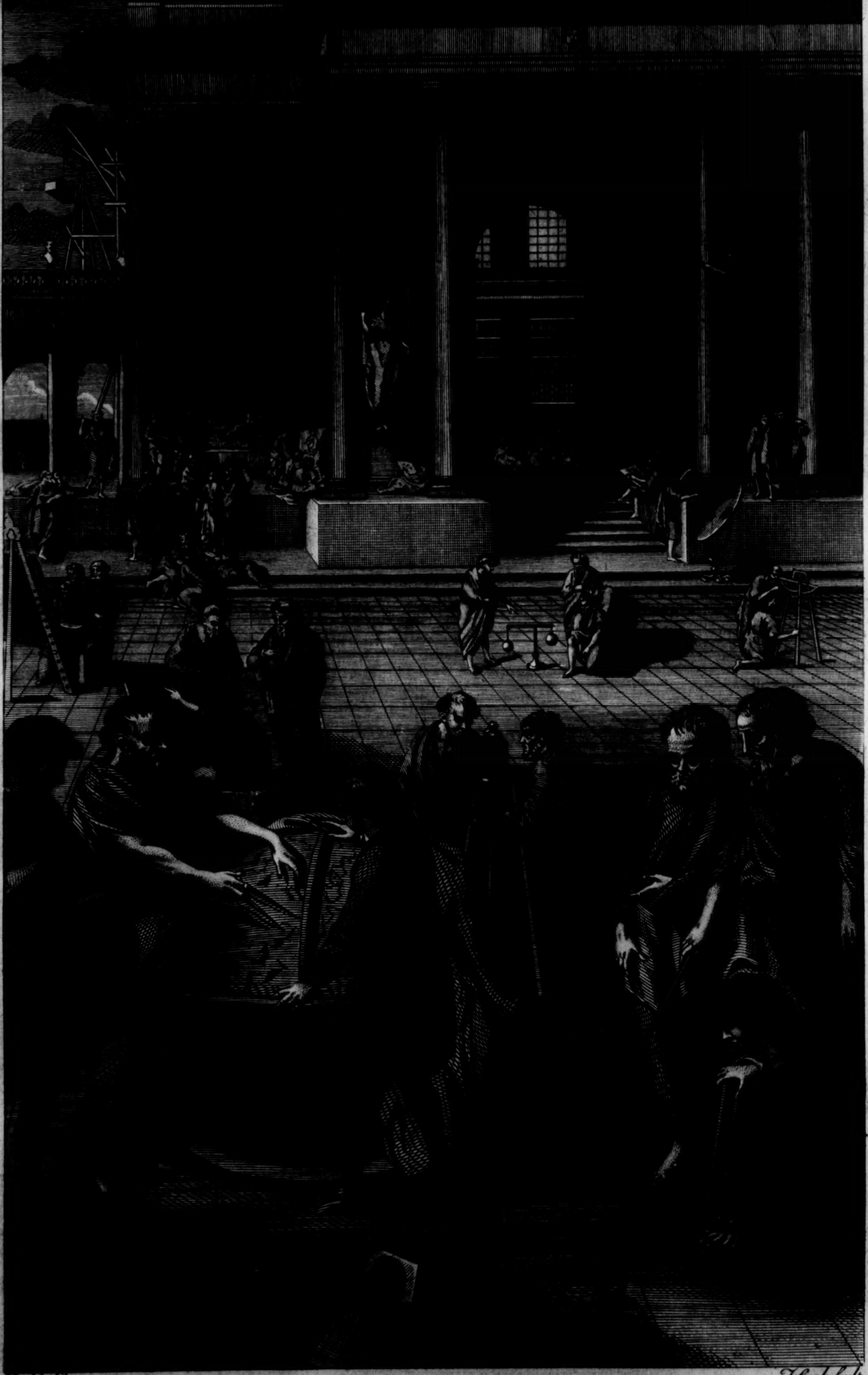

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CYCLOPÆDIA.

Publish'd as the Act directs Jan.y 3.d 1778.

CYCLOPÆDIA:

OR, AN

UNIVERSAL DICTIONARY

OF

ARTS AND SCIENCES.

CONTAINING
An EXPLANATION of the TERMS, and an ACCOUNT
OF THE SEVERAL SUBJECTS,

IN THE

LIBERAL AND MECHANICAL ARTS,

AND THE

SCIENCES, HUMAN and DIVINE.

Intended as a COURSE of ANCIENT and MODERN LEARNING.

K

By E. CHAMBERS, F.R.S.

> *Floriferis ut apes in ſaltibus omnia libant,*
> *Omnia nos*— LUCRET.

WITH THE

SUPPLEMENT,

AND

MODERN IMPROVEMENTS,

Incorporated in one ALPHABET.

By ABRAHAM REES, D.D.

IN FOUR VOLUMES.

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CYCLOPÆDIA:

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ARTS and SCIENCES.

A.

A May be conſidered, I. as a LETTER; II. as a WORD; and III. as an ABBREVIATION.

I. A, as a LETTER, or the mark of a vocal ſound, is the moſt ſimple, and that which the dumb are moſt eaſily taught to utter.

To pronounce it clearly, we need only open the mouth wider than for any other ſound, and then emit the air from our lungs. It is the firſt letter of the alphabet in all the known languages of the world, except in that of the Ethiopians; in which, according to Ludolfus, it is the thirteenth.

We muſt ſeek the origin of this, and the reſt of our letters, in the Oriental languages. See ALPHABET and LETTERS.

In the Engliſh language the character A is the mark of three different ſounds, which are termed by our grammarians, the *broad* A, the *open* A, and the *ſlender* A.

1. Our *broad* A reſembles the ſound marked by the German A, and is found in many of our monoſyllables, as *all*, *wall*, *malt*, *ſalt*, where it is pronounced as *au* in *cauſe*, and *fault*, or as *aw* in *law*. It is probable that this *broad* ſound was that which our Saxon anceſtors expreſſed by the character A, as it is ſtill, almoſt uniformly, retained in the ruſtic pronunciation and northern dialects of our language; as *taulk* for *talk*, *maun* for *man*, *haund* for *hand*, &c.

2. The *open* A of the Engliſh, is not unlike the A of the Italians, and is the ſound marked by this letter in *father*, *rather*, &c.

3. The ſlender ſound marked by the character A, is peculiar to the Engliſh language, and reſembles the ſound of the French *e* maſculine, or of their diphthong *ai* in *païs*; perhaps it is a middle ſound between them, or between the *a* and *e*. Such we have in the words, *place*, *face*, *waſte*, and in all thoſe that terminate in *ation*; as *ſalvation*, *preſervation*, &c.

The ſounds of which A is the character in our language are ſometimes ſhort; as in the words *glaſs*, *graſs*, *braſs*, &c. at other times long; as in *glaze*, *graze*, &c. Their length is commonly denoted by an *i* immediately ſubjoined to the *a*; as in *plain*, *rain*, &c. or by an *e* added at the end of the word; as in *plane*, *crane*, &c.

Some contend that there are four, others, that there are five diſtinct ſounds, denoted by the character A in the Engliſh language. There are, perhaps, little variations and diſtinctions in the ſounds marked by the character A, as well as by the other vowel letters in our alphabet; but they are ſo local or arbitrary, or, after all, ſo nice and ſubtle, that they entirely eſcape the notice of foreigners, and are hardly diſtinguiſhable by the natives.

Thoſe who deſire to enter more deeply into the firſt formation of ſounds, and to ſee the elementary principles of ſpeech treated with philoſophical accuracy, will find ſatisfaction in the ingenious treatiſes of Wallis and Holder.

In burleſque poetry, the letter A is ſometimes added after words; it lengthens them a ſyllable, without altering their ſenſe; as *line-a*, for *line*, in Dryden, &c. It is ſometimes redundant, when prefixed to words, as *ariſe*, *awake*; the ſame with *riſe*, *wake*, &c.

In our calendar, A is the firſt of the DOMINICAL letters, which were introduced in imitation of the eight NUNDINAL letters of the Romans, of which their A was one.

II. A is a WORD. This firſt ſimple ſound is uſed in our language to expreſs moſt of the vehement emotions of the ſoul. We naturally uſe it on all ſudden occaſions of admiration, joy, anguiſh, apprehenſion of danger, &c. and where the emotion is very great, the A is enforced by adding an aſpirate to it, as *ah!*

It is ſometimes a noun; for we ſay great A and little *a*; but it is moſt commonly a definite, or an indefinite article. It is *definite*, and denotes the number *one*, as, *a* man is coming, that is, *no more than one*. It is alſo uſed as an *indefinite* article; ſo we ſay, *a* man may come this way; that is, *any* man.

A, uſed as an article, has no plural ſignification; before a word beginning with a vowel, *y* and *w* excepted, and before a ſilent *h* preceding a vowel, it is written *an*, of which *a* is the contraction, as *an* arbour, *an* ox, *an* hour, &c.

A ſeems to be a true and genuine prepoſition, in the three following caſes. 1. When it is put before a participle or participial noun, denoting ſome action not yet accompliſhed; as I am *a* writing. 2. When it is placed before local ſurnames; as Thomas *à* Becket. 3. When it is uſed in compoſition; e. g. *a*foot, *a*ſleep, &c. Dr. Wallis ſuppoſes it to be a contraction of *at*; but Dr. Lowth thinks, that it is the prepoſition *on*, and ſometimes *of*. *At*, he ſays, has relation chiefly to *place*; *on* has a more general relation, and may be applied to *action*, and many other things, as well as *place*.

In ſome inſtances, A has a peculiar ſignification, denoting the proportion of one thing to another; as ſuch income *a* year; ſo many hours *a* day; ſo much *a* man, &c.

III. A is alſo an ABBREVIATION. A put to bills of exchange, is in England an abbreviation for *accepted*, and in France for the word *accepté*. It is likewiſe uſual among merchants to mark their ſets of books with the letters A, B, C, &c. inſtead of the numbers 1, 2, 3, &c.

In the Roman inſcriptions, the ſenſe of the A is to be collected chiefly from the connection of the words, and the ſcope of the inſcription. A ſingly ſtands for *Aulus*, *Auguſtus*, *ager*, *aiunt*, *ante*, *ære*, *ædes*, *ædilis*, *ædilitas*, *ærarium*, *aula*, *anima*, *amicus*, *amica*, *albo*, *alia*, *acta*, &c. and by a more modern abbreviation for *artium*. Thus A. M. ſtands for *Artium Magiſter*, *Maſter of Arts*, and A. B. for *Artium Baccalaureus*, *Bachelor of Arts*. AA. ſignifies *Auguſti*, and AAA. ſtands for *auro*, *argento*, *ære*. AB ſtands for *alia bona*, and AC for *actâ cauſâ*,

&c. On Greek and Roman medals A denotes commonly the name of the place where they were ſtruck; as Athens, Argos, Antioch, Aquileia. On French coins A is the mark of the mint of Paris, and AA ſignifies their coinage at Metz.

The Romans in their trials uſed their A to denote abſolution; whence Cicero calls it *litera ſalutaris*, the ſaving letter. Their manner was this. Three ballots were given to each judge, marked one with an A for *abſolvo, I abſolve*; a ſecond with a C for *condemno, I condemn*; and the third with N. L. which ſtood for *non liquet, is not clear*. One or other of theſe, each judge, according to his judgment, put into an urn; and the prætor acquitted or condemned the criminal, as the one or the other of theſe letters were the moſt numerous. If the ſuffrages for acquitting and condemning were equal, the accuſed was always acquitted.

The Romans alſo made uſe of the letter A, in collecting their ſuffrages in caſes of legiſlation. When a new law was propoſed, or an amendment of an old one was in agitation, each voter had two ballots put into his hand, the one marked A, ſignifying *antiquo*, q. d. *antiquam volo, I like the old way*; and the other was marked U. R. for *uti rogas, as you deſire*; and his ſuffrage was given, by putting the one, or the other, into the urn.

A, in the days of Roman barbariſm, was one of the numeral letters, and ſignified five hundred; when written with a daſh over it, thus, Ā, it denoted five thouſand.

The letter A is alſo uſed by chronologers and hiſtorians as an abbreviation for *anno*; ſo they put A. M. for *anno mundi*, A. D. for *anno Domini*, &c.

The Romans dated from the building of Rome; and in their writings A. U. C. ſtands for *anno ab urbe condita*.

Among logicians, A denotes an univerſal affirmative propoſition.

In Algebra, A or *a*, and the firſt letters of the alphabet, repreſent *known* quantities; and the laſt letters repreſent quantities that are *unknown*.

In the preſcriptions of phyſicians, A, or ā, or āā, denotes equal parts of the ingredients ſpecified, and is a contraction of the prepoſition *ανα*, which is uſed in the ſame ſenſe by medicinal writers in the Greek tongue.

Among chemiſts, AAA ſignifies an AMALGAMA, or the operation of amalgamating.

AABAM. Some of the French alchymiſts have uſed this word to ſignify *Lead*.

AAM, or HAAM, is a liquid meaſure generally uſed by the Dutch; it contains 128 mingles, each mingle weighing about 36 ounces avoirdupoiſe; and conſequently the *Aam* is equal to 148⅘ pints of Paris, or to 288 pints of Engliſh meaſure; the Paris pint weighing 31 ounces, and that of England 16 ounces.

AAVORA, in *Natural Hiſtory*, the fruit of a ſort of large palm-tree in the Weſt Indies, and in Africa. It is of the ſize of a hen's egg, and included, with ſeveral more, in a large ſhell. In the middle of the fruit there is a hard nut, about the ſize of a peach-ſtone, which contains a white almond, very aſtringent, and proper to check a DIARRHÆA.

AB, in the Hebrew chronology, the eleventh month of the civil year, and the fifth of the eccleſiaſtical year, which begins with *Niſan*. The month *Ab* anſwers to the moon of July, and contained thirty days.

AB, in the Syriac Calendar, is the name of the laſt ſummer month.

AB, prefixed to the names of places, generally denotes that they belonged to ſome abbey.

ABACA, a kind of flax or hemp, gathered in ſome of the Manillas or Philippine Iſlands. This plant is ſown every year; being gathered, it is ſteeped in water, and beaten as hemp is. It is of two kinds, the white and the grey. The white *Abaca* is uſed for making very fine linen; but the grey is employed for nothing but cordage.

ABACATUAIA, in *Zoology*, the name of an American fiſh, of the ſhape of the European doree or faber. It is much of the ſhape, ſize, and figure of the common plaiſe. Its mouth is ſmall and toothleſs, and its eyes have a black pupil, and a ſilvery iris. It has five fins, one on the back, and another on the belly, each running to the tail; and two at the gills. The tail makes the fifth, and is conſiderably forked. It is caught about the ſhores of the Braſils, and is commonly eaten there. This fiſh is a ſpecies of *zeus*, according to Artedi, and belongs to the thoracic order of Linnæus.

ABACAY, in *Natural Hiſtory*, a name given by the people of the Philippine Iſlands to a ſpecies of parrot, called alſo CALANGAY.

ABACINARE, or ABBACINARE, in writers of the middle age, a ſpecies of puniſhment, conſiſting in the blinding of the criminal, by holding a red-hot baſon, or bow, before his eyes.

ABACK, in *Sea-language*, ſignifies the ſituation of the ſails, when their ſurfaces are flatted againſt the maſts by the force of the wind. They may be brought *aback*, either by a ſudden change of the wind, or an alteration in the ſhip's courſe. They are laid *aback* to effect an immediate retreat, without turning either to the right or left, in order to avoid ſome imminent danger.

ABACOT, a cap of ſtate, wrought up in the form of two crowns, worn by our ancient Britiſh kings.

ABACTOR (called by the Roman lawyers *Abigeus*, or *Abigevus*), one who drives off cattle in herds; in contradiſtinction to one who ſteals a ſingle ſheep, &c. only, who is called a thief. *Nam qui ovem unam ſurripuerit, ut fur coercetur, qui gregem ut Abactor*. The puniſhment of *Abigeat* was more ſevere than that of *Furtum*; viz. condemnation to the mines, baniſhment, or even death itſelf, according to the quality of the offender. But ſometimes in Spain the puniſhment was more ſevere than elſewhere, the people there being moſt addicted to it.

The word is compounded of *ab, from*; and *actor*, a driver; from *agere, to drive*.

ABACTUS, or ABIGEATUS, among the ancient phyſicians, was uſed for a miſcarriage procured by art, or force of medicines, in contradiſtinction to *aborſus*, which is natural. But the moderns know no ſuch diſtinction. See ABORTION.

ABACUS, among the ancients, was a kind of cupboard, or buffet. See BEAUFET.

The word is formed from the Greek αϐαξ, which, among that people, ſignified the ſame thing.

ABACUS, among the mathematicians, was a little table ſtrewed over with duſt, on which they drew their ſchemes and figures.

In this ſenſe, the word ſeems formed from the Phœnician אבק, *abak, auſt*.

ABACUS *Pythagoricus*, a table of numbers, contrived for the ready learning of the principles of arithmetic; ſo denominated from its inventor, Pythagoras.

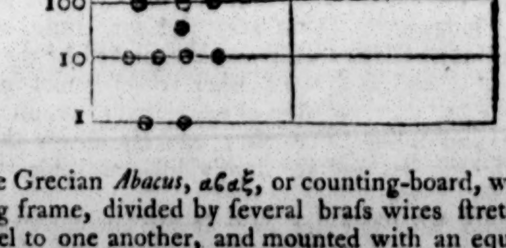
Hence alſo, from an agreement in point of uſe, the names *Abacus* and *Abaco*, are uſed, among Latin and Italian writers, for an alphabet, or A B C, *&c.*

The *Abacus Pythagoricus* was, in all probability, no other than what we call a multiplication-table.

Ludolfus and Wolfius give us methods of performing multiplication without the help of the *Abacus*; but they are too operoſe in ordinary caſes for practice. See MULTIPLICATION.

The *Abacus* for facilitating the operation of arithmetic, is an inſtrument almoſt as ancient, and extenſive, as the art of arithmetic itſelf: if it be later than the methods of computing by the fingers, and by *lapilli*, or ſtones (which obtained among the Egyptians), it is at leaſt much prior to the uſe of numeral letters or figures, wrought with the pen. We find it in uſe, under ſome variations, among the Greeks, Romans, Chineſe, Germans, French, &c. It excels in point of facility, and cleanlineſs of operation, as working without any ſtrokes or blots of the pen, or waſte of paper; ſome alſo give it the preference in point of expedition.

The *Abacus* is variouſly contrived; that chiefly uſed in European countries is made by drawing any number of parallel lines, at pleaſure, at a diſtance from each other, equal to twice the diameter of a *calculus*, or counter. Here a counter placed on the firſt or lowermoſt line ſignifies 1; on the ſecond 10; on the third, 100; on the fourth, 1000; on the fifth 10000; and ſo on. In the ſpaces between the lines, the ſame counters ſignify half of what they ſignify on the next ſuperior line; *viz.* in the ſpace between the firſt and the ſecond lines, 5; between the ſecond and third, 50; between the third and fourth, 500; and ſo on. Thus the counters on the *Abacus*, in the figure here ſubjoined, make the ſum of 37392. —The *Abacus* is alſo divided croſs-wiſe into *areolæ*, by means whereof ſubtractions are made. Wolf. Lex. Math. p. 171. ſeq.



The Grecian *Abacus*, αϐαξ, or counting-board, was an oblong frame, divided by ſeveral braſs wires ſtretched parallel to one another, and mounted with an equal number of little ivory balls, like the beads of a necklace. By the arrangement of theſe balls, diſtinguiſhing the numbers into different claſſes, and obſerving the relations of the lower to the upper, all kinds of computations were eaſily performed. Mahudel, in Hiſt. Acad. R. Inſcr. t. iii. p. 390.

The Roman *Abacus* was much the ſame with the Grecian, except that inſtead of ſtrings, or wires, and beads in the Roman, we find pins and grooves for them to ſlide in. It is deſcribed by ſeveral authors; but notwithſtanding all theſe deſcriptions, we ſhould have had a very obſcure idea of the ancient manner of reckoning, had there not been figures of it found among the ancient marbles. Phil. Tranſ. N° 180.

The Chineſe *Abacus* conſiſts, like the Grecian, of ſeveral ſeries of beads ſtrung on braſs wires, extended from the top to the bottom of the inſtrument, and divided in the middle by a croſs piece from ſide to ſide; ſo that in the upper row each ſtring has two beads, which are each reckoned for five; and in the lower row, each ſtring has five beads of different values; the firſt being reckoned as 1; the ſecond, as 10; the third, as 100, &c. as among us. Add, that inſtead of four pins for digits, or units, in the Roman *Abacus*, the Chineſe has five beads.

We have two different figures, and deſcriptions, of the Chineſe *Abacus*, one given by F. Martinius, who had lived many years in China; the other by Dr. Hook, who copied it from a Chineſe dictionary of the court-language. See SHWAN-PAN.

ABACUS *logiſticus* is a rectangled triangle, whoſe ſides, forming the right angle, contain the numbers from 1 to 60; and its area, the products of each two of the oppoſite numbers. This is alſo called a *canon of* SEXAGESIMALS.

ABACUS & *palmulæ*, in the *Ancient Muſic*, denote the machinery, whereby the ſtrings of the polyplectra, or inſtruments of many ſtrings, were ſtruck, with a plectrum made of quills.

ABACUS *harmonicus* is uſed by Kircher for the ſtructure and diſpoſition of the keys of a muſical inſtrument, whether to be touched with the hands or the feet.

ABACUS *Major*. A trough uſed in the mines, wherein the ore is waſhed.

ABACUS, or ABACISCUS, in *Architecture*, is the uppermoſt member of the capital of a column; ſerving as a kind of crowning, both to the capital and the whole column.

Many of our dictionary writers very erroneouſly make the *Abacus* to be the capital itſelf.

Vitruvius, and others after him, who give the hiſtory of the orders, tell us, the *Abacus* was originally intended to repreſent a ſquare tile laid over an urn, or rather over a baſket.—An Athenian old woman happening to place a baſket thus, covered over the root of an acanthus; that plant ſhooting up the following ſpring, encompaſſed the baſket all around, till meeting with the tile, it curled back in a kind of ſcroll. Calimachus, an ingenious ſculptor, paſſing by, took the hint, and immediately executed a capital on this plan; repreſenting the tile by the *Abacus*, the leaves by the volutes, and the baſket by the vaſe, or body of the capital.—See *Tab. Archit. fig.* 21.

There is ſome difference in the form of the *Abacus* in different orders. In the Tuſcan, Doric, and ancient Ionic, it is a flat, ſquare member, well enough repreſenting its original tile; whence the French call it *tailloir, trencher*. See *fig.* 24. *lit.* l. & *fig.* 28. *lit.* o. & *fig.* 32. *lit.* k. See alſo TUSCAN, DORIC, and IONIC.

In the richer orders it loſes its native form; its four ſides, or faces, being arched, or cut inwards, with ſome ornament, as a roſe, or other flower, or a fiſh's tail, in the middle of each arch.—See *fig.* 26. *lit.* d. & *fig.* 20. See CORINTHIAN, and COMPOSITE.

But ſome architects take other liberties in the *Abacus*, both in reſpect of its name, place, and office. Thus, in the Tuſcan order, where it is the largeſt and moſt maſſive, as taking up one third of the height of the whole capital, it is ſometimes called the dye of the capital.—In the Doric it is not always the uppermoſt member of the capital; a *cymatium* being frequently placed over it.—In the Ionic, ſome make it a perfect ogee, and crown it with a fillet.

The proportion of the *Abacus*, as preſcribed by Vitruvius, is, that its diagonal (from corner to corner) be twice its height. A rule which the moderns make no difficulty of diſpenſing with.

ABACUS is alſo uſed by Scamozzi for a concave moulding in the capital of the Tuſcan pedeſtal.

ABACUS likewiſe, in the *Ancient Architecture*, is uſed to denote certain compartments in the incruſtation or lining of the walls of ſtate-rooms, MOSAIC pavements, and the like. There were *Abaci* of marble, porphyry, jaſper, alabaſter, and even glaſs; ſhaped variouſly, ſquare, triangular, and the like.

ABADIR, in the Roman *Theology*, the ſtone which Saturn ſwallowed, believing it his new-born ſon Jupiter, and which at length became deified, and the object of religious worſhip.

ABAFT, in the *Sea Language*, is uſed in ſpeaking of things placed or done, toward the ſtern, or hinder-part of a veſſel; called alſo *aft*, and ſtands oppoſite to *fore*.—Thus they ſay a thing is *abaft* the fore-maſt, when it is behind it, or nearer the ſtern than the fore-maſt is. The poſt of the maſter, captain, and other officers, is *abaft* the main-maſt.

The ſtern, ſtrictly ſpeaking, is only the outſide; *abaft* includes both inſide and out.

ABAGI, the ſame thing with ABASSI, although of different value; it is worth at Teflis, and throughout all Georgia, about 36 ſols French money; four chaouris, which are alſo called ſains, make one *Abagi*.

ABALIENATION, in the Roman *Law*, denotes a ſpecies of alienation; whereby thoſe goods called *res mancipi*, ſuch as cattle, ſlaves, lands, and poſſeſſions, within the territory of Italy, were transferred to perſons legally capable thereof, either by a *formula*, called *traditio nexu*, or a ſurrender in open court.

ABALIENATUS, alienated from, a medical term, which, when applied to the body, ſignifies that the part ſo ſpoken of, is in a ſtate that requires amputation; and when applied to the ſenſes, denotes their total deſtruction.

ABANGA, the name which the inhabitants of the iſland of St. Thomas give to the fruit of their palm-tree, which is about the ſize of a citron, to which it bears great reſemblance; as it alſo does to the lemon externally; its kernels are uſed as reſtoratives. See ADY.

ABAPTISTON, or ABAPTISTA, is uſed by ſome authors to expreſs the ſaw, *terebella*, or perforating part of the inſtrument, called the trepan; becauſe it is generally contrived in ſuch a manner as to prevent its ſinking ſuddenly into the ſkull, and wounding the brain, when the bone is cut through.

It is derived from the negative α, and βαπτω, *I immerge*. See TREPAN.

ABARCA, an ancient kind of ſhoe uſed in Spain to paſs the mountains, made of raw hides, and bound with cords, which ſecured them againſt the ſnow.

ABARNAHAS, is a term uſed by ſome of the alchemiſts, particularly Zadith, in the Theatrum Chym. who tells us that it is the ſame as the full moon, or MAGNESIA.

ABARTAMEN, lead.

ABARTICULATION, in *Anatomy*. See DIARTHROSIS.

ABAS, a weight uſed in Perſia for weighing pearls; being an eighth part lighter than the European CARAT.

ABAS, ſometimes ſignifies the EPILEPSY. See TINEA.

ABASED, ABAISSE, in *Heraldry*, is applied to the vol, or wings of eagles, &c. when the tip, or angle, looks downward toward the point of the ſhield; or when the wings are ſhut: the natural way of bearing them being ſpread, with the tip pointing to the chief, or the angles.

A chevron, a pale, bend, &c. are alſo ſaid to be *abaſed*, when their points terminate in, or below the centre of the ſhield.

Again, an ordinary is ſaid to be *abaſed*, when below its due ſituation.

ABASSI, a ſilver coin current in Perſia, worth two mammoudis, or four chayes: the chaye being eſtimated at nine ſols, ſix deniers, of French money, makes the *Abaſſi* worth thirty-eight ſols; ſeventeen ſols of Holland, or near eighteen pence Engliſh. It derives its name from Schaw Abbas II. king of Perſia, under whom it was ſtruck.

ABAT-CHAUVEE, a name given in Poitou, Angoumois, Saintonge, La Marche, and Limoſin, in France, to a ſort of very ordinary wool; much like that called by the French, *paignons*, and *plures*.

ABATE, in *Law*, ſignifies to throw down; as, to *abate* a nuiſance.

It is likewiſe uſed to denote the act of one who ſteps into an eſtate void by the death of the laſt poſſeſſor, before the heir can enter; and by that means keeps him out.

ABATE alſo means to defeat or overthrow, on account of ſome error or exception. See ABATEMENT.

ABATE, in the *Manege*. A horſe is ſaid to *abate*, or take down his CURVETS, when he puts both his hinder legs to the ground at once, and obſerves the ſame exactneſs in all the times.

ABATELEMENT, in *Commerce*, (from the French *abattre*) a term uſed for a prohibition of trade to all French merchants in the ports of the Levant, who will not ſtand to their bargains, or who refuſe to pay their debts. It is a ſentence of the French conſul, which muſt be taken off, before they can ſue any perſon for the payment of their debts.

ABATEMENT, in *Heraldry*, ſomething added to a coat-armour, to diminiſh its proper value and dignity, and note ſome diſhonourable action, or ſtain, in the character of the perſon who bears it. It may be made by reverſion or diminution.

Reverſion is either turning the whole eſcutcheon upſide-down; or the adding another eſcutcheon, inverted, in the former.

Diminution is the blemiſhing any part by adding a ſtain, or mark of diminution: ſuch are the delf, a point dexter, a point champaign, a plain point, a gore ſiniſter, and a guſſet. See each under its proper article.

It may be added, that theſe marks muſt always be either tawney or murrey; otherwiſe, inſtead of diminutions, they become additions of honour.

The laſt editor of Guillim diſcards the whole notion of *Abatements*, as a chimæra. He alledges that no one inſtance is to be met with of ſuch bearing; and that it implies a contradiction to ſuppoſe it. Arms, being *inſignia nobilitatis & honoris*, cannot admit any mark of infamy, without ceaſing to be arms, and becoming badges of diſgrace, which all would covet to lay aſide. Add, that as no hereditary honour can be actually diminiſhed; ſo neither can the marks thereof. Both indeed may be forfeited; as in the caſe of treaſon, where the eſcutcheon is totally reverſed, to intimate a total ſuppreſſion of the honour.

Some inſtances, however, are produced to the contrary by Columbiere and others. But theſe, though they may ſhew ſome extraordinary reſentments of princes for offences committed in their preſence, do not amount to a proof of ſuch cuſtom or practice; much leſs authorize the being of particular badges in the hands of inferior officers, as kings at arms.

In a word, as arms are rather the titles of the dead, than of the living, it would ſeem, that they can neither ſuffer diminution nor *Abatement*; for thus an equal indignity would be put upon the anceſtor and the deſcendant. Diminution therefore and *Abatement*, can only effect arms lately granted, and ſolely when the perſon who obtained them is yet alive, and has tarniſhed his former glory by his after miſbehaviour. Even in this caſe, where *Abatement* may properly take place, it can only be made by the ſuppreſſion of ſome honourable badge, and not by the introduction of any degrading emblem.

ABATEMENT, in *Law*, is the fruſtrating, or ſetting aſide a ſuit, on account of ſome fault, either in the matter, or proceeding thereof. Thus, *Plea in*

ABATEMENT, is ſome exception alledged, either againſt the plaintiff's writ, as wanting due form, or againſt his count or declaration, as being inſufficient, or varying from the writ, ſpeciality, or record; or againſt the matter of either, as inſufficient, or being before another court; or againſt the allegations, as being uncertain, on account of ſome miſnomer, or the death of one of the parties, or the marriage of the plaintiff, being a woman: to which ſome add diſability.—Upon any of theſe, the defendant prays, that the plaintiff's writ or plaint may *abate*, i. e. that his ſuit may ceaſe for that time: if it be granted, all writs and proceſſes muſt begin *de novo*.

The death of a plaintiff did in all caſes *abate* the writ before judgment, until the ſtatute 8 and 9 W. III. c. 11. by which neither the death of the plaintiff or defendant ſhall *abate* it, if the action might be originally proſecuted by and againſt the executors or adminiſtrators of the parties; and if there are two or more plaintiffs or defendants, and one, or more, die; the writ or action ſhall not *abate*, if the cauſe, or action, ſurvives to the ſurviving plaintiff, againſt the ſurviving defendant, &c. It alſo denotes an irregular entry upon lands.

ABATEMENT, in *Commerce*. See DISCOUNT and REBATEMENT.

ABATEMENT, in the *Cuſtoms*, is an allowance made upon the duty of goods, when the quantum damaged is determined by the judgment of two merchants upon oath, and aſcertained by a certificate from the ſurveyor and land-waiter.

ABATIS, or **ABBATIS**, in *Writers of the Barbarous Age*, denotes an officer in the ſtables, who had the care and diſtribution of the provender. The name is derived from *Batum*, the name of an ancient meaſure of corn.

ABATOR, in *Law*. See ABATE.

ABAVI, **ABAVO**, or **ABAVUM**; a large tree in Ethiopia, which bears a fruit like a gourd.

ABB, among *Clothiers*, denotes the yarn of a weaver's warp, whence the wool of which it is made is called *Abb-wool*.

ABBA, in the Syriac and Chaldee languages, literally ſignifies a *father*; and figuratively, a ſuperior, reputed as a father in reſpect of age, dignity, or affection.

It was alſo anciently uſed as a title of honour, which ſome great men, it is ſaid, ſtill retain in the Pyrenean mountains.

ABBA, **ABA**, or **ANBA**, is more particularly uſed in the Syriac, Coptic, and Ethiopic churches, as a title which the people give their biſhops.

The biſhops themſelves beſtow the title *Abba*, more eminently on the patriarch of Alexandria; which occaſioned the people to give him that of *Baba*, or *Papa*, that is, *grandfather*; a title which he bore before the biſhop of Rome. It is a Jewiſh title of honour, given to certain of that claſs of Rabbins, called Tanaites; and it is alſo particularly uſed by ſome writers of the middle age, for the ſuperior of a monaſtery, uſually called ABBOT.

ABAISSEUR, in *Anatomy*, a name given by Winſlow, and other French writers, to one of the muſcles of the eye, called by others the *deprimens* and *humilis*; and by Fabricius, the *rectus inferior*: Cowper, and Albinus, call it the *depreſſor oculi*; and it is one of the *quatuor recti oculi* of the laſt author.

ABBESS, the ſuperior of an ABBEY, or convent of NUNS

The *Abbeſs* has the ſame rights, and authority over the nuns, that the ABBOTS regular have over their monks. Her ſex, indeed, does not allow her to perform the ſpiritual functions annexed to the prieſthood.

F. Martene, in his treatiſe on the rights of the church, obſerves, that ſome *abbeſſes* have formerly confeſſed their nuns. But he adds, that their exceſſive curioſity carried them ſuch lengths, that there aroſe a neceſſity of checking it.

St. Baſil, in his rule, allows the *abbeſs* to be preſent with the prieſt, at the confeſſion of her nuns.

ABBEY, or **ABBY**, a monaſtery, or religious houſe, governed by a ſuperior under the title of ABBOT, or ABBESS.

In our ancient ſtatutes the word is ſometimes alſo written *Abbathy*. By 31 H. VIII. c. 13. *Abbathies* are given to the king.

ABBEYS differ from PRIORIES, in that the one are under the direction of an abbot, and the other of a prior; but abbot and prior (we mean a prior conventual) are much the ſame thing, and differ in little but the name.

One third of the beſt benefices in England were anciently, by the pope's grant, appropriated to *Abbeys*, and other religious houſes; which, upon their diſſolution under king Henry VIII. became lay-fees. For an eſtimate of the number and value of religious houſes, aboliſhed and ſurrendered in this reign, ſee MONASTERY.

ABBOT, or **ABBAT**, originally derived from the Hebrew *Ab*, *father*, ſignifies the ſuperior of a monaſtery of monks erected into an abbey, or prelacy.

Abbots were really diſtinguiſhed from the clergy, though frequently confounded with them, becauſe a degree above laymen. St. Jerom, writing to Heliodorus, ſays expreſly, *alia monachorum eſt cauſa, alia clericorum*.

In thoſe early days the *Abbots* were ſubject to the biſhops, and the ordinary paſtors. Their monaſteries being remote from cities, and built in the fartheſt ſolitudes, they had no ſhare in eccleſiaſtical affairs. They went on Sundays to the pariſh-church with the reſt of the people; or, if they were too remote, a prieſt was ſent them, to adminiſter the ſacraments, till, at length, they were allowed to have prieſts of their own body. The *Abbot*, or archimandrite, himſelf was uſually the prieſt; but his function extended no farther than to the ſpiritual aſſiſtance of his monaſtery, and he remained ſtill in obedience to the biſhop.

The *Abbots* ſoon wore off their former plainneſs and ſimplicity, and endeavoured to be independent of the biſhops, which occaſioned ſome ſevere laws to be made againſt them at the council of Chalcedon: notwithſtanding this, in time, many of them carried the point of independency, and got the appellation of *lord*, with other badges of the epiſcopate, particularly of the mitre.

Hence aroſe new ſpecies and diſtinctions of *Abbots*: *mitred*, and *not mitred*; *croziered*, and *not croziered*; *œcumenical Abbots*, *cardinal Abbots*, *&c.*

ABBOTS, *Mitred*, were thoſe privileged to wear the *mitre*; and allowed, withal, a full epiſcopal authority within their ſeveral precincts.—Among us, theſe were alſo called *Abbots ſovereign*, and *Abbots general*; and they were lords of parliament. Of theſe Sir Edward Coke reckons twenty-ſeven in England, beſide two *mitred* priors.

The reſt, who were *not mitred*, were ſubject to the DIOCESAN.

ABBOTS, *Croziered*, are thoſe who bear the CROZIER, or paſtoral ſtaff.

ABBOTS were likewiſe diſtinguiſhed into *Abbots elective*, and *Abbots preſentative*; but are now chiefly diſtinguiſhed into *regular* and *commendatory*.

ABBOTS, *Regular*, are real monks, or religious, who have taken the VOWS, and wear the habit, of the ORDER.

Such are all *Abbots* preſumed to be; it being expreſly provided by the canons, that none but a monk have the command over monks.—But, in fact, it is found far otherwiſe; in France, as it is ſaid, there are now but ſix regular abbeys.

ABBOTS *in commendam*, are ſeculars; though they have undergone the tonſure, and are obliged, by their bulls, to take orders when they come of age.

Though the term *commendam* inſinuates, that they have only the adminiſtration of their abbeys for a time; yet do they hold, and reap the fruits of them for ever, as well as the regular *Abbots*.

Their BULLS give them a full power *tam in ſpiritualibus quam in temporalibus*; and yet it is true that the commendatory *Abbots* do not perform any ſpiritual offices; nor have they any ſpiritual juriſdiction over their monks. So that the phraſe *in ſpiritualibus*, is rather ſomething of the Roman ſtyle, than a reality.

The ceremony whereby *Abbots* are created, is properly called benediction; or ſometimes, though abuſively, conſecration.

It anciently conſiſted in cloathing him with the habit called *cucullo*, a cowl; putting the paſtoral ſtaff in his hand, and the ſhoes called *pedales*, or *pedules*, on his feet. Theſe particularities we learn from the *Ordo Romanus* of Theodore, archbiſhop of Canterbury.

ABBOT is alſo a title, which has been given to certain biſhops, becauſe their ſees had originally been abbeys; and they were even elected by the monks: ſuch are thoſe of Catanea and Montreal in Sicily.

ABBOT is alſo an appellation ſometimes given to the ſuperiors or generals of ſome congregations of regular CANONS; as that of S. Genevieve at Paris.

ABBOT is alſo a title borne by ſeveral magiſtrates, and other lay-perſons.—Among the Genoeſe, one of their principal magiſtrates was called the *Abbot* of the people.

In France, particularly about the time of Charlemagne, there were ſeveral lords and courtiers, who having the ſuperintendency of certain abbeys committed to them, were ſtyled *Abbacomites*, or abbey-counts.

ABBREVIATION, or ABBREVIATURE, a contraction of a word, or paſſage; made by dropping ſome of the letters, or by ſubſtituting certain marks, or characters, in their place.

Lawyers, phyſicians, &c. uſe abundance of *Abbreviatures*; partly for the ſake of expedition, and partly for that of myſtery.—A liſt of the principal *Abbreviatures*, in the ſeveral arts and faculties, ſee under CHARACTER.

Of all people, the Rabbins are the moſt remarkable for this practice: ſo that their writings are unintelligible, without an explication of the Hebrew *Abbreviatures*. The Jewiſh authors and copyiſts do not content themſelves to *abbreviate* words, like the Greeks and Latins, by retrenching ſome of the letters, or ſyllables thereof; but they frequently take away all but the initial letters. Thus, ר ſtands for *rabbi*, and א for אל, אדני or אמר according to the place it is found in.

But ſtill farther, they frequently take the initial letters of ſeveral ſucceeding words, join them together, and adding vowels to them, make a barbarous ſort of word, repreſentative of all the words thus abridged. Thus, *Rabbi Schelemoh Jarchi*, in the jargon of Hebrew *Abbreviatures*, is called *Raſi*; and *Rabbi Moſes ben Maiemon*, is *Rambam*. Mercerus, David de Pomis, Schindler, Buxtorf, &c. have given explications of ſuch *Abbreviatures*.—The moſt copious collection of Roman *Abbreviatures*, is that of Sertorius Urſatus: *Sertorii Urſati, equitis, de notis Romanorum commentarius.*

ABBREVIATOR is more particularly uſed for an officer in the court of Rome, appointed as aſſiſtant to the vice-chancellor, for drawing up the pope's briefs, and reducing petitions, when granted by the pontiff, into proper form, for being converted into bulls.

The *Abbreviators* are ſuppoſed by Ciampini, to be the ſucceſſors either of the *cancellarii* in the imperial houſhold, or of the ſeven *notarii*, ſaid to have been placed by pope Clement I. in the ſeven quarters of Rome, to write down the acts of the martyrs within their ſeveral diſtricts. They are ſaid to have taken the name, either from their writing the *brevia*, briefs, or ſhorter epiſtles of the popes; or from their making uſe of *notæ*, or abbreviations in writing. The latter opinion may ſeem the more probable, in that the name is ſometimes uſed by writers of the ſixth age, as ſynonymous with *notarii* or *breviatores*.

The *Abbreviators* at preſent make a college of ſeventy-two perſons, divided into two ranks; one called *Abbreviatores de parco majore*, who are twelve in number, all prelates; the other, *Abbreviatores de parco minore*, called alſo *examinatores*, who may be laymen. Ciampini has two volumes on the inſtitution, office, privileges, ceremonies, &c. of the *Abbreviators*.

ABBREVIATORS is alſo a name given by ſome authors to an ancient literary academy, ſuppoſed to have been at Rome, in the fifteenth century, and compoſed of the chief men of letters of the age, as Pomp. Lætus, Platina, Pontanus, Sannazarius, Sabellicus, &c. who, by the rules of the ſociety, changed their names at their admiſſion, for thoſe of ſome ancient Greek or Roman; but the exiſtence of ſuch an academy is very doubtful.

ABBREUVOIR, in maſonry, the joint, or juncture of two ſtones; or the interſtice or ſpace left between them, and filled up with mortar.

The word is French, and literally denotes a watering-place.

ABCEDARY, ABCEDARIAN, or ABECEDARIAN, is ſometimes applied to compoſitions whoſe parts are diſpoſed in the order of the letters of the alphabet.

In this ſenſe *Abcedarian* is ſynonymous with *alphabetical*.—Thus we meet with *Abcedarian* pſalms, lamentations, prayers, and the like; chiefly among Hebrew writers; which makes it probable they were the inventors of this ſpecies of wit.

ABDALS, in the Eaſtern countries, a kind of ſaints ſuppoſed to be inſpired to a degree of madneſs. The word comes, perhaps, from the Arabic, *abdallah*, the ſervant of God.—The Perſians call them *devanch khoda*, agreeable to the Latins way of ſpeaking of their prophets and ſibyls, *q. d. furentes Deo*, raging with the God.

The *Abdals* are often carried by exceſs of zeal, eſpecially in the Indies, to run about the ſtreets, and kill all they meet of a different religion. The Engliſh ſailors call this *running a muk*, from the name of the inſtrument, a ſort of poignard, employed on this occaſion.

ABDELAVI, an Egyptian plant very like a melon, except that the fruit is more oblong, and acute at the extremities.

ABDEST, among the *Mahometans*, a peculiar manner of waſhing, before prayer, entering the moſque, or reading the Alcoran; practiſed with ſome difference both by Turks and Perſians. The word is compounded of the Perſian *ab*, *water*, and *deſt*, *hand*.

ABDICARIA *propoſitio*, in *Logic*, is uſed for a negative propoſition.

ABDICATION, ABDICATIO, the act whereby a magiſtrate, or perſon in office, renounces, and gives up the ſame, before the legal term of ſervice is expired.

The word is derived from *abdicare*; which is compounded of *ab*, *from*; and *dicere*, *to declare*.

Abdication is frequently confounded with *reſignation*; but, ſtrictly ſpeaking, there is a difference: *Abdication* being done purely and ſimply; whereas *reſignation* is done in favour of ſome third perſon.

In this ſenſe, Diocleſian, and Charles V. are ſaid to have *abdicated* the crown: but Philip IV. of Spain *reſigned* it. The parliament of England voted King James's violation of the laws, and his quitting the kingdom, without providing for the due adminiſtration of affairs in his abſence, to import an *Abdication* of the crown. The Lords would have had the word *deſertion* made uſe of; but the Commons thought it was not comprehenſive enough, becauſe the king might then have the liberty of returning.

The Scots called it a *forſeiture* of the crown, from the verb *foris-facio*.

ABDICATION, among Roman writers, is more particularly uſed for the act whereby a father diſcarded or diſclaimed his ſon, and expelled him the family.

In this ſenſe the word is ſynonymous with the Greek αποκηρυξις, and the Latin *a familia alienatio*, or ſometimes *ablegatio*, and *negatio*; and ſtands oppoſed to *adoption*.—It is diſtinguiſhed from EXHÆREDATIO, or diſinheriting, in that the former was done in the father's life-time, the latter by will at his death: ſo that whoever was *abdicated*, was alſo diſinherited, but not *vice verſa*.

ABDITÆ *Cauſæ*, are the ſecret or remote cauſes of diſtempers, which phyſicians of the dogmatic, or rational ſect, affirmed, were neceſſary to be known, in order to eſtabliſh a right method of cure.

ABDOMEN, in *Anatomy*, the belly, or lower *venter*; or that part of the body comprehended between the *thorax* and the hips.

The word is derived from *abdere*, *to hide*.

Anatomiſts uſually divide the BODY into three regions, or venters: the head, the *thorax* or breaſt, and the *Abdomen*, which makes the loweſt part of the trunk; being terminated by the diaphragm above, and by the *inguen* or *pubis* below.

The *Abdomen* is lined internally with a thin, ſoft membrane, which, inveſting all the *viſcera* above mentioned, contains and keeps them in their place: this is called the PERITONÆUM: upon a rupture or dilatation whereof, they are apt to fall, and form thoſe tumours called HERNIÆ.

It is covered and defended with five pair of muſcles; which not only defend the *viſcera*, but, by their alternate relaxations, and contractions in reſpiration, promote the action of digeſtion, and the extruſion of the *fæces* and urine. By their contraction, the cavity of the *Abdomen* is ſtraitened, and the deſcent of the contents of the *viſcera* through the inteſtines is promoted. They are the proper antagoniſts to the ſphincters of the *anus* and bladder, and forcibly expel the excrements of thoſe parts, as alſo the *fœtus* in parturition.

Theſe muſcles are the OBLIQUI *deſcendentes* and *aſcendentes*, the RECTUS *tranſverſalis* and PYRAMIDALIS. See deſcriptions of the veins, arteries, and muſcles, &c. of the *Abdomen*, under their reſpective names.

The *Abdomen* is ſubdivided into leſſer regions or cavities; of which three are anterior; the uppermoſt, called the epigaſtric, commences from the diaphragm and *cartilago enſiformis*, and terminates two fingers breadth above the navel; the ſecond, called the umbilical, begins where the former ends, and terminates two fingers breadth below the navel; the third, called the hypogaſtric, deſcends as low as the *os pubis*. Each of theſe ſubdiviſions the more accurate writers divide farther into three parts; a middle and two lateral ones, called the HYPOCHONDRIA. The middle part of the umbilical is called the *umbilicus*, or navel; and its lateral parts the *lumbi*, or loins: the middle of the hypogaſtric is called the HYPOGASTRIUM; and its ſides the ILIA, or flanks. To which may be added the PUBES, GROIN, ISCHIATIC region, and PERINÆUM, ſometimes called the lumbar region.

There is but one poſterior region, called *regio lumbaris*, which is the poſterior part of the *Abdomen*, comprehending all that ſpace which reaches from the loweſt ribs on each ſide, and the laſt *vertebra* of the back to the *os ſacrum*, and the neighbouring parts of the *os ilium*. Authors however are not agreed whether the hind part be properly included in the *Abdomen*, which ſome reſtrain to the anterior, or fore-part only.

Diſeaſes of the ABDOMEN are inflammations, abſceſſes, *ſchirri*, indurations, inflations, ſpaſms, *&c.* Hence the *Abdomen* becomes the ſeat of divers operations; as perforations, ſutures, ſections, *&c.*

Wounds of the ABDOMEN, may be conſidered as of four kinds:

1. Such as affect the integuments only.
2. Such as affect the muſcles, together with the integuments, without penetrating the *peritonæum*.
3. Such as with the integuments penetrate into the cavity, without wounding any of its contents.
4. Such as penetrating into the cavity, wound ſome or other of its contents.

The firſt ſort, or ſuperficial wounds of the *Abdomen*, are not eſteemed dangerous, and require no treatment different from other wounds. However Arcæus (lib. ii. cap. 4.) and Vigo (lib. iii. cap. 11.) agree in pronouncing thoſe more liable to bad accidents, which are received within two or three fingers breadth of the navel.

The ſecond ſort are diſtinguiſhed from the two laſt by the probe; for if the patient is carefully placed in the ſituation he was in when the wound was given, and the probe be introduced, it will generally paſs into the cavity of the *Abdomen*, if the *peritonæum* is perforated. Another way of diſtinguiſhing theſe wounds is by injecting warm water into them; and if it returns immediately, there is reaſon to believe the wound to be only muſcular; but if any conſiderable quantity remain in the wound, the cavity is certainly penetrated. If the wound is large, great ſkill is required in the ſurgeon, eſpecially if it is made in a tranſverſe, or oblique direction, for in this caſe the ſuture is neceſſary, to keep the gaping lips of the wound together. Having taken theſe precautions, to preſerve the inteſtines and *peritonæum* in their natural ſituation, the wound is to be dreſſed with vulnerary balſams, and an adheſive plaſter; the patient muſt alſo be enjoined abſtinence, muſt have reſt, and his bowels muſt be kept open.

In wounds of the *Abdomen*, that penetrate into its cavity, the ſurgeon is firſt to examine very carefully, whether any of its contents partake of the injury. It will be found that this is not the caſe, if there is no great degree of weakneſs, hæmorrhage, pain, fever, *&c.* if on laying the patient upon the wounded ſide, there is no diſcharge of chyle, gall, excrement, or urine; if milk being injected warm, returns without any alteration in its colour; if the inflicting inſtrument has not been very ſharp; and laſtly, if there is no vomiting or diſcharge of blood by the mouth, ſtool, or urine, nor ſwelling or hardneſs of the belly.

We have ſome very valuable remarks on the hydropical tumours of the *Abdomen*, in the Medical Eſſays of Edinburgh, vol. v. art. 59.

There is a *ſinus* on each ſide of the *cartilago xiphoides*, between the muſcles called *recti* and *tranſverſalis*, into which on the left ſide, by violent vomiting, the ſtomach is ſometimes ruptured. This occaſions exceſſive pain, which is greater when the patient is up, and ſuſpended by his lying in a horizontal poſture; this circumſtance is the pathognomic ſign of the diſeaſe, to remove which, in caſe of its continuing obſtinate, the place muſt be laid open, and the rupture reduced in the ordinary manner.

ABDUCENS *labiorum*, in *Anatomy*, a name given by Spigelius to a muſcle, which he alſo calls the *ſecundus ad latera trahens*. This is the *levator anguli oris* of Albinus, and the *caninus* or *elevator labiorum communis* of others.

ABDUCENT, in *Anatomy*. See ABDUCTOR.

ABDUCTION, in *Logic*, a kind of argumentation, by the Greeks called *apagoge*; wherein the greater extreme is evidently contained in the medium, but the medium not ſo evidently in the leſſer extreme as not to require ſome farther medium, or proof, to make it appear.

It is called *Abduction*, from *ab*, *from*; and *ducere*, *to draw*; becauſe, from the concluſion, it draws us on to prove the propoſition aſſumed.

Thus, in the ſyllogiſm, ‘All whom God abſolves are ‘free of ſin; but God abſolves all who are in Chriſt: ‘therefore, all who are in Chriſt are free of ſin.’ The major is evident; but the minor, or aſſumption, is not ſo, without ſome other propoſition to prove it; as, ‘God ‘received ſatisfaction for ſin by the ſuffering of Jeſus ‘Chriſt.’

ABDUCTION, in *Surgery*, denotes a ſpecies of FRACTURE, wherein the bone near the joint is ſo divided tranſverſely, that the extremities recede from each other.

ABDUCTOR, or **ABDUCENT**, in *Anatomy*, a name common to ſeveral muſcles, whoſe action is the withdrawing, opening, or pulling back, the parts they are fixed to.

The name is compounded of *ab*, *from*; and *ducere*, *to draw*.—Their antagoniſts are called ADDUCTORES.

ABDUCTOR *auricularis*, or of the little finger, ariſes from the annular ligament, and the third and fourth bones of the *carpus* in the ſecond rank; and is inſerted externally into the firſt bone of the little finger: it ſerves to draw that finger from the reſt, and alſo to bend it a little.—See *Tab. Anat.* (Myol.) *fig.* 2. *n.* 23.

In ſome ſubjects it appears divided into two or three muſcles, conſiſting of ſo many different ſeries of fibres.

ABDUCTOR *indicis*, or of the fore-finger, ariſes from the inſide of the bone of the thumb, and is inſerted into the firſt bone of the fore-finger, which it draws from the reſt towards the thumb.—See *Tab. Anat.* (Myol.) *fig.* 1. *n.* 32. *&* *fig.* 6. *n.* 24. *&* *fig.* 7. *n.* 8.

ABDUCTOR *minimi digiti manus*. See ABDUCTOR *auricularis*.

ABDUCTOR *minimi digiti pedis*, or of the little-toe, ariſes from the outſide of the *os calcis*, near the exterior bone of the *metatarſus*, and is inſerted laterally into the outſide of the ſecond bone of that toe, which it pulls from the reſt.—See *fig.* 1. *n.* 74. *&* *fig.* 6. *n.* 45.

ABDUCTOR *oculi*, or of the eye, is one of the four *recti*, or ſtraight muſcles, ariſing from the bottom of the orbit, and ſpread over the firſt proper tunic; ſerving to draw the eye towards the outer CANTHUS.

ABDUCTOR *pollicis manus*, called alſo *thenar*, ſprings from the annular ligament, and firſt bone of the *carpus*; from whence paſſing to the thumb, it makes that fleſhy body called *mons lunæ*: it draws the thumb from the fingers. —See *fig.* 1. *n.* 31. *&* *fig.* 2. *n.* 21. *&* *fig.* 6. *n.* 25. *&* *fig.* 7.

ABDUCTOR *longus pollicis*, in *Anatomy*, a name given by Albinus to a muſcle of the hand called by Winſlow, Cowper and others, EXTENSOR *primus pollicis*.

ABDUCTOR *oſſis metacarpi digiti minimi*, in *Anatomy*, a name given by Albinus to a muſcle of the hand called by Winſlow, and ſome others, the *metacarpialis*, and by the generality of writers, by names but badly expreſſing its nature or uſes. Riolanus calls it *pars hypothenaris parvi digiti*; and Spigelius, *interoſſeus ultimo oſſi metacarpii, parte manus externa, adherens*. Cowper calls it the *abductor minimi digiti*; and Douglas, the *flexor primi internodii minimi digiti*.

ABDUCTOR *pollicis pedis*, or of the great toe, ſprings from the inſide of the *os calcis*, and the greater *os cuneiforme*; and is inſerted into the outſide of the exterior *os ſeſamoideum pollicis*; it ſerves to draw the great TOE from the reſt.—See *fig.* 1. *n.* 72. *&* *fig.* 2. *n.* 52.

Some anatomiſts likewiſe reckon four *Abductors* of the thigh. ABDUCTOR FEMORIS, *primus*, *ſecundus*, *tertius*, *et quartus*. The uſe of theſe four muſcles is to adduce, or move the thigh-bone, according to their different directions.

ABECEDARIAN. See ABECEDARY.

ABEL-TREE, or ABELE-TREE, a ſpecies of poplar, with large leaves. This tree may be propagated by layers or cuttings, and alſo by ſuckers. Many advantages might be derived from planting it in boggy ſoils, where few other trees will thrive. The wood of it is uſeful for flooring or wainſcoting rooms; and it is preferred for turnery-ware to any other, on account of its peculiar whiteneſs. The quickneſs of its growth, inſomuch that it will yield ſhoots of eighteen or twenty feet long in a year, renders it eligible in plantations that are deſigned for ſhade or ſhelter.

ABELIANS, ABELONIANS, or ABELOITES, a ſect in Africa, not far from *Hippo*, whoſe diſtinguiſhing tenet and practice was to marry, and yet live with their wives in a profeſſed abſtinence, without having any carnal commerce together. The learned have taken great pains to aſcertain the principle they went upon, and the reaſon of their denomination, to very little purpoſe. But, in effect, it is more than probable, they took their name from Abel for no other reaſon, but becauſe like that patriarch they had no iſſue; not that he lived in continence after marriage; but becauſe he was killed before he had married.

ABELICEA, the name of a very tall tree, growing principally in Crete, called alſo Santalus *adulterina*, and Pseudosantalum.

ABELMOLUCH, a ſpecies of the Ricinus, or *Palma Chriſti*.

ABELMOSCH, or Abelmusk, the muſk-ſeed; a ſmall odoriferous ſeed brought from Egypt, chiefly uſed in perfumes. The beſt comes from Martinico.

ABELOITES, } See Abelians.
ABELONIANS, }

ABENEL Gauby, a fixed ſtar of the ſecond or third magnitude, in the ſouth ſcale of the conſtellation Libra. Its latitude is 22′ 51″ N. its longitude ♏ 10°, 46′, 40″.

ABEREMURDER, AbererMurdrum, in ancient lawbooks, denotes murder that has been proved, or made appear by judiciary proceſs.

The word is Anglo-Saxon; compound of Ebeꞃe, *proved* or *clear*; and moꞃð, *killing*, or *homicide*.

In this ſenſe *Aberemurder*, called alſo *Eberemurder*, amounts to the ſame with *probatum murdrum*, or *murder which needed proof*; and ſtands oppoſed to open murder, which was murder ſufficiently known by the notoriety of the fact.

Lambard explains *Aberemurder* by *manifeſtum murdrum*; and Spelman, by *cædes manifeſta*: others by *apertum murdrum*.

Aberemurdrum was one of thoſe crimes which could not be expiated by money, as moſt others might be.

ABERRATION, in *Aſtronomy*, an apparent motion in the fixed ſtars, occaſioned by the progreſſive motion of light: the theory of which is explained by Dr. Bradley. See Light.

Aberration, in *Medicine*, ſignifies a deviation from the ordinary courſe of nature.

Aberration, in *Optics*, is uſed to denote that error or deviation of the rays of light, when inflected by a lens or ſpeculum, whereby they are hindered from meeting or uniting in the ſame point, called the *geometrical focus*: it is either lateral or longitudinal. The lateral *Aberration* is meaſured by a perpendicular to the axis of the ſpeculum, produced from the focus, to meet the reflected or refracted ray: the longitudinal *Aberration* is the diſtance of the focus from the point in which the ſame ray interſects the axis. If the focal diſtance of any lenſes be given, their apertures be ſmall, and the incident rays homogeneous and parallel, the longitudinal *Aberrations* will be as the ſquares, and the lateral *Aberrations* as the cubes of the linear apertures.

There are two ſpecies of *Aberration*, diſtinguiſhed by their different cauſes: one ariſing from the figure of the glaſs or ſpeculum; the other from the unequal refrangibility of the rays of light. The ſecond ſpecies of *Aberration* is ſometimes called the Newtonian, from the name of its inventor. The former ſpecies of *Aberration* is altogether inconſiderable, compared with the latter; inſomuch that if the object-glaſs of a teleſcope be planoconvex, and the plane ſide be turned toward the object, and the diameter of the ſphere, to which the convex ſide of the glaſs is ground, be 100 feet, the ſemidiameter of the aperture be two inches, and the ratio of the ſine of incidence out of glaſs into air be to that of refraction as 20 to 31; the diameter of the circle of *Aberrations* will in this caſe be only $\frac{961}{72000000}$ parts of an inch. But the diameter of the little circle, through which the ſame rays are ſcattered by unequal refrangibility, will be about the 55th part of the breadth of the aperture of the object-glaſs, which is here four inches; and therefore the error ariſing from the ſpherical figure of the glaſs is to the error ariſing from the different refrangibility of the rays, as $\frac{961}{72000000}$ to $\frac{4}{55}$, that is, as 1 to 5449. See Newton's Optics, p. 83, or Smith's Optics, book ii. cap. 6, where this propoſition is demonſtrated.

In conſequence of this diſcovery, and of the apprehenſion, that equal refractions muſt produce equal divergencies in every ſort of medium, it was imagined, that all ſpherical object-glaſſes of teleſcopes would be equally affected by the different refrangibility of light, in proportion to their aperture, of whatever materials they were conſtructed; and therefore, that the only improvement of which refracting teleſcopes were capable, was that of increaſing their length. On this account Sir Iſaac Newton, and others after him, deſpairing of ſucceſs in the manufacture and uſe of refracting lenſes, directed their chief attention to the conſtruction of reflecting teleſcopes. However, in 1747, M. Euler applied himſelf to the ſubject of refraction, and, purſuing a hint ſuggeſted by Sir Iſaac Newton, formed a ſcheme of making object-glaſſes with two lenſes of glaſs, incloſing water between them; hoping, that by conſtructing them of different materials, the refractions would balance one another, and prevent the uſual *Aberration*. Mr. Dollond examined this ſcheme, and found, that M. Euler's principles were unſatisfactory. M. Clairaut likewiſe concurred in opinion, that his ſpeculations were more ingenious than uſeful.

This controverſy, which promiſed to be of great importance in the ſcience of optics, engaged the attention of M. Klingenſtierna of Sweden, and induced him carefully to examine the eighth experiment in the ſecond part of Newton's Optics, with the concluſions which he draws from it. He found, that the rays of light, in the circumſtances there ſuppoſed, did not loſe their colour, as Sir Iſaac Newton imagined. This hint of the Swediſh philoſopher led Mr. Dollond to re-examine the ſame experiment; and it appeared, after accurate trials, that different ſubſtances made the light to diverge very differently, in proportion to their general refractive power: therefore in the year 1757 he procured wedges of different kinds of glaſs, and applied them together, ſo that the refractions might be made in contrary directions, in order to diſcover, whether the refraction and divergency of colours would vaniſh together. The reſult of his firſt trials encouraged him to perſevere; for he diſcovered a difference far beyond his hopes in the refractive qualities of different kinds of glaſs, with reſpect to their divergency of colours. The Venice glaſs, and the Engliſh crown glaſs, were found to be nearly allied in this reſpect; the common Engliſh plate glaſs made the light diverge more, and the Engliſh flint glaſs moſt of all. Without inquiring into the cauſe of this difference, he proceeded to adapt wedges of crown glaſs, and of white flint glaſs, ground to different angles, to each other, ſo as to refract in contrary directions; and the refracted light was intirely free from colours. Having meaſured the refractions of each wedge, he found that of the white glaſs to be to that of the crown-glaſs nearly as *two* to *three*: and he deduced this general concluſion, that any two wedges, made in this proportion, and applied together ſo as to refract in contrary directions, would refract the light without any *Aberration* of the rays.

Mr. Dollond's next object was to make ſimilar trials with ſpherical glaſſes of different materials; and, in order to obtain a refraction of light in contrary ray directions, one muſt be concave, and the other convex: the latter, which was to refract the moſt, that the rays might converge to a real focus, was made of crown glaſs, and the former of white flint glaſs: and, the refractions of ſpherical glaſſes being in an inverſe ratio of their focal diſtances, it was neceſſary, that the focal diſtances of the two glaſſes ſhould be inverſely as the ratios of the refractions of the wedges; for, being thus proportioned, every ray of light that paſſes through this combined glaſs, at any diſtance from its axis, will conſtantly be refracted, by the difference between two contrary refractions, in the proportion required; and therefore the different refrangibility of the light will be intirely removed.

But in the application of this admirable diſcovery to practice, many difficulties occurred. At length, however, by repeated trials, and reſolute perſeverance, Mr. Dollond ſucceeded ſo far, as to conſtruct refracting teleſcopes much ſuperior to any that had before been uſed, repreſenting objects with great diſtinctneſs, and in their true colours.

M. Clairaut, who intereſted himſelf betimes in this diſcovery, endeavoured to aſcertain the principles of Mr. Dollond's theory, and to lay down rules for facilitating the conſtruction of theſe new teleſcopes. With this view he made ſeveral experiments, in order to determine the refractive powers of different kinds of glaſs, and the proportion in which they ſeparated the rays of light; and from theſe experiments he deduced ſeveral theorems and problems of general uſe. M. D'Alembert likewiſe made a great variety of calculations to the ſame purpoſe; and ſhewed how to correct the errors to which theſe teleſcopes are ſubject, by placing the object-glaſſes, in ſome caſes, at a ſmall diſtance from one another, and ſometimes by uſing eye-glaſſes of different refractive powers. But though foreigners were hereby ſupplied with the moſt accurate calculations, they were very defective in practice. The Engliſh teleſcopes, made, as they imagined, without any exact rule, were greatly ſuperior to the beſt of their conſtruction.

Mr. Euler, who firſt gave occaſion to this important and uſeful inquiry, was very reluctant in admitting Mr. Dollond's lond's improvements, becauſe they militated againſt a preconceived theory of his own. At laſt, however, convinced of their reality and importance by M. Clairaut, he aſſented; and ſoon after received farther ſatisfaction from the experiments of M. Zeiher, of Peterſburgh.

M. Zeiher demonſtrated, that it is the *lead*, in the compoſition of glaſs, which gives it this remarkable property; that, while the refraction of the mean rays is nearly the ſame, that of the extreme rays conſiderably differs; and by increaſing the lead, he produced a kind of glaſs, which occaſioned a much greater ſeparation of the extreme rays, than the flint glaſs which Mr. Dollond had made uſe of, and at the ſame time conſiderably increaſed the mean refraction. M. Zeiher, in the courſe of his experiments, made glaſs of minium and flint, with a mixture of alkaline ſalts; and found, that this mixture greatly diminiſhed the mean refraction, without making hardly any change in the diſperſion; and at length obtained a kind of glaſs greatly ſuperior to the flint glaſs of Mr. Dollond for the conſtruction of teleſcopes; ſince it occaſioned *three* times as great a diſperſion of the rays as the common glaſs, whilſt the mean refraction was only as 1.61 to 1.

In 1748, Mr. Dollond made a farther improvement in teleſcopes, by introducing *two* object-glaſſes of crown glaſs, and one of flint. See Phil. Tranſ. vol. L. p. 735, 743; and vol. LV. p. 56. Hiſt. Ac. Par. 1756, p. 183, 624. Ditto, 1767, p. 107. Swed. Mem. vol. XVI p. 300. Ac. Berl. 1762, and 1766.

For a farther account of Mr. Dollond's new refracting, or achromatic teleſcopes, ſee the article TELESCOPE.

ABERRATION, *Crown of*, is a luminous circle ſurrounding the real diſk of the ſun, and depending on the *Aberration* of the ſolar rays, whereby his apparent diameter is enlarged.

ABESAMOM, dirt or clay.

ABESSI, the ſame as REBIS; they ſignify the matter that remains of the aliment, after the chyle is ſeparated from it; that is, excrement.

ABESTA, or AVESTA, the name of one of the ſacred books of the Perſian Magi; which they attribute to their great founder Zoroaſter, or Zerduſht.

The *Abeſta* is a commentary or expoſition of two other of their religious books, called Zend and Pazend; the three together include the whole ſyſtem of the *ignicolæ*, or worſhippers of fire. D'Herbel. Bibl. Orient. p. 11. Hyde, de Rel. Vet. Perſ. c. 2.

According to Du Perron, the *Aveſta* ſignifies the language of the original text of Zoroaſter's works. Hiſt. Ac. Sc. Par. 1762.

ABESTON. See ABESTUS.

ABESUM, unſlacked or quick lime. See CALX.

ABETTOR, or ABBETTOR, in *Law*, one who incites or encourages another to perform ſomething criminal; or by ſome way aſſiſts him in the performance itſelf.

Thus thoſe who procure others to ſue out falſe appeals of felony, or murder againſt men, to render them infamous, are particularly denominated *Abettors*.

So *Abettors* in MURDER, are ſuch as adviſe or procure a murder to be committed, or are acceſſary thereto.

There are *Abettors* in FELONY, but not in TREASON; the law looking on all thoſe concerned in treaſon as principals.

ABEVACUATION, in *Medicine*, denotes a partial evacuation of the peccant humours, either by nature or art.

ABEYANCE, ABEIANCE, or ABBAYANCE, in *Law* books; ſomething that only exiſts in expectation, or in the intendment, or remembrance of the law.

Abeyance in our law, amounts to much the ſame with *hæreditas jacens*, among the Romans, and κληρος αδεσποτος, or διαλειπων, among the Greeks; *i. e. hæreditas ſperata* or *expectata*, or rather *novum dominium expectans*. As civilians ſay land and goods do *jacere*; ſo common lawyers ſay, that things in like condition are in *Abeyance*.

It is a maxim in law, that of every land, either there is a fee ſimple in ſomebody, or it is in *Abeyance*—If a church become vacant by the death of a parſon, the freehold is ſaid to be in *Abeyance*, till a new parſon be inducted: for the patron has not the fee, but only the right of preſenting to it, the freehold itſelf being in the incumbent thus preſented, and therefore till ſuch preſentation, in nobody.

ABHEL, in *Botany*, a name given by ſome to ſavin, an ever-green garden ſhrub, well known in phyſic in many intentions.

ABIB, in the Hebrew *Chronology*, the name of the firſt month of their eccleſiaſtical year. This month was afterwards called Niſan, and anſwers to part of our March and April.

ABIES, in *Botany*. See FIR-TREE.

ABIGA *Herba*, the *Ground* PINE or CHAMÆPITYS.

ABIGEATUS, ſee ABACTUS.

ABIGEUS, ſee ABACTOR.

ABILITY is uſed, in *Law*, for a capacity of doing certain things, relating either to the acquiſition of property, or the transferring of it.

Ability in this ſenſe coincides with *capacity*, and ſtands oppoſed to *diſability*, or *non-ability*.

Every perſon is ſuppoſed to be *able*, i. e. to have the power of taking and diſpoſing of effects, whom the law does not diſable.

The king's iſſue are of *Ability* to inherit in England whereſoever born; and children of ſubjects born beyond ſea, may inherit, if their birth were within the allegiance of the king.

AB-INTESTATE, AB-INTESTATO, in the *Civil Law*, is applied to a perſon who inherits from one who died inteſtate.

ABISHERING, an ancient *Law* term, denoting a being free, or exempt, from all AMERCIAMENTS for tranſgreſſions of any kind.

The word in a charter or grant, is ſaid not only to give the proprietor the forfeitures and amerciaments of all others for tranſgreſſions committed within his fee; but alſo to exempt him from all ſuch controul by any within that compaſs.

ABIT, or ABOIT, Ceruſs.

ABJURATION, in a general ſenſe, the act of denying, or renouncing a thing in a ſolemn manner, and even with an oath.

The word is compounded of *ab*, *from* or *againſt*; and *jurare*, *to ſwear*.

Among the Romans, *Abjuration* ſignified the denying a debt, pledge, depoſit, or the like truſt, by a falſe oath.

In which ſenſe, *Abjuration* coincides with *perjuration*; and ſtands diſtinguiſhed from *ejuration*, where the oath is ſuppoſed juſt.

ABJURATION, more particularly, is uſed for a ſolemn recantation, or renunciation of ſome doctrine, or opinion, as falſe and pernicious.

In our own laws, to *abjure* a perſon, is to renounce all authority or dominion of ſuch a perſon.—By the *oath of Abjuration*, a perſon binds himſelf not to own any regal authority in the perſon called the Pretender, or ever to pay him the obedience of a ſubject. 1 W. and M. 13 W. III. 1 Geo. I. The refuſers of the oath enjoined by theſe ſtatutes are liable to ſundry penalties, forfeitures, &c. The oath of *Abjuration*, by the 6 G. III. cap. 53. I A. B. do truly and ſincerely acknowledge, profeſs, teſtify, and declare in my conſcience, before God and the world, that our ſovereign lord king George is lawful and rightful king of this realm, and all other his majeſty's dominions thereunto belonging. And I do ſolemnly and ſincerely declare, that I do believe in my conſcience, that not any of the deſcendants of the perſon who pretended to be prince of Wales during the life of the late king James the ſecond, and ſince his deceaſe pretended to be, and took upon himſelf the ſtyle and title of king of England, by the name of James the third, or of Scotland, by the name of James the eighth, or the ſtyle and title of king of Great Britain, hath any right or title whatſoever, to the crown of this realm, or any other the dominions thereunto belonging. And I do renounce, refuſe, and abjure any allegiance or obedience to any of them. And I do ſwear, that I will bear faith and true allegiance to his majeſty king George, and him will defend, to the utmoſt of my power, againſt all traiterous conſpiracies and attempts whatſoever, which ſhall be made againſt his perſon, crown, or dignity. And I will do my utmoſt endeavour to diſcloſe and make known to his majeſty, and his ſucceſſors, all treaſons and traiterous conſpiracies which I ſhall know to be againſt him or any of them. And I do faithfully promiſe, to the utmoſt of my power, to ſupport, maintain, and defend the ſucceſſion of the crown againſt the deſcendants of the ſaid James, and againſt all other perſons whatſoever; which ſucceſſion, by an act, intitled, *An act for the further limitation of the crown, and better ſecuring the rights and liberties of the ſubject*, is and ſtands limited to the princeſs Sophia, electreſs and ducheſs dowager of Hanover, and the heirs of her body, being proteſtants. And all theſe things I do plainly and ſincerely acknowledge and ſwear, according to theſe expreſs words by me ſpoken, and according to the plain and common ſenſe and underſtanding of the ſame words, without any equivocation, mental evaſion, or ſecret reſervation whatſoever. And I do make this recognition, acknowledgment, abjuration, renunciation, and promiſe heartily, willingly, and truly, upon the true faith of a Chriſtian. So help me God.

ABJURATION is alſo uſed in our *Ancient Cuſtoms*, for an oath taken by a perſon guilty of felony; who, flying to a place of ſanctuary, would ſwear to forſake the realm for ever in lieu of other puniſhment.—We alſo find inſtances of temporary *Abjuration*, *viz.* for three years, for one year and a day, and the like. This, in ſome caſe, was admitted from criminals in lieu of death. The devotion for the church was ſo warm, from the time of Edward the Confeſſor to the Reformation, that if a man, having committed felony, could recover a church or church-yard before he were apprehended, it was an aſylum from which he could not be brought to take his trial at law; but confeſſing his crime to the juſtices, or coroner, and *abjuring* the kingdom, he was at liberty.

By Stat. 21 Jac. I. all uſe of ſanctuaries, and conſequently of *Abjuration*, is taken away.

ABLACTATION. The weaning of a child from the breaſt. See Weaning.

Ablactation, in the ancient *Agriculture*, is a method of engrafting; wherein the cyon of one tree, being united for ſome time to the ſtock of another, is afterwards cut off, and, as it were, weaned from its mother-tree.

Among the modern writers, *Ablactation* is more uſually called INARCHING, or GRAFTING *by approach*.

Ablactation is only practicable where the ſtock to be grafted on, and the tree from which the graft is to be taken, ſtand ſo near, that the branch or cyon may be applied, without cutting off. Hence, it is chiefly uſed on plants that grow in caſes; as orange, lemon, and pomegranate trees; vines, jaſmins, *&c.* The ſeaſon is April or May. To perform it, the uſual method is, to take the branch, intended for the graft, and pare it away, both the rind and wood, the length of three inches; then, paring likewiſe the ſtock, ſo that they may join cloſely to each other, they are bound together, and covered over with clay, or grafting-wax. As ſoon as they are found well incorporated together, the head of the ſtock is to be cut off four inches above the binding; and the ſpring following, the graft, leaving the ſtock to ſubſiſt by itſelf. Or the operation may be done by cutting off the head of the ſtock at firſt, and leaving the top a little ſloped, and applying the graft thereto, as in *ſhoulder*-GRAFTING. But this method is not found equally ſucceſsful.

ABLAQUEATION, a name uſed by the ancient writers of *Agriculture* for an operation in gardening, whereby the earth is dug from about a vine, or other fruit-tree, and its roots are laid bare, to expoſe them more to the ſun, rain, and air, in order to promote its fecundity.—The proper ſeaſon for *Ablaqueation* is autumn, for the benefit of the winter rain, and ſnow water. Bradley fixes it in January. But experience having ſhewn the practice to be dangerous, it is now generally laid aſide.

ABLATIVE, in *Grammar*, the ſixth caſe of Latin nouns. The word is formed from *auferre*, *to take away*. Priſcian alſo calls it the *comparative caſe*; as ſerving, among the Latins, for comparing, as well as taking away.

The ABLATIVE is oppoſite to the DATIVE; the firſt expreſſing the action of taking away, and the latter that of giving.

The *Ablative* hardly anſwers to the juſt idea of a caſe; at leaſt it is the moſt vague of all others. It will be ſhewn, in its place, that the Engliſh, and other modern tongues, have properly no ſuch thing as CASES. But even in the ancient languages, from which the notion of caſes is borrowed, it is ſuggeſted, that the *Ablative* is only a ſort of ſupernumerary, or ſupplement to the reſt. The five proper caſes not being found ſufficient to expreſs all the relations of things to each other, recourſe was had to an expedient; *viz.* the putting a prepoſition before ſome of the other caſes; and this made the *Ablative*.

It may be added, that in the plural number the *Ablative* is ſtill more obſcure, as being only the DATIVE repeated. In Engliſh, French, *&c.* there is no preciſe mark whereby to diſtinguiſh the *Ablative* from other caſes; and we only uſe the term in analogy to the Latin. Thus, in the two phraſes, *the magnitude of the city*, and *he ſpoke much of the city*; we ſay, that *of the city* in the firſt is genitive, and in the latter *Ablative*; becauſe it would be ſo, if the two phraſes were expreſſed in Latin.

The queſtion concerning the Greek *ablative* has been the ſubject of a famous literary war between two great grammarians, Friſchlin and Cruſius; the former of whom maintained, and the latter oppoſed the reality of it.

The diſpute is not decided to this day. Sanctius, and the Port-royaliſts ſtill maintain the affirmative; Perizonius the negative. The chief reaſon alledged by Sanctius is, that the Roman writers often joined Greek words with the Latin prepoſitions, which govern *ablative* caſes, as well as with nouns of the ſame caſe. To which Perizonius anſwers, that the Latins anciently had no *ablative* themſelves; but inſtead thereof, made uſe, like the Greeks, of the dative caſe; till at length they formed an *ablative*, governed by prepoſitions, which were not put before the dative: that, at firſt, the two caſes had always the ſame termination, as they ſtill have in many inſtances: but that this was afterwards changed in certain words. It is no wonder then, that the Latins ſometimes join prepoſitions which govern an *ablative* caſe, or nouns in the *ablative* caſe, with Greek datives, ſince they were originally the ſame; and that the Greek dative has the ſame effect as the Latin *ablative*. See Cases.

Ablative Absolute, in *Grammar*, is a word or phraſe detached, and independent of the reſt of the diſcourſe; neither governing, nor being governed of any other thing. This is frequent among the Latins; in imitation of whom, the modern languages have likewiſe adopted it.

ABLECTI, in *Antiquity*, a choice or ſelect part of the ſoldiery in the Roman armies, picked out of thoſe called *extraordinarii*.

ABLEGMINA, in *Antiquity*, thoſe choice parts of the entrails of victims, which were offered in ſacrifice to the gods. The *ablegmina* were otherwiſe called *proſiciæ*, *porriciæ*, *proſecta*, and *proſegmina*: they ſeem to have differed from *ſtrebula*, which were the like morſels of the fleſhy parts; and from *augmentum*, which particularly denoted a part of the liver.

Some authors make *ablegmina* to denote all thoſe parts of the victims which were offered to the deities; contrary to the authority of Feſtus, who reſtrains *ablegmina* to the *exta*, or entrails only.

The *exta* being found good, were to be proſected, or parted; *i. e.* the extremes or prominent parts cut off, as *ablegmina*, to be ſprinkled with flour, and burnt by the prieſts on the altar, pouring wine on them.——Tertullian rallies the heathens for thus ſerving their gods with ſcraps and offals.

ABLET, or Alblen, in *Zoology*, a name given by ſome to the common *bleak*, a ſmall freſh-water fiſh, called in Latin *alburnus*.

The *ablet* is truly and properly a ſpecies of *cyprinus*, and is diſtinguiſhed by Artedi by the name of the five-inch cyprinus, with twenty rays in the *pinna ani*. See Alburnus and Cyprinus.

ABLUENTS, Abluentia, in *Medicine*, a name which ſome authors give to a ſort of diluting remedies, better known by the name of ABSTERGENTS.

ABLUTION, in *Antiquity*, a religious ceremony in uſe among the Romans; being a ſort of purification, performed by waſhing the body, before they entered on ſacrifice.

Sometimes they waſhed their hands and feet, ſometimes the head, and oftentimes the whole body: for which purpoſe, at the entrance into their temples, were placed marble veſſels filled with water.

Ablutions appear to be as old as any ceremonies, and external worſhip itſelf. Moſes enjoined them; the heathens adopted them, and Mahomet and his followers have continued them: thus they have got footing among moſt nations, and make a conſiderable part of moſt eſtabliſhed religions.—The Egyptian prieſts had their diurnal and nocturnal *ablutions*: the Grecians, their ſprinklings: the Romans, their luſtrations and lavations: the Jews, their waſhings of hands and feet, beſide their baptiſms: the ancient Chriſtians had their *ablutions* before communion, which the Romiſh church ſtill retain before their maſs, ſometimes after: the Syrians, Cophts, &c. have their ſolemn waſhings on Good Friday: the Turks, their greater and leſſer *ablutions*; their gaſt and wodon; their aman, tabarut, guſul, and abdeſt, &c.

Ablution is particularly uſed, in the Romiſh church, for a ſup of wine and water, which the communicants anciently took after the hoſt, to waſh it down, and help to digeſt it.

The ſame term alſo ſignifies the water which ſerves to waſh the hands of the prieſt who conſecrated it.

Ablution, in *Pharmacy*, is a preparation which divers remedies undergo, by waſhing them in water, or ſome other fluid, proper to cleanſe and free them of their impurities, and ſo to exhalt their powers.

The uſual way of doing this is by COHOBATION, or pouring the liquor diſtilled from the body, upon it again: and repeating this as often as it is neceſſary.

Ablution is ſometimes alſo uſed, though with leſs propriety, for the waſhing or infuſing certain medicines in water, to freſhen them, and diſſolve their ſalts.

ABOLITION, Abolishing, in a general ſenſe, the act of deſtroying a thing, or reducing it to nothing.

In our laws, the *Abolition* of a law, ſtatute, or cuſtom, is the abrogating or repealing it.

The leave given by a prince, or judge, to a criminal accuſer, to deſiſt from farther proſecution of the accuſed, is peculiarly called *Abolition*. *V.* 25 *H.* 8. *c.* 21.

Abolition is particularly uſed among civilians, for remitting the puniſhment of a crime.

In this ſenſe *abolition* is a lower ſpecies of amneſty, which takes off the puniſhment, but not the infamy: *liberat, ſed notat.*

Abolition is alſo particularly uſed, among Roman lawyers, for the annulling a proſecution, or legal accuſation.

Abolition in this ſenſe differs from amneſty, and oblivion; becauſe in the former, the accuſation might be renewed, even by the ſame proſecutor, which in the latter was extinguiſhed for ever.

Within thirty days after a public *abolition*, the ſame accuſer, by the prince's licence, was allowed to renew the charge; after a private *abolition*, another accuſer might renew it, but the ſame could not.

This kind of *abolition* is either granted in favour of the accuſed, or of the accuſer; and is either public, granted by the prince or ſenate, on occaſions of public rejoicing, victory, and congratulation; or private, ſued for to the preſident or judge, by one of the parties; frequently by the accuſer himſelf, who after having imbarked in the proſecution, by ſubſcribing his name to the charge, could not by the Turpilian ſenatus-conſult otherwiſe deſiſt, without incurring infamy. On ſuch occaſions therefore the accuſer would *petere ablitionem*; that is, move for an *abolition:* which was only granted, on his ſhewing fair and honeſt motives for withdrawing the charge; viz. inadvertency, youth, warmth, or the like: nor was it granted without the conſent of the accuſed; or if the accuſation appeared to have been utterly falſe, or malicious, &c.

For the accuſed, the charge againſt him was alſo *aboliſhed* by the death of the accuſer, or his being incapacitated from proſecuting by reaſon of ſickneſs, or the like. ——An action of injury was *aboliſhed* by diſſimulation: a ſentence of condemnation, by indulgence.

Abolition was alſo uſed for expunging a perſon's name out of the public liſt of the accuſed, hung up in the treaſury.

This was called *abolere nomen*; and, like the former, was either public, as that under Auguſtus, when all the names, which had long hung up, were expunged at once, or private, done at the motion of one of the parties.

By ſeveral laws in the Theodoſian code it appears, that an *abolition* of debts was ſometimes granted the debtors to the fiſcus. We have a medal of the emperor Adrian, wherein that prince is repreſented ſtanding with a ſcepter in his left hand, and a lighted torch in his right; with which he ſets fire to ſeveral papers in preſence of the people, who teſtify their joy and gratitude by lifting up their hands towards heaven. The legend is, *Reliqua vetera* H. S. *nummis abolita.*

ABOLLA, in *Antiquity*, a warm kind of garment, lined or doubled, uſed by the Greeks and Romans; chiefly out of the city, in following the camp.

The word is Latin, formed, as ſome imagine, from *bulla*, on a ſuppoſition that this veſtment was garniſhed with thoſe ornaments called *bullæ*. Others, denying this circumſtance, derive it from the Greek *αμϐολη*, of *αναϐολη*, *amictus*, *cloathing*.

Critics and antiquaries are greatly divided as to the form, uſe, kinds, &c. of this garment. Papias makes it a ſpecies of the *toga*, or gown; but Nonius, and the generality, a ſpecies of the *pallium*, or cloak.

The *abolla* ſeems rather to have ſtood oppoſed to *toga*, which was a garment of peace, as the *abolla* was of war; at leaſt Varro and Martial place them in this oppoſite light.

Some, after Nonius, hold it to have been a military garb alone; others, after Papias, a ſenatorial; and Salmaſius particularly, to have been worn by the preſidents in the provinces, and even by the præfecti of the city, when they adminiſtered juſtice; which Pitiſcus endeavours to refute. Others will alſo have the *abolla* to have been uſed by the philoſophers, particularly the Stoics, Cynics, &c. Laſtly, others reconcile all theſe variances, by making divers kinds of *abollæ*, accommodated to different occaſions and profeſſions. Even kings appear to have uſed the *abolla:* Caligula was affronted at king Ptolemy for appearing at the ſhews in a purple *abolla*, and by the eclat thereof turning the eyes of the ſpectators from the emperor upon himſelf.

ABOMASUS, Abomasum, or Abomasium, in *comparative Anatomy*, one of the ſtomachs or ventricles of animals of the ruminating kind. See Ruminant and Rumination.

Beaſts that chew the cud are found to have four ſtomachs; viz. the *rumen*, or *magnus venter*, or ſtomach, properly ſo called; the *reticulum*, *omaſus*, and *abomaſus*. The *abomaſus*, properly called the *maw*, is the laſt of the four; being the place wherein the chyle is formed, and from which the food deſcends immediately into the inteſtines.

It is full of a ſort of leaves, like the *omaſus*; but its leaves have this peculiarity, that beſide the membranes they conſiſt of, they contain a great number of glands, not found in any of the firſt.

It is in the *abomaſus* of calves and lambs that the runnet, or earning, is formed, wherewith houſewives curdle their milk.

ABORIGINES, or Aborigenes, in *Geography*, a name ſometimes given to the primitive inhabitants of a country, or thoſe who had their original therein; in contradiſtinction to colonies, or new races of inhabitants, derived from elſewhere.

The term *Aborigines* is famous in antiquity.—Though now an appellative, it was originally a proper name, given only to a certain people of Italy; and both the reaſon and origin of it are greatly diſputed among the learned.

Aborigines then denoted a nation in Italy, which inhabited the ancient Latium, or country now called Romania or Campagna di Roma.

In which ſenſe, the *Aborigines* are diſtinguiſhed from the Janigenæ, who, according to the falſe Beroſus, inhabited the country before them; from the Siculi, whom they expelled; from the Grecians, whom they deſcended from; from the Latins, whoſe name they aſſumed, after their union with Æneas and the Trojans; and, laſtly, from the Auſonii, Volſci, Oenotrii, &c. neighbouring nations in other parts of the country.

Whence this people came by the appellation, whether (1) as belonging to any of the ſpecies of *Aborigines*, above recited; or (2) from their having been *aberrigines*, *i. e.* wanderers; or (3) from their inhabiting the mountains; or on what other account, is much diſputed.

(1) S. Jerom ſays, they were ſo called, as being, *abſque origine*, the primitive planters of the country after the flood. Dion Halicarnaſſ. accounts for the name, as denoting them the founders of the race of inhabitants of that country: others think them ſo called as being originally Arcadians, who claimed to be earth-born, and not deſcended from any people.

(2) Aurelius Victor ſuggeſts another opinion, viz. that they were called *Aborigines*, *q. d. Aberrigines*, from *ab*, *from*; and *errare*, *to wander*; as having been before a wandering people, to which opinion Feſtus gives ſome credit. It is added, that Pelaſgians, another name ſometimes given them, is of the ſame import, and denotes vagabonds, like cranes.

(3) Pauſanias rather thinks they were thus called, *απο ορεων*, *from mountains*; which opinion ſeems confirmed by Virgil, who ſpeaking of Saturn, the legiſlator of his people, ſays:

> *Is genus indocile, ac diſperſum montibus altis*
> *Compoſuit, legeſque dedit.*—

The *Aborigines* were either the original inhabitants of the country, ſettled there by Janus, as ſome imagine, or by Saturn, or Cham, as others, not long after the diſperſion; or even, as ſome think, before it: or they were a colony ſent from ſome other nation; who, expelling the ancient inhabitants the Siculi, ſettled in their place.

ABORTION, is uſed, in *Medicine*, for the unſeaſonable excluſion of an imperfect human *fœtus*, either alive, or dead, before the natural time of delivery.

In this ſenſe, *abortion* amounts to the ſame with what we popularly call *miſcarriage*; the Latins *abortus*, and ſometimes *abactus*.

This may happen at any time of pregnancy; but if before the ſecond month after conception, it is properly called a *falſe conception*, or effluxion.

The cauſes of *abortion* are very various. The moſt uſual are, diſtempers, either acute or chronical; immoderate evacuations, all ſtrong paſſions, violent exerciſes, frights, lifting of weights, weakneſs from any cauſe whatever, fulneſs of blood, ſtimulating medicines, offenſive ſmells, exceſſive uſe of venery, and, in general, any thing which tends to promote the *menſes*. But the moſt frequent cauſes of abortion are either too great ſtricture, or laxity of the *uterus*, which are more particularly pointed out by Hippocrates.

The ancient Greek legiſlators, Solon and Lycurgus, prohibited the practice of creating *abortion*. Whether or no it was permitted among the Romans, has been much diſputed, between two learned modern civilians. It is certain the practice, which was by them called *viſceribus vim inferre*, was frequent enough: but whether there was any penalty on it, before the emperors Severus and Antonine, is the queſtion. Noodt maintains the negative; and farther, that thoſe princes only made it criminal in one particular caſe; viz. of a married woman's practiſing it out of reſentment againſt her huſband, in order to defraud him of the comfort of children; this was ordered to be puniſhed by a temporary exile: *ſiqua prægnans vim viſceribus ſuis intulerit ne inimico marito filium procrearet, temporali exilio coerceatur*. He adds, that there was no general prohibition of the practice before Gratian and Valens. It is true we find in Cicero an earlier inſtance, of a woman puniſhed for this fact; but it was in Mileſia, a country not ſubject to the Roman laws.

Bynkerſhoeck however denies, that a woman was allowed to drink the *poculum abortionis*, *impune*; and the reaſon he gives, is, that the womb was the huſband's property, who was declared, by the laws, the ſole *cuſtos* of it; to prevent his being impoſed on in the children he was to bring up. But then this does not affect women, who had been impregnated by others than their huſbands.

The foundation on which the practice is ſaid to have been allowed, was, that the *fœtus*, while *in utero*, was reputed as a part of the mother, ranked as one of her own viſcera, over which ſhe had the ſame power as over the reſt: beſides, that it was not reputed as a man, *homo*; nor to be alive, otherwiſe than as a vegetable: conſequently, the crime amounted to little more than that of plucking unripe fruit from the tree. V. Juven. Sat. 6. v. 500. Senec. Conſolat. ad Helviam Matrem, c. 16.

This laſt cited author repreſents it as a peculiar glory of Helvia, that ſhe had never, like other women, whoſe chief ſtudy is their beauty and ſhape, deſtroyed the *fœtus* in her womb. *Nunquam te fœcunditatis tuæ quaſi exprobraret ætatem, puduit: nunquam more alienarum quibus omnis commendatio ex forma petitur, tumeſcentem uterum abſcondiſti quaſi indecens onus, nec inter viſcera tua conceptas ſpes liberorum eliſiſti.*

The primitive fathers, Athenagoras, Tertullian, Minutius Felix, Auguſtin, &c. declaimed loudly againſt the practice, as virtual murder: *Homicidii feſtinatio eſt, prohibere naſci; nec refert, natam quis eripiat animam, an naſcentem diſturbet.* Several councils have declared againſt it. Yet we are told that the modern Romiſh eccleſiaſtical laws allow of diſpenſations for it. Egane mentions the rates at which a diſpenſation for it may be had.

The practice of artificial *abortion* is chiefly in the hands of women and nurſes, rarely in that of phyſicians; who, in ſome countries, are not admitted to the profeſſion without abjuring it. Hippocrates, in the oath he would have enjoined on all phyſicians, includes their not giving the *peſſus abortivus*; though elſewhere he gives the formal proceſs, whereby he himſelf procured a maid to miſcarry. The time for it is preſently after impregnation; at leaſt within the third or fourth month of geſtation. The manner of effecting it is chiefly by medicines of the purgative, and deobſtruent kind: Roman authors ſpeak of the *poculum abortionis*, or *abortive* draught, frequent among them. External violences are alſo ſometimes had recourſe to; as leaping from a ſtool, preſcribed by Hippocrates: obſtinate faſtings, and vehement evacuations, have been frequently practiſed for the ſame end.—Yet all the powers of medicine often fail to procure *abortion*, by reaſon of the naturally cloſe contraction of the orifice of the uterus; which has been known to hold out againſt the moſt malignant fevers, dyſenteries, ſalivations, and the like; againſt the ſtrongeſt aperients and evacuants; againſt diſtilled oils of juniper, ſavin, ſuccinum; againſt large quantities of crocus metallorum, artemiſia, myrrh, mercury, the farina of muſcus terreſtris, &c.

The moſt fatal method is by punctures of the uterus, with a pointed inſtrument for the purpoſe; too often uſed among us, and not unknown to the ancients.—Patin mentions a midwife hanged at Paris, for killing a *fœtus* in the womb, by running a ſtilletto, or kind of bodkin, up the vagina, through the orifice of the uterus; by which a miſcarriage was procured, but with ſuch ill ſucceſs, that the mother was ſeized with convulſions, and died miſerably. The criminal confeſſed ſhe had treated many before in the ſame manner, with good effect. Our own age and country afford a parallel inſtance, a woman having been a few years ago executed among us for the like fact. Tertullian has a paſſage, which ſhews the ſame was practiſed in thoſe days; *eſt etiam æneum ſpiculum, quo jugulatio ipſa dirigitur cæco latrocinio* εμϐρυοσφακτην *appellant, utique viventis infantis peremptorium.* The operation, conſidering the tenderneſs of the part, muſt be of the utmoſt danger. Brendelius gives an account of what he obſerved in diſſecting a girl at Norimberg, in 1714, who died of the operation, which ſhe had performed on herſelf; the neck of the uterus appeared exceedingly diſtended, the veſſels lacerated and mortified, the uterus itſelf inflamed and putrefied, &c.

Abortion may be produced by whatever immediately affects the child, the placenta, the membrane, or the mother. When the time of miſcarriage is juſt at hand, the pains are much the ſame as thoſe in labour.

Abortion is dangerous where the time of pregnancy is far advanced, ſo that the *fœtus* muſt be large, where the cauſe is very violent, or the patient ſtrongly convulſed, and where a large hæmorrhage precedes, or enſues, or the *fœtus* is putrefied, &c. Under other circumſtances it rarely proves mortal.

Abortion is alſo uſed, ſomewhat abuſively, for a *fœtus*, which, dying in the womb, continues there beyond the natural term; ſometimes ſeveral years, and even during the whole life of the mother.

To prevent Abortion. See Miscarriage.

ABORTIVE, ſomething come before its due time, or before it has arrived at its maturity and perfection.

Abortive *Flux, fluxus abortivus*, is ſometimes uſed, among the ancients, as ſynonymous with abortion or effluxion; viz. where the embryo loſes its hold, and ſlips away. In this ſenſe, the eagle-ſtone is celebrated for ſtopping *abortive fluxes*; for which end it was to be hung to the arm, *ſubnexus ſpem uteri defendit a fluxibus abortivis.* See Ætites.

Among modern phyſicians, *abortive fluxes* are chiefly underſtood of a kind of hæmorrhages, which ſometimes precede, and bring on abortion; at other times, burſt forth in the act of excluſion.

The cauſe is a violent ſeparation of the ſecundines from the uterus; which may ariſe from a vehement fit of paſſion, or motion of the body, a fall, fright, or the like. Thunder, lightning, hot liquor, too liberal uſe of deobſtruents, or the navel-ſtring being too ſhort, ſometimes occaſion an *abortive* hæmorrhage.

Abortive *Corn*, a diſtemper of corn mentioned by M. Tillet, and ſuſpected to be occaſioned by inſects. It appears long before harveſt, and may be known by a deformity of the ſtalk, the leaves, the ear, and even the grain.

Abortive *Vellum* is made of the ſkin of an *abortive* calf.

ABRA, a ſilver coin in Poland, nearly equivalent to the Engliſh ſhilling. It is current through all the dominions of the Grand Signior, at the value of one fourth of the Holland's dollar, or *aſlani*.

ABRACADABRA, a magic word, recommended by Serenus Sammonicus, ſuppoſed to have the virtue of a charm or amulet, in curing agues, and preventing other diſeaſes, particularly the fever called by the phyſicians *hæmitratæus*.

To have this effect, the word muſt be wrote on paper, and repeated, omitting each time the laſt letter in the former, ſo that the whole may form a kind of inverted cone: in which there is this property, that which way ſoever the letters be taken, beginning from the *apex*, and aſcending either to the right or left, they make the ſame word, or, as ſome will have it, the ſame ſentiment, as is found in the firſt whole line.—According to Julius Africanus, another ancient writer, the pronouncing of the word in the ſame manner will do as well.

ABRAHAMIANS, or Abrahamites, a ſect of heretics, who renewed the error of the Paulicians.

They took their name from that of their leader Abraham, a native of Antioch, by the Arabs called Ibrahim; whence alſo the name Ibrahimiah, given by them to this ſect. The *Abrahamians* aroſe about the cloſe of the eighth century, and were ſuppreſſed by the vigilance of Cyriacus, patriarch of Antioch.

Abrahamites is alſo uſed, in church-hiſtory, for a party of monks, who ſuffered death for the worſhip of images under Theophilus.

ABRAMIS, in *Ichthyology*, a name given by Bellonius and others, to the *cyprinus latus*, or bream.

ABRASA, ulcers attended with abraſion of part of the ſubſtance; or ulcers, where the ſkin is ſo tender and lax, as to be ſubject to abraſion.

ABRASAXAS, an amulet in the form of a circle. See Abraxas.

ABRASION, is ſometimes uſed, among *Medicinal* writers, for the act of wearing away the natural *mucus* which covers the membranes, and particularly thoſe of the ſtomach and inteſtines, by ſharp corroſive medicines, or humours.

The word is compoſed of the Latin *ab*, and *rado*, *to ſhave*, or *ſcrape off*.

ABRAUM, in *Natural Hiſtory*, a name given by ſome writers, to a ſpecies of red clay, uſed in England by the cabinet-makers, &c. to give a red colour to new mahogany wood; we have it from the Iſle of Wight, but it is alſo found in Germany and Italy.

ABRAXAS, a barbarous word, denoting a power which preſides over three hundred and ſixty-five others, the number of days in the year.

Abraxas is a word of obſcure origin, framed by ancient heretics as ſhould ſeem for quaintneſs ſake: it is ſuppoſed to be technically compounded of the Greek letters, conſidered as numeral characters; according to the cuſtom of the Grecians, who expreſſed their numbers by letters of the alphabet; the values of which in the preſent word ſtand thus: Α 1, Β 2, Ρ 100, Α 1, Ξ 60, Α 1, Σ 200; which added together make the number 365.

The word is uſually written, among modern authors, *abraxas*, though, as ſome hold, by a corrupt tranſpoſition of the letters Σ and Ξ, for *abraſax*, as it is found in all the Greek fathers, as well as on ancient ſtones. Irenæus indeed has *abraxas*, but the reaſon may be, that the chapter in which the word occurs is only extant in

Latin; ſo that though it be in Greek characters, the orthography is of Latin copyiſts or tranſlators.—In ſtrictneſs the word ought to be written in Greek characters, ΑΒΡΑCΑΞ; ſince, beſides that the inventors of it ſpoke that language, the word does not contain the number 365, when written in the Latin character. Hence a farther error in moſt books, wherein the word occurs in the ſmaller or running character, on account of the Greek ſigma; which having in ancient inſcriptions the ſame figure with the Latin C, is often rendered by a Roman C inſtead of S; whence *abracax* for *abraſax*.

ABRAXAS is more particularly uſed, in the Baſilidian theology, for the ſupreme God, as ſuppoſed to contain the values or powers of 365 dependent deities.

Abraxas was properly the principle of the Gnoſtic hierarchy; the ſpring from whence their plurality of æons aroſe. From *abraxas* proceeded the primigenial mind; from the primigenial mind the logos, or word; from the word, phroneſis or prudence; from prudence, ſophia and dynamis, or wiſdom and ſtrength; and from theſe two proceeded principalities, and powers, and angels; and from theſe, other angels, to the number of 365, the regents or intelligences of ſo many celeſtial orbs.

The Baſilidians, who paſs for the authors of the *diſciplina arcani*, and the Platonic trinity, are ſuſpected among Chriſtians of ſome meaning ſtill deeper, and more myſterious, in their *abraxas*. Several have even ſuſpected ſomething of the goſpel trinity concealed in this word; which they explain, by ſuppoſing it compounded of the initial letters of the Hebrew words *Ab ben rouah*, *q. d.* father, ſon, and ſpirit. Wendelin, canon of Tournay, and father Hardouin, have given more preciſe explications of the word, according to this ſyſtem. The former makes it ſtand for *pater*, *filius*, *ſpiritus ſanctus*, *ſalus a ligno*: the latter, improving ſomewhat on the explication, makes it repreſent as hereunder.

A	A	Pater	A	1
B	Ben	Filius	B	2
P	Rouah-hakadoſh	Spir. Sanctus	P	100
A	ανθρώπες	homines	A	1
C	σαζων	ſalvans	C	200
A	αγιω	per ſacrum	A	1
Ξ	ξυλω	lignum	Ξ	60
				365

ABRAXAS is alſo uſed, among *Antiquaries*, for a ſpecies of graven gem, on which the word *abraxas* is uſually inſcribed; ſuppoſed to have been worn by the ancient Gnoſtics, Baſilidians, and Carpocratians, as an amulet or taliſman againſt diſeaſes.

Abraxas, in this ſenſe, is ſynonymous with Baſilidian ſtone, a name by which ſome authors call theſe antiques; or *abraxean ſtone*, as they are denominated by others.

Abraxaſes are of divers figures and ſizes: ſometimes in that of rings to be worn on the finger; in which form they were ſuppoſed of great efficacy for driving away flies.

Abraxaſes are frequent in the cabinets of the curious: a collection of them, as complete as poſſible, has been much deſired by ſeveral. There is a fine one in the abbey of S. Genevieve, which has occaſioned much inquiry. They are chiefly of the third century; moſt of them ſeem to have come from Egypt, whence they become of conſiderable uſe for explaining the antiquities of that country.

Macarius, Chifflet, and Capello, have written expreſly on *abraxaſes*: the two former have given explications of a great number of theſe ſtones; the laſt, figures only, without explications. The former are reproached with exceſs of conjectures and erudition; the latter, with puzling the reader with mere riddles: there is ſtill room for ſomething better on the ſubject.

Abraxaſes have ſometimes no other inſcription beſide the word; but more uſually ſome ſymbol of the Baſilidian god. Beſide which, we ſometimes find other marks and words adjoined; as the names of ſaints, angels, Baſilidian virtues, apoſtles, and the ineffable name Jehovah itſelf, either at length, or in the abbreviature ΙΑΩ; ſometimes the words σαϐαωθ Ἀδοναι, or the names of other gods; as Mithras, or Mithraξ; שמש, Semes, Sol; Ανουϐις; εις Ζευς Ζεραπις; and the like. Sometimes Iſis ſitting on a lotus, or Apis ſurrounded with ſtars; ſometimes monſtrous compoſitions of animals, obſcene images, Phalli, and Ithyphalli. The graving of *abraxaſes* is not uniform, rarely good; the reverſe, on which is the word, is ſaid to be ſometimes of a lower and a more modern taſte than the face. The characters are uſually Greek, ſometimes Hebrew, Coptic, or Hetrurian; and ſometimes of a mongrel kind, forged as ſhould ſeem on purpoſe to make their import impenetrable. It is diſputed, whether or no the Veronica of Montreuil, or the Granite obeliſk, mentioned by Gori, be *abraxaſes*.

ABREAST, a *Marine* term, expreſſing the ſituation of two or more ſhips, that lie with their ſides parallel to each other, and their heads equally advanced. When the line of battle at ſea is formed *abreaſt*, the whole ſquadron advances uniformly, the ſhips being equally diſtant from, and parallel to each other; ſo that the length of each ſhip forms a right angle with the extent of the ſquadron, or line *abreaſt*. See LINE.

ABRIC, ſulphur.

ABRIDGING, in *Algebra*, is the reducing a compound problem, or equation, to its more ſimple expreſſion. See PROBLEM, EQUATION, and EXPRESSION.

To prevent the mind's being diſtracted with attending to known quantities, concerning which nothing farther is required, and to keep the attention entire for the reſt, mathematicians uſe to *abridge* their equations, by expreſſing all the known qualities of the ſame term, by a ſingle letter.—For an inſtance: to *abridge* the equation

$$\begin{array}{llll} x^3 & -axx & +abx & -abc=0 \\ & -b & +ac & \\ & -c & +bc & \end{array}$$

All the known quantities $-a-b-c$ of the ſecond term are ſuppoſed equal to one ſingle letter $-n$: all the known quantities $+ab+ac+bc$ of the third term, equal to another letter $+p$: and all the known quantities $-abc$ of the fourth term, equal to a ſingle letter $-q$. By which means we have $x^3-nxx+px-q=0$, inſtead of the equation propoſed.

An equation thus abridged, is called a formula. See FORMULA.

ABRIDGMENT, a ſummary, or contraction of a diſcourſe; wherein the leſs material things being more briefly inſiſted on, the whole is brought into a leſſer compaſs.

Abridgments of books are numerous. They are uſually ſaid to have had their riſe in the times of ignorance; to have been one of the firſt fruits of that barbariſm which enſued on the decline of the Roman empire; and to have been unknown in thoſe happy days, when letters flouriſhed among the Greeks and Romans: yet we have ſome traces of them in thoſe times.

ABRIDGMENT, in *Law*, is particularly uſed for the ſhortening a count or declaration, by ſubtracting ſome of the ſubſtance of it.

A man is ſaid to *abridge his plaint* in aſſize, or a woman her demand in an action of dower, when, having put any lands therein which are not in the tenure of the tenant or defendant; and non-tenure, or the like, is pleaded to that land in abatement of the writ; they are brought to *abridge*, *i. e.* to deſiſt from and leave that parcel out of the demand; and pray that the tenant may anſwer to the reſt, to which he has not yet pleaded any thing.—Though the demandant has *abridged* his plaint, or demand; yet the writ ſtill remains good for the reſt. The reaſon is, that ſuch writs run in general, and do not ſpecify particulars. See 21 H. 8. c. 3.

ABROCHMENT, or ABBROCHMENT, ABBROCAMENTUM, in ſome ancient *Law*-writers, denotes the act of ingroſſing or buying up commodities by wholeſale, before they come into the open market; in order to ſell them off dear by retail, otherwiſe called *foreſtalling*.

ABROGATION, the act of aboliſhing a law, by authority of the maker.

In which ſenſe, the word is ſynonymous with abolition, repealing, and revocation.

Abrogation ſtands oppoſed to *rogation*: it is diſtinguiſhed from *derogation*, which implies the taking away only ſome part of a law; from *ſubrogation*, which denotes the adding a clauſe to it; from *obrogation*, which implies the limiting or reſtraining it; from *diſpenſation*, which only ſets it aſide in a particular inſtance; and from *antiquation*, which is the refuſing to paſs a law.

ABROHANI, or MALLEMOLLI, the name of a kind of muſlin, or clear white fine cotton cloth, brought from the Eaſt Indies, particularly from Bengal; being in length ſixteen French ells and three quarters, and in breadth five eighths.

ABROKUS, in *Botany*, a name uſed by ſome of the Latin writers, for the *bromus*, or *avena ſterilis*, the wild oat; and by others, for the *orobus*, or bitter vetch. The Greeks originally uſed the word, and that not only for theſe two vegetables, but in a much larger ſenſe, underſtanding by it any herb reſembling the plants cultivated for the uſe of the table, but not-eſculent. The Greeks and Romans had a way of expreſſing the boiling of pulſe, or herbs, by words ſignifying the wetting them: thus the Greeks expreſſed boiled things by *brocha*, βροχα, and the Romans by *madida*. Virgil uſes this word for the peaſe, and Plautus for all eſculent things that were boiled: hence theſe baſtard peas and oats were called *abrocha*, *non madida*, not fit for boiling or eating.

ABRONO, in *Botany*, a name given by Serapion, and others, to the heart-peaſe; called alſo *abrugi*.

ABROTANUM, or Abrotonum. See Southernwood.

ABRUGI. See Abrono.

ABRUS, in the *Materia Medica*, the name of a ſeed produced by one of the phaſeole, or kidney-beans, and commonly called Angola-ſeeds.

ABSCESS, in *Medicine*, a kind of inflammatory TUMOUR, containing purulent matter, pent up in a fleſhy part, and corrupting and conſuming the fibres, and other ſubſtance thereof.

Abſceſs is the ſame with what the Greeks call *apoſtema*, and the Engliſh, *impoſthume*, or *impoſthumation*.

Almoſt all *abſceſſes* are the conſequences of inflammation.—The ripening of *abſceſſes* is promoted by poultices, &c.—*Abſceſſes* are opened either by cauſtic, or inciſion; but the latter way is in moſt caſes preferable.

Abſceſſes ariſe often in women after delivery; and though dangerous in themſelves, yet they often appear to be the *criſis* of the diſeaſe, that gave riſe to them.—For the cure, if they cannot be diſcuſſed, i. e. carried off by proper artificial evacuations, as phlebotomy, purging, &c. with the occaſional uſe of calomel, and gentle perſpirative fotuſes, liniments, and cataplaſms; recourſe is to be had to the contrary method, and they muſt be brought to ſuppuration.

ABSCISSE, Abscissa, in *Conics*, a part of the diameter or tranſverſe *axis*, of a conic ſection, intercepted between the *vertex*, or ſome other fixed point, and a ſemiordinate. See Conic *Section*.

Such are the lines AP, AP, &c. (*Tab. Conics*, *fig.* 20.) intercepted between the *vertex* A and the ſemiordinates PM, PM, &c. which are called *abſciſſes*, of the Latin *abſcindere*, *to cut off*; as being parts cut off from the *axis*.—Others call them *ſagittæ*, *q. d.* arrows.

In the *parabola* the *abſciſſe* is a third proportional to the *parameter* and ſemiordinate; and the *parameter* a third proportional to the *abſciſſe* and ſemiordinate.

In the *ellipſis*, the ſquare of the ſemiordinate is equal to the rectangle of the *parameter* into the *abſciſſe*, ſubtracting another rectangle of the ſame *abſciſſe*, into a fourth proportional to the *axis*, *parameter*, and *abſciſſe*.

In the *hyperbola*, the ſquares of the ſemiordinates are to each other as the rectangles of the *abſciſſe* into another line, compoſed of the *abſciſſe* and the tranſverſe *axis*.

ABSCISSION, in *Rhetoric*, is a figure of ſpeech, when beginning to ſay a thing, we break off ſhort, as ſuppoſing the matter ſufficiently ſignified, by what has been already ſaid.

For an inſtance: One of her ſex, age, and beauty, to be ſeen alone, at ſuch an hour, with a man of his character.—I need ſay no more.

Abſciſſion is a ſpecies of ellipſis, or ſuppreſſion.—Scaliger diſtinguiſhes it from præciſion, and ſuſpenſion.

Aſtrologers alſo ſpeak of an *abſciſſion* of the light of a planet, by another planet's outſtripping it, and joining a third before it. *Abſciſſion* is held a deterioration.

Abscission, in *Surgery*, denotes the act of taking away ſome morbid or ſuperfluous part by an edged inſtrument.

In this ſenſe, *abſciſſion* amounts to the ſame with the Greek αποκοπη. Cowper ſpeaks of the *abſciſſion* of a leg; which is more properly called amputation. The *abſciſſion* of the *præpuce* makes what we call circumciſion. *Abſciſſion* of the ears is a kind of legal puniſhment, inflicted on perjury. In ſome countries they alſo practiſe *abſciſſion* of the noſe on traitors in an army, as a puniſhment reputed worſe than death.

Abscission is more properly uſed for the operation of cutting away ſome ſoft part of the body, when depraved, or grown hurtful.

In which ſenſe, *abſciſſion* differs from amputation, in that the latter is of a ſolid or bony part, the former of a fleſhy or membranous one; yet they are ſometimes confounded.

We ſay, the *abſciſſion* of a nerve, lip, cheek, or the like: Mr. Shipton gives an inſtance of the *abſciſſion* of a portion of the inteſtines not being mortal.

ABSINTHITES, Absinthiac, or Absinthiated, ſomething tinged or impregnated with the virtues of *abſinthium*, or WORMWOOD.

Bartholin mentions a woman whoſe milk was become *abſinthiated*, and rendered bitter as gall, by the too liberal uſe of wormwood.

Vinum abſinthites, or *poculum abſinthiatum*, wormwood wine, is much ſpoke of among the ancients, as a wholeſome agreeable drink, and even an antidote againſt drunkenneſs; though ſome have charged it with being offenſive to the head, and liable to cauſe fevers, cephalalgias, vomitings, uterine fluxes, &c. Ray alſo makes it a preventive of venery. The preparation is given by many. According to the common account, it is made by infuſing the leaves of the plant in a quantity of wine. But Fehr ſhews that it ſhould rather be prepared by fermentation, in order to correct the crudities of the plant, and call forth its volatile ſalt. Paulli prepares it even without *abſinthium*. Dr. Bowle prefers the *aqua abſinthites*, or wormwood-water, taken in a ſmall quantity after meals, to the wine; as being leſs liable to affect the head, and fill it with vapours.

ABSINTHIUM, in *Botany*. See Wormwood.

Absinthium is alſo a name given to other plants, by different authors; as to dwarf *ptarmica*, with leaves divided after the manner of wormwood; alſo to the alpine *chamæmile*, with ſouthernwood-leaves.

ABSIS. See Apsis.

ABSOLUTE, in a general ſenſe, ſomething that ſtands free or independent.

Absolute, in *Metaphyſics*, denotes a being whoſe whole eſſence does not conſiſt in a mere habitude or relation to another.

In which ſenſe *abſolute* ſtands oppoſed to *relative* or *reſpective*.

Absolute is more particularly underſtood of a thing which does not proceed from any cauſe, or does not ſubſiſt by virtue of any other being, conſidered as its cauſe.

In which ſenſe, God alone is *abſolute*.

Abſolute, in this ſenſe, is ſynonymous with *independent*, and ſtands oppoſed to *dependent*.

Absolute alſo denotes a thing's being free from conditions, or limitations.

In this ſenſe, the word is ſynonymous with *unconditional*.

We ſay, an *abſolute* decree, *abſolute* promiſe, *abſolute* obedience. The covenant with Noah was *abſolute*, and without conditions; that under the goſpel, on condition of faith and obedience. The Antinomians alſo hold the goſpel-covenant *abſolute*, and that Chriſt has purchaſed our ſalvation, without any conditions to be performed on our ſide.

Absolute *Government*, that wherein the prince is left ſolely to his own will, being not limited to the obſervance of any laws except thoſe of his own diſcretion.

When the Danes made their king *abſolute*, in 1670, they declared him abſolved from his coronation oath.

Absolute *Number*, in *Algebra*, is the known quantity or number which poſſeſſes one intire ſide, or part of an EQUATION; being the rectangle or ſolid whoſe root or value is to be found.

Thus, in the equation $aa+16a=36$, the *abſolute number* is 36; which is equal to *a* multiplied by itſelf, and added to 16 times *a*.

This is what Vieta calls *homogeneum comparationis*.

Absolute *Equation*, in *Aſtronomy*, is the ſum of the optic and eccentric equations.

Absolute *Ablative*. See Ablative.

Absolute *Motion*, *Place*, *Space*. See the reſpective ſubſtantives.

ABSOLUTELY, in a general ſenſe, ſtands oppoſed to *relatively*. See Relative.

Thus the terms of a propoſition are ſaid to be taken *abſolutely*, that is, without relation to each other.—Man, conſidered *abſolutely*, and in himſelf, is a reaſonable creature.

Absolutely is alſo uſed for *unlimitedly* or *unconditionally*.

In which ſenſe, the ſchoolmen oppoſe it to *ſecundum quid*.

Thus a thing is ſaid to be *abſolutely*, and ſimply, good.

Absolutely is alſo uſed, by *Divines*, in oppoſition to *declaratively*.

The church of Rome holds, that a prieſt can forgive ſins *abſolutely*; the proteſtants ſay, only *declaratively* and miniſterially.

Absolutely, in *Grammar*: we ſay, a word is taken *abſolutely*, *abſolute ſumptus*, when it has no *regimen*, or government. Thus, in the phraſe, We ſhould pray without ceaſing, the word *pray* is taken *abſolutely*, as it governs nothing.

Absolutely, in *Geometry*, is taken for entirely, or completely. Thus we ſay, ſuch a thing is *abſolutely* round; in contradiſtinction from that which is only partly ſo; as a ſpheroid, cycloid, &c.

ABSOLUTION, Absolutio, in the *Civil Law*, &c. a definitive ſentence, whereby a perſon, accuſed of any crime, is acquitted, and declared innocent.

Among the Romans, the ordinary method of pronouncing judgment was this: after the cauſe had been pleaded on both ſides, the Præco uſed the word *dixerunt*, *q. d.* they have ſaid what they had to ſay; then three ballots were diſtributed to each judge, marked as mentioned under the article A; and as the majority fell of either mark, the accuſed was *abſolved* or condemned, &c. If he were *abſolved*, the Prætor diſmiſſed him with *videtur non feciſſe*, or *jure videtur feciſſe*.

Absolution, in the *Canon Law*, is a juridical act, whereby a prieſt, as a judge, remits the ſins of ſuch as, upon confeſſion, appear to have the conditions requiſite thereto.

The Romaniſts hold *abſolution* a part of the ſacrament of penance: the council of Trent, ſeſſ. xiv. cap. iii. and that of Florence, in the decree *ad Armenos*, declare the form or eſſence of the ſacrament to lie in the words of *abſolution*, I abſolve thee of thy ſins.

The *formula* of *abſolution*, in the Romiſh church, is abſolute: in the Greek church, it is deprecatory; and in the churches of the reformed, declarative.

In the church of Rome there are divers other political *abſolutions*; as,

Absolutio *a ſævis*, which is neceſſary where a perſon has been witneſs to the execution of ſentence of death on a criminal, or has any other way diſqualified himſelf for the holding of a benefice.

Absolutio *ad cantelam*, is that granted to a perſon who has lodged an appeal againſt a ſentence of excommunication, by which the force of the cenſure is ſuſpended.

It being a maxim, in the papal juriſprudence, that the ſentence ſtands good, notwithſtanding any appeal; this ſort of *abſolution* is ſometimes granted until the iſſue of his appeal be known: by means hereof, ſome articles, at leaſt, of his excommunication, are taken off; inſomuch that perſons may converſe with him without danger: and, beſide, in caſe of death, this ſentence is ſuppoſed to be of ſome avail to him.

ABSOLUTISM, the *dogma* of God's acting abſolutely in the affair of ſalvation, and not being guided in his willing, or nilling, by any reaſon; maintained by the Calvinists, for which, among other doctrines, the Lutherans refuſe all union with them.

ABSORBENTS, in a general ſenſe, is uſed for ſuch things as have the faculty of *abſorbing*, or ſwallowing up others.

Absorbents, in *Medicine*, remedies which, by the ſoftneſs or poroſity of their component parts, become proper to ſheath the aſperities of ſharp pungent humours; or to imbibe or dry away, as with a ſponge, ſuperfluous moiſtures; and are of divers kinds; ſimple, compound, ſaline, cinnabarine, marine, fixed, earthy, acid, alcaline, &c. In the *Pharmacopœias*, we meet with ſeveral forms of *abſorbents*; ſuch are the teſtaceous powders, hartſhorn, coral, crabs eyes and claws, calcined bones, burnt ivory, *terra ſigillata*, and even iron itſelf: alſo divers woods; as ſanders, maſtic, *guaiacum*, ſaſſafras: and divers roots; as china, *ſarſaparilla*, &c.

Abſorbents conſume the humours without fuſing them, and have ſometimes the effect of ſtrengtheners, ſometimes of purgatives, oftener of calmers, to allay fermentations. They are of uſe for tempering acrimonies, and after emollients and attenuants, for healing tumours; ſome hold them neceſſary for preventing the ill effects of bitters; they are good in cardialgias or heats of the ſtomach, and hiccups; are alſo given in hectics, and other chronical caſes, as coughs, though with great caution and reſerve. *Abſorbents* have alſo their ill effects; eſpecially if too laviſhly given, being liable to make congeſtions in the *viſcera:* they are hurtful in the itch, bilious fevers, dyſenteries, hypochondriacal and hyſteric caſes, quartans, &c. according to ſome.

They are generally preſcribed as the only remedy for the acute diſeaſes of infants, though held by others rather hurtful to children, by loading their tender *viſcera*, and creating obſtructions in the capillaries.

Particular kinds of *abſorbents* have their particular effects; old oyſter-ſhells are preferred for children; magiſteries and precipitates are leaſt ſuitable, as being already ſurcharged with acids. *Abſorbents* ſaturated with acid juices, as of citrons, are good in coughs and catarrhs; prepared with cinnabar, in iſchurias; with aſtringents, in the diabetes; ſaline, in the itch; marine, in chronical diſeaſes of the breaſt; in which laſt caſe, the earthy are hurtful.

They are ſometimes applied to ulcers; but it is to be obſerved, that the inſipid terreſtreous *abſorbents*, ſuch as coral, &c. put into an ulcer, where a bone is carious, can have little other effect than to imbibe the matter of the ulcer; if they fall into any *cavernulæ* of the corrupted bone, they may remain ſo long there, that the matter they imbibe may become acrid. Lint is an *abſorbent*, which has not this diſadvantage. Monro, in Med. Eſſ. Edinb. vol. V. art. 24.

The taking an immoderate quantity of crabs eyes, and other *abſorbents* for the heart-burn, has ſometimes been attended with fatal conſequences. See Phil. Tranſ. N°. 459. ſect. 2.

Van Swieten, in his comment on Boerhaave's Aphoriſms, obſerves, that theſe *abſorbent* powders ought not to be ground too fine, but rather left ſomewhat coarſe, as they will be leſs apt to concrete and prove dangerous.

It is a neceſſary caution to drink diluting liquors with them; alſo to take gentle purges; as well for ſome time after they are left off, as during the uſe of them.

Abſorbents are much the ſame with what we otherwiſe call driers and ſweeteners. Latin writers alſo uſe the word as ſynonymous with *Imbibentia*, and *Saturantia*.

The term *abſorbent* is frequently confounded with *alcali*; alcalies having, really, the effect of *abſorbents*, with reſpect to acids.

Aſhes are an *abſorbent* in reſpect of water; though not in the degree ſuppoſed by Ariſtotle, from whom we derive a vulgar error, that a pot full of aſhes will ſtill *abſorb* as much water as if empty. Cloves are ſo violent an *abſorbent* of moiſture, that we are told, if care be not taken in the importing, to keep all water, wine, and the like, at a good diſtance from them, a certain quantity of cloves will, in two days time, drain a whole hogſhead of wine. M. Homberg has a diſcourſe on the quantity of acids *abſorbed* by terreſtrial alcalis; wherein he ſhews, how much acid any known alcali will retain. M. de la Hire gives an experiment for aſcertaining the quantity of water *abſorbed* by plants. Mem. Acad. R. Scien. an. 1700, p. 81.

Absorbent *Veſſels*, a minute kind of veſſels, found in animal bodies, which attract, and imbibe the nutritious, and other matters brought near their mouths.

Theſe are ſometimes alſo called *reſorbent veſſels*, and ſometimes *abſorbent pores*.

Abſorbent veſſels are found in all parts of the body, eſpecially where the membranes lie open to cavities, as in the mouth, œſophagus, ſtomach, inteſtines, &c. A late author computes no leſs than 7,000,000,000 in one ſquare foot of the ſurface of the ſtomach: by theſe, mercury, plaſters, and the like medicines externally applied, enter the habit of the body: to theſe are alſo owing the inſtantaneous effects of ſpirits, drams, water, &c. upon the body. The like veſſels are alſo numerous in the ſkin; where they are ſuppoſed to imbibe the fluid matters floating in the ambient air, and convey them into the body.

It has been ſaid that there are no *abſorbent* veins, and that *abſorption* is performed entirely by the vaſcular *lymphatics*. But if this were the caſe, we ſhould be continually ſubject to a *hydrocephalus*; becauſe in the head no vaſcular *lymphatics* are found. It is plain that there are abſorbent veins that open into the cavities of the body, becauſe in the aſcites the extravaſated blood is frequently received into the circulation, and diſcharged by urine or ſtool. Dr. Hunter aſcertains it by the following experiment on a living dog; an opening was made in the cavity of his belly, and three quarts of warm water injected and ſecured; ſix hours after, he was examined, and not above four ounces of the water remained.

For farther ſatisfaction on this ſubject, conſult Hunter's Commentaries, and Dr. Garner's Obſervations on them, in the Medic. Muſ. vol. ii. p. 229; and alſo Dr. Wilkinſon, ibid. p. 117, &c.

Abſorbent veſſels are more particularly uſed for thoſe lacteals which open into the ſides of the inteſtinal tube, to imbibe the chyle in its deſcent from the ſtomach, and convey it into the meſenteric veins.

Naturaliſts ſpeak of the like *abſorbents* in plants; the fibrous or hairy roots of which are conſidered as a kind of *vaſa abſorbentia*, which attract and imbibe the nutritious juices from the earth.

ABSORBING, the act of ſucking up, or imbibing another body. Sir Iſaac Newton ſhews that black bodies *abſorb* all the rays they receive, and that thoſe rays of light which impinge againſt the ſolid particles of bodies are *abſorbed* and loſt: but it appears from ſome later experiments and obſervations of M. Bouguer, that this effect is to be attributed, not to the impact of light on the ſolid parts of bodies, but to the action of ſome power diffuſed over their ſurfaces. He found by repeated trials on the reflection of light, from the ſurface of water, and of different pieces of cryſtal, that a conſiderable quantity of light, when the angles of incidence were ſmall, was actually extinguiſhed. This effect, he obſerved, was diminiſhed by increaſing the incidence; ſo that, at an inclination to cryſtal of above 49° 49′, a very ſmall part of the rays was *abſorbed*; though ſome few were loſt, when they fell perpendicularly on the reflecting ſurface. See his Traité d'Optique. Paris. 1760.

ABSORPTION, in the *Animal Oeconomy*, is uſed for that power whereby the ſmall open orifices of veſſels, imbibe liquors lodged in the cavities of the animal bodies. This, according to Dr. Monro, is obſerved to increaſe or diminiſh, proportionally to the ſtrength or weakneſs of the creature.

Absorptions *of the earth*, a term uſed by Kircher and others, for the ſinking in of large tracts of land, by means of ſubterranean commotions, and many other accidents.

Pliny tells us, that in his time the mountain Cymbotus, with the town of Eurites, which ſtood on its ſide, were wholly *abſorbed* into the earth, ſo that not the leaſt trace of either remained; and he records the like fate of the city Tantalis in Magneſia, and after it of the mountain Sypelus, both thus *abſorbed* by a violent opening of the earth. Galanis and Garnatus, towns once famous in Phœnicia, are recorded to have met the ſame fate; and the vaſt promontory, called Phlegium, in Æthiopia, after a violent earthquake in the night-time, was not to be ſeen in the morning, the whole having diſappeared, and the earth cloſed over it. Theſe and many other hiſtories, atteſted by the authors of greateſt credit among the ancients, abundantly prove the fact in the earlier ages; and there have not been wanting too many inſtances of more modern date. Kircher's Mund. Subter. p. 77.

The mountain Picus, in one of the Molucca iſles, was ſo lofty, that it appeared at great diſtances as an immenſe column reared erect in the air, and ſerved as a land-mark to ſailors; an earthquake in this iſland deſtroyed it; at one inſtant the whole mountain was *abſorbed* into the bowels of the earth, and no mark of its place remained but a vaſt lake of water, exactly anſwering to the ſhape of the baſe of the mountain. A like accident, but of a more terrible kind, happened in China, in the year 1556, when a whole province of the mountainous parts of that kingdom was in one moment *abſorbed* into the earth, and all the towns buried, the whole number of the inhabitants ſinking with it, and an immenſe lake of water remaining in its place to this time. Of much later date is the deſtruction of a city in the confines of Swiſſerland; but this, though generally ſaid to have been ſwallowed up into the earth, was not properly an *abſorption*, for the whole city was buried by the fall of a mountain upon it.

The burning mountains, Veſuvius and Strongylus, both once very high, have in length of time loſt half their height, the upper part having been undermined by the burning, and having fallen into, and been *abſorbed* by the under part. And in the year 1646, during the terrible earthquake in the kingdom of Chili, ſeveral whole mountains of the Andes diſappeared, and were one after another wholly *abſorbed* in the earth.

Theſe, and a thouſand other accidents of the like kind, prove the truth of *abſorptions* in general; ſome of them leaving level ground in the place of the things *abſorbed*, ſome immenſe chaſms and cracks, and ſome lakes of freſh or ſalt water; and it may be, that many immenſe lakes were formed in ages, of which we have no hiſtories, by the like *abſorptions*.

Pliny gives many accounts of the reſtoring of places thus *abſorbed*, but later obſervations do not give an equal credit to theſe parts of his hiſtory.

There are inſtances however of iſlands being produced, though we cannot affirm them to have appeared in the place of any which have been *abſorbed*.

In the year 1638, an iſland was raiſed near St. Michael's, in the Atlantic ocean, by ſubterranean fires, which threw up ſtones, and other ſubterranean productions, in ſuch quantities, that they formed an iſland of five miles in length. The mountain raiſed in one night, in the ſea near Puzzoli, is another inſtance of this ſudden production of theſe mountains: this appeared after one night's violent ſubterranean conflict, and ſtill keeps its place, and is known under the name of the Mons Sanctus.

ABSTEMIOUS, is properly underſtood of a perſon who refrains abſolutely from all uſe of wine.

It is compounded of *abs*, *from*, and *timetum*, *wine*.

The hiſtory of Mr. Wood, in the Medic. Tranſ. vol. ii. p. 261, art. 18, is a very remarkable exemplification of the very beneficial alterations which may be effected on the human body, by a ſtrict courſe of abſtemiouſneſs.

The Roman ladies, in the firſt ages of the republic, were all enjoined to be *abſtemious*; and that it might appear, by their breath, whether or no they kept up to the injunction, it was one of the laws of the Roman civility, that they ſhould kiſs their friends and relations whenever they accoſted them.

ABSTENTUS, among *Civilians*, is underſtood of an heir with-held by his tutor from taking on him an inheritance.

Among *Eccleſiaſtical Writers*, the word is alſo uſed for a perſon excommunicated.

ABSTERGENTS, or ABSTERSIVE *Medicines*, more uſual, called among phyſicians DETERGENTS; they are cleanſing *medicines* of a ſaponaceous nature, capable of diſſolving concretions formed of earth and oil, which water ſimply, as an abluent, cannot effect.

ABSTINENCE, in a general ſenſe, the act or habit of refraining from ſomething which we have a propenſity to, or find pleaſure in.

The word is derived from *abſtinere*; formed of *abs*, *from*, and *tenere*, *to hold*.

The Jews were obliged to abſtain from their wives at certain ſeaſons.—The ſame is enjoined, in the Apoſtolical Conſtitutions, on all faſt and meagre days: the church of England recommends certain days of faſting, and *abſtinence*.—*Abſtinence from fleſh* has been enjoined by ſtatute even ſince the Reformation, particularly on Fridays and Saturdays, and on vigils, and all commonly called fiſh-days, 2 and 3 Ed. 6. c. 19.—The like injunctions were renewed under queen Elizabeth, but at the ſame time it was declared, that this was done not out of motives of religion, as if there were any difference in meats, but in favour of the conſumption of ſea-fiſh, and to multiply the number of fiſhermen and mariners, as well as ſpare the ſtock of ſheep, 5 Eliz. c. 15.—The great faſt, ſays St. Auguſtin, is to *abſtain* from ſin.

The ancient athletæ lived in a perpetual *abſtinence* from all kind of ſenſible pleaſure, to render their bodies more robuſt, and hardy.

ABSTINENCE is more particularly uſed for a ſpare DIET, or a ſlender parſimonious uſe of FOOD.

The phyſicians relate wonders of the effects of *abſtinence* in the cure of many diſorders, and in protracting the term of life.—The noble Venetian, Cornaro, after all imaginable means had proved vain, ſo that his life was deſpaired of at forty, recovered, and lived to near an hundred, by mere dint of *abſtinence*, as he himſelf gives the account.

Moſt of the chronical diſeaſes, the infirmities of old age, and the ſhort lives of Engliſhmen, are owing, according to Dr. Cheyne, to repletion; and may be either cured, prevented, or remedied, by *abſtinence*.

Among the brute creation, we ſee extraordinary inſtances of long *abſtinence*.—It is the natural courſe of divers ſpecies to paſs four, five, or ſix months, every year, without either eating or drinking: accordingly the tortoiſe, dormouſe, ſerpent, &c. are obſerved regularly to retire, at certain ſeaſons, to their reſpective cells, and hide themſelves; ſome get into the caverns of rocks, or ruins; others dig holes under ground; others get into the woods, and lay themſelves up in the clefts of trees; others bury themſelves under water, &c.

The ſerpent kind bear *abſtinence* to a very great degree. We have ſeen rattle-ſnakes that had ſubſiſted many months without any food, yet ſtill retained their vigour and fierceneſs.—Dr. Shaw ſpeaks of a couple of *Ceraſtes* (a ſort of Egyptian ſerpents), which had been kept five years in a bottle cloſe corked, without any ſort of food, unleſs a ſmall quantity of ſand, wherein they coiled themſelves up in the bottom of the veſſel, may be reckoned as ſuch: yet, when he ſaw them, they had juſt caſt their ſkins, and were as briſk, and as lively, as if juſt taken.

In effect, ſeveral ſpecies of birds, the whole tribe almoſt of inſects, and many among the other tribes, are able to ſubſiſt all winter, not only without food, but many of them without reſpiration too.—This furniſhes an admirable inſtance of the wiſdom of the Creator: the proper food of theſe creatures, eſpecially the inſect tribe, being then wanting, there is a proviſion for them to live without it. When the fields are diveſted of their flowery furniture, and the trees and plants are ſtripped of their fruits, what would become of ſuch animals as are ſubſiſted only by the produce of the ſpring and ſummer, and of others which are incapable of bearing ſevere cold? To prevent the total deſtruction and extirpation of many ſpecies of animals, the Author of nature has provided, that creatures, thus bereaved of their food, ſhould be likewiſe impatient of cold; to lead them thus to ſhelter themſelves out of the way of danger; and that, when there arrived, the natural texture and viſcidity of their blood ſhould diſpoſe it, by a farther degree of cold, to lag and ſtagnate in the veſſels: ſo that, the circulation ſtopping, and the animal functions being, in a great meaſure, ſuſpended, there is no ſenſible waſte or conſumption of parts, but they remain in a kind of drowſy neutral ſtate, between life and death, till the warm ſun revive both them and their food together, by thawing the congealed juices, both of ſuch animals and vegetables. The fact, however, is queſtionable; and will be more particularly conſidered hereafter.

It is more than probable, that all motion of the animal juices is extinct in flies, and other inſects, when thus aſleep; in that, though cut in pieces, they do not awake, nor does any fluid ooze out at the wound, unleſs ſome extraordinary degree of warmth have been firſt applied to unbind the congelation.—The ſleep of ſuch animals is little elſe than death, and their waking a reſurrection.—For if life does not conſiſt in a circulation of the blood, we do not know what it conſiſts in.

Hence it is no wonder that tortoiſes, dormice, &c. are found as fat and fleſhy, after ſome months *abſtinence*, as before.—Sir G. Ent weighed his tortoiſe ſeveral years ſucceſſively, at its going to earth in October, and coming out again in March; and found, that of four pounds four ounces, it only uſed to loſe about one ounce. V. Philoſoph. Tranſact. N° 194.

It is to be added, that in moſt of the inſtances of long *abſtinence* related by *Naturaliſts*, there were apparent marks of a texture of blood and humours, much like that of ſummer-beaſts and inſects.—Though it is no improbable opinion, that the air itſelf may furniſh ſomething for nutrition. It is certain, there are ſubſtances of all kinds; animal, vegetable, &c. floating in the atmoſphere; which muſt be continually taken in by reſpiration: and that an animal body may be nouriſhed thereby, is evident, in the inſtance of vipers; which, if taken when firſt brought forth, and kept from every thing but air, will yet grow very conſiderably in a few days. So the eggs of lizards are alſo obſerved to increaſe in bulk, after they are produced, though there be nothing to furniſh the increment but air alone; after the like manner as the eggs or ſpawn of fiſhes grow, and are nouriſhed with the water.—And hence, ſome ſay, it is, that cooks, turn-ſpit dogs, &c. though they eat but little, yet are uſually fat.

ABSTINENCE is alſo uſed ſometimes to ſignify a *ſuppreſſion.* Thus in Cœlius Aurelianus, *abſtinentia ſudoris*, ſignifies a ſuppreſſion of ſweat. Sometimes in this author it means a *Compreſſion*; as *Spiritus ob abſtinentiam clauſus*, means the wind ſhut up in the inteſtines by compreſſion, thereby cauſing the *Iliac* PASSION.

ABSTINENTES, in *Eccleſiaſtical Hiſtory*, a ſort of people in the ancient church, who carried *abſtinence* and mortification ſo far, that they have been put in the catalogue of heretics; though wherein their error conſiſted, is little agreed on.

Some repreſent the *Abſtinentes* as the ſame with thoſe otherwiſe called *Continentes*, and that they particularly enjoined *abſtinence* from the uſe of marriage; others ſay, from fleſh; and others, from wine. Others will have them a branch of the GNOSTICS, and that their hereſy conſiſted in holding fleſh evil in itſelf, and created by the devil. Some make them the ſame with the *Hieracites*; others, with the *Encratites*. They are ſaid to have ariſen in Spain and the Gauls in the third century.

ABSTRACT, ABSTRACTUM, in *Philoſophy*. See ABSTRACTION.

ABSTRACT *Idea*, among *Logicians*, denotes an idea formed in the mind, when we conſider a thing ſimply in itſelf, without reſpect to the ſubject wherein it reſides; or it is a ſimple idea, detached and ſeparated from any particular ſubject or complex idea, for the ſake of viewing and conſidering it more diſtinctly.

Thus, magnitude and humanity are *abſtracts*, or *abſtract* ideas, when conſidered in themſelves, and without being attached to any particular body, or perſon; though they cannot have any real ſubſiſtence without ſuch ſubjects, nor the ſubjects without them.

Whiteneſs is an *abſtract*, inaſmuch as it does not denote any one white object, but that colour, or idea in the general, wherever found.

Abſtract ideas are oppoſed to thoſe which are concrete: the concrete denoting a general or *abſtract* idea's being attached to ſome particular ſubject, or conſidered as combined with ſome other ideas; as, *great houſe*, *white wall.*

All our ſimple ideas, ſays Mr. Locke, have *abſtract*, as well as *concrete* names; as, *whiteneſs*, *white*; *ſweetneſs*, *ſweet*, &c. The like alſo holds in our ideas of modes, and relations; as, *juſtice*, *juſt*; *equality*, *equal*, &c.

But as to our ideas of ſubſtances, we have very few *abſtract* names at all.—Thoſe few that the ſchools have forged, as *Animalitas*, *Humanitas*, &c. bear no proportion to the infinite number of names of ſubſtances; and could never get admittance into common uſe, or obtain the licence of public approbation: which ſeems to intimate a confeſſion of mankind, that they have no ideas of the real eſſences of ſubſtances; ſince they have not names for ſuch ideas.

Indeed the reality and exiſtence of all *abſtract* ideas, and of any ſuch faculty in the mind as *abſtraction*, has of late been controverted.

ABSTRACT *Terms*, are thoſe made uſe of to denote abſtract ideas. In which ſenſe, the words *whiteneſs*, *paternity*, *animality*, *juſtice*, *crookedneſs*, &c. are *abſtracts*, or *abſtract terms.*

ABSTRACT is alſo extended to divers other things, in reſpect of their purity, ſimplicity, ſubtility, &c.—In which ſenſe, we ſay,

ABSTRACT *Numbers* are aſſemblages of units, conſidered in themſelves, and not applied to denote any collections of particular ſorts of things.

ABSTRACT *Mathematics* are thoſe branches employed about quantity conſidered abſolutely, or in the general; without reſtriction to any certain kind, or ſpecies of it.

Such are, *Geometry* and *Arithmetic.*

In this ſenſe, *abſtract* mathematics ſtand oppoſed to mixed mathematics; where the ſimple and *abſtracted* properties and relations of quantity delivered in the former, are applied to ſenſible objects; and by that means become intermixed with phyſical conſiderations.—Such are *Hydroſtatics*, *Optics*, *Navigation*, &c.

ABSTRACT is alſo uſed in matters of *Literature*, for a compendious view, or EPITOME of a larger work.

An *abſtract* is ſuppoſed to be a degree ſhorter, and more ſuperficial than an abridgment.

ABSTRACTION, an operation of the mind, whereby we ſeparate things naturally conjunct, or exiſting together; and form, and conſider, ideas of things thus ſeparated.

The faculty of *abſtracting* ſtands directly oppoſite to that of compounding—By compoſition we conſider thoſe things together, which in reality are not joined together in one exiſtence. And by *abſtraction* we conſider thoſe things ſeparately and apart, which in reality do not exiſt apart.

Abſtraction is chiefly employed theſe three ways.—Firſt, when the mind conſiders any one part of a thing, in ſome reſpect diſtinct from the whole; as a man's arm without the conſideration of the reſt of his body.

Secondly, when we conſider the MODE of any ſubſtance, omitting the ſubſtance itſelf, or when we ſeparately conſider ſeveral modes which ſubſiſt together in one ſubject. This *abſtraction* the *Geometricians* make uſe of, when they conſider the length of a body ſeparately, which they call a LINE; omitting the conſideration of its breadth and depth.

Thirdly, it is by *abſtraction*, that the mind frames general, or univerſal ideas; omitting the modes and relations of the particular objects whence they are formed.—Thus, when we would underſtand a thinking being in general, we gather from our ſelf-conſciouſneſs what it is to think; and omitting the conſideration of thoſe things which have a peculiar relation to our own mind, or to the human mind, we conceive of a thinking being in general.

Ideas framed thus, which are what we properly call *abſtract ideas*, become general repreſentatives of all objects of the ſame kind; and their names applicable to whatever exiſts conformable to ſuch ideas.—Thus, the colour that we receive from chalk, ſnow, milk, &c. is a repreſentative of all of that kind; and has a name given it, *whiteneſs*, which ſignifies the ſame quality, wherever found or imagined.

It is this laſt faculty, or power of *abſtracting*, according to Mr. Locke, that makes the great difference between men and brutes; even thoſe latter muſt be allowed to have ſome ſhare of reaſon: that they really reaſon in ſome caſes, ſeems almoſt as evident as that they have ſenſe; but it is only in particular ideas. They are tied up to thoſe narrow bounds; and do not ſeem to have any faculty of enlarging them by *abſtraction.* Eſſay on Human Underſtanding, lib. ii. cap. 11. lib. iii. cap. 3.

Such is the doctrine of *abſtract* ideas, under the improvements of that excellent author.—In effect, it is the ſtanding opinion, that the mind has ſuch a power or faculty of framing *abſtract* ideas or notions of things; and on ſuch very ideas do a great part of the writings of philoſophers turn. Theſe are ſuppoſed in all their ſyſtems; and without them there would be nothing done.—They are more eſpecially reputed the object of logic, mathematics, and metaphyſics, and all that paſſes under the notion of the moſt *abſtracted* and ſublime learning.

Yet has a late eminent and ingenious author, Dr. Berkeley, conteſted the reality of any ſuch ideas; and gone a good way towards overturning the whole ſyſtem, and conſequently towards ſetting philoſophy on a new foundation. See a Treatiſe concerning the Principles of Human Knowledge, firſt printed in 1710.

The qualities or modes of things, it is on all hands agreed, do never really exiſt apart, and ſeparated each from all others; but are conſtantly mixed and combined together, ſeveral in the ſame object.—But, ſay the philoſophers, the mind being able to conſider each quality, ſingly or *abſtracted* from other qualities with which it is united, does by that means frame to itſelf *abſtract* ideas, of a different nature and kind from the ſenſible ones.

For an example hereof: the eye perceiving an object extended, coloured, and moved, reſolves this compound idea into its ſimple conſtituent ones; and viewing each by itſelf, excluſive of the reſt, frames *abſtract* ideas of extenſion, colour, and motion themſelves, or in their own nature.—Not that it is poſſible for ſuch colour and motion to exiſt without extenſion; but only that the mind can frame to itſelf, by *abſtraction*, the idea of colour excluſive of extenſion; and of motion, excluſive both of colour and extenſion.

Again, ſay the ſame philoſophers, the mind having obſerved that in the particular extenſions perceived by ſenſe, there is ſomething common, and alike in all; and ſome other things peculiar; as, this, or that figure, or magnitude, which diſtinguiſh them one from another; it can conſider apart, or ſingle out by itſelf, what is common; making thereof a general *abſtract* idea of extenſion, which is neither line, ſurface, nor ſolid, nor has any figure or magnitude, but is an idea entirely preſcinded from them all.—So, likewiſe, by leaving out of the ſeveral colours perceived by ſenſe, that which diſtinguiſhes them one from another, and only retaining what is common to all, it makes an idea of colour in the *abſtract*, which is neither red, nor blue, nor white, &c.—After the ſame manner, by conſidering motion *abſtractedly*, both from the body moved, and from the figure it deſcribes, and all particular directions and velocities; an *abſtract* idea of motion is framed, which equally correſponds to all motions whatever.

They add, that as the mind frames *abſtract* ideas of qualities or modes; ſo does it, by the ſame faculty, attain *abſtract* ideas of the more compound beings, which include many coexiſtent qualities.—For an example—Having obſerved that Peter, James, John, &c. reſemble each other in ſhape, and other qualities; we can leave out of the complex idea we had of Peter, James, &c. that which is peculiar to each, retaining only what is common to all, and ſo make an *abſtract* idea, wherein all the particulars equally partake.—And thus it is we are ſuppoſed to obtain the *abſtract* idea of man, or of humanity, or human nature; wherein there is indeed included colour, becauſe no man but has ſome colour; but it is neither white, nor black, nor brown; becauſe there is no one particular colour wherein all men partake. So likewiſe there is included ſtature, but then it is neither tall, nor low, nor yet middle ſtature, but ſomething *abſtracted* from all theſe; and ſo of the reſt.

Farther yet, there being a general variety of other creatures, which partake in ſome parts, but not all, of the complex idea of man; the mind leaving out thoſe parts which are peculiar to men, and retaining only thoſe which are common to all living creatures, frames the idea of animal; which *abſtracts* or participates not only of all men, but all birds, beaſts, fiſhes, and inſects.

The conſtituent parts of ſuch *abſtract* idea of animal, are body, life, ſenſe, and ſpontaneous motion.—By body, is meant, body without any particular ſhape, or figure; there being no one common to all animals; without covering, either of hair, or feathers, or ſcales: nor yet naked; hair, feathers, ſcales, and nakedneſs, being the diſtinguiſhing properties of particular animals, and for that reaſon left out of the *abſtract* idea. Upon the ſame account, the ſpontaneous motion muſt be neither walking, nor flying, nor creeping; it is nevertheleſs a motion.—But what that motion is, it is not eaſy to conceive. ‘I will not affirm, ſays Dr. Berkeley, that other ‘people have not this wonderful faculty of *abſtracting* ‘their ideas; but I am confident I have it not myſelf.—I ‘have, indeed, a faculty of imagining, or repreſenting ‘to myſelf the ideas of things I have perceived, or of va‘riouſly compounding or dividing them: I can imagine ‘a man with two heads, or the upper parts of a man ‘joined to the body of a horſe. I can conſider the hand, ‘the eyes, the noſe, each by itſelf, *abſtracted* or ſeparated ‘from the reſt of the body.—But then, whatever hand or ‘eye I imagine, it muſt have ſome particular ſhape and ‘colour.—So again, the idea of a man I frame to my‘ſelf, muſt be either of a white, or a black, or a tawny, ‘a ſtrait, or a crooked, a tall, or a low, or a middle‘ſized man.

‘I cannot by any effort of thought conceive the *abſtract* ‘idea above deſcribed; and it is equally impoſſible for ‘me to form the *abſtract* idea of motion, diſtinct from ‘the body moving, and which is neither ſwift nor ſlow, ‘curvilinear nor rectilinear.—And the like may be ſaid ‘of all other *abſtract* general ideas whatever.’

Since all things that exiſt are only particulars, ‘Whence, ‘ſays Mr. Locke, is it, that we come by general words, ‘expreſſive of a thouſand individuals?’ His anſwer is, terms only become general, by being made the ſigns of *abſtract* and general ideas; ſo that the reality of *abſtract* ideas ſhould follow from the reality of general words.—But, according to Dr. Berkeley, a word becomes general, by being made the ſign, not of an *abſtract* general idea, but of ſeveral particular ones, any one of which it indifferently ſuggeſts to the mind.—For an example, when I ſay, that Whatever has extenſion is diviſible; the propoſition is to be underſtood of extenſion in general: not that I muſt conceive any *abſtract* general idea of extenſion, which is neither line, ſurface, nor ſolid, neither great nor ſmall, &c. To make this more evident, ſuppoſe a geometrician to be demonſtrating a method of dividing a line into two equal parts: in order hereto, he draws, for inſtance, a black line, an inch long; and this, which in itſelf is a particular line, is, nevertheleſs, with reſpect to its ſignification, general: ſince it repreſents all lines whatever: ſo that what is demonſtrated of this one, will hold of all others.—And as that particular line becomes general by being made a ſign; ſo does the name *line*; and as the former owes its generality, not to its being the ſign of an *abſtract* or general line, but of any or all particular right lines that may poſſibly exiſt; ſo muſt the latter derive its generality from the ſame cauſe.

But to this reaſoning it has been replied, that the univerſality conſiſts in the idea; and not merely in the name as uſed to ſignify, and recall into the mind, a variety of particular things, reſembling that which is the immediate object of reflection; becauſe had we no previous fixed notion what the name ſignifies, we could not know what particular things to apply it to, or aſſign any reaſon for applying it to one thing, rather than another. All that can be pictured in the imagination, as well as all that we take notice of by our ſenſes, is indeed particular. And whenever any general notions are preſent in the mind, the imagination, at the ſame time, is commonly engaged in repreſenting to itſelf ſome of the particulars comprehended under them. But it would be a very ſtrange inference from hence, that we have none but particular ideas. As well almoſt might we conclude, that we have no other notion of any thing than of its name, becauſe they are ſo aſſociated in our minds, that we cannot ſeparate them; or of the ſun, than as a white, bright circle, ſuch as we ſee in the heavens, becauſe this idea or phantaſm is apt to accompany all our thoughts of it. See Dr. Price's Review of the principal Queſtions and Difficulties in Morals, p. 43.

Dr. Cudworth obſerves, that *abſtract* ideas are implied in the cognoſcitive power of the mind; and he pronounces the opinion, that they are only ſingular ideas annexed to a common term; or, in other words, names without any meaning; to be ſo ridiculouſly falſe, as to deſerve no confutation. See Eternal and Immutable Morality, book iv.

Mr. Locke, ſpeaking of the difficulty of forming *abſtract* ideas, ſays: ‘And does it not require ſome pains and ‘ſkill to form the general idea of a triangle, which yet ‘is none of the moſt *abſtract* and comprehenſive; for it ‘muſt neither be oblique, nor rectangular; neither equi‘lateral, iſoſceles, nor ſcalenous; but all, and none of ‘theſe, at once.’—Now, let any man look into his thoughts, and try whether he has, or can attain to an idea of a triangle, correſpondent to this deſcription.

Dr. Campbell, in his Philoſophy of Rhetorick, vol. ii. p. 115, expreſſes his apprehenſion, that the bare mention of this hypotheſis is equivalent to a confutation of it, ſince it really confutes itſelf. He adopts the ſentiments of Berkeley on this ſubject, and will allow to the mind no other power of *abſtraction*, if the term be retained, beſide that, by which a particular idea is regarded, as repreſenting a whole order. Mr. Locke, he ſays, has, on ſome occaſions, evidently inclined to the ſame opinion: in proof of which he refers to his Eſſay, book iii. cap. 3. § 11.

From the notion of *abſtract* ideas, Dr. Berkeley endeavours to ſhew, it was, that bodies firſt came to be ſuppoſed to have an exiſtence of their own, excluſively and independent of the mind perceiving them.—Can there be a greater ſtrain of *abſtraction*, ſays he, than to diſtinguiſh the exiſtence of ſenſible objects from their being perceived, ſo as to conceive them exiſting unperceived?

If there were external bodies, he ſays, it is impoſſible we ſhould ever come to know it; and if there were not, we might have the very ſame reaſons to think there were that we have now. His principal argument may be reduced to the following ſyllogiſm: Whatever is immediately perceived by ſenſe, is an idea. Senſible things are immediately perceived by ſenſe; for the proof of which he appeals to experience: therefore ſenſible things are ideas; and conſequently exiſt only in the mind. See his Dialogues between Hylas and Philonous.

The late lord Bolingbroke likewiſe controverted the exiſtence of *abſtract* ideas; and Mr. Hume, in his Eſſays, aſſerts, that it is unintelligible and abſurd to conclude, that the ideas of primary qualities are attained by *abſtraction*; and he has purſued Berkeley's reaſoning to an extent, which he himſelf never intended, and repreſented all his arguments as merely ſceptical, ‘becauſe they admit of no ‘anſwer, and produce no conviction.’ He concurs with Dr. Berkeley in denying the exiſtence of matter; and advances a ſtep farther, maintaining, that the ſoul is merely a bundle of perceptions, and that there is nothing in the univerſe but impreſſions and ideas.

Some late Scotch writers, Drs. Reid, Beattie, and Oſwald, with a view of obviating thoſe ſceptical inferences, which had been deduced from the principles of Mr. Locke, have, in oppoſition to theſe, offered a new ſyſtem reſpecting the nature and origin of our ideas, the outlines of which, with remarks, the editor propoſes to inſert, under their proper heads, in the courſe of this work. See Ideas, Intuition, *Common* Sense.

We ſhall only add, that *abſtracting*, on the common ſyſtem, is no more than generalizing: it is making one thing ſtand for an hundred, by omitting the conſideration of the differences between them: it is taking ſeveral differents, i. e. different combinations, ſetting aſide the peculiarities in each, and conſidering only what is found alike in all.—Thus it is that I ſay, I love my friend, love my miſtreſs, love myſelf, my bottle, my book, my eaſe, &c. —Not that it is poſſible I ſhould have the ſame perception with reſpect to ſo many different ſorts of things, things that ſtand in ſuch different relations to me; but only that there appearing ſomething in them all that bears a reſemblance to the reſt, in ſome circumſtance or other, I chuſe to expreſs all by one name, *love.* For if I conſider the tendency and effects of them all, I ſhall find they lead me very different ways, to very different actions; all the analogy there is between them, is a ſort of pleaſure or ſatisfaction, ariſing upon the application of the particular object to its proper organ, or ſenſe.-- The *abſtract* idea of love, then, will terminate in the idea of pleaſure: but it is certain, there can be no idea of pleaſure, without a thing pleaſant to excite it. Any other *abſtract* idea of pleaſure, will amount to no more than a view or perception of the circumſtances wherewith our pleaſures have been attended: but theſe are mere externals, foreign to the pleaſurable ſenſation itſelf; which nothing but an object applied in ſuch and ſuch a manner, can excite.—To ſuppoſe an idea of pleaſure produced indirectly, by any other than the proper cauſe, is as abſurd as to ſuppoſe an idea of ſound, produced without a ſonorous object. The mind has no power of making any ideas, call them what you will, whether *abſtract* or *concrete*; or *general*, or *particular*: its activity goes no farther than to the perceiving of ſuch as are preſented to it: ſo that its action is really no other than a degree of paſſion.

ABSTRACTION, in *Chemiſtry*, denotes the drawing off, or exhaling away, a menſtruum from the ſubject it had been put to diſſolve.

Some alſo uſe the word as ſynonymous with DISTILLATION, or even COHOBATION.

ABSTRACTITIOUS, or ABSTRACTIVE, is applied by ſome modern *Chemiſts*, to a ſpirit drawn from vegetables without fermentation.

In which ſenſe *abſtractitious* ſpirits are ſynonymous with natural ſpirits, and ſtand oppoſed to fermentative or artificial ones.

Such ſpirits are chiefly procured from plants which abound in volatile ſalt. The *abſtractitious* ſpirit of ſcurvygraſs is preferred to that procured by fermentation. All the native ſpirits of aromatic plants are called *abſtractitious.*

ABSTRUSE, denotes ſomething deep, hidden, or far removed from the common apprehenſions, and ways of conceiving; in oppoſition to what is obvious and palpable.

The word is of Latin original, *abſtruſus*; formed of *abs, from*; and *trudo, I thruſt.*

In this ſenſe, *Metaphyſics* is an *abſtruſe* ſcience; and many ſpeculations of mathematics are likewiſe *abſtruſe.*

ABSURD, ABSURDUM, a term applied to any action or ſentiment that thwarts, or goes contrary to ſome evident truth.

Thus, a propoſition would be *abſurd*, that ſhould affirm, that two and two make five; or that ſhould deny them to make four.

The *Logicians* and *Mathematicians* have a way of proving the truth of a propoſition, by ſhewing that the contrary is *abſurd.*

This they call

Reductio ad ABSURDUM, or *arguing ex abſurdo.*

Abſurd, when applied to actions, is ſynonymous with *ridiculous.*

ABSURDITY, a kind of error or offence againſt ſome evident, and generally allowed truth, or principle.

The greateſt of all *abſurdities* is CONTRADICTION.

The ſchoolmen make two ſpecies of *abſurdities*—The one, *abſolute*, απλως, which contradicts the common ſenſe of mankind: the other *relative*, τινι, which gives the lye to ſome one, or more philoſophers; or perſons of great weight and authority.

In this ſenſe, the doctrine of a *vacuum* is an abſurdity; as being contrary to Ariſtotle: and that of a *plenum*, as being contrary to Sir Iſaac Newton.—In effect, there is ſcarce one truth of any moment, that is not an *abſurdity* in this ſenſe; as being repugnant to the ſyſtem of ſome ſect, or party.

As reaſon conſiſts in the due uſe of names and words, *abſurdity* conſiſts in the abuſe of them. The higheſt of all our faculties, and our failings, take their riſe from the ſame thing, language; and are as it were coupled together, to temper each other, and reduce human nature to a kind of mediocrity.

Hobbes aſſigns *abſurdity* as a privilege peculiar to man, and which no other creature is capable of: he adds, that of all men, thoſe called philoſophers, are moſt expoſed to it. Whence the ſaying of Cicero, there is nothing ſo *abſurd* but has been ſaid by a philoſopher, *nihil tam abſurde dici poteſt, quod non dicatur a philoſopho.* The reaſon ſeems to be, that of all men they reaſon, and diſcourſe moſt. Yet a nearer and more appoſite cauſe may be aſſigned, viz. their neglect, at ſetting out, to define the terms they make uſe of, i. e. to aſſign the preciſe idea each is made to repreſent: which is much like a man's undertaking to number, without knowing the value of the numeral figures; reaſoning, according to the author firſt cited, being no other than computing. Divers *abſurdities* alſo ariſe from the wrong connecting names into propoſitions; as firſt, when the names of bodies are applied to accidents; or the names of accidents to bodies: as in that propoſition, 'faith is infuſed, or inſpired;' ſince nothing is either fuſible, or inſpirable, but body: and the ſame *abſurdity* the Carteſians fall into, when they make extenſion to conſtitute body, &c. Secondly, when the names of accidents inherent in external bodies are attributed to accidents of our own bodies; as when it is ſaid that colour is in the object, ſound in the air, &c. Thirdly, when the names of bodies are attributed to words, or conceptions; as is done by thoſe who aſſert that there are univerſal things, that animal is a genus, &c. Fourthly, when the names of accidents are given to words, and propoſitions; as when it is ſaid that the definition is the nature of the thing, or a perſon's command is his will. Fifthly, when in lieu of proper words, metaphors and tropes are made uſe of; as, the way leads to ſuch a place, the proverb ſays this or that: which though allowable on ordinary occaſions, yet is of miſchievous conſequence in reaſoning and ſearching after truth. Laſtly, when names are taken at random, and uſed without meaning, as tranſubſtantiation, conſubſtantiation, *entelechia*, &c.

He that can avoid theſe rocks will not eaſily fall into an *abſurdity*, except in a very long chain of reaſoning, when he may be apt to forget ſome propoſition before laid down.

ABSUS, the Egyptian LOTUS. Ray.

ABSYNTHIUM, or ABSINTHIUM, a medicinal plant, of conſiderable efficacy in quality of a bitter, and ſtomachic; popularly called WORMWOOD.

The word ſeems compounded of the primitive particle *α*, and ψινθος, *delectatio, pleaſure*; alluding to the diſagreeable taſte of this plant.

ABSYNTHUS, in *Natural Hiſtory*, the name of a ſtone, deſcribed by ſome old authors as being of a black colour, variegated with ſpots and veins of red. They ſay that, when once heated, it retains the warmth for ſeven days. The account ſeems ſuperſtitious and imaginary, and the deſcriptions they give ſo ſhort, that it is not eaſy to gueſs what ſtone, if any in nature, was meant to be pointed out by them. Probably the word is only a corruption of the ASIICTOS, or ASYCTOS, of Pliny.

ABUCCO, ABOCCO, or ABOCCHI, a weight uſed in the kingdom of Pegu. One *abucco* is twelve teccalis and a half; two *abuccos* make an agiro, which is alſo called giro; two giri make half a biza; and the biza weighs a hundred teccalis; that is to ſay two pounds and five ounces the heavy weight, or three pounds nine ounces light weight of Venice.

ABUKESB. See ASLANI.

ABUNA, among the Chriſtian Arabs, is the title or appellation of a religious character.

The word, which is Arabic, is ſometimes alſo written *abouna*, ſometimes *abana*, and by ſome *abbuna*, or *abunna*; it literally denotes *father*, and is more particularly uſed for the archbiſhop, or metropolitan of the Abyſſinian church.

ABUNDANT *Numbers*, are thoſe whoſe quota-parts, added together, exceed the NUMBER itſelf whereof they are parts.

Thus, the number 12 is *abundant*, its quota-parts, 1, 2, 3, 4, and 6, amounting to 16.—In oppoſition to *abundant* numbers ſtand DEFECTIVE ones.

ABUNDANT *Notion*, in *Logic*, is that which includes more marks and characteriſtics than are neceſſary to diſtinguiſh it from others.

Thus, we may be ſaid to give an *abundant* notion of a rectilinear triangle, when we deſcribe it as a ſpace terminated by three right lines, and containing three angles. Inaſmuch as the number of its angles is determined by that of its ſides; ſo that the bare mention of its three ſides was ſufficient to have defined it.

ABUSE; an irregular uſe of a thing, or the introducing ſomething contrary to the true intention thereof.

The word is compounded of *ab, from*; and *uſus, uſe.*

In *Grammar*, to apply a word *abuſively*, or in an *abuſive* ſenſe, is to miſapply, or pervert its meaning.

A permutation of benefices, without the conſent of the biſhop, is deemed *abuſive*, and conſequently is null.

ABUTILON, in *Botany*, the name of a genus of plants, allied to the mallow kind. Dr. Linnæus calls it *Sida*, and ranges it in the claſs of monadelphia.

The characters are theſe: the flower wholly reſembles that of the mallow; but the fruit reſembles a ſort of head compoſed of ſeveral capſules, ſo diſpoſed round an axis, that every *ſtria* of that receives one of theſe. Theſe capſules are bivalve, and uſually contain kidney-ſhaped ſeeds.

Miller enumerates ſixteen ſpecies of this plant; which is aſperient and vulnerary. The leaves externally applied cleanſe ulcers; the ſeed provokes urine, and expels gravel.

ABUTTALS, Abbutals, Abutals, among *Law*-writers, denote the buttings or boundings of a piece of land; expreſſing on what other lands, highways, or the like, the ſeveral extremes thereof do *abut*, or terminate. See Boundary.

In this ſenſe, the word is ſometimes alſo written corruptly *abuttals*, or *abutals.*—In old ſurveys, we often find them called *headlands.*—*Abuttals* amount to the ſame with what Latin writers call *capita*; Marculfus, *frontes*; the French, *bouts.*—In Coke, the plaintiff is ſaid to fail in his *Abuttals*, that is, in ſetting forth how the land is bounded.

ABYSS, in a general ſenſe, denotes ſomething profound, and, as it were, bottomleſs.

The word is originally Greek, αϐυσσος; compounded of the privative α, and βυσσος, *bottom*; q. d. without a bottom.

We ſay, the *abyſs* of a mountain, an *abyſs* of waters, the great *abyſs*, the Moſaic *abyſs*, an unfathomable *abyſs*, &c.

Abyss, in a more particular ſenſe, denotes a deep maſs, or fund of waters.

In this ſenſe, the word is particularly uſed, in the Septuagint, for the water which God created at the beginning with the earth, which encompaſſed it round, and which our tranſlators render by the *deep.*—Thus it is that darkneſs is ſaid to have been on the face of the *abyſs*.

Abyss is alſo uſed for an immenſe cavern in the earth, where God collected all thoſe waters on the third day; which, in our verſion, is rendered the *deep*, and elſewhere, the *great deep*.

Dr. Woodward has made ſeveral obſervations and conjectures with reference to this great *abyſs*, in his Natural Hiſtory of the Earth.—He aſſerts, that there is a mighty collection of waters incloſed in the bowels of the earth; conſtituting a huge orb in the interior or central parts of it; and over the ſurface of this water he ſuppoſes the terreſtrial ſtrata to be expanded.—This, according to him, is what Moſes calls the *great deep*, and what moſt authors render the *great abyſs*.

That there is ſuch an aſſemblage of waters lodged in the depths of the earth, is confirmed by abundance of obſervations. See Earth and Deluge.

The water of this vaſt *abyſs*, he aſſerts, does communicate with that of the ocean, by means of certain hiatuſes, or chaſms paſſing betwixt it and the bottom of the ocean: and this and the *abyſs* he ſuppoſes to have one common centre, around which the water of both is placed; but ſo that the ordinary ſurface of the *abyſs* is not level with that of the ocean, nor at ſo great a diſtance from the centre as the other, it being, for the moſt part, reſtrained and depreſſed by the ſtrata of earth lying upon it; but wherever thoſe ſtrata are broken, or are ſo lax and porous, that water can pervade them, there the water of the *abyſs* aſcends, fills up all the clefts and fiſſures into which it can get admittance; and ſaturates all the interſtices and pores of the earth, ſtone, or other matter, all round the globe, quite up to the level of the ocean.

The exiſtence of an *abyſs*, or receptacle of ſubterraneous waters, is controverted by Camerarius, and defended by Dr. Woodward, chiefly by two arguments; the firſt, drawn from the vaſt quantity of water, which covered the earth in the time of the deluge; the ſecond, from the conſideration of earthquakes, which he endeavours to ſhew are occaſioned by the violence of the waters in this *abyſs*.—A great part of the terreſtrial globe has been frequently ſhaken at the ſame moment; which argues, that the waters, which were the occaſion hereof, were co-extended with that part of the globe. There are even inſtances of univerſal earthquakes; which ſhew that the whole *abyſs* muſt have been agitated: for ſo general an effect muſt have been produced by as general a cauſe; and that cauſe can be nothing but the ſubterraneous *abyſs*. For the true cauſe of earthquakes, ſee Earthquake.

This *abyſs* is no uſeleſs thing; when once eſtabliſhed, it ſerves to ſolve ſeveral difficult phænomena; as the origin of ſprings and rivers; the level maintained in the ſurface of different ſeas, and their not overflowing their banks. To the effluvia emitted from this *abyſs* ſome even attribute all the diverſities of weather, and changes in our atmoſphere; and what is more, the origin of every thing in the earth, or on its ſurface. Dr. Woodward has an epiſtle on the œconomy of the great *abyſs* hid in the bowels of the earth, and the perpetual communication between it and the atmoſphere. Ray, and other authors, ancient as well as modern, ſuppoſe a communication between the Caſpian ſea and the ocean, by means of a ſubterranean *abyſs*: and to this they attribute it, that the Caſpian does not overflow, notwithſtanding the great number of large rivers it receives; of which Kempfer reckons above fifty, in the compaſs of ſixty miles. But the daily evaporation may be ſufficient for this purpoſe. See Evaporation, Seas, Springs.

Abyss is alſo uſed to denote the cavernous belly of a hollow mountain.

In which ſenſe Mr. Tournefort deſcribes the *abyſs* of mount Arrarat, a horrible ſpectacle.

Abyss is alſo uſed to denote *Hell*. In which ſenſe the word is ſynonymous with what is otherwiſe called Barathrum, Erebus, and Tartarus; in the Engliſh Bible, the *bottomleſs pit*.

Abyss is more particularly uſed, in *Antiquity*, to denote the temple of Proſerpine.

It was thus called, on account of the immenſe fund of gold and riches depoſited there; ſome ſay hid under ground.

Abyss is alſo uſed, in *Heraldry*, to denote the center of an *Eſcutcheon*.

In which ſenſe, a thing is ſaid to be borne in *abyſs*, *en abyſme*, when placed in the middle of the ſhield, clear from any other bearing: he bears azure, a fleur de lys, in *abyſs*.

Abyss is alſo uſed, by ſome *Alchemiſts*, for the immediate receptacle of ſeminal matter; by others for the firſt matter itſelf.

Abyss is alſo uſed metaphorically for a thing not to be known or comprehended, on account of its immenſe extent, or profundity.

In which ſenſe it coincides with ſecret, inſcrutable, incomprehenſible, &c.—The judgments of God are called a great *abyſs*.

Abyss, in *Hydrography*, is ſynonymous with gulph.

ABYSSINIAN is uſed as the name of a ſect, in the Chriſtian church, eſtabliſhed in the empire of Abyſſinia.

The *Abyſſinians* are a branch of the Cophts, or Jacobites; with whom they agree in admitting only one nature in Jeſus Chriſt, and rejecting the council of Chalcedon: whence they are alſo called monophysites, and eutychians.

The *Abyſſinian* church is governed by a biſhop, or metropolitan, ſtyled abuna, ſent them by the Cophtic patriarch of Alexandria reſiding at Cairo, who is the only perſon that ordains prieſts.

They have canons alſo, and monks; the former of whom marry, the latter at their admiſſion vow celibacy, but with a reſervation. Le Grand ſays, they make a promiſe aloud, before their ſuperior, to keep chaſtity, but add in a low voice, *as you keep it*. The emperor has a kind of ſupremacy in eccleſiaſtical matters.

The *Abyſſinians* have divers times expreſſed an inclination to be reconciled to the ſee of Rome; but rather out of intereſt of ſtate than any other motive.

Meneſis, and other miſſionaries, accuſe the *Abyſſinians* of Judaiſm, in regard to the many Jewiſh obſervances ſtill in uſe among them: ſome have even doubted, whether they are more Chriſtians, or Jews? Lobo ſays expreſly they are only Chriſtians in name: they practiſe circumciſion on females, as well as males.—They eat no meats prohibited by the law of Moſes.—Women are obliged to the legal purifications.—Brothers marry their brothers wives, &c. They abſtain from hog's fleſh, blood, meats ſtrangled, &c. and obſerve both Saturday and Sunday ſabbath, according to the cuſtom of the primitive church: all of them marks of Judaiſm; though by ſome reſolved into mere human inſtitution, and uſage. They celebrate the Epiphany with peculiar feſtivity, in memory of Chriſt's baptiſm; when they plunge and ſport in ponds and rivers, which has occaſioned ſome to affirm that they were baptized a-new every year. Among the ſaints-days is one conſecrated to Pilate and his wife; becauſe Pilate waſhed his hands before he pronounced ſentence on Chriſt; and his wife deſired him to have nothing to do with the blood of that juſt perſon. They have four lents: the great one commences ten days earlier than ours, and is obſerved with much ſeverity, many abſtaining therein even from fiſh, becauſe St. Paul ſays there is one kind of fleſh of men, and another of fiſhes. They allow of divorce, which is eaſily granted among them, and by the civil judge: nor do their civil laws prohibit polymagy. They have at leaſt as many miracles, and legends of ſaints, as the Romiſh church; which proved no ſmall embarraſſment to the Jeſuit miſſionaries, to whom they produced ſo many miracles, wrought by their ſaints, in proof of their religion, and thoſe ſo well circumſtantiated and atteſted, that the Jeſuits were obliged to deny miracles to be any proof of a true religion; and in proof hereof to alledge the ſame arguments againſt the *Abyſſinians*, which proteſtants in Europe alledge againſt the papiſts. Ludolf allows that they believe the real preſence after the Lutheran manner, but denies that they hold tranſubſtantiation; though Renaudot aſſerts, that they maintain it. They pray for the dead, and invoke ſaints and angels; have ſo great a veneration for the Virgin, that they charged the Jeſuits with not rendering her honour enough. Images in painting they venerate, but abhor all thoſe in relievo, except the croſs. They hold that the ſoul of man is not created, becauſe, ſay they, God finiſhed all his work on the ſixth day. They admit the apocryphal books, and the canons of the apoſtles, as well as the Apoſtolical Conſtitutions, for genuine. Their liturgy is given by Alvarez, and in Engliſh by Pagit; their calendar by Ludolf; the anſwers of abba Gregory to certain queſtions, propoſed by the author laſt cited, are publiſhed by Fabricius, under the title of Theologia Æthiopica.

ACACALIS, in the *Materia Medica*, the name given by ſome authors to the *ſiliqua ſylveſtris*, or wild *carob*.

ACACALOTL, in *Zoology*, the name of an American bird, called by ſome CORVUS *aquaticus*, or the water raven. The male is four ſpans long from his beak to the end of his tail, and is moderately fleſhy; his legs are a ſpan and a half long. Its beak is two hands breadth long, is bent like a bow, and of a blue colour; its head is ſmall; it is of a mixt brown and red colour on the breaſt and belly, and of a finely variegated hue on the back, made up of a ſhining purple, black, and green; its wings are of a fine green, which looks very bright and gloſſy in the ſun. It is a native of Mexico, and is common about lakes and rivers, feeding on fiſh; it is eaten, but is coarſe, and of a rank fiſhy taſte.

ACACIA, in *Botany*, the name of a genus of trees, the characters of which are theſe: the flower conſiſts only of one leaf, and is of the funnel-faſhioned kind, and uſually contains a great number of ſtamina, and the flowers are commonly collected in cluſters, or little heads; the piſtil ariſes from the bottom of the flower, and finally becomes a ſiliquoſe fruit divided into ſeveral hollows, and containing a number of roundiſh ſeeds. The *acacias* belong to the polyandria monogynia claſs of Linnæus.

The ſpecies of *acacia* enumerated by Mr. Tournefort are twelve; and by Miller twenty-two.

The Æthiopian pepper of Matthiolus ſeems to belong to this genus of plants.

The flowers of the *acacia* are uſed by the Chineſe in making that yellow, which, we ſee, bears waſhing in their ſilks and ſtuffs; and appears with ſo much elegance in their painting on paper. The method is this:

They gather the flowers before they are fully open; theſe they put into a clean earthen veſſel over a gentle heat, and ſtir them continually about, as they do the tea-leaves, till they become dryiſh and of a yellow colour; then to half a pound of the flowers they add three ſpoonfuls of fair water, and after that a little more, till there is juſt enough to hold the flowers incorporated together: they boil this for ſome time, and the juice of the flowers mixing with the water, it becomes thick and yellow; they then take it from the fire, and ſtrain it through a piece of coarſe ſilk. To the liquor they add half an ounce of common alum, and an ounce of calcined oyſter-ſhells reduced to a fine powder. All is then well mixed together; and this is the fine laſting yellow they have ſo long uſed.

The dyers of large pieces uſe the flowers and ſeeds of the *acacia* for dying three different ſorts of yellow. They roaſt the flowers, as before obſerved; and then mixing the ſeeds with them, which muſt be gathered for this purpoſe when full ripe: by different admixtures of theſe, they give the different ſhades of colour, only for the deepeſt of all, they give a ſmall mixture of Braſil wood.

Mr. Geoffroy, with great probability, attributes the origin of bezoar to the ſeeds of this plant; which being brouſed by certain animals, and vellicating the ſtomach by their great ſourneſs and aſtringency, cauſe a condenſation of the juices, till at length they become coated over with a ſtony matter, which we call BEZOAR, or BEZOARD.

ACACIA *Indiana*, ſignifies TAMARIND.

ACACIA; *baſtard* or *falſe* ACACIA, *robinia*, in *Botany*; Lin. Gen. Plant. 775. Its characters are theſe: the empalement of the flower is ſmall, and divided into four parts, the three under ſegments being narrow, but the upper one broad. The flower is of the PEA-*bloom* kind; the ſtandard is large, roundiſh, obtuſe, and ſpreads open. The two wings are oval, and have ſhort appendices, which are obtuſe. The heel is roundiſh, compreſſed, obtuſe, and is extended the length of the wings. In the center is ſituated ten ſtamina, nine joined together, and the other ſtanding ſingle, terminated by roundiſh ſummits. It hath an oblong cylindrical germen, ſupporting a ſlender ſtyle, crowned by a hairy ſtigma. The germen afterward becomes an oblong, compreſſed pod, incloſing kidney-ſhaped ſeeds. There are ten ſpecies.

ACACIA *Zeylanica*, ſignifies LOGWOOD.

ACACIA, in *Medicine*, an inſpiſſated juice of a ſhrub of the thorn kind, uſed as an aſtringent.

It is prepared by inſpiſſating, to a due conſiſtence, the juice expreſſed from the unripe pods of a large prickly tree of this name.

There are two kinds, the *vera*, and *germanica*.

The ACACIA *vera* is brought from the Levant in round balls, of different ſizes, in fine bladders; and ſuppoſed to be the juice of the pods of a large thorny tree, growing in Egypt and Arabia.—Some naturaliſts will have it the ſame tree that yields the gum arabic.

This is very auſtere, and binding; and, on that account, good againſt fluxes.—Chuſe that of a tan-colour, ſmooth, and ſhining; and of an aſtringent diſagreeable taſte.—It is, or ſhould be, an ingredient in the *Theriaca Andromachi*.

The *German* ACACIA is a counterfeit of the former; being made of the juice of unripe ſloes, boiled to the conſiſtence of a ſolid extract, and put up in bladders like the former.—It is diſtinguiſhed from it chiefly by its colour, which is as black as that of Spaniſh liquorice.—It is uſed as a ſubſtitute to the true *acacia*.

ACACIA, among *Antiquaries*, denotes ſomething reſembling a kind of roll, or bag, ſeen on medals in the hands of ſeveral of the conſuls, and emperors, from the time of Anaſtaſius.

According to Du Cange, the *ακακια*, properly ſo called, was a purple bag, filled with earth, or ſand, and bore by the prince in his left hand, to remind him of his frailty and mortality; to prevent his being too much elated with his ſtation.

But authors are not agreed, either about the uſe of this roll, or about the ſubſtance whereof it conſiſts; ſome taking it for a handkerchief rolled up, which the perſon who preſided at the games threw out as a ſignal for their beginning; whilſt others rather imagine it intended to repreſent a roll of memoirs, or petitions.

ACACIANS, in *Church Hiſtory*, the followers of Acacius, biſhop of Cæſarea, who flouriſhed about the middle of the fourth century. Some of them maintained, that the Son was not of the ſame, but of a ſimilar ſubſtance with the Father: others held that he was of a different ſubſtance from the Father. This was likewiſe the denomination of another ſect, derived from the name of their leader, a patriarch of Conſtantinople, in the fifth century, who favoured the opinion of Eutyches. See EUTYCHIANS.

ACADEMICS, a ſect of philoſophers, who followed the doctrine of Socrates and Plato, as to the uncertainty of knowledge, and the incomprehenſibility of truth.

Academic, in this ſenſe, amounts to much the ſame with Platoniſt; the difference between them being only in point of time. They who embraced the ſyſtem of Plato, among the ancients, were called *academici*; whereas thoſe who did the ſame ſince the reſtoration of learning, have aſſumed the denomination of Platoniſts.

We uſually reckon three ſects of *academics*; though ſome make five.—The ancient *academy* was that whereof Plato was the chief. See PLATONISM.

Arceſilas, one of his ſucceſſors, introducing ſome alterations into the philoſophy of this ſect, founded what they call the *ſecond academy*.

The eſtabliſhment of the third, called alſo the *new academy*, is attributed to Lacydes, or rather to Carneades.

Some authors add a fourth, founded by Philo; and a fifth by Antiochus, called the *Antiochan*, which tempered the ancient *academy* with STOICISM.

The ancient *academy* doubted of every thing; and went ſo far as to make it a doubt, whether or no they ought to doubt.—It was a ſort of principle with them, never to be certain, or ſatisfied of any thing; never to affirm, or deny any thing, either for true or falſe.—In effect, they aſſerted an abſolute ACATALEPSIA.

The *new academy* was ſomewhat more reaſonable; they owned ſeveral things for truths, but without attaching themſelves to any with entire aſſurance.—Theſe philoſophers had found, that the ordinary commerce of life and ſociety was inconſiſtent with the abſolute and univerſal doubtfulneſs of the ancient *academy*: and yet, it is evident, they looked upon things rather as probable, than as true and certain: by this amendment, thinking to ſecure themſelves from thoſe abſurdities into which the ancient *academy* had fallen. See the *academical* queſtions of Cicero; where that philoſopher explains, and unravels the ſentiments of thoſe who in his days called themſelves followers of the new and old *academy*, with great clearneſs and addreſs.

ACADEMICS, or rather **ACADEMISTS**, is alſo uſed among us for the members of the modern *academies*, or inſtituted ſocieties of learned perſons.

ACADEMY, ACADEMIA, in *Antiquity*, a fine villa, or pleaſure-houſe, ſituate in one of the ſuburbs of Athens, about a mile from the city; where Plato, and the wiſe men who followed him, held aſſemblies for diſpute and philoſophical conference; and which gave the denomination to the ſect of ACADEMICS.

It took its name, *academy*, from one Academus, or Ecademus, a citizen of Athens, to whom it originally belonged; and who uſed to have gymnaſtic ſports or exerciſes therein.—He lived in the time of Theſeus.

Some, miſtakenly, derive its name and origin from Cadmus the Phœnician, as being the firſt who introduced learning, and the uſe of letters, among the Greeks.

The *academy* was farther improved and adorned by Cimon, with fountains, trees, ſhady walks, &c. for the convenience of the philoſophers, and men of learning, who here met to confer, diſpute, &c.—Hipparchus, the ſon of Piſiſtratus, built a wall round it; and in order to defray the charges, laid ſo heavy a tax on the people, that ever after Ἱππαρχȣ τειχιον, was uſed proverbially for any expenſive buſineſs.—It was alſo the burying-place of illuſtrious perſons, who had deſerved well of the republic.

Here it was that Plato taught his philoſophy; and from him all public places, deſtined for the aſſemblies of the learned and ingenious, have been ſince called ACADEMIES.

Sylla ſacrificed the delicious groves and walks of the *academy*, planted by Cimon, to the laws of war; and employed thoſe very trees to make machines wherewith to batter the city. Cicero alſo had a villa, or country retirement, near Puzzuoli, which he called by the ſame name, *academia*; where he uſed to entertain his philoſophical friends.—It was here he compoſed his Academical Queſtions, and his books De Natura Deorum.

ACADEMY is more frequently uſed among the moderns, for a regular ſociety, or company of learned perſons; inſtituted under the protection of a prince, for the cultivation and improvement of arts or ſciences.

Some authors confound *academy* with univerſity; but though much the ſame in Latin, they are very different things in Engliſh.—An univerſity is, properly, a body compoſed of graduates in the ſeveral faculties; of profeſſors, who teach in the public ſchools; of regents or tutors, and ſtudents who learn under them, and aſpire likewiſe to degrees. Whereas, an *academy* is not intended to teach, or profeſs any art, ſuch as it is, but to improve it: it is not for novices to be inſtructed in, but for thoſe that are more knowing; for perſons of diſtinguiſhed abilities to confer in, and communicate their lights and diſcoveries to each other, for their mutual benefit and improvement.

The firſt *academy* we read of, was eſtabliſhed by Charlemagne at the motion of Alcuin: it was compoſed of the chief wits of the court, the emperor himſelf being a member.—In their *academical* conferences, every perſon was to give an account of what ancient authors he had read; and each of them aſſumed the name of ſome ancient author, who pleaſed him moſt, or ſome celebrated perſon of antiquity. Alcuin, from whoſe letters we learn theſe particulars, took that of Flaccus, the ſurname of Horace: a young lord, named Augilbert, took that of Homer: Adelard, biſhop of Corbie, was called Auguſtin: Riculfe, biſhop of Mentz, was Dametas; and the king himſelf, David.

Moſt nations have now their *academies*, Ruſſia not excepted.

Of theſe uſeful inſtitutions we ſhall give an account in the following order.

ACADEMIES *of Antiquities*; as

The *academy* at Cortona, lately eſtabliſhed for the ſtudy of the Hetrurian antiquities, and conſequently, by right of conqueſt, the antiquities of the whole world. Their head is called Lucumon, a name taken from the ancient governors of Hetruria. One of their laws is, to give audience to poets only one day in the year: another is, to fix their ſeſſions, and impoſe a tax of a diſſertation on each member in his turn.

The *academy of Antiquities* at Upſal, owes its riſe to queen Chriſtina, but its eſtabliſhment chiefly to Charles Guſtavus her ſucceſſor. Its deſign is for illuſtrating the northern languages, and the antiquities of the country, as ſtones, coins, and the like monuments; in which notable diſcoveries have been made by it. The more eminent of its members have been Verelius, Loccenius, Scheffer, Rudbecks, Keder, Salin, Perinſkiold, &c.

ACADEMY, *Royal, of Arts*, was inſtituted in London for the encouragement of *Deſigning, Painting, Sculpture*, &c. &c. in the year 1768. This *academy* is under the immediate patronage of the king, and under the direction of *forty* artiſts of the firſt rank in their ſeveral profeſſions. It furniſhes, in winter, living models of different characters to draw after, and in ſummer, models of the ſame kind to paint after. Nine of the ableſt *academicians* are annually elected out of the forty, whoſe buſineſs is to attend by rotation, to ſet the figures, to examine the performances of the ſtudents, and to give them neceſſary inſtruction. There are likewiſe *four* profeſſors, of *Painting*, of *Architecture*, of *Anatomy*, and of *Perſpective*, who annually read public lectures on the ſubjects of their ſeveral departments; beſide a preſident, a council, and other officers. The profeſſors and *academicians* have ſalaries annexed to their employments; and the *academy* is provided, by the munificence of his majeſty, with a conſiderable ſum, which is annually diſtributed for the relief of indigent artiſts, and their diſtreſſed families. The admiſſion to this *academy* is free to all ſtudents properly qualified to reap advantage from the ſtudies cultivated in it; and there is an annual exhibition of paintings, ſculptures, and deſigns, open to all artiſts of diſtinguiſhed merit.

ACADEMIES *of Belles Lettres*, thoſe wherein eloquence and poetry are chiefly cultivated. Italy is full of theſe; and France has its ſhare; ſuch are

The *academy of Umidi* at Florence, called afterwards La Fiorentina, in honour of the grand duke Coſmo I. who declared himſelf its protector in 1549, is illuſtrious both for the works it has produced, and its members; which for theſe two laſt ages have included moſt of the eminent men, not only in Tuſcany, but in all Italy. Their chief attention is to the Italian poetry.

ACADEMY *of Humoriſts, Umoriſti*, had its origin at Rome, from the marriage of Lorenzo Mancini, a Roman gentleman, at which ſeveral perſons of condition were gueſts; and it being carnival-time, to give the ladies ſome diverſion, they took themſelves to the reciting of verſes, ſonnets, ſpeeches, and comedies, firſt *ex tempore*, and afterwards premeditatedly; which gave them the denomination of *Belli humori*. After ſome experience, coming more and more into the taſte of theſe exerciſes, they reſolved to form an *academy* of *Belles Lettres*; and changed the title of *Belli Humori* for that of *Humoriſti*; chooſing for their device a cloud, which after being formed of the ſaline exhalations of the ſea, returns in a gentle ſweet ſhower, with the motto from Lucretius, *redit agmine dulci*.

ACADEMY *of Arcadi* was eſtabliſhed at Rome in 1690, for reviving the ſtudy of poetry, and the *Belles Lettres*; and comprehends moſt of the politer wits in Italy, of both ſexes; many princes, cardinals, and other eccleſiaſtics: to avoid all diſputes among whom, about pre-eminence, it is wiſely provided, that all appear maſked, after the manner of ſhepherds of Arcadia. Within ten years from its firſt eſtabliſhment, the number of *academiſts* amounted to ſix hundred. They hold aſſemblies ſeven times a year in a mead, or grove; of late in the gardens of the duke of Salviati. Six of theſe meetings are employed in the recitation of poems, and verſes of the *Arcadi* reſiding at Rome, who read their own compoſitions; except ladies and cardinals, who are allowed to make uſe of other ſhepherds for this office. The ſeventh meeting is ſet apart for the compoſitions of foreign, or abſent members; in which there is more entertainment than in all the reſt; becauſe the pieces produced here are written in all the different ſtyles and dialects of Italy. The government of this *academy* is wholly democratical, allowing of no prince, or protector, but only a *cuſtos*, who repreſents the whole ſociety, choſen each olympiad, that is, every four years; with a power of electing twelve others yearly, to aſſiſt him in the adminiſtration. Under theſe are two *ſubcuſtodes*, one vicar or *procuſtos*, and four deputies, or ſuperintendants, annually choſen. There are five ways of electing members; the firſt called *acclamation*, uſed when ſovereign princes, cardinals, and ambaſſadors of kings, deſire to be admitted; in which caſe the votes are given *viva voce*: the ſecond *annumeration*, introduced in favour of ladies and academical colonies; where the votes are taken privately: the third *repreſentation*, eſtabliſhed in favour of colleges and univerſities, where the young gentry are bred; who have each a privilege of recommending one, or two members privately, to be ballotted for: the fourth *ſurrogation*, whereby new ſhepherds are ſubſtituted in the room of thoſe dead, or expelled: the laſt, *deſtination*, whereby, when there is no vacancy of members, perſons of poetical merit have the title *Arcadi* conferred on them, till ſuch time as a vacancy ſhall happen. All the members of this body, at their admiſſion, aſſume new paſtoral names, in imitation of thoſe of ancient Arcadians.

The *academy* has divers colonies of *Arcadi* eſtabliſhed in other cities in Italy, all regulated after the ſame manner.

Academy, *Royal*, at Caën, was eſtabliſhed by letters patent in 1705; it had its riſe fifty years earlier in private conferences, held firſt in the houſe of M. de Brieux. M. de Segrais retiring to this city, to ſpend the reſt of his days, reſtored and gave new luſtre to their meetings. In 1707, M. Foucault, intendant of the generality of Caën, procured the king's letters patent for erecting them into a perpetual *academy*, of which M. Foucault was to be protector for the time, and the choice afterwards left to the members, the number of whom was fixed to thirty, and the choice of them, for this time, left to M. Foucault. Beſide the thirty, leave is given to add ſome ſupernumerary members, not exceeding ſix, from the eccleſiaſtical communities in that city.

An aſſembly of men of letters at Lyons, are ſaid only to want letters patent to form a royal *academy*, inferior to few in France. It conſiſts of twenty *academiſts*, with a director at their head, and a ſecretary who is perpetual. F. Lombard, a jeſuit, one of the members, here read a learned diſſertation on infinity.

Academies, *Chirurgical*; as that firſt inſtituted at Paris in 1731; and finally eſtabliſhed by letters patent from the king in 1751; the members of which are not only to publiſh their own and correſpondents obſervations and improvements, but to give an account of all that is publiſhed in ſurgery, and to compoſe a complete hiſtory of this art, by their extracts from all the authors, ancient and modern, who have wrote on it. A queſtion in ſurgery is to be propoſed by the *academy* yearly; and a prize of a gold medal of two hundred livres value to be given to him, who furniſhes the moſt ſatisfactory anſwer.

Academies, *Coſmographical*; as that of the Argonauts at Venice, inſtituted at the ſolicitation of F. Coronelli, for the improvement of *Geography*. The deſign of the *accademia coſmografica* is to procure exact maps, geographical, topographical, hydrographical, and ichnographical, of the celeſtial as well as terreſtrial globe, and the ſeveral regions and parts thereof, together with geographical, hiſtorical, and aſtronomical deſcriptions accommodated thereto, to be made and publiſhed: in order to which, the ſeveral members oblige themſelves, by their ſubſcription, to take one or more copies of each piece, publiſhed under the direction of the *academy*; and to advance the money, or part of it, in order to defray the charge of publication. To this end, there are three ſocieties ſettled, at Venice, Paris, and Rome; the firſt under F. Moro, provincial of the Minorites of Hungary; the ſecond, under the abbot Laurence au Rue Payenne au Marais; the third, under F. Ant. Baldigiani, jeſuit, profeſſor of mathematics in the Roman college; to whom thoſe addreſs themſelves, who are willing to engage in this deſign. The Argonauts number 196 members in the ſeveral countries of Europe: their device is the terraqueous globe, with the motto, *plus ultra*. At the expence of this *academy*, all the globes, maps, and geographical writings of F. Coronelli have been publiſhed.

Academy *of Dancing*. One of this kind was inſtituted by Louis XIV. with extraordinary privileges.

Academies, *Eccleſiaſtical*; as that at Bologna, employed in the examination of the doctrine, diſcipline, and hiſtory of each age of the church.

Academies, *Hiſtorical*; as the *Royal Academy of Portugueſe Hiſtory* at Liſbon, was inſtituted by king John V. in 1720; as appears by a medal ſtruck by the *academy*, on the front whereof is that prince's effigy, with the inſcription *Johannes* V. *Luſitanorum Rex*; and on the reverſe, the ſame prince ſtanding is repreſented ſupporting and raiſing Hiſtory, almoſt proſtrate before him, with the legend *Hiſtoria Reſurges:* underneath are the following words in abbreviature, REGia ACADemia HISToriæ LUSITanæ INSTITuta VI. Idus Decembris MDCCXX. This *academy* conſiſts of a director, four cenſors, a ſecretary, and fifty members; to each of whom is aſſigned ſome part, either of the eccleſiaſtical, or civil hiſtory of the nation; which he is to treat either in Latin, or Portugueſe.

Academy *of Suabian Hiſtory* at Tubingen, was lately eſtabliſhed by ſome learned men, for publiſhing the beſt hiſtorical writings, the lives of the chief hiſtorians, and compiling new memoirs, on the ſeveral points and periods thereof.

Academies *of Languages*, are called by ſome, *Grammatical Academies*; as

The *Academy della Cruſca* at Florence, famous for its vocabulary of the Italian tongue, was formed in 1582, but ſcarce heard of before the year 1584, when it became noted for a diſpute between Taſſo and ſeveral of its members. Many authors of note confound this with the Florentine *academy*.

Academy *of Fructiferi* had its riſe in 1617, at an aſſembly of ſeveral princes and nobility of the country, who met with a deſign to refine and perfect the German tongue. It flouriſhed long under the direction of princes of the empire, who were always choſen preſidents. In 1668, the number of members aroſe to upwards of nine hundred.

Academy, *French*, had its riſe in a private meeting of men of letters, in the houſe of Mr. Conrart, in the year 1628. Cardinal Richlieu, in 1635, at the inſtance of Mr. Chapelain, erected it into an *academy* for refining and aſcertaining the French language and ſtyle. The number of the members was limited to forty, out of whom, a director, a chancellor, and ſecretary, are to be choſen; the two former hold their poſt for two months, the ſecretary is perpetual. Several privileges and immunities were conferred on the new *academy*, particularly the *droit de committimus*, or a privilege of not appearing to anſwer before any court, but that of the king's houſhold. Their firſt aſſemblies were held in the cardinal's apartment; after his death, in that of the chancellor Seguier. At laſt an apartment was given them in the Louvre, now called *l'Academie Françoiſe*. They meet three times a week in the Louvre; at breaking up, forty ſilver medals are diſtributed among them, having on one ſide the king of France's head, and on the reverſe, *protecteur de l'academie*, with a laurel and this motto, *à l'immortalité*. By this diſtribution, the attention of the *academiſts* is ſecured: thoſe who are preſent receiving the ſurplus, otherwiſe intended for the abſent.

As to the employment of the *academy*; its deſign being not only to give rules, but examples of good writing: they began with making ſpeeches on ſubjects taken at pleaſure, each member in his turn: twenty of theſe have been printed. Their next work was a critique of the Cid of M. Corneille, a taſk enjoined them by the cardinal. They next ſet about a Dictionary of the French tongue, which, after about fifty years ſpent in it, in order to ſettle the words and phraſes to be uſed in writing, &c. was publiſhed in 1694; having in the mean while given occaſion to ſome ſmart diſputes with M. l'Abbe Furetiere, one of their own members.

Their hiſtory is written with great elegancy to the year 1652, by M. Peliſſon: improved and continued to the year 1700, by M. l'Abbe d'Olivet: the ſame is given rhetorically, by F. le Camus.

Academy, *Royal Spaniſh*, is an *academy* for cultivating the Caſtilian tongue, eſtabliſhed at Madrid, on the model of the French *academy*.—The deſign of this was laid by the duke d'Eſcalona; and approved of by the king in 1714, who declared himſelf protector thereof.—It conſiſts of twenty-four *academiſts*; including the director and ſecretary.

Its device is a crucible on the fire, with this motto, *Limpia, fija, y da eſplendor:* i. e. it purifies, fixes, and gives brightneſs; which ſome have criticized. Their object, as marked out by the royal declaration, is to cultivate and improve the national language: in order to which, they are to begin with chooſing carefully ſuch words and phraſes, as have been uſed by the beſt Spaniſh writers; noting the low, barbarous, or obſolete ones, and compoſing a dictionary, wherein theſe may be diſtinguiſhed from the former, &c. by which means, adds that prince, it will clearly appear, that the Caſtilian tongue is inferior to none of theſe moſt eſteemed in the world; and may be employed with advantage either in teaching the arts and ſciences, or in expreſſing the moſt perfect Latin or Greek originals in exact tranſlations. The number of members is limited to twenty-four; the duke d'Eſcalona to be director for life; but his ſucceſſors choſen yearly. The ſecretary to be perpetual. The *academy* to have its own printer; yet not to put any thing to preſs without the permiſſion of the council. For farther encouragement, all privileges and immunities enjoyed by the domeſtic officers, actually in the king's ſervice, and the royal palace, are granted the *academiſts*.

Academies *of Law*; as that famous one at Beryta, and that of the Sitientes at Bologna.

Academy *of Medals and Inſcriptions*, was erected for the ſtudy, and explanation of ancient monuments; and to conſecrate great and memorable events to poſterity, by ſimilar monuments; as medals, relievos, inſcriptions, &c. The *academy of medals and inſcriptions* at Paris, was ſet on foot by M. Colbert in 1663, for the ſtudy and explanation of ancient monuments, and perpetuating of great and memorable events, eſpecially thoſe of the French monarchy, by coins, relievos, inſcriptions, &c. The number of members at firſt was confined to four or five, but in 1701 was increaſed to forty; whereof ten to be honoraries, ten penſionaries, ten aſſociates, and the ſame number of novices or eleves. The king nominates their preſident and vice-preſident yearly; but their ſecretary and treaſurer are perpetual. The reſt are choſen by the members themſelves, agreeably to the conſtitutions given them on that behalf. Their chief work is a kind of medallic hiſtory of the reign of Louis XIV. Beſide which we have ſeveral volumes of their eſſays, under the title of memoirs; and their hiſtory, written and continued by their ſecretaries. Their motto is *Vetat mori*.

Academies, *Medical*; as that of the Naturæ Curioſi in Germany; that founded at Palermo, in 1645; another at Venice, in 1701, which meets weekly in a hall near the grand hoſpital; another at Geneva, in 1715, in the houſe of M. le Clerc. The college of phyſicians at London is alſo by ſome ranked in the number of medical *academies*.

Academy, *Muſical*; this conſiſts of the managers, and directors of the opera.

The French have alſo conſiderable *academies* in moſt of their great cities; as, at Montpelier, a royal *academy* of ſciences, on the like footing as that at Paris; being as it were a counterpart thereof: at Thoulouſe an *academy* under the denomination of Lanterniſts: others at Niſmes, Arles, &c.

Academy *of Naturæ Curioſorum*, in Germany, was firſt founded in 1652, by M. Bauſch, a phyſician; and taken in 1670 under the protection of the emperor Leopold.

This *academy* differs from all others, in that it has no fixed reſidence, or regular aſſemblies; inſtead whereof is a kind of bureau, or office, firſt eſtabliſhed at Breſlaw, afterwards removed to Nuremberg, where letters, obſervations, &c. from members and correſpondents are taken in. The *academy* conſiſts of a preſident, two adjuncts, or ſecretaries, and colleagues or members. The colleagues, at their admiſſion, oblige themſelves to two things; firſt, to chooſe ſome ſubject out of the animal, vegetable, or mineral kingdom to handle, provided it had not been treated of by any colleague before; the ſecond, to apply themſelves to furniſh materials for the annual Ephemerides. Each member to bear a ſymbol of the *academy*, viz. a gold ring, whereon, inſtead of a ſtone, is a book open, and on the face thereof an eye; on the other ſide the motto of the academy, *nunquam otioſus*, i. e. *never idle*. See the hiſtory, laws, &c. of this *academy*, with the names of its members, and the titles of its pieces, in Ephem. Germ. dec. 1. an. 1, & 2. Pref. and the continuation of the ſame in the prefaces and appendices to the enſuing volumes.

Academy, *Naval*; as that at Peterſburgh.

Academies *of Painting*, *Sculpture*, and *Architecture*; as thoſe celebrated ones anciently at Florence and Milan, called alſo *ſchools*; and that other at Bologna, lately incorporated into the new inſtitute; to which may be added the *academy* of painting and ſculpture at Paris and Vienna; another of deſigning at Rome.

Academy *of Painting and Sculpture* at Paris was eſtabliſhed fifty years ago, under the cardinal Mazarine, firſt protector thereof; and the chancellor Seguier, vice-protector.

It conſiſts of a director, a chancellor, four rectors, a treaſurer, twelve profeſſors; adjuncts to the rectors and profeſſors; counſellors; a ſecretary; a profeſſor for anatomy, and another for geometry and perſpective.

Perſons are here admitted either in quality of painters or ſculptors.—The painters are admitted according to their reſpective talents; there being a diſtinction made between thoſe who work in hiſtory, and thoſe who only paint portraits, or landſkips, or beaſts, or fruits, or flowers, or paint in miniature; or only deſign, or engrave, or carve, &c. An account of it has been publiſhed by Guerin, under the following title, Deſcript. de l'Acad. Roy. de Peinture & Sculpt.

There is alſo a French *academy* of painting, ſculpture, &c. at Rome, eſtabliſhed by Lewis XIV. wherein thoſe who have won the annual prizes in the like *academy* at Paris, are received and entertained for three years, to give them an opportunity for perfecting themſelves.

Academy, *Political*, is compoſed of ſix perſons, who meet on certain days each week at the Louvre, in the chamber where the papers relating to foreign affairs are lodged. Here they peruſe ſuch papers as are put in their hands, by order of the ſecretary for foreign affairs, who acquaints the king with the progreſs they make, and the capacities of each, that his majeſty may employ them accordingly.

Academies *of Sciences* chiefly denote thoſe erected for improving natural and mathematical knowledge, otherwiſe called philoſophical and phyſical *academies*: ſuch as the *academy ſecretorum naturæ*, formed at Naples, in the houſe of Baptiſta Porta, about the year 1560, the firſt *academy* of the philoſophical kind. It was ſucceeded by the

Academy *of Lyncei*, founded at Rome by prince Frederic Ceſi, towards the cloſe of the ſame century; ſeveral of whoſe members rendered it famous by their diſcoveries: the celebrated Galileo Galilei was of the number.

Divers other *academies* contributed alſo to the advancement of theſe ſciences; but it was by ſpeculations, rather than by repeated experiments on the phænomena of nature: ſuch were the *academy* of Beſſarian at Rome, and that of Laurence de Medicis at Florence, in the fifteenth century; in the ſixteenth, that of Infiammati at Padua, of Vegna Juoli at Rome, of Ortolani at Placentia, and of Umidi at Florence. The firſt of theſe ſtudied fire and pyrotechnia, the ſecond wine and vineyards, the third gardens and pot-herbs, the fourth water and hydraulics. Add to theſe, that of Venice, called La Veneta, founded by Frederic Badoara, a noble Venetian; another in the ſame city, whereof Campegio, biſhop of Feltro, appears to have been the chief; and that of Coſenza, or la Conſentina, whereof Bernadin Teleſio, Sertorio Quatromanni, Paulus Aquinas, Julio Cavalcanti, and Fabio Cicali, celebrated philoſophers, were the chief members.

The compoſitions of all theſe *academies* of the ſixteenth century were good in their kind, but none of them comparable to thoſe of the Lyncei.

Academy *del Cimento* made its appearance at Florence, ſome years after the death of Torricelli, under the protection of prince Leopold, afterwards cardinal de Medicis. Redi was one of its chief members. Count Laurence Magalotti, ſecretary of this *academy*, publiſhed a volume of curious experiments in 1677, under the title of Saggi di Naturali Eſperienze; a copy of which being preſented to the Royal Society, was tranſlated into Engliſh by Mr. Waller, and publiſhed at London, in 4to.

Academy *degl' inquieti* at Bologna, incorporated afterwards into that *della traccia* in the ſame city, followed the example of that *del Cimento*: their meetings were at the houſe of the abbot Antonio Sampieri. Here Geminiano Montanari, one of the chief members, made excellent diſcourſes on phyſical and mathematical ſubjects, part whereof was publiſhed in 1667, under the title of Penſieri Fiſico-Matematici. This *academy* afterwards met in an apartment of Euſtachio Manfredi; and afterwards in that of Jacob Sandri, but arrived at a higher luſtre, when its aſſemblies were held in the palace Marſilli.

Academy *of Roſſano*, in the kingdom of Naples, called *La Societa Scientifica Roſſaneſe degl' Incurioſi*, was founded about the year 1540, under the name of *naviganti*, and renewed under that of *ſpenſierati* by Camillo Tuſcano, about the year 1600. It was transformed from an *academy* of Belles Lettres into an *academy* of ſciences, at the ſolicitation of the learned abbot Don Giacinto Gimma; who being made preſident under the title of promoter-general thereof, in 1695, gave a new ſet of regulations. He divided the *academiſts* into ſeveral claſſes, viz. grammarians, rhetoricians, poets, hiſtorians, philoſophers, phyſicians, mathematicians, lawyers, and divines, with a claſs apart for cardinals and perſons of quality. To be admitted a member, a man muſt have degrees in ſome faculty. The members are not allowed to take the title of *academiſt*, in the beginning of their books, without a written permiſſion from the preſident, which is not granted till the work has been examined by the cenſors of the *academy*. This permiſſion is the greateſt honour the *academy* can confer; ſince hereby they, as it were, adopt the work; and are anſwerable for it againſt all critiques which may be made of it. The preſident or promoter himſelf is ſubject to this law. Add, that no *academiſt* is allowed to publiſh any thing againſt the writings of another, without leave from the ſociety.

There have been ſeveral other *academies* of ſciences in Italy, which have not ſubſiſted long, for want of being ſupported by the princes. Such were at Naples that of the *Inveſtiganti*, founded about the year 1679, by the Marqueſs d'Arena, Don Andrea Concubletto; and that which met in 1698, in the palace of the Duke de Medina, Don Lewis della Cerda, viceroy of Naples. At Rome, that of *Fiſico-Matematici*, which met in 1686, in the houſe of Sig. Ciampini: at Verona, that of *Aletofili*, founded the ſame year by Sig. Joſeph Gazola, which met in the houſe of the count Serenghi della Cucca: at Breſcia, that of *Fileſotici*, founded the ſame year for the cultivation of phyſics and mathematics, and ended the year following: that of F. Franciſco Lana, a Jeſuit of great ſkill in thoſe ſciences: laſtly, that of *Fiſico-Critici* at Sienna, founded in 1691, by Sig. Peter Maria Gabrielli.

Some other *academies* ſtill ſubſiſting in Italy, repair with advantage the loſs of the former. One of the principal is the *academy* of *Filarmonici* at Verona, ſupported by the Marquis Scipio Maffei, one of the moſt learned men in Italy. Though the members of this body apply themſelves to the Belles Lettres, they do not neglect the ſciences. The *academy* of *Ricovrati* at Padua ſtill ſubſiſts with reputation; in it, learned diſcourſes are held from time to time on phyſical ſubjects; ſuch for inſtance is that, which the celebrated Sig. Antonio Valliſnieri, firſt profeſſor of phyſic in the univerſity of that city, delivered here on the origin of ſprings, ſince printed. The like may be ſaid of the *academy* of the *Muti di Reggio*, at Modena; to which the ſame Sig. Valliſnieri, a native of that city, preſented an excellent diſcourſe on the ſcale of created beings, ſince inſerted in his Hiſtory of the Generation of Man and Animals; printed at Venice in 1721. In the number of theſe *academies* may alſo be ranked the aſſembly of learned men, which of late years met at Venice in the houſe of Sig. Criſtino Martinelli, a noble Venetian, and great patron of learning.

Among the new *academies*, the firſt place, after the inſtitute of Bologna, is given to that of the counteſs Donna Clelia Grillo Borromeo, one of the moſt learned ladies of the age, to whom Sig. Gimma dedicates his literary hiſtory of Italy. She had lately eſtabliſhed an *academy* of experimental philoſophy in her palace at Milan; of which Sig. Valliſnieri was nominated preſident, and had already drawn up the regulations of it, though we do not find it has yet taken place. There are likewiſe many other *academies* of leſs note in Italy; Jarchius enumerates 550, of which the names are very curious.

F. Merſenne is ſaid to have given the firſt idea of a philoſophical *academy* in France, towards the beginning of the ſeventeenth century, by the conferences of naturaliſts and mathematicians, occaſionally held at his lodgings; at which Gaſſendi, Des Cartes, Hobbes, Roberval, Paſcal, Blondel, and others, aſſiſted. F. Merſenne propoſed to each, certain problems to examine, or certain experiments to be made. Theſe private aſſemblies were ſucceeded by more public ones, formed by Mr. Montmort and Mr. Thevenot, the celebrated traveller. The French example animated ſeveral Engliſhmen of diſtinction and learning to erect a kind of philoſophical *academy* at Oxford, towards the cloſe of Cromwell's adminiſtration; which, after the Reſtoration, was erected by authority into a Royal Society. The Engliſh example in its turn animated the French. Lewis XIV. in 1666, aſſiſted by the counſels of M. Colbert, founded an *academy* of ſciences at Paris, called the

ACADEMY, *Royal, of Sciences*, for the improvement of phyſicks, mathematicks, and chemiſtry. In the year 1699, it had as it were a ſecond birth; the ſame prince, by a regulation dated the 26th of January, giving it a new form, and putting it on a new and more ſolemn footing.

In virtue of that regulation, the *academy* was to be compoſed of four kinds of members, viz. *honorary*, *penſionary*, *aſſociates*, and *eleves*.—The firſt claſs to conſiſt of ten perſons; and the reſt of twenty each.—The honorary *academiſts* to be all inhabitants of France; the penſionaries all to reſide at Paris; eight of the aſſociates allowed to conſiſt of foreigners; and the eleves all to live at Paris.—The officers, to be a preſident, named every year by the king, out of the claſs of honorary *academiſts*; and a ſecretary and treaſurer, to be perpetual.

Of the penſionaries, three to be geometricians, three aſtronomers, three mechanics, three anatomiſts, three chemiſts, three botaniſts; the remaining two, ſecretary and treaſurer.—Of the twelve aſſociates, two to apply themſelves to geometry, two to botany, and two to chemiſtry.—The eleves to apply themſelves to the ſame kind of ſcience with the penſionaries they are attached to; and not to ſpeak, except when called thereto by the preſident.—No regular or religious to be admitted, except into the claſs of honorary *academiſts*; nor any perſon to be admitted, either for aſſociate or penſionary, unleſs known by ſome conſiderable printed work, ſome machine, or other diſcovery.—Farther, no perſon to be allowed to make uſe of his quality of *academiſt*, in the title of any of his books, unleſs ſuch book have been read to, and approved by the *academy*.

In the year 1716, the duke of Orleans, then regent, made an alteration in their conſtitution; augmenting the number of honoraries, and of aſſociates capable of being foreigners, to twelve; admitting regulars among ſuch aſſociates; ſuppreſſing the claſs of eleves, and eſtabliſhing, in lieu thereof, a new claſs of twelve adjuncts, to the ſix ſeveral kinds of ſciences cultivated by the *academy*; and, laſtly, appointing a vice-preſident, to be choſen yearly by the king, out of the honorary members; and a director, and ſub-director, out of the penſionaries.

This *academy* has done great things for the ſervice of learning; by the continuation of the MERIDIAN, by the ſending perſons to different parts of the world for making obſervations; but eſpecially by the excellent writings they have publiſhed, either in a ſeparate, or a joint capacity; particularly their MEMOIRS. Indeed they have an advantage over moſt *academies*, in being defrayed their expences, and even paid for time and attendance. Nevertheleſs they have undergone ſome imputations; particularly that of plagiariſm, in borrowing their neighbours inventions: with what juſtice, we do not ſay. They have the diſtribution of annual prizes. Their hiſtory to the year 1697 was written by Mr. Du Hamel; and ſince that time continued from year to year by Mr. Fontenelle, under the following titles. Du Hamel Hiſtoria Regiæ Academiæ Scientiarum, Paris, 4to. Hiſtorie de l'Academie Royale des Sciences, avec les Memoires de Mathematique & de Phyſique tirez des Regiſtres de l'Academie, Paris, 4to. Hiſt. de l'Acad. Roy. des Sciences depuis ſon Etabliſſement en 1666, juſqu'en 1699, en 13 tomes, 4to.

A new hiſtory, from the inſtitution of the *academy*, to the period from whence Mr. de Fontenelle commences, has been formed; with a ſeries of the works publiſhed under the name of this *academy*, during that firſt interval.—Their motto, *Invenit & perfecit.*

ACADEMY; the *Royal Society at Berlin* was founded by the late king Frederic of Pruſſia in 1700, on the model of that of England, excepting that beſides natural knowledge it likewiſe comprehends the Belles Lettres. A new form, and a new ſet of ſtatutes were given it in 1710; by which it is ordained, that the preſident ſhall be one of the counſellors of ſtate, and nominated by the king. The members to be divided into four claſſes; the firſt, for proſecuting phyſics, medicine, and chemiſtry; the ſecond, for mathematics, aſtronomy, and mechanics; the third, for the German language, and the hiſtory of the country; the fourth, for oriental learning, particularly as it may concern the propagation of the Goſpel among infidels. Each claſs to elect a director for themſelves, who ſhall hold his poſt for life. Their meeting to be in the caſtle called New Marſhal; one claſs to meet every week in their turns. The members of any of the claſſes to have free admiſſion into the aſſemblies of any of the reſt. The great promoter of this inſtitution was the celebrated M. Leibnitz, who accordingly was made the firſt director. The *academy* has publiſhed ſeveral volumes of its lucubrations in Latin, under the title of Miſcellanea Berolinenſia. This *academy* has ſince been renewed; and ſeveral volumes of its tranſactions publiſhed in French, under the title of Hiſtoire de l'Academie Royale des Sciences & Belles Lettres, à Berlin.

There are other *academical* inſtitutions at Berlin, and other parts of the north; ſeveral of which having diſtinguiſhed themſelves by their journals, ephemerides, &c. the reader will find ſome account of them under the article JOURNAL.

ACADEMY *of Peterſburgh* was founded, or rather projected, by the late czar, Peter the Great, and happily executed by the munificence of the czarina, Catherine, his wife, and ſucceſſor, on the model nearly of the *academy* of Paris, whereof the czar was a member. Hither that prince invited learned men, from all parts of Europe.

The *academy* held its firſt public meeting in December, 1725, in the preſence of the duke of Holſtein, and a large appearance of perſons of diſtinction. The ordinary aſſemblies are held twice a week, and public or ſolemn ones thrice in the year; wherein an account is given of what has been done in the private ones. The building, apparatus, &c. of this *academy* are extraordinary. They have a fine library, an obſervatory, &c. In effect, it partakes much of what we call an UNIVERSITY; having regular profeſſors in the ſeveral faculties, who read lectures as in our ſchools. Several volumes of the works of this *academy*, under the title of Commentarii Academieæ Scientiarum Imperial. Petropolit. have been publiſhed; beſide ſeveral mathematical pieces, compoſed by particular members of it. Their motto is, *Paulatim.*

ACADEMY *of Sciences*, called *The Inſtitute of Bologna*, was founded by count Marſigli, in 1712, for the cultivating of phyſics, mathematics, medicine, chemiſtry, and natural hiſtory. Its hiſtory is written by M. de Limiers, from memoirs furniſhed by the founder himſelf.

For a farther account of ſimiliar inſtitutions, ſee SOCIETY.

ACADEMY, is alſo uſed among us for a kind of collegiate ſchool or ſeminary; where youth are inſtructed in the liberal arts and ſciences in a private way; now indeed it is uſed for all kinds of ſchools.

Frederic I. king of Pruſſia, eſtabliſhed an *academy* in Berlin in 1703, for the education of the young nobility of the court, ſuitable to their extraction. The expence of the ſtudents was very moderate, the king having undertaken to pay the extraordinaries. This illuſtrious ſchool, which was then called the *Academy of Princes*, has now loſt much of its ancient ſplendor.

We have two royal *academies* of this kind; one at Portſmouth, for teaching navigation, drawing, &c. which may be ſtyled a naval or maritime *academy*; and another at Woolwich, where youth are taught fortification, gunnery, and ſuch branches of the mathematics, as are neceſſary to qualify them for engineers.

The nonconformiſt miniſters, &c. are bred up in private *academies*; as not approving the common univerſity education. The principal of their *academies* are thoſe at Hoxton, Daventry, and Warrington.

ACADEMY is likewiſe a name given to a riding ſchool, where young gentlemen are taught the great horſe, and other ſuitable exerciſes, as fencing, &c. See MANEGE.

ACADEMY is alſo uſed in ſpeaking of the ſchools of the Jews; i. e. thoſe ſeminaries where the rabbins, or doctors, inſtruct the youth of their nation in the Hebrew tongue; explain to them the Talmud; teach them the Cabbala, &c.

ACADEMY, or ACADEMY-*Figure*, in painting, is a drawing, or DESIGN made after a model, with a crayon, or pencil.—Or the copy of ſuch a draught.

ACÆNA, *ακαινα*, in *Antiquity*, a Grecian decemped, or ten-foot rod, uſed in meaſuring of their lands.

ACAIAIBA, in *Botany*, a name by which ſome authors have called the tree which produces the caſhew nuts: the acajou of other writers.

ACAJOU, in *Botany*, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is of the funnel-faſhioned kind, and divided into many ſegments at the edges. From the cup of this there ariſes a piſtil, which is ſurrounded with a multitude of ſtamina, and is fixed, in the manner of a nail, to the hinder part of the flower; this finally becomes a ſoft turbinated fruit, to which there is affixed a capſule of the ſhape of a kidney, containing a ſeed, or a kernel, of the ſame figure.

There is only one known ſpecies of this genus, viz. the tree which produces the caſhew-nut, or Weſt-Indian anacardium.

Of the juice of this fruit they make a drink, which, duly fermented, enebriates like wine. The Indians eat the nuts, ſlightly roaſted, dipped in water or wine, and ſprinkled with ſalt, as a provocative to venery. The juice is ſaid to ſtop a diarrhœa, and cure a diabetes. From the ſweetiſh liquor contained in the two ſhells, the Indians extract an oil, uſed by painters, to give their colour a laſting black; and to preſerve wood from putrefaction.

ACALEPHE, a nettle. It alſo ſignifies a certain fiſh, the fleſh of which is very tender. Likewiſe a ſea-fowl mentioned by Nicander, and a ſea-animal, mentioned by Gellius.

ACALYPHA, in *Botany*, the name of a genus of plants, called by Boerhaave, and others, RICINOCARPOS. The characters are theſe: the male and female flowers are diſtinct, but they are produced on the ſame plants, the male ones uſually ſtanding immediately over the female ones.

ACALCUM, tin.

ACAMATOS, among *Phyſicians*, means that diſpoſition of a limb, which is equally diſtant from flexion and extenſion.

ACANACEOUS, ſee ACANTHACEOUS.

ACANAPHORA, in *Botany*, a name given by ſome to the common knapweed, or jacea, a common wild plant.

ACANOR, a particular ſort of chemical furnace. See ATHANOR.

ACANTHA, in a general ſenſe, a ſpine or prickle, chiefly of plants of the thorny kind.

The word is formed from *ακη*, *mucro*, *point*, and *ανθος*, *flower*.

ACANTHA, in a more particular ſenſe, denotes a ſpine, or quill, of certain fiſhes, as the echinus marinus, or ſea-hedge-hog. Hence the thorn-back, a ſpecies of the galeus, is peculiarly called *acanthias*, from the two prickles on its back.

ACANTHA, among ſome *Anatomiſts*, is applied to the hind or poſterior protuberances of the VERTEBRÆ of the back; forming what we call the SPINA *dorſi*.

ACANTHABOLUS, a ſurgeon's inſtrument, wherewith to extract foreign bodies, which by the ſharpneſs of the points have penetrated, and entered the parts of the body.

The word is compounded of *ακανθα*, *a thorn*; and *βαλλω*, *to caſt away*.

The *acanthabolus* is the ſame with the inſtrument which is otherwiſe called *volſella*.—Its chief uſe is for extracting fiſh-bones, or the like, ſticking in the œſophagus; as alſo the fragments of weapons, bones, hair, &c. remaining in wounds.—Its figure reſembles that of a pair of pincers; ſometimes it is alſo made crooked, for more commodious application to the fauces.

ACANTHABOLUS is alſo ſometimes uſed for an inſtrument, wherewith people pull out the hairs from their eye-brows.

ACANTHACEOUS, among *Botaniſts*, a term applied to a claſs of plants, popularly known under the name of the THISTLE *kind*.

ACANTHALZUCA, the ſame as *echenopus*, or *glove* THISTLE.

ACANTHE, in the *Materia Medica* of the ancients, a name given to the plant we now call the ARTICHOAK.

ACANTHE *Arabica*, in *Botany*, a name given by ſome of the Greek writers to a plant called alſo *leucacanthe*, and by the Arabian phyſicians *bunkon*. It was a prickly plant, whoſe roots were ſomewhat like thoſe of the cyperus, and compoſed of ſeveral knobs or joints, and of a bitter taſte. It was brought for medicinal uſe from the Eaſt Indies, and ſome parts of Arabia, and was the root of the *amgaila* of Aviſenna and others.

ACANTHIAS, in *Zoology*, a name given by ſome authors to the fiſh, the ſkin of which is uſed by our artificers in poliſhing, and called by them ſimply fiſh-ſkin. See GALEUS.

ACANTHICE, *maſtich*, among ancient *Naturaliſts*, a kind of gum, yielded by the herb helxine. Gaza explains it by *ſpinalis* MASTICHA.

ACANTHINE, *acanthinus*, denotes a thing relating to, or reſembling the herb ACANTHUS.

In this ſenſe, we read of *acanthina veſtimenta*, *acanthine garments*, of which we have two different explications. Some underſtand by it a kind of embroidery, wrought in imitation of the Egyptian *acanthus* or thorn, whoſe ſmall ſprigs are much interlaced. Others will have it a peculiar kind of ſilken ſtuff, made of the lanugo, or down of a plant of the thiſtle kind, growing in Sicily and the Eaſt.

ACANTHINUM *lignum* is uſed by ſome writers for BRASIL wood.

ACANTHION, among *Naturaliſts*, a plant of the thorn, or rather of the thiſtle kind; whoſe down being cleanſed from the prickles, was manufactured into a kind of ſtuff, not unlike ſilk.

ACANTHIS, in *Ornithology*, ſee GOLDFINCH.

ACANTHOPTERYGII, in *Natural Hiſtory*, a term uſed to expreſs one of the general claſſes or families of fiſhes; the character of which is, that the rays of the fins are bony, and ſome of them prickly at the extremities.

The word is derived from *ακανθα*, a *thorn*, or *prickle*, and *πτερυγιον*, *a fin*.

Under this claſs are contained ſeventeen GENERA; viz. the *gaſtereſteus*, *chætodon*, *zeus*, *cottus*, *triglia*, *ſcorpæna*, *trachinus*, *perca*, *ſciæna*, *ſparus*, *labrus*, *mugil*, *ſchomber*, *xiphias*, *gobius*, *blennius*, and *ophidion*.

ACANTHUS, in *Botany*. See BEARS-BREECH.

The ancients have not only called the herb bears-breech by this name, but alſo a thorny tree growing in Egypt.

An accurate examination of the ancient writers will, however, ſhew very plainly, that they meant two very different vegetables under this name; the *acanthus* of Virgil, and the Egyptian *acanthus* of Theophraſtus, being two wholly different plants. Virgil mentions the *acanthus* as being an ever-green plant, and producing berries, or a ſmall round fruit, *baccas ſemper frondentis acanthi*, are his words; and Theophraſtus tells us, that his Egyptian *acanthus* is a prickly tree, and bears pods like thoſe of beans. The Greek ſculptors adorned their works with the figure of the latter; as the Gothic did with that of the former, which they repreſented not only in their capitals, but alſo in other ornaments. It is plain, that the *acanthus* of Theophraſtus, is the *acacia*, a tree, from ſome ſpecies of which we have the gum arabic now in uſe; and the *acanthus* of Virgil, mentioned in this place, ſeems to be the Cyrenian *lotus*, which Herodotus ſays is like the Egyptian ACANTHUS.

ACANTHUS, in *Architecture*, an ornament in the Corinthian and Compoſite ORDERS; being the repreſentation of the leaves of an acanthaceous plant, in the capitals thereof.—See *Tab. Archit. fig.* 21. *litt.* bb.

ACANUS, a ſpecies of thiſtle, called *Acanus Theophraſti*. See CARDUUS.

ACAPATLI, in *Botany*, a name uſed by ſome authors for the plant which produces the long pepper, uſed in medicine.

ACAPNON, *ακαπνον*, a name of the SAMPSUCHUM, or MARJORAM; alſo of dry wood.

ACARA, in *Zoology*, the name of a fiſh caught in the freſh waters of the Braſils, and eſteemed a very delicate and well-taſted one. It ſeldom exceeds three or four inches in length, and has a high back like the PEARCH. Its mouth is ſmall, and its jaws rough like a file. It has one long back fin, which is ſupported by a great number of rigid and prickly rays, and reaches to the tail. Its ſcales are large; its back is of a gloſſy brown; its ſides and belly white; its tail is not forked. It has a large black ſpot on the middle of each ſide, and another near the tail. Its fins are all brown.

ACARAAYA, in *Zoology*, the name of a fiſh caught on the Braſilian ſhores, and by ſome called alſo GARANHA. It grows to three feet in length, and is of the ſhape of our carp. Its lower jaw is furniſhed with an even range of ſharp teeth, like little needles. Its upper jaw has two very long ones, and beſide theſe, a multitude of other very ſhort ones. Its eyes are large, and their iris red. Its tail is broad, and a little forked. Its ſcales are of a moderate ſize, and of a ſilver hue, with an admixture of purple. Its belly, and the under part of its head, are wholly white; and its fins all of a fine pale red, except thoſe under the belly, which are white, with a ſlight edge of red. It is eaten in Braſil, both freſh and ſalted.

ACARAMUCU, in *Zoology*, the name of a fiſh found in the weſtern ocean, and in ſome other parts of the world. It is a very ſingular and remarkable animal. It is of a flatted, but long body, and not thick. It is uſually of about eight or ten fingers breadth long, and about four broad. Its mouth is round, but very ſmall, ſcarce admitting the end of one's little finger. In the fore-part of the mouth, both above and below, there are triangular and ſharp teeth. On each ſide, juſt below the eyes, there are two ſquariſh fiſſures, which ſerve in the place of gills; and on the ridge of the back, directly behind the eyes, there is placed a fine ſlender pointed horn, which ſtands nearly erect, but bending a little backward; this is of a cylindrical ſhape, and four fingers breadth long. It has no ſcales, but a ſmooth ſkin, and is of a mixed greyiſh and browniſh colour. It feeds on ſea-weeds; and its fleſh is not eatable.

ACARAPEBA, in *Zoology*, the name of an American fiſh, called alſo by ſome BROSEME. It has a ſomewhat broad and flat body, covered with large ſcales of a fine ſilver whiteneſs. It grows to a foot in length, and to four or five fingers in breadth. It has a large mouth, but without teeth; and its tail is forked. It has one long black fin, the anterior rays, or naves of which are rigid and prickly, the hind naves ſoft and flexile. The fins are all like the reſt of the body, of a pure white. The fiſh ſeems a kind of SMARIS.

ACARAPINIMA, in *Zoology*, the name of a Braſilian fiſh, of the CANTHARUS kind, and ſeeming of the ſame ſpecies with the *cantharus* of the Mediterranean.

ACARAPITAMBA, in *Zoology*, the name of a fiſh caught in the Braſilian ſeas, of an oblong figure, reſembling the MULLET, and growing to two feet or more in length. Its mouth and teeth are very ſmall. It has one long fin on the back, running very nearly to the tail, which is ſupported by rigid and prickly rays. Its tail terminates in two oblique horns. Its ſcales are large, and of a purpliſh colour, with a fine admixture of blue; and along the middle of each ſide there runs from the gills to the tail, a very broad and beautiful gold-coloured line. Its back, down to this line, is variegated alſo with ſmall gold-coloured ſpots; and the ſides under the line are very beautifully variegated with ſmall and fine longitudinal, but ſhort gold-coloured lines, of a ſomewhat paler colour than the broad one. Its belly is white, and its fins yellow.

ACARAPUCU, in *Zoology*, the name of a Braſilian fiſh, caught in the freſh waters, and growing to eighteen inches in length. It is of a rounded body; and its mouth is ſmall and not prominent. It has lips, which it can hide, or ſuffer to appear at pleaſure, and has no teeth. Its tail is long and forked; its ſcales are all of a ſilvery hue. On the back it has a fine golden gloſs, ſhining among the whiteneſs; and on the ſides five or ſix large blue ſpots. Its back and ſide fins are of a pale blue, as is alſo the tail: the belly fins are yellowiſh. It is a well-taſted fiſh.

ACARAUNA, in *Zoology*, an American fiſh, of which there are two ſpecies; the one called *acarauna*, without any addition; and the other the *acarauna quadrata*, or ſquare *acarauna*; and by our ſailors, the *old-wife*.

The *acarauna*, ſimply ſo called, grows to about four or five inches long, and is conſiderably broad and flat. It is covered with ſmall blackiſh ſcales; its tail is large and forked. It has two fins under the gills, two more under the belly, and a long one running all along the back, and another anſwering it from the anus to the tail. Its mouth is ſmall and narrow, and its teeth very ſmall. Its eyes are but ſmall; and on each ſide near the tail, it has an extremely ſharp thorn, or prickle: theſe it can draw in at pleaſure into its ſides, and occaſionally throw them out, to annoy other fiſhes.

The *acarauna quadrata*, or ſquare *acarauna*, or old wife, is much of the ſame ſize with the former ſpecies. It is frequently preſerved in the cabinets of the curious, and is found there, of a pale brown, with its tail and the fore-part of the body of a pale yellow, or ſtraw colour. It is covered with ſcales, furrowed with ſlight parallel lines, except that the anterior parts of its head is covered with a naked, but rough ſkin. The top of the head riſes into an acute angle; the forehead is flat; and the eyes round and large, and placed high. Its mouth is very ſmall; and its teeth are very ſlender, and ſtand cloſe together. The upper jaw has on each ſide four ſharp thorns growing from it, and the lower two very large and ſharp ones, bending downward, and in ſhape and ſtructure reſembling a cock's ſpur; and from theſe there runs up a row of ſmall thorns to the eye.

ACARI, or ACARIS, in *Natural Hiſtory*, an animalcule bred in wax; ſaid by Ariſtotle to be the leaſt object of human ſight.

ACARI, or ACARUS, is alſo uſed for a kind of vermin lodged under the cutis, where preying on the parts, it excites an itching, and raiſes pimples.

A German phyſician has traced their origin; he finds the *acari* ariſe from milk-meats turning ſtale and ſour. Their ſeat is chiefly in the hands or feet, rarely in the arms or legs. See ITCH.

ACARUS is alſo uſed by ſome *Naturaliſts* as the claſſical name of the lice of animals, which are indeed of as many various genera as the animals on which they breed.

ACARNA, in *Botany*, a name by which Theophraſtus, and ſome other writers, expreſs the common ARTICHOAK.

Monſ. Vaillant gives the name *acarna* to one of the genera of the *cynarocephalous*, or artichoak-headed claſs of plants.

ACARNAN, in *Zoology*, the name of a ſmall ſea-fiſh, very common in the Mediterranean, and brought to market among the RUBELLIOS, or ERYTHRINI, and called by the fiſhermen by the name, *fravolino*, or *phragolino*. It very much reſembles the erythrinus in ſhape; but as that is of a fine red, this, on the contrary, is of a ſilvery white. Its mouth is moderately large; its teeth ſlender and pointed; and its eyes large, having fine yellow iriſes. Its fins are white, but have each a black ſpot at their origin. It ſeems doubtful whether this be really any way different from the erythrinus, except in colour, which alone is not diſtinction ſufficient to make a ſpecies.

ACARON, the wild MYRTLE.

ACARTUM, red lead; called alſo AZEMAFOR.

ACARUS. See ACARI.

ACATALECTIC, ACATALECTICUS, in the ancient poetry, a term applicable to ſuch VERSES as have all their FEET and ſyllables; and are in no wiſe lame or defective at the end.

The word comes from κατα, and ληγω, *to ceaſe or end*; whence καταληκτικος, *which wants ſomething at the end*; and the privative α being prefixed ακαταληκτικος, *which wants nothing at the end.*

On the contrary, *catalectic* verſes are thoſe which end too haſtily, and with a ſyllable too little.

In the following ſtrophe of Horace, the two firſt verſes are *acatalectic*, and the laſt *catalectic*.

> *Solvitur acris hyems, grata vice*
> *Veris & Favoni:*
> *Trahuntque ſiccas machinæ carinas*——

ACATALEPSIA, ACATALEPSY, in *Philoſophy*, an impoſſibility of a thing's being conceived or comprehended.

The word is compounded of the privative α, and καταλαμβανω, *deprehendo, to find out.*

Acatalepſia is ſynonymous with incomprehenſibility.

ACATALUS, a JUNIPER *berry.*

ACATASTATOS, *inconſtant*, is a phyſical term, applied to irregular fevers, whoſe paroxyſms are uncertain, and which are indicated by frequent changes in the urine. It is likewiſe applied to thoſe ſhivering fits in fevers, which have no conſtant return, and to turbid urine, that depoſits no regular ſediment.

ACATERY, ACCATRY, in the king's houſhold, a kind of check betwixt the CLERKS of the kitchen, and the PURVEYORS.

ACATHISTUS, ακαθιςος, in an *Eccleſiaſtical* ſenſe, a ſolemn hymn, or vigil, anciently ſung in the Greek church, on the Saturday of the fifth week of Lent, in honour of the Virgin, for having thrice delivered Conſtantinople from the invaſions of barbarous nations.

It was called ακαθιςος, i. e. *without ſitting*, becauſe it was celebrated ſtanding: the people ſtood all night, ſinging the praiſes of their delivereſs.

The ſame name is alſo given to the day whereon it was performed, which is called the feaſt τȣ ακαθιςȣ.

ACATIUM, in the ancient *Navigation*, a kind of boat or pinnace uſed for military purpoſes.

The *acatium* was a ſpecies of thoſe called *actuariæ naves*, i. e. ſuch as were wrought with oars. It was ſometimes made uſe of in battle: Strabo repreſents it as a kind of privateer, or pirate ſloop.

ACAULIS, in *Botany*, a term applied to certain plants, the flowers of which have no ſtalk or pedicle to ſupport them, but reſt immediately on the ground: of this kind are the carline thiſtle, and ſome others.

ACAULOSE, or ACAULOUS, is applied, by *Botaniſts*, to thoſe plants which have no proper ſtem, or CAULIS.

ACBAB, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands, to a bird, very like our common hen, which is very frequently wild among them. It lives on rice, and other vegetables, and does a great deal of miſchief; but is ſhort-winded, and does not fly well, ſo that it is eaſily deſtroyed.

ACBAR, the name of an idol of enormous ſize, which the Arabians are ſaid formerly to have worſhipped. It was with difficulty that Mahomet reſtrained them from this ſpecies of idolatry. Hyde's Diſſ. vol. i. p. 257.

ACCADEMIA, among *Muſicians*, ſignifies a concert.

ACCALIA, in *Antiquity*, ſolemn feaſts, held in honour of Acca Laurentia, nurſe, or foſter-mother of Romulus.

Theſe were otherwiſe called *Larentalia*.—To the ſame Acca is alſo attributed the inſtitution of the FRATRES ARVALES.

ACCAPITARE, ACCAPTARE, ACAPTARE, in ancient *Law*-books and records, the act of becoming vaſſal of a lord, or of yielding homage and obedience to him.

The word is compounded of the Latin *ad*, *to*; and *caput*, *head*; by reaſon vaſſals own their lords for their head. Whence alſo the lords are ſometimes called *domini capitales*: as thoſe who command in an army are called *capitanei*, *captains*; and in old French, *chevetaines*, *chieftains*, in reſpect of their ſoldiers.

ACCAPITUM, a ſum of money paid to a vaſſal, upon his admiſſion to a FEUD.

The word is alſo written *acapitum*, *accapitamentum*, *acaptio*, *acaptatio*, and *acaptagium*.

ACCAPITUM, in our ancient *Law*-books, ſignifies RELIEF due to the chief lord.

ACCATRY. See ACATERY.

ACCATUM, the ſame as *accatem*, or AURICHALCUM.

ACCAZDIR, denotes tin.

ACCEDAS *ad Curiam*, an original writ, which lies for removing ſuits in any court baron, except the county court, into the king's court; upon apprehenſion of partiality or falſe judgment in the other.

A like writ lies for him who has received falſe judgment in the county court; where it is called *de falſo judicio*.

An *Accedas ad Curiam* lies alſo for juſtice delayed, as well as falſly given; and is a ſpecies of the writ RECORDARI.

ACCEDAS *ad Vicecomitem*, is a writ directed to the coroner, commanding him to deliver a writ to the ſheriff, who having a PONE delivered to him, ſuppreſſes it.

ACCELERATION, in *Mechanics*, the increaſe of velocity in a moving body.

Accelerated motion is that which continually receives freſh acceſſions of velocity.

Acceleration ſtands directly oppoſed to *retardation*, which denotes a diminution of velocity.

ACCELERATION is chiefly uſed in *Phyſics*, in reſpect of falling bodies, i. e. of heavy bodies tending towards the CENTRE of the earth by the force of GRAVITY.

That natural bodies are *accelerated* in their deſcent, is evident from various conſiderations, both *à priori* and *poſteriori*.—Thus, we actually find, that the greater height a body falls from, the greater impreſſion it makes, and the more vehemently does it ſtrike the ſubject plane, or other obſtacle.

Various are the ſyſtems and opinions which philoſophers have produced to account for this *acceleration*. Some attribute it to the preſſure of the air: the farther, ſay they, a body falls, the greater load of atmoſphere is of conſequence incumbent on it: and the preſſure of a fluid is in proportion to the perpendicular altitude of the column thereof.—Add, that the whole body of the fluid preſſing in innumerable right lines, which all meet in a point, viz. the centre; that point, by the meeting of thoſe lines, ſuſtains, as it were, the preſſure of the whole maſs: conſequently, the nearer a body approaches thereto, the effect or preſſure of more united lines muſt it ſuſtain.

But what overturns this account, is, that as the preſſure of the air downwards increaſes; ſo, by the known laws of ſtatics, does the reſiſtance, or the force wherewith the ſame fluid tends to repel, or drive the body upwards again.

Others inſiſt, that the incumbent air is the groſſer and more vaporous, the nearer the earth; and filled with more heterogeneous particles, which are not true elaſtic air: and hence, ſay they, a deſcending body, meeting continually with leſs reſiſtance from the elaſticity of the air, and having the ſame force of gravity ſtill acting on it, muſt neceſſarily be *accelerated*. Hobbes (Philoſ. Probl. c. 1. p. 3.) attributes *acceleration* to a new impreſſion of the cauſe which makes bodies fall; which on his principles, is alſo the air. As part of this mounts, part alſo muſt deſcend; for reaſons drawn from the motion of the earth, which is compounded of two motions, one circular, the other progreſſive; conſequently the air aſcends, and circulates at once. As the body, in its fall, receives a new preſſure in every point of its deſcent, its motion, he ſays, muſt needs be accelerated.

But what overturns all accounts where the air or atmoſphere is concerned, is, that the *acceleration* holds *in vacuo*, and even more regularly than in air. See VACUUM.

The Peripatetic account is worſe than this: the motion of heavy bodies downwards, ſay they, ariſes from an intrinſic principle, which makes them tend to the centre, as their proper ſeat, or element, where they would be at reſt: hence, add they, the nearer bodies approach thereto, the more is their motion *accelerated*.

The Gaſſendiſts, on the other hand, hold that the earth emits a ſort of attractive effluvia, innumerable threads whereof continually aſcend and deſcend; which threads, proceeding like radii from a common centre, divaricate the more, the farther they go: ſo that the nearer a heavy body is to the centre, the more of theſe magnetic threads it receives; and hence the more is its motion *accelerated*.

But this is refuted by an eaſy experiment: for if a ball be let fall out of the loweſt window of a high tower, and alſo out of the higheſt; the *acceleration* will be the ſame in both caſes, notwithſtanding the greater vicinity to the centre in the one, than in the other caſe.

The Carteſians account for the *acceleration*, from the repeated pulſes of a ſubtil etherial matter, which is continually acting on the falling body, and impelling it downwards.

After all, the cauſe of *acceleration* is nothing myſterious; the principle of GRAVITATION, which determines the body to deſcend, determining it to be *accelerated* by a neceſſary conſeqence.

Suppoſe a body let fall from on high: the primary cauſe of its beginning to deſcend, is doubtleſs the power of gravity; but when once the deſcent is commenced, that ſtate becomes in ſome meaſure natural to the body; ſo that if left to itſelf, it would perſevere in it for ever, even though the firſt cauſe ſhould ceaſe: as we ſee in a ſtone caſt with the hand, which continues to move, after it is left by the cauſe that gave it motion.

But, beſide the propenſity to deſcend impreſſed by the firſt cauſe, and which of itſelf were ſufficient to continue the ſame degree of motion once begun, *in infinitum*; there is a conſtant acceſſion of ſubſequent efforts of the ſame principle, gravity, which continues to act on the body already in motion, in the ſame manner as if it were at reſt.

Here, then, being a double cauſe of motion; and both acting in the ſame direction, viz. directly towards the centre of the earth; the motion they jointly produce muſt neceſſarily be greater than that of any one of them.—And the velocity thus increaſed having the ſame cauſe of increaſe ſtill perſiſting, the deſcent muſt neceſſarily be continually *accelerated*.

For, ſuppoſing gravity, whatever it be, to act uniformly on all bodies, at equal diſtances from the earth's centre; and that the time in which a heavy body falls on the earth, be divided into equal parts infinitely ſmall: let this gravity incline the body towards the earth's centre, while it moves in the firſt infinitely ſmall part of the time of its deſcent; if, after this, the action of gravity be ſuppoſed to ceaſe, the body would proceed uniformly on towards the earth's centre, with a velocity equal to the force of the firſt impreſſion.

But now, ſince the action of gravity is here ſuppoſed ſtill to continue; in the ſecond moment of time, the body will receive a new impulſe downwards, equal to what it received at firſt; and thus its velocity will be double of what it was in the firſt moment; in the third moment it will be triple; in the fourth quadruple, and ſo on continually: for the impreſſion made in one moment, is not at all altered by what is made in another; but the two are, as it were, aggregated, or brought into one ſum.

Wherefore, ſince the particles of time are ſuppoſed infinitely ſmall, and all equal to one another; the *impetus* acquired by the falling body will be every-where, as the times from the beginning of the deſcent.—And hence, ſince the quantity of matter in the body given, continues the ſame; the velocity will be as the time in which it is acquired.

Farther, the ſpace paſſed over by a moving body in a given time, and with a given velocity, may be conſidered as a rectangle made by the time and the velocity.—Suppoſe A (*Tab. Mechan. fig.* 64.) a heavy body deſcending, and let AB repreſent the time of its deſcent; which line ſuppoſe divided into any number of equal parts, AC, CE, EG, &c. repreſenting the intervals, or moments of the given time.—Let the body deſcend through the firſt of thoſe diviſions, AC, with a certain equable velocity ariſing from the propoſed degree of gravity: this velocity will be repreſented by AD; and the ſpace paſſed over, by the rectangle CAD.

Now, as the action of gravity in the firſt moment produced the velocity AD, in the body before at reſt; in the ſecond moment, the ſame will produce, in the body ſo moving, a double velocity, CF; in the third moment, to the velocity CF will be added a farther degree, which, together therewith will make the velocity EH, which is triple of the firſt, and ſo of the reſt. So that in the whole time AB, the body will have acquired a velocity

BK.—Again, taking the diviſions of the line, e. g. AC, CE, &c. for the times, the ſpaces gone through will be the areas or rectangles, CD, EF, &c. So that in the whole time AB, the ſpace deſcribed by the moveable, will be equal to all the rectangles, i. e. to the dented figure ABK.

Such would be the caſe, if the acceſſions of velocity only happened in certain given points of time, e. g. in C, in E, &c. So that the degree of motion ſhould continue the ſame till the next period of *acceleration* come up.—If the diviſions or intervals of time were ſuppoſed leſs, e. g. by half; then the dentures of the figure would be proportionably ſmaller; and it would approach ſo much the nearer to a triangle.—If they were infinitely ſmall, i. e. if the acceſſions of velocity were ſuppoſed to be made continually, and in every point of time, as is really the caſe; the rectangles thus ſucceſſively produced will make a juſt triangle, e. g. ABE (*fig.* 65.)—Here, the whole time AB conſiſting of the little portions of time A 1, A 2, &c. and the area of the triangle ABE, of the ſum of all the little triangular ſurfaces anſwering to the diviſions of the time; the whole area or triangle expreſſes the ſpace moved through in the whole time AB; and the little triangles A 1 *f*, &c. the ſpaces gone thro' in the diviſions of time *a* 1, &c.

But theſe triangles being ſimilar, their areas are to one another, as the ſquares of their homologous ſides AB, A 1, &c. and conſequently, the ſpaces moved, are to each other as the ſquares of the times.

Hence we may eaſily infer the great law of *acceleration*, viz. "That a deſcending body, uniformly *accelerated*, deſcribes, in the whole time of its deſcent, a ſpace which is juſt half of what it would have deſcribed in the ſame time, with the *accelerated* velocity it has acquired at the end of its fall." For, the whole ſpace the falling body has moved through in the time AB, we have already ſhewn, will be repreſented by the triangle ABE; and the ſpace the ſame body would move through in the ſame time, with the velocity BE, will be repreſented by the rectangle ABEF.—But the triangle is known to be equal to juſt half the rectangle.—Therefore, the ſpace moved, is juſt half of what the body would have moved with the velocity acquired at the end of the fall.

Hence, 1. we gather, that the ſpace moved with the laſt acquired velocity BE, in half the time AB, is equal to that really moved by the falling body in the whole time AB.

2. If a falling body deſcribe any given length in a given time, in double that time it will deſcribe four times that length; in thrice the time, nine times, &c. and univerſally, if the times be in arithmetical proportion, 1, 2, 3, 4, &c. the ſpaces deſcribed will be, 1, 4, 9, 16, &c.

3. The ſpaces deſcribed by a falling body, in a ſeries of equal moments or intervals of time, will be as the unequal numbers 1, 3, 5, 7, 9, &c.—And ſince the velocities acquired in falling are as the times; the ſpaces will alſo be as the ſquares of the velocities; and both times and velocities in a ſubduplicate ratio of the ſpaces.

The motion of a body aſcending, or impelled upwards, is diminiſhed or retarded from the ſame principle of gravity acting in a contrary direction, in the ſame manner as a falling body is *accelerated*. See RETARDATION.

A body thus projected upwards, riſes till it has loſt all its motion: which it does in the ſame time that a body falling would have acquired a velocity equal to that wherewith the body was thrown up.

Hence, the ſame body thrown up, will riſe to the ſame height from which falling, it would have acquired the velocity wherewith it was thrown up.

And hence, the heights which bodies thrown up with different velocities do aſcend to, are to one another as the ſquares of thoſe velocities.

ACCELERATION *of bodies on inclined planes.*—The ſame general law obtains here, as in bodies falling perpendicularly: the effect of the plane is, to make the motion ſlower; but the inclination being every where equal, the retardation riſing therefrom will proceed equally in all parts, at the beginning and the ending of the motion.—The particular laws, ſee under *Inclined* PLANE.

ACCELERATION *of the motion of pendulums.*—The motion of pendulous bodies is *accelerated* in their deſcent; but in a leſs ratio than that of bodies falling perpendicularly. See the laws of this under PENDULUM.

ACCELERATION *of the motion of projectiles.* See PROJECTILE.

ACCELERATION *of the motion of compreſſed bodies*, in expanding or reſtoring themſelves. See DILATATION.

That the motion of compreſſed air, expanding itſelf by its elaſticity to its former dimenſions, is *accelerated*, is evident from various conſiderations.

ACCELERATION is alſo applied in the ancient aſtronomy, in reſpect of the fixed ſtars.—This *acceleration* was the difference between the revolution of the *primum mobile*, and the ſolar revolution; which was computed at 3 minutes, and 56 ſeconds.

ACCELERATION *of the Moon*, is a term uſed to expreſs the increaſe of the moon's mean motion from the ſun, compared with the diurnal motion of the earth; ſo that it is now a little ſwifter than it was formerly. Dr. Halley was the firſt who made this diſcovery; and he was led to it by comparing the ancient eclipſes obſerved at Babylon, with thoſe obſerved by Albatennius in the ninth century, and ſome of his own time. He was not able to aſcertain the quantity of this *acceleration*, becauſe the longitudes of Bagdat, Alexandria, and Aleppo, where the obſervations were made, had not been accurately determined. But ſince his time the longitude of Alexandria has been aſcertained by Chazelles; and Babylon, according to Ptolemy's account, lies 50′ eaſt from Alexandria. From theſe *data*, Mr. Dunthorne compared ſeveral ancient and modern eclipſes, with the calculations of them by his own tables, and hereby verified Dr. Halley's opinion; for he found, that the ſame tables repreſent the moon's place more backward than her true place in ancient eclipſes, and more forward than her true place in later eclipſes; and thence juſtly inferred, that her motion in ancient times was ſlower; in later times quicker than the tables give it. But he did not content himſelf with merely aſcertaining the fact; he proceeded to determine the quantity of the *acceleration*; and by means of the moſt ancient eclipſe, of which any authentic account remains, obſerved at Babylon in the year before Chriſt 721, he concluded, that the obſerved beginning of this eclipſe was not above an hour and three quarters before the beginning by the tables; and therefore the moon's true place could precede her place by computation but little more than 50′ of a degree at that time. Admitting the *acceleration* to be uniform, and the aggregate of it as the ſquare of the time, it will be at the rate of about 10 in 100 years. Phil. Tranſ. n. 218, n. 492, or vol. xlvi. p. 162.

Dr. Long attributes the *acceleration* above deſcribed, to one or more of theſe cauſes; either, 1. the annual and diurnal motion of the earth continuing the ſame, the moon is really carried round the earth with a greater velocity than heretofore: or, 2. the diurnal motion of the earth, and the periodical revolution of the moon continuing the ſame, the annual motion of the earth round the ſun is a little retarded; which makes the ſun's apparent motion in the ecliptic a little ſlower than formerly, and, conſequently, the moon in paſſing from any conjunction with the ſun, ſpends leſs time before ſhe again overtakes the ſun, and forms a ſubſequent conjunction: in both theſe caſes, the motion of the moon from the ſun is really *accelerated*, and the ſynodical month actually ſhortened: or, 3. the annual motion of the earth, and the periodical revolution of the moon continuing the ſame, the rotation of the earth round its axis is a little retarded; in this caſe, days, hours, minutes, ſeconds, &c. by which all periods of time muſt be meaſured, are of a longer duration; and conſequently the ſynodical month will appear to be ſhortened, though it really contains the ſame quantity of abſolute time as it always did. If the quantity of matter in the body of the ſun be leſſened by the particles of light continually ſtreaming from it, the motion of the earth round the ſun may become ſlower: if the earth increaſes in bulk, the motion of the moon round the earth may be quickened thereby. Aſtronomy, vol. ii. p. 436.

ACCELERATOR, in *Anatomy*, a muſcle of the penis, whoſe office is to expedite the diſcharge of the urine, and the ſemen.

This is more peculiarly called *accelerator urinæ*: ſome make two muſcles of it, and give them the denomination *acceleratores*, or *acceleratory muſcles*.

It ariſes tendinous from the upper and fore-part of the urethra, but ſoon grows fleſhy, paſſes under the os pubis, and encompaſſes the bulb of the cavernous body of the urethra.—Both ſides of this muſcle meet in a middle line, correſponding to the ſeam in the ſkin over it; and continue ſo united, the ſpace of two inches; after which, it detaches two fleſhy elongations, which become thin tendons at their terminations on the cavernous bodies of the penis.

Its upper part covering the bulb, when in action, ſtraitens the veins which paſs through it from the corpus cavernoſum of the urethra, and hinders the reflux of the blood in an erection. By the repeated contractions of this upper part, the blood in the bulb is alſo driven towards the glans; and thereby aſſiſts the erection.

The two elongations compreſs the channel of the urethra, and ſo force out the contained ſeed, or urine; whence the muſcle takes its name.

ACCENDENTES, or ACCENSORES, in *Eccleſiaſtical Writers*, a lower order of miniſters in the church of Rome, whoſe office is to light, ſnuff, and trim the candles or tapers.

The *accendentes* are much the ſame with thoſe otherwiſe called *acolythi* and *ceroferarii*.

ACCENDONES, or ACCEDONES, in *Roman Antiquity*, a kind of gladiators, whoſe office was to excite and animate the combatants, during the engagement.

ACCENSI, in *Antiquity*, denote an inferior order of officers, appointed to attend the Roman magiſtrates, ſomewhat in the manner of uſhers, ſerjeants, or tip-ſtaves, among us.

They were thus called from *accire*, *to ſend for*; one part of their office being to call aſſemblies of the people, ſummon parties to appear before the judges, &c.

ACCENSI alſo denote a kind of ſupernumerary ſoldiers in the Roman armies; whoſe office was to attend the motions of their principals, and ſupply the places of thoſe who were killed, or diſabled by their wounds.

They were thus denominated, *quia accenſebantur*, or *ad cenſum adjiciebantur*: Vegetius calls them *ſupernumerarii legionum*: Cato calls them *ferentarii*, becauſe they furniſhed thoſe engaged in battle with weapons, drink, &c. Though Nonius ſuggeſts another reaſon of that appellation, viz. becauſe they fought with ſtones, ſlings, and weapons, *quæ ferrentur*, ſuch as are thrown, not carried in the hand. They were ſometimes alſo called *velites*, and *velati*, becauſe they fought clothed, but not in armour; ſometimes *adſcriptitii*, and *adſcriptivi*; ſometimes *rorarii*. The *accenſi*, Livy obſerves, were placed at the rear of the army, becauſe no great matter was expected from them: they were taken out of the fifth claſs of citizens.

ACCENSI was alſo an appellation given to a kind of adjutants, appointed by the tribune to aſſiſt each centurion and decurion. In which ſenſe, *accenſus* is ſynonymous with *optio*.—In an ancient inſcription, given by à Torre, we meet with ACCENSUS EQUITUM ROMANORUM; an office no where elſe heard of; that author ſuſpects it for a corruption, and inſtead thereof reads A CENSIBUS.

ACCENSION, ACCENSIO, in *Phyſics*, the act of kindling, or ſetting a body on fire.

The word is formed of the Latin *accendere*, *to kindle*; a compound of *ad*, *to*; and *candere*, *to glow*. Though ſome grammarians ſuſpect the primitive ſignification of *accendere*, to have been, *to render famous*.

Accenſion, on other occaſions, is called INFLAMMATION, IGNITION, CONFLAGRATION, &c.

Accenſion, ſtands oppoſed to EXTINCTION.

Chemiſts furniſh us with various inſtances of the *accenſion* of cold liquors by bare mixtion: as of the acid ſpirits of minerals, and the eſſential oils of plants.

ACCENT, in its primitive ſenſe, an affection of the voice, which gives each ſyllable of a word its due pitch, in reſpect of height or lowneſs.

The word is originally Latin, *accentus*, a compound of *ad*, *to*; and *cano*, *to ſing*. In this ſenſe, *accent* is ſynonymous with the Greek τονος, the Latin *tenor*, or *tonor*, and the Hebrew טעם *guſtus*, *taſte*.

The *accent*, properly, only reſpects high and low, or or acute and grave.—Though the modern grammarians uſe it alſo in reſpect of loud and ſoft, long and ſhort; but this confounds *Accent* with *Quantity*.

The difference between the two may be conceived from that which we obſerve between the beat of a drum, and the ſound of a trumpet: the former expreſſes every thing belonging to loud and ſoft, and long and ſhort: but, ſo long as there is a μονοτονια in the ſound, there is nothing like *accent*.

ACCENT is alſo uſed in grammar, for a character placed over a ſyllable, to mark the *accent*, i. e. to ſhew it is to be pronounced in a higher, or in a lower tone; and to regulate the inflexions of the voice in reading. It is diſtinguiſhed from *emphaſis*, as the former regards the tune of the voice, the latter the ſtrength of it.

We reckon three grammatical *accents* in ordinary uſe, all borrowed from the Greeks, viz. the *acute accent*, which ſhews when the tone of the voice is to be raiſed; and is expreſſed thus (´).

In modern writings it is a little line, or *virgula*, placed over the vowel, a little ſloping or inclined, in its deſcent, from right to left, as ´.—It is not ordinarily uſed, either in Engliſh, or Latin: the French, indeed, retain it; but it is only to mark the cloſe or maſculine é.

The *grave accent*, when the note or tone of the voice is to be depreſſed; and is figured thus (`).

The *circumflex accent*, which is compoſed of both the acute and the grave; it points out a kind of undulation of the voice, and is expreſſed thus (˜ or ˆ).

But if it be true, that the whole ſyſtem of pronunciation turns on three *accents*, it is no leſs true, that each of theſe three admits of ſeveral degrees. The acute *accent*, for inſtance, may be either higher, or lower; may be ſimply acute, or very acute; and the like holds of the grave and circumflex. So that each of the three common *accents* is, as it were, a genus, including divers particular ſpecies; though the ancient grammarians have not thought fit to give particular names and figures to all theſe differences.

Words which have no accents are called *Atonics*.

The Hebrews have a grammatical, a rhetorical, and a muſical *accent*; though the firſt and laſt ſeem, in effect, to be the ſame; both being compriſed under the general name of *tonic accents*, becauſe they give the proper tone to ſyllables: as the rhetorical *accents* are ſaid to be *euphonic*; inaſmuch as they tend to make the pronunciation more ſweet and agreeable.

There are four euphonic *accents*, and twenty-five tonic; of which ſome are placed above, and others below the ſyllables; the Hebrew *accents* ſerving not only to regulate the riſings and fallings of the voice, but alſo to diſtinguiſh the ſections, periods, and members of periods, in a diſcourſe; and to anſwer the ſame purpoſes with the points in other languages. Their *accents* are divided into *emperors*, *kings*, *dukes*, &c. each bearing a title anſwerable to the importance of the diſtinction it makes.—Their emperor rules over a whole phraſe, and terminates the ſenſe completely; anſwering to our point.—Their king anſwers to our colon; and their duke to our comma.—The king, however, occaſionally becomes a duke, and the duke a king, as the phraſes are more or leſs ſhort.—It muſt be noted, by the way, that the management and combination of theſe *accents* differs in Hebrew poetry from what it is in proſe.

The uſe of the tonic, or grammatical *accents*, has been much controverted; ſome holding that they diſtinguiſh the ſenſe, while others maintain that they are only intended to regulate the muſic, or ſinging; alledging that the Jews ſing rather than read, the ſcriptures in their ſynagogues.

The truth ſeems here to lie between the two opinions: for though we are inclined to think, that the primary intention of theſe *accents* was to direct the ſinging; yet the ſinging ſeems alſo to have been regulated according to the ſenſe; ſo that the *accents* might ſerve not only to guide the ſinging, but alſo to point out the diſtinctions.—Though it muſt be confeſſed, that many of theſe diſtinctions are too ſubtle and inconſiderable; nor can the modern writers, or the editors of old ones, agree in opinion on this ſubject; ſome of them making twice as many of theſe diſtinctions as others.

The Hebrew *accents*, in effect, have ſomething common with thoſe of the Greeks and Latins; and ſomething peculiar to themſelves.—What they have in common, is, that they mark the tones; ſhewing how the voice is to be raiſed, and ſunk, on certain ſyllables. What they have peculiar is, that they do the office of the points in other languages.

It is certain the ancient Hebrews were not acquainted with theſe *accents*; ſo that, at beſt, they are not *jure divino*.—The opinion which prevails amongſt the learned, is, that they were invented about the ſixth century, by the Jewiſh doctors of the ſchool of Tiberias, called the Maſſoretes.

The learned Hennin affirms them to be of Arabic invention; and to have been adopted and transferred thence into the Hebrew by the Maſſoretes: eſpecially by the celebrated Rabbi Ben Aſcher, who flouriſhed in the middle of the ſixth century; on occaſion of the emperor Juſtinian's prohibiting the reading their traditions in their ſynagogues. He adds, that they were firſt brought to their degree of perfection, by Rabbi Juda Ben David Chiug, a native of Fez, in the eleventh century.—It is indeed poſſible, the Jews might borrow their points from the Arabs: but how they ſhould have their *accents* from them is hard to conceive, the Arabic language having no ſuch thing as *accents*, either in proſe or verſe.

As to the Greek *accents*, now ſeen both in manuſcript and printed books, there has been no leſs diſpute about their antiquity and uſe, than about thoſe of the Hebrews—Iſaac Voſſius, in an expreſs treatiſe De Accentibus Græcanis, endeavours to prove them of modern invention; aſſerting, that they anciently had nothing of this kind, but only a few notes in their poetry, which were invented by Ariſtophanes the grammarian, about the time of Ptolemy Philopater; and that theſe were of muſical, rather than of grammatical uſe, ſerving as aids in the ſinging of their poems; and very different from thoſe introduced afterwards.

This appears from inſcriptions as well as manuſcripts, none of which, till 170 years before Chriſt, has either accent, ſpirit, apoſtrophus, or ιωτα ſubſcribed.—He adds, that Ariſtarchus, a diſciple of Ariſtophanes, improved on his maſter's art; but that all they both did, was only deſigned to facilitate youth in the making of verſes.—The ſame Voſſius ſhews from ſeveral ancient grammarians, that the manner of writing the Greek *accents* in thoſe days, was quite different from thoſe now uſed in our books.

Hen. Chriſt. Hennin thinks, that *accents* were the invention of the Arabians, about nine hundred years ago; and that they were only uſed in poetry; that they were intended to aſcertain the pronunciation of the Greek, and to keep out that barbariſm which was then breaking in upon them; that the ancient *accents* of Ariſtophanes were perfectly agreeable to the genuine Greek pronunciation, but that the modern ones of the Arabs deſtroy it. Wetſtein, Greek profeſſor at Baſil, in a learned diſſertation, endeavours to prove the Greek *accents* of an older ſtanding.—He owns that they were not always formed in the ſame manner by the ancients; but thinks that difference owing to the different pronunciation which obtained in the ſeveral parts of Greece.

He brings ſeveral reaſons à priori for the uſe of *accents*, even in the earlieſt days; as that they then wrote all in capital letters equidiſtant from each other, without any diſtinction either of words, or phraſes; ſo that without *accents* they could ſcarce be intelligible: and that *accents* were neceſſary to diſtinguiſh ambiguous words, and to point out their proper meaning; and this ſentiment he confirms from a diſpute on a paſſage in Homer, mentioned by Ariſtotle in his Poetics, chap. v. Accordingly, he obſerves, that the Syrians, who have tonic, but no diſtinctive *accents*, have yet invented certain points, placed either below or above the words, to ſhew their mood, tenſe, perſon, or ſenſe. See farther in his Diſſertatio Epiſtolica de Accentuum Græcorum Antiquitate & Uſu. Baſil, 1686.

The uſe of *accents*, to prevent ambiguities, is moſt remarkably perceived in ſome eaſtern languages, particularly the Siameſe and Chineſe. The Chineſe only reckon four accents; for which the miſſionaries uſe the following marks, *á*, *â*, *à*, *ã*; to which they have added a fifth, thus *ă*. They make a kind of modulation, wherein, prolonging the duration of the ſound of the vowel, they vary the tone; raiſing and falling it by a certain pitch of voice: ſo that their talking is a ſort of muſic or ſinging. The ſame ſound *ya*, according to the *accent* affixed to it, ſignifies *God*, a *wall*, *excellent*, *ſtupidity*, and a *gooſe*.—If they deviate ever ſo little from the *accent*, they ſay quite a contrary thing than what was intended. Thus, meaning to compliment the perſon you are talking to with the title Sir, you call him a beaſt with the ſame word, only a little varied in the tone.

The Siameſe are alſo obſerved to ſing rather than talk. Their alphabet begins with ſix characters, all only equivalent to a K, but differently *accented*. For though in the pronunciation the *accents* are naturally on the vowels, yet they have ſome to diverſify ſuch of their conſonants as are in other reſpects the ſame.

As minutely as the *accents* of words have been ſtudied, the *accents* of ſentences ſeem to have been utterly overlooked: yet it may be obſerved, that all mankind lower the voice at the end of a period, elevate it in interrogations, and the like. See Bacon, de Augment. Scien. l. vi. cap. 1. Elem. Crit. vol. 2.

ACCENT is alſo applied, not very properly, to the characters which mark the quantities of ſyllables, or the time the voice is to dwell on them.

The ſpurious *accents* anſwer to the characters of time in muſic; as crotchets, quavers, &c.—The genuine *accents* rather anſwer to the muſical notes, ſol, fa, &c.

Such are the *long accent*, which ſhews that the voice is to ſtop on the vowel, and is expreſſed thus (¯).

The *ſhort accent*, which ſhews that the time of pronunciation ought to be ſhort, and is marked thus (˘).

Some even rank the hyphen, diaſtole, and apoſtrophe, among *accents*.

ACCENT alſo denotes a certain inflexion of voice; or a peculiar tone, and manner of pronunciation, contracted from the country, or province, where a perſon was bred. In this ſenſe, we ſay, the Welſh tone or *accent*, the northern *accent*, the Gaſcoign *accent*, Norman *accent*, &c.

ACCENT is alſo a tone or modulation of the voice, frequently uſed as a mark of the intention of the ſpeaker, and giving a good or an evil ſignification to his words.

One may give offence with the ſofteſt and moſt ſoothing words imaginable, by a proper management of the *accent*, and manner of pronouncing them.—The *accent* frequently gives a contrary ſenſe to what the words themſelves naturally imported.

ACCENT, in *Muſic*, is a modulation of the voice, to expreſs a paſſion.

Every bar or meaſure is divided into *accented* and *unaccented* parts.

The *accented* parts are the principal; being thoſe intended chiefly to move and affect: it is on theſe the ſpirit of the muſic depends.

The beginning and middle, or the beginning of the firſt half of the bar, and of the latter half of it, in common time; and the beginning of the three notes in triple time, are always the *accented* parts of the meaſures.

In common time, the firſt and third crotchet of the bar are on the *accented* part of the meaſure.—In triple time, where the notes always go by three and three, that which is in the middle of every three is always *unaccented*; the firſt and laſt *accented*. But the *accent* in the firſt is ſo much ſtronger, that in many caſes the laſt is accounted as if it had no *accent*.

The harmony is always to be full, and void of diſcords in the *accented* parts of the meaſure. In the *unaccented* parts this is not ſo abſolutely neceſſary; diſcords here paſſing without any great offence to the ear.

ACCENT, in *Poetry*. See REST.

ACCEPTANCE, the act of receiving, or admitting.

Acceptance, among civilians, is the concurrence of the will, or choice of the donee, which renders the act complete; and without which the donor may revoke his gift at pleaſure.

In beneficiary matters, the canoniſts hold, that the *acceptance* ſhould be ſignified at the ſame time with the reſignation; not *ex intervallo*.

ACCEPTANCE, in common law, denotes a tacit agreement to a preceding act, which might have been defeated and avoided, were it not for ſuch *acceptance* had.—If a man and his wife, ſeiſed of land in right of the wife, make a joint leaſe, or feoffment by deed, reſerving rent; the man dying, and the wife receiving the rent; ſuch receipt is deemed an *acceptance*, and ſhall make the leaſe good: ſo that ſhe ſhall be barred from bringing the writ, CUI IN VITA.

So if a leſſee for the term of twenty years, accept a leaſe of the ſame land for ten years: by the leſſee's *acceptance* of the new leaſe, the term of twenty years is determined in law. 2 Roll. Abr. 469.

ACCEPTANCE, in *Commerce*, is particularly uſed in reſpect of bills of exchange.—To *accept* a BILL *of exchange*, is to ſign, or ſubſcribe it; and thereby become principal debtor of the ſum contained therein; with an obligation to pay or diſcharge it at the time prefixed.

The *acceptance* is uſually performed by him on whom the BILL is drawn; upon its being preſented to him by the perſon on whoſe behalf it was drawn, or by ſome others by his order.—While the acceptor is maſter of his ſignature, i. e. before he has returned the *accepted* bill to the bearer, he may eraſe his *acceptance*; but not after he has once delivered it.

A ſmall matter amounts to an *acceptance*, ſo that there be a right underſtanding between both parties; as, "Leave "your bill with me, and I will accept it;" or "call "for it to-morrow, and it ſhall be accepted." This obliges as effectually by the cuſtom of merchants, and according to law, as if the party had actually ſubſcribed, or ſigned it, which is uſually done.

But ſhould a man ſay, "Leave your bill with me; I will "look over my accounts and books between the drawer "and me, and call to-morrow, and accordingly the bill "ſhall be accepted." This ſhall not amount to a complete *acceptance*; for this mention of his books and accounts, was really intended to give him an opportunity of examining if there were effects in his hands to anſwer; without which perhaps he would not accept the ſame; and ſo it was ruled by the lord chief juſtice Hale, at Guildhall, London.

A bill may be accepted for part; becauſe the party upon whom the ſame was drawn, had no more effects in his hands; which being uſually done, there muſt be a proteſt, if not for the whole ſum, yet at leaſt for the reſidue: however, after payment of ſuch part, there muſt be a proteſt for the remainder.

Bills payable at ſight are not to be *accepted*; as being to be acquitted at their preſenting; or, in defect of payment, to be proteſted.—In bills drawn for a certain number of days after ſight, the *acceptance* muſt be dated; becauſe the time is to be accounted therefrom.—The form of this *acceptance* is, *accepted ſuch a day*; and then the ſignature.

Bills drawn payable on a day named, or at USANCE, or double uſance, need not be dated; uſance being reckoned from the date of the bill itſelf.—On theſe it is ſufficient to write, *accepted*, and the ſignature.

If the bearer of a bill be contented with an *acceptance* to be paid in twenty days after ſight, where, in the bill itſelf, only eight days are expreſſed, he runs the riſque of the twelve additional days: ſo that if the acceptor fail, he has no remedy againſt the drawer. And if the bearer contents himſelf to receive a leſs ſum than is expreſſed, in part, he is to ſtand the chance of the reſt.

ACCEPTATION, in *Grammar*, the SIGNIFICATION of a word; or the ſenſe wherein it is taken and received. Thus we ſay:

Such a word has ſeveral *acceptations*. In its firſt and moſt natural *acceptation*, it denotes, &c.

ACCEPTILATION, in the *Civil Law*, an acquittance given without receiving any money; or a declaration of the creditor, in favour of the debtor, ſignifying, that he is ſatisfied for his debt, and forgives all farther claim, or demand; though in reality no payment has been made.

ACCEPTOR, of a bill of exchange, the perſon who accepts the bill.

The *acceptor*, who is uſually the perſon on whom the bill is drawn, becomes perſonal debtor by the acceptance; and is obliged to pay it, though the drawer fail before it becomes due.

ACCESS, in a general ſenſe, ſignifies the approach of a thing towards another.

In which ſenſe, *acceſs* ſtands oppoſed to *receſs*.

We ſometimes ſay, the *acceſs* of bodies, the *acceſs* of the moon, the ſun, planets, &c. but more frequently, the approach of bodies, the appulſe of the moon, the riſing of the ſun, &c. Geometricians ſpeak of a line called the curve of equable *acceſs*, or approach.

Access, in a more particular ſenſe, denotes entrance, or admiſſion.

We ſay, ſuch a perſon has *acceſs* to the prince: the *acceſs* on that ſide was very difficult, by reaſon of rocks, &c.

Access, in *Medicine*, denotes a fit, or return of ſome periodical diſeaſe.

We ſay an *acceſs* of the gout, but eſpecially of an ague, an intermitting fever, an epilepſy, &c. an *acceſs* of madneſs; ſometimes alſo a prophetical *acceſs*, a cold *acceſs*, &c. *Acceſs* is frequently confounded with *paroxyſm*; but they are different things; an *acceſs* being properly the beginning, or firſt onſet of a diſeaſe, a PAROXYSM the height of it.

ACCESSIBLE, ſomething that may be approached; or, that acceſs may be had to.

Such a place, a fortreſs, is *acceſſible* from the ſea-ward; i. e. the paſſage to it is practicable. See FORTIFICATION.

ACCESSION, in a general ſenſe, is the act of approaching, or going to a place, perſon, or thing. It is more particularly uſed for the act whereby a thing is joined or united to ſomething exiſting before.

Accession is alſo uſed for the act of engaging, and becoming a party, in a treaty before concluded between other powers; on the ſame footing and conditions as if originally comprehended in the treaty itſelf: ſuch as The *acceſſion* of the States General to the treaty of Hanover; of the Czarina to the treaty of Vienna, &c.

Accession, in the language of the *Conclave*, is a method of electing a pope, by procuring for ſome candidate two thirds of the voices, upon which the reſt are inrolled by way of *acceſſion*.

Accession, in the *Civil Law*, denotes a method of acquiring property in certain things, by virtue of their connection with other things, which already belong to us.

Acceſſion is effected divers ways, from whence ariſe ſeveral ſpecies of it: *ſimple* and *mixt*; *natural* and *artificial*; *diſcrete* and *concrete acceſſion*.

ACCESSORY, or **Accessary**, ſomething that accedes, or is added to another more conſiderable thing.

In which ſenſe, the word ſtands oppoſed to PRINCIPAL.

Accessory, or **Accessary**, in *Common Law*, is chiefly uſed for a perſon guilty of a felonious offence, not principally, but by participation: as, by advice, command, or concealment.

There are two kinds of *acceſſories*; *before* the fact, and *after* it.—The *firſt* is he who commands, or procures another to commit felony, and is not preſent himſelf; for if he be preſent, he is a principal.

The *ſecond* is he who receives, aſſiſts, or comforts any man that has done murder, or felony, whereof he has knowledge. A man may alſo be *acceſſory* to an *acceſſory*, by aiding, receiving, &c. an *acceſſory* in felony.

An *acceſſory* in felony ſhall have judgment of life and member, as well as the principal, who did the felony; but not till the principal be firſt attainted, and convict, or outlawed thereon.—Where the *principal* is pardoned without attainder, the *acceſſory* cannot be arraigned; it being a maxim in law, *Ubi non eſt principalis, non poteſt eſſe acceſſorius*. But if the principal be pardoned, or have his clergy after attainder, the *acceſſory* ſhall be arraigned. 4 and 5 W. & M. cap. 4. And by Stat. 1 Anne, cap. 9, it is enacted, that where the *principal* is convicted of felony, or ſtands mute, or challenges above twenty of the jury, it ſhall be lawful to proceed againſt the *acceſſory* in the ſame manner as if the *principal* had been attainted; and notwithſtanding ſuch *principal* ſhall be admitted to his clergy, pardoned, or delivered before attainder. In ſome caſes alſo, if the *principal* cannot be taken, then the *acceſſory* may be proſecuted for a miſdemeanor, and puniſhed by fine, impriſonment, &c. Stat. ibid. See Stat. 5 Anne, cap. 31. In the loweſt and higheſt offences there are no *acceſſories*, but all are *principals*: as in riots, routs, forcible entries, and other treſpaſſes, which are the loweſt offences.—So alſo in the higheſt offence, which is, according to our law, high treaſon, there are no *acceſſories*. Cok. Littlet. 71.

Acceſſories, in petty treaſon, murder, and in felonies of ſeveral kinds, are not to have their clergy.—There can be no *acceſſory* before the fact in manſlaughter; becauſe that is ſudden and unprepenſed.

Accessory by ſtatute, is ſuch a one as abets, adviſes, aids, or receives one that commits an offence, which is made felony by ſtatute.

Accessory *nerves*, **Accessorius** *Williſii*, or *Par* **Accessorium**, in *Anatomy*, a pair of nerves, which, ariſing from the medulla in the vertebræ of the neck, aſcend, and enter the ſkull, and paſs out of it again, with the par vagum, wrapped up in the ſame common integument, and after quitting them, are diſtributed into the muſcles of the neck and ſhoulders.—See *Tab. Anat.* (*Oſteol.*) *fig.* 5. *lit.* rr.

In the aſcent towards the head, they receive branches from each of the firſt five pair of cervical nerves, near their riſe from the medulla; and ſend forth twigs to the muſcles of the larynx, gula, &c.—Uniting with a branch of the intercoſtal, they form the plexus ganglioformis.

Accessory, among *Painters*, an epithet given to ſuch parts of an HISTORY-*piece*, as ſerve chiefly for ornament, and might have been wholly left out: ſuch are *vaſes*, *armour*, &c.

ACCIDENCE, **Accidentia**, a name chiefly uſed for a little book, containing the firſt elements, or rudiments of the Latin tongue.

ACCIDENS, **Accident**, in *Philoſophy*.

Per **Accidens**, is frequently uſed among *Philoſophers* to denote what does not follow from the nature of a thing, but from ſome accidental quality thereof: in which ſenſe it ſtands oppoſed to PER *ſe*, which denotes the nature and eſſence of a thing.

Thus, fire is ſaid to burn *per ſe*, or conſidered as fire, and not *per accidens*; but a piece of iron, though red-hot, only burns *per accidens*, by a quality *accidental* to it, and not conſidered as iron.

ACCIDENT, **Accidens**, in *Philoſophy*, ſomething additional, or ſuperadded, to a SUBSTANCE; or not eſſentially belonging thereto, but capable, indifferently, either of being or not being in it, without the deſtruction thereof.

The ſchoolmen diſtinguiſh three kinds of *accidents*; *verbal*, *predicable*, and *predicamental*.

Accident, *Verbal*, *Accidens verbale*, ſtands oppoſed to eſſence; and in this ſenſe, the adjuncts to a thing, though ſubſtances themſelves, are denominated *accidents* thereof. Thus, the cloaths a man has on, though real ſubſtances, yet, as they are not eſſential, but adventitious or acceſſory to his perſon, are *accidents*.

Accident, *Predicable*, *Accidens prædicabile*, is uſed in oppoſition to *proper*.—Such is any common quality; as whiteneſs, heat, learning, or the like.

Thus a man may be ſick or well; and a wall white or black; yet the one be ſtill a man, and the other a wall.

Theſe are called in the ſchools, *predicable accidents*; becauſe uſually laid down and explained in the doctrine of predicables.

Accidents, *Predicable*, may either be taken in the ABSTRACT, as whiteneſs, learning; or in the CONCRETE, white, learned.

If taken in the *abſtract*, as is done by Porphyry, the *accident* is defined as above, that which may either be preſent, or abſent, without the deſtruction of its ſubject.

If it be taken in the *concrete*; *accident* is uſually defined by the ſchoolmen, to be ſomething capable of being predicated contingently, of many, in reſpect of quality.—As learning, which may probably be predicated of you, him, &c.

Accident, *Predicamental*, *Accidens prædicamentale*, is a mode, or modification of ſome created ſubſtance, inhering or depending thereon, ſo as not to be capable of ſubſiſting without the ſame.

In this ſenſe, *accident* is oppoſed to *ſubſtance*.—Whence, as ſubſtance is defined a thing that ſubſiſts of itſelf, and the *ſubſtratum* of *accidents*; ſo an *accident* is ſaid to be that *cujus eſſe eſt ineſſe*: and therefore Ariſtotle, who uſually calls ſubſtances ſimply οντα, entities, beings; commonly calls *accidents*, οντος οντα, entities of entity; requiring ſome ſubſtance wherein to reſide, as their ſubjects of adheſion.

Accident, then, has an immediate and eſſential dependence on its ſubſtance; both as to its production, its continuation, and its effects: it ariſes or is deduced from its ſubject, is preſerved or ſubſiſted by it; and can only be affected by what alters, or affects, the ſubject.

The old ſchoolmen, however, will not have *accidents* to be mere modes of matter, but entities really diſtinct from it: and, in ſome caſes, ſeparable from all matter.—But the notion of real *accidents*, and qualities, is now exploded. Ariſtotle and the Peripatetics make nine kinds or claſſes of *predicamental accidents*; others contract them into a leſs number.

ACCIDENT, *Abſolute*, is a term uſed in the Romiſh theology, for a predicamental *accident*, which ſubſiſts, or may poſſibly ſubſiſt, at leaſt miraculouſly, and by ſome ſupernatural power, without a ſubject.

Such, they contend, are the *accidents* of the bread and wine in the euchariſt, e. g. the colour, flavour, figure, &c. thereof, which remain after the ſubſtances they belonged to are changed into other ſubſtances of fleſh.

The Carteſians, univerſally, combat the notion of *abſolute accidents*; it being their doctrine, that the eſſence of matter conſiſts in extenſion; and that *accidents* are only modifications thereof, in no wiſe diſtinct from it: an *accident* therefore without a ſubject muſt be a contradiction.—And hence, Carteſianiſm is branded as contrary to the Roman catholic faith.

Various expedients have been invented by the Carteſians, to account for tranſubſtantiation, &c. without the hypotheſis of *abſolute accidents*.—Some hold, that the uſual impreſſions are made on the ſenſe by the immediate agency of God; and without any thing remaining of the former nature. Others aſcribe the whole to hetorogeneous matters contained in the pores of the bread, &c. which remaining unaltered by the tranſubſtantiation, produce the ſame ſenſations as the bread produced.

ACCIDENT, in the popular ſenſe of the word, ſignifies a contingent effect; or ſomething produced caſually, and without any foreknowledge or deſtination thereof in the agent that produced it.

ACCIDENT, in *Heraldry*, is an additional note, or mark, in a coat-armour, not neceſſarily belonging thereto; but capable either of being retained, or omitted, without altering the eſſence of the armour.—Such are ABATEMENTS, DIFFERENCES, and TINCTURE.

ACCIDENT, among *Phyſicians*, is ſometimes uſed for what is more generally called SYMPTOM.

ACCIDENTS, in *Aſtrology*, denote the moſt extraordinary occurrences in the courſe of a man's life: ſuch are a remarkable inſtance of good fortune, a ſignal deliverance, a great ſickneſs, &c.

ACCIDENTAL, ſomething that partakes of the nature of an *accident*; or, that is not eſſential to its ſubject, but indifferent.

Thus, whiteneſs is *accidental* to marble; and heat, to iron.

ACCIDENTAL *Colours*, ſo called by M. Buffon, are thoſe which depend upon the affections of the eye, in contradiſtinction to ſuch as belong to the light itſelf. The impreſſions made upon the eye by looking ſtedfaſtly on objects of a particular colour are various, according to the ſingle colour, or aſſemblage of colours, in the object, and they continue for ſome time after the eye is withdrawn, and give a falſe colouring to other objects which are viewed during their continuance. M. Buffon has endeavoured to trace the connection which theſe *accidental* colours have with thoſe that are natural, in a variety of inſtances. The ſubject has likewiſe been conſidered by M. de la Hire, and M. Æpinus; and M. d'Arcy has contrived a machine for meaſuring the duration of the abovementioned impreſſions on the eye, and he inferred, in the reſult of ſeveral trials, that the effect of the action of light on the eye continued about eight thirds of a minute. See Ac. Par. 1743. Ditto, 1765. Nov. Com. Petrop. v. 10. And for an abſtract, Dr. Prieſtley's Hiſt. &c. of Diſcoveries relating to Viſion, &c. p. 631.

ACCIDENTAL *Point*, in PERSPECTIVE, is a POINT in the horizontal line, where lines parallel to one another, though not perpendicular to the picture, or repreſentation, meet.

ACCIDENTAL *Dignities*, and *Debilities*, in *Aſtrology*, are certain caſual diſpoſitions, and affections, of the planets, whereby they are ſuppoſed to be either ſtrengthened, or weakened, by their being in ſuch a houſe of the figure.

ACCIPENSER, in the Linnæan ſyſtem of *Zoology*, the name of a genus of fiſh, of the order of the *chondropterygii*. This genus comprehends the ſturgeon, &c. Its diſtinguiſhing characters are, that the mouth is tubulated, and without teeth; and the gills have only one hole or aperture on each ſide.

The ſpecies of this genus are two, the STURGEON and the HUSO, or iſinglaſs-fiſh.

There have been many diſputes, whether the ſturio or ſturgeon be the ſame fiſh with the *accipenſer* or not, and what was the difference between the *accipenſer* and *ſilurus* of the ancients; but the whole ſeems to have been this, that the Romans called the ſturgeon *accipenſer*, when they had it freſh, and caught in their own neighbourhood, but *ſilurus*, when it was brought to them in pickle from the Grecian ports.

ACCIPESIUS, in *Ichthyology*, a name given by Athenæus and other of the Greek writers, to the ſturgeon, called by others *oniſcos*. See ACCIPENSER.

ACCIPITER, in *Ichthyology*, a name given by Gellius, and ſome others, to the fiſh called by others, the *milvus* and *lucerna*. It is a ſpecies of the *trigla*, and is diſtinguiſhed by Artedi, by the name of the *trigla*, with the head a little aculeated, and with a ſingular fin, placed near the pectoral fins.

ACCIPITER, the *hawk*, in the Linnæan ſyſtem of *Zoology*, the name of one whole order of birds: the diſtinguiſhing character of which, is, their having a hooked or crooked beak. Of this order there are three genera, the PARROT, the OWL, and the FALCON, diſtinguiſhed by their ſeveral marks.

ACCIPITRINA, in *Botany*, a name by which ſome authors have expreſſed the hawk-weed, and others the flixweed or *Sophia chirurgorum*.

ACCISMUS, denotes a feigned refuſal of ſomething which a perſon earneſtly deſires. The word is Latin, or rather Greek ακκισμος; ſuppoſed to be formed from *Acco*, the name of a fooliſh old woman, famous in antiquity, for an affectation of this kind.

Acciſmus is ſometimes conſidered as a virtue, ſometimes as a vice, which Auguſtus and Tiberius practiſed with great ſucceſs.

Cromwell's refuſal of the crown of England, may be brought as an inſtance of an *acciſmus*.

ACCLAMATION, a confuſed noiſe, or ſhout of joy, by which the public expreſs their applauſe, eſteem, or approbation of any thing.

Acclamation, in a more proper ſenſe, denotes a certain *formula* of words, uttered with extraordinary vehemence, and in a peculiar tone, ſomewhat reſembling a ſong frequent in the ancient aſſemblies.

Acclamations were uſually accompanied with applauſes, with which they are ſometimes confounded, though they ought to be diſtinguiſhed; as

Acclamation was given by the voice, applauſe by the hands; beſides, *acclamation* was alſo beſtowed on perſons abſent, applauſe only on thoſe preſent. *Acclamation* was alſo given by women, whereas applauſe ſeems to have been confined to men.

Acclamations are of divers kinds; *eccleſiaſtical*, *military*, *nuptial*, *ſenatorial*, *ſynodical*, *ſcholaſtic*, *theatrical*, &c.

Biſhops and other eccleſiaſtical officers, were elected by the *acclamations* of the people. We meet with loud *acclamations*, muſical and rhythmical *acclamations*, *acclamations* of joy and reſpect, and even of reproach and contumely. The former, wherein words of happy omen were uſed, were alſo called *laudationes & bona vota*, or good wiſhes: the latter, *execrationes & convicia*.—But their principal uſe has always been at the ſolemn entries of princes, and heroes; where they are uſually attended with good wiſhes, prayers, vows, &c.

Antiquity has handed down to us ſeveral forms of *acclamation*; the Hebrews uſed to cry, Hoſanna; the Greeks, Αγαθη τυχη, *good luck*.—The Romans to their princes, generals, &c. *Dii te nobis ſervent, veſtra ſalus, noſtra ſalus: the Gods preſerve you for us*; *your ſafety, our ſafety.*

The *acclamations* of the army were generally *Io triumphe*, or *ſalve imperator*.

ACCLAMATION is alſo applied among the *Antiquaries* to certain medals; whereon the people are repreſented expreſſing their joy for ſome conſiderable favour.

In this ſenſe, *acclamation* is alſo uſed to denote the vows repreſented on medals, for the proſperity of the emperor and commonwealth.

ACCLAMATION alſo denotes a method of election, practiſed in the ACADEMY of *Arcadi*, when the votes are not given in ſecret, as is practiſed on other occaſions, but *viva voce*. Cardinals, princes, viceroys, and embaſſadors, are elected by *acclamation*.

The members thus choſen, aſſume the title *Arcade acclamato*, a dignity ſomewhat ſuperior to the reſt.

ACCLAMATION, in *Rhetoric*, is a figure of ſpeech, thus called by the Latins, by the Greeks *epiphonema*.

ACCLIVIS, in *Anatomy*, a muſcle, otherwiſe called OBLIQUUS *aſcendens*.

ACCLIVITY, the ſteepneſs, or ſlope, of a line or PLANE inclined to the HORIZON; taken upwards.

The aſcent of a hill is an *acclivity*: the deſcent of the ſame a *declivity*.

Some writers of fortifications uſe *acclivity* for TALUS.

ACCOLA, in a general ſenſe, denotes an inhabitant near any certain place.

The word is compounded of *ad*, *to*; and *colere*, *to dwell*, *inhabit*; *accola eo quod adveniens terram colat*. Hence ſome place the diſtinguiſhing character of *accolæ* in this, that they come from elſewhere: *Accola cultor loci in quo non eſt natus*; by which they ſtand oppoſed to *incolæ*—According to the verſe:

> *Accola non propriam, propriam colit incola terram.*

ACCOLADE, a ceremony anciently uſed in the conferring of knighthood.

The word literally denotes an embrace, or hugging; being formed of *ad*, *to*; and *col*, or *collum*, *neck*.

Antiquaries are not agreed, wherein the *accolade* properly conſiſted.—The generality ſuppoſe it to be, the embrace or kiſs, which princes anciently gave the new knight, as a token of their affection.—Whence the word *accolade*, q. d. a claſping, or taking round the neck. A very ingenious author will rather have it to be a blow on the chine of the neck, given on the ſame occaſion. Fauchet ſeems to reconcile the two opinions: he ſuppoſes it to be the kiſs; but withal, imagines the kiſs to be intended as a ſtroke on the cheek, *En leur baillant ſur la joue.*—The ceremony being only an imitation of that practiſed among the Romans, in the *manumiſſion* of their ſlaves, where it is known a blow was given.

For the *accolée*, or blow, John of Saliſbury aſſures us, it was in uſe among the ancient Normans: by this it was that William the Conqueror conferred the honour of knighthood on his ſon Henry.

At firſt, it was given with the naked fiſt; thus Lambertus Ardenſis, deſcribing the manner in which Baldric, count de Guines, was created knight by Thomas à Becket, ſays, *eidem comiti in ſignum militiæ gladium lateri et calario ſui militis pedibus aptavit, & alapam collo ejus inflixit.* But this was afterwards changed into a blow with the flat of a ſword, on the ſhoulder of the knight.

Salmonet, and after him the continuators of Morery, mention an order in England, called knights of the *accolade*; ſo called from the manner of their creation. The order here meant is that of knights bachelors, or *equites aurati.* But the name, if ever, is now no longer known among us.

ACCOLE'E is ſometimes uſed as ſynonymous with Accolade.

Accolée is alſo uſed in *Heraldry* in divers ſenſes, when two things are joined together, as two ſhields divided at the flanks, they are ſaid to be *accolée.*

Accolée is alſo uſed in ſpeaking of lions, dogs, and other animals, which have collars, or crowns about their necks; as the lion in the arms of the name of Ogilvy.

Engliſh heralds ordinarily ſay, *collared*, or *gorged* with an open crown, inſtead of *accolée.*

Others uſe the term *accolée*, when two keys, batoons, maces, ſwords, &c. are ſaltier wiſe, behind the ſhield.

ACCOMMODATION, in *Philoſophy*, the application of one thing, by analogy, to another.

To know a thing by *accommodation*, is to know it by the idea of a ſimilar thing referred thereto.

Accommodation, is alſo uſed in *Theology:* thus, a prophecy of ſcripture is ſaid to be fulfilled properly, as when a thing foretold comes to paſs; and improperly, or by way of *accommodation*, when an event happens to any place or people, like to what fell out ſome time before to another.—This method of explaining ſcripture by *accommodation*, ſerves as a key for ſolving ſome of the greateſt difficulties relating to the prophecies.

The primitive church accommodated multitudes of Jewiſh, and even heathen ceremonies and practices to Chriſtian purpoſes; but the Jews had before done the ſame by the Gentiles: ſome will even have circumciſion, the tabernacle, brazen ſerpent, &c. to have been originally of Egyptian uſe, and only accommodated by Moſes to the purpoſes of Judaiſm. Saurin's Diſſert. Old Teſt. tom. I. p. 506. Middleton's Letters from Rome.

Accommodation, in *Law*, is alſo uſed for an amicable agreement, or compoſition, between two contending parties.—Thus we ſay, The proceſs is grown ſo intricate and perplexed, that there is no hope of getting out of it but by an *accommodation.*

Theſe *accommodations* are frequently effected by means of compromiſe, and arbitration.

ACCOMPANYMENT, ſomething attending, or added as a circumſtance to another; either by way of ornament, or for the ſake of ſymmetry, or the like.

Accompanyment, in *Muſic*, denotes the inſtruments which accompany a voice, to ſuſtain it, as well as to make the muſic more full.

The *accompanyment* is uſed in recitative, as well as in ſong; on the ſtage, as well as in the choir, &c. The ancients had likewiſe their *accompanyments* on the theatre; they had even different kinds of inſtruments to *accompany* the chorus, from thoſe which accompanied the actors in the recitation.

The *accompanyment*, among the moderns, is frequently a different part or melody, from the ſong it accompanies. It is diſputed whether it was ſo among the ancients.—The organiſts ſometimes apply the word to ſeveral pipes which they occaſionally touch to *accompany* the treble; as the drone, flute, &c.

Accompanyments, in *Heraldry*, are all ſuch things as are applied about the ſhield, by way of ornament; as the belt, mantlings, ſupporters, &c.

A thing is alſo ſaid to be *accompanied*, when there are ſeveral bearings, or figures, about ſome principal one; as a ſaltier, bend, feſs, chevron, or the like.

ACCOMPLICE, one that has a hand in a buſineſs; or is privy in the ſame deſign or crime with another. See Accessory.

The word is compounded of *ad, to*; *con, together*; and *plicare, to fold.*

By the law of Scotland, the *accomplice* can only be proſecuted after the conviction of the *principal* offender: unleſs the acceſſion of the *accomplice* is immediate, in *ipſo actu*, ſo as in effect to render them *co-principal.*

By the general rule, the *accomplice* ſuffers the ſame puniſhment with the *principal* offender. Yet if he be remarkably leſs guilty, juſtice will not permit equal puniſhment.

The council of Sens, and ſeveral other ſynodical ſtatutes, expreſly prohibit the revealing of *accomplices.*

ACCOMPLISHMENT, the entire execution, atchievement, or fulfilling of ſomething propoſed, or undertaken.

Accomplishment, in *Theology*, is principally uſed in ſpeaking of events foretold by the Jewiſh prophets, in the Old Teſtament, and fulfilled under the New.

Mr. Sykes has a particular inquiry into the meaning of thoſe words uſed by the evangeliſt: That it might be fulfilled, or accompliſhed, which was ſpoke by the prophets; where he ſhews. that the ἵνα πληρωθη, *fulfilled*, does not neceſſarily refer to a prediction of a future event *accompliſhed*; but is frequently a mere accommodation of words, borrowed from ſome other author, and accommodated to the preſent occaſion. Grotius ſuggeſted the opinion firſt.

Accomplishment is more particularly uſed for the acquirement of ſome branch of learning, uſeful art, polite exerciſe, &c.

ACCOMPT. See Account.

ACCORD, in *Muſic*, is more uſually called Concord.

The word is formed, according to ſome, from the Latin *ad, to*; and *cor*, the *heart*; but others, with greater probability, derive it from the French *corde*, a *ſtring*, or *cord*; on account of the agreeable union between the ſounds of two ſtrings ſtruck at the ſame time. Whence alſo ſome of the conſonants in muſic come to be called *tetrachord, hexachord*, &c. which are a fourth, and a ſixth.

Accord, in *Law*, is a verbal agreement between two, at the leaſt, to ſatisfy an offence that the one hath committed againſt the other; whether it be a treſpaſs, or the like; for which the one agrees to make, and the other to accept, a certain ſatisfaction.—This, if executed, becomes a good bar in law to any ſuit to be brought for the ſame matter.

Accord with ſatisfaction is a good plea in perſonal actions, where damages only are to be recovered; and in all actions which ſuppoſe a wrong *vi & armis*, where a *copias* and *exigent* lay at the common *Law*, in treſpaſs and ejectment, detinue, &c. So in an appeal of *Maihem.* But in real actions it is not a good plea. 4 Rep. 1. 9. 70. 9 Rep. 77.

ACCOUNT, or Accompt, in *Arithmetic*, a *calculus*, or computation of the number of certain things, or computation of time, &c.

The word is compounded of *ad, to*; and *computus*, a *computation.*

There are various ways of *accounting*; as, by enumeration, or telling one by one; and by the rules of arithmetic, addition, ſubtraction, &c.

We *account* time by years, months, &c. The Greeks *accounted* it by olympiads; the Romans, by indictions, luſtres, &c. We *account* diſtances by miles, leagues, &c.

Account is alſo uſed in reſpect of a company or ſociety, when two or more perſons have received or diſburſed money for each other; or when this has been done by their order or commission.

Account, or Accounts, is alſo uſed, collectively, for the ſeveral books or regiſters which merchants keep of their affairs and negociations.

There are divers kinds of *accounts* among merchants, as *perſonal, real, imaginary, general, particular accounts*, &c.

Accounts, *Perſonal*, are thoſe which diſcover what each perſon, or ſubject, with whom a man has dealings on credit, owes to, or has owing to him.

Accounts, *Real*, are thoſe whereby a dealer diſcovers what effects are on hand at any time, and what is gained or loſt on each.

Every *account* is diſtinguiſhed into two parts, for which two oppoſite pages are aſſigned of one folio or opening; the name of the perſon with whom a man has *account* being written on the top of each, with the word debtor on the left-ſide, and creditor on the right.

Account, *Perſonal*, is to contain on the debtor ſide what the perſon owes me, and the payments I make to him; and on the creditor ſide, all that I owe to him, and the payments he makes of his debts to me.

Account, *Real*, muſt contain on the debtor ſide the quantity and value of what was upon hand at the beginning of the *account*, and all afterwards received, with the coſts and charges thereof; and on the creditor ſide, the quantity and value of what is diſpoſed of or any way taken out of it, with the returns made by it.

Accounts, *Imaginary*, are then brought in to make a balance between credit and debt, and in caſes where the real and perſonal *accounts* will not in the articles belonging to them make, as they uſually do, ſuch balance.

The chief of theſe is the *account* of *profit* and *loſs*; on the debtor ſide of which are entered all loſſes, and on the creditor ſide all gains. Such alſo is the *ſtock account*, &c.

Accounts, *Sundry*, when one *account* is balanced by ſundry; i. e. when one debtor or creditor for a ſum, and ſundry *accounts* creditors or debtors for the parts of the ſum; it is entered under the head of to, or by, *ſundry accounts*.

Accounts, *General*, are thoſe where all the goods of the ſame name are put into one *account*.

Accounts, *Particular*, are thoſe where each ſpecies, or ſubdiviſion of things under the ſame name, have their ſeparate *account*.

Account, *Open*, is uſed for an *account* not liquidated or ſettled.

Account *in bank* is a fund of money, which merchants, or others, place in the common caſh of a bank, to be in readineſs for the payment of bills of exchange, or promiſſory notes, purchaſes, and other debts contracted in the courſe of buſineſs.

Account *Current* amounts to the ſame with an open *account*.

Account, *opening an*, with any one, ſignifies the placing him, for the firſt time, in the great book. This is done by writing his name, ſurname, and place of reſidence, in large characters, and afterwards charging him with articles, either of debtor or creditor, as affairs turn up. When an *account* is opened with any perſon in the great book, his name is to be entered at the ſame time in the index, or alphabet book, with the page wherein his *account* is to be found.

Account, *placing a Sum to an*, is to enter down in the great book the ſeveral particulars for which a perſon becomes either debtor or creditor.

Account, *examining an*, is the reading it exactly over, pointing the ſeveral articles, and verifying the computation, in order to find whether there be any error, and whether the ſum total, or the balance, be juſt.

Account, *caſting up, or cloſing an*, is the ſtating and ſettling of it, to find the balance: this is called alſo *balancing* or *ſettling an account*.

Accounts are *cloſed* in the great book, on two occaſions: the firſt, when it is required to terminate an affair entirely, either with debtors or creditors, in order to learn what is due. The ſecond, when it is neceſſary to carry on the *account* to another page of the ſame book, or to a new book, for want of room.

Account, *Balance of an*, is the ſum by which the debt exceeds the credit, or *vice verſa*, upon ſtating or ſettling of it.

Account *of Sales*, is an *account* given by one merchant to another, or by a factor to his principal, of the diſpoſal, charges, commiſſion, and nett proceeds of certain merchandize, ſent for the proper, or company, account of him, who conſigned the ſame to ſuch factor or vender.

When the like *account* is inland or domeſtic, the ſame is tranſmitted in the current money of that country wherein the buſineſs is tranſacted. As from a Blackwell-hall factor to the clothiers in the country, or from the warehouſemen in town, who deal by commiſſion for the country manufacturers, as bay-factors, drugget and duroy factors, and the like.

Account, *Money of*, is an arbitrary ſpecies, contrived for the facilitating, and expediting the taking, and keeping of *accounts*.—Such are pounds ſterling in England; livres and ſols in France; roupees in India; milrees in Portugal.

Accounts, *Books of*, of merchants and tradeſmen, are conſidered as a ſort of private inſtruments, and in the civil law, and law of merchants, are allowed to make a half proof. The reaſon is, that merchants are often under a neceſſity of dealing on truſt, without note or writing. Hence the ſuppletory oath of the merchant, with his book of *accounts*, is admitted abroad as a full proof againſt his chapman. But in England this is under ſome limitation. See Stat. 7. Jac. I. cap. 12. which confines this ſpecies of proof to ſuch tranſactions as have happened within one year before the action brought; unleſs between merchant and merchant, in the uſual intercourſe of trade.

Account, or **Accompt**, in a legal ſenſe, is a particular detail, or enumeration, delivered to a court, a judge, or other proper officer or perſon, of what a man has received or expended on the behalf of another, whoſe affairs he had the management of.

In the REMEMBRANCER's office in the exchequer, are entered the ſtates of all the *accounts* concerning the king's revenue; for cuſtoms, exciſe, ſubſidies, &c.

The great *accounts*, as thoſe of the mint, wardrobe, army, navy, tenths, &c. are called *impreſt accounts*.

All *accounts* which paſs the remembrancer's office, are brought to the office of the clerk of the PIPE. See TALLY and AUDITOR.

Account, in *Common Law*, denotes a writ or action which lies againſt a perſon, who by his office ought to give an *account*, but refuſes.

A writ or action of *account* properly lies only againſt bailiffs, receivers, and guardians in SOCAGE; though others are alſo brought in as a ſecondary intendment.

By 4 and 5 Anne, actions of *account* may be brought againſt the executors and adminiſtrators of guardians, bailiffs, receivers, &c. and by one jointenant, &c. againſt the other, his executors and adminiſtrators, as bailiff for receiving more than his ſhare: however, actions of *account* are now very ſeldom uſed; the moſt ready and effectual way of ſettling matters of *account* being by bill in a court of equity.

Accounts, *Chamber of*, in the French polity, is a ſovereign court, of great antiquity, where the *accounts* relating to the king's revenue are delivered in, and regiſtered. This anſwers pretty nearly to the court of exchequer in England.

There are preſidents of *accounts*, maſters of *accounts*, correctors of *accounts*, &c.

ACCOUNTANT, or **Accomptant**, a perſon, or officer, appointed to keep, or make up the *accounts*, of a company, office, court, or the like.

Thus there are *accountants* in the cuſtom-houſe, the exciſe, &c. See CHANCERY, COUNTING-*Houſe*, BOOK-*Keeping*.

ACCOUTREMENT, an ancient term, uſed for an habiliment; or a part of the apparatus and furniture of a ſoldier, knight, or even of a gentleman.

The word is formed from the ancient German, *kuſter*; whence *coutre*, a name uſed in ſome cathedrals in France, e. g. at Bayeux, for the ſacriſtan or officer, who has the care of furniſhing, and ſetting out, the altar, in the church; called in German *kuſter*, νεωκορος.

ACCRETION, in *Phyſics*, the growth or increaſe of an organical body, by the acceſſion of new parts. Alſo a growing together, as of the fingers to one another.

The word is compounded of *ad*, *to*; and *creſcere*, *to grow*. *Accretion* is of two kinds; the one, conſiſting in an external appoſition of new matter.

This is what we otherwiſe call, *juxtapoſition*; and it is thus, ſtones, ſhells, &c. are ſuppoſed to grow.

The other is by ſome fluid matter received into proper veſſels, and gradually brought to adhere, or grow to the ſides thereof.—This is what we call *introſuſception*; and it is thus that plants and animals are nouriſhed.

Accretion, in the *Civil Law*, denotes the union or ACCESSION of a thing vague or vacant, to another already occupied, or diſpoſed of.

A legacy given to two perſons jointly, *tam re quam verbis*, falls wholly to him that ſurvives the teſtator, by right of *accretion*.—ALLUVION is another ſpecies of *accretion*.

ACCROCHE', in *Heraldry*, denotes a thing's being hooked into another.

ACCROACHING, in old *Law* books, the act of incroaching or uſurping on another's right; and particularly the attempt to exerciſe royal power, which was a very vague charge, and led to a multitude of conſtructive treaſons. Theſe are limited and defined by Stat. 25 Edw. III. cap. 2. The word is originally French, *accrocher*, which ſignifies to faſten a thing by a hook.

ACCRUE, or **Accrew**, in *Law*, is underſtood, of a part that accedes to, or follows the property of, another part or perſon.

ACCUBATION, a poſture of the body, between ſitting and lying.

The word is compounded of *ad*, *to*; and *cubo*, *I lie down*. *Accubation*, or *accubitus*, was the table poſture of the Greeks and Romans; whence we find the words particularly uſed for the lying, or rather as we call it, ſitting down to meat.

The Greeks introduced this poſture. The Romans, during the frugal ages of the republic, were ſtrangers to it. But as luxury got footing, this poſture became adopted, at leaſt by the men; for as to women, it was reputed an indecency in them to lye down among the men; though afterwards this too was got over. But children did not lye down, nor ſervants, nor ſoldiers, nor perſons of meaner condition; but took their meals ſitting, as a poſture leſs indulgent.

The Roman manner of diſpoſing themſelves at table was this: a low round table was placed in the cœnaculum, or dining-room, and about this uſually three, ſometimes only two beds, or couches; according to the number of which, it was called *bielinium*, or *triclinium*. Theſe were covered with a ſort of bed-cloaths, richer or plainer, according to the quality of the perſon, and furniſhed with quilts and pillows, that the gueſts might lie the more commodiouſly. There were ordinarily three perſons on each bed; to crowd more was eſteemed ſordid. In eating they lay down on their left ſides, with their heads reſting on their pillows, or rather on their elbows. The firſt lay at the head of the bed, with his feet extended behind the back of the ſecond; the ſecond lay with the back of his head towards the navel of the firſt, only ſeparated by a pillow, his feet behind the back of the third; and ſo of the third, or fourth. The middle place was eſteemed the moſt honourable. Before they came to table, they changed their cloaths, putting on what they called *cœnatoria veſtis*, the dining garment, and pulled off their ſhoes, to prevent ſoiling the bed.

ACCUBITOR, an ancient officer of the emperor of Conſtantinople; whoſe buſineſs was to lie near the emperor. The *accubitor* was the head of the youths of the bedchamber; and had the cubicularius and procubitor under him.

ACCUMULATION, the act of heaping, or amaſſing ſeveral things together.

The word is originally compounded of *ad*, *to*; and *cumulus*, *heap*.

ACCUMULATION, in a *legal* ſenſe, denotes a concurrence of ſeveral titles to the ſame thing; as, when a perſon claims lands, a benefice, or the like, in virtue of ſeveral titles, or pretenſions of different kinds; e. g. by death, by reſignation, &c. Or it denotes a concurrence of ſeveral circumſtances to the proof of one fact: thus, we read of *accumulative* treaſon; which is, where a fact is not treaſon in itſelf, but becomes ſo by an *accumulation* of circumſtanecs.

The earl of Strafford was condemned of *accumulative* treaſon; none of the facts alledged againſt him amounting ſingly to treaſon. But his attainder was reverſed by 13 & 14 Car. II. cap. 29.

ACCUMULATION, in the ancient *Agriculture*, denotes the operation of covering up the roots of trees, by throwing on them the earth that had been before dug from them. In which ſenſe, *accumulation* ſtands oppoſed to ABLAQUEATION.

ACCUMULATION *of arms*, *cumulatio armorum*, in *Heraldry*, is what the moderns call QUARTERING of arms.

ACCUMULATION *of degrees*, in an *Univerſity*, is uſed for the taking of ſeveral DEGREES together, and with fewer exerciſes, or nearer to each other, than the ordinary rules allow of.

ACCURSED, ſomething that lies under a curſe, or ſentence of EXCOMMUNICATION.

In the Jewiſh idiom, *accurſed* and crucified were ſynonymous. Among them, every one was accounted *accurſed*, who died on a tree.

This ſerves to explain the difficult paſſage in Rom. ix. 3. where the apoſtle Paul wiſhes himſelf *accurſed after the manner of Chriſt*, i. e. crucified, if happily he might by ſuch a death ſave his countrymen. The prepoſition ἀπὸ here made uſe of, is uſed in the ſame ſenſe, 2 Tim. i. 3. where it obviouſly ſignifies *after the manner of*.

ACCUSATIO, among *Phyſicians*, is a word of the ſame import as INDICATIO.

ACCUSATION, ACCUSATIO, in the *Civil Law*, the intenting a criminal action againſt any perſon, either in one's own name, or that of the public.

The word is compounded of *ad*, *to*; and *cauſari*, *to plead*.

By the Roman law, there was no public *accuſer*, for public crimes; every private perſon, whether intereſted in the crime, or not, might *accuſe*, and proſecute the *accuſed* to puniſhment, or abſolution.

But the *accuſation* of private crimes was never received but from the mouths of thoſe who were immediately intereſted in them.—Thus none but the huſband could accuſe his wife of adultery.

Indeed, it was not properly an *accuſation*, except in public crimes; in private ones, it was called ſimply ACTION, or intenting an action, *intendere actionem*, or *litem*.

Cato, who was eſteemed the moſt innocent perſon of his age, had been *accuſed* forty-two times, and abſolved as often.

When the accuſed *accuſes* the accuſer, it is called *recrimination*; which is not admitted till the *accuſed* has been firſt purged.

The ancient Roman lawyers diſtinguiſhed between *poſtulatio*, *delatio*, and *accuſatio*: for firſt, leave was deſired to bring a charge againſt one, which was called *poſtulare*; then he againſt whom the charge was laid, was brought before the judge, which was called *deferre*, or *nominis delatio*: laſtly, the charge was drawn up, and preſented, which was properly the *accuſatio*.

The *accuſation* properly commenced, according to Pædianus, when the *reus*, or party charged, being interrogated, denied he was guilty of the crime, and ſubſcribed his name to the *delatio* made by his opponent.

By the cruel laws of the INQUISITION, the *accuſed* is forced to accuſe himſelf of the crime objected to him. There are three ways of entering an information in the tribunal of the inquiſition. The firſt, by way of inquiſition, when a private perſon, applying to the inquiſitor, declares he will neither be *denunciator*, nor *accuſer*, but that common fame gives out, that ſuch and ſuch a perſon is an *heretic*: the ſecond, by way of *accuſation*, when the informer takes on him the office of *accuſer*, which rarely happens; becauſe, in this caſe, the *accuſer* is obliged to prove, and expoſes himſelf to the *lex talionis*, in caſe his information prove falſe. The laſt, and moſt uſual way, is by *denunciation*, that is, by naming thoſe who know the fact.

It has formerly been the cuſtom in ſome parts of Europe, where the *accuſation* was very heavy, either to decide it by combat, or at leaſt make the *accuſed* purge himſelf by oath; which, however, was not admitted, excepting a certain number of his neighbours and acquaintance ſwore together with him.

In the French *Law*, none but the *procureur general*, or his deputies, can form an *accuſation*, except for high treaſon, and coining, where *accuſation* is open to every body. In other crimes, private perſons can only act the part of denouncers, and demand reparation for the offence, with damages.

Writers on politics treat of the benefit and the inconveniencies of public *accuſations*. Various arguments are alledged, both for the encouragement and the diſcouragement of *accuſations* againſt great men. Nothing, according to Machiavel, tends more to the preſervation of a ſtate, than frequent *accuſations* of perſons truſted with the adminiſtration of public affairs. This, accordingly, was ſtrictly obſerved by the Romans, in the inſtances of Camillus, accuſed of corruption by Manlius Capitolinus, &c. *Accuſations*, however, in the judgment of the ſame author, are not more beneficial than calumnies are pernicious; which is alſo confirmed by the practice of the Romans. Manlius not being able to make good his charge againſt Camillus, was caſt into priſon.

ACCUSATIVE, in *Grammar*, the fourth caſe of nouns that are declined.

Its uſe may be conceived from this, that all verbs which expreſs actions that paſs from the agent, as *to beat*, &c. muſt have ſubjects to receive thoſe actions: for, if I beat, I muſt beat ſomething; ſo that ſuch verb evidently requires after it a noun, or name, to be the object of the action expreſſed. Hence, in all languages, which have caſes, the nouns have a termination which they call *accuſative*; as, *amo Deum*, *I love God*.

In Engliſh, we have nothing to diſtinguiſh this caſe from the *nominative*; but as we ordinarily place words in their natural order, it is eaſily diſcovered; the *nominative* conſtantly preceding, and the *accuſative* following the verb.—Thus, when we ſay, the prince loves the princeſs, and the princeſs loves the prince: the prince is the *nominative* in the firſt, and the *accuſative* in the laſt; and the princeſs the *accuſative* in the firſt, and the *nominative* in the ſecond.

ACENTETUM, or ACENTETA, in *Natural Hiſtory*, a name given by the ancients to the pureſt and fineſt kind of rock cryſtal. They uſed the cryſtal in many ways, ſometimes engraving on it, and ſometimes forming it into vaſes and cups, which were held next in value to the *murrhina vaſa* of thoſe times. The cryſtal they obtained from the mines of Cyprus was much eſteemed, but often faulty in particular parts, having hairs, cracks, and foulneſſes, which they called ſalts, in the midſt of the large pieces. Pliny tells us, that when it was uſed for engraving on, the artiſt could conceal all theſe blemiſhes among the ſtrokes of his work; but when it was to be formed into cups and precious vaſes, they always choſe the *acentatum*, that is, the pure cryſtal, which had no flaws or blemiſhes.

ACEPHALI, or ACEPHALITÆ, frequently occurs in *Eccleſiaſtical Hiſtory*, as the denomination of divers ſects: particularly,

1. Of thoſe who in the affair of the council of Epheſus, refuſed to follow either St. Cyril, or John of Antioch.
2. Of certain Chriſtians of the fifth century, who at firſt followed Peter Mongus; but afterwards abandoned him, upon his ſubſcribing the council of Chalcedon; being generally of the opinion of Eutyche, that there was only one nature in Chriſt.
3. Of the adherents of Severus of Antioch; and of all in general who refuſed to admit the council of Chalcedon.

ACEPHALUS, or ACEPHALOUS, ſomething that wants a head.

The word is compoſed of the privative α, and κεφαλη, *caput*, *head*.

Pliny repreſents the Blemmyes as a headleſs, or *acephalous* nation.

But though the exiſtence of a nation of *acephali* be ill warranted, naturaliſts furniſh ſeveral inſtances of individuals born without heads, by ſome *luſus* or aberration of nature. Wepſer gives a catalogue of ſuch *acephalous* births from Shenckius, Licetus, Paræus, Wolfius, Mauriceau, &c.

Acephalous worms, or what are ſuppoſed ſuch, are frequent.—The *lumbricus latus*, or joint-worm, was long taken to be *acephalous*: the firſt who gave it a head was Tulpius, and after him Fehr; the former even makes it *biceps*, or two-headed.

The levellers in the reign of Henry I. were called *acephali*.

This word, in our ancient *Law*-books, is alſo uſed for thoſe poor people who had no proper lord; as holding nothing in fee, either of king, biſhop, baron, or other feudal lord.

ACEPHALUS is alſo uſed in *Poetry*, for a verſe which is lame or defective, by wanting a beginning.

Some alſo give the name ακεφαλος to all verſes which begin with a ſhort, inſtead of a long ſyllable.

ACER, in *Botany*. See MAPLE.

ACERATOS, *ακηρατος*, from *α* negative and *κεραω*, or *κεραννυμι*, *to mix*; unmixed, uncorrupted. It is applied ſometimes to the humours of the body by Hippocrates. Paulus Ægineta mentions a plaſter under this name, but probably means *aceron*. See ACERIDES.

ACERB, ACERBUS, a compound taſte, conſiſting of four, with the addition of a degree of roughneſs, and aſtringency.

Such is the taſte of pears, grapes, and moſt other fruits before they are ripe.

Phyſicians uſually make *acerb* an intermediate ſavour between acid, auſtere, and bitter. All matters which come under this denomination are aſtringent.

ACERIDES, *ακηριδες*, from *α* negative; and *κηρος*, *wax*. Plaſters made without wax are thus called.

ACERINA, in *Ichthyology*, a name given by Pliny and other of the old *Naturaliſts*, to the fiſh we at this time call the CERUNA, and AURATA *fluviatilis*, and in England the *ruffe*. It is a genuine ſpecies of PEARCH, and is diſtinguiſhed by Artedi from all the other fiſh of that genus, by having the back fin ſingle, and the head cavernous.

ACEROSUS; it is an epithet, denoting the browneſt and coarſeſt ſort of bread, made of flour not ſeparated from the bran.

ACERRA, in *Antiquity*, a kind of altar, erected near the bed of a perſon defunct. It was much uſed among the Romans; and the friends and familiars daily burnt incenſe on it, till the time of the burial.

By the laws of the *Twelve Tables*, the erecting of *acerræ* was prohibited.

The *acerra* alſo ſignified a little pot, wherein the incenſe and perfumes were put, to be burnt on the altars of the gods, and before the dead.

The *acerra* appears to have been the ſame with what was otherwiſe called *thuribulum*, and *pyxis*; ſome have alſo confounded it with the *pateræ*, in which libations were offered.

We find mention of *acerræ* in the ancient church. The Jews had alſo their *acerræ*, in our verſion rendered *cenſers*; and the Romaniſts ſtill retain them under the name of *incenſe pots*.

In Roman writers, we frequently meet with *acerra plena*, a full *acerra*; to underſtand which it is to be obſerved, that people were obliged to offer incenſe in proportion to their eſtate and condition; the rich in larger quantities, the poor only a few grains: the former poured out *acerras* full on the altar; the latter took out two or three bits with their fingers.

ACESCENT, a word uſed to denote any thing which is turning ſour, i. e. *acid*, or which is ſlightly *acid*. It is only applied properly to denote the firſt of theſe two meanings. The ſecond may be better expreſſed, by either of the words *acidulous*, or *ſub-acid*.

ACESTA, ſignifies curable diſtempers.

ACESTIDES; thus the chimneys of furnaces where braſs was made, were called; contrived narrow at top, on purpoſe to receive the fumes of the melting metal, and collect them, that CADMIA might be produced in greater quantities.

ACESTIS, *ακεϛις*; a fictitious ſort of CHRYSOCOLLA, made of Cyprian verdigreaſe, the urine of children, and nitre.

ACESTRIDES, female phyſicians; midwives were ſo called among the Greeks.

ACETABULUM, in *Antiquity*, a little vaſe, or cup, uſed at table to ſerve up things proper for ſauce, or ſeaſoning: much after the manner of our ſalts, and vinegar-cruets.

Hence Agricola, in his treatiſe of Roman meaſures, takes the name to have been formed from *acetum*, *vinegar*; as ſuppoſing it principally deſtined to ſerve vinegar in.

ACETABULUM alſo denotes a Roman MEASURE, uſed both for liquid and dry things, chiefly in medicine.

The *acetabulum* contained a *cyathus*, and a half, as is proved by Agricola, from two verſes of Fannius; who, ſpeaking of the *cyathus*, ſays, it weighs ten drachms; and the *oxybaphus*, or *acetabulum*, fifteen, or about one eighth of a pint.

Bis quinque hunc faciunt drachmæ, ſi appendere tentes:
Oxybaphus fiet, ſi quinque addantur ad illas.

Binet, in his treatiſe of weights and meaſures prefixed to his tranſlation of Pliny, makes the *acetabulum* of oil weigh two ounces and two ſcruples; the *acetabulum* of wine, two ounces, two drachms, a grain, and a third of a grain; and the *acetabulum* of honey, three ounces, three drachms, a ſcruple, and two *ſiliquæ*.]

ACETABULUM, in *Anatomy*, is uſed for a deep cavity, in certain bones, appointed for the reception of the large heads of other bones, in order to their articulation.—See *Tab. Anat.* (*Oſteol.*) *fig.* 12. *lit.* b. Thus the cavity of the iſchium, or huckle-bone, which receives the head of the thigh-bone, is called *acetabulum*, and ſometimes *cotyle*, or *cotyloides*.

The *acetabulum* is lined, and capped round with a cartilage, whoſe circular margin is called *ſupercilium*.—In its bottom lies a large mucilaginous gland.

ACETABULUM is alſo uſed, by *Anatomiſts*, in the ſame ſenſe with COTYLEDON.

ACETABULUM, in *Botany*, the name of a genus of ſea-plants, compoſed of leaves formed in the ſhape of a baſon, and making a ſort of inverted cone.

It ſignifies alſo a glandular ſubſtance, found in the placenta of ſome animals.

ACETARIA. See SALLET.

ACETARY is uſed for an inner part in the ſtructure of certain fruits; thus called from the ſourneſs of its taſte.

The *acetary* of a pear is a globular part, lying within the calculary, or choak, and ſurrounding the core. It is of the ſame ſubſtance with the parenchyma or pulp, only that the bladders of which it conſiſts are ſmaller, and rounder than thoſe of the PARENCHYMA: from whence however it ſeems to be derived. Whence it is ſometimes alſo called, the *inner parenchyma*.

The quince alſo has an *acetary*, reſembling, though leſs than that of a pear.

ACETIFICATION is uſed by ſome *Chemiſts* to denote the action or operation whereby vinegar is made.

Acetification is a branch or ſpecies of fermentation, ariſing by expoſing vinous liquors in open veſſels, and a warm place, which turns them acid.

Acetification chiefly differs from the fermentation whereby wine is made, in this, that the latter is effected by a gentler heat, ſufficient only to raiſe, and rarify the ſulphureous parts; whereas, in *acetification*, there is what is ſufficient to raiſe and rarify the ſaline parts; which is the preciſe point, wherein *acetification* conſiſts.

ACETOSA, in *Botany*. See SORREL.

ACETOSELLA, in *Botany*, *Wood* SORREL.

ACETOUS *Acid*, is the ſame as VINEGAR.

ACETOUS *Fermentation*, is that fermentation by which vinegar is produced,

ACETOUS *Æther*, is an ÆTHER made by means of vinegar.

ACETUM, in *Medicine*, &c. the ſame with vinegar; the properties, uſes, and preparations whereof, ſee under the article VINEGAR.

The word is pure Latin; formed of *acere*, *to be ſharp*.

There are ſeveral medicines in the ſhops, whereof this liquor is the baſis; as,

ACETUM *diſtillatum*, diſtilled vinegar; chiefly uſed in preparations for diſſolution and precipitation.

ACETI, *Spiritus*, ſpirit of vinegar; made by drenching copper-filings with diſtilled vinegar, then evaporating it till the fumes of the vinegar cannot be ſmelt; the ſaturation and evaporation to be again repeated, till the menſtruum be ſatiated; which being then diſtilled, the ſpirit comes over.—Its qualities and uſes are much the ſame with thoſe of the diſtilled vinegar, only it is more powerful.

ACETUM *Roſatum*, vinegar of roſes; this is made of roſe-buds infuſed in vinegar forty or fifty days; the roſes are then preſſed out, and the vinegar preſerved.—It is chiefly uſed by way of embrocation on the head and temples, in the head-ach.

After the like manner are made *acetum ſambucinum*, vinegar of elder; *acetum anthoſatum*, vinegar of roſemary-flowers; *acetum ſcilliticum*, vinegar of ſquills, &c.

The German diſpenſatories abound with medicated vinegars; chiefly aimed againſt peſtilential diſeaſes; but they are not uſed among us.—Our diſpenſatories indeed retain ſome of them, as the *Acetum Theriacale Norimbergenſe*; but it is never preſcribed.

ACETUM *Alcalizatum*, is made of diſtilled vinegar; with the addition of ſome alkaline, or volatile ſalt.

ACETUM *Philoſophorum*, a ſour kind of liquor; made by diſſolving a little butter of antimony in a great deal of water.

ACETUM *Eſuriens*, in *Chemiſtry*, a diſtilled vinegar, rectified with the help of verdigreaſe. It is made by diſſolving the common verdigreaſe in fine diſtilled vinegar, then evaporating the ſolution, and recovering the verdigreaſe again in form of cryſtals; and from this, by a proper degree of fire, diſtilling with a retort an acid ſpirit, which is the richeſt acid that can by any art be prepared from vinegar.

ACETUM *Portabile*. See VINEGAR.

ACHAC, in *Zoology*, the name given by the people of the Philippine iſlands, to a bird common there. It is of the ſize of a common hen; its belly, breaſt, and neck, are of a pale brown, and its back of a duſty reddiſh colour; its wings are extremely beautiful, being principally of a greeniſh blue colour; the tail is white, ſhort, and continually in motion; the eyes are black, and the beak is thick and ſtrong, and is of a black colour, and obtuſe figure; the legs are reddiſh, and the claws black: when it makes any noiſe, it ſeems to utter the word, *phi*, *phi*, very often repeated. It lives principally about the cultivated parts of the iſlands, and feeds on rice, and other vegetables, being properly of the partridge kind.

ACHALALACTLI, in *Zoology*, the name of an American bird, deſcribed by Nieremberg, and remarkable for a chain or ring of ſilvery whiteneſs round its neck. It is of the ſize of a pigeon, its beak is ſharp, and three fingers breadth long, and its head is ornamented with a very long creſt of a bluiſh black colour. The belly and under ſide of the wings are white, and the back and outſide of the wings are of the colour of the creſt, of a bluiſh black, and variegated with white ſpots; the tail is partly black, and partly blue. It is common about the lakes and rivers of Mexico, and feeds on ſmall fiſh.

ACHAMELLA, in *Botany*. See ACMELLA.

ACHANDES, in *Ichthyology*, a name given by ſome to the REMORA.

ACHANE, Αχανη, an ancient Perſian corn meaſure, containing 45 Attic *medimni*.

ACHAOVA, in the *Materia Medica* of the ancients, the name of an herb much celebrated in many diſtempers; but we are not aſſured at preſent, what is the plant that it truly belongs to. Some have eſteemed it, what is called in Egypt uchove, an herb nearly reſembling chamomile, but lower, and with broader leaves, approaching to thoſe of feverfew, and of a faint, but not diſagreeable ſmell.

Avicenna ſeems however to have meant a different plant by this name, and probably the herb we call MARUM.

ACHARISTON; under this name Galen deſcribes ſome compoſitions of ſingular efficacy, which cured ſo quickly, that they were undervalued; as the Greek name implies.

ACHAT, in our *Law* French, ſignifies a contract, or bargain; eſpecially in the way of purchaſe.

Purveyors were by act of parliament 36 Ed. III. ordained to be thenceforth called ACHATORS.

ACHATES, in *Natural Hiſtory*, the ſtone popularly called AGAT, LAPIS *jaſpis*, &c.

ACHE, or ACH, a painful ailment in any part of the body. *Aches* may be either ſcorbutic, or rheumatic, owing to violent pains, or the like. See HEAD-*Ach*, &c.

ACHE, in ſome old authors, a name given to the plant called *apium paluſtre*, or *paludapium*, in Engliſh, SMALLAGE.

ACHEMENIS, a herb mentioned by Pliny; ſuppoſed by the ancients to have the property of exciting terror.

ACHERNER, or ACHARNER, in *Aſtronomy*, a ſtar of the firſt magnitude in the ſouthern extremity of the conſtellation ERIDANUS, but inviſible in our latitude.

ACHERSET, a meaſure of corn, conjectured to be the ſame with our quarter or eight buſhels. The monks of Peterborough had an allowance weekly of twelve *acherſotes de frumento*, and eight *acherſotes de braſio*, and ſix *de gradi*, and eleven *acherſotes de fabis*, &c. Spelman.

ACHETA, in *Natural Hiſtory*, a name by which the ancients called the large ſpecies of CICADA, the nymphs of which they uſed to eat, and eſteemed an excellent food: the ſmaller kind, which ſeems to have been our middling ſort (for we have three kinds) they called TETTIGONIA.

ACHIA, a kind of cane which grows in the Eaſt Indies, and is pickled there while green, with ſtrong vinegar and pepper, together with ſome other ſpice and ingredients.

ACHIAR, is a Malayan word, ſignifying all ſorts of fruits and roots, pickled with vinegar and ſpice. The Dutch import from Batavia all ſorts of *achiar*. The name is applied to whatever the *achiar* is made of; as *bamboe achiar*, &c.

ACHLÆNUS, or ACHÆINUS, in *Natural Hiſtory*, a word uſed by the ancients to expreſs a ſtag or deer, in the ſecond year's age. In the firſt, it was called *nebrus*, in the third *dicrotus*, and always after that *ceraſtes*.

ACHICOLUM, is uſed to expreſs the *fornix*, *tholus*, or *ſudatorium* of the ancient baths; which was a hot room where they uſed to ſweat. It is alſo called *architholus*.

ACHILLEA, in the *Materia Medica* of the ancients, a name given to the gum, which we at this time know by that of *ſanguis draconis*, or DRAGON'S-BLOOD.

The ancient Greeks called this *cinnabari*; and the uſe of that word for the mineral which we now call cinnabar, was only becauſe of its being of the ſame fine red colour with this gum. Avicenna treating of the *achillea*, ſays it is otherwiſe called *ſanguis draconis*, and deſcribes it as a red gum, univerſally known in his time.

ACHILLEA, in the Linnæan ſyſtem of *Botany*, a genus of the *ſyngeneſia polygamia ſuperflua* claſs of plants, the common calyx of which is ovated, and imbricated with oval, acute, connivent ſquamæ: the compound flower is radicated; the hermaphrodite florets are numerous and tubulous; the female florets are ligulated, and the proper hermaphrodite ones funnel-ſhaped; there is no pericarpium, and the ſeed is ſingle, oval, and naked.

ACHILLEA *Lutea*. See AGERATUM.

ACHILLEA *Montana*. See JACOBEA.

The ancient *Botaniſts* gave the name *achillea* to a plant, which is ſaid to be the ſame with our millefolium, from Achilles, who, having been the diſciple of Chiron, firſt brought it into uſe for the cure of wounds and ulcers.

ACHILLEA *Gallica*, a name given to mountain rag-wort, or corn MARYGOLD.

ACHILLEIS, or ACHILLEID, a celebrated poem of Statius, of the epic kind, wherein he propoſed to deliver the whole life and actions of Achilles.

It only takes in his infancy, the poet being prevented from proceeding by death.

It is a point controverted among the critics, whether the whole life of a hero, e. g. of Achilles, be a proper ſubject of an EPIC poem?

ACHILLES, a name which the ſchools give to the principal argument alleged by each ſect of philoſophers in behalf of their ſyſtem.

In this ſenſe, we ſay, this is his *Achilles*; that is, his maſter-proof: alluding to the ſtrength and importance of Achilles among the Greeks.

Zeno's argument againſt MOTION, is peculiarly termed *Achilles*.—That philoſopher made a compariſon between the ſwiftneſs of *Achilles*, and the ſlowneſs of a tortoiſe: arguing, that, if the tortoiſe were one mile before *Achilles*, and the motion of *Achilles* 100 times ſwifter than that of the tortoiſe, yet he would never overtake it. But this ſophiſm is eaſily ſolved, by expreſſing the whole relative diſtance ran by the tortoiſe before *Achilles* overtook him, by the following ſeries, $\frac{1}{100}+\frac{1}{10000}+\frac{1}{1000000}$, &c. the ſum of which is $\frac{1}{99}$ of a mile; and the diſtance run by *Achilles* is one mile; ſo that when *Achilles* had run $1\frac{1}{99}$ of a mile, he would have overtaken the tortoiſe.

ACHILLES, *Tendon of*, CHORDA *Achillis*, is a large TENDON, formed by the union of the tendons of the four extenſor muſcles of the FOOT.

It is ſo called, becauſe the fatal wound whereby Achilles is ſaid to have been ſlain, was given there.

ACHIOTL, in *Botany*, a name given by ſome authors to the *uraca*, or *arnotto*, called *orleana*, and *orellana*, by other writers.

ACHIOTTE, a red drug from America, uſed in dying, and in the preparation of chocolate.

The word is Braſilian, where it properly ſignifies the tree from whence this matter is procured. Ray writes it *acchiote*. *Achiotte* is the ſame with what the French frequently call ROUCOU, and the Dutch *orleane*. It has been commonly eſteemed a kind of *argilla*, or earth; but later obſervers find it a flower, or ſeed of a tree, which grows chiefly in very hot countries, as Yucutan, or Campeche, and Guatimala. It is about the ſize of a plum-tree, only more tufted; its branches being longer than the trunk. The fruit is encloſed in a rind like a cheſnut, except that it is of an oval figure. It begins to open croſs-ways from the middle to the top, and ſubdivides into four parts; having, in the middle, a beautiful carnation-coloured flower. The tree has no leaves; but inſtead thereof ſhoots out filaments like thoſe of ſaffron, only bigger and longer. Between theſe grow little ſoft vermilion coloured grains, about the ſize of pepper-corns; which the Indians, ſepararing from the filaments, bake in cakes of about half a pound each; in which form the drug is brought into Europe.

The poor people uſe *achiotte* inſtead of ſaffron; it is uſed as marigolds are, to give a yellow colour to cheeſe, in Glouceſterſhire, and others mix it as an ingredient in chocolate, during the grinding of the cocoa, the quantity of two drams to a pound, to give it a reddiſh colour, &c. though this practice was formerly more frequent than at preſent; the opinion of its being an earth, which even Mr. Ray fell into, having diſcredited its uſe. Some alſo uſe it to dye wax of a vermillion colour. Phyſicians hold it a good cordial, and preſervative againſt retention of urine. It is made, as we make STARCH.

According to Savary, to procure the *achiotte*, they ſhake out the grains in an earthen veſſel, ſoak and then waſh them in ſeveral repeated warm waters, till they have diſcharged all their vermillion colour; after which letting the water ſtand to ſettle, the *fecula* at the bottom is taken and formed into little cakes and balls; which when pure, and not adulterated either with red earth, or fine brick-duſt, are highly valued. Some alſo uſe fire to boil the *achiotte*, and give it a farther conſiſtence.

ACHIROPŒTOS, a name given by ancient writers to certain miraculous pictures of Chriſt and the Virgin, ſuppoſed to have been made without hands.

The moſt celebrated of theſe is the picture of Chriſt, preſerved in the church of St. John Lateran at Rome; ſaid to have been began by St. Luke, but finiſhed by the miniſtry of angels.

ACHLIS. See MACHLIS.

ACHLYS, in *Medicine*, a darkneſs, or dimneſs of ſight, ariſing from a ſmall *cicatricula* on the pupil, occaſioned by a ſuperficial ulcer on the *cornea*.

The word is Greek, and literally ſignifies a kind of cloud. In a metaphorical ſenſe, *achlys* alſo denotes a diſorder of the womb; anſwering to what Latin writers call *ſuffuſio uteri*.

ACHNE has various ſignifications; ſometimes it denotes lint; at other times chaff, or froth of the ſea. Hippocrates uſes it to denote a white mucilage, obſervable in the eyes of patients who have fevers; and alſo a white mucus in the fauces, thrown up from the lungs.

ACHOR, in *Medicine*, the third ſpecies or degree of a TINEA, or ſcald-head.

Achor is a ſort of ſmall running ulcer on the face and head, chiefly of children while at ſuck; by which the ſkin is broken into a number of little holes, out of which iſſues a viſcid humour, like *ichor*, whence its name.

ACHOR differs from the FAVUS and TINEA only in the degree of virulence. It is called *favus* when the perforations are large, and *tinea*, when they are like thoſe which are made by moths in cloth.

Writers of medical obſervations afford divers anomalous inſtances of *achores*, viz. ſome are found even in aged people, others on the feet; others reſembling the venereal diſeaſe; others which diſappeared upon cutting the hair, and returned on its growing anew; others followed by a thickneſs of hearing; others by panics; and others by a *gutta ſerena*. Their drying up has ſometimes been followed by a fever, their repulſion inwards by an epilepſy.

ACHROMATIC, in *Optics*; a term, ſays M. Des Landes, firſt introduced into his *aſtronomy*, to denote TELESCOPES of a new invention, contrived to remedy *aberrations* and colours. The word is compoſed of the privative *α*, and *χρωμα*, *colour*. See ABERRATION and TELESCOPE.

ACHRONICAL, in *Aſtronomy*. See ACRONYCHAL.

ACHTELING, a meaſure for liquids uſed in Germany. Thirty-two *achtelings* make a *heemer*; four *ſciltems*, or *ſciltins*, make an *achteling*.

ACHTENDEELING, or ACHTELING, a meaſure for grain, uſed in ſome parts of Holland.

ACHY, a ſpecies of CASSIA that grows in Arabia.

ACHYRONIA, in *Botany*, the name given by Van Royen, and continued by Linnæus, to a genus of plants of the papilionaceous kind, the characters of which are theſe. The flower has a perianthium, divided into five ſegments at the edge, the upper one being longer than the reſt; the vixillum of the flower is compreſſed, hairy or rough on the outſide, and obtuſe; the alæ are lunated, obtuſe, and open, and are ſhorter than the vixillum; the carina is bifid, and its length the ſame as that of the alæ; the ſtamina are nine or ten filaments growing into a ſort of vagina; the antheræ are roundiſh, but ſomewhat oblong; the germen of the piſtil is oval; the ſtyle is ſimple, and aſcendent; the ſtigma is acute; the fruit is an oval oblong pod, containing a few kidney-ſhaped ſeeds.

ACHYROPHORUS, in *Botany*, the name of a genus of plants of the ſame characters with the HYPOCHÆRIS.

ACIA, a term in the Roman *Surgery*, about the meaning whereof, phyſicians and commentators are much divided. Celſus ſpeaking of the healing of wounds, either by ſuture, or the fibula, ſays, each is beſt effected by means of a ſoft *acia*, not too much twiſted, that it may ſit the eaſier on the body.

Boxhornius will have the *acia* to be the *acus* of the fibula, or that part which pinched—In which view *acia mollis* only imported, that it was not ſet ſo as to pinch too much.

ACICOCA, a herb that grows in Peru, and is ſometimes uſed inſtead of the herb *paraguay*, of which it is ſaid to have all the properties.

ACICULÆ, in *Natural Hiſtory*, ſmall ſpikes, or prickles, in form of needles, with which nature has armed ſeveral creatures. See *Tab. of Fiſhes*, N°. 20. and *Tab. of teſtaceous and cruſtaceous Animals*, N°. 13. See alſo *Tab. of Quadrupeds*, N°. 15, 25, and 26.

ACIDS derive their name from the word *acere*, *to be ſharp*; which expreſſes one quality by which they are diſtinguiſhed, viz. their ſour taſte. They form one of the general claſſes, into which ſimple ſalts are divided, and are the moſt ſimple of all ſaline ſubſtances. If they were ſeparated from water, to which they have a ſtrong affinity, and from all other ſubſtances not neceſſary to their ſaline eſſence, they would appear under a concrete or ſolid form: but the contact of the air, which is loaded with watery vapours, is ſufficient to diſſolve them, and therefore they are always in a fluid ſtate. On this account, it is not eaſy to aſcertain the quantity of *acid* in *acid* liquors. Homberg made ſeveral experiments to this purpoſe, by combining *acid* liquors with ſalt of tartar, ſo as to form neutral ſalts; imagining that the weight gained by this alkali from its union with *acids*, or the difference between the weight of the ſalt of tartar and the neutral ſalt produced, was equal to the weight of real *acid* contained in the quantity of *acid* liquor employed. But as he did not conſider, that the air expelled from ſalt of tartar, during its combination with *acids*, makes a very conſiderable part of the weight of that alkali, the inferences from his experiments are not juſt; and the real quantity of *acid* contained in an *acid* liquor, is ſo much more than the quantity inferred by him, as the whole weight of the fixable air diſengaged from the ſalt of tartar.

Acid ſalts are all found to be volatile; by which they are diſtinguiſhed from the reſt, which are either fixed, or have an urinous, inſtead of an *acid* taſte.

Some chemical philoſophers have even made it very probable, that it is the *acid*, which is the ſaline part, or principle, in all ſalts. They conſider it as a ſubtle, penetrating ſubſtance, diffuſed through the ſeveral parts of the globe; which, according to the different matters it happens to be united with, produces different kinds of bodies.

Of this ſentiment is Sir Iſaac Newton.—'In decompounding ſulphur, ſays that author, we get an *acid* ſalt of the ſame nature with oil of ſulphur *per campanum*; which ſame *acid*, abounding in the bowels of the earth, unites ſometimes with earth, and thus makes *alum*; ſometimes with earth and *bitumen*, and thus compounds ſulphur.' In reality, all our native ſalts, though without any mixture from art, are yet found to be real mixtures; and their compoſition and decompoſition are eaſily made.

Acids poſſeſs ſeveral common properties, beſide the ſharpneſs or ſourneſs of their taſte. They are readily united with water; and from this union, a new compound fluid is formed, whoſe ſpecific gravity differs from the mean gravity of its component parts. They may be likewiſe combined with ſpirit of wine, and form a very volatile ſubſtance, which chemiſts have denominated *æther*. They may be alſo combined with abſorbent earths, with alkaline ſalts, with metallic ſubſtances, with phlogiſton, and with oils; and in the proceſs of uniting with them, diſcharge all or part of the fixable air which they contain. The combination with alkaline ſubſtances occaſions a violent effervеſcence, and produces neutral ſalts. They diſſolve the aſhes of vegetables, and the ſolid parts of animals. All ſolutions, the metallic ones excepted, deſtroy the acrimony of the diſſolving *acid*, and the menſtruum loſes its diſſolving power.

Acids likewiſe for the moſt part agree in changing into red the blue colours of vegetable juices, and in heightening the colour of thoſe that are red. But this property is not common to all *acids*; for the volatile ſulphureous *acid* deſtroys theſe colours. Nor is it peculiar to *acids*; for *alum*, a neutral ſalt, produces the ſame effect.

Acids reſiſt fermentations; they are not ſo eaſily frozen as water, and they generate cold, when poured upon ice. M. Homberg explains the action of *acids* on alkalies, and accounts for the great number of little bubbles, and the heat produced thereby, in the following manner.—The matter of light, which he ſuppoſes to be the chemical principle, ſulphur, and to poſſeſs the whole extent of the univerſe, is kept in a perpetual motion by the continual impulſes which the ſun, and fixed ſtars give it; but this motion, happening on ſome occaſions to be ſlackened, may be retrieved again, and augmented by the near approach of flame, which this author ſuppoſes to be the only matter capable of giving motion to light. Light cannot proceed in its motion, without continually ſtriking againſt the ſolid bodies, and paſſing through all the porous ones which it meets with.

Suppoſe, now, *acids* to be little, ſolid, pointed bodies, ſwimming at liberty in an aqueous fluid, and kept in continual motion by the repeated impulſes of the matter of light; and alkalies to be ſpongious bodies, whoſe pores have formerly been filled with the points of *acids*, and which ſtill retain the dents or impreſſions thereof, and are ready to receive the like points again: it is eaſy to conceive, that if ſome of theſe porous alkalies float in the ſame liquor wherein the ſolid *acids* float, theſe latter, being impelled by the matter of light, will enter the cavities of the former; and that they will do it the more readily, if the motion of the impelling light has been accelerated by external heat.

The introduction of *acids* into the pores of alkalies is, to all appearance, effected with great velocity and friction; inaſmuch as it produces ſo conſiderable a degree of heat; and as the pores of the alkalies were before filled with an aerial matter, which is now expelled by the points of the *acids*, that air is put in motion, and produces the bubbles which are ſo much the more ſenſible, as the heat accompanying the action is the greater. Homberg's Eſſai du Sel principe.

Sir Iſaac Newton accounts for the effects of *acids*, by the great principle of attraction. See Affinity.

Acids differ conſiderably from each other with regard to their ſtrength, their ſolvent power, and the changes produced in them by the bodies on which they act.

Acids ſeem, from their univerſality, to be of the greateſt uſe in the œconomy of the world. The air, earth, and ſea, abound with them. It is obſerved, that the air is moſt replete with *acid*, when the wind blows from the north and eaſt, and when the weather is ſerene; a fact, which, according to Hoffman, is confirmed by the obſervations of thoſe who are concerned in nitre works: from whence we may conclude, that the *aerial acid* is inſtrumental to the production of cold in the air. The analogy between *acids* and *cold*, and between alkalies and heat, is very remarkable. *Heat* and alkalies promote the putrefaction of dead bodies; or, in other words, deſtroy the coheſion of their parts: on the contrary, *acids* and *cold* preſerve them from putrefaction, by preſerving the coheſion of their component parts.

Acids are diſtributed into three general claſſes, according to the ſubſtances from which they are extracted; viz. *animal*, *mineral*, and *vegetable acids*. Nevertheleſs, it is the opinion of Stahl, and of other eminent chymiſts, that there is but one primitive acid; and that all the other *acids* are only different modifications or combinations of it.

Acid, *Aerial*, a name given by Mr. Bergman of Upſal to fixed air, becauſe he found that this ſpecies of air had an *acid* quality, by its changing the blue juice of tourneſole into red; and the fact was farther verified by Mr. Hey, and Mr. Bewley; the latter of whom has proved, by a ſeries of experiments, that fixed air does not owe its *acidity* entirely to the nature of the ſubſtances from which it is extracted, as Sig. Landriani, and ſome foreign philoſophers, imagine; but that it is an original *acid ſui generis*, expelled from the ſubſtances with which it is combined, by the force of fire, or by the power of a ſuperior *acid*; but Dr. Prieſtley rather apprehends, that it is a modification of the nitrous *acid*.

Acid *of Amber* is ſuppoſed by Dr. Monro to be an *acid ſui generis*, and extracted from ſalt of *amber*. Phil. Tranſ. vol. lxvii. p. 1. Nº. 49.

Acids, *Animal*, are thoſe which have been lately diſcovered in certain *animal* ſubſtances; as butter, fat, blood, ants, and flies.

M. Homberg firſt aſcertained the exiſtence of a latent *animal acid*, and he has propoſed two ways of procuring it. One way is, by concentrating the phlegm which ariſes firſt in the common diſtillation of *animal* ſubſtances for their volatile ſalt and oil. The reſiduum of this phlegmatic liquor, when it has been rediſtilled with a gentle heat, till only a ſmall portion is left, will yield an *acid*; which he has ſometimes concentrated ſo far, that it ſeemed to be as ſtrong as common vinegar.

The other method of collecting this *acid* is, by mixing earthy matters with the animal ſubject at firſt, and urging the diſtillation after all the alcaline ſalt and oil have ariſen. The *acid* is at length forced out by the great vehemence of fire. Whether this *acid* be any other than part of the *vegetable acid* derived from plants in the ordinary way of food and nutrition, or of the *acid* of the *marine* ſalt which *animal* ſubſtances poſſeſs, muſt be determined by future experiments and obſervations. But it is certain that they differ in the ſame circumſtances as the *vegetable acids* do from *mineral acids*.

Mr. Hook has long ſince obſerved, that inſects which are furniſhed with ſtings, as bees, waſps, and hornets, diſcharge, when irritated, an *acid* juice; but none yield ſo large a quantity as ants. Ants in their *chryſalis*, or maggot ſtate, have no *acid*; but if a ſtick be thruſt into an ant-hill, they will diſcharge a fluid, which has an *acid* taſte and ſmell; and which will make the blue flowers of ſuccory, borrage, &c. red. And this *acid* obtained, either by diſtillation, or by throwing the living animals into water, till it be ſufficiently impregnated with it, will, with lead, make a peculiar ſort of *ſaccharum ſaturni*, which on diſtillation will give back the *acid* in its own form again.

M. Margraaf has demonſtrated, by ſome late experiments, that it bears no analogy either to the *marine*, or *vitriolic acid*; becauſe it does not precipitate ſilver, lead, or mercury, from the *nitrous acid*, nor quicklime from the *marine*. He concludes upon the whole, that this *acid* much reſembles that of vinegar, though in ſome reſpects it is different.

Acids, *Concrete*, are ſaline ſolid ſubſtances, which have the properties of *acids*; ſuch as cryſtals of tartar, eſſential ſalts of vegetables, the volatile *acid* ſalt of amber, and of ſome other bitumens, and the flowers of benjamin.

Acid, *Fluor*, is a new *mineral acid*, ſo called from the name which the chemiſts have given to the ſubſtance from which it is extracted. This ſubſtance is of the ſame kind with the Derbyſhire *ſpar*. The *acid* is expelled from it by oil of vitriol; and as it was firſt diſcovered by Mr. Scheele, a Swede, it is often diſtinguiſhed by the name of the Swediſh *acid*. Mr. Scheele ſuppoſed, that *acid* and water were the conſtituent parts of the foſſil from which it was procured. Mr. Boulanger apprehends, that this new *acid* is only the *acid* of ſalt combined with an earthy ſubſtance. But Dr. Prieſtley, in the reſult of his experiments, has proved, that the *fluor acid* is the *acid* of vitriol, charged with ſo much phlogiſton as is neceſſary to its taking the form of air, and alſo with much of the earthy matter of the ſpar. Experiments and Obſervations on different kinds of Air, vol. ii. p. 188.

Acids *Fluor* ſometimes denote thoſe *acids*, which are always in a fluid ſtate; ſuch are the volatile, vitriolic, nitrous, marine *acids*, and thoſe which are obtained by diſtillation from vegetable and animal ſubſtances.

Acid, *Marine*, is one of the three *mineral acids*; ſo called, becauſe it is generally obtained from ſea ſalt; though it may be likewiſe extracted from ſal gem, or foſſile ſalts, and from the ſalt of ſaline fountains and pits. This *acid* is ſtronger than any of thoſe of the *vegetable* or *animal* kingdom; but weaker than the *vitriolic* or the *nitrous*. It is never found pure, but always combined with an alkali, ſo as to form a neutral ſalt. As it is more volatile than the other *mineral acids*, it cannot be ſo eaſily combined with phlogiſton, though many facts ſufficiently aſcertain the practicability of ſuch a combination. This ſpecies of *acid* is ſuppoſed by the chemiſts to be an offſpring of the *vitriolic acid*, and to conſiſt of this *acid* combined with an inflammable and a mercurial principle. Becker aſcribes its peculiar properties to a principle, which he calls mercurial earth; but Stahl rejects this part of his theory; and expreſſes a wiſh, that the exiſtence of the mercurial earth could be as well aſcertained as the exiſtence of phlogiſton.

The *marine acid* eaſily diſſolves zinc, iron, and copper; it acts with greater difficulty on tin, and ſcarcely acts at all in its liquid ſtate on ſilver, mercury, lead, or regulus of antimony. It diſſolves gold by the help of the *nitrous acid*; and by a modern diſcovery, gold and platina are rendered ſoluble in this menſtruum, either by previous ſolution in aqua regia and precipitation from that menſtruum, by means of an alkali, or by a previous calcination with tin and other imperfect metals.

Some of the moſt remarkable phænomena attending the combination of *marine acid* with metallic ſubſtances, are the following: it diſſolves theſe ſubſtances with leſs heat and efferveſcence, and with fewer vapours than *nitrous acid* does. All combinations of metals with this *acid* are eaſy of fuſion in the fire; there are few which concrete into a cryſtalline form. The metals with which it contracts the ſtrongeſt union, are thoſe to which it unites with the greateſt difficulty. *Marine acid* volatilizes either wholly, or in part, the metals with which it is united; and forms with thoſe metallic ſubſtances to which it moſt firmly adheres, ſuch as mercury, regulus of antimony, ſilver and lead, metallic ſalts, much more corroſive than thoſe formed by the *vitriolic* or *nitrous acid*. Homberg indeed found, that *marine acid* of itſelf corrodes glaſs more than any other *acid*.

This *acid* can only be obtained by means of an intermediate ſubſtance ſufficiently powerful to diſengage it from the native fixed alkali, which is the baſis of common ſalt. *Vitriolic acid* is the moſt proper for this purpoſe.

Acids, *Mineral*, are one of the general claſſes into which *acids* are diſtributed. They derive their name from the *mineral* ſubſtances from which they are procured; and they are ſubdivided into the marine, nitrous, and vitriolic *acids*. With reſpect to their general character, they are more ſimple, leſs volatile, more ſuſceptible of concentration, and ſtronger than the *acids* obtained from *animals* or *vegetables*.

Acid, *Nitrous*, is the moſt limited, and the leaſt frequent in the earth, of all the *mineral acids*. It is ſeldom met with in any combination, but in the neutral ſalt, from which it derives its name. The concentrated *nitrous acid* is weaker and much more volatile than the *vitriolic*. In this ſtate it ſtrongly attracts the moiſture of the air, and when mixed with water, occaſions a great heat and ebullition. M. Baumè obſerves, that while they are mixing, the liquor aſſumes a blue or deep green colour, though the vapours at the ſame time retain their original yellowiſh red. It fulminates, when ignited, on the contact of any inflammable matter; and burſts into flame, when mixed with diſtilled and expreſſed oils. It is of a yellowiſh red flame colour, emits vapours of the ſame colour, and poſſeſſes a peculiar taſte and ſmell. The *nitrous acid* contains phlogiſton, and yet takes it with avidity from moſt other ſubſtances. By means of this property, the ſubſtances into which it enters, burn without the aſſiſtance of common air.

This *acid* is one of the moſt powerful menſtruums in chemiſtry; not that it is ſtronger than either the *vitriolic* or *marine*; but on account of the facility, quickneſs, and activity, with which it diſſolves moſt ſubſtances. It corrodes and diſſolves all metallic bodies, except gold and platina; and Dr. Brandt has found, that by particular management it can diſſolve gold. But its action is moſt vehement on thoſe metals, which contain moſt inflammable matter, as zinc and iron. This *acid* combined with fixed vegetable alkali forms nitre; with marine or foſſil alkali, it forms a neutral ſalt, which ſhoots into cubical cryſtals, hence called *nitrum cubicum*; with volatile alkali, it produces the nitrous *ſal ammoniacum*. *Nitrous acid* eaſily diſſolves all calcareous and abſorbent earths. It is eaſily combined with oils, and with ſpirits of wine. This *acid*, which is ſometimes called ſpirit of nitre, may be procured by mixing two parts of dry or powdered clay with one part of nitre, and diſtilling the compoſition in a reverberatory furnace, with a gradual heat. Clay is very proper for decompoſing nitre, becauſe it contains a *vitriolic acid*. Martial vitriol is uſed for producing ſmoaking ſpirit of nitre; and pure *vitriolic acid* is made uſe of in diſtilling Glauber's ſmoaking ſpirit of nitre.

Acid, *Phoſphoric*. See Phosphorus.

Acid, *Vague*, a general term uſed by ſome chemiſts for the *vitriolic acid*. See Acid *Vitriolic*.

This mixing with foſſil oil, *petroleum*, *oleum tenæ*, or the like, conſtitutes the various ſorts of native foſſil tranſparent ſulphurs; uniting with ſemi-metals, it forms cinnabar, antimony, and other foſſils, both ſolid and fluid; uniting with metals, it forms divers kinds of vitriols; with calcareous earths, different alums; and laſtly, with *pyrites*, which is the *matrix* of vitriol, calcined in a wood fire, it produces common ſulphur. See Acids.

Acids, *Vegetable*, are thoſe which are procured from *vegetable* ſubſtances. Such are the juices of ſour fruit, ſour wine, or vinegar; cryſtals of tartar; all the eſſential, *acid*, concrete ſalts, procured by cryſtallization from the expreſſed juices of plants; and laſtly, all the *acids* obtained from *vegetable* ſubſtances in analyſing them by diſtillation. They differ from *mineral acids* in being leſs ſimple, leſs fixed, leſs ſuſceptible of concentration, and weaker.

Acid, *Vitriolic*, is the third ſpecies of the *mineral acids*; and was formerly obtained from martial vitriol. This *acid* is copiouſly diffuſed through the earth, the waters of the ocean, and the atmoſphere, and is ſuppoſed by ſome to be the baſis of all the other *acids*. It abounds moſt in the mineral kingdom, combined with various other bodies. Its ſpecific gravity, when it is highly concentrated, is more than double that of water. M. Heilot obtained ſome, concentrated to ſuch a degree, as to become ſolid and cryſtalline. This *acid* being likewiſe more fixed than water, admits a much greater degree of heat. It very freely imbibes moiſture, and acquires hereby a very conſiderable increaſe of weight. It diſſolves the aſhes of vegetables and calcareous earths; and when combined with the latter forms a matter called *ſelenites*, reſembling ſalt in its appearance, but differing from it in taſte and ſolubility. It may be likewiſe combined with alkalies, both vegetable, fixed, and foſſil. This *acid* alſo acts upon all metallic ſubſtances by means of their phlogiſton, and diſſolves them with a moderate efferveſcence and heat; and by diſcharging part of the inflammable principle, calcines them more or leſs, according to their nature, and the manner of making the ſolution. This *acid*, when ſtrongly concentrated, will act powerfully on oils; and being diſtilled together with ſpirits of wine, yields *æther*. The *vitriolic acid* is more ſimple and powerful than the *nitrous* and *marine acids*, ſeparates them from the alkalies to which they are united, and ſubſtitutes itſelf in their place. This *acid* may be procured by collecting the vapour of burning ſulphur, confined by means of a glaſs bell, and received into the vapour of water.

Acids, *Volatile*, are thoſe which are more *volatile* than other *acids*: ſuch is the *volatile vitriolic*, or ſulphureous *acid*, which is only the common *vitriolic* acid combined with phlogiſton. Thoſe who are deſirous of farther information concerning the ſubject of *acids* in general, and the ſeveral claſſes and ſpecies of them above enumerated, may conſult Neumann's Works, tranſlated by Dr. Lewis, and Macquer's Dictionary of Chemiſtry.

Acids, in the *Materia Medica*, denote ſuch medicines as are poſſeſſed of an *acid* quality: as vinegar, ſpirit of vitriol, &c.

Acids and *alkalies* have been conſidered by ſome chemiſts as the two *athletæ* of nature, the great inſtruments whereby all things were effected; and the cauſe not only of a natural, but preternatural diſeaſes and cures. This hypotheſis we chiefly owe to Tachenius, a German chemiſt, and a follower of Helmont's ſyſtem, who publiſhed two books to ſhew, that all natural things are compoſed of *alkali* and *acid*. The *acid*, which was generated in the air from the ſun, and contained in it the hidden ſeeds of all things, aſſociated the *alkali* to itſelf; and from hence, as a paſſive ſubject, aroſe the *eſſe*, or forms of things. He was followed by Swalve, and his doctrine has been ſince defended by others, but combated and refuted by Bohnius, Boyle, Bertrand, Pitcairn, Hoffman, &c.

Some have pretended to correct and improve this hypotheſis of *acia* and *alkali*, by making *acid* and *viſcid* the cauſes of all diſeaſes, and fluid *alkali* the inſtrument of all cures. Act. Erud. Lipſ. An. 1689.

In reality, though the terms *acid* and *alkali* be new, notions much reſembling thoſe already recited may be met with in ancient writers, who frequently aſcribe the origin of many diſeaſes to unnatural, ſour, and corroſive juices, in the belly.

Acids, Mr. Boyle obſerves, not only diſturb the body while they continue *acid*, but in many caſes create diſtempers, whereof they ſhould ſeem the remedies.

Helmont aſſerts, that no *acid* can be lodged naturally in any part of the body, except the ſtomach; that if it extend farther, it becomes unnatural, infects the ſweet and balſamic juices, and proves the cauſe of moſt diſeaſes.

To correct the redundancy of *acids* in the ſtomach, all *alkalious*, or urinary ſalts, both fixed, as of wormwood, centaury, carduus; and volatile, as ſpirit of ſal ammoniac, ſpirit and ſalt of hartſhorn, ſcurvy-graſs, &c. are recommended. Under corrections alſo come all fixed earthy or metalline concretes, which abſorb the *acid*, as iron, ſaccharum ſaturni, antimony, and all oils and fat things, which obtund and inoſculate the parts of *acids*, as ſpirits of wine, oil of cloves, &c.

The medicinal qualities of *acids* are much diſputed by many phyſicians. Some alledge, that they are hurtful in coughs, and moſt of them, the juice of lemons excepted, in diſeaſes of the breaſt. A large doſe of ſuch as are very concentrated, taken internally, would prove a very corroſive poiſon. However, *acids*, properly adminiſtered, are excellent cooling and aperitive medicines, fit to quench thirſt, and to leſſen the acrimony of the bile. Theſe, being powerful *antiſeptics*, are eſteemed good in all putrid and malignant diſeaſes; nor are they leſs efficacious in inflammatory and feveriſh caſes. However, great care ought to be taken not to adminiſter them in ſuch large quantities as to corrode the bowels, or to coagulate the blood. *Acids* are alſo commended in the plague, and as *ſtyptics*. Thus vinegar not only ſerves to ſtop hæmorrhages, but being ſprinkled upon a red-hot tile, or iron, corrects the putrefaction of the air.

ACIDITY, Aciditas, the quality which conſtitutes or denominates a body *acid*; or that ſenſation of ſharpneſs and ſourneſs which *acids* excite upon the taſte.

ACIDULÆ, in *Natural Hiſtory*, a ſpecies of mineral waters, diſtinguiſhed by a latent acidity in their nature. When they are unaccompanied with heat, they are called *acidulæ*; but if heat be added to their briſk ſpirit, they are denominated *thermæ*.

Acidulæ are native waters, impregnated with particles of ſome acid mineral, as vitriol, alum, nitre, or ſalt; and, as Dr. Seip of Prymont firſt diſcovered, in 1736, and Dr. Brownrigg of Whitehaven farther evinced, with a conſiderable quantity of fixed air, formerly known by the name of their *ſpirit*, or *mephitis*, to which they owe their briſk ſparkling quality. Phil. Tranſ. Abr. vol. viii. p. 659; and Phil. Tranſ. vol. lv. p. 236, &c. For Dr. Prieſtley's method of making artificial waters of this kind, ſee the article Pyrmont.

The phyſicians alſo frequently include chalybeat and aluminous, or ferregineous, waters, under the claſs of *acidulæ*.

Their virtues depend, in general, on the principles and ingredients in their compoſition. A general analyſis of mineral waters may be made, either by evaporation, which will diſcover both the quantity of ſolid matter contained in the water, and, by ſubſequent trials, the peculiar nature of it; or by diſtillation, whence it may be known, whether the water contains any volatile matter, ſaline or bituminous; or again, by the mixture of certain liquors. The moſt common for this purpoſe are the infuſion of galls, ſyrup of violets, *ol. tart. per deliq. tinct. argenti, ſal. alk. vol. tinct. ſulp. vol. ſoap* and *aqua fortis*. But for a minute and more accurate inveſtigation, the materials are more numerous, and the *apparatus* more conſiderable. The *operator* ſhould be provided with ſcales and weights, an hydroſtatic balance, different ſorts of glaſſes and cements, a thermometer, a hand-pump, microſcopes, crucibles, &c.

A ſmall quantity of the infuſion of *galls* will diſcover whether the water be impregnated with iron. If it contains a coarſe oker, the colour ſtruck by the *galls* is very dark; the finer iron produces an inky purple; but the fineſt, ſuch as the Pyrmont water contains, gives an azure blue. A dram of *ſyrup* of *violets*, mixed with a ſmall wine-glaſs of the mineral water, will produce a green colour, if there be any alkaline ſalt, or alum, in it; though Dr. Rutty ſays, that if the ſpirit be new, alum will turn it red. This green colour is alſo obſerved, when a ſolution of iron is met with; with an acid, the ſyrup produces a red.

Ol. tart. per deliq. dropped into a ſmall quantity of the water to be examined, diſcovers earthy matter, by precipitating it in the form of a white cloud; if a whitiſh cloud riſes to the top, and the water be clear underneath, the quantity of earthy matter is very little. This oil precipitates the contents of all hard waters. If it meets with a ſolution of mercurial particles, it diſcovers them by producing a yellow colour; and it ferments with acids.

Tinct. argenti, if made with pure *aqua fortis*, is the moſt delicate addition for diſcovering ſea-ſalt in water, which it joins with, and falls in a milky cloud.

Sal. alk. vol. precipitates the contents of hard water, and diſcovers mercury, or any of its preparations, by turning the liquor whitiſh, and coagulating part of it. It diſcovers copper, by producing a blue colour.

Tinct. ſulph. vol. diſcovers lead in water, by turning it into a duſky brown colour. *Soap* readily determines whether the water be hard or ſoft, by diſſolving in it; if hard, the *ſoap* curdles; but if ſoft, forms with it an homogeneous mixture, and with a little agitation a froth is raiſed. *Aqua fortis* turns the water into a green colour, if it contains a ſolution of copper. After all, Dr. Lewis obſerves, that he can recollect but two inſtances, in which ſimple mixture affords any degree of certainty; the blue colour from copper and volatile alkali, and the bluiſh or purple from iron, and ſome aſtringents. See Hoffman de Acidulis, &c. Shaw's Improvements on Mineral Waters, in his Chemical Works, and Neumann's Works, with Dr. Lewis's Additions, p. 252.

ACIDULATED, any thing wherein acid juices have been put, in order to give it a coolneſs, and briſkneſs.

ACIDULOUS denotes a thing that is ſlightly *acid*; it is ſynonymous with the word *ſub-acid*.

ACIDUM *Ætherium*, *aluminoſum*, *catholicum*, *primigenium*, *ſulphureum*, are all different names for SPIRIT *of vitriol*.

ACIDUM *Pingue*, a name firſt given by M. Meyer, and afterwards adopted by M. Crans, and ſome other German chemiſts, to a certain cauſtic *acid*, which magneſia, limeſtone, or any calcareous earth, meets with in the fire, and attracts, loſing at the ſame time a conſiderable portion of water; and by means of which it is *neutraliſed*, rendered *cauſtic* and uncryſtalizable, and deprived of the property of efferveſcing with *acids*. M. Meyer ſuppoſes, that this ſubſtance nearly approaches to that of fire and of light; that by the aid of this *acid* lime unites with oil, diſſolves ſulphur, &c. that it enters very abundantly into the compoſition of vegetables and animals; that it is this which eſcapes from charcoal when burning, which increaſes the weight of metallic *calces*, and in general anſwers the various purpoſes in nature, which the Engliſh philoſophers, Hales, Black, Macbride, Prieſtley, and others, have aſcribed to fixed air. See AIR FIXED.

This new doctrine was attacked, and the Engliſh ſyſtem defended, in the year 1769, by M. Jacquin, a profeſſor at Vienna; but before this period it had made a very rapid progreſs in Germany; it was adopted by many chemiſts of reputation, and taught publicly in their ſchools. In 1770, M. Crans, phyſician to the king of Pruſſia, publiſhed a reply to M. Jacquin; in which he diſcovers a very zealous attachment to the *acidum pingue* of M. Meyer. See Lavoiſier's Eſſays Phyſical and Chemical, vol. i.

ACIDUM *Vitrioli vinoſum*. See ÆTHER and SPIRIT *Ætherial* of Frobenius.

ACINACES, in *Antiquity*, a kind of cutlas or ſcimetar, in uſe among the Perſians.

ACINARIA, in *Botany*, a name given by ſome to the marſh whortle-berries, or *vaccinia paluſtria*.

ACINI, in *Botany*, ſmall grains, or berries, growing in bunches, after the manner of grapes; alſo the ſtones or

ſeeds of grapes. The berries of the *elder*, *privet*, *ivy*, &c. are of this kind, and ſo called.

Anatomiſts have called ſome glands, of a ſimilar formation, *acini glanduloſi*.—See *Tab. Anat.* (*Splanch.*) *fig.* 41. *lit.* bb & dd, &c.

ACINIFORMIS *Tunica*, the ſame with the TUNICA UVEA of the eye. It is alſo called ACINOSA *tunica*.

ACINODENDRON, in *Botany*, the name given by Burman, in his Theſaurus, to a genus of plants, afterwards called MELASTOMA, belonging, in the Linnæan ſyſtem, to the genus *thymus*, and to the claſs and order *didynamia gymnoſpermia*.

ACINOS, ſtone, or wild BASIL.

ACINUS properly ſignifies the grape. See ACINI. It is alſo the name of the STAPHYLOMA.

ACITLI, in *Zoology*, the common Mexican name for the great creſted diver, common to Europe and America, and more uſually called by authors, the LEPUS *aqueus*, or water-hare.

ACKNOWLEDGMENT-*Money*, a ſum paid, in ſome parts of England, by tenants, on the death of their landlords, as an *acknowledgment* of their new lords.

ACLIDES, in the Roman *Military Art*, a kind of miſſive weapon, having a thong fixed to it, by which, after caſting it out of the hand, it might be drawn back again.

Servius deſcribes the *aclides* as full of ſpiculæ, or eminences. It was full of ſpikes, and ſo would do miſchief both where it ſtruck, and in the withdrawing. Each warrior ſeems to have been furniſhed with two.

ACLOWA, in *Botany*, the name of a plant common in Guinea, and uſed by the natives to cure the Itch. They rub it on the body, as we do our unguents. Petivier accounts it a kind of *colutea*, and has named it the *Guinea ſcorpioide colutea*, with leaves like the gum tragacanth ſhrub.

ACME, the height or top of any thing.

The word is Greek, ſignifies point, and is more eſpecially uſed to denote the height, or utmoſt vehemence, of a diſtemper.

Accordingly, ſome *inſtitution*-writers divide diſeaſes into four ſtates, or periods:

1. *Arche*, the beginning, or firſt attack.—2. *Anabaſis*, the growth.—3. *Acme*, the height—And, 4. *Paracme*, which is the declenſion of the diſtemper.

ACMELLA, in *Botany*, a plant which grows in the iſland of Ceylon, of which there are three ſpecies noted by botaniſts. It is commended in nephritic diſorders, but very rarely uſed. It is alſo called ACHAMELLA.

ACNE is a name given to a ſmall purple, or hard tubercle, on the face.

ACNIDA, in *Botany*, a genus of the *dioecia pentandria* in the Linnæan ſyſtem.

ACO, a name given to a fiſh found in the Mediterranean, called alſo AQUO, SARACHUS, and SARACHINUS.

ACOEMETÆ, or ACOEMETI, a name given to certain monks in the ancient church, who flouriſhed, particularly, in the Eaſt; and who were thus called, becauſe they had divine ſervice performed, without interruption, in their churches.

The word is formed of the privative *α*, and χοιμαω, *to lie down*, or *ſleep in bed*.

The *acoemetæ* divided themſelves into three bodies, each of which officiated in their turn, and relieved the others: ſo that their churches were never ſilent, night nor day.

The STYLITES were alſo ſometimes called *acoemetæ*.

There are a kind of *acoemetæ* ſtill ſubſiſting in the Romiſh church; the religious of the Holy Sacrament coming properly enough under that denomination; in regard they keep up a perpetual adoration; ſome or other of them praying, before the ſacrament, day and night.

ACOLCHICHI, in *Zoology*, the Mexican name for a bird, deſcribed by Nieremberg under the name of the PTEROPHOENICO *Indiarum*.

ACOLIN, in *Zoology*, the name of a bird of the partridge kind, common in the Spaniſh Weſt Indies. It is no larger than a ſtarling; its legs and feet are of a pale greeniſh colour, and its toes very long; its beak is yellow, and ſomewhat long; its head ſmall; its breaſt and belly are white; its ſides are ſpotted with brown, and its back and tail of a duſky yellowiſh brown; its tail is very ſhort, and both that and the back have ſome black ſpots, and ſome narrow ſtreaks of white. It frequents the ſides of lakes, and is ſuppoſed to feed on flies, worms, and other inſects, which are found about watery places. It is a tolerably well taſted bird.

ACOLUTHI, or ACOLYTHI, in *Antiquity*, a term applied to ſuch perſons as were ſteady and immoveable, in their reſolutions.

The word Ακολυθος is compounded of the privative *α*; and κελευθος, *via*, *way*; as ſtill perſiſting in their way, or courſe.

For this reaſon, the Stoics were called *acolythi*; becauſe nothing could ſhake or alter their reſolves.

Among the *Eccleſiaſtical Writers*, the term *acolythus*, or *acolythiſt*, is peculiarly applied to thoſe young people, who, in the primitive times, aſpired to the miniſtry; and, for that purpoſe, continually attended the biſhops: which aſſiduity occaſioned their being diſtinguiſhed by this appellation.

In the Romiſh church, *acolythi* were of longer continuance; but their functions were different from thoſe of their firſt inſtitution. They were ſuch as had only received the firſt of the four leſſer orders, whoſe buſineſs was to light the tapers, carry the candleſticks, the incenſe-pot, and prepare the wine and water.

At Rome there were three kinds of *acolythi*; viz. *palatini*, who waited on the pope; *ſtationarii*, who ſerved in churches; and *regionarii*, who, together with the deacons, officiated in other parts of the city.

ACOLUTHI, or *Acolythus*, was alſo a title in the Grecian empire, given to the captain or commander of the VARANGI, a body of guards appointed for the ſecurity of the emperor's palace.

ACOLYTHIA, in the Greek church, denotes the office, or order of divine ſervice.

The ſame name is alſo given to the prayers, ceremonies, hymns, and the like, whereof the Greek ſervice is compoſed.

ACON, an inſtrument uſed in the ancient exerciſes, like the *diſcus*.

ACON gave name to an ancient order of knighthood, who were afterwards united to the knights *hoſpitallers*.

ACONCROBA, in *Botany*, a name given by the natives of Guinea to a plant, growing wild with them, and in great eſteem for its virtues in the ſmall-pox. They give an infuſion of it in wine. The leaves of this plant are opake, and as ſtiff as thoſe of the phillerey; they grow in pairs, and ſtand on ſhort foot-ſtalks; they are ſmall at each end, and broad in the middle; and the largeſt of them are about three inches in length, and an inch and quarter in breadth in the middle. They ſomewhat reſemble thoſe of our bay. They are of a duſky colour on the upper ſide, and of a pale green underneath.

ACONE, in the *Natural Hiſtory* of the ancients, the name of a ſtone uſed as a whetſtone, and for ſeveral other purpoſes; but more uſually known among the Romans by the name COTICULA. It ſignifies alſo a mortar for the purpoſe of levigation.

ACONITE, MYOCTONON, in *Botany*, a plant, famous among the ancients, both in quality of a POISON, and a remedy.

Aconitum is ſaid, by ſome, to take its name from Aconæ, a city in Bithynia, where it grew in great abundance: though it is alſo found in other places, particularly the mountains about Trent, &c.

The flower is of the polypetalous anomalous kind, conſiſting of five irregular leaves, and ſomewhat reſembling a man's head, with a hood or helmet on it. The upper petal ſeems to perform the office of a hood or helmet; the two lower leaves repreſent that part of the helmet which receives the lower jaw, and the two wings ſeem adapted to the upper part of the face, or the temples. From the center of the flower there ariſe two piſtils, ſhaped like feet, and received into the hollow of the upper petal or hood, as is alſo the piſtil, which finally becomes a fruit, compoſed of ſeveral membranaceous vaginæ collected into a head, and uſually containing angular and wrinkled ſeeds. See *Tab.* I. *of Botany*, *Claſs* II.

The ancient botaniſts give the name *aconite* to ſeveral plants, of different kinds.—One ſpecies they called *lycoctonum*, λυκοκτονον, *wolfs-bane*; or *cynoctonon*, κυνοκτονον, *dogs-bane*, from its effects: of theſe they had likewiſe their diviſions; as the *napellus*, thus called *a napo*, becauſe its root reſembled the turnep-kind: another called *anthora*, q. d. *anti-thoræ*, good againſt diſorders cauſed by the *thora*, another kind of *aconite*.

Dioſcorides only makes two kinds of *aconite*; the firſt the ſame with the *thelyphonium*, the ſecond the proper *aconite*. In ſtrictneſs there appears to have been but one ſpecies of *aconite*, which reſembled the *thelyphonium* in its virtue and effects, but differed from it in leaf, colour, ſoil, root, &c. Mr. Tournefort, however, enumerates twenty-one ſpecies of *aconite*.

The claſs of *aconites* is held extremely cauſtic and acrimonious, in virtue whereof they produce mortal convulſions, or inflammations, which end in mortifications. The ancients were ſo ſurpriſed at theſe effects, that they were afraid to touch the plants; and hence a thouſand ſuperſtitious precautions about the manner of gathering them.—Their roots are, however, held of ſervice in malignant fevers, by ſome; and, accordingly, make an ingredient in ſome orvietans, and other alexipharmic compoſitions.

The ancients uſed this plant againſt the ſting of the ſcorpion, which is ſaid to be deadened by the touch of the *aconite*, and reſtored to its vigour by that of hellebore.—Theophraſtus relates, that there was a way of preparing it, in thoſe days, ſo as it ſhould only deſtroy at the end of one, or two years.—Arrows dipt in its juice are ſaid to prove mortal, wherever they wound.—The Indians uſed *aconite*, corrected in cows urine, with good ſucceſs againſt fevers.

Some compare the poiſon of the *aconite* to that of the NAPELLUS. Others ſeem to make it of the ſame kind with that of the SALAMANDER. Dr. Mead will have it to agree with the CICUTA. It is the root alone that is hurtful; for its leaves and fruit are ſaid to be innocent.

The Engliſh call this plant wolf's-bane, from the Anglo-Saxon *wulfes-bane*.

ACONITI, *ακονιτι*, is an appellation given to ſome of the ancient ATHLETÆ, but differently interpreted. Mercurialis underſtands it of thoſe who only anointed their bodies with oil, but did not ſmear themſelves over with duſt, as was the uſual practice. M. Burette will have it to ſignify thoſe who conquered eaſily without duſt, q. d. *απονητι*, *αμαχει*, *with little trouble*.

ACONITON ſignifies not plaſtered, and is a name given to veſſels not lined within.

ACONTIAS, a name uſed by ſome authors, for a ſort of COMET, or METEOR, whoſe head appears round, or oblong, and its tail very long, and ſlender, reſembling a javelin.

It takes its denomination from a ſerpent thus called, frequent in Calabria and Sicily; where it is alſo named *ſaettone* (from *ſagitta*, *an arrow*), by reaſon of its flying at paſſengers like an arrow; in order to which, it winds itſelf up a tree, to ſpring thence with the greater violence. For the like reaſon the Greeks call it *acontias*, of *ακοντιον*, a *dart*, or *arrow*.

It differs from the XIPHIAS, in that it is longer, and more like a dart; and the other is ſhorter and broader in the middle.

ACONTIAS, in *Zoology*, the name of a ſpecies of ſerpent, called alſo JACULUM, or the dart-ſnake, from its manner of vibrating its body in the manner of a dart. Bellonius found one of theſe in the iſland of Rhodes, which he deſcribes in this manner. It is about three hands-breadth long, and of the thickneſs of one's little finger. Its colour is a milky grey on the back, variegated with ſmall black ſpots, like ſo many eyes; and on the belly it is perfectly white. The neck is wholly black, and from that two milk-white ſtreaks run all the way along the back to the tail; the black ſpots alſo are each ſurrounded with a ſmall circle of white. It is found in Egypt and Lybia, and in the iſlands of the Mediterranean. It is alſo called CENCHREAS and CENCHRITES.

ACONTIUM, in *Ancient Writers*, a kind of Grecian dart, or javelin, ſomewhat reſembling the Roman PILUM.

ACOPA, in *Botany*, a name given by Dioſcorides, and ſome other authors, to the TRIFOLIUM *paludoſum*, or buck-bean.

ACOPA, in *Medicine*, is alſo uſed to denote remedies againſt the ill conſequences proceeding from laſſitude, occaſioned by too violent labour, exerciſe, or the like; ſuch as tenſions, pains in the bones, &c. They are alſo proper on many other occaſions, ſome being of a warm, others of a mollifying nature. The name is alſo applied to the ſoft cerates made uſe of for tumours, &c.

The word is derived from *α* privative, and *κοπος*, *wearineſs*.

ACOPIS, the name of a ſort of foſſile ſalt, deſcribed by Pliny, and ſaid to have been uſed by the ancients, mixed with oil, and heated, to rub over the limbs to cure wearineſs. Others ſay it is a precious ſtone like glaſs, marked with ſpots of a golden colour.

ACOPON, or ACOPUM, ſee ACOPA.

ACOPOS, a plant mentioned by Pliny, ſaid to be the ſame with the ANAGYRIS of Dioſcorides, which Gerard ſays is the bean-trefoil; it ſignifies alſo LABURNUM.

ACOR ſignifies ſourneſs or acrimony.

ACORDINA denotes Indian tutty.

ACORI, or BLUE CORAL, in *Natural Hiſtory*. The true *acori* is very ſcarce; ſome, however, is fiſhed on the coaſts of Africa, particularly from Rio-del-re, to the river of the Camarones. This CORAL is part of the merchandize which the Dutch trade for with the Camarones; that of the kingdom of Benin is alſo very much eſteemed. It grows in form of a tree on a rocky bottom. It is alſo a name for the greater GALANGAL root.

ACORN, in *Natural Hiſtory* and *Agriculture*, denotes the fruit of trees of the oak kind.

The *acorn*, according to Dr. Grew, is the nut of an oak, with this only difference, that beſides the cup it ſtands in, it has only a leathern or parchment cover, inſtead of a ſhell. And hence it is, that whereas the kernel of a nut is ſweet, that of an *acorn* is of a very rough taſte; the auſtere parts of the ſap, which in a nut are drained off into the ſhell, being here imbibed by the kernel itſelf.

Writers on huſbandry give rules concerning ſeminaries or nurſeries of *acorns*, the propagating, ſowing, or planting of *acorns*.

For timber, thoſe *acorns* are to be choſen as ſeed which are moſt ſolid and heavy, not thoſe which are biggeſt. See SEEDS.

In the Phil. Tranſ. vol. lviii. Nº 11, an. 1768, p. 75, there is a curious and important memoir by John Ellis, Eſq. containing a method of preſerving *acorns* in bee's-wax, for a whole year, in a ſtate fit for vegetation, whereby other ſeeds may be preſerved in like manner; and ſuch as are valuable may be brought over from the Eaſt Indies, to plant for the benefit of the American colonies.

Acorns were the food of the firſt ages; but when corn was found out, *acorns* were neglected. They are of little uſe in our days, but to fatten hogs, and other cattle, and poultry. Yet among the Spaniards the *acorn*, GLANS *Iberica*, is ſaid to have long remained a delicacy, and to have been ſerved up in the nature of a deſert.

In dearths, *acorns* have been ſometimes dried, ground into meal, and baked into bread.

The inhabitants of Chio held out a long ſiege, without other food. But they are ſaid to breed head-achs and ventoſities, and to be hard of digeſtion. A decoction of *acorns* is reputed good againſt dyſenteries and colics. A peſſary of them is ſaid to be good in immoderate fluxes of the menſes.

ACORN, in *Sea-Language*, denotes a little ornamental piece of wood in the ſhape of a cone, fixed on the top of the ſpindle on the maſt-head, above the vane, to keep it from coming off the ſpindle in a whirlwind, or when the ſhip leans much upon one ſide under ſail.

ACORUS, a medicinal plant, of the flag kind; frequently confounded by the ancients, and alſo by the modern apothecaries, with the CALAMUS *aromaticus*. It pertains to the claſs of *hexandria monogynia*, in the Linnæan ſyſtem. They are diſtinguiſhed by this, that from the middle of ſome of the leaves of the latter, there ariſes a longiſh cluſter of an infinity of little flowers, the thickneſs of the little finger, and reſembling *macropiper*, or long pepper.—The other is the common flag-flower.

It is only the root of the ACORUS that is uſed in phyſic; and it is this we uſually call *acorus*.—The *calamus aromaticus* is brought from Lithuania and Tartary: it is knotty, reddiſh without, and white within; as thick as the little finger, and half a foot long.

It is ſpicy and bitteriſh; and uſed in cephalic and ſtomachic compoſitions.—It is alſo an ingredient in the THERIACA *Andromachi*. Its principal uſe is in obſtructions of the menſes, ſpleen, and liver; in the cholic, &c.

Some rank *galangals* as a ſpecies of *acorus*.

ACORUS *adulterinus*, or *vulgani*, in the *Materia Medica*, the name of the root of the *iris lutea paluſtris*, or common yellow water-FLAG-*flower*.

ACOS, in *Medicine*, ſignifies a remedy.

ACOUSMATICI, an appellation given to ſuch among the diſciples of Pythagoras, as were ſtill under five years probation.

The *acouſmatici* are ſometimes alſo called by Latin writers, *acuſtici*. The *acouſmatici* ſtood oppoſed to the *mathematici*, who were thoſe initiated into the ſecrets of ſcience; and the *acouſmatic* philoſophy, to the *mathematic*.

Some have denied the appellation of Pythagoreans to be due to the *acouſmatici*, becauſe many of theſe had their learning not immediately from Pythagoras, but from Hippaſus, who, according to ſome, was of Crotona, but according to others, of Metapontium.

ACOUSTICS, ACOUSTICA, the doctrine, or theory of hearing, or of ſounds.

The word is formed of the Greek ακȣω, *audio, to hear*.

Acouſtics is the ſame with what we otherwiſe call PHONICS.

ACOUSTICS, ACOUSTICA, or ACOUSTIC *Medicines*, are remedies againſt the imperfections and diſorders of the EAR; or of the ſenſe of HEARING.

ACOUSTIC is particularly applied to *inſtruments* uſed by thoſe who are dull of hearing, to ſupply that defect.

Dr. Hook ſays, it is by no means impoſſible to hear the loweſt whiſper that can be made, to the diſtance of a furlong; and that he knows a way of hearing any perſon ſpeak through a ſtone-wall three feet thick.

ACOUSTIC *Nerve*. See AUDITORY *Nerve*.

ACOUSTIC *Veſſels*. In the ancient theatres there were a kind of *acouſtic* veſſels, made of braſs, ſhaped, as ſome have ſaid, in the bell-faſhion, which being of all tones within the pitch of the voice, or even of inſtruments, rendered the ſounds more audible, ſo that the actors could be heard through all parts of the theatres, which were even 400 feet in diameter.

ACOUSTIC *Duct*, is applied to the external paſſage of the ear; called alſo *meatus auditorius*.

ACQUEST, or ACQUIST, is underſtood in a legal ſenſe, of GOODS, or effects, not deſcended or held by inheritance; but acquired either by purchaſe, or donation.

The word is formed of the verb *acquerir*, from *acquirere, to acquire*, or *get*.

The French laws make a deal of difference between *acqueſts*, and hereditary effects. The civil law allows none. See HEIR.

ACQUEST is alſo popularly uſed for conqueſt, or a place acquired by the ſword.

ACQUIETANDIS *Plegiis*, a writ of juſticies lying for a ſurety againſt the creditor that refuſes to acquit him after the debt is paid.

ACQUIETARE, in ancient *Law-Books*, ſignifies to diſcharge, or pay the debts of a perſon deceaſed; as the heir thoſe of his father, &c.

ACQUISITION, the act of procuring a right or title to the enjoyment, or property of a thing.

ACQUISITION is alſo ſometimes uſed for an ACQUEST.

ACQUITTAL, a diſcharge, deliverance, or ſetting free of a perſon from the guilt or ſuſpicion of an offence.

Acquittal is of two kinds; in *law*, and in *fact*.—When two are appealed or indicted of felony, one as principal, the other as acceſſory; the principal being diſcharged, the acceſſory is, by conſequence, alſo freed: in which caſe, as the acceſſory is *acquitted by law*, ſo is the principal *in fact*.

ACQUITTAL is alſo uſed, where there is a lord MESN, and tenant, and the tenant holds land of the meſn, and the meſn holds over the lord paramount: here, the meſn ought to acquit the tenant of all ſervices claimed by any other for the ſame lands; the tenant being to do ſervice to the meſn only, and not to divers lords for one parcel of land.

ACQUITTANCE, or QUITTANCE, a releaſe, or diſcharge in writing, of a ſum of money, or other duty, which ought to be paid, or done.

The verb *acquit*, the participle *acquitted*, and the noun *acquittal*, do all ſignify a diſcharge from an offence objected.—In which ſenſe, we meet with *acquitted* by proclamation.

ACRASIA, ΑΚΡΑΣΙΑ, is uſed by ſome writers in phyſic, for the exceſs or predominancy of one quality above another; either in a mixture, or in the conſtitution of a human body. The word is uſed by Hippocrates, and other Greek *medicinal* writers, to expreſs exceſs of any kind, intemperance and imbecillity.

ACCAI, an Arabic word, ſignifying either SATYRIASIS, or FUROR *uterinus*.

ACRAS, or rather *Achras*, the wild PEAR.

ACRATISMA, in *Antiquity*, a breakfaſt among the old Greeks, conſiſting of a morſel of bread ſoaked in pure unmixed wine.

ACRATONELLI. See MULSUM.

ACRATOS, from α negative, and κεραννυμι, *I mix*; ſimple, unmixed. This is very often uſed by Hippocrates, and applied to excretions of different ſorts, and is always of very bad preſage. Thus in his Prænotiones, he obſerves, that in all painful diſorders of the pleura and lungs, the ſpittle ſhould appear mixed and yellow; and that it is a dangerous ſymptom if it be all yellow, without any mixture. And immediately after he tells us, that if the ſpittle be ſo unmixed, as to appear black, it is a very bad preſage.

ACRE is uſed in the dominions of the Mogul, in regard to his revenues, for the ſum of 100,000 roupees; eight roupees being equal to about one pound ſterling.

ACRE, a quantity of land, containing four ſquare ROODS, or 160 ſquare POLES, or PERCHES.

The word perhaps is formed from the Saxon *acere*, or German *acker*, *field*, of the Latin *ager*. Salmaſius derives it from *acra*, uſed for *acæna*, a land meaſure among the ancients, containing 10 feet.

By the cuſtom of countries the perch differs in quantity, and of conſequence, the acres of land: it is commonly but 16½ feet; but in Staffordſhire it is 24 feet. According to the Stat. 34 Hen. VIII. concerning the ſowing of flax, it is declared, that 160 perches make an *acre*; and the ordinance of meaſuring land, 35 Edw. I. agrees with this account. The word *acre* formerly meant any open ground or field; as Caſtle-*acre*, Weſt-*acre*, &c. and not a determined quantity of land.

Alſo *acre*, or *acre*-fight, is an old ſort of duel, fought by ſingle combatants, Engliſh and Scotch, between the frontiers of their kingdoms, with ſword and lance; and this duelling was alſo called camp-fight, and the combatants, champions, from the open field, that was the ſtage of trial.

Acre alſo by computation is 10 ſquare chains, of 22 yards each, that is, 4840 ſquare yards. And a mile being 1760 yards ſquare, a mile ſquare will be found to contain 640 *acres*.

The Scotch *acre* contains four Scotch roods, and bears proportion to that of the Engliſh by ſtatute, as 100,000 to 78,694, regard being had to the difference betwixt the Scotch and Engliſh FOOT.

The French *acre*, *arpent*, contains 1¼ Engliſh *acre*, or 55206 ſquare Engliſh feet, whereof the Engliſh *acre* contains only 43560.—The Straſburg *acre* is about half an Engliſh *acre*.—The Welch *acre* contains commonly two Engliſh ones.—The Iriſh *acre* is equal to one *acre*, two roods, nineteen perches $\frac{27}{121}$, Engliſh.

Houghton gives a table of the number of *acres* to a houſe in each county of South-Britain, which is found to vary in the Engliſh counties, from 3½ *acres*, the proportion in Middleſex, and 17½ in Surry, to 49 *acres* in Southampton. In the Welſh counties, from 51 *acres*, as it is found in Flintſhire, to 193, as in Merionethſhire.

Dr. Grew attempts to aſcertain the number of *acres* in England, which, according to him, amounts to 46 millions and 80000. Phil. Tranſ. N°. 330, p. 266, ſeq. or Abr. vol. iv. p. 450.

Sir William Petty reckons but 28 millions; others 29 millions. And by an account of the number of *acres* in each county, ſuppoſed to be taken from ſome old regiſter, the number of *acres* in England amounted only to 39¼ millions. But Dr. Grew ſhews, that this is too little.

The United Provinces are ſaid to contain 4382000 *acres*. The province of Holland but one million of *acres*; and was thought formerly to contain 2,400,000 ſouls. But by the more accurate computations of Mr. Kerſſeboom, that province does not contain one million of ſouls. If England were as well peopled in proportion, it would contain 46 millions of inhabitants; that is, perhaps, about five times as many as it now contains.

By a ſtatute of 31 Eliz. it is ordained, that if any man erect a new cottage, he ſhall add four *acres* of land to it. See SURVEYING.

ACRE-*Tax*, a tax laid on land at ſo much per *acre*.—In ſome places this is alſo called *acre-ſhot*.

Impoſitions on lands in the great level are to be raiſed by a proportionable *acre-tax*, 20 Car. II. cap. 8.—An *acre-tax* of 2*s*. 6*d*. *per acre*, for draining Hadenham-level, 13 Geo. I. cap. 18.

ACREME, a term ſometimes uſed in ancient law-books, for ten acres.

ACRIBEIA, a term purely Greek, Ακριϐεια, literally denoting an exquiſite or delicate accuracy; it is ſometimes uſed in our language for want of a word of equal ſignificancy.

ACRID, in *Natural Hiſtory*, denotes any thing ſharp or pungent to the taſte.

Ancient *Naturaliſts* diſtinguiſh two kinds of *acrid* taſtes; the firſt proceeding from hot and dry, as that of pepper; the ſecond from hot and moiſt, as that of garlic.

Acrid, according to Grew, properly belongs to the claſs of compound taſtes. It is not ſimply ſour or pungent; there being bodies not *acrid*, which yet are pungent, e. g. *arum*; nor is it ſimply hot; for there are many hot bodies which are not *acrid*, as the roots of zedoary, yarrow, and contrayerva.—The characteriſtic therefore of *acritude* conſiſts in pungency joined with heat.

Acrid bodies, by the pungency and tenuity of their parts, incide, digeſt, heat, open, irritate, purge, cauſe appetite, &c. They inflame the ſkin, when chewed produce ſaliva, and when ſnuffed, ſneezing.

The eating of *acrid* food with thoſe intentions, is particularly called by the Greeks *drimyphagia*.

Acrid things are hurtful to the head and eyes, and contrary to bilious temperaments; but advantageous to pituitous ones.

Acrids may be divided into claſſes, according as they yield their acrimony. 1. By diſtillation. 2. By infuſion. 3. Neither by infuſion nor diſtillation.

In leucophlegmatic habits they are powerful expectorants, deobſtruents, diuretics, and emmenagogues. Their virtue frequently depends on the trouble which they give to the ſtomach.

ACRIDOPHAGI, in the ancient *Geography*, a nation, or people, ſaid to have fed on locuſts.

The word is compounded of ακρις, *locuſt*, and φαγω, *to eat*.

The *Acridophagi* are repreſented as a people of Ethiopia, inhabiting near the deſerts. In the ſpring they made proviſion of a large kind of locuſts, which they ſalted, and kept for their ſtanding food all the year: they lived to forty years of age, then died, as is ſaid, of a ſort of winged worms generated in their bodies. See S. Jerom againſt Jovinian, lib. ii. and on S. John, cap. 4. Diodor. Sicul. lib. iii. cap. 3. and 29. and Strabo, lib. xvi.—Pliny alſo ſpeaks of *Acridophagi* in Parthia; and S. Jerom, in Libya.

Though the circumſtances of theſe people be fabulous; yet may the *Acridophagia* be true; and to this day they are ſaid to eat locuſts in ſome parts of the Eaſt. This is confirmed by the accounts of the Daniſh miſſion, in Niebuhr's Deſcription de L'Arabie, p. 150, & ſeq. And hence S. John the Baptiſt is ſaid to have lived on locuſts, ακριδες, and wild honey, Matth. cap. iii. ver. 4.

Yet is the rendering ακριδες, by locuſts, as the Engliſh tranſlators have done, much controverted.—Iſidore of Peluſium, in his 123d epiſtle, ſpeaking of this food of S. John, ſays, it was not animals, but the tops of herbs; and even charges thoſe who underſtood the word otherwiſe with ignorance; but St. Auguſtine, Beda, Ludolphus, and others, are of a different opinion. Accordingly, the Jeſuits of Antwerp reject, with contempt, the opinion of the Ebionites, who for ακριδες put εγχριδες, a delicious diet, prepared of honey and oil; that of ſome other innovators, who read αχαριδες, or χαριδες, *ſea-crabs*; and that of Beza, who reads αχραδες, *wild pears*.

ACRIFOLIUM ſignifies any prickly-leaved plant.

ACRIMONY, that quality in things which renders them ACRID to the taſte.

Acrimony imports much the ſame with *aſperity*, or ſharpneſs; and expreſſes a quality in bodies, by which they corrode, deſtroy, or diſſolve others.

Salts are only cauſtic in virtue of their *acrimony*. The *acrimony* of the bile is ſuppoſed the cauſe of divers diſorders; and a catarrh is believed to be a defluxion of *acrimonious* humour.

The Briſtol water is recommended by Dr. Randolph for tempering the bad effects of *acrimonious* blood. This he mentions as its firſt and principal virtue. See his Enquiry into the Medicinal Virtues of Briſtol Water, 8vo. 1750.

ACRIS ſignifies a locuſt, the top of a mountain, and the extremities of fractured bones.

ACRIVIOLA, ſee NASTURTIUM *Indicum*, for which it is a name.

ACROAMATIC, in a more general ſenſe, denotes a thing ſublime, profound, or abſtruſe. In which ſenſe, it ſtands oppoſed to *exoteric*.

We ſay *acroamatic* philoſophy, *acroamatic* theology, an *acroamatic* method, *acroamatic* interpretation, &c.

Few ſects, or profeſſions, but have two ways of teaching, if not two ſorts of doctrine, an *acroamatic* for adepts and proficients; and an *exoteric* for novices. We find traces of this among the heathen as well as Chriſtian divines, philoſophers, and chemiſts. Hence the ceremonies of initiations, and ablutions, the diſcipline of ſecrecy; and hence alſo the origin of fables, ænigmas, parables, ſymbols, &c.

ACROAMATIC is ſometimes alſo uſed in a more general ſenſe for any thing kept ſecret, or remote from popular uſe.

In which ſenſe Reimman gives the title *bibliotheca acroamatica*, to a deſcription of the MSS. of the library of Vienna, abridged from the vaſt commentaries of Lambecius and Neſſelius.

ACROAMATICI, a denomination given the diſciples, or followers of Ariſtotle, &c. who were admitted into the ſecrets of the inner or *acroamatic* philoſophy.

ACROATICS, a name given to Ariſtotle's lectures in the more difficult and nice parts of philoſophy; to which none but his diſciples and intimate friends were admitted, whereas the *exoteric* were public or open to all; but there are other differences. The *acroatic* were ſet apart for the higher and more abſtruſe ſubjects; the *exoteric* were employed in rhetorical and civil ſpeculations. Again, the *acroatics* were more ſubtle and exact, evidence and demonſtration being here aimed at; the *exoterics* chiefly aimed at the probable and plauſible. The former were the ſubject of the mornings exerciſes in the Lyceum, the latter of the evenings: add that the *exoterics* were publiſhed, whereas the *acroatics* were kept ſecret, being either entirely concealed, or if they were publiſhed, it was in ſuch obſcure terms, that few but his own diſciples would be the wiſer for them. Hence, when Alexander complained of his præceptor for publiſhing his *acroatics*, and thus revealing what ſhould have been reſerved to his diſciple; Ariſtotle anſwered, that they were made public and not public, for that none who had not heard them explained by the author, *viva voce*, would underſtand them.

The word is formed from ακροαομαι, *to hear*.

ACROBATICA, or ACROBATICUM, an ancient engine, whereby people were raiſed aloft, that they might ſee more conveniently about them.

The *acrobatica* among the Greeks amounted to the ſame with what they call *ſcanſorium* among the Latins.

Authors are divided as to the office of this engine. Turnebus and Barbarus take it to have been of the military kind, raiſed by beſiegers, high enough to over-look the walls, and diſcover the ſtate of things on the other ſide. Baldus rather ſuppoſes it a kind of moveable ſcaffold, or cradle, contrived for raiſing painters, plaiſterers, and other workmen, to the tops of houſes, trees, &c. Some ſuſpect that it might have been uſed for both purpoſes.

ACROCHIRISMUS, ακροχειρισμος, among the ancients, a kind of gymnaſtic exerciſe, wherein the two parties contended only with their hands and fingers, without cloſing, or engaging the other parts of the body.

The word is alſo written *acrochireſis*, and *acrochiria*: it is originally Greek, formed from ακροχειρ, the part employed in this combat, which ſome would needleſsly reſtrain to the tips of the fingers; though the *etymon* does not make this neceſſary.

Some make this a diſtinct exerciſe from wreſtling, and ſuppoſe it to have given the denomination *acrochiriſtæ* to a peculiar ſet of *athletæ* who profeſſed it. Others with more probability conſider it as only a ſpecies, or branch of wreſtling; ſome will have it to have been properly only a prelude to a wreſtling bout, wherewith the *athletæ* began to try each others ſtrength, and bring their arms into play. This exerciſe made part of the *pancratium*. Pauſanias ſpeaks of a famous *pancratiaſt*, named Soſtrates, who got the ſurname *Acrochirſites*, or *Acrochiriſtes*, from his having overcome all his antagoniſts at the *acrochiriſm*.—It appears to have been in uſe in the age of Hippocrates, who aſcribes to it a virtue of extenuating the reſt of the body, and making the arms fleſhy.

ACROCHORDON, a painful ſpecies of WART, very prominent and pendulous, having a large head with a ſmall pedicle, or baſe.

Theſe are alſo called *penſiles verrucæ*, or *hanging warts*, and ſtand diſtinguiſhed from *ſeſſiles verrucæ*, or *myrmecia*. Others deſcribe the *acrochordon*, as a harder, rougher ſort of wart, growing under the cutis, very callous, and uſually of the ſame colour with the ſkin; ſmall at bottom, and bigger upwards, but rarely exceeding the ſize of a bean.

ACROCOLIA, ακροκωλια, from ακρος, *extreme*, and κωλον, *a limb*. Theſe are the extremities of animals, which are uſed in food, as the feet of calves, ſwine, ſheep, oxen, or lambs; and of the broths of which, jellies are made. They are recommended by Hippocrates as proper food, where there is a tendency to a dropſy. They are in general recommended as ſtrengtheners for weak people.

ACROCORION, in *Botany*, a name uſed by ſome authors for the ſeveral ſpecies of the ſpring crocuſes.

ACROE, in *Botany*, the name given by the natives of Guinea, to a kind of ſhrub, which they uſe in wine, as a reſtorative and analeptic. It is of the trifoliate kind, and has ſomewhat of the appearance of the corallodendrons, but is not prickly; the middle or end leaf ſtands on a pedicle of an inch long, the other two leaves have no pedicles at all. Phil. Tranſ. N°. 232.

ACROMION, ACROMIUM, in *Anatomy*, the upper proceſs of the SCAPULA, or ſhoulder-blade.

The word is derived from ακρος, *higheſt*, and ωμος, *ſhoulder*, q. d. the extremity of the ſhoulder.

Some have thought the *acromion* of a nature different from other bones; becauſe, during infancy, it appears no more than a cartilage, which oſſifies by little and little, and about the age of twenty years becomes hard and firm, like a common bone.

ACROMONOGRAMMATICUM, among poets, denotes a kind of poem, or compoſition, wherein each ſubſequent verſe commences with the letter, with which the verſe preceding terminates.

ACROMPHALION, from ακρος, *extreme*, and ομφαλος, the *navel*; the tip of the navel.

ACRON, ακρον, in *Medicine*, ſignifies that which is moſt excellent in its kind.

ACRON, in *Botany*, among the ancients, was uſed to ſignify the *capitulum*, top, or flower of plants of the thiſtle kind.

ACRONYCHAL, ACRONICHUS, in *Aſtronomy*, is applied to the RISING of a ſtar or other point, above the horizon, when the ſun ſets; or its SETTING when the ſun riſes.

The *acronychal* is one of the three poetical riſings and ſettings of the ſtars; and ſtands diſtinguiſhed from COSMICAL and HELIACAL.

Among ancient writers, a ſtar was properly ſaid to be *acronychal*, or to riſe *acronychally*, which roſe in the evening, when the ſun was ſet. Greek writers, it is true, uſe the term ακρονυχιας indifferently, in ſpeaking either of evening or morning, by reaſon both are conſidered as ακρα της νυκτος, *the extremities of the night*. And hence, among them we find *acronychal* applied to the riſing and ſetting of the ſtars, either in the morning or evening. But the ancients were more diſtinct, and by the ακρονυκτιος rather meant the firſt beginning or approach of night, than the end or period of it; and accordingly among them, the ſtars which roſe in the evening, not thoſe in the morning, were ſaid to riſe *acronychally*.

This word is ſometimes ignorantly ſpelt *achronical*, or *achronichial*, from a miſtaken notion of its being derived from α, and χρονος, *time*.

ACRONYCHAL is likewiſe an appellation more peculiarly given to the ſuperior planets, Saturn, Jupiter, and Mars, when they were come to the meridian of midnight.

ACRONYCTÆ, ſtars riſing in the twilight, about ſunſetting.

ACROPATHOS ſignifies literally a diſeaſe at the top, or ſuperior part.

ACROPOSTHIA, ακροποσθιη, or ακροποσθια, from ακρος, *extreme*, and ποσθη, the prepuce, or ſkin, which covers the glans of the penis. The extremity of the prepuce, that which is cut off in circumciſion.

ACROSPELOS, a name given to the wild-oat graſs, or BROMUS.

ACROSPIRE, in *Natural Hiſtory*, &c. the ſame with PLUMULE.

ACROSPIRED, or ACRESPIRED, is uſed in reſpect of barley; which, in the operation of making MALT, is apt, after coming, or ſprouting, at the lower, or root-end, to become *acroſpired*, i. e. to ſprout alſo at the upper, or blade-end.

By 6 Geo. I. cap. 21. *Malt-makers* are forbid to wet or water their malt when on the floor, or couch; or to permit it to *acreſpire*.

ACROSTIC, a kind of poetical compoſition, the verſes whereof are diſpoſed in ſuch manner, as that the initial letters make up ſome perſon's name, title, motto, or the like.

The word is derived from the Greek ακρος, *ſummus*, that which is at one of the extremes; and ϛιχος, *verſus*.

There are alſo *acroſtics*, where the name or title is made up by the initial letters of the middle words, or the laſt of the final ones.—And others which go backwards; beginning with the firſt letter of the laſt verſe, and proceeding upwards. Some refiners in this trifling way, have even gone to PENTACROSTICS; where the name is to be repeated five times.

ACROSTIC is alſo an appellation given by ſome authors to two ancient epigrams in the firſt book of the Anthology; the one in honour of Bacchus, the other of Apollo. Each conſiſts of 25 verſes; the firſt whereof is the propoſition, or argument of the whole, and the other 24 compoſed of four epithets, beginning each with the ſame letter; and thus following in the order of the 24 letters of the Greek alphabet: ſo that the firſt of the 24 comprehends four epithets beginning with α; the ſecond as many, with β; and ſo of the reſt to ω; which makes 96 epithets for each god.

Among *Eccleſiaſtical Writers*, *acroſtics* denote the ends of verſes of pſalms, which the people ſang by way of chorus, or reſponſe, to the *præcentor*, or leader of the pſalm. This was called ſinging *acroſtics*, *acroſtichia*, which was a ſpecies of pſalmody uſual in the ancient church. *Acroſtic*, in this ſenſe, amounts to the ſame with *hypopſalma*, *diapſalma*, *acrotelution*, and *ephymnion*, which are all terms of the ſame ſignification.

Though an *acroſtic* properly ſignifies the beginning of a verſe, yet it is ſometimes alſo uſed for the end or cloſe of it; as by the author of the Conſtitutions, when he orders one to ſing the hymns of David, and the people to ſing after him the *acroſtics* or ends of the verſes.

It does not however denote preciſely the end of the verſe, but ſomething added at the end of a pſalm, or ſomething frequently repeated in the courſe of a pſalm, anſwering to our *gloria patri*.

Some pretend to find *acroſtics* in the Pſalms, particularly in thoſe called ABCDARIAN Pſalms.

ACROSTICUM, forked fern, in the Linnæan ſyſtem of *Botany*, belonging to the *cryptogamia filices*, the name of a genus of capillary plants, the character of which is, that the fructifications are not diſpoſed in any regular manner on the leaves, as in moſt of the other capillary plants; but they are ſo placed as to form a heap, covering the whole underſide of the leaf: the RUTA *muraria* is of this kind.

ACROSTOLIUM, in *Antiquity*, an ornament of the prow, or forecaſtle of a ſhip, chiefly of war; ſometimes ſhaped like a buckler, a helmet, or an animal, but more frequently turned circular or ſpiral. The ancients had divers decorations or additional parts to their ſhips, called by a general name κορυμϐα, thoſe on the prow were more particularly called ϛολος, of which the extreme part alone was denominated *acroſtolium*.

To the *acroſtolia* may be referred the *anſerculus*, mentioned by Bayſius; and alſo thoſe poliſhed ſteel pieces reſembling a duck's neck, uſed by the Venetians at the heads of their gondolas.

The *acroſtolia* were torn from vanquiſhed ſhips, and faſtened to the conqueror's, as a ſignal of victory. We frequently find them repreſented on the reverſes of ancient medals. An *acroſtolium* is alſo ſeen in the famous ſculpture of the *apotheoſis* of Homer.

ACROTELEUTIC, among *Eccleſiaſtical Writers*, denotes the end of a verſe or pſalm; or ſomething added thereto to be ſung by the people.

In which ſenſe *acroteleutic* amounts to the ſame with *acroſtic*, *hypopſalma*, *diapſalma*, *epode*, &c.

The *gloria patri* is by ſome writers called the *acroteleutic* to the pſalms; becauſe always uſed to be repeated by the people at the end of each.

Hence the word *acroteleutic* is ſometimes alſo uſed as ſynonymous with DOXOLOGY.

ACROTERIA, or **Acroters**, in *Architecture*, little pedeſtals, uſually without baſes, anciently placed at the middle, and the two extremes, of PEDIMENTS; and ſerving alſo to ſupport ſtatues.

The word in its original ſignifies the (ακρον) extremity of any body; as the tip of a rock, &c.

Thoſe at the extremes ought to be half the height of the TYMPANUM; and that in the middle, according to Vitruvius, ſhould be one eighth part more.

Acroteria ſometimes alſo ſignifies figures, whether of ſtone, or metal, placed as ornaments, or crownings, on the tops of temples, or other buildings.

Sometimes it alſo denotes thoſe ſharp PINACLES, or ſpiry battlements, which ſtand in ranges about flat buildings, with rails and balluſters.

Acroteria, among ancient *Phyſicians*, was uſed to denote the greater extremities of the body, as the head, hands, and feet.

The *acroteria* growing cold in acute diſtempers, is held a prognoſtic of death; as indicating a decay of the vital flame, either by reaſon of a coagulation of the blood, or too great a conſumption of it before.

Ariſtotle alſo uſes *acroteria*, for the tips or extreme parts of the fingers, covered by the nails; ſometimes alſo for the eminences of the bones.

ACROTERIASM, among ancient *Phyſicians*, the act of cutting off the extreme parts of the body, when putrefied, by a ſaw. The amputation of any extremity.

ACROTHYMIA, in *Surgery*, the name of a large tumour in the fleſh, riſing in the ſhape of a wart, though ſometimes depreſſed and flat, called THYMUS. See NÆVUS.

ACT, **Actus**, in *Phyſics*, an effective exerciſe, or application of ſome power, or faculty.

In this ſenſe, *act* ſtands oppoſed to power, *potentia*, which is only the capacity of *acting*, not the exertion of that capacity.

Though the word *act*, properly and primarily, be only applicable where the power might exiſt without being drawn forth into *act*; yet the ſchoolmen extend it farther; defining it by the preſence of any power or perfection, even though it could not be abſent.

In which ſenſe, God himſelf is ſaid to be a moſt pure *act*; by reaſon his perfections are always and neceſſarily preſent. And thus, form is called an *act*; inaſmuch as the preſence hereof completes the power and perfection of matter.—FORM, ſay ſome, is MATTER reduced into act. Even exiſtence is termed an *act*; becauſe, when this is given a being, nothing farther is wanted. The Greeks ſometimes call *act* εντελεχεια, a term denoting an actual poſſeſſion of perfection, by the Latins uſually rendered *perfectibabia*.

Metaphyſicians give various diviſions of *act*, viz. into *infinite*, as the *act* of creating; and *finite*, as the *act* of moving.—*Tranſient*, or thoſe exerciſed in other beings, as heating; and *immanent*, which remain in their own ſubject, as thinking.

Act, in *Logic*, is particularly underſtood of an operation of the human mind.

Thus, to diſcern and examine, are *acts* of the underſtanding: to judge and affirm, are *acts* of the will.

There are voluntary *acts*, and ſpontaneous ones, which ſeem produced without the privity, or participation, of the ſoul.

Act, in a *legal* ſenſe, is an inſtrument, or other matter in writing; of uſe to declare, or juſtify the truth of a thing. In which ſenſe, records, decrees, ſentences, reports, certificates, &c. are called *acts*, authentic *acts*, ſolemn *acts*, &c. See DEED.

Acts alſo denote the deliberations and reſolutions of an aſſembly, ſenate, council, or convocation; taken down by clerks, notaries, actuaries, or the like, and entered in a regiſter.

Acts *of the Senate*, *acta ſenatus*, among the Romans, were minutes of what paſſed and was debated in the ſenate-houſe.

Theſe were alſo called *commentarii*, and by a Greek name υπομνηματα. They had their origin in the conſulſhip of Julius Cæſar, who ordered them both to be kept and publiſhed. The keeping them was continued under Auguſtus, but the publication was abrogated. Afterwards all writings, relating to the decrees or ſentences of the judges, or what paſſed and was done before them, or by their authority, in any cauſe, were all called by the name ACTA. In which ſenſe we read of civil *acts*, criminal *acts*, intervenient *acts*, ACTA *civilia*, *criminalia*, *intervenientia*, &c.

Acts *of the People*, *acta populi*, among the Romans, were journals or regiſters of the daily occurrences, as aſſemblies, trials, executions, buildings, births, marriages, deaths, &c. of illuſtrious perſons, and the like.

Theſe were otherwiſe called *acta publica*, and *acta diurna*, or ſimply *acta*.

The *acta* only differed from annals, in that only the greater and more important matters were in the latter, and thoſe of leſs note in the former.

Their origin is attributed to Julius Cæſar, who firſt ordered the keeping and making public the acts of the people; ſome trace them higher, to Servius Tullius, who, to diſcover the number of perſons, born dead, and alive, ordered that the next of kin, upon a birth, ſhould put a certain piece of money into the treaſury of *Juno Lucina*; upon a death, into that of *Venus Libitina*; the like was alſo to be done upon aſſuming the *toga virilis*, &c. Under Mareus Antoninus, this was carried farther; perſons were obliged to notify the births of their children, with their names, and ſurnames, the day, conſul, and whether legitimate, or ſpurious, to the præfects of the *ærarium Saturni*, to be entered in the public *acts*. Though before this time the births of perſons of quality appear to have thus been regiſtered.

Acts, *Public*. The knowledge of public *acts* has been erected into a peculiar ſcience, called the *diplomatic*, of great importance to an hiſtorian, ſtateſman, chronologer, and even critic. The preſervation of them was the firſt occaſion of erecting libraries.

The ſtyle of *acts* is generally barbarous Latin. Authors are divided as to the rules of judging of their genuineneſs, and even whether there be any certain rules at all? F. Germon will have the greater part of the *acts* of former ages to be ſpurious. Fontanini aſſerts, that the number of forged *acts* now extant is very ſmall. It is certain there were ſevere puniſhments inflicted on the forgers and falſifiers of *acts*.

The chief of the Engliſh *acts*, or public records, are publiſhed by Rymer, under the title of *Fædera*, and continued by Saunderſon: an extract whereof has been given in French by Rapin, and tranſlated into Engliſh, under the title of *acta Regia*. Great commendations have been given this work, and ſome exceptions made to it: as that there are many ſpurious *acts*, as well as errors in it; ſome have even charged it with falſifications.

The public *acts* of France fell into the hands of the Engliſh after the battle of Poitiers, and are commonly ſaid to have been carried by them out of the country. But the tradition is not ſupported by any ſufficient teſtimony, and has even been ſhewn by M. Bruſſel to be falſe.

Acts *of Council*. Theſe differed from canons, in that the latter contained only the reſults, or the laws and regulations agreed on, and drawn up in form; whereas the *acts* included the preceding debates, motions, &c.

In the firſt collections of councils, only the bare canons were delivered. Afterwards they began to give the *acts* as well as the canons.

Hence we have two kinds of ſynodical collections: one containing all the *acts*, or tranſactions, relating to matters of faith and doctrine; the other, containing only the canons relating to diſcipline, is called the book of CANONS.

Acts *of Parliament* are particularly denominated *Statutes*.

The *acts* of the Royal Society are called *Tranſactions*; thoſe of the Royal Academy of Sciences at Paris, *Memoirs*; thoſe of the ſocieties of Leipſic, &c. ſimply *acts*, ACTA *eruditorum*, &c.

The edicts and declarations of the council of the Roman emperors, were called conſiſtory *acts*, ACTA *conſiſtorii*.

Acts, *Clerk of the*, is an officer of the navy. See CLERK.

Acts are alſo matters of fact tranſmitted to poſterity in certain authentic books, and memoirs.

In which ſenſe we ſay, the ACTS of the Apoſtles, ACTS of the Martyrs, &c.

Acts *of the Apoſtles*, a canonical book of the New Teſtament, which contains great part of the lives of St. Peter and St. Paul; commencing at the aſcenſion of our Saviour, and continued down to St. Paul's arrival at Rome, after his appeal to Cæſar, comprehending in all about thirty years. St. Luke has been generally taken for the author of this book, and his principal deſign in writing it was to obviate the falſe ACTS, and falſe hiſtories, which began to be diſperſed up and down the world. The exact time of his writing it is not known; but it muſt have been at leaſt two years after St. Paul's arrival at Rome, becauſe it informs us that St. Paul dwelt two whole years in his own hired houſe; perhaps he wrote it while he remained with St. Paul, during the time of his impriſonment.

There are alſo ſpurious ACTS of the Apoſtles compoſed in Hebrew by one Abdias; tranſlated into Greek by his diſciple Eutropius; and thence into Latin, by Julius Africanus.

The book called *Acts* of Pilate, relating to Jeſus, is a falſe and ſuppoſititious relation of our Saviour's trial before Pilate; impiouſly framed by the enemies of Chriſtianity; and filled with the blackeſt blaſphemy.—The emperor Maximin, by a ſolemn edict, ordered it to be ſent into all the provinces of the empire; and injoined the ſchoolmaſters to teach and explain it to their ſcholars, and make them learn it by heart.

The piece was written with ſo much careleſſneſs or ignorance, that our Saviour's death was therein referred to the 4th conſulate of Tiberius, that is, to the 7th of his empire; which is eleven years before our Saviour's paſſion, and five before Pilate was made governor of Judea. See Euſebius, lib. ix. cap. 4. and 6. Ruffin, lib. i. cap. 5, &c.

The true and genuine *acts* of Pilate were ſent by him to Tiberius, who reported them to the ſenate; but they were rejected by that aſſembly, becauſe not immediately addreſſed to them: as is teſtified by Tertullian, in his Apol. cap. 5. and 20, 21. Euſeb. Hiſt. lib. ii. cap. 2.

Act, in the univerſities, a theſis maintained in public, by a candidate for a degree; or, to ſhew the capacity and proficiency of a ſtudent, in the UNIVERSITY.

The candidates for a degree of bachelor and maſter of arts are to hold philoſophy *acts*; thoſe for bachelor of divinity are to keep divinity *acts*, &c.

At Oxford, the time when the maſters or doctors complete their degrees, is alſo called the ACT; which is held with great ſolemnity: at Cambridge they call it the *commencement*.

Act *of Faith*, AUTO *da fe*, in the Romiſh church, is a ſolemn day held by the INQUISITION, for the puniſhment of heretics, and the abſolution of the innocent accuſed.

They uſually contrive the *auto* to fall on ſome great feſtival; that the execution may paſs with the more awe and regard: at leaſt it is always on a Sunday.

The *auto da fe* may be called the laſt act of the inquiſitorial tragedy; it is a kind of goal-delivery, appointed as oft as a competent number of priſoners in the inquiſition are convicted of hereſy, either by their own voluntary, or extorted confeſſion; or on the evidence of certain witneſſes. The proceſs is thus: in the morning, they are brought into a great hall, where they have certain habits put on, which they are to wear in the proceſſion. The proceſſion is led up by Dominican friars, after which come the penitents, ſome with ſan benitoes, and ſome without, according to the nature of their crimes; being all in black coats without ſleeves, and bare-footed, with a wax-candle in their hands. Theſe are followed by the penitents, who have narrowly eſcaped being burnt, who over their black coats have flames painted, with their points turned downwards, *feugo revolto*. Next come the negative, and relapſed, who are to be burnt, having flames on their habit pointing upwards; after theſe come ſuch as profeſs doctrines contrary to the faith of Rome, who, beſides flames pointing upwards, have their picture painted on their breaſts, with dogs, ſerpents, and devils, all open mouthed, about it. Each priſoner is attended with a familiar of the inquiſition, and thoſe to be burnt have alſo a Jeſuit on each hand, who are continually preaching to them to abjure. After the priſoners, comes a troop of familiars on horſe-back, and after them the inquiſitors, and other officers of the court, on mules; laſt of all, the inquiſitor-general on a white horſe, led by two men with black hats and green hat-bands.

A ſcaffold is erected in the Terreiro de Paio, big enough for two or three thouſand people; at one end of which are the priſoners, at the other the inquiſitors. After a ſermon made up of encomiums of the inquiſition, and invectives againſt heretics, a prieſt aſcends a deſk near the middle of the ſcaffold, and having taken the abjuration of the penitents, recites the final ſentence of thoſe who are to be put to death; and delivers them to the ſecular arm, earneſtly beſeeching at the ſame time the ſecular power, not to touch their blood, or put their lives in danger.

The priſoners being thus in the hands of the civil magiſtrate, are preſently loaded with chains, and carried firſt to the ſecular goal, and from thence in an hour or two brought before the civil judge, who, after aſking in what religion they intend to die, pronounces ſentence, on ſuch as declare they die in the communion of the church of Rome, that they ſhall be firſt ſtrangled, and then burnt to aſhes; on ſuch as die in any other faith, that they be burnt alive.

Both are immediately carried to the Ribera, the place of execution, where there are as many ſtakes ſet up, as there are priſoners to be burnt, with a quantity of dry furze about them. The ſtakes of the profeſſed, that is, ſuch as perſiſt in their hereſy, are about four yards high, having a ſmall board towards the top for the priſoner to be ſeated on. The negative and relapſed, being firſt ſtrangled and burnt, the profeſſed mount their ſtakes by a ladder; and the Jeſuits after ſeveral repeated exhortations, to be reconciled to the church, part with them, telling them they leave them to the devil, who is ſtanding at their elbow to receive their ſouls, and carry them with him into the flames of hell. On this a great ſhout is raiſed, and the cry is, let the dogs *beards be made*, which is done by thruſting flaming furzes, faſtened to long poles, againſt their faces, till their faces are burnt to a coal, which is accompanied with the loudeſt acclamations of joy. At laſt, fire is ſet to the furze at the bottom of the ſtake, over which the profeſſed are chained ſo high, that the top of the flame ſeldom reaches higher than the ſeat they ſit on, ſo that they rather ſeem roaſted than burnt. There cannot be a more lamentable ſpectacle; the ſufferers continually crying out, while they are able, *miſericordia per amor di Dios*: yet it is beheld by all ſexes, and ages, with tranſports of joy and ſatisfaction.

Acts, in *Poetry*, are certain diviſions, or principal parts, in a dramatic poem, contrived to give a reſpite, or breathing-time, both to the actors and ſpectators.

In the interval, between the *acts*, the ſtage remains empty, and without any action viſible to the ſpectators; though it is ſuppoſed all the while there is one paſſing out of ſight.

It is not, however, purely for the ſake of the reſpite, that theſe *acts* are obſerved; but to give affairs a greater degree of probability, and render the intrigue more affecting. For the ſpectator who ſees the action prepared that is to paſs in the interval, cannot forbear acting, in his imagination, the part of the abſent actors; by which means, he is the more agreeably ſurpriſed when a new *act* coming upon the ſtage, he ſees the effects of that action, which before he could but gueſs at.

To this it may be added, that authors contrive to have the moſt dry and difficult parts of the drama tranſacted between the *acts*, that the ſpectators may have no notion of theſe, excepting what their fancy preſents them with at a diſtance; and that nothing may appear upon the ſtage, but what is natural, probable, and entertaining.

The ancient Greek poets were unacquainted with this diviſion of a play into *acts*; though their epiſodes, or choruſes, ſerved almoſt the ſame purpoſe.

It is true, they conſidered their pieces as conſiſting of certain parts or diviſions, which they called *protaſis*, *epitaſis*, *cataſtaſis*, and *cataſtrophe*: but there were no real diviſions or interruptions anſwering to them in the repreſentation.

It was the Romans who firſt introduced *acts* into the drama; and in Horace's time, the five *acts* were grown into a law, as appears by the verſe,

> *Neu brevior quinto, neu ſit productior,* actu.

This law ſtands unrepealed to this day; though it ſeems to draw its force from the authority of Horace, rather than that of reaſon, or nature.—All plays are held irregular that have either more, or fewer, than five acts.

Some indeed have aſſerted, that every juſt action conſiſts of five diſtinct parts: and have undertaken to mark out the preciſe ſhare of the action, which each of the five *acts* ought to bear.

The firſt, they ſay, is to propoſe the matter or argument of the fable, and to ſhew the principal characters.—The ſecond, to bring the affair or buſineſs upon the carpet.—The third to furniſh obſtacles and difficulties.—The fourth either points a remedy for thoſe difficulties, or finds new ones in the attempt.—The fifth puts an end to all by a diſcovery.

Be this as it will, it is certain, on the principles of that great maſter of the drama, Ariſtotle, we may have a juſt and regular play, though only divided into three *acts*.

Theſe *acts* are ſubdivided into SCENES.

ACTE, the *elder*. See SAMBUCUS.

ACTEA, in *Botany*, the name whereby Linnæus diſtinguiſhes the *chriſtophoriana* of Tournefort. He ranges it under the *polyandria monogynia*.

ACTIAN *Games*, *Ludi* ACTIACI, ſolemn games, inſtituted, or, according to ſome, only reſtored, by Auguſtus, in memory of the victory at Actium.

Stephanus, and ſome others, will have them held every third year; but the more common opinion is that of Strabo, who ſays, they only returned every fifth, and were celebrated in honour of Apollo, ſince ſurnamed *Actius*.

By the way, it is a groſs overſight in ſome others, to imagine that Virgil inſinuates them to have been inſtituted by Æneas; from that paſſage Æn. III. v. 280.

> *Actiaque Iliacis celebramus littora ludis.*

It is true, the poet there alludes to the *Actian* games; but he only does it by way of compliment to Auguſtus, to attribute that to the hero from whom he deſcended, which was done by the emperor himſelf: as is obſerved by Servius.

ACTIAN *Years*, *Anni* ACTIACI, were a ſeries of YEARS, commencing from the æra of the battle of Actium; called the æra of Auguſtus. See EPOCHA.

ACTINE, ακτινη, in *Botany*, a name of the herb BUNIAS, or NUPUS.

ACTINIA, in the *Hiſtory* of *Inſects*, a genus of ſea-animals, of the order of the *gymnarthria*, naturally of a cylindric ſhape, but of variable figure; the *tentacula* are very numerous, and are ranged in ſeveral ſeries about the mouth, which is placed at one of the extremities of the body; theſe are in a continual vibratory motion, and by that means draw ſmall animals into its mouth for food. The whole animal is equally thick in all parts, and is about half an inch long; its tail is divided into three parts, or terminated, as it were, by three points: it is of a pale fleſh colour, except the *tentacula*, which have a beautiful variety of colours. It lodges itſelf in little cavities of rocks, and of the larger ſea-plants of the ſtony kind; and is found on the coaſts of the American iſlands, of various ſpecies; differing from each other in figure, colour, &c. See ANEMONIES.

ACTION, in a general ſenſe, denotes the operation of a power.

The idea of *action* is ſo familiar to us, that a definition may as eaſily obſcure as explain it.—Some ſchoolmen, however, attempt to expreſs its nature by 'a manifeſtation of the power or energy of a ſubſtance; made either within, or without it.'—Thus, ſay they, when the mind *acts*, what does it more, than perceive a vital power exerting itſelf; as, in reality, the ſeveral *actions* of the mind are no other than ſo many indications of its vitality?

It is a point controverted among the ſchoolmen, whether or no *action*, thus taken, be a thing diſtinct both from the agent, and the term, or effect. The *modiſts* ſtand for the affirmative, and the *nominaliſts* aſſert the negative. Theſe latter obſerve, that the *action* may be conſidered two ways, *entitatively* and *connotatively*.

ACTION, *entitatively* taken, is what we call a CAUSE, or what may act.

ACTION, *connotatively* conſidered, is the ſame cauſe, only conſidered as acting, or connoting the effect it produces. Now, ſay they, a cauſe may be without any *action*, connotatively taken, i. e. it may be conſidered as not producing an effect; but it cannot be without it entitatively, for that would be to be without itſelf. Hence they conclude, that the cauſe differs from the *action* connotatively, not entitatively taken; and the agent is the cauſe of the *action*, conſidered connotatively, not entitatively.

Actions are divided, with reſpect to their principle, into UNIVOCAL, where the effect is of the ſame kind with the cauſe; as the production of man by man; and EQUIVOCAL, where it is different; as the ſuppoſed production of frogs by the ſun.—And again, into VITAL; as nutrition, reſpiration, the *action* of the heart, &c. and NOT-VITAL; as heating.

With reſpect to their ſubject, *actions* are divided into IMMANENT; which are received within the agent that produced them; as are vital *actions*, cogitation, &c.—And TRANSIENT, which paſs into another.

In reſpect of duration, *actions* are again divided into INSTANTANEOUS, where the whole effect is produced in the ſame moment; as the creation of light: and SUCCESSIVE, where the effect is produced by degrees; as corruption, fermentation, putrefaction, diſſolution, &c.

The Carteſians reſolve all phyſical *action* into metaphyſical. Bodies, according to them, do not act on one another; the *action* all comes immediately from the Deity; the motions of bodies, which ſeem to be the cauſe, being only the occaſions thereof. See OCCASIONAL *Cauſe*.

It is one of the laws of nature, that *action* and reaction are always equal, and contrary to each other.

For the *actions of powers*, &c. ſee POWER, WEIGHT, MOTION, RESISTANCE, and FRICTION.

For the laws of the *action of fluids*, &c. ſee FLUID and SPECIFIC *Gravity*.

ACTION, in *Phyſics*; the *actions* or functions of the body, each part of which has an action peculiar to itſelf. They are divided by the writers of inſtitutes, into the *vital*, *animal*, and *natural*. The *vital* are ſuch as are eſſential to the ſubſiſtence of the individual: ſuch are the motions of the heart and lungs, the ſecretion of ſpirits in the cerebellum, on which the motions of the heart and lungs depend; and the circulation of the blood and fluids in their proper veſſels. *Pulſation* and *reſpiration* are the external ſigns of life.

The *natural actions* are ſuch as are neceſſary to the continuance of the animal, but not ſo immediately, but that it may ſubſiſt ſome time under a ſuſpenſion of them; as the digeſtion of the aliment, and its converſion into blood.

Under *animal actions* are comprehended thoſe which conſtitute the ſenſes of touch, taſte, ſmell, viſion, hearing, perception, imagination, memory, judgment, ratiocination, affections of the mind, and voluntary motion; without any, or all of which, it is poſſible for an animal to live.

In the year 1752, Dr. White publiſhed an ingenious performance, under the title of an Eſſay on the vital and other voluntary Motions of Animals, 8vo. and in the ſame year Dr. Simſon alſo a book on Vital and Animal Actions, 8vo.

ACTION alſo, in *Phyſics* and *Mechanics*, denotes the action of bodies on each other by preſſure.

If a body be urged by equal and contrary actions or preſſures, it will remain at reſt. But if one of theſe preſſures be greater than its oppoſite, motion will enſue towards the parts leaſt preſſed.

It is to be obſerved, that the *actions* of bodies on each other, in a ſpace that is carried uniformly forward, are the ſame as if the ſpace were at reſt; and any powers or motions that act upon all bodies, ſo as to produce equal velocities in them in the ſame, or in parallel right lines, have no effect on their mutual *actions*, or relative motions. Thus the motion of bodies aboard a ſhip, that is carried ſteadily and uniformly forward, are performed in the ſame manner as if the ſhip was at reſt. The motion of the earth round its axis has no effect on the *actions* of bodies and agents at its ſurface, but ſo far as it is not uniform and rectilineal. In general, the *actions* of bodies upon each other depend not on their *abſolute*, but *relative* motion.

ACTION, *Quantity of*, in *Mechanics*, is uſed for the product of the maſs of a body, by its velocity.

When a body is tranſported from one place to another, the *action* is the greater, in proportion to the maſs, to the velocity, or rapidity of the motion. See MOMENTUM.

Monſ. de Maupertuis lays it down as a general principle, that 'whenever any changes happen in nature, the quantity of *action* neceſſary to produce this change is always the leaſt poſſible.' And this, he ſays, is a law indicating the higheſt wiſdom.

From this general principle, and the common rule for finding a *minimum* by fluxions, he deduces the known laws of percuſſion, for hard and elaſtic bodies, and even the laws of reſt, as he calls them; that is of the equilibrium, or equipollency of preſſures.

This ingenious author ſeems to think, that the laws of motion, thus deduced, afford a ſtronger proof for the exiſtence of God, or of a firſt intelligent cauſe, than the other arguments commonly alledged, and deduced from the order of nature. But we apprehend, that few metaphyſicians will be of his opinion. The proof of a God from the order of nature ſeems to depend on two principles: 1. That there is an order in nature. 2. That this order is contingent. For if this order was not contingent, but abſolutely neceſſary, as Spinoſa, and other atheiſts pretend, it ſeems that no ſufficient reaſon, from the order of nature, could be aſſigned for the exiſtence of a firſt intelligent cauſe. Now, Monſ. de Maupertuis not having eſtabliſhed the contingency of his principle of the *minimum* of *action*, his argument ſeems defective in this reſpect; not to mention others.

Mr. Euler has demonſtrated, that in the trajectories deſcribed by bodies urged by central forces, the velocity, multiplied by the element of the curve, is always a minimum. Monſ. Maupertuis looks on this as an application of his principle, to the motion of the planets. Mem. de l'Acad. de Berlin, 1746, tom. ii. p. 290.

ACTION, in *Ethics*, or *moral* ACTION, is a voluntary motion, of a creature capable of diſtinguiſhing good and evil; whoſe effect, therefore, may be juſtly imputed to the agent. See MORAL.

A *moral action* may be more fully defined to be whatever a man, conſidered as endued with the powers of underſtanding and willing, with reſpect to the end he ought to aim at, and the rule he is to regard in acting, reſolves, thinks, does, or even omits to do; in ſuch manner as to become accountable for what is thus done or omitted, and the conſequences thereof.

The foundation, then, of the morality of *actions*, is, that they are done knowingly, and voluntarily.

All moral *actions* may be divided, with reſpect to the rule, into GOOD and EVIL.

ACTION, in *Oratory*, is an accommodation of the perſon of the orator to his ſubject; or, a management of the voice and geſture, ſuited to the matter ſpoken, or delivered.

Action makes one of the greateſt branches or diviſions of rhetoric, as uſually taught. The ancients uſually call it *pronunciation*.

Action is a collateral or ſecondary method of expreſſing our ideas; and is ſuſceptible of a kind of eloquence as well as the primary.—It is an addreſs to the external ſenſes; which it endeavours to move, and bring into its party, by a well-concerted motion and modulation; at the ſame time that the reaſon and underſtanding are attacked by force of argument. Accordingly, Tully very pertinently calls it *Sermo Corporis*, *the diſcourſe of the body*; and *Corporis Eloquentia*, *the eloquence of the body*.—The Roman mimes and pantomimes, we read, had ſuch a copia in this kind, ſuch a compaſs even of mute *action*, that voice and language ſeemed uſeleſs to them: they could make themſelves underſtood to people of all nations; and Roſcius, the comedian, is particularly famed, as being able to expreſs any ſentence by his geſtures, as ſignificantly and variouſly as Cicero with all his oratory. Quintilian gives us a ſyſtem of the rules of *action*; taken not only from the writings of the ancient orators, but from the beſt examples of the forum.

What we uſually attribute to eloquence, was really the effect of the *action* only, as ſome of the greateſt maſters in that way have frankly acknowledged.—Demoſthenes expreſly calls it, 'the beginning, the middle, and the end, of the orator's office;' and Cicero profeſſes, that 'it is not of ſo much importance what the orator ſays, as how he ſays it.'

After all, it is a point that will bear being controverted, whether *action* ought to be practiſed, and encouraged at all? A thing that has ſo much command over mankind, it is certain, muſt be very dangerous; ſince it is as capable of being turned to our diſadvantage, as to our advantage. It is putting a weapon in the hands of another, which, if he pleaſes, he may make uſe of to ſubdue and enſlave us: and, accordingly, hiſtory is full of the pernicious uſes made thereof.—For this reaſon, eloquence and *action* are generally diſcouraged in the modern policy; and both the bar, and the pulpit, are brought to a more frigid way of delivery.

Perhaps the foundation of all *action* may be vicious and immoral.—Voice and geſture, we know, will affect brutes; not as they have reaſon, but as they have paſſions: ſo far as theſe are uſed in a diſcourſe, therefore, it does not regard an aſſembly of men, more than it would a herd of quadrupeds: that is, their whole effort is ſpent, not on the rational faculties, which are out of the queſtion, but on the animal ones, which alone they endeavour to poſſeſs and actuate, independently of reaſon.—Nay, more, our reaſon, and the judgment itſelf, are intended to be biaſſed and inclined by them; *action* being only uſed as an indirect way of coming at the reaſon, where a direct and immediate one was wanting; i. e. where the judgment cannot be taken by the proper means, argument, it is to be taken indirectly, by circuition, and ſtratagem.

The natural order of things, then, is here inverted: our reaſon, which ſhould go before, and direct our paſſions, is dragged after them: inſtead of cooly conſidering, and taking cognizance of things; and according to what we perceive therein, raiſing ourſelves to the paſſions of grief, indignation, or the like, we are attacked the other way; the impreſſion is to be carried backwards, by virtue of the natural connection there is between the reaſon and the paſſions: and thus the helm, the principle of our actions, is taken out of our own hand, and given to another. See Passion.

The caſe is much the ſame here, as in ſenſation and imagination: the natural and regular way of arriving at the knowlege of objects, is by ſenſe; an impreſſion begun there, is tranſmitted to the imagination, where the image is produced, ſimilar to that which firſt ſtruck on the organ.—But the proceſs is ſometimes inverted: in hypochondriac, lunatic, and other delirious caſes, the image is firſt excited in the imagination; and the impreſſion thereof communicated back to the organs of ſenſe: by which means objects are ſeen, which have no exiſtence.

Upon the whole, *action* does not tend to give the mind any information about the ſubject that is diſcuſſed; nor is it deſigned to convey any arguments or ideas which the ſimple uſe of language would not convey. But is it not that which we ſhould form our judgments upon? And can any thing help us to form a juſt judgment, beſide that which in ſome way or other enlightens and convinces our underſtanding? When Cicero made Cæſar tremble, turn pale, and let fall his papers, he did not appriſe him of any new guilt which Cæſar did not know of: the effect had no dependence on Cæſar's underſtanding; nor was it any thing more than might have been produced by the unmeaning ſounds of a muſical inſtrument duly applied. However, *action* may be uſeful in awakening and fixing the attention, provided that it be accompanied with ſuitable argument and addreſs.

Action, in a *theatrical ſenſe*, is nearly the ſame with that among orators; with this difference, that the actor adapts his *action* to an aſſumed character, whereas the orator is ſuppoſed, in reality, to feel the paſſion which his *action* expreſſes, whether joy or grief, &c.

Action, in *Poetry*, is an event, either real or imaginary, which makes the ſubject of an epic, or dramatic poem. The *action* of a poem coincides nearly with the fable thereof; it being the uſual practice, not to take any real tranſaction of hiſtory, but to feign or invent one; or at leaſt to alter the hiſtorical fact, ſo as to render it in good meaſure fictitious.

F. Boſſu has two chapters, *Of real actions*, the recitals whereof are fables: and of *feigned actions*, the recitals whereof are hiſtorical.

The critics lay down four qualifications, as neceſſary to the epic and tragic *action*: the firſt, UNITY; the ſecond, INTEGRITY; the third, IMPORTANCE; and the fourth DURATION; to which ſome add a fifth, viz. CONTINUITY.

This unity is not only to exiſt in the firſt draught, or model of the fable; but in the whole epiſodized *action*.

In order to the integrity of the *action*, it is neceſſary, according to Ariſtotle, that it have a beginning, middle, and end.—If the three parts of a whole ſeem to be generally denoted by the words, *beginning*, *middle*, and *end*, Boſſu interprets them more expreſly, thus: the cauſes and deſigns of a man's doing an *action*, are the beginning; the effects of thoſe cauſes, and the difficulties met withal in the execution of thoſe deſigns, are the middle of it; and the unravelling and extricating of thoſe difficulties, is the end of the *action*.

The poet, ſays Boſſu, ſhould ſo begin his *action*, that, on one hand, nothing ſhould be farther wanting for the underſtanding of what he afterwards delivers; and, on the other, that what thus begins require after it a neceſſary conſequence. The end is to be conducted after the like manner, only with the two conditions tranſpoſed; ſo that nothing be expected after it, and that what ends the poem be a neceſſary conſequence of ſomething that went before it. Laſtly, the beginning is to be joined to the end by a middle, which is the effect of ſomething that went before it, and the cauſe of what follows.

In the cauſes of an *action*, one may obſerve two oppoſite deſigns; the firſt, and principal, is that of the hero: the ſecond comprehends all their deſigns, who oppoſe the pretenſions of the hero. Theſe oppoſite cauſes do all produce oppoſite effects, viz. the endeavours of the hero to accompliſh his deſign, and the endeavours of thoſe who are againſt it.—As the cauſes and deſigns are the beginning of the *action*, ſo thoſe contrary endeavours are the middle of it, and form a difficulty, plot, or intrigue, which makes the greateſt part of the poem.

And the ſolution, or clearing up of this difficulty, makes the unravelling.

The unravelling of the plot, or intrigue, may happen two ways; either with a diſcovery, or without.

The ſeveral effects which the unravelling produces, and the different ſtates to which it reduces the perſons, divides the *action* into ſo many kinds.—If it change the fortune of the principal perſon, it is ſaid to be with a peripetia; and the *action* is denominated *implex*, or mixed: if there be no peripetia, but the unravelling be a mere paſſing from trouble to repoſe, the *action* is ſimple.

For the duration of the epic *action*, Ariſtotle obſerves, it is not ſo limited as that of the tragic *action*: the latter is confined to a natural day; but the epopea, according to that critic, has no fixed time.—In effect, tragedy being full of paſſion, and, conſequently of violence, which cannot be ſuppoſed to laſt long, requires a ſhorter time; and the epic poem, being for the habits which proceed more ſlowly, requires a longer time, either for them to take hold, or to be rooted up; and hence the difference between the epic and dramatic *action*, in point of duration. Boſſu lays it down as a rule, that the more vehement the manners of the principal perſonages are, the leſs time ought the *action* to laſt: accordingly, the *action* of the Iliad, containing the wrath of Achilles, &c. holds but forty-ſeven days; whereas that of the Odyſſey, where prudence is the reigning quality, laſts eight years and a half; and that of the Æneid, where the prevailing character of the hero is piety and mildneſs, nearly ſeven years.

As to the importance of the epic *action*, there are two ways of providing for it: the firſt, by the dignity and importance of the perſons. This way alone Homer makes uſe of; there being, otherwiſe, nothing great and important in his models, but what might have happened to ordinary perſons.—The ſecond, by the importance of the *action* itſelf; ſuch as the eſtabliſhment, or downfall of a religion, or a ſtate; which is Virgil's *action*, and in which he has much the advantage of Homer.

Boſſu mentions a third way of making the *action* important, viz. by giving a higher idea of the perſonages, than what the readers conceive of all that is great among men.—This is done by comparing the characters of the poem with thoſe of the preſent time.

Action is alſo uſed in *Painting* and *Sculpture*, for the poſture of a figure; or the *action* it is ſuppoſed to be in; expreſſed by the diſpoſition of the body, or the paſſion appearing in the face.

Action *of the Mouth*, in the *Manege*, denotes the agitation of a horſe's tongue, and mandible, or his champing on the bit; diſcoverable by a white, ropy foam.—This, with the maſters, paſſes for a ſign of health, vigour, and mettle.

Action, in the *Military* art, is an engagement between two armies, or between different bodies of troops belonging to them. This term is likewiſe uſed to ſignify ſome memorable act done by an officer, or commander of a body of troops.

Action, in *Law*, is a right of demanding, and purſuing, in a court of judicature, what is any man's due.

Or, *action* is any kind of PROCESS which a perſon enters for the recovery of his right. See CAUSE.

Actions are divided, by Juſtinian, into two general kinds; *real*, or thoſe againſt the thing; and *perſonal*, or thoſe againſt the perſon.—For whoever brings an *action*, either does it againſt one obnoxious to him, in reſpect either of contract, or of offence: in which caſe ariſe *actions* againſt the perſon, which require the party to do, or give ſomething: or, he does it againſt one not obnoxious, yet with whom a controverſy is riſen touching ſome matter; as, if Caius hold a field, which Julius claims as his property, and brings his *action* for the ſame. See the Inſtit. lib. iv. tit. 4. where the principal *actions*, introduced by the Roman law, are ſummarily explained.

In common law, from the two claſſes of *real* and *perſonal actions*, ariſes a third, called a *mixed action*; which regards both the *perſon* and the *thing*.

Action, *Real*, is that whereby the defendant claims title to lands, or tenements, rents, or commons, in fee-ſimple, fee-tail, or for life.

But *real actions*, formerly ſo numerous and conſiderable, as writs of right, of entry, &c. with their appendages, as *grand cape*, *petit cape*, receipt, view, aid-prayer, voucher, counter-plea of voucher, counter-plea of warrantry, and recovery of value, are now much out of uſe: by reaſon of the uſual admixture of perſonal matters therewith, which change them into *mixed actions*.

Action, *Perſonal*, is that which one man hath againſt another, on account of a contract for money or goods; or of an offence done by him, or ſome other perſon, for whoſe fact he is anſwerable.

Action, *Mixt*, is that laid indifferently for the *thing* detained, or againſt the *perſon* of the detainer; being thus called, becauſe it has a mixed reſpect, both to the *thing*, and to the *perſon*.

Others better define it, a ſuit given by law to recover the thing demanded, and damages for the wrong done.

Such is, aſſize of *novel diſſeiſin*, which, if the diſſeiſor make a feoffment to another, the diſſeiſee ſhall have againſt the diſſeiſor, and the feoffee, or other ter-tenant; to recover not only the land, but damages alſo.—And the like in *action* of waſte, *Quare impedit*, &c. See ASSIZE.

Actions are alſo divided into CIVIL and PENAL.

Action, *Civil*, is that which only tends to the recovery of what, by reaſon of a contract, or other like cauſe, is a man's due.—As, if a perſon by *action* ſeek to recover a ſum of money formerly lent, &c.

Action, *Penal*, aims at ſome penalty upon the party ſued, either corporal, or pecuniary.

Such is the *Actio Legis Aquiliæ*, in the *Civil Law*; and with us, the next friends of a man feloniouſly ſlain, or wounded, ſhall purſue the law againſt the offender, and bring him to condign puniſhment.

Action is alſo diſtinguiſhed, as it lies for the recovery either of the ſimple value of the thing challenged; or of the double, triple, quadruple, &c.

Thus, a *Decies tantum* lies againſt embracers; and againſt jurors that take money for their verdict, of either, or both parties.

To this claſs alſo belong all *actions* on a ſtatute that puniſhes an offence by reſtitution, or fine, proportionable to the tranſgreſſion.

Action, again, is divided into *prejudicial*, called alſo *preparatory*, and *principal*.

Action, *Prejudicial*, is that which ariſes from ſome queſtion, or doubtful point in the principal one.

As, if a man ſue his younger brother, for land deſcended from his father; and it be objected, he is a baſtard: this point of baſtardy muſt be tried, before the cauſe can proceed: whence the *action* is termed *præjudicialis, quia prius judicanda*.

Action, again, is either *anceſtrel*, or *poſſeſſory*.—*Anceſtrel action*, is that which we have by ſome right deſcending from our anceſtor.—*Poſſeſſory*, ſometimes alſo called *perſonal action*, is that which hath its beginning in and from ourſelves.

Action *upon the Caſe*, *Actio ſuper caſum*, is a general *action*, given for the redreſs of a wrong done any man without force, and not eſpecially provided for by law.

This, of all others, is now moſt in uſe.—Where there ariſes an occaſion of ſuit, that has neither fit name, nor certain form already preſcribed; the clerks of the chancery, anciently, conceived a proper form of *action* for the thing in queſtion: which was called an *Action upon the caſe*, by the civilians *Actio in factum*.

Action *upon the Statute*, *Actio ſuper ſtatutum*, is a writ or *action*, brought againſt a man, upon an offence againſt a STATUTE, whereby an *action* is given that did not lie before.

Thus, where one commits perjury to the prejudice of another, he who is damaged ſhall have a writ upon the ſtatute, and a cauſe accordingly.

Action, *Popular*, only differs from an *action* upon the ſtatute, in that, where the ſtatute gives the ſuit or *action* to the party grieved; or otherwiſe, to one ſingle perſon certain, it is called *action* upon the ſtatute; and where the authority is given by the ſtatute to every one that will ſo ſue, it is an *action popular*.

Action is alſo divided into *perpetual* and *temporal*.

Action, *Perpetual*, is that whoſe force is not determined by any period or term of time.

Of this kind were all civil *actions* among the ancient Romans; viz. ſuch as aroſe from laws, decrees of the ſenate, and conſtitutions of the emperors; whereas *actions* granted by the prætor died within the year.

We have alſo *perpetual* and *temporary actions* now in England; all being perpetual, which are not expreſly limited.

Divers ſtatutes give *actions*, on condition they be purſued within the time preſcribed.—Thus the ſtatute of 1 Edw. VI. gives *action* for three years after the offences committed, and no longer; and the ſtatute of 7 Hen. VIII. cap. 3. does the like for four years; and that of 31 Eliz. cap. 5. for one year, and no more.

But, as by the civil law no *actions* were ſo perpetual, but that by time they might be preſcribed againſt; ſo, in our law, though *actions* be called *perpetual*, in compariſon of thoſe that are expreſly limited by ſtatute; yet is there a means to preſcribe againſt real *actions*, after five years, by a fine levied, or a recovery ſuffered. See PRESCRIPTION.

Again, *actions* are either *local*, as ejectment, waſte, &c. which muſt be brought in the county, where the land lies; or *tranſitory*, ſuch as debt, detinue, &c. which may be brought in any county.

Action *of a Writ*, is when a perſon pleads ſome matter, whereby he ſhews, that the plaintiff had no juſt cauſe to have the writ he brought, though it be poſſible he might have another writ or *action* for the ſame matter.—Such plea is called, a *Plea to the action of the* WRIT.

When by the plea it appears, that the plaintiff has no cauſe of any *action* for the thing demanded, it is called, a *Plea to the action*.

Action, in affairs of *Commerce*, or **Action** *of a* COMPANY, is a part or ſhare in the company's ſtock or CAPITAL, which conſiſts of a number of ſuch *actions*.

Actions in France and Holland, amount to the ſame with *ſhares*, or *ſubſcriptions*, in England.

Thus, the capital of a company, which has three hundred *actions* of a thouſand livres each, conſiſts of three hundred thouſand livres. Hence, a perſon is ſaid to have four or ſix *actions* in ſuch company, if he hath contributed to the capital, and be intereſted in it for four or ſix thouſand livres.

A proprietor cannot have a deliberate vote in the aſſemblies of a company, unleſs he has a certain number of *actions*, fixed by the letter-patent of its eſtabliſhment; nor can he be a director, unleſs he has a ſtill greater number of *actions*.

Action alſo denotes an obligation or inſtrument, which the directors of ſuch companies deliver to thoſe who pay money into their ſtock. See BANK and ACTIONARY.

Actions are always riſing and falling, according as the company's credit gains or loſes. The ſmalleſt whiſper of an approaching war or peace, true or falſe, ſhall frequently occaſion a conſiderable alteration in it. In the year 1719, the French company of the Weſt, ſince called the India Company, arrived at ſuch an immenſe degree of credit, that in ſix months time its *actions* roſe to eighteen hundred *per cent.* a degree of temporary credit which no other company ever attained.

In 1672, the *actions* of the Dutch Eaſt India company were at ſix hundred and fifty *per cent.* and they were never known to be higher.—But the war with France then coming on, they fell 250 *per cent.* in a few months. After the peace of Nimeguen, they roſe again; and in 1718 were 600 *per cent.*

The French have three kinds of *actions*.—*Simple*, which are intitled to a ſhare in all, both the profits and loſſes of the company.—*Rentieres*, intitled only to a profit of two *per cent.* ſure; for which the king is ſecurity.—And *intereſted actions*, which claim the two *per cent.* ſecured by the king; and are alſo to ſhare the exceſs of the dividend with the ſimple *actions*.

There were ſeveral other kinds of *actions* introduced by the brokers, in the buſy days of the *Rue Quinquempoix*; but they have ſince ſunk into oblivion; theſe were called mother *actions*, daughter, grand-mother, grand-daughter *actions*, &c.

To *melt* or *liquidate* an *action*, is to ſell, or turn it into money, &c.

To *feed* an *action* is to pay exactly when they become due, the ſeveral ſums ſubſcribed to the ſtock of the company, according to the ſeveral orders of council, made for the creation of the new *actions*.

ACTIONARY, or **Actionist**, a term frequent in foreign news-papers; denoting the proprietor of an *action*, or ſhare in a company's ſtock.

ACTIVE, **Activus**, ſomething that communicates motion, or action, to another.

In this ſenſe, the word ſtands oppoſed to *paſſive*.

Thus we ſay, an *active* cauſe, *active* principles, &c.

The quantity of motion in the world, Sir Iſaac Newton ſhews, muſt be always decreaſing, in virtue of the vis inertiæ, &c. So that there is a neceſſity for certain *active* principles to recruit it: ſuch he takes the cauſe of gravity to be, and the cauſe of fermentation. Adding, that we ſee but little motion in the univerſe, except what is owing to theſe *active* principles.

Active *Principles*, in *Chemiſtry*, are thoſe which are ſuppoſed to act of themſelves, and do not need to be put in action by others.

Salt, ſulphur, and mercury, are uſually conſidered by the chemiſts as *active principles*; and phlegm and earth as paſſive ones.

M. Homberg, and ſome late chemiſts after him, only make one *active* principle, viz. ſulphur, or fire; which they take to be the ſource or principle of all the motion and action of the univerſe.

The term *active principles*, ſays Dr. Quincy, has been uſed to expreſs certain diviſions of matter, that are, by ſome particular modifications, comparatively *active*, in reſpect of others: ſuch are ſpirit, oil, and ſalt, whoſe parts are better fitted for motion than thoſe of earth and water; but with how much impropriety, will eaſily appear.

For, in a ſtrict ſenſe, all motion in matter is rather paſſion; and there is no *active* principle, unleſs we thus call the known powers of gravitation, attraction, and repulſion, on which the Newtonian philoſophy is founded: ſo that let bodies exiſt under what modifications ſoever, there can be no alteration made of theſe univerſal properties.—Hence, the diviſion of matter into what, for diſtinction ſake, may be called *ſpirit*, does not give it any properties inconſiſtent with this general law.

Active, in *Grammar*, denotes a word having a ſignification that ſerves to explain or denote an action.

Thus we ſay, a verb *active*, a conjugation *active*, &c. or an *active* participle.

Active, *Verbs*, are ſuch as do not only ſignify doing, or acting, but have alſo nouns following them, to be the ſubject of the action or impreſſion.

Thus, *to love*, *to teach*, are verbs *active*; becauſe we can ſay, *to love a thing*, *to teach a man*.

Verbs *neuter* alſo denote an action, but are diſtinguiſhed from verbs *active*, in that they cannot have a noun following them.—Such are, *to ſleep*, *to go*, &c.

Some grammarians, however, make three kinds of verbs *active*: the *tranſitive*, where the action paſſes into a ſubject different from the agent; *reflected*, where the action returns upon the agent; and *reciprocal*, where the action turns mutually upon the two agents who produced it.

ACTIVITY, the power of acting, or the active faculty.

The *activity* of fire exceeds all imagination.—The *activity* of an acid, a poiſon, &c.—Bodies, according to Sir Iſaac Newton, derive their *activity* from the principle of **attraction**.

Activity *of a Body, the Sphere of*, is the ſpace which ſurrounds it, ſo far as its efficacy or virtue extends to produce any ſenſible effect.

ACTON *Water*, a purging water of a well in a town near London, noted for the pungency of its ſalt. Its colour is whitiſh, its taſte is ſweetiſh, with a mixture of the ſame bitter which is in the **Epsom** *water*. Its ſalt is not quite ſo ſoft, and is more calcareous than that of the Epſom *water*, being more of the nature of the ſalt of lime; it is however more nitrous than the other. A quantity of it being boiled high, and mixed with a ſolution of ſublimate in pure water, throws down a yellow ſediment. It ſtrikes a deep red or purple with the tincture of logwood in brandy, as is uſual with nitrous ſalts. It does not precipitate ſilver out of the ſpirit of nitre, as common ſalt does; a pint and a half of the water yield forty-eight grains of ſalt. See Allen's Hiſtory of purging Waters.

ACTOR, one that acts in the *Drama*, one who repreſents ſome perſon, or character, upon the theatre.

The drama, in its original, only conſiſted of a ſimple chorus, who ſung hymns in honour of Bacchus: ſo that the primitive actors were no more than ſinging men. Theſpis was the firſt who took upon him to introduce a perſona, or *actor*; who was to eaſe the chorus, by reciting the adventures of ſome of their heroes. Thus came the recitation, or declamation in uſe.

Æſchylus finding a ſingle perſon tireſome, thought to entertain the audience more agreeably by the introduction of a ſecond perſon, who ſhould converſe and make dialogue with the firſt. He likewiſe dreſſed his *actors* a little more decently than they had been before, and put them on the **buskin**.

Sophocles, finding the two perſons of Æſchylus too few for the variety of incidents, added a third; and here the Greeks ſtopped; at leaſt, we do not find, in any of their tragedies, above three perſons in the ſame ſcene: though, in their comedies, they took a greater liberty.

The moderns have brought a much greater number of *actors* upon the ſtage.—This heightens the trouble and diſtreſs that ſhould reign there, and makes a diverſity, in which the ſpectator is ſure to be intereſted.

Horace ſpeaks of a kind of ſecondary *actors*, in his time, whoſe buſineſs was to imitate the firſt; and leſſen themſelves, to become better foils to their principals. The proper buſineſs of theſe ſubaltern *actors* is unknown to us.

Actor, among *Civilians*, the proctor or advocate in civil courts or cauſes: as *actor eccleſiæ* has been ſometimes uſed for the advocate of the church; *actor dominicus* for the lord's attorney; *actor villæ* the ſteward, or head bailiff of a village.

ACTRESS, **Actrix**, a female who *acts*, or does the office of an *actor*.

Actreſſes, or women actors, were unknown to the ancients, among whom men always performed the part of women; and hence one reaſon for the uſe of maſks among them.

Actreſſes are ſaid not to have been introduced on the Engliſh ſtage, till after the reſtoration of king Charles II. who has been charged with contributing to the corruption of our manners, by importing this uſage from abroad. But this can be but partly true: the queen of James I. acted a part in a paſtoral; and Prynn, in his Hiſtriomaſtix, ſpeaks of women actors in his time as whores; which was one occaſion of the ſevere proſecution brought againſt him for that book.

ACTUAL, ſomething that is real and effective; or that exiſts truly and abſolutely.

In *Philoſophy*, we ſay, *actual* heat, or *cold*; in oppoſition to *virtual* or *potential*.

Actual heat, conſidered actively, is the act of producing heat: paſſively taken, it is the quality whereby a body is denominated *hot*.—Virtual or potential heat, actively taken, is the power or faculty of producing heat; paſſively taken, it ſhould be the power or faculty of being heated, or of receiving *actual heat*.

In medicinal language, *actual* is alſo oppoſed to *potential*, and is applied to any thing endued with a quality which operates by an immediate power inherent in it. For example: a red-hot iron, or fire, is called an *actual* cautery, in contradiſtinction from cauteries, which have a power of producing the ſame effects on animal ſolids, as *actual* fire; and which are called *potential* cauteries or cauſtics. Boiling water is *actually* hot, and brandy is *potentially* hot.

Actual ſin is that committed knowingly, by a perſon arrived at years of diſcretion.

Original ſin, in *Theology*, is that which, according to ſome divines, we contract by deſcent, as being the children of Adam.

ACTUARIÆ *Naves*, in *Antiquity*, a ſort of long ſhips, thus denominated, as being particularly contrived for ſwiftneſs and expedition; they anſwer to what the French call *brigantines*.

Cicero, in an epiſtle to Atticus, calls a ſhip *decem ſcalmorum*, of ten banks of rowers, *actuariola*.

ACTUARIUS, or **Actarius**, primarily denotes a notary, or officer appointed to write down the acts or proceedings of a court, aſſembly, or the like.

In the eaſtern empire, the *actuarii* were properly officers who kept the military accounts, received the corn from the *ſuſceptores*, or ſtore-keepers, and diſtributed it to the ſoldiers.

Theſe acted as a kind of brokers with the ſoldiers; made bargains with them for receiving their pay before it became due; for which there were fixed rates.

Actuarius was alſo a title of dignity, in the court of Conſtantinople, peculiar to phyſicians.

From an appellative, the word has become a proper name of a celebrated Greek phyſician, author of a treatiſe, ſtill extant, on urines.

Actuarius, or **Actuary**, alſo means the clerk who regiſtered the acts and conſtitutions of the convocation.

ACTUATE, to bring into act; or put a thing in action.

Thus an agent is ſaid, by the ſchoolmen, to *actuate* a power, when it produces an act in a ſubject.—And thus the mind may be ſaid to *actuate* the body.

ACTUATIO, actuation, ſignifies the change wrought on a medicine, or any thing elſe taken into the body, by the vital heat, which is neceſſary to make it act, and produce its effect.

ACTUS, in the ancient *Agriculture*, the length of one furrow; or as far as a plough goes before it turns. Plin. lib. xviii. cap. 3.

In Engliſh it may be rendered by a *furlong*.—It is alſo uſed as a determinate meaſure, where it contains 120 Roman feet.

Actus *minimus*, was 120 feet in length, and 4 in breadth; being equal to the SEXTANS, or ſixth part of the JUGERUM, or INTEGER.

Actus *major*, called alſo *actus quadratus*, was the ſquare of 120 feet, or 14400, being the *ſemis*, or half of the JUGERUM.—This was alſo denominated *modius*, and *mina*. Varro de Re Ruſt. lib. i. cap. 10.

ACUANITES, **Acuanitæ**, in *Eccleſiaſtical Hiſtory*, called more frequently MANICHEES.

They took the name from Acua, a diſciple of Thomas, one of the twelve apoſtles.

ACUBENE, in *Aſtronomy*, a name given by ſome to a ſtar on the ſouthern claw of CANCER.

ACUHYATLI, in *Zoology*, the name of a very large ſerpent, of a poiſonous quality, in America, more uſually known by its name of CUCURUCU, or CURUCUCA.

ACUITION, in *Grammar* and *Proſody*. See ACUTITION.

In *medicine*, it ſignifies increaſing the force of any thing by adding to it ſomething of the ſame ſort.

ACULEATE, **Aculeated**, ſomething that has ACULEI, or prickles.

Naturaliſts divide fiſhes into thoſe with *aculeated*, and non-*aculeated* fins. Phil. Tranſ. N° 204.

ACULEATUS *longus*, in *Zoology*, a name given by ſome to the PUGNITIUS *marinus longus*, a ſmall prickly Weſt-India fiſh.

ACULEI, among *Botaniſts*, &c. denote the prickles or ſpines of plants of the thorny kind.

The word is Latin, formed from *acus*, *a needle*.

Among *Zoologiſts*, *aculeus* is alſo uſed for the ſting of a bee, ſcorpion, or the like.

The word *aculeus* is alſo uſed for certain parts of the ECHINI *marini*. See *Tab. of Foſſils*, *Claſs* 10.

Aculei *pinnarum*. See PINNÆ.

ACULEOSA, a name of the CARDUUS *polyacanthos*.

ACULER, in the *Manege*, is uſed for the motion of a horſe, when in working upon volts he does not go far enough forward, at every time or motion, ſo that his ſhoulders embrace or take in too little ground, and his croupe comes too near the center of the volt. Horſes are naturally inclined to this fault, in making demi-volts.

ACUMEN, οξυτης, in the *Ancient Muſic*, was uſed to ſignify a ſound produced by the *intention*, or raiſing of the voice.

Acumen differs from *intention*, as the *effect* from the *cauſe*.

ACUMINA, among the ancients, denoted a kind of military omen, or auſpice, ſuppoſed to have been taken from the points or edges of darts, javelins, ſwords, or other weapons; viz. by examining whether they were bright or ſolid, ſharp or blunted.

ACUPUNCTURE, or **Acupuncturation**, a method of curing many diſeaſes, by pricking ſeveral parts of the body with a needle, or inſtrument of that form.

This is practiſed every day by the Chineſe and Japaneſe, and other nations in that part of the world. They perform the operation with a large gold, or ſilver needle, which they ſtrike into the ſeveral parts of the body, either with their hand, or with a hammer made on purpoſe. It is extremely ſurpriſing that ſo ſevere and deſperate an operation ſhould be practiſed ſo much by a people otherwiſe judicious, and that too in the head and breaſt, as well as in the abdomen, arms, legs, thighs, and many other parts of the body, nay even in the abdomen of women with child, when the fœtus is reſtleſs.

We ſometimes alſo find mention of an *acupuncture* practiſed in Europe; but this amounts to no more than the perforating or opening a part, e. g the cornea, with the point of a needle; which has been done with good ſucceſs, for the cure of an *hydropthalmia* and *hypopyon*.

It is chiefly uſed in diſeaſes of the head and lower belly: it is applied to the head, in head-aches, lethargies, convulſions, epilepſies, diſeaſes of the eyes, &c. To the abdomen in colics, dyſenteries, want of appetite, hyſterical diſorders, ſurfeits, pains of the belly and joints, obſtructions of the liver and ſpleen, &c.

Surgeons are furniſhed with images, wherein all the places in the body proper for the needle are deſigned by marks.

M. Ten Ryne was an eye-witneſs of the uſe of this puncture on a ſoldier, who being afflicted with violent diſorders of the ſtomach, and frequent vomitings at ſea, ſuddenly relieved himſelf by pricking a thumb's breadth deep into four different places about the region of his PYLORUS. Ten. Ryn. Diſſ. de Acupunct. ap. Phil. Tranſ. N° 148. p. 231, ſeq.

ACURON, a name given to the ALISMA.

ACUS, in *Ichthyology*, the name of a long and ſlender ſea-fiſh, of which there are two ſpecies, a larger and a ſmaller.

The larger is often a cubit long, and not thicker than a finger; its ſnout is long, tubular, and not ſlit all the way up, but only open at the end; its eyes are prominent. From the head to the anus it is of an hexagonal figure, and from the anus to the tail it is ſquare. The anus is nearly in the middle of the body, and near it is a long longitudinal fiſſure for the eggs of the female. In all theſe reſpects, it very much reſembles the hippocampus. It has two fins at the gills, and another on the back; theſe are all very ſmall, and the laſt, in particular, ſcarce diſcernible, unleſs when the fiſh is alive and in motion. Its tail is a ſmall ſingle fin. It has a hard variegated ſkin, and has ſo little fleſh about it, that it is not regarded as eatable. It is common in the Mediterranean, and is called by the Venetian fiſhermen *biſcia*, that is, the viper fiſh. Its mouth is of a ſtrange figure, opening upward at the end of the ſnout. See *Tab. of Fiſhes*, N° 25.

Acus ſignifies alſo, with other authors, the *belone* or *paphix*, called in Engliſh the GAR-fiſh, and by ſome the HORN-fiſh. The two diſtinct kinds underſtood by this too general term, are diſtinguiſhed by the names of the authors who firſt named them; the TOBACCO-pipe fiſh, or that with the tubular noſe, being called the *acus* of Ariſtotle; and the GAR-fiſh, or that with the horizontal open mouth, the *acus* of Oppian.

This laſt is in ſhape ſomewhat like the former, being very long and ſlender, with a round back, and a flat belly. Its noſe or ſnout is very long, pointed and ſharp, and its head flat. The back is of a greeniſh colour, and the ſides and belly of a ſilvery white. The head is of a bluiſh green, and there is an obſcurely purple dotted line, which runs all along the back. The under jaw is longer than the upper, and both are thick ſet with ſharp teeth. It has only one back fin, and its tail is forked. See Phil. Tranſ. vol. lxiii. part 1. N° 21. from which it appears, that though the ACUS *maxima ſquamoſa* be a fiſh that is a ſtranger to our ſeas, yet its *exuviæ* are common here.

Bellonius has deſcribed another ſpecies of this fiſh, which is ſcaly, and has broader teeth, and is conſiderably larger than the common one, which either has no ſcales, or extremely minute ones. Its dotted line on the back is ſaid by ſome to be a ſingle row of ſcales; and theſe authors affirm, that the fiſh has no other. See LACERTUS.

Acus is alſo uſed by ſome authors for the AMMODYTES, or SAND-eel; a ſmall EEL caught in the ſands.

Acus alſo ſignifies chaff.

Acus *paſtoris*, a name of the SCANOIX.

Acus *moſchata*, a name of the GERANIUM *moſchatum*.

ACUTE, *ſharp*, ſomething that terminates in a point, or edge; diſpoſed either for piercing, or cutting.

In this ſenſe, the word uſually ſtands oppoſed to *obtuſe*.

Acute *angle*, in *Geometry*, is that which is leſs than a right angle; or which does not *ſubtend* 90 degrees.

Such is the angle ACB (*Tab. Geometry*, *fig*. 68.)

Acute-*angled triangle*, is that whoſe three angles are all *acute*; called alſo an *oxygonus triangle*.

Such is the triangle ACB (*Tab. Geometry*, *fig*. 68.)

Acute-*angular-ſection* of a cone, is uſed, by the ancient *Geometricians*, for the ELLIPSIS.

Acute-*angled cone*, ſee CONE.

Acute, in *Muſic*, is underſtood of a ſound, or tone, which is ſharp, ſhrill, or high, in reſpect of ſome other.

In which ſenſe, the word ſtands oppoſed to *grave*; and both theſe properties of ſound depend on the quickneſs or ſlowneſs of the vibrations by which they are produced.

Sounds conſidered as *acute*, and grave, that is, in the relation of gravity and *acuteneſs*, conſtitute what we call *tune*, the foundation of all HARMONY.

Acute *accent*, in *Grammar*. See ACCENT.

Acute *diſeaſe*. See DISEASE.

ACUTELLA, in *Botany*, a name uſed by ſome to expreſs the common ANONIS, or REST-harrow, a ſmall prickly plant, with red or white flowers, and famous for its ſpreading and tough root.

ACUTIATOR, in writers of the barbarous ages, denotes a perſon that whets, or grinds cutting inſtruments;

called alſo in ancient gloſſaries, *acutor*, *ακονητης*, *ſamiarius*, *cobarius*; &c.

In the ancient armies there were *acutiatores*, a kind of ſmiths, retained for whetting or keeping the arms ſharp.

ACUTITION, or ACUITION, in a general ſenſe, the ſame with acuating or ſharpening.

ACUTITION. in *Grammar*, denotes the pronouncing, or marking a ſyllable with an acute ACCENT.

ACUTITION, or *acuition*, in *Medicine* and *Chemiſtry*, is uſed for ſharpening or increaſing the force of any medicine.

ACYROLOGIA, denotes an improper acceptation, or expreſſion, wherein a word or phraſe is uſed in ſome unuſual or oblique ſenſe, hardly reducible to the rules of language.

The word is compounded of *ακυρος*, *improper*, and *λογος*, *ſermo*.

Such, e. g. is the word *ſpero*, ſometimes uſed in Roman writers for *timeo*.

The *acyrologia* bears a near affinity to the *catachreſis*, inſomuch that divers terms and expreſſions, alledged as inſtances of the latter, are by others brought as examples of the former.

AD *beſtias*, in *Antiquity*, is underſtood of a kind of puniſhment of criminals, condemned to be thrown to wild beaſts.

The term was alſo applied to a ſort of gladiators hired to fight with wild beaſts.

Theſe are otherwiſe called *beſtiarii*.

AD *extra*, a term uſed among *School Divines*, in ſpeaking of the eternal operations of the Godhead.

Acts or operations *ad extra*, are properly thoſe whoſe term or effect is not within the divine eſſence; by which they ſtand oppoſed to operations *ad intra*. Creation, preſervation, regeneration, converſion, renovation, &c. are actions of God *ad extra*.

AD *intra*, among *School Divines*, is underſtood of thoſe acts of the Divine Being, whoſe term and effect is within his own eſſence. In which ſenſe, acts or operations *ad intra*, ſtand oppoſed to thoſe *ad extra*.

AD *hominem*, among *Logicians*, is underſtood of a kind of ARGUMENT drawn from the belief or principles of thoſe we argue with, and which of conſequence muſt be concluſive to them, though otherwiſe diſbelieved by us; or, it is where a diſputant quits his own language and ſyſtem, and borrows that of his opponent to convince him, by turning his own prejudices or errors againſt himſelf.

This the ſchoolmen call *argumentum ad hominem*.

AD *libitum*, is ſometimes uſed in *Muſic*, for *ſe piace*, *at diſcretion*. It is alſo uſed, in general, for whatever is left to diſcretion.

AD *ludos*, in *Antiquity*, a Roman ſentence, whereby criminals were condemned to entertain the people, either by fighting with beaſts, or with each other, and thus executing juſtice on themſelves.

AD *metalla*, in *Antiquity*, the puniſhment of being doomed to work in the mines. Criminals condemned to this, were called *metallici*.

It were to be wiſhed that puniſhments of this kind could be ſubſtituted in lieu of our frequent executions; which are as repugnant to the principles of humanity, as to thoſe of ſound policy.

AD *quiddities*, among ſchoolmen, include the relations, analogies, agreements, diſagreements, ſimilitudes, and diſſimilitudes of things.

Ad quiddities are properly thoſe attributes of things, which anſwer to the queſtion, *ad quid? to what?* By which they differ from mere QUIDDITIES, which anſwer to the queſtion, *quid ſit? What is it?* The latter inquire what things are in themſelves; the former what they are, *ad alia*.

AD *valorem*, is uſed in ſpeaking of the duties, or cuſtoms, paid for certain commodities; ſome things are rated by the weight, meaſure, tale, or the like; others pay *ad valorem*, according to the value, or worth ſworn to by the owner.

ADAGE, ADAGIUM, a proverb, or popular ſaying.

Eraſmus has made a large and valuable collection of Greek and Roman *adages*, from their poets, orators, philoſophers, &c.

Adage, proverb, and parœmia, are the ſame thing; but they differ from *gnome*, *ſentence*, and *apophthegm*.

ADAGIO, in *Muſic*, one of the words uſed by the Italians to denote a degree or diſtinction of time.

Adagio expreſſes a ſlow time; the ſloweſt of any, except grave. Uſed ſubſtantively, it ſignifies a ſlow movement. Sometimes this word is repeated, as *adagio, adagio*, to denote a ſtill greater retardation in the time of the muſic.

ADAL, in the ſenſe of Paracelſus, ſignifies that part of plants, in which their medicinal virtue conſiſts; or the pure and active parts of plants, ſeparated from the impure and inert.

ADALIDES, in the Spaniſh policy, are officers of juſtice, for matters touching the military forces.

In the laws of king Alphonſus, the *adalides* are ſpoken of, as officers appointed to guide and direct the marching of the forces in time of war.—Lopez repreſents them as a ſort of judges, who take cognizance of the differences ariſing upon excurſions, the diſtribution of plunder, &c.

ADAMANT, ADAMAS, in *Natural Hiſtory*, &c. an ancient name for a precious ſtone, by us called a DIAMOND.

Adamas is uſed by ſome ancient *Naturaliſts*, for the ſpume or *ſcoria* of gold; which is caſt away, as not being malleable.

This is particularly called *χρυσι αδαμαντα*; and is miſtaken by Pliny for the gem of that name.

ADAMANT is alſo uſed for a ſpecies of iron, denoting the hardeſt, or higheſt tempered part thereof.

This is ſometimes called the *adamantine* part of iron.

Mr. Boyle more particularly gives the denomination *adamus lucidus*, to a diamond in his poſſeſſion, which had the faculty of ſhining in the dark; a property ſince diſcovered in many others, at leaſt when excited by friction. Vid. Boyle, Phil. Work. Abr. t. i. p. 494. It. t. iii. p. 155.

ADAMANT is ſometimes alſo uſed for the MAGNET, or load-ſtone.

In which ſenſe Skinner thinks it may be beſt derived from the French *aimant*, which ſignifies the ſame.

ADAMANTII, in *Church Hiſtory*, a name given by ſome Chriſtian hiſtorians to the followers of Origen, ſurnamed *Adamantius*, becauſe of his unwearied pains in reading and writing, or the ſtrength and acuteneſs of his reaſoning, according to ſome; or rather, as Heuman ſays, whoſe name was *Adamantius*: however, Euſebius ſays, this was a common name given to Origen, without aſſigning any reaſon for it. Euſ. lib. vi. cap. 14.

ADAMAS, in *Aſtrology*, a name given to the moon.

ADAMI *Pomum*, in *Anatomy*, a protuberance in the forepart of the throat.

Some fancy it is thus called upon a ſtrange conceit, that a piece of the forbidden apple, which Adam eat, ſtuck by the way, and was the occaſion of it.

In reality, it is only the convex part of the firſt cartilage of the *larynx*, called *ſcutiformis*.

The name, Adam's apple, is alſo given to a kind of fruit frequent in Italy, reſembling a lemon, ſaid to be a good remedy againſt the itch.

ADAMIC *earth*, is a name ſome have given to common clay; called alſo *terra zoica*, *rubella*, and *lutum*.

The occaſion of the name we ſuppoſe to be, that this is taken for the *adamah*, or ruddy earth, of which the firſt man was formed.

This appellation is likewiſe given to the mud depoſited by ſea-water, which is a ſediment of the moſt ſlimy and unctuous parts contained in it.

ADAMITES, ADAMITÆ, a ſect who took upon them to imitate the nakedneſs of Adam: as if man had been reinſtated in his original innocence.

The critics explain the name Adam, אדם, from whence the term ariſes, variouſly; ſome by *earth*, others by *red*, others by *acquieſcence*.

Prodicus was their author, according to the account given by Theodoret.—They were, in reality, a branch ſprung out of the CARPOCRATIANS and BASILIDIANS.

This ſect is ſaid to have ſtarted up afreſh in the fifteenth century, under Picard, their leader; who pretended to re-eſtabliſh the law of nature, which, according to him, conſiſted in two things, viz. community of women, and nakedneſs.—Theſe laſt walked naked in the public places; whereas the former only put off their cloaths in their aſſemblies.

An ingenious writer, viz. Beauſobre, has ſhewn, that the *Adamitiſm*, i. e. the nakedneſs of theſe people, is a mere calumny, forged by their adverſaries, the Calixtines and Papiſts, at the time when the Vaudois firſt ſhewed themſelves in that country.

Jovet and Moreri ſpeak of *Adamites* in England; and indeed the Romaniſts and reformed mutually reproach each other with having *Adamites* among them.

ADAMITES, in *Church Hiſtory*, a name given by ſome writers to the firſt patriarchs, the ſons or deſcendants of Adam by Seth. In which ſenſe *Adamites* amount to the ſame with *Sethites*, and ſtand diſtinguiſhed from *Cainites*.

There are divers traditions concerning the quarrels, wars, &c. between the *Adamites* and the *Cainites*.

ADAMITES, *Præ*. See PRE-ADAMITES.

ADAMITUM and *Adamita*, the hardeſt white ſtones, and ſtones in the bladder. The former, Paracelſus ſays, are a ſpecies of TARTAR.

ADAMUS, *Adam*. This is uſed in an *alchemiſtical* ſenſe, to ſignify the philoſopher's ſtone, which they call an animal, and ſay it has carried its inviſible *Eve* in its body, ever ſince the moment they were united by the Creator.

ADAR, in the Hebrew *Chronology*, the twelfth month of their eccleſiaſtical year, and the ſixth of their civil year. It contains only nine and twenty days, and anſwers to our February, and ſometimes enters into the month of March, according to the courſe of the moon.

ADARCE, in the *Materia Medica* of the ancients, a ſaltiſh humour concreting about the ſtalks of reeds, and other vegetable matter, in form of incruſtations.

The ancients ſpeak of *adarce*, as chiefly produced in Cappadocia and Galatia, though we alſo read of it in Italy; and of a native kind produced in Indian reeds, much as ſugar in the cane.

Its colour is like that of the fine powder of the Aſſian ſtone, or *ſarcophagus*, and its ſubſtance all lax and porous, much like the baſtard ſponge; ſo that it might be called the baſtard ſponge of the marſhes.

It is a *topic* adapted to rub and ſcour the ſkin in a leproſy, ſun-burning, tetters, freckles, and ſuch like blemiſhes, being on the whole of an acrimonious quality. Dr. Plott deſcribes it in his Natural Hiſtory of Oxfordſhire.

Though ſome have ſuppoſed the incruſtations, often ſeen about our ſprings, to be the ſame with the *adarce* of the Greek phyſicians; this ſeems a miſtake, as theſe incruſtations poſſeſs none of the virtues or properties of that ſubſtance; it being principally compoſed of ſea-ſalt, of which thoſe contain no particle, being merely a mixture of earth and ſpar.

ADARCON, *adarconim*, an ancient coin, mentioned in Scripture, uſually of gold, derived, as ſome think, from thoſe gold pieces coined by Darius, called δαρειχοι.

Hoſtus makes the *adarcon* only equal to the Attic *drachma*; but biſhop Cumberland, after the ſcholiaſts of Ariſtophanes and Harpocration, twice as much.

ADARIGES, a name for SAL *armoniac*.

ADARME, in *Commerce*, a ſmall Spaniſh weight uſed through their American provinces, equal to the ſixteenth part of an ounce.

Stephens renders it in Engliſh by a dram.

ADARNECH, a name for ORPIMENT.

ADARTICULATION, is uſed, by ſome phyſicians, for *αρθρωδια*, by others, for *διαρθρωσις*. See ARTHRODIA, and DIARTHROSIS.

ADATAIS, or ADATYS, a muſlin or cotton cloth, very fine and clear, of which the piece is ten French ells long, and three quarters broad. This muſlin comes from the Eaſt Indies, and the fineſt from Bengal.

ADCHER, in the *Materia Medica*, a name given by Avicenna and Serapion, to the SCÆNANTH, or camel's hay. This ſeems to have been, at that time, the common Arabian name of this drug; but Garcias tells us, that in his time the Arabs called it *adher*.

It is to be obſerved, however, that the Arabians have not confined this word to the SCÆNANTH alone, but expreſs by it all the kinds of *ruſhes*. Thus, Avicenna tells us, that the *adcher* is of two kinds, the one bearing no fruit, the other bearing a hard black fruit: this plainly belongs not to the *ſcænanth*, but the common *ruſh*, of which Dioſcorides has, in the ſame manner, deſcribed two kinds, thus differing from one another.

ADCORDABILES *denarii*, in ancient *Law-books*, denote money paid by the vaſſal to his lord, in the nature of a fine, upon the ſelling or exchanging of a FEUD.

The word is formed from *accorder*, *to agree*.

ADCRESCENTES, in the Roman *Empire*, the ſame with ACCENSI.

ADDACE, in *Natural Hiſtory*, the name by which the Africans call the common ANTELOPE. See GAZELLA.

ADDEPHAGIA, in *Medicine*, a term uſed by ſome phyſicians, to denote a greedineſs in children, whereby they load themſelves with new food, ere the old is digeſted. This is ſometimes alſo written corruptly, *adephagia*.

The word is compounded of *αδδην*, *much*, and *φαγω*, *I eat*. Some uſe *addephagia* in a more extenſive ſenſe, for voraciousneſs in general, ſo as to comprehend the BULIMIA, PICA, and MALACIA.

ADDER, in *Nrtural Hiſtory*, a venomous reptile of the ſerpent kind, more uſually called a VIPER.

ADDER is alſo ſometimes confounded with *aſp*; thus the deaf *adder*, ſpoken of in the Engliſh Bible, is not properly the *adder*, but the *aſp*.

The *adder* differs from the ſnake, in that the former is much ſhorter for its bigneſs, eſpecially his tail below the vent; that it is marked on the back with black lines or ſpots, which the ſnake wants; that its belly is blackiſh, and of one colour, whereas the ſnake's is particoloured, of a pale yellow and blue; that it never grows to the bigneſs which ſome ſnakes attain to; and laſtly, that it is *viviparous*, whereas the ſnake is *oviparous*.

ADDER, *Sea*, the Engliſh name of a ſpecies of SYNGNATHUS, with a round body, and no pectoral or tail fins.

ADDER, *Water*, in *Zoology*, a name given to the NATRIX.

ADDER-*Bolts*. See DRAGON-FLIES.

ADDER-STUNG, is uſed in reſpect of cattle, when ſtung with any kind of venomous reptiles; as adders, ſcorpions, &c. or bit by a hedge-hog, or ſhrew.

For the cure of ſuch bites, ſome uſe an ointment made of dragon's blood, with a little barley-meal, and the whites of eggs.

ADDER'S-TONGUE, in *Botany*, a medicinal plant, ſo called either from its reſembling or its curing the bite of a viper. It is more commonly called *ophioglоſſum*.

No part of the fructification of this plant is viſible, except the fruit. This is an oblong, double, or diſtichous capſule, divided by a great number of tranſverſe articulations, into many cells, each of which, when mature, opens tranſverſly, and is found to contain a great number of ſmall ſeeds of a ſubovate figure.

Caſpar Bauhine deſcribes what he calls three ſpecies of this plant.

Tournefort makes eight ſpecies of OPHIOGLOSSUM, which are only the varieties of the common European kind, mentioned above.

This is a ſpring plant, and is only to be found in April and May. It is not uncommon in wet meadows, and is eaſily diſtinguiſhed among the other ſpring plants by its ſpike, or tongue.

It is eſteemed one of the beſt vulnerary herbs this country produces; but it is more in uſe among the common people than in the ſhops. They give its juice internally, and uſe the herb bruiſed, or an ointment prepared from it, with lard, or May-butter, externally, at the ſame time.

Farriers, &c. prepare an ointment of this herb, called ADDER's-*tongue ointment*, uſed as a remedy againſt the bites of venomous beaſts. Phil. Tranſ. vol. xlix. part 2, N° 112.

ADDER'S *Wort*. See BISTORT.

ADDEXTRATORES, or ADDEXTRARII, in the court of Rome, denote the pope's MITRE-bearers.

Some ſuppoſe them thus called, on account of their walking at the pope's right-hand, when he rides to viſit the churches.

ADDICE, ſee ADZE.

ADDICO, ſee ADDICTIO.

ADDICTI, in *Antiquity*, inſolvent perſons, or thoſe who being ſentenced to pay a debt, but unable to do it, were adjudged to a kind of temporary ſervitude to the creditor.

In this ſenſe, *addicti* were a ſpecies of *ſervi*; from whom, however, they differed in this, that a ſlave, when diſcharged, became a *libertus*; whereas an *addictus* became *ingenuus*. Again, a ſlave could not be diſcharged without the conſent of his maſter; whereas the *addictus* was diſcharged of courſe, when his debt was ſatisfied.

ADDICTIO, ADDICTION, in the Roman law, a transferring, or paſſing over goods to another; whether by ſentence of a court, or in the way of ſale, to him that bids moſt for them.

The word ſtands oppoſed to *abdictio*, or ABDICATION.

It is formed of *addico*, one of the ſtated words uſed by the Roman judges, when they allowed the delivery of the thing or perſon on whom judgment had paſſed.

Hence, goods thus adjudged by the prætor, to the right owner, were called *bona addicta*; and the debtors delivered up, in like manner, to their creditors, to work out their debt, were called *ſervi addicti*.

ADDICTIO *in diem*, denoted the adjudging of a thing to a perſon for a certain price; unleſs by ſuch a day the owner, or ſome other perſon, gave more for it.

ADDITAMENT, ADDITAMENTUM, a thing added to another. It ſignifies the ſame as EPIPHYSIS.

Additaments, in *Phyſick* and *Chemiſtry*, are things ſuperadded to the ordinary ingredients of any compoſition.

ADDITION, the act of joining one thing to another, or of augmenting a thing, by the acceſſion of others.

ADDITION is alſo uſed for the thing added with itſelf.

ADDITION, in *Arithmetic*, is the firſt of the four fundamental rules, or operations, of that art.

Addition conſiſts in finding the amount of ſeveral numbers, or quantities, ſeverally added one to another.—Or, *addition* is the invention of a number, from two or more homogeneous ones given, which is equal to the given numbers taken jointly, or together.

The number, thus found, is called the *ſum*, or aggregate of the numbers given.

The character of *addition* is +, which we uſually expreſs by *plus*. Thus $3+4$ denotes the ſum of 3 and 4; and is read 3 *plus* 4.

The *addition* of ſimple numbers is eaſy. Thus it is readily perceived that 7 and 9, or $7+9$, make 16; and $11+15$ make 26.

In longer, or compounded numbers, the buſineſs is performed by writing the given numbers in a row downwards; homogeneous under homogeneous, i. e. units under units, tens under tens, &c. and ſingly collecting the ſums of the reſpective columns.

To do this, we begin at the bottom of the outmoſt row or column to the right; and if the amount of this column do not exceed 9, we write it down at the foot of the ſame column: if it do exceed 9, the exceſs is only to be written down, and the reſt reſerved to be carried to the next row, and added thereto; as being of the ſame kind or denomination.

Suppoſe, e. g. the numbers 1357 and 172 were given to be added: write either of them, v. gr. 172, under the other 1357; ſo as the units of the one, viz. 2, ſtand under the units of the other, viz. 7; and the other numbers of the one, under the correſpondent ones of the other, viz. the place of tens under tens, as 7 under 5; and that of hundreds, viz. 1, under the place of hundreds of the other, 3.—Then, beginning, ſay, 2 and 7 make 9; which write underneath; alſo 7 and 5 make 12; the laſt of which two numbers, viz. 2, is to be written, and the other one reſerved in your mind to be added to the next row, 1 and 3: then ſay, 1 and 1 make 2, which added to 3 make 5: this write underneath, and there will remain only 1, the firſt figure of the upper row of numbers, which alſo muſt be writ underneath; and thus you have the whole ſum, viz. 1529. The ſame method will extend to any number of ſums, which are required to be united in one.

$$\begin{array}{r} 1357 \\ 172 \\ \hline 1529 \end{array}$$

Addition *of numbers of different denominations*, for inſtance, of pounds, ſhillings, and pence, is performed by adding or ſumming up each denomination by itſelf, always beginning with the loweſt; and if, after the *addition*, there be enough to make one of the next higher denomination, for inſtance, pence enough to make one or more ſhillings, they muſt be added to the figures of that denomination, that is, to the ſhillings; only reſerving the odd remaining pence to be put down in the place of pence.—And the ſame rule is to be obſerved in ſhillings with regard to pounds.

For an inſtance, 5 pence and 9 pence make 14 pence; now in 14 there is once 12, or a ſhilling, and two remaining pence; the pence ſet down, and reſerve 1 ſhilling to be added to the next column, which conſiſts of ſhillings. Then 1 and 8 and 2 and 5 make 16: the 6 put down, and carry the 1 to the column of tens; 1 and 1 and 1 make three tens of ſhillings, or 30 ſhillings: in 30 ſhillings there is once 20 ſhillings, or a pound, and 10 over: write 1 in the column of tens of ſhillings, and carry 1 to the columns of pounds; and continue the *addition* of pounds, according to the former rules.

l.	*s.*	*d.*
120	15	9
65	12	5
9	8	0
195	16	2

So, half of an even ſum of ſhillings will be carried to the pounds; and the odd one (where it ſo happens) ſet under the tens of the ſhillings.

Addition *of Decimals*, is performed after the ſame manner as that of whole numbers; as may be ſeen in the following example.

$$\begin{array}{r} 630.953 \\ 51.0807 \\ 305.27 \\ \hline 987.3037 \end{array}$$

Addition *of Vulgar Fractions*, ſee under FRACTION.

Addition *of Ratios* is uſed by ſome authors in the ſame ſenſe with COMPOSITION OF RATIOS, which ſee.

Addition, in *Algebra*, or the ADDITION *of Species*, is performed by connecting the quantities to be added, by their proper ſigns; and alſo by uniting into one ſum, thoſe that can be ſo united. See QUANTITY, SPECIES, &c. Thus a and b make $a+b$; a and $-b$ make $a-b$; $-a$ and $-b$ make $-a-b$; $7a$ and $9a$ make $7a+9a$; $-a\sqrt{ac}$ and $b\sqrt{ac}$ make $-a\sqrt{ac}+b\sqrt{ac}$, or $b\sqrt{ac}-a\sqrt{ac}$; for the order in which they are written, makes no alteration in their value.

But, particularly, 1°, Affirmative quantities of the ſame ſpecies, or kind, are united by adding the prefixed numbers whereby the ſpecies are multiplied.

Thus, $7a+9a$ make $16a$. And $11bc+15bc$ make $26bc$. Alſo $3\frac{a}{c}+5\frac{a}{c}$ make $8\frac{a}{c}$; and $2\sqrt{ac}+7\sqrt{ac}$ make $9\sqrt{ac}$; $6\sqrt{ab-xx}+7\sqrt{ab-xx}$ make $13\sqrt{ab-xx}$. And in like manner $6\sqrt{3}+7\sqrt{3}$ make $13\sqrt{3}$. Again, $a\sqrt{ac}+b\sqrt{ac}$ make $\overline{a+b}\sqrt{ac}$, by adding together a and b, as numbers multiplying $\sqrt{ac}$. And ſo $\frac{\overline{2a+3c}\sqrt{3axx-x^3}}{a+x}+\frac{3a\sqrt{3axx-x^3}}{a+x}$ make $\frac{\overline{5a+3c}\sqrt{3axx-x^3}}{a+x}$, ſince $2a+3c$ and $3a$ make $5a+3c$.

2°, Affirmative fractions, which have the ſame denominator, are added together by adding their numerators.

Thus $\frac{1}{5}+\frac{2}{5}$ make $\frac{3}{5}$, and $\frac{2ax}{b}+\frac{3ax}{b}$ make $\frac{5ax}{b}$; and thus $\frac{8a\sqrt{cx}}{2a+\sqrt{cx}}+\frac{17a\sqrt{cx}}{2a+\sqrt{cx}}$ make $\frac{25a\sqrt{cx}}{2a+\sqrt{cx}}$ and $\frac{aa}{c}+\frac{bx}{c}$ make $\frac{aa+bx}{c}$.

3°, Negative quantities are added after the ſame manner as affirmative. See NEGATIVE.

Thus, -2 and -3 make -5; $-\frac{4ax}{b}$ and $-\frac{11ax}{b}$ make $-\frac{15ax}{b}$; $-a\sqrt{ax}$ and $-b\sqrt{ax}$ make $\overline{-a-b}\sqrt{ax}$.

When a negative quantity is to be added to an affirmative one, the affirmative muſt be diminiſhed by the negative one.

Thus, 3 and -2 make 1; $\frac{11ax}{b}$ and $-\frac{4ax}{b}$ make $\frac{7ax}{b}$; $-a\sqrt{ac}$ and $b\sqrt{ac}$ make $b-a\sqrt{ac}$.

And note, that when the negative quantity is greater than the affirmative, the aggregate ſum will be negative. Thus, 2 and -3 make -1; $-\frac{11ax}{b}$ and $\frac{4ax}{b}$ make $-\frac{7ax}{b}$; and $2\sqrt{ac}$ and $-7\sqrt{ac}$ make $-5\sqrt{ac}$.

Addition *of irrational Quantities*.—If they be of different denominations, reduce them to the ſame denomination; and if they be then commenſurable, add the rational quantities without the vinculum; and to their ſum prefix the radical ſign.—The reſt as in the addition of rationals.

Thus, we ſhall find $\sqrt{8}+\sqrt{18}=2\sqrt{2}+3\sqrt{2}=5\sqrt{2}=\sqrt{50}$. On the contrary, $\sqrt{7}$ and $\sqrt{5}$ being incommenſurable, their ſum will be $\sqrt{7}+\sqrt{5}$.

Addition, in *Law*, is that name, or title, which is given to a man over and above his proper name, and ſurname; to ſhew of what eſtate, degree, or myſtery he is; and of what town, village, or country.

Additions of Eſtate, or quality, are yeoman, gentleman, eſquire, and ſuch like.

Additions of Degree, are thoſe we call names of dignity; as knignt, lord, earl, marquis, and duke.

Additions of Myſtery, are ſuch as ſcrivener, painter, maſon, and the like. See CHOPCHURCH.

Additions of Place, are, of Thorp, of Dale, of Woodſtock.—Where a man hath houſhold in two places, he ſhall be ſaid to dwell in both; ſo that his *addition* in either may ſuffice. Knave was anciently a regular *addition*.

By ſtat. 1 Hen. V. cap. 5. it was ordained, that in ſuch ſuits or actions where proceſs of outlawry lies; ſuch *addition* ſhould be made to the name of the defendant, to ſhew his eſtate, myſtery, and place where he dwells; and that the writs, not having ſuch *additions*, ſhall abate, if the defendant take exception thereto; but not by the office of the court.—The reaſon of this ordinance was, that one man might not be troubled by the outlawry of another; but by reaſon of the certain *addition*, every perſon might bear his own burden.

If one be of the degree of a duke, earl, &c. he ſhall have the *addition* of the moſt worthy dignity. 2 Inſt. 669.

Such titles, however, are not properly *additions*, but names of dignity. The title of knight or baronet is part of the party's name, and ought to be rightly uſed; but the titles of eſquire, gentleman, or yeoman, &c. being no part of the name, but *additions*, as people pleaſe to call them, may be uſed, or not uſed, or if varied, it is not material. 1 Lill. 34.

An earl of Ireland is not an *addition* of honour here in England; but ſuch a perſon muſt be written by his Chriſtian and ſurname, with the *addition* of eſquire only; and the ſons of Engliſh noblemen, although they have given them titles of nobility, in reſpect to their families, if you ſue them, they muſt be named by their Chriſtian and ſurnames, with the *addition* of eſquire; as—ſuch-a-one, eſquire, commonly called lord A, &c. 2 Inſt. 596, 666.

No *addition* is neceſſary, where proceſs of outlawry doth not lie. 1 Salk. 5. If a city be a county of itſeif, wherein are ſeveral pariſhes, *addition* thereof, as *de London*, is ſufficient; but *addition* of a pariſh not in a city, muſt mention the county, or it will not be good. 1 Danv. 237.

Addition, in *Muſic*.—The note or mark of *addition* is a dot placed on the right ſide of a note, to ſignify, that the time of the ſound of ſuch note, is to be lengthened half as much more, as it would otherwiſe be.

A note of *addition* amounts to the ſame with what is by ſome old Engliſh authors, called *prick of perfection*.

Thus a ſemibreve, when marked with a dot, is to be as long as three minims; the minim, with the like dot, to be as long as three crotchets; the crotchet as three quavers, &c. See CHARACTER.

Additions, in *Heraldry*, denote a kind of bearings, in coat of arms, wherein are placed rewards, or additional marks of honour.

In which ſenſe, *additions* ſtand oppoſed to ABATEMENTS, or DIMINUTIONS. See DIFFERENCE.

Additions reſemble, but differ from ordinaries. To the claſs of *additions* belong a bordure, quarter, canton, gyron, pile, flaſques, hanches, voiders, ermine, and an ineſcutcheon gules, called alſo an *eſcutcheon of pretence.* On any of theſe may an *addition* of honour be placed, according to the pleaſure of the prince, or the fancy of the herald; which reward deſcends to none of the family, except the perſon's own direct line. In this manner the arms of a kingdom have been ſometimes given, by way of *addition*, to a private ſubject.

ADDITIONS, in *Diſtilling*, a name given to ſuch things as are added to the waſh, or liquor, while in a ſtate of fermentation, in order to improve the vinoſity of the ſpirit, procure a larger quantity of it, or give it a particular flavour.

All things of whatever kind, thus added in the time of fermentation, are called by thoſe of the buſineſs, who ſpeak moſt intelligently, *additions*; but many confound them with things of a very different nature, under the name of FERMENTS.

The *additions* uſed in the diſtillery, may be reduced to four general heads. 1. *Salts*, 2. *Acids*, 3. *Aromatics*, and 4. *Oils*. A little tartar, nitre, or common ſalt finely powdered, may be added to the liquor while fermenting, eſpecially in the beginning of the operation; or in their ſtead, a little of the vegetable, or finer mineral acids, may be dropped in at different times, when found neceſſary. Theſe are of great uſe, eſpecially in the fermenting ſolutions of treacle, honey, and the like ſweet and rich vegetable juices, which either wholly want an acid in themſelves, or have it in too ſmall a proportion, or have been robbed or diveſted of it. The proper acids for this purpoſe are, the juice of Seville oranges, or lemons, or the ſpirit of ſulphur, or Glauber's ſpirit of ſalt, or, what is greatly preferable to all theſe, a particular aqueous ſolution of tartar, a ſuccedaneum for which may be tamarinds, or the robs of ſome very acid fruits, or the *media ſubſtantia vini*. On this foundation ſtands that ingenious practice of uſing a ſuitable proportion of the ſtill bottoms, or the remaining waſh, in the ſubſequent brewing.

After the ſame manner, a very conſiderable quantity of any eſſential vegetable oil, may by proper management be converted into a ſurpriſingly large quantity of inflammable ſpirit; but great care in this caſe muſt be had not to drop it in too faſt, nor too much at a time; this might damp the fermentation: and, indeed, the adding a large quantity of oil at once, is the common way of ſtopping the fermentation at any point required.

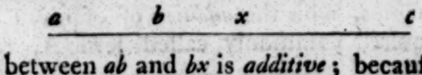
The beſt method, of all others, of introducing the oil, ſo as to avoid all inconvenience, is to reduce it firſt to an elæoſaccharum, by grinding it in a mortar, with a due quantity of fine ſugar in powder. The oil thus added, with its particles diſunited, and in form of powder, will readily mix with the liquor, and immediately ferment with it.

A large proportion of rectified ſpirit, or of any other ſpirit, may, by prudent management, be alſo introduced into the fermenting liquor; and this will always come back with a large *addition* to the quantity of ſpirit, that would otherwiſe have riſen from the diſtillation.

ADDITIVE, denotes ſomething to be added to another.

Geometricians ſpeak of *additive ratios*; aſtronomers of *additive equations*, &c.

ADDITIVE *ratio* is uſed, by ſome writers, for that whoſe terms are diſpoſed to addition, that is, to compoſition, in oppoſition to *ſubſtractive ratio*, whoſe terms are diſpoſed to ſubſtraction, i. e. to diviſion. Phil. Tranſ. N° 257. Suppoſe the line *ac* divided in the points *b* and *x*,



the ratio between *ab* and *bx* is *additive*; becauſe the terms *ab* and *bx* compoſe the whole *ax*. But the ratio between *ax* and *bx* is ſubſtractive, becauſe *ax* and *bx* differ by the line *ab*.

ADDITIVE EQUATIONS, in *Aſtronomy*, thoſe which are to be added to the ſun's mean ANOMALY, in order to find the true one. V. Hiſt. Acad. Roy. des Scienc. 1720, p. 118.

ADDOUBORS, in *Law*, ſee REDUBBORS.

ADDRESS, in a general ſenſe, is uſed for ſkill and good management, and of late has been adopted from the French, and is uſed in genteel phraſe, and alſo in *Commerce*, as ſynonymous with direction to a perſon or place. The word is formed of the French verb *addreſſer, to direct any thing to a perſon.*

ADDRESS, means alſo a diſcourſe preſented to the king, in the name of a conſiderable body of his people; to expreſs or notify their ſentiments of joy, ſatisfaction, or the like, on ſome extraordinary occaſion.

We ſay, the lords *addreſs*, the commons *addreſs*.—*Addreſſes* were firſt ſet on foot under the adminiſtration of Oliver Cromwell.—At Paris, their office of intelligence is called *bureau d'adreſſe.*

ADDUCENT *Muſcles*, or ADDUCTORS, are thoſe which bring forward, cloſe, or draw together, the parts of the body whereto they are annexed.

The word is compounded of *ad*, *to*; and *ducere, to draw* or *bring.*

Adducents, or *adductors*, ſtand oppoſed to *abducents*, or *abductors.*

ADDUCTION, in *Anatomy*, the motion, or action, of the ADDUCENT muſcles. See ADDUCTOR.

ADDUCTOR *oculi*, a muſcle of the eye, ſo called, becauſe it inclines its pupil towards the noſe.

It is alſo called *bibitorius*; becauſe it directs the eye toward the cup in drinking.

ADDUCTOR *pollicis*, is a muſcle of the thumb, which ariſes tendinous, and aſcends obliquely towards a broad termination, at the ſuperior part of the firſt bone of the thumb.—*See Tab. Anat.* (*Myol.*) *fig.* I. *n.* 31. & *fig.* VII. *n.* 7.—Its office is to bring the thumb near the fore-finger.

This muſcle is called by Albinus, and the generality of writers, the *abductor indicis*; and by Winſlow, the *ſemi-interoſſeus indicis.*

ADDUCTOR *pollicis pedis*, called alſo *antithenar*, is a muſcle of the great toe, which ariſes from the inferior part of the *os cuneiforme tertium*, and is inſerted into the internal part of the *oſſa ſeſamoidea* of the great toe; which it draws nearer the reſt.

ADDUCTOR *indicis*, is a muſcle of the fore-finger, ariſing from the inſide of the bone of the thumb, and inſerted into the firſt bone of the fore-finger, which it draws towards the thumb.

ADDUCTOR *minimi digiti pedis*; the ſame as TRANSVERSALIS *pedis.*

ADDUCTOR *proſtatæ*, a name given by Santorini to a muſcle, which he alſo calls *levator proſtatæ*; and which Winſlow calls *proſtaticus ſuperior*. Albinus, from its office, has very properly called it *compreſſor proſtatæ.*

ADDUCTOR *brachii* ſerves to draw the arm toward the trunk of the body; though Winſlow finds its office more complicated, and that it acts in concurrence with the flexors and extenſors, in bending and extending the arm.

ADEB, in *Commerce*, the name of a large Ægyptian weight, uſed principally for rice, and conſiſting of two hundred and ten okes, each of three rotolos, a weight of about two drams leſs than the Engliſh pound. But this is no certain weight; for at Roſetto the *adeb* is only one hundred and fifty okes.

ADEC ſignifies ſour milk.

ADECTOS, an epithet applied to a medicine that allays the ſenſe of pain, or the uneaſineſs created by ſtimulants.

ADEL-*fiſh*, a name given by ſome nations to the *lavaretus*, or *albula nobilis.*

Theſe are generally treated of by authors as two different kinds of fiſh. But Artedi contends, that they are the ſame ſpecies, and diſtinguiſhes them by the name of the *coregonus*, with the upper jaw flat, and longer than the under; and with fourteen rays in the back fin.

ADELING. See ATHELING.

ADELPHIANI, in *Church Hiſtory*, a ſect ſo called from their leader *Adelphius.*

They were ſingular in this, that they kept the Sabbath as a faſt.

ADELSCALC, in *Ancient Cuſtoms*, denotes a ſervant of the king.

The word is alſo written *adelſcalche*, and *adelſcalcus*. It is compounded of the German *adel*, or *edel*, *noble*, and *ſcalc*, *ſervant*. Among the Bavarians, *adelſcalcs* appear to have been the ſame with royal *thanes* among the Saxons, and thoſe called *miniſtri regis* in ancient charters.

ADEMPTION, ADEMPTIO, in the *Civil Law*, the REVOCATION of a grant, donation, or the like.

The *ademption* of a legacy may be either *expreſs*; as when the teſtator declares in form, that he revokes what he had bequeathed: or *tacit*, as when he only revokes it indirectly, or implicitly. See RECISSION.

Thus if A by will gives his daughter M 1000*l.* to be firſt paid after his debts, beſide a ſhare out of the dividend of his eſtate; and afterward, on her marriage, an agreement be made for what ſhe ſhould have out of A's eſtate, that it ſhould be only 1100*l.* which ſhould be in full of what was intended thereout; this agreement is an *ademption* of the legacy.

ADEN, a gland. See GLANDULA.

ADENANTHERA, in *Botany*, the name of a genus of plants belonging to the claſs of *decandria monogynia*, the characters of which are theſe: the perianthium is very ſmall, and is compoſed only of one leaf divided into five ſegments at the edge. The flower conſiſts of five leaves, and is of a campanulated form. The petals are pointed and ſeſſile, and they turn inwards, and are hollowed underneath. The ſtamina are ten erect tubulated filaments, a little ſhorter than the flower; and the antheræ are roundiſh and incumbent, and bear on their exterior apex a globoſe glandule. The germen of the piſtil is oblong and gibbous on the back in the lower part. The ſtyle is tubulated, and of the length of the ſtamina, and the ſtigma is ſimple. The fruit is a long compreſſed pod, in which are ſeveral round ſeeds.

ADENOGRAPHY, that branch of *Anatomy* which deſcribes the glands, and glandular parts of the body.

The word is compounded of *αδην*, *gland*, and *γραφω*, *I deſcribe.*

Adenography is the ſame with what ſome others call *adenology*, or the adenological part of *Anatomy.*

ADENOS, a kind of cotton, otherwiſe called marine cotton. It comes from Aleppo by the way of Marſeilles, where it pays 20 *per cent.* duty, according to the TARIFF of the year 1706. Its valuation, by the ſame *tariff*, is of 76 livres, 16 ſols.

ADENOSUS *abſceſſus*, in *Medicine*, a crude hard tubercle, difficult of diſcuſſion, and reſembling the appearance of a gland.

ADEPS, among *Phyſicians*, fat. This is an animal oil, ſecreted from the blood, and contained in the *membrana adipoſa*, or, as Boerhaave calls it, the *membrana celluloſa*; which is not a ſingle membrane, but a *congeries* of a great number of membraneous *laminæ*, joined irregularly to each other at different diſtances, ſo as to form numerous interſtices of different capacities, which communicate with each other. Theſe interſtices have been named *cellulæ*, and the ſubſtance made up of them, the cellulous ſubſtance.

Theſe cellular interſtices are ſo many little bags or ſatchels, filled with an unctuous or oily juice, more or leſs liquid, which is called *fat*; the different conſiſtence of which depends not only on that of the oily ſubſtance, but on the ſize, extent, and ſubdiviſion of the cells.

Neumann divides *fats*, from their conſiſtence, into three kinds; the firſt, called *pinguedo*, is ſoft and thin, and becomes liquid in a very ſmall heat; ſuch is that which we meet with in birds, reptiles, and fiſhes (the very large fiſhes excepted.) The ſecond is thick, liquifies leſs readily, and is denominated *axungia*. The third is more hard and firm; when taken from the animal it is called *adeps*, and when freed from the ſkins, &c. *ſevum*. The two laſt kinds of *fat* are chiefly found in quadrupeds.

In ſome parts of the body, the fat ſerves for a cuſhion, pillow, or mattreſs; as on the *nates*, where the *laminæ* and cells are very numerous. In other parts this membrane has few or no *laminæ*, and conſequently little or no fat; as on the forehead, elbows, &c.

In the young *fœtus* there is ſcarce any *fat*; but in the older *fœtus*, *fat* begins to appear. When the child is born, and for ſome years after, it hath much *fat* immediately beneath the ſkin; in men, the *fat* is moſt abundantly ſpread on the *glutei* muſcles.

Fats taken freely as food are difficult of digeſtion; relax and weaken the tone of the ſtomach and inteſtines, and are ſuppoſed likewiſe to render the juices tenacious, and to increaſe the bile.

The medical virtues of *fats*, as manifeſted by experience, are ſuch as ariſe from their uſe in external applications, for ſoftening and ſuppling, for abating pains and ſpaſms, and for promoting maturation. Thoſe that are principally uſed are the *fat* of *vipers*, *hog's lard*, and *mutton ſuet*.

ADEPTS, ADEPTI, a denomination given to the proficients in *Alchemy*; particularly to thoſe who pretend to the ſecrets of the philoſophers ſtone, and the univerſal medicine.

The word is formed from the verb *adipiſci*, *to obtain.*

Ripley, Lully, Paracelſus, Helmont, Hollandus, Sendivogius, &c. are the principal among the *adepti.*

It is a ſort of tradition among the *Alchemiſts*, that there are always twelve *adepti*; and that their places are immediately ſupplied by others, whenever any of the fraternity die.

The term *adepts* is ſometimes more generally applied to thoſe who are proficients in any kind of ſcience.

ADEQUATE, ADÆQUATUM, ſomething equal to, or coextended with, another; and filling the whole meaſure and capacity thereof.

In this ſenſe the word ſtands oppoſed to INADEQUATE.

ADEQUATE, or total, in *Logic*, is applied to the objects of ſcience. The *adequate* object of a ſcience includes the *material* and *formal* object: the *material* object of a ſcience, is that part which is common to it with other ſciences; the *formal* is that which is peculiar to itſelf.

ADEQUATE *ideas*, or *notions*, in *Metaphyſics*, are ſuch images or conceptions of an object, as perfectly repreſent it, or anſwer to all the parts and properties of it.

M. Leibnitz defines an *adequate notion* to be that, of whoſe ſeveral characters we have diſtinct ideas.—Thus, a circle being defined a figure bounded by a curve line which returns into itſelf, and whoſe points are all equally diſtant from a certain intermediate point therein; our notion of a circle is *adequate*, if we have diſtinct ideas of all theſe circumſtances, viz. a curve returning upon itſelf, a middle point, an equality of diſtance, &c.

All SIMPLE ideas are *adequate* and perfect; and the faculty, be it what it will, that excites them, repreſents them entire.

The ideas of modes are likewiſe *adequate*, or perfect; except of thoſe modes which occaſionally become ſubſtances; for when we ſpeak of modes ſeparately exiſting, we only conſider them ſeparate from the ſubſtance by way of abſtraction.

All abſtract ideas are alſo *adequate* and perfect; ſince they repreſent all that part of the ſubject which we then conſider.—Thus, the idea of roundneſs is perfect, or *adequate*, becauſe it offers to the mind all that is in roundneſs, in general.

Of the ſame kind are all ideas, of which we know no original, or external object really exiſting out of the mind, by occaſion of which they were excited in us, and of which we think them the images. Thus, when a dog is before us, it is the external object without us which raiſes the idea in our mind; but the idea of an animal, in general, has no external object to excite it: it is created by the mind itſelf, and muſt of neceſſity be *adequate* or perfect.

On the contrary, the ideas of all ſubſtances are *inadequate* and imperfect, which are not formed at the pleaſure of the mind, but gathered from certain properties, which experience diſcovers in them.

This is evident, becauſe our knowledge of ſubſtance is very defective; and we are only acquainted with ſome of their properties: thus, we know that ſilver is white, that it is malleable, that it melts, &c. but we do not know what farther properties it may have; and we are wholly ignorant of the inward texture of the particles whereof it conſiſts.—Our idea of ſilver therefore not repreſenting to the mind all the properties of ſilver, is *inadequate* and imperfect.

ADERAIMIN, ſee ALDERAIMIN.

ADES, or HADES, *αδης*, from *α* and *ιδω*, denotes the inviſible ſtate. In the heathen mythology, it comprehends all thoſe regions that lie beyond the river Styx, viz. Erebus, Tartarus, and Elyſium. See HELL.

ADESSENARII, a name given to thoſe who hold that Jeſus Chriſt is really preſent in the euchariſt; but in a manner different from what the Romaniſts hold.

From the Latin verb *adeſſe*, *to be preſent.*

The *Adeſſenarii*, called alſo *Impanatores*, are divided into four different opinions touching the point.—Some hold that the body of Jeſus Chriſt is in the bread; others, that it is about the bread; others, that it is with the bread; and, laſtly, others, that it is under the bread. See IMPANATION.

ADFECTED *equation* is that where the unknown quantity is found in two or more different degrees, or powers. E. gr. $x^3-px^2+qx=a^2b$; where there are three different powers of x; viz. x^3, x^2, and x^1. See EQUATION.

ADFILIATION, ADFILIATIO, is uſed to ſignify a Gothic cuſtom; where a perſon remarrying, who has children by a former bed, renders them capable of inheriting equally with the common children of both parties.

This is done by agreement, and is otherwiſe called, by ſome, *adoptio per matrimonium.*

This cuſtom is ſtill retained in Germany, under the name *einkindſchafft*, and *unio prolium.*

But the learned Heineccius obſerves, that the *unio prolium* is not an ADOPTION.

ADHATODA, in *Botany*, the Malabar nut. See JUSTICIA.

Tournefort enumerates four ſpecies of this plant, which by Houſton and Linnæus is called JUSTICIA, a name given to it in the Zeylanic tongue, from its virtue of expelling the dead fœtus, which it ſignifies.

ADHESION, ADHERENCE, in *Phyſics*, the act of two bodies which are joined or faſtened to each other, either by the mutual impreſſion of their own parts; or the compreſſion of external bodies. See COHESION.

The word is compounded of *ad*, *to*; and *hærere*, *to ſtick.*

Anatomiſts ſometimes obſerve proſphyſes, or *adheſions* of the lungs to the ſide of the thorax, the pleura, and diaphragm, which give occaſion to various diſorders.

The *adheſions* of two poliſhed planes, and two hemiſpheres, are phænomena urged in behalf of the weight and preſſure of the ATMOSPHERE.

The argument drawn from the *adheſion* of two poliſhed planes, urged in behalf of the weight and preſſure of the atmoſphere, might be objected to, as this preſſure is not ſufficient to produce the effect, and that poliſhed bodies will adhere very ſtrongly, even in an exhauſted receiver.

However, it is certain, that the air contributes in part to this ADHESION.

Dr. Deſaguliers has given experiments of the *adheſion* of leaden bullets to each other: the cauſe of which is reſolved into the principle of ATTRACTION. Phil. Tranſ. N° 389.

We alſo read of *adheſions* of the dura mater to the cranium; of the ſtone to the bladder; though ſome combat this laſt as a chimera; at leaſt the inſtances of it appear to be rare.

We have alſo ſeveral caſes of *adheſions* of the inteſtines, mentioned in the Philoſophical Tranſactions, Number 481.

Adhesion, in *Logic.* The ſchoolmen diſtinguiſh two kinds of *certitude*; the one of *ſpeculation*, which ariſes from the evidence of the thing; and the other of *adheſion*, or attachment, which does not depend on the evidence, but on the importance of the matter, and the intereſt we have in its truth.

Adhesion, or Adherence, is alſo uſed for the perſiſting in a former opinion or reſolution.—After the free conference between the two houſes, concerning the bill for preventing occaſional conformity, when the lords retired, and it came to the final vote of *adhering*, they were ſo equally divided, that in three queſtions put on different heads, the *adhering* was carried but by one vote in every one, and by a different perſon each time.—The commons likewiſe *adhered*; and thus the bill was loſt.

ADHIL, in *Aſtronomy*, a ſtar, of the ſixth magnitude, upon the garment of Andromeda, under the laſt ſtar in her foot.

ADHOA, in *Ancient Cuſtoms*, denotes what we otherwiſe call RELIEF.

In which ſenſe, we ſometimes alſo find the word written *adoha*, *adhoamentum*, and *adhogamentum*.

ADJACENT, or Adjoining, ſomething ſituate near, or aſide of another; of *ad*, *to*, and *jacere*, *to lie.*

ADIANTUM, *Maidenhair*, in *Botany*, the name of a genus of plants, the characters of which are theſe: the flowers are not diſcovered. The ſeeds are contained in ſpherical capſules, placed in the ſinuſes and complications of the leaves, and ſurrounded each with an elaſtic ring, which contracting, burſts the capſule, and ſcatters abroad the minute ſeeds. To this it is to be added, that the leaves of the maidenhairs have all one general appearance, by which they are eaſily diſtinguiſhed at ſight, from the other plants of the fern kind. See *Tab.* 1 *of Botany*, *Claſs* 16.

Tournefort enumerates twenty ſpecies of this plant.

In the Linnæan ſyſtem of *Botany*, the general character of the *adianta* is, their having the fructifications in form of oval ſpots, diſpoſed in cluſters under the reflected tops of the leaves; and they are claſſed with the *cryptogamia filices.*

The *adiantum* is eſteemed a great pectoral, and gives name to a ſyrup much in uſe for that intention. It is alſo ſaid to be a remover of obſtructions, both of the kidneys and the menſes, though little uſed in thoſe intentions. Its eſſence is by ſome commended in hypochondriac and hyſteric complaints.

Adiantum *aureum*, called alſo *muſcus capillaris*, *polytrichum aureum medium*, C. B. *polytrichum nobile*, *vel primum*, *polytrichum apulei aureum*, &c. in Engliſh, *golden maiden*-HAIR, is of the moſs kind. It grows in heathy and boggy ground. It is a good ſudorific, and its infuſion drank hot is recommended againſt pleuriſies. Camerarius gives a relation of this plant riſing ſpontaneouſly out of the ruins of a town burnt down in Germany; as the *eriſymum vulgare* did from the ruins of London.

The various ſpecies of this plant abound with a neutral ſaponaceous quality, approaching to nitre; with their mucilage they impart all their virtue to boiling water. The beſt preparation, therefore, of the plant, is a ſtrong infuſion made with boiling water, and ſweetened with liquorice root. The French make a ſyrup of the *adiantum verum*, and flavour it with orange flower water; and a ſyrup is made in America of the *adiantum Canadenſe*, with maple ſugar. Our confectioners prepare a ſyrup of it, which they ſell under the name of *capillaire.* Theſe ſyrups are eſteemed in diſorders of the breaſt; as they allay tickling coughs from defluxions of thin rheum, and aſſiſt the expectoration of phlegm.

ADIAPHORISTS, Adiaphoristæ, or Adiaphorites, a name given in the ſixteenth century to the moderate LUTHERANS, who adhered to the ſentiments of Melanchthon; and afterwards to thoſe who ſubſcribed the interim of Charles V.

The word is compounded of the privative *α*, and διαφορος, *different.*

ADIAPHOROUS, Adiaphorus, is a name given by Mr. Boyle to a kind of ſpirit diſtilled from tartar, and ſome other vegetable bodies; and which is neither acid, vinous, nor urinous; but in many reſpects different from any other ſort of ſpirit.

ADIAPNEUSTIA, ſignifies defective perſpiration, from denſe pores, &c.

ADIAPTOTOS; the Greek word ſignifies *firm*; but it is a name given by phyſicians to a remedy for the cholic, which is ſtone parſley, henbane-ſeed, white pepper, &c. made into an electary.

ADIARRHOEA, in *Medicine*, ſignifies a total ſuppreſſion of all the neceſſary evacuations.

ADICE, ſee NETTLE.

ADJECTIVE, in *Grammar*, a kind of noun joined with a ſubſtantive, either expreſſed or implied, to ſhew its qualities, or accidents.

The word is formed of the Latin *adjicere*, *to add to*; as deſigned to be added to a ſubſtantive, without which it has no preciſe ſignification.

Father Buffier defines *adjectives* in a manner ſomewhat different from other grammarians.—Nouns, according to him, are ſubſtantives, when the objects which they repreſent are conſidered ſimply, and in themſelves, without any regard to their qualities: on the contrary, they are *adjectives*, when they expreſs the quality of an object. Thus, when I ſay ſimply, *an heart*, the word *heart* is a ſubſtantive, becauſe none of its qualities are expreſſed; but when I ſay, *a generous heart*, the word *generous* is an *adjective*; becauſe it adds a quality, or attribute, to the heart. *Adjectives*, then, appear to be nothing elſe but modificatives.

In effect, the end of an *adjective* being only to expreſs the quality of an object; if that quality be the object itſelf whereof we ſpeak, it becomes a ſubſtantive; e. gr. if I ſay, *this book is good*; *good*, here, is an *adjective*; but if I ſay, *good is always to be choſen*, it is evident *good* is the ſubject I ſpeak of; and conſequently, *good*, there, is the ſubſtantive.

On the contrary, it often happens in other languages, and ſometimes in our own, that a ſubſtantive becomes an *adjective*; as, for inſtance, in theſe words: *the king, hero as he is, remembers he is a man*; where the word *hero*, though ordinarily a ſubſtantive, is yet apparently an *adjective.*

From this idea of an *adjective*, it appears that many of the nouns, which, in the common grammars, are accounted ſubſtantives, are really *adjectives*, and *vice verſa*; grammar in this, and a thouſand other inſtances, depending upon cuſtom.

Some diſtinguiſh *adjectives* into *phyſical* and *metaphyſical*; the former being uſed to diſtinguiſh phyſical eſſences, in conſequence of the immediate impreſſions they make upon us; the latter to denote thoſe which are metaphyſical and abſtracted, in conſequence of ſome operation of our minds with regard to them.—Again,

Adjectives, in *Logic*, are divided into four kinds; the *nominal*, the *verbal*, the *numeral*, and the *pro-nominal.* The *nominal* are thoſe which diſtinguiſh certain ſpecies by ſome inherent and permanent quality, which ariſes either from the nature of the thing, or from its form or ſituation; ſuch as *good*, *black*, *round*, *external*, &c. The *verbal*, are thoſe which denote ſome accidental or adventitious quality, which appears to be the effect of an action which paſſes, or has paſſed, in the thing under conſideration; ſuch as *rampant*, *domineering*, *careſſing*, *embelliſhed*, &c. *Numeral adjectives* are thoſe which rank any ſubject in numerical order, as, *firſt*, *ſecond*, *laſt*, &c. *Pro-nominal* are thoſe which do not concern either ſpecies, action, or arrangement, but are merely indications of individuality; theſe *adjectives* are either *perſonal*, as *mine*, *thine*, &c. or they have a vague and indeterminate meaning, ſuch as, *ſome*, *one*, *many*, &c. or laſtly, they ſerve the purpoſe of mere indication, ſuch as, *this*, *that*, *ſuch*, &c.

Verbal and *nominal adjectives*, are alſo called CONCRETES.

AD INQUIRENDUM, a judicial writ, commanding inquiry to be made of any thing touching a cauſe depending in the king's court, for the better execution of juſtice; as of baſtardy, or the like. Reg. Judic.

ADJOINING is particularly uſed for the aſſociating of a perſon to another; or appointing him a collegue, or ADJUNCT.

ADJOURNMENT, in *Law*, the putting off a COURT, or meeting; and appointing it to be kept at another time or place.

The word is formed of the Latin *ad*, *to*; and the French *jour*, *day*, q. d. another day.

In which ſenſe, we meet with the phraſe *adjournment in eyre*, for an appointment of a day when the juſtices in eyre intend to ſit again.

Adjournments in parliament differ from *prorogations.*

And each houſe has the privilege of *adjourning* itſelf.

ADIPOSUS, fat, or fatty. The word is chiefly uſed in *Anatomy*, as an epithet of certain cells, ducts, membranes, and veſſels, e. g. MEMBRANA & VASA *adipoſa* CELLULÆ *adipoſæ*, DUCTUS *adipoſi*, &c. See ADEPS.

ADIPSON, from the privative α, and διψα, *thirſt*; a name given by Hippocrates to oxymel; who ſays alſo that the *ptiſſana*, by its glutinouſneſs, prevents or cures thirſt. Medicines adminiſtered for allaying thirſt are called by this name.

ADIPSOS ſignifies the Egyptian palm-tree, liquorice, and a pill, or catapotium, compoſed by Aſclepiades, and mentioned by Galen.

ADIRATUS, a price or value ſet upon things ſtolen or loſt, as a recompence to the owner.

ADIRIGE ſignifies *ſal ammoniacum*.

ADIT, in a general ſenſe, denotes the approach to, or entrance of any thing.

The word is originally Latin, *aditus*, formed from *adire*, *to go to*.

In which ſenſe, we meet with *adit* of a houſe, *adit* of a theatre, of the circus, &c.

ADIT *of a* MINE, the hole, or aperture, whereby it is entered and dug, and by which the water and ores are carried away.

Adit of a mine amounts to the ſame with *cuniculus*, or *drift*, and is diſtinguiſhed from AIR-*ſhaft*. Phil. Tranſ. N° 69.

The *adit* is uſually made on the ſide of a hill, towards the bottom thereof, about 4, 5, or 6 feet high, and 8 wide, in form of an arch; ſometimes cut in the rock, and ſometimes ſupported with timber, ſo conducted, as that the ſole or bottom of the *adit* may anſwer to the bottom of the ſhaft, only ſomewhat lower, that the water may have a ſufficient current to paſs away, without the uſe of the pump.

Damps, and the impurity of the air, are the great impediments againſt driving *adits* above 20 or 30 fathoms, by reaſon of the neceſſity, in this caſe, of letting down air-ſhafts from the day to meet the *adit*, which are often very expenſive, both on account of the great depth of mines, and the hardneſs of the mineral ſtrata to be cut through. The beſt remedy againſt this, is that practiſed in the coal-mines near Liege, where they work their *adits* without air-ſhafts: the manner of which is deſcribed by Sir Robert Moray. Vid. Phil. Tranſ. N° 5.

Adit of a mine, is ſometimes uſed for the AIR-*ſhaft* itſelf, being a hole driven perpendicularly from the ſurface of the earth into ſome part of a mine, to give entrance to the air.

In this ſenſe we ſometimes find it improperly written *addit*. Phil. Tranſ. N° 200.

To draw off the ſtanding water in winter, in deep mines, they drive up an *adit*, or AIR-*ſhaft*, upon which the air diſengages itſelf from the water, when it begins to run, with ſuch violence, as produces a noiſe equal to the burſting of a cannon, daſhes every thing in the way againſt the ſides of the mine, and looſens the very rocks at a diſtance. Ibid. N° 26.

ADIT *in ſhips*, in *Antiquity*, was a ſpace in the upper part, where the ſhip was wideſt, at which people entered, anciently called *agea*.

ADITS *of a theatre*, *aditus theatri*, in *Antiquity*, were doors on the ſtairs, whereby perſons entered from the outer porticos, and deſcended into the ſeats.

ADJUDGING, in *Law*, the act of paſſing a determinate ſentence in behalf of a perſon.

ADJUDICATION, the act of adjudging the property of a thing to a perſon by a legal ſentence, decree, or judgment.

ADJUDICATION is more particularly uſed for the addiction, or conſigning a thing ſold by auction, or the like, to the higheſt bidder.

ADJUNCT, ADJUNCTUM, in *Philoſophy*, ſomething joined or ſuperadded to a being from without. See ADJUNCTION.

Or, an *adjunct* is an additament or acceſſion to a thing, not eſſentially belonging to it, but only accidental thereto.

There are two kinds of *adjuncts*; the one, a ſubſtance (whether ſpirit or body) accidentally ſuperadded to another, as its ſubject.—Such is water in a ſponge, or veſſel, and ſuch is the ſoul in the body.

The ſecond an attribute or mode, accidentally likewiſe ſuperadded to a ſubſtance, whether body or ſpirit.—Such is figure in a body, knowledge in the mind, &c.

Some divide *adjuncts* into *abſolute*; which agree to the whole thing, without any limitation: thus, paſſions are *abſolute adjuncts* of a man:—and *limited*, which only agree to their ſubject in reſpect of ſome certain part thereof: thus, man only thinks, conſidered as to his mind; only grows, as to his body, &c.

In ethics, we uſually reckon ſeven *adjuncts*, popularly called *circumſtances*; *quis*, *quid*, *ubi*, *quibus auxiliis*, *cur*, *quomodo*, *quando*.

ADJUNCTS, in *Rhetoric* and *Grammar*, are certain words or things added to others; to amplify the diſcourſe, or augment its force.

Such are adjectives, attributes, and epithets, which are added to ſubſtantives, ſubjects, &c. to expreſs their nature, qualities, accidents, &c.

Arguments drawn from *adjuncts*, are ſupplements or enforcements of the proof ariſing from the circumſtances of the fact.

ADJUNCT is alſo uſed in civil concerns, for a COLLEGUE, or fellow-officer, aſſociated to another, to aſſiſt him in his miniſtry.

ADJUNCT *gods*, or ADJUNCTS *of the gods*, in *Mythology*, among the Romans, were a kind of inferior deities, added as aſſiſtants to the principal ones, to eaſe them in their functions.

Thus, to Mars was adjoined Bellona and Nemeſis; to Neptune, Salacia; to Vulcan, the Cabiri; to the good Genius, the Lares; to the Evil, the Lemures, &c.

ADJUNCTS, or ADJOINTS, in the *Royal Academy of Sciences at Paris*, denote a claſs of members, attached to the purſuits of particular ſciences.

The claſs of *adjuncts* was created in 1716, in lieu of the *eleves*: they are twelve in number; two for geometry, two for mechanics, two for aſtronomy, two for anatomy, two for chemiſtry, and two for botany.—The *eleves* not taken into this eſtabliſhment were admitted on the foot of ſupernumerary *adjuncts*. See ACADEMY.

ADJUNCTION, the act of joining, or adding, of one thing to another.

All *adjunction* implies a ſubordination.—The *adjunct* is for the ſake of a thing it is joined to, not contrary-wiſe; as, the cloaths for the man; not the man for the cloaths.—Whatever is part of a thing, cannot be called an *adjunct* of it.

There are various ſpecies of *adjunction*; viz. by ADHESION, by APPOSITION, ADJACENCY, ACCUBATION, INCUBATION, IMPOSITION, ASSESSION, &c.

AD JURA REGIS, is a writ that lies for the king's clerk againſt him who endeavoured to eject him, to the prejudice of the king's title in right of his crown.

ADJURATION, a part of exorciſm, wherein the devil is commanded, in the name of God, to depart out of the body of the poſſeſſed, or to declare ſomething.

ADJUTAGE. See AJUTAGE.

ADJUTANT, in the *Military Art*, an officer in the army, whoſe buſineſs it is to aid and aſſiſt the major.

Adjutant is the ſame that we otherwiſe call *Aid-Major*.

In the cavalry, each regiment has an *adjutant*, and in the infantry, each battalion.

The *adjutant* receives the orders every night from the brigade-major, which, after he has carried to the colonel, he delivers out to the ſerjeants. Where detachments are to be made, he gives the number each company muſt furniſh, and aſſigns the hour and place of rendezvous. He alſo places the guards, receives and diſtributes ammunition to the companies, and, by the major's orders, regulates the price of bread, beer, &c.

ADJUTANT is ſometimes alſo uſed by the French for an *aid de camp*.

The word is formed of the Latin *adjutare*, *to aſſiſt*.

ADJUTANT, among the *Jeſuits*. The general of the Jeſuits had a ſelect number of fathers of that order reſiding with him, under the denomination of *adjutants-general*; who had each their ſeveral province, or country, under their care, as France, England, &c. Their buſineſs was to inform the father-general of the occurrences of ſtate in ſuch countries; to which end, each of them had their correſpondents, delegated emiſſaries, viſitors, regents, provincials, &c. See JESUITS.

ADJUTORIUM, in *Anatomy*, the *humerus*, or ſhoulder-bone.

It is thus called from *adjuvare*, *to help*.

Some authors uſe this word for a medicine intended only as auxiliary, or ſubſervient to another of greater efficacy: in particular, after a due uſe of internals, for an external remedy, applied to a part affected, to aſſiſt in, and complete the cure.

ADJUVANTIA, ſee JUVANTIA.

ADLE *egg*, that which is not fecundified by the cock's tread.

Adle egg is the ſame with what is otherwiſe called a *ſubventaneous* one.

Adle eggs, after incubation, are found to contain a ſhapeleſs, globoſe, aſh-coloured body, not unlike a *mola*. Phil. Tranſ. N° 87.

ADLEGATION, in the *Public Law* of the German empire, a right claimed by the ſtates of the empire of adjoining plenipotentiaries, in public treaties and negociations, to thoſe of the emperor, for the tranſacting of matters which relate to the empire in general.

In which ſenſe *adlegation* differs from *legation*, which is the right of ſending ambaſſadors on a perſon's own account.

Several princes and ſtates of the empire enjoy the right of *legation*, who have not that of *adlegation*, and *vice verſa*. The biſhops, for inſtance, have the right of *adlegation* in treaties which concern the common intereſt, but no right of *legation* for their own private affairs. The like had the duke of Mantua.

The emperor allows the princes of Germany the privilege of *legation*, but diſputes that of *adlegation*. They challenge it as belonging to them *jure regni*, which they enjoy in common with the emperor himſelf. Ludwig has a diſcourſe on the ſubject, wherein the controverſy is treated at large.

ADLOCUTION, ADLOCUTIO, in *Antiquity*, is chiefly underſtood of ſpeeches made by Roman generals to their armies, to encourage them before a battle. We frequently find theſe *adlocutions* expreſſed on medals, by the abbreviature ADLOCUT. COH.

The general is ſometimes repreſented as placed on a tribunal; often on a bank or mount of turf, with the cohorts ranged orderly round him, in *manipuli* and *turmæ*. The uſual formula in *adlocutions* was, *fortis eſſet ac fidus*.

ADMANUENSES, in ancient *Law* books, denote perſons who ſwore by laying their hands on the book.

The word is compounded of the Latin *ad*, *to*, and *manus*, *hand*.

In which ſenſe, *admanuenſes* amount to the ſame with laymen, and ſtand oppoſed to clerks, who were forbid to ſwear on the book, their word being to be reputed as their oath; whence they were alſo denominated *fide digni*.

ADMEASUREMENT, ADMENSURATIO, in *Law*, a writ which lies for the bringing thoſe to reaſon, or mediocrity, who uſurp more of any thing than their ſhare.

This writ lies in two caſes; termed,

ADMEASUREMENT *of Dower*, *Admenſuratio dotis*, where the widow of the deceaſed holds more from the heir, or his guardian, on account of her dower, than of right belongs to her. And,

ADMEASUREMENT *of Paſture*, *Admenſuratio paſturæ*; this lies between thoſe who have COMMON of paſtures appendant to their freehold, or common by vicinage, in caſe any of them ſurcharge the common with more cattle than they ought.

ADMINICLE, or ADMINICULE, ADMINICULUM, a term uſed in ſome ancient ſtatutes, for aid, help, or ſupport. Stat. 1 Edw. IV. cap. 1.

ADMINICULATOR, in *Eccleſiaſtical Writers*, denotes an ancient officer of the church, whoſe buſineſs was to defend the cauſe of widows, orphans, and others deſtitute of help. The *adminiculator* is the ſame with what is otherwiſe called ADVOCATE of the poor.

ADMINICULES, among *Antiquaries*, are applied to the attributes, or ornaments, wherewith Juno and ſome other figures are repreſented on medals.

ADMINICULUM, in the French *Juriſprudence*, ſignifies the beginning of a proof; an imperfect proof; or a circumſtance or conjecture, tending to form or fortify a proof.

ADMINISTRATION imports the government or direction of affairs; and particularly the exerciſe of diſtributive juſtice.

Indolent princes confide the *adminiſtration* of public affairs to their miniſters.—Civil wars are uſually raiſed on pretence of *male-adminiſtration*, or of abuſes committed in the exerciſe of juſtice, &c.

The two criterions of a good *adminiſtration* in England, according to Trenchard, are, the keeping the nation out of foreign broils, and paying off the public debts; the latter of which depends on the former.

ADMINISTRATION, in the Engliſh *Law*, ſignifies the act, or office, of an adminiſtrator, in managing and diſpoſing of a man's goods, or eſtate, that died inteſtate, or without any will; with an intent to give an account thereof.

In this caſe, inſtruments, or powers, called letters of *adminiſtration*, are taken out in the prerogative court.

Theſe letters muſt be granted, 1. to the huſband of the wife's goods and chattels; 2. to the wife of the huſband's goods and chattels; 3. if there is no huſband or wife, to the children, ſons or daughters; 4. if there be no children alive, to the father or mother; 5. then to a brother or ſiſter of the whole blood, or of the half blood, (who, for this purpoſe, are of equal degree with the whole blood); 6. and if there are none ſuch, to the next of kin, as uncle, aunt, or couſin; 7. then to a creditor of the deceaſed; 8. and for want of all theſe, to any other perſon, at the diſcretion of the ordinary; or the ordinary may grant to a ſtranger letters *ad colligendum bona defuncti*, to gather up the goods of the deceaſed; or may take them into his own hands to pay the deceaſed's debts, in ſuch order as an executor or adminiſtrator ought to pay them. But it is ſaid he or the ſtranger, who hath letters *ad colligendum*, cannot ſell them, without making themſelves executors of their own wrong, and action lies only againſt the ordinary, &c. Wood's Inſt. 333.

By Stat. 21 Hen. VIII. widows, and next of kin, are to be appointed adminiſtrators, and a mother is to have *adminiſtration* of goods of a child, before a brother or ſiſter, &c. But an *adminiſtration* may be granted to the father before a widow; and a reſiduary legatee ought to be preferred before the widow in an *adminiſtration cum teſtamento annexo*. 3 Salk. 21.

On granting *adminiſtration*, bonds with ſureties are to be taken for the adminiſtrator, to make and exhibit an inventory of the goods of the deceaſed, to render a juſt account thereof, and to make a diſtribution of the ſurpluſage after debts paid, according to law, &c. Stat. 22 and 23 Car. II. cap. 10. See ADMINISTRATOR, EXECUTOR, INTESTATE, KINDRED.

ADMINISTRATION is ſometimes alſo uſed for the direction of the affairs of a minor, a pupil, a lunatic, or the like.

ADMINISTRATION is alſo uſed in reſpect of eccleſiaſtical functions.—The parſon has the *adminiſtration* of the ſacraments in his pariſh.—*Adminiſtration* of the euchariſt is prohibited to perſons excommunicate.

In beneficiary matters they diſtinguiſh two kinds of *adminiſtration*; *temporal*, which relates to the temporalities of a benefice, dioceſe, &c. and *ſpiritual*, to which belong the power of excommunicating, &c.

ADMINISTRATION, in *Anatomy*, is uſed for the manner of diſſecting the parts of the body, particularly the MUSCLES.

In which ſenſe, *adminiſtration* is ſynonymous with *encheireſis*, *exerciſe*, &c.

Anatomical *adminiſtrations* are not to be learned by oral precepts, but require ocular inſpection.—Galen, Harvey, and others, have diſcourſes expreſs under the title of anatomical *adminiſtrations*.

ADMINISTRATION, in *Commerce*, is alſo uſed for a Spaniſh ſtaple at Calao in Peru, a city on the coaſts of the South Sea, where all ſhips, allowed to trade on the coaſt, are obliged to unload their European goods, and pay certain duties.

ADMINISTRATOR, in *Law*, he to whom the ordinary commits the *adminiſtration* of the goods of a perſon deceaſed, in default of an executor.

An action lies for, or againſt, an *adminiſtrator*, as for, or againſt, an executor; and he ſhall be accountable to the value of the goods of the deceaſed, and no farther:—unleſs there be waſte, or other abuſe chargeable on him: If the *adminiſtrator* die, his executors are not *adminiſtrators*; but the court is to grant a new adminiſtration.—If a ſtranger, who is neither *adminiſtrator*, nor executor, take the goods of the deceaſed, and adminiſter, he ſhall be charged, and ſued as an executor, not as an *adminiſtrator*.

The origin of *adminiſtrators* is derived from the civil law. Their eſtabliſhment in England is owing to a ſtatute made in the thirty-firſt year of Edward III. Till then, no office of this kind was known, beſide that of executor: in caſe of a want of which, the ordinary had the diſpoſal of goods of perſons inteſtate, &c.

There are divers ſorts of *adminiſtrators*.

Adminiſtrator durante minore ætate, is where an infant is entitled to adminiſtration of the goods of an inteſtate; in which caſe adminiſtration is granted to another, until he is of the age of twenty-one years. Though where the infant is made executor, ſuch adminiſtration, during his minority, ceaſing at his coming to the age of ſeventeen. 5 Rep. 29. 6 Rep. 27.

Adminiſtrator cum teſtamento annexo, is one to whom adminiſtration, with the will annexed, is granted, upon an executor's refuſal to prove the teſtament, or upon his dying before the probate. 1 Inſt. 113.

Adminiſtrator de bonis non, &c. is one to whom adminiſtration is granted of the goods of a teſtator remaining unadminiſtered, by reaſon of his executor's dying inteſtate. 2 Roll. Abr. 907. There is alſo

Adminiſtrator pendente lite; and *durante abſentia extra regnum*.

If a woman have goods thus committed to her charge, or adminiſtration, ſhe is called *adminiſtratrix*; and is accountable, &c. in like manner as an *adminiſtrator*.

ADMINISTRATOR is alſo uſed for the advocate of a church.

ADMINISTRATOR is alſo uſed for a perſon appointed to receive, manage, and diſtribute the revenues of an hoſpital, or religious houſe.

ADMINISTRATOR is alſo uſed for a prince who enjoys the revenues of a ſecularized biſhoprick.

Yet this title does not hold univerſally: the king of England, as elector of Brunſwic-Lunenburg, for inſtance, is not called *adminiſtrator*, but duke of Bremen and Verden; and the king of Pruſſia is not *adminiſtrator*, but duke of Magdeburg, and prince of Halberſtadt.

ADMINISTRATOR is alſo uſed for the regent or protector of a kingdom, during the minority of its proper prince, or even a vacancy of the throne.

The pope pretends to the *adminiſtration* of the empire, during a vacancy, by cenſure, or ſuſpenſion.

ADMINISTRATOR is ſometimes uſed for the preſident of a province.

ADMINISTRATRIX, ſee ADMINISTRATOR.

ADMIRAL, ADMIRALIUS, ADMIRALLUS, a great officer, who commands the naval forces of a kingdom or ſtate, and takes cognizance by himſelf, or officers appointed by him, of all maritime cauſes.

Authors are divided about the origin and denomination of this important officer, whom we find eſtabliſhed, with ſome variation, in moſt kingdoms that border on the ſea.

Du Cange aſſures, that the Sicilians were the firſt, and the Genoeſe the next after them, who gave the denomination *admiral* to the commanders of their naval armaments; and that they took it from the Saracen, or Arabic *amir*, a general name for any commanding officer.—The firſt *admiral* we read of in Engliſh hiſtory was under Edward I. But the firſt title of *admiral* of England conferred upon a ſubject, was given by patent of Rich. II. to the earl of Arundel and Surrey.

ADMIRAL *of England, the lord high*, in ſome ancient records called *capitaneus marinorum*, is judge, or preſident, of the court of admiralty.

He takes cognizance, by himſelf, his lieutenant, or deputies, of all crimes committed on the ſea, or the coaſt thereof; and all the civil and marine tranſactions relating thereto: as alſo of what is done in all great ſhips, riding in any great river, beneath the bridges thereof next the ſea.

Anciently, the *admiral* had alſo juriſdiction in all cauſes of merchants and mariners; not only on the ſea, but in all foreign parts.—We have had no *high admiral* for ſome years; the office being put in COMMISSION, or under the adminiſtration of the lords *commiſſioners of the admiralty*.

ADMIRAL is alſo uſed for the commander in chief of a ſingle fleet, or SQUADRON; and is diſtinguiſhed by a flag diſplayed at his main-top-maſt-head.

Thus, we ſay, the *admiral* of the *red*; the *admiral* of the *white*, and *admiral* of the *blue*. See NAVY and SQUADRON.

The term *admiral* is alſo applied to all flag-officers; in which ſenſe it includes *vice-admirals*, and *rear-admirals*.

ADMIRAL, *Rear*, is the *admiral* of the third, and laſt ſquadron of the royal fleet, and carries his flag at the mizen-top-maſt-head.

ADMIRAL, *Vice*, is one of the three principal officers of the royal navy; who commands the ſecond ſquadron, and has his flag ſet up at the fore-top-maſt-head.

ADMIRAL, *Vice*, is alſo an officer appointed by the lord *high admiral*, in divers parts of the kingdom, with judges and marſhals ſubordinate to him; for the exerciſing of juriſdiction in maritime affairs, within his reſpective limits.

There are upwards of twenty *vice admirals*.—From their deciſions and ſentences, appeal lies to the court of *admiralty* in London.

There are alſo *admirals of the galleys*.

Monſtrelet makes mention of an *admiral of the archers*, or croſs-bow-men. See ARBALET.

ADMIRAL is likewiſe the name of the principal veſſel of a fleet, on board of which is the *admiral*.

When two ſhips of war, bearing the ſame colours, meet in the ſame port, that which arrived firſt, has the title and prerogative of *admiral*; and the other, though of greater ſtrength and rate, ſhall only be accounted *vice-admiral*.—It is pretty much the ſame with the veſſels in the cod and whale fiſhery. That which arrives firſt, in any harbour or creek of Newfoundland, takes the title and quality of *admiral*, which it retains during the whole fiſhing ſeaſon.—Such ſhip may ſecure to herſelf ſo much beech, or flakes, or both, as are neceſſary for the number of boats ſhe ſhall uſe, with an overplus of one boat only more than ſhe uſes.—The maſter of the ſecond ſhip is *vice-admiral*; and the maſter of the third *rear-admiral*. See FISHERY.

ADMIRAL's *Court*, or the *High Court of Admiralty*. See COURT *of* ADMIRALTY.

ADMIRAL, in *Conchology*, the name given by authors to a very beautiful, and very precious ſhell, of the *voluta* kind. See *Tab. of Shells*, N° 10.

Of theſe the curious reckon four ſpecies. 1. The grand *admiral*. 2. The vice-*admiral*. 3. The orange-*admiral*. And, 4. The extra-*admiral*.

The firſt of theſe is the moſt eſteemed, and a ſingle ſhell has been ſold, in Holland, for five hundred florins. It is of a very elegant and bright white enamel, and is variegated with bands of yellow, repreſenting, in ſome degree, the colours of the flags of a man of war at ſea; hence it obtained its name. It is of a very curious ſhape, and formed with particular elegance about the head; the clavicle being exerted. There runs along the center of the large yellow band in this ſhell, a fine denticulated line, which is its diſtinguiſhing character.

The vice-*admiral* is an elegant ſhell, but its head is leſs beautifully wrought than in the *admiral*, and its broad band wants the dentated line, ſo remarkable in that.

The orange-*admiral* has more yellow than either of the others.

The extra-*admiral* has the ſame bands with theſe, but they run one into another, and form a more mixed clouding.

ADMIRATION, in *Grammar*, a note or character, intimating ſomething worthy to be admired, or wondered at.—It is expreſſed thus (!). See CHARACTER.

ADMISSION, ADMISSIO, in the *Eccleſiaſtical Law*, an act whereby a biſhop, upon examination, *admits* or allows a clerk to be able, or competently qualified for the office; which is done by the formula *admitto te habilem*.

All perſons are to have epiſcopal ordination before they are admitted to any parſonage or benefice; and if any ſhall preſume to be admitted, not having ſuch ordination, &c. he ſhall forfeit 100*l.* Stat. 14. Car. II.

No perſon is to be admitted into a benefice with cure of 30*l. per ann.* in the king's books, unleſs he is a bachelor in divinity at leaſt, or a preacher lawfully allowed by ſome biſhop, &c.

ADMITTENDO *Clerico*, is a writ granted to him who hath recovered his right of preſentation againſt the biſhop in the common pleas.

ADMITTENDO *in Socium*, is a writ for the aſſociation of certain perſons to JUSTICES of ASSIZE formerly appointed.

ADMONITION, in *Eccleſiaſtical Affairs*, a part of diſcipline much uſed in the ancient church. It was the firſt act, or ſtep, towards the puniſhment, or expulſion of delinquents. In caſe of private offences, it was performed according to the evangelical rule, privately: in caſe of public offence, openly, before the church. If either of thoſe took effect, for the recovery of the fallen perſon, all farther proceedings, in the way of cenſure, ceaſed: if they did not, recourſe was had to EXCOMMUNICATION. By the ancient canons, nine monitories, or *admonitions*, at due diſtance, are required before excommunication.

ADMONITION is alſo uſed, in writers of the barbarous age, for the CITATION, or ſummoning a perſon to appear in a court of juſtice. See SUMMONS, &c.

ADMONITIO FUSTIUM, a military puniſhment, among the Romans, reſembling, in ſome reſpects, our whipping or laſhing, but performed with a vine-branch.

ADMORTIZATION, among *Feudal Writers*, the act of reducing lands to MORTMAIN.

ADNATA, in *Anatomy*, a thick white membrane, inveſting the ball of the eye; and making the outermoſt coat thereof: called alſo *circumoſſalis & circumcalvalis*.

It is the *tunica adnata* that makes what we commonly call the *white* of the EYE; whence it is alſo called the ALBUGINEA.

The *adnata* ſprings from the *pericranium*, and grows to the exterior part of the *tunica cornea*, ſerving to connect the whole eye both to the *palpebræ*, and the adjacent bones, and thus keep it faſt in the ſocket; whence it is alſo called *conjunctiva*.

To leave room for the viſible ſpecies to paſs through it, a little round aperture is left in the fore-part, called the ſight, through which the IRIS and PUPILLA appear.

The *adnata* abounds with veins and arteries, which, though ordinarily not viſible, are conſpicuous in ophthalmies, which are properly inflammations of this part. The academiſts *Naturæ Curioſi* give the hiſtory of a dropſy of the *adnata*, and its cure. Ephem. Germ. Dec. 3. An. 3. Obſ. 3. p. 4.

ADNATA, or *Adnaſcentia*, among *Gardeners*, denote thoſe off-ſets, which by a new germination under the earth, proceed from the lily, narciſſus, hyacinth, and other flowers, and afterwards grow to true roots. The French call them *cayeux*, *ſtalks*.

ADNATA is alſo a term uſed for ſuch things as grow upon animal or vegetable bodies, whether inſeparably as hair, wool, horns, &c. or accidentally, as the ſeveral epiſtical plants.

ADNOUN, ADNOMEN, or ADNAME, is uſed by ſome *Grammarians* to expreſs what we more uſually call an ADJECTIVE.

ADOLESCENS ſignifies the iron bars that ſupport the fire in a grate or furnace.

AD OCTO, q. d. to the eighth number; a term uſed by ſome ancient philoſophers, to denote the higheſt, or ſuperlative degree: becauſe, in their way of diſtinguiſhing qualities, they reckoned no degree above the eighth.

ADOLESCENCE, ADOLESCENTIA, the ſtate of growing youth; or that period of a perſon's age commencing from his infancy, and terminating at his full ſtature, or manhood.

The word is formed of the Latin *adoleſcere*, *to grow.*

The ſtate of *adoleſcence* laſts ſo long as the fibres continue to grow, either in magnitude or firmneſs.

It is commonly computed to be between 15 and 25, or even 30 years of age; though in different conſtitutions its terms are very different.—The Romans uſually reckoned it from 12 to 25 in boys; and to 21 in girls, &c. —And yet, among their writers, *juvenis* and *adoleſcens* are frequently uſed indifferently, for any perſon under 45 years.

The fibres, being arrived at a degree of firmneſs and tenſion ſufficient to ſuſtain the parts, no longer yield and give way to the efforts of the nutritious matter, to extend them: ſo that their farther accretion is ſtopped from the very law of their nutrition.

ADONAI, one of the names of God in Scripture: this word ſignifies properly *my lords*, in the plural number, as *Adoni*, ſignifies *my lord*, in the ſingular number. The Jews, who either out of reſpect, or ſuperſtition, do not pronounce the name of *Jehovah*, read *Adonai* in the room of it, as often as they meet with *Jehovah* in the Hebrew text. But the ancient Jews were not ſo nice; there is no law which forbids them to pronounce the name of God.

ADONIA, in *Antiquity*, ſolemn feaſts, in honour of Venus, and in memory of her beloved Adonis.

They were begun by the women, who imitated the cries and lamentations of Venus, for the death of her paramour.—When they were weary of lamenting his death, they changed their note, and ſung his praiſes, and made rejoicings, as if he were raiſed to life again: or rather, according to Meurſius, theſe two offices made two diſtinct feaſts, which were held at different times of the year, the one ſix months after the other; Adonis being ſuppoſed to paſs half the year with Proſerpine, and half with Venus.

The *adonia* were obſerved with great ſolemnity by moſt nations, Greeks, Phœnicians, Lycians, Syrians, Egyptians, &c. To theſe the prophet Ezekiel is ſuppoſed to refer, chap. viii. ver. 14.

The *adonia* were otherwiſe called *ſalambo*. The abbé Banier has a memoir on the hiſtory of the ADONIA. Mem. Acad. Inſcript. tom. iv.

ADONIC, in *Poetry*, denotes a ſhort kind of verſe, conſiſting of a dactyl, and a ſpondee, or a trochee.—As *rara juventus.*

It takes its name from Adonis; as having been originally uſed in the Threnæ, or lamentations for that favourite.

The chief uſe of the *Adonic* verſe is at the end of each ſtrophe of Sapphic verſe; or among Ariſtophanic anapæſts in the ancient tragedy. But we meet with *Adonics* by themſelves without Sapphics, as alſo Sapphics without *Adonics.*

ADONIDES, in *Botany*, are thoſe writers, who have given hiſtories, or catalogues of the plants cultivated in ſome particular place.

ADONION, among the *Ancient Botaniſts*, a ſpecies of *ſouthernwood* according to Gorræus, which uſed to be ſet in pots, and ſerved as an ornament for gardens.

ADONIS, in *Zoology*, the name of a ſmall fiſh, of the anguilliform kind, of a cylindric ſhape, and about ſix inches long; it is of a gold colour, mixt with a greeniſh hue in ſome parts, and in others with a reddiſh. It has, on each ſide, a white ſtraight line running from the gills to the tail. Its gills are very remarkable ſmall, and many have ſuppoſed thence that it had none. It is remarkable for ſleeping on the ſurface of the water, and near the ſhores; and Rondeletius affirms, that he has ſeen them ſleeping upon the dry rocks.

Mr. Ray ſuſpects this fiſh, which is alſo called *exocœtus*, to be the ſame with the EXOCOETUS of Bellonius, or the GOTTORUGINE.

Adonis *flos*, ſee PHEASANT'S *Eye.*

Adonis *potio*, an ancient beverage or drink made of wine, mixed with flour of roaſted *ador*; the ſame with what was otherwiſe called CYCEON.

ADONISTS, a ſect or party, among *Divines* and *Critics*, who maintain, that the Hebrew points ordinarily annexed to the conſonants of the word Jehovah, are not the natural points belonging to that word, nor expreſs the true pronunciation of it, but are the vowel-points, belonging to the words *Adonai* and *Elohim*, applied to the conſonants of the ineffable name Jehovah; to warn the readers, that inſtead of the word Jehovah, which the Jews were forbid to pronounce, and the true pronunciation of which had been long unknown to them, they are always to read *Adonai.*

ADOPTER, in *Chemiſtry*, ſee RECEIVER.

ADOPTIANI, in *Church Hiſtory*, a ſect in the eighth century, whoſe diſtinguiſhing tenet was, that Chriſt, as to his human nature, was not the proper, or natural, but only the adoptive ſon of God.

ADOPTION, ADOPTIO, an act by which any one takes another into his family, owns him for his ſon, and appoints him his heir.

The word is derived from *adoptare*; whence the Latin barbarous *adobare*, *to make a knight.*

The cuſtom of *adopting* was very familiar among the ancient Romans, who had an expreſs formula for it.—They firſt learnt it from the Greeks, among whom it was called ὑιοτης, *filiation.*

As *adoption* was a ſort of imitation of nature, intended for the comfort of thoſe who had no children, eunuchs were not allowed to adopt; as being under an actual impotency of begetting children.

Neither was it lawful for a young man to *adopt* an elder; becauſe that would have been contrary to the order of nature; but it was even required, that the perſon who *adopted*, ſhould be eighteen years older than his adoptive ſon, that there might at leaſt appear a probability of his being the natural father.

The Romans had two forms of *adoption*; the one before the pretor; the other at an aſſembly of the people, in the times of the commonwealth, and afterwards by a reſcript of the emperor.

In the firſt, the natural father addreſſed himſelf to the pretor, declaring that he emancipated his ſon, reſigned all his authority over him, and conſented he ſhould be tranſlated into the family of the adopter.

The latter manner of *adoption* was practiſed, where the party to be *adopted* was already free; and this was called *adrogation.*

The perſon *adopted* changed all his names; aſſuming the prename, name, and ſurname, of the perſon who *adopted* him.

Beſides the formalities preſcribed by the Roman law, divers other methods have taken place; which have given denominations to divers ſpecies of *adoptions*, among the Gothic nations, in different ages. As,

Adoption *by arms* was when a prince made a preſent of arms to a perſon, in conſideration of his merit and valour.—Thus it was that the king of the Heruli was *adopted* by Theodoric; Athalaric by the emperor Juſtinian; and Coſroes, nephew of the king of Perſia, by the emperor Juſtin.

This method of *adoption*, practiſed in Germany, was called *barbarous*, by way of oppoſition to the Roman cuſtom.

The obligation here laid on the *adoptive* ſon was, to protect and defend the father from injuries, affronts, &c. —And hence the ceremony of dubbing knights took its origin, as well as name.

Adoption *by baptiſm* is that ſpiritual affinity which is contracted by god-fathers and god-children in the ceremony of baptiſm.

This kind of *adoption* was introduced into the Greek church, and came afterwards into uſe among the ancient Franks, as appears by the Capitulars of Charlemaign.

In reality, the god-father was ſo far conſidered as *adoptive* father, that his god-children were ſuppoſed to be entitled to a ſhare in the inheritance of his eſtate.

Adoption *by hair*, *adoptio per capillum*, or *crinem*, was performed by cutting off the hair of a perſon, and giving it to the *adoptive* father. It was thus that pope John VIII. *adopted* Boſon king of Arles; which, perhaps, is the only inſtance in hiſtory, of *adoption*, in the order of eccleſiaſtics; a law that profeſſes to imitate nature, not daring to give children to thoſe in whom it would be thought a crime to beget any.

Adoption *by matrimony* is the taking the children of a wife or huſband, by a former marriage, into the condition of proper or natural children; and admitting them to inherit on the ſame footing with thoſe of the preſent marriage. This is a practice peculiar to the Germans; among whom, it is more particularly known by the name of *einkindſchaft*; among their writers in Latin, by that of *unio prolium*, or *union of iſſues.* But the more accurate writers obſerve, that this is no *adoption.* See ADFILIATION.

Adoption *by teſtament*, that performed by appointing a perſon heir by will, on condition of his aſſuming the name, arms, &c. of the *adopter.*

Of which kind, we meet with divers inſtances in the Roman hiſtory.

Adoption was allowed among the Greeks to ſuch as had no iſſue of their own; excepting thoſe who were not κυριοι εαυτων, *their own maſters*, e. g. ſlaves, women, madmen, infants, or perſons under twenty years of age; who being incapable of making wills, or managing their own eſtates, were not allowed to *adopt* heirs to them. Foreigners being incapable of inheriting at Athens, if any ſuch were *adopted*, it was neceſſary firſt to make them free of the city. The ceremony of *adoption* being over, the *adopted* had his name inrolled in the tribe and ward of his new father; for which entry a peculiar time was allotted, viz. the feſtival Θαργηλια.

To prevent raſh and inconſiderate *adoptions*, the Lacedæmonians had a law, that *adoptions* ſhould be tranſacted, or at leaſt confirmed, in the preſence of their kings. The children *adopted* were inveſted with all the privileges, and obliged to perform all the duties, of natural children; and being thus provided for in another family, ceaſed to have any claim of inheritance, or kindred, in the family which they had left, unleſs they firſt renounced their *adoption*; which, by the laws of Solon, they were not allowed to do, unleſs they had firſt begotten children, to bear the name of the perſon who had *adopted* them: thus providing againſt the ruin of families, which would otherwiſe have been extinguiſhed by the deſertion of thoſe who had been *adopted* to preſerve them. If the children *adopted* happened to die without children, the inheritance could not be alienated from the family into which they had been *adopted*, but returned to the relations of the *adopter*. It ſhould ſeem, that by the Athenian law, a perſon, after having *adopted* another, was not allowed to marry, without permiſſion from the magiſtrate: in effect, there are inſtances of perſons, who being ill uſed by their *adoptive* children, petitioned for ſuch leave. However this be, it is certain ſome men married after they had *adopted* ſons: in which caſe, if they begat legitimate children, their eſtates were equally ſhared between the begotten and *adopted*.

Among the Turks, by the law of Mahomet, *adoption* is no impediment of marriage. The ceremony of *adoption* is performed by obliging the perſon *adopted* to paſs through the ſhirt of the *adopter*. Hence, among that people, to *adopt* is expreſſed by the phraſe, *to draw another through my ſhirt*.

It is ſaid that ſomething like this has alſo been obſerved among the Hebrews; where the prophet Elijah *adopted* Eliſha for his ſon and ſucceſſor, and communicated to him the gift of propheey, by letting fall his cloke, or mantle on him.

But *adoption*, properly ſo called, does not appear to have been practiſed among the ancient Jews.

Adoption is now in moſt countries aboliſhed, though it has been ſaid to ſubſiſt in Saintonge in France.

ADOPTION is alſo uſed, in *Theology*, for a federal act of God's free grace; whereby thoſe that are regenerate by faith, are admitted into his houſhold, and intitled to a ſhare in the inheritance of the kingdom of heaven.

ADOPTION is ſometimes alſo uſed, in ſpeaking of the ancient clergy, who had a cuſtom of taking a maid or widow into their houſes, under the denomination of an *adoptive* or ſpiritual ſiſter, or niece.

ADOPTION is alſo uſed in ſpeaking of the admiſſion of perſons into certain hoſpitals, particularly that of Lyons; the adminiſtrators whereof have all the power and rights of parents over the children admitted.

ADOPTION is alſo uſed for the reception of a new academy into the body of an old one.

In which ſenſe, *adoption* amounts to much the ſame with *incorporation*.

The French academy of Marſeilles was *adopted* by that of Paris; on which account, we find a volume of ſpeeches extant, made by ſeveral members of the academy of Marſeilles, deputed to return thanks to that of Paris, for the honour.

In a ſenſe, not unlike this, *adoption* is alſo applied by the Greeks, to the admitting a monk, or brother, into a monaſtic community; ſometimes called ſpiritual *adoption*.

ADOPTIVE, **ADOPTIVUS**, or **ADOPTITIUS**, denotes a perſon *adopted* by another.

Adoptive children, among the Romans, were on the ſame footing with natural ones; for which reaſon, they were either to be inſtituted heirs, or expreſly diſinherited; otherwiſe the teſtament was null.

The emperor Adrian preferred *adoptive* children to natural ones; by reaſon we chooſe the former, but are obliged to take the latter at random.

M. Menage has publiſhed a book of eloges, or verſes addreſſed to him; which he calls *Liber Adoptivus*, an *adoptive* book; and adds it to his other works.—Heinſius, and Furſtemburg of Munſter, have likewiſe publiſhed *adoptive* books.

ADOPTIVE; in *Eccleſiaſtical Writers* we find *adoptive* women, or ſiſters, *adoptivæ fœminæ*, or *ſorores*, uſed for thoſe handmaids of the ancient clergy, otherwiſe called *ſubintroductæ*.

ADOPTIVE *arms* are thoſe which a perſon enjoys by the gift or conceſſion of another, and to which he was not otherwiſe intitled. They ſtand contradiſtinguiſhed from arms of *alliance*.

ADOPTIVE is alſo uſed to expreſs a thing borrowed or taken from another. In which ſenſe we ſometimes meet with *adoptive hair*, by way of oppoſition to natural hair; and *adoptive gods*, by way of contradiſtinction to domeſtic ones. The Romans, notwithſtanding the number of their domeſtic, had their *adoptive* gods, taken chiefly from the Egyptians: ſuch were Iſis, Oſiris, Anubis, Apis, Harpocrates, and Canopus.

ADOPTIVI, in *Church Hiſtory*. See **ADOPTIANI**.

ADOR ſignifies a ſpecies of corn called SPELTA and ZEA.

ADORATION, the act of rendering divine honours; or of addreſſing GOD, or a being, as ſuppoſing it a god. See **WORSHIP**.

The word is compounded of *ad*, *to*; and *os*, *mouth*; and literally ſignifies to apply the hands to the mouth; *manum ad os admovere*, q. d. *to kiſs the hand*; this being, in the eaſtern countries, one of the great marks of reſpect and ſubmiſſion.

The ceremony of *adoration* among the ancient Romans was thus: the devotee having his head covered, applied his right hand to his lips, the fore-finger reſting on the thumb, which was erect, and thus bowing his head, turned himſelf round from left to right. The kiſs thus given was called *oſculum labratum*; for ordinarily they were afraid to touch the images of their gods themſelves with their profane lips. Sometimes, however, they would kiſs their feet, or even knees, it being held an incivility to touch their mouths; ſo that the affair paſſed at ſome diſtance. Others pretend, that they firſt ſtretched out the hand, and afterwards drew it back to their lips; but it rather appears, that the contrary order was obſerved. Saturn, however, and Hercules, were *adored* with the head bare; whence the worſhip of the laſt was called *inſtitutum peregrinum*, and *ritus Græcanicus*, as departing from the cuſtomary Roman method, which was to ſacrifice and *adore*, with the face veiled, and the cloaths drawn up to the ears, to prevent any interruption in the ceremony, by the ſight of unlucky objects.

Sometimes alſo proſtration, or falling on the face, and ſometimes kneeling, were practiſed; ſometimes they turned towards the ſun, and ſometimes to the eaſt.

Other circumſtances of *adoration* were the putting crowns, garlands, and the like, on the ſtatues or images *adored*; ſitting down by them, praying to them, in ſoft trembling murmurs, to be favourable, *faveas mihi*.

The Romans practiſed *adoration* at ſacrifices, and other ſolemnities; in paſſing by temples, altars, groves, &c. at the ſight of ſtatues, images, or the like, whether of ſtone or wood, wherein any thing of divinity was ſuppoſed to reſide. Uſually there were images of the gods placed at the gates of cities, for thoſe who went in, or out, to pay their reſpects to.

The Gauls, inſtead of turning about to the right hand, after the Roman manner, thought it more religious to turn to the left.

In the ſymbols of Pythagoras, *adoration* is enjoined to be performed in a ſitting poſture, genuflexion being then unknown.

The Jewiſh manner of *adoration* was by proſtration, bowing and kneeling. Pinchon has a diſcourſe expreſs on the form of the Jewiſh *adoration*. The Chriſtians adopted the Grecian rather than the Roman method, and *adored* always uncovered. The ordinary poſture of the ancient Chriſtians was kneeling, but on Sundays, ſtanding. In this they conformed to the heathens, that a peculiar regard was had to the eaſt, to which point they ordinarily directed their prayers; which occaſioned a belief among the heathens, as if they *adored* the ſun. Something of this uſage is ſtill retained, as appears by the poſition of our churches. A late author has diſcovered an error of the builders in this reſpect; many of our ancient churches being found to vary ſeveral degrees from the true eaſt and weſt.

ADORATION is alſo uſed for certain extraordinary civil honours, or reſpects, which reſemble thoſe paid to the Deity, yet are given to men.

We read of *adorations* paid to kings, princes, emperors, popes, biſhops, abbots, &c. *Adorations* paid to the purple, to the perſon. *Adoration* by kneeling, by falling proſtrate, kiſſing feet, hand, garment, &c.

The Perſian manner of *adoration*, introduced by Cyrus, was by bending the knee, and falling on the face at the prince's feet, ſtriking the earth with the forehead, and kiſſing the ground. This ceremony, which the Greeks called προσκυνειν, Conon refuſed to perform to Artaxerxes, and Caliſthenes to Alexander the Great, as reputing it impious and unlawful.

The *adoration* performed to the Roman and Grecian emperors, conſiſted in bowing, or kneeling at the prince's feet, laying hold of his purple robe, and preſently withdrawing the hand, and clapping it to the lips. Some attribute the origin of this practice to Conſtantius. It was only perſons of ſome rank or dignity that were intitled to the honour. Bare kneeling before the emperor to deliver a petition, was alſo called *adoration*.

It is particularly ſaid of Diocleſian, that he had gems faſtened to his ſhoes, that divine honours might be more willingly paid him, by kiſſing his feet. The like uſage was afterwards adopted by the popes, and is obſerved to this day.

ADORATION is alſo uſed in the court of Rome, for the ceremony of kiſſing the pope's feet.

Theſe prelates finding a vehement diſpoſition in the people to fall down before them, and kiſs their feet, procured crucifixes to be faſtened on their ſlippers; by which ſtratagem, the *adoration* intended for the pope's perſon, is ſuppoſed to be transferred to Chriſt. Divers acts of this *adoration* we find offered even by princes to the pope. We are told, that in the ancient church the ſame ceremony was practiſed to all biſhops; people kiſſed their feet, and ſaluted them with the phraſe ϖροσκυνω σε, *I adore thee.*

The practice of *adoration* may be ſaid to be ſtill ſubſiſting in England, in the ceremony of kiſſing the king's or queen's hand, and in ſerving them at table, both being performed kneeling.

ADORATION is alſo particularly uſed for the ceremony of owning, or paying homage to a new elected pope.

Adoration properly is paid only to the pope when placed on the altar, in which poſture the cardinals, conclaviſts alone, are admitted to kiſs his feet. The people are afterwards admitted to do the like at St. Peter's church: the ceremony is deſcribed at large by Guicciardin.

ADORATION is alſo uſed for a method of electing a pope without ſcrutiny, or voting.—In the election by *adoration*, the cardinals ruſh haſtily, as if agitated by ſome ſpirit, and fall without more ado to the *adoration* of ſome one among them, and proclaim him pope.

In the election by ſcrutiny, *adoration* is the laſt thing, and follows the election; as in the other it is the election itſelf, or rather ſuperſedes the election.

ADORATION is more particularly uſed for kiſſing one's hand in preſence of another, as a token of reverence.

The Jews *adored* by kiſſing their hands, and bowing down their heads; whence in their language *kiſſing* is properly uſed for *adoration*.

ADORATION is alſo uſed among Roman writers, for a high ſpecies of applauſe given to perſons, who had ſpoken or performed well in public. The method of expreſſing it was, by riſing, putting both hands to their mouth, and then returning them towards the perſon intended to be honoured.

ADORATION is of divers kinds and qualities; *ſupreme* and *ſubordinate*; *mediate* and *immediate*; *abſolute* and *relative*; *internal* and *external*; *ſecret* and *open*.

ADORATION, *external*, coincides with what is otherwiſe called *ritual adoration*.

ADORATION, *internal*, coincides with ſpiritual *adoration*, called alſo *adoration* in ſpirit and in truth.

ADORATION, *ſolemn*, that performed in public, with ſtated ceremonies preſcribed by authority: in oppoſition to private, or tacit, or implicit *adoration*.

ADORATION, *ſupreme*, the higheſt degree of religious honour or worſhip rendered to a being, as ſuppoſing him the ſupreme God; in oppoſition to ſubordinate worſhip given to inferior beings.

ADORATION, *abſolute*, that rendered immediately to a being in conſideration of his own eſſential perfections, and terminating in himſelf. This coincides with immediate *adoration*, and ſtands oppoſed to relative or mediate *adoration*. Olearius has an expreſs diſſertation on the *adoration* of the Father by the Son.

ADORATION, *relative*, is that worſhip paid to an object, as belonging to, or repreſentative of another.

In which ſenſe the Romaniſts profeſs to adore the croſs, not ſimply or immediately, which they allow would be idolatry, but in reſpect of Jeſus Chriſt, whom they ſuppoſe to be on it. The Jeſuits in China carry an image of Chriſt under their cloaths, and to this refer mentally the public *adorations* they offer to Chacinchoan. Vid. Paſcal. Lettr. Provinc. 5.

ADORATION, *perpetual*, is a kind of ſociety or aſſociation of devout perſons eſtabliſhed in Romiſh countries, who take their turns to pray before the euchariſt, regularly relieving each other, ſo that the ſervice never ceaſes day nor night.

The members of the perpetual *adoration* anſwer to the ACOEMITI in the eaſtern church.

We find ſocieties under this denomination in France, Germany, Italy, &c.

ADORATION, *barbarous*, is a term uſed in the laws of king Canute, for that performed after the heathen manner, who *adored* idols.

The Phœnicians *adored* the winds, on account of the terrible effects produced by them; the ſame was adopted by moſt of the other nations, Perſians, Greeks, Romans, &c.

The Troglodytes *adored* tortoiſes, as ſomething peculiarly ſacred; ſeveral people *adored* weapons, and inſtruments of war. The Scythians, &c. *adored* ſwords, the Romans axes, the Arabs ſtones, the Indians *adored* vipers, the Bengaleſe and Canadeſe the ſun; the latter of which nations is alſo ſaid to *adore* the croſs. The Manta, a Peruvian people in the iſland of Puna, anciently *adored* a huge emerald, of the bigneſs of an oſtrich's egg, by offering it to other emeralds of a leſſer ſize. All which the prieſts kept for their own uſe; the doctrine, as Garcilaſſo obſerves, being founded on their avarice.

The Perſians chiefly paid their *adorations* to the ſun and fire, ſome ſay alſo to rivers, the wind, &c. The motive of *adoring* the ſun was the benefits they received from that glorious luminary, which of all creatures, has doubtleſs the beſt pretenſions to ſuch homage; the inſtitution of the fire-worſhip is uſually referred to Zoroaſter. The retainers to it are called IGNICOLÆ; by the Perſians, Ghebr, Ateſch, Pereſh.

Dr. Hyde reduces the Perſian fire-worſhip to a ſubordinate kind of honour, or ſervice, which he calls *pyrodulia*, defending that people from any charge of *pyrolatria*, or idolatry of fire. A late traveller into theſe parts does the ſame.

The Greeks and Romans alſo *adored* fire under the name of VESTA. Pliny mentions the method of *adoring* lightning, which was by poppiſms, or gentle clappings of the hands.

The Jews have been charged by heathens with *adoring* the vine, an aſs's head, &c. By Chriſtians, with *adoring* the book of the law; a charge which one of their rabbies has been at the pains to remove. The *adoration* of the golden calf, into which they fell in the wilderneſs, ſeems to have been borrowed, like many other of their ceremonies, from the Egyptians.

The Egyptians are ſaid to have paid *adoration* to divers animals, plants, fiſhes, &c. the crocodile, the ibis, onions, &c. But thoſe were only ſymbolical, or relative acts of homage; they *adored* the ſun in a more peculiar manner, under the name of Oſiris.

It is diſputed, whether the Chineſe pay divine or only civil honours to the ſtatues of Confucius, and their anceſtors. That people, however, appear to *adore* heaven; whence the inſcription in all their temples, and which even the Chriſtians are ſaid to have retained in their churches, *king tien*, i. e. *adore heaven*.

The Indians are ſaid to *adore* the devil. Some charge the ſame on the Bramins.

ADOREA, in Roman *Antiquity*, a word uſed in different ſenſes; ſometimes for all manner of grain, ſometimes for a kind of cakes made of fine flour, and offered in ſacrifice; and finally for a dole or diſtribution of corn, as a reward for ſome ſervice; whence by metonymy it is put for praiſe or rewards in general.

ADOS ſignifies water, in which red-hot iron has been extinguiſhed.

ADOSCULATION is uſed by ſome *Naturaliſts*, for a ſpecies of copulation, or impregnation, by mere external contact between the genital parts of the two ſexes, without intromiſſion.

Such is that of plants, by the falling of the *farina fœcundans* on the piſtil, or uterus.

Divers kinds of birds and fiſhes are alſo impregnated by *adoſculation*.

ADOSSEE is uſed, in *Heraldry*, to denote two figures or bearings, placed back to back.

The arms of the duchy of Bar are two bars *adoſſée*.

ADOXA, in *Botany*, a name given by Linnæus to the genus of plants, called by other writers MOSCHATELLINA. They are claſſed among the *octandria tetragynia*.

ADPERCEPTION, in the Leibnitzian ſtyle, denotes the act whereby the mind becomes conſcious to itſelf of a perception.

AD PONDUS *Omnium*, to the weight of the whole; an abbreviation among *Phyſicians*, &c. ſignifying, that the laſt preſcribed ingredient is to weigh as much as all the others put together.

ADQUISITUS, in ſome ancient Latin writers of *Muſic*, is uſed for the note, or chord, which the Greeks called ϖροσλαμϐανομενος. See DIAGRAM.

AD QUOD *Damnum*, a writ directed to the ſheriff, commanding him to inquire what hurt may befal the king by granting a fair, or market, in any town, or place.

The ſame writ alſo iſſues for an inquiry to be made of what the king, or other perſon, may ſuffer, by granting lands in fee-ſimple to a convent, chapter, or other body politic; by reaſon ſuch land falls into MORTMAIN.

The writ *Ad quod damnum* is alſo had for the turning and changing of ancient highways; which may not be done without the king's licence obtained by this writ, on inquiſition found that ſuch change will not be detrimental to the public. Vaugh. Rep. 341. Ways turned without this authority are not eſteemed highways, ſo as to oblige the inhabitants of the hundred to make amends for robberies; nor have the ſubjects an intereſt therein to juſtify going there. 3 Cro. 267. If any one change a highway without this authority, he may ſtop the way at his pleaſure. But ſee the ſtatute 8 and 9 W. III. cap. 16. for enlarging of highways by order of juſtices of peace, &c. Where any common way ſhall be encloſed after a writ of *Ad quod damnum* executed, any perſon aggrieved

grieved by ſuch encloſure, may complain to the juſtices at the next quarter ſeſſions; but if no ſuch complaint or appeal be made, then the inquiſition and return, recorded by the clerk of the peace, ſhall be for ever binding. 8 and 9 W. III.

ADRACHNE, in *Botany*, the ſtrawberry bay. It grows plentifully in the iſland of Candy, on the hills of Leuce, and in other places among the rocks, more like a ſhrub than a tree. It flowers and bears fruit twice in the year, as does the arbutus ſtrawberry-tree. It is alſo called *adracla*, and ANDRACHNE.

ADRACLA, another name for the preceding ſhrub. See ANDRACHNE.

ADRAGANTH, ſee TRAGACANTH, the ſame as gum DRAGANT.

ADRAM, a name given to SAL gem.

ADRASTIA, or ADRASTEA, in *Antiquity*, an epithet given to the goddeſs Nemeſis, or Revenge.

It was taken from king Adraſtus, who firſt erected a temple to that deity.

ADRASTIA *certamina*, in *Antiquity*, a kind of Pythian games, inſtituted by Adraſtus king of Argos, in the year of the world 2700, in honour of Apollo, at Sicyon.

Theſe are to be diſtinguiſhed from the Pythian games celebrated at Delphi.

ADRIANISTS, a branch of *Anabaptiſts*, the diſciples of Adrian Hamſtedius, in the ſixteenth century, who taught firſt in Zealand, and afterwards in England.

The *Adrianiſts*, beſides the common *dogma* of anabaptiſm, are ſaid to have had ſome peculiar notions relating to the perſon of Chriſt.

ADRIFT; a veſſel broke from her moorings, and driven by the wind or waves, is ſaid to be *adrift*.

ADRIUNE, in *Botany*, a name given by the Arabian writers to the plant known at this time by the name of *cyclamen*, or ſow-bread.

ADROBOLON, another name for the Indian BDELLIUM.

ADROGATION, in *Antiquity*, a ſpecies of adoption, whereby a perſon who was capable of chooſing for himſelf, was admitted by another into the relation of a ſon.

The word is compounded of *ad*, *to*, and *rogare*, *to aſk*; on account of a queſtion put in the ceremony of it, whether the adopter would take ſuch a perſon for his ſon? and another to the adoptive, whether he conſented to become ſuch a perſon's ſon?

ADROP, among *Alchemiſts*, denotes either that preciſe matter, as lead, out of which the mercury is to be extracted for the philoſophers ſtone; or it denotes the philoſophers ſtone itſelf, inaſmuch as this is alſo called *ſaturn* and *plumbum*, or lead, *azar*, *azane*, and *lapis ipſe*.

ADROTERON, ſee ALICA.

ADSAMAR, ſee URINE.

ADSCRIPTS is uſed by ſome *Mathematicians*, for the natural tangents, called alſo, by Vieta, *proſines*.

ADSIDELA, in *Antiquity*, a table at which the flamens ſat, when they offered ſacrifice.

ADSIGNIFICATION, among *Schoolmen*, the act of noting or ſignifying a thing, with the addition of the time when it happened.

ADSTRICTION, among *Phyſicians*, is uſed to denote the too great rigidity and cloſeneſs of the emunctories of the body; particularly the pores of the ſkin: alſo to ſignify the ſtyptic quality of medicines. See ASTRINGENTS.

AD TERMINUM *qui præteriit*, is a writ of entry, which lies where a man, having leaſed lands or tenements for terms of life, or years, is, after the term expired, held from them by the tenant, or other ſtranger, who enjoys the ſame, and deforceth the leſſor.—The ſame writ alſo lies for the leſſor's heir.

ADVANCE, in *Commerce*, denotes money paid before goods are delivered, work done, or buſineſs performed. To pay a note of hand or bill by *advance*, is to pay the value before it becomes due, in which caſe it is uſual to allow a diſcount for the time it is pre-advanced.

ADUAR, a kind of ambulatory village, wherein Arab families inhabit, in a ſort of tents, moveable on occaſion, as forage and proviſions ſuit. Some alſo write the word *adouar*, and *adouard*. There are reckoned thirty thouſand *aduars* in the kingdom of Algiers.

ADVANCE-FOSSE, or DITCH, in *Fortification*, denotes a ditch of water round the *eſplanade*, or GLACIS of a place; to prevent its being ſurpriſed by the beſiegers. See FOSSE.

ADVANCE-GUARD, or VAN-GUARD, in the *Military Art*, is the firſt line, or diviſion of an army ranged, or marching in battle-array; or that part of it which is next the enemy, or which marches firſt toward them.

The whole body of an army is divided into *advance-guard*, arrear-guard, and main-body.

The word is ſometimes alſo applied to a ſmall party of horſe, viz. 15, or 20, commanded by a lieutenant, beyond, and in ſight of, the main-guard.

ADVANCER, among *Hunters*, is one of the ſtarts, or branches of a buck's attire, between the back antler and the palm.

ADVENT, ADVENTUS, in the calendar, the time immediately preceding Chriſtmas; anciently employed in pious preparation for the *adventus*, or coming on, of the feaſt of the Nativity.

Advent includes four Sundays, or weeks; commencing either from the Sunday which falls on St. Andrew's day, or that next before or after it, i. e. from the Sunday which falls between the 27th of November, and the third of December incluſive.—But it is to be noted, this rule has not always obtained.—In the Ambroſian office, there are ſix weeks marked for *Advent*; and St. Gregory, in his Sacramentary, allows five.

The firſt week of *Advent*, in our way of reckoning, is that wherein it begins; but it was anciently otherwiſe; the week next Chriſtmas being reputed the firſt; and the numeration carried backwards.

Great auſterity was practiſed in the ancient church during this ſeaſon.—At firſt they faſted three days a week; but they were afterwards obliged to faſt every day; whence the ſeaſon is frequently called in ancient writers, *Lent*, and *Quadrageſima S. Martini*.

The courts of juſtice were at one time all ſhut.

ADVENT is alſo one of the times, from the beginning whereof, to the end of the octaves of the Epiphany, the ſolemnizing of MARRIAGE is forbid, without expreſs licence.

ADVENTITIA *cœna*, in *Antiquity*, an entertainment made by the friends of a perſon who had been travelling, by way of welcome at his return. This was otherwiſe called *cœna adventoria*.

ADVENTITIOUS, ſomething accruing or befalling a perſon, or thing, from without.

Thus, *adventitious* matter is ſuch matter as doth not properly belong to any body, but is caſually joined to it.

ADVENTITIOUS, in the *Civil Law*, is applied to ſuch goods as fall to a man, either by mere fortune, or by the liberality of a ſtranger, or by collateral, not direct ſucceſſion.

In this ſenſe, the word ſtands oppoſed to *profectitious*; by which are ſignified ſuch goods as deſcend in a direct line, from father to ſon.

ADVENTITIOUS *foſſils*, are foreign or extraneous ones, found incorporated with others, to which they do not properly belong. Such are ſea-ſhells, &c.

AD VENTREM *inſpiciendum*, in *Law*. See VENTRE *inſpiciendo*.

ADVENTURE, an extraordinary and ſurpriſing enterprize, or accident, either real, or fictitious.

The word is French, and literally denotes an event, or accident.

Novels, romances, &c. are chiefly taken up in relating the *adventures* of cavaliers, lovers, &c.

ADVENTURE, in *Commerce*; a bill of *adventure* is a writing ſigned by a merchant, atteſting that the property of goods ſhipped, or ſent away in his name, belongs to another, the *adventure* or chance whereof the ſaid perſon is to ſtand, with a covenant to account to him for the produce of it.

ADVENTURE. See MINE-*Adventurer*.

ADVENTURERS is particularly uſed for an ancient company of merchants and traders, erected for the diſcovery of lands, territories, trades, &c. unknown.

The ſociety of *adventurers* had its riſe in Burgundy, and its firſt eſtabliſhment from John, duke of Brabant, in 1248; being known by the name of *the Brotherhood of St. Thomas à Becket*. It was afterwards tranſlated into England, and ſucceſſively confirmed by Edward III. and IV. Richard III. Henry IV. V. VI. and VII. who gave it the appellation of MERCHANT-*adventurers*.

By our ſtatutes, *adventurers* making ſettlements in any part of America belonging to the enemy, may obtain a charter from the king. Stat. 13 Georg. II. cap. 4. ſect. 13.

ADVERB, ADVERBIUM, in *Grammar*, a particle joined to a verb, adjective, or participle, to explain their manner of acting or ſuffering; or to mark ſome circumſtance or quality ſignified by them.

The word is formed from the prepoſition *ad*, *to*, and *verbum*, *a verb*; and ſignifies literally a word joined to a verb, to ſhew how, or when, or where, one is, does, or ſuffers; as, the boy paints *neatly*, writes *ill*; the houſe ſtands *there*, &c.

Not that the *adverb* is confined purely to the verbs; but becauſe that is its moſt ordinary uſe. Whence it becomes ſo denominated κατ' ἐξοχην. We frequently find it joined to adjectives, and ſometimes even to ſubſtantives, particularly where thoſe ſubſtantives ſignify an attribute, or quality of the thing ſpoken of; v. gr. he is *very* ſick; he is *truly* king.

An *adverb* is likewiſe joined ſometimes to another *adverb*, to modify its meaning; v. gr. *very devoutly*, &c. Whence ſome grammarians chooſe rather to call *adverbs* modificatives; compriſing under this one general term, *adverbs*, conjunctions, prepoſitions, and even adjectives.

Adverbs are very numerous; but they may be reduced under the general claſſes of *adverbs* of time, of place, of order, of quantity, of quality, of manner, of interrogation, of affirmation, of denegation, of diminution, of doubting, of exception, and of compariſon.

Adverbs are denominated by Mr. Harris attributes of attributes, or attributives of the ſecond order. Hermes, p. 192.

ADVERBIAL, ſomething relating to *adverbs*. We ſay an *adverbial* phraſe, *adverbial* expreſſion, &c.

Adverbial *numbers* are ſometimes uſed to denote once, twice, thrice, &c.

ADVERSARIA, among the ancients, was uſed for a book of accounts, like our journal or day-book.

Hence, **adversaria** is ſometimes alſo uſed among us for a *common-place book*.

Adverſaria amounts to the ſame with *Opiſthographia*, *ὑπομνηματα*, or *memoriale*; and ſtands oppoſed to *codex*; the former being for occaſional matters which were taken down haſtily, from which they were afterwards tranſcribed into the latter, in a fair regular manner, for ſtanding uſe.

Adversaria is alſo a title given to divers books, containing collections of miſcellaneous obſervations, remarks, &c.

In which ſenſe, *adverſaria* amounts to much the ſame with *variæ lectiones*, *variæ obſervationes*, *commentarii*, *lectiones antiquæ*, *loci communes*, *geniales dies*, *veſperæ*, *electa*, *miſcellanea*, &c.

Adversaria is alſo uſed for a commentary on ſome text or writing.

This was ſo called, becauſe the notes were written on the *adverſe* or oppoſite page.

ADVERSARY. See **Antagonist.**

The word is formed of the Latin prepoſition *adverſus*, *againſt*; and *vertere*, *to turn*.

ADVERSATIVE, in *Grammar*.—A particle *adverſative*, is that which expreſſes ſome difference, or oppoſition, between what goes before, and what follows.

Thus, in the phraſe, *he loves knowledge*, but *has no application*; the word *but* is an *adverſative* conjunction; between which and a disjunctive one there is this difference, that the firſt ſenſe may hold good, without the ſecond oppoſed to it, which is otherwiſe in regard to *disjunctive* conjunctions.

Adverſatives of this kind may be called *abſolute*; beſide theſe, there are ſeveral others recited by Harris: ſuch as *adverſatives* of *compariſon*, expreſſed by the words *than* and *as*, which mark not only oppoſition, but that equality or exceſs which ariſes among ſubjects from their being compared; ſuch likewiſe are *adverſatives adequate* and *inadequate*, the former of which is expreſſed by the word *unleſs*, and the latter by *although*. Hermes, p. 254, &c.

ADVERSATOR, in *Antiquity*, a ſervant ſent to wait his maſter's returning from ſupper, and attending him home. The rich had ſervants in this quality, to apprize them of any danger.

ADVERTISEMENT, an intelligence or information given to perſons intereſted in an affair.

The word is formed from *advertere*, *to conſider*.

Advertisement is more particularly uſed for a brief account of articles of private concern, inſerted in the daily, or other public papers.

By the ſtatute of 25 Geo. II. cap. 36, and 28 Geo. II cap. 19. the penalty of 50*l.* is inflicted on perſons advertiſing a reward, with no queſtions to be aſked, for the return of things loſt or ſtolen; and likewiſe on the printer.

ADVICE-*Boat*, a ſmall veſſel employed to carry expreſſes or orders with diſpatch.

ADULT, **Adultus**, one who is arrived at years of diſcretion, and entered upon manhood, or the age of **Adolescence**; and is old enough to have underſtanding and diſcernment.

The word is formed from the verb *adoleſcere*, *to grow up*.

There is a notable difference between the proportions of infants and *adults*.—A man, Mr. Dodart obſerves, formed like a fœtus, would be a monſter, and would ſcarce be acknowledged for one of the ſpecies.—The Anabaptiſts confer the ſacrament of baptiſm upon none but **adults**.

We find many things in authors concerning the diſeaſes, the regimen, the diet, &c. of *adults*.—The Chineſe have a peculiar ſchool of *adults*.

Adult is alſo uſed in *Civil Law Writers*, for a youth between fourteen and twenty-five years of age.

In which ſenſe *adultus* is ſynonymous with *juvenis*, *adoleſcens*, or *adoleſcens*.

Adult *plants*, a late author obſerves, differ from immature ones, in that they contain more oil, and leſs ſalt; and the ſame he judges will hold of men; but this requires farther examination.

ADULTERATION, in a general ſenſe, the act of corrupting, or debaſing a thing that was pure, by ſome improper admixture.

The word is Latin, formed of the verb *adulterare*, *to corrupt*, by mingling ſomething foreign to any ſubſtance.

We have laws againſt the *adulteration* of coffee, tea, tobacco, ſnuff, wine, beer, bread, wax, hair-powder, &c. See Stat. 13 W. III. cap. 5.—11 Geo. I. cap. 30.—1 Geo. I. cap. 46.—1 W. and M. cap. 34.—23 El. cap. 8.—10 Ann, cap. 26.—3 Geo. III. cap. 11.

For the method of detecting *adulteration* of liquors, ſee **Proof**, **Essay**, &c.

Adulteration *of coin* properly imports the making, or caſting of a wrong metal, or with too baſe or too much alloy.

Adulterations of coins are effected divers ways, as, by forging another ſtamp, or inſcription; by mixing impurer metals with the gold or ſilver: moſt properly, by making uſe of a wrong metal, or an undue alloy, or too great an admixture of the baſer metals with gold, or ſilver. Counterfeiting the ſtamp, or clipping and leſſening the weight, do not ſo properly come under the denomination of *adulterating*.

Evelyn gives rules and methods, both of *adulterating* and detecting *adulterated* metals, &c.

Adulterating is ſomewhat leſs extenſive than *debaſing*, which includes diminiſhing, clipping, &c.

To adulterate or debaſe the current coin, is a capital crime in all nations.—The ancients puniſhed it with great ſeverity: among the Egyptians both hands were cut off; and by the *Civil Law*, the offender was thrown to wild beaſts. The emperor Tacitus enacted, that counterfeiting the coin ſhould be capital; and under Conſtantine it was made treaſon, as it is alſo among us.

The *adulterating* of gems is a curious art, and the methods of detecting it no leſs uſeful.

Adulteration, in *Pharmacy*, denotes a fraudulent corruption of drugs, or medicines, by ſubſtituting ingredients of leſs value, for the ſake of greater gain.

This practice the dealers in all the parts of medicine are but too well acquainted with. Pharmaceutical authors give numerous inſtances of *adulterations*, both in ſimple and compound medicines.

ADULTERESS, a woman who commits *adultery*. See **Adultery.**

ADULTERINE, in a general ſenſe, denotes any thing which has been adulterated, or that is ſpurious, or counterfeited; and it is thus applied to a fraudulent balance, to debaſed and counterfeit coins, to a falſe key, and to ſuppoſititious writings.

Adulterine, in the *Civil Law*, is particularly applied to a child iſſued from an adulterous amour, or commerce.

Adulterine children are more odious than the illegitimate offspring of ſingle perſons.—The Roman law even refuſes them the title of natural children; as if nature diſowned them.

Adulterine children are not eaſily diſpenſed with for admiſſion to orders. Thoſe are not deemed *adulterine*, who are begotten of a woman openly married, through ignorance of a former wife being alive.

By a decree of the parliament of Paris, *adulterine* children are declared not legitimated by the ſubſequent marriage of the parties, even though a papal diſpenſation be had for ſuch marriage, wherein is a clauſe of legitimation.

Adulterine *marriages*, in St. Auguſtine's ſenſe, denote ſecond marriages, contracted after a divorce.

ADULTERY, **Adulterium**, (in ancient *Law-books* called **Advowtry**) a crime committed by married perſons, againſt the faith pledged to each other in marriage, by having carnal commerce with ſome other; or even by a perſon not married, who has the ſame intercourſe with another that is.

Moraliſts and canoniſts, and divines, have diſtinguiſhed ſeveral ſpecies of *adultery*, as,

Adultery, *manifeſt*, that wherein the parties are caught *εν εργῳ*, *in the fact*, or, as ſome expreſs it, *res in re*.

On ſuch occaſions, ſtrangers, or people not intereſted in the family, have been allowed to accuſe, and proſecute women for *adultery*, either if committed during a huſband's long abſence, or through his connivance.

Adultery, *occult or ſecret*, that kept concealed from the knowledge of the world, and only divulged to a confeſſor or the like.—In the canon law this is moſt favourably dealt with; perſons were admitted to penance for this, and abſolved, who were refuſed it for the open kind.

Adultery, *preſumptive*, that which is only diſcovered or inferred from certain ſigns, or indications. Such are the parties being found in bed together, *nudus cum nuda*.

Adultery, *interpretative, or reputed*, denotes an act which though properly not included under the denomination, yet is reputed as equivalent to it, and puniſhed as ſuch.

Thus mixed marriages between Chriſtians and Jews, e. g. between a Chriſtian man and a Jewiſh woman, are put by the laws of Arcadius and Honorius, on the footing of *adultery*.

So alſo ſecond marriages are called by ſome, as Athenagoras, and St. Ambroſe, an honourable or better ſort of *adulteries*.

Adultery, *improper*, includes other extraordinary caſes and ſpecies; ſuch are the commerce with a woman only eſpouſed, not actually married; with a married woman, who lives as a common whore; with a married woman, taking her for ſingle; with a putative wife, or concubine, taking her for a real wife; and with a nun, who by her vows is doomed eſpouſed.

Adultery, *figurative*, that intended only to repreſent, or prefigure another fact, or convey ſome other inſtruction. This coincides with typical, or allegorical *adultery*, and ſtands oppoſed to actual. So the *adultery* of Mars and Venus is turned into an allegory by naturaliſts, moraliſts, alchemiſts, &c.

Adultery, *ſingle*, is that where only one of the parties is married, in contradiſtinction from double *adultery*, which is, where both parties are married.

Adultery, *inceſtuous*, that wherein the parties are related within the third degree of conſanguinity.

Adultery, *licit*, that not prohibited by any expreſs or known law.

It has been diſputed whether *adultery* be *malum in ſe*, or only *malum prohibitum*, i. e. evil in itſelf, or only rendered evil, by virtue of poſitive laws and prohibitions. St. Ambroſe and ſome others have maintained, that *adultery* was not criminal before the Moſaic law.

It has been controverted, whether *adultery* may be lawfully committed in war, with the enemies wives? The anſwer is in the negative, and the authoriſed practice of civiliſed nations is agreeable to this. It has alſo been a famous queſtion, whether it be lawful for a woman to commit *adultery* with the conſent of her huſband, and for the procuring ſome great good to him? St. Auſtin apparently allows of it; at leaſt, does not condemn it.

It has likewiſe been a diſpute, whether it be lawful for one of the parties married to commit *adultery*, with the conſent of the other, for the ſake of having children? Of which we have inſtances in Abraham, who, on this account, converſed with Hagar; and likewiſe among the Greeks and Romans.

Pollman, a German profeſſor, has a diſſertation on the huſband's right to alienate his wife's body to another's uſe.

Adultery, *illicit*, that which is expreſly contrary to ſome obligatory law: ſuch, according to the generality of caſuiſts, is all *adultery*, proper, improper, ſingle, double, open, and occult; by reaſon of a natural baſeneſs or turpitude in the thing, as well as its being a violation of conjugal faith, and injury to our neighbour.

In effect, puniſhments have been annexed to *adultery* in moſt ages and nations, though of different degrees of ſeverity. In many it has been capital, in others venial, and attended only with ſlight pecuniary mulcts. Some of the penalties are ſerious, and even cruel; others of a jocoſe and humorous kind.

Among the Egyptians, *adultery* by conſent, was puniſhed in the man, by a thouſand laſhes, given with rods; and in the woman, with the loſs of her noſe. Nevertheleſs *adulteries* were not unfrequent among the Egyptians.

The Grecian laws expreſs great indignation againſt *adultery*. In the earlier times of Athens, the puniſhment of *adultery* ſeems to have been arbitrary. In other parts of Greece, *adultery* was ſeverely puniſhed.

In the later times of Greece it was ordered by Draco, that he who catched an *adulterer* in the fact, might impoſe on him any arbitrary puniſhment; and this law was confirmed by Solon. Nevertheleſs it appears to have been highly impolitic, as it gave full ſcope to private revenge, inſtead of leaving the puniſhment to the ſtate.

It was by the Grecian law farther ordained, that if any one was injuriouſly confined upon ſuſpicion of *adultery*, he ſhould make his complaint by appeal to the *Theſmothetæ*, which, if they found juſtifiable, he ſhould be acquitted, and his ſureties diſcharged from their bail; but in caſe he were found guilty, the judges were to inflict on him what puniſhment they would, death only excepted; and the offender was obliged to procure friends to be reſponſible for his future chaſtity.

There were other remarkable puniſhments for *adulterers* among the Grecians; ſuch, particularly, as putting out their eyes. And the Locrians obſerved this cuſtom in later ages, being compelled to the obſervance of it by Zaleucus, their lawgiver, whoſe rigour in executing this law is very remarkable; for having caught his ſon in *adultery*, he reſolved to deprive him of his ſight, and remained a long time inexorable, notwithſtanding the whole city was willing to remit the puniſhment, and requeſted him to ſpare the youth. At length, unable to reſiſt the people's importunity, he mitigated his ſentence, and redeemed one of his ſon's eyes, by cauſing one of his own to be put out; by this glorious act ſetting a memorable example both of *juſtice* and of *mercy*.

At Gortyn in Crete, they puniſhed *adulterers* after another manner; they were covered with wool, an emblem of the ſoftneſs and effeminacy of their diſpoſition, and in that dreſs they were carried through the city to the magiſtrate's houſe, who ſentenced them to ignominy, whereby they were in a manner deprived of all their privileges, and their ſhare in adminiſtering the public buſineſs.

The Spartans, indeed, may in one ſenſe be ſaid to have tolerated *adultery*, ſince they laughed at thoſe who thought the violation of the marriage bed an unſupportable affront: they allowed other men the liberty of embracing their wives, which freedom they took with others in their turn. Nay even ſtrangers, as well as citizens of Sparta, were allowed the ſame freedom with their wives. Yet we find that their kings were exempt from this cuſtom, that the royal blood might be preſerved unmixed, and the government remain in the ſame lineal deſcent.

But notwithſtanding this liberty, which was founded on mutual conſent, they accounted all other *adulteries* the moſt heinous crime in the world; and while they adhered to their ancient laws, they were wholly ſtrangers to them. See Potter's Arch. lib. iv. cap. 12. Plutarch tells us that if any perſon diſcovered his ſiſter or daughter, while unmarried, in this crime, he was allowed by Solon's laws to ſell her for a ſlave. *Adultereſſes* were never after permitted to adorn themſelves with fine cloaths; and in caſe they appeared to do ſo, were liable to have them torn off by any that met them, and likewiſe be beaten. The ſame liberty was permitted to any that found them in the temples, which were thought to be polluted by the admiſſion of perſons ſo infamous and deteſtable. Laſtly, their huſbands, though willing, were forbidden to cohabit any longer with them, upon pain of ignominy *ατιμια*; but perſons who proſtituted women, were adjudged to die.

There are various conjectures concerning the ancient puniſhment of *adultery* among the Romans.

By a law of Romulus, of which Plutarch makes mention, a man had the liberty of turning away his wife, either for poiſoning his children, counterfeiting his private keys, or for *adultery*. Though ſome maintain that it was made capital, by a law of Romulus, and again by the Twelve Tables. Others, that it was firſt made capital by Auguſtus; and others, not before the emperor Conſtantine. The truth is, the puniſhment in ancient times was very various, much being left to the diſcretion of the huſband and parents of the *adulterous* wife, who exerciſed it differently, rather with the ſilence and countenance of the magiſtrate, than any formal authority from him. Thus we are told the wife's father was allowed to kill both parties when caught in the fact, provided he did it immediately, killed both together, and, as it were, with one blow. The ſame power ordinarily was not indulged the huſband, except the crime were committed with ſome mean, or infamous perſon; though, in other caſes, if his rage carried him to put them to death, he was not puniſhed as a murderer. On many occaſions, however, revenge was not carried ſo far, but mutilating, caſtrating, cutting off the ears, noſes, &c. were deemed ſufficient. The puniſhment allotted by the *lex Julia*, was not, as many have imagined, death; but rather baniſhment, or deportation, being interdicted fire and water: though Octavius appears, in ſeveral inſtances, to have gone beyond his own law, and to have put *adulterers* to death. But though the Julian law left the accuſation of *adultery* open to every body, yet ſtrangers were ſeldom ſuffered to proſecute, where the huſband made no complaint. But where the huſband made a trade of his wife's infamy, or having ſeen her ſhame with his own eyes, patiently ſuffered the affront; in theſe caſes, *adultery* became a crime of public concern; and the Julian law provides a puniſhment for ſuch huſbands as well as for their wives.

Under Macrinus *adulterers* were burnt at a ſtake. Conſtantine firſt by law made the crime capital. Under Conſtantius and Conſtans, *adulterers* were burnt, or ſewed in ſacks, and thrown into the ſea. Under Leo and Marcian, the penalty was abated to perpetual puniſhment, or cutting off the noſe.

By the civil law, as altered by Juſtinian, who, at the inſtance of his wife Theodora, mitigated the ſeverity of the *lex Julia*, *adultery* is puniſhed with whipping, and ſhutting up in a convent for two years: during which time, if the huſband do not conſent to take her back again, ſhe is ſhaven, and ſhut up for life.—This is called *authenticating*, as having been eſtabliſhed by an authentic.

In France, however, the whipping is omitted, that the huſband may be the leſs averſe to the taking her back within the two years.

Under Theodoſius women convicted of this crime were puniſhed after a very ſingular manner, viz. by a public conſtupration; being locked up in a narrow cell, and forced to admit all the men to their embraces that would offer themſelves. This cuſtom was again aboliſhed by the ſame prince.

It is controverted whether, among the Romans, *adultery* was allowed to be compounded?

By an edict of the emperor Antoninus, the huſband was not allowed to bring an action of *adultery* againſt his wife, unleſs he himſelf were innocent; the reaſon given for it is very natural, *periniquum enim videtur eſſe ut pudicitiam vir et uxore exigat, quam ipſe non exhibeat.*

By the Jewiſh law, *adultery* was puniſhed by death in both parties, where they were both married, or only the woman.

The Jews had a particular method of trying, or rather purging an *adultereſs*, or a woman ſuſpected of the crime, by making her drink the bitter waters of jealouſy; which, if ſhe were guilty, made her ſwell.

Among the Mingrelians, *adultery* is puniſhed with the forfeiture of a hog, which is uſually eaten in good friendſhip between the gallant, the adultereſs, and the cuckold.

In ſome parts of the Indies, it is ſaid any man's wife is permitted to proſtitute herſelf to him who will give an elephant for the uſe of her; and it is reputed no ſmall glory to her, to have been rated ſo high.

Adultery is ſaid to be ſo frequent at Ceylon, that not a woman but practiſes it, notwithſtanding its being puniſhable with death.

Among the Japaneſe, and divers other nations, *adultery* is only penal in the woman. Among the Abyſſinians, the crime of the huſband is ſaid to be only puniſhed on the innocent wife. In the Marian iſlands, on the contrary, the woman is not puniſhable for *adultery*; but if the man go aſtray, he pays ſeverely: the wife and her relations waſte his lands, turn him out of his houſe, &c.

Among the Chineſe there is reaſon to conclude, that *adultery* is not capital; for it is ſaid that fond parents will make a contract for their daughters future huſbands, to allow them the indulgence of a gallant.

In Spain, they puniſhed *adultery* in men by cutting off that part which had been the inſtrument of the crime.

In Poland, before Chriſtianity was eſtabliſhed, they puniſhed *adultery* and fornication in a very particular manner: the criminal they carried to the market-place, and there faſtened him by the teſticles with a nail; laying a razor within his reach, and leaving him under a neceſſity, either of doing juſtice upon himſelf, or of periſhing in that condition.

By the old law of Scotland, notorious or double *adultery* is puniſhed by death; ſingle *adultery* by baniſhment, fining, &c. though by the opinion of ſome Scotch lawyers, it may be puniſhed by death.

The Saxons formerly burnt the *adultereſs*, and over her aſhes erected a gibbet, whereon the *adulterer* was hanged.

In this kingdom, likewiſe, *adultery* by the ancient laws was ſeverely puniſhed. King Edmund the Saxon, ordered *adultery* to be puniſhed in the ſame manner as homicide; and Canute the Dane ordered that a man who committed *adultery* ſhould be baniſhed, and that the woman ſhould have her noſe and ears cut off. In the time of Henry I. it was puniſhed with the loſs of eyes and genitals. Lib. Hen. I. cap. 12. Doomſday Tit. Ceſtre. Civit.

Adultery at preſent is only puniſhed by fine and penance in the ſpiritual court; or by an action at common law for damages. Though ſome of our law-books ſpeak of *adultery* as a thing temporal againſt the peace. As to the *adultereſs*, by our law, ſhe undergoes no temporal puniſhment whatever, except the loſs of her dower; and ſhe does not loſe even that, if her huſband is weak enough to be reconciled to her, and cohabit with her after the offence committed. 13 Ed. I. cap. 34.

But it is to be obſerved, that *adultereſſes* are ſuch either by the *Canon*, or *Civil Law*.

According to the former, a woman is an *adultereſs*, who either being herſelf married converſes carnally with another man; or being ſingle herſelf, converſes with a man that is married.

According to the latter, ſhe is not an *adultereſs*, if ſhe be not herſelf in the married ſtate, though ſhe converſes with a man that is. The crime, in this caſe, was more properly called *ſtuprum* than *adulterium*.

Hence, among the Romans, the word *adultera*, *adultereſs*, differed from *pellex*, which denoted a ſingle woman, who cohabited with a married man: and *pellex* differed from *concubina*, which ſignified her who had only intercourſe with an unmarried man. The former was reputed infamous, and the latter innocent.

It is much diſputed, whether *adultery* diſſolves the bond of matrimony, and be a ſufficient cauſe of divorce, ſo that the parties may marry again. This was allowed in the ancient church, and is ſtill continued in the Greek, as well as the Lutheran and Calviniſt churches. Romaniſts, however, diſallow of it, and the council of Trent even anathematized thoſe who maintain it; though the canon of anathematization was mitigated in deference to the republic of Venice, in ſome of whoſe dominions, as Zant, Cephalonia, &c. the contrary uſage obtains.

The eccleſiaſtical courts in England ſo far agree with the papiſts, that they only grant a divorce *à menſa & thoro*, in caſe of *adultery*; ſo that a complete divorce, to enable the parties to marry again, cannot be had without an act of parliament.

By a council of Nantes, marriage was declared diſſolved by *adultery*, but the innocent party was not allowed ſecond marriage. In after times, leave was given to the innocent party alone; and afterwards the ſame was allowed the criminal party.

ADULTERY is alſo uſed in *Ancient Cuſtoms*, for the puniſhment, or fine impoſed for that offence, or the privilege of proſecuting for it.

In which ſenſe, *adulterium* amounts to the ſame with what the Saxons called *legerwita*.

ADULTERY is ſometimes uſed, in a more extenſive ſenſe, for any ſpecies of impurity, or crime, againſt the virtue of chaſtity; and in this ſenſe divines underſtand the ſeventh commandment.

ADULTERY is alſo uſed, eſpecially in Scripture, for idolatry, or departing from the true God, to the worſhip of a falſe one.

ADULTERY is alſo uſed, in *Eccleſiaſtical Writers*, for a perſon's invading, or intruding into a biſhopric, during the former biſhop's life. The reaſon of the appellation is, that a biſhop is ſuppoſed to contract a kind of ſpiritual marriage with his church.

The tranſlation of a biſhop from one ſee to another was alſo reputed a ſpecies of *adultery*; on the ſuppoſition of its being a kind of ſecond marriage, which, in thoſe days, was eſteemed a degree of *adultery*. This concluſion was founded on that text of St. Paul, *Let a biſhop be the huſband of one wife*, by a forced conſtruction of church for wife, and of biſhop for huſband.

ADULTERY is alſo uſed, in *Ancient Naturaliſts*, for the act of ingrafting one plant upon another.

In which ſenſe, Pliny ſpeaks of the *adulteries* of trees, *arborum adulteria*, which he repreſents as contrary to nature, and a piece of luxury, or needleſs refinement.

ADULTERY is alſo uſed by ſome fanciful *Aſtronomers* and *Aſtrologers*, for an eclipſe of the ſun, or moon, happening in an unuſual, and, as they ſuppoſe, irregular manner: as in the caſe of horizontal eclipſes, where, though the ſun and moon be diametrically oppoſite, yet they appear as if both above the horizon at the ſame time.

ADVOCARIA, in middle age writers, a tax paid the lord for his protection; ſometimes alſo called *ſalvamentum*.

ADVOCATE, ADVOCATUS, among the Romans, a perſon ſkilled in their law, and who undertook the defence of cauſes at the bar.

The word is compounded of *ad*, *to*, and *vocare*, *to call*; q. d. *I call to my aid or defence*.

The Roman *advocates* anſwered to one part of the office of a barriſter among us, viz. the pleading part; for as to the giving counſel, they never meddled with it; that being the buſineſs of the *juriſconſulti*.

The Romans, in the firſt ages of their ſtate, held the profeſſion of an *advocate* in great honour; and the ſeats of their bar were crouded with ſenators and conſuls; they, whoſe voices commanded the people, thinking it an honour to be employed in defending them.

They were ſtyled, *comites*, *honorati*, *clariſſimi*, and even *patroni*; as if their CLIENTS were not leſs obliged to them, than freed men to their maſters. See PATRON.

The bar was not at that time venal.—Thoſe who aſpired to honours and offices, took this way of gaining an intereſt in the people, and always pleaded *gratis*.

But no ſooner were luxury and corruption brought into the commonwealth, than the bar became a ſharer in them.—Then it was that the ſenators lett out their voices for pay, and zeal and eloquence were ſold to the higheſt bidder.—To put a ſtop to this abuſe, the tribune Cincius procured a law to be paſſed, called from him *Lex Cincia*, whereby the *advocates* were forbid to take any money of their clients.—Fred. Brunerus has publiſhed an ample comment upon this law.

It had before this been prohibited the *advocates* to take any preſents or gratuities for their pleading.—The emperor Auguſtus added a penalty to it: notwithſtanding which, the *advocates* played their part ſo well, that the emperor Claudius thought it an extraordinary circumſtance, when he obliged them not to take above eight great ſeſterces, which are equivalent to 64 pounds ſterling, or upwards, for pleading each cauſe.

Advocate is ſtill uſed in countries, and courts, where the civil law obtains, for thoſe who plead and defend the cauſes of clients truſted to them.

In Scotland they have a college, or *Faculty of Advocates*, 180 in number, appointed to plead in all actions before the lords of ſeſſion.—They have a dean, treaſurer, clerks, examinators, and a curator of their library.

By the articles of the Union, none are to be named ordinary lords of ſeſſion, except thoſe who have been *advocates*, or principal clerks of ſeſſion for five years, &c.

In France, they have two kinds of *advocates*, viz. pleading *advocates*, *avocats plaidants*; and counſel *advocates*, *avocats conſultants*.

This diſtinction was formed with a view to the two branches among the Romans, *advocati*, and *juriſconſulti*.—Yet there is this difference, that the function of the *juriſconſulti*, who only gave their advice, was of a different kind from that of the *advocati*; being a ſort of private and perpetual magiſtrature, principally under the firſt emperors; and the *advocati* never became *juriſconſulti*. Whereas, on the other hand, in France, after the *advocates* have attained to reputation, and experience enough at the bar, they quit ſo buſy a province, and become a kind of chamber-counſel.—They have alſo their *advocate* general, and king's *advocate*, *avocat du roy*.

Advocate, *lord*, in Scotland, one of the officers of ſtate, whoſe buſineſs is to give his advice about the making and executing of laws; to defend the king's right and intereſt in all public meetings; to proſecute all capital crimes before the juſticiary; and to concur in all purſuits before ſovereign courts for breaches of the peace; and alſo in all matters wherein the king, or his donator, has intereſt.—He intents no proceſſes of treaſon, except by warrant of privy-council.

The *lord advocate* is ſometimes an ordinary lord of ſeſſion; in which caſe, he only pleads in the king's cauſes; otherwiſe, he is at liberty to plead in all cauſes.

Advocate *of a city*, or *town*, is a magiſtrate eſtabliſhed in ſeveral places of Germany, for the adminiſtration of juſtice in that city, in the emperor's name. See Advouee.

Advocate is more particularly uſed, in *Church Hiſtory*, for a perſon appointed to defend the rights and revenues of a church, or religious houſe.

The word *advocatus*, or *advowee*, is ſtill retained, for what we uſually call the *patron*, or he who has the advowſon, or right of preſentation, in his own name.

The abbeys and monaſteries had alſo all their *advocates*, or *advowees*. See Adminiculator.

There are ſeveral other kinds of *advocates*; as,

Advocate, *conſiſtorial*, is an officer of the court of Rome, whoſe buſineſs it is to plead on the oppoſitions made to the provisions of benefices in that court. There are ten of theſe in number.

Advocates, *elective*, thoſe choſen by the abbot, biſhop, or chapter, a particular licence being had from the king, or prince, for that purpoſe. The elections were originally made in the preſence of the count of the province.

Advocates, *feudal*. Theſe were of the military kind, who, to make them the more zealous for the intereſt of the church, had lands granted them in fee, which they held of the church, and did homage, and took an oath of fidelity to the biſhop or abbot. Theſe were to lead the vaſſals of the church to war, not only in private quarrels of the church itſelf, but in military expeditions for the king's ſervice, in which they were the ſtandard-bearers of their churches.

Advocate, *fiſcal*, *fiſci* Advocatus, was an officer inſtituted by the emperor Adrian, to defend the cauſe and intereſts of the fiscus, or private treaſury, in the ſeveral tribunals where that might be concerned.

Advocates, *juridical*, in the middle age, were thoſe who from attending cauſes in the court of the comes, or count of the province, became judges themſelves, and held courts of their vaſſals thrice a year, under the name of the *tria placita generalia*.

In conſideration of this further ſervice, they had a particular allowance of one third part of all fines, or mulcts, impoſed on defaulters, &c. which was called *tertia bannorum pars*, *tertius denarius*, *tertia pars compoſitionum*, *tertia pars legum*, or *emendarum*, &c. Beſides a proportion of diet for themſelves and ſervants.

Advocates, *matricular*, were the *advocates* of the mother, or cathedral, churches.

Advocates, *military*, thoſe appointed for the defence of the church, rather by arms and authority, than by pleading and eloquence.

Theſe were introduced in the times of confuſion, when every perſon was obliged to maintain their own property by force; biſhops and abbots not being permitted to bear arms, and the ſcholaſtic or gowned *advocates*, being equally unacquainted with them, recourſe was had to knights, noblemen, ſoldiers, or even to princes.

Advocates, *nominative*, thoſe appointed by a king, or pope. Sometimes the churches petitioned kings, &c. to appoint them an *advocate*; at other times, this was done of their own accord. By ſome regulations, no perſon was capable of being elected *advocate*, unleſs he had an eſtate in land in the ſame county.

Advocates, *regular*, thoſe duly formed and qualified for their profeſſion, by a proper courſe of ſtudy, the requiſite oath, ſubſcription, licence, &c.

Advocates, *ſubordinate*, thoſe appointed by other ſuperior ones, acting under them, and accountable to them.

There were divers reaſons for the creation of theſe ſubordinate *advocates*; as, the ſuperior quality of the principal *advocate*, his being detained in war, or being involved in other affairs; but chiefly the too great diſtance of ſome of the church lands, and their lying in the dominions of foreign princes.

Advocates, *ſupreme* or *ſovereign*, were thoſe, who had the authority in chief, but acted by deputies, or ſubordinate *advocates*. Theſe were alſo called principal, greater, and ſometimes general *advocates*.—Such in many caſes were kings, &c. when either they had been choſen *advocates*, or became ſuch by being founders, or endowers of churches.—Princes had alſo another title to *advocateſhip*, ſome of them pretending to be *advocati nati* of the churches within their dominions.

ADVOCATIA, in the *Feudal Law*, the procuration of ſome public buſineſs, committed by a ſuperior to his ſubſtitute.

Advocatia is alſo uſed for the patronage and protection of a church, college, monaſtery, and the like.

In which ſenſe it amounts to the ſame with advowson.

Advocatia is alſo uſed for the protection or defence of lay perſons, eſtates, &c.

ADVOCATION, *advocatio*, in the *Civil Law*, the act of calling another to our aid, relief, or defence.

Advocation, *letters of*, in the law of Scotland, thoſe granted by the lords of ſeſſion, upon complaint of a perſon ſued before an incompetent judge. By theſe letters, the lords of ſeſſion *advocate*, that is, call that cauſe from the incompetent judge to themſelves.

If after letters of *advocation* are intimated to that judge, he yet proceeds, his decree will be null, as given *ſpreto mandato*.

ADVOCATIONE *Decimarum*, a writ which lies for the claim of the fourth part, or upward, of the tithes that belong to any church. Reg. Orig. 29.

ADVOCATURA, in writers of the middle and barbarous age, denotes an inferior kind of juriſdiction, exerciſed by advocates within the diſtricts of their reſpective churches, &c. The word is ſometimes uſed as ſynonymous with advocatia.

ADVOWEE, in *Ancient Cuſtoms*, and *Law-books*, denotes the advocate of a church, religious houſe, or the like.

The word is otherwiſe written *avouee*, *advouee*, and *avowee*; ſometimes *advouer*; being derived from *avouer*, *to own*, or *acknowledge*.

There were *advowees* of cathedrals, abbies, monaſteries, &c. Thus, Charlemaign had the title of *advowee* of St. Peters; king Hugh, of St. Riquier; and Bolandus mentions ſome letters of pope Nicholas, by which he conſtituted king Edward the Confeſſor, and his ſucceſſors, *advowees* of the monaſtery at Weſtminſter, and of all the churches in England.

Theſe *advowees* were the guardians, protectors, and adminiſtrators of the temporal concerns of the churches, &c. and under their authority, were paſſed all contracts which related to them.

It appears alſo, from the moſt ancient charters, that the donations made to churches were conferred on the perſons of the *advowees*.—They always pleaded the cauſes of the churches in court, and diſtributed juſtice for them, in the places under their juriſdiction.—They alſo commanded the forces furniſhed by their monaſteries, &c. for the war; and even were their champions, and ſometimes maintained duels for them.

This office is ſaid to have been firſt introduced in the fourth century, in the time of Stillico; though the Benedictines do not fix its origin before the eighth century.

By degrees, men of the firſt rank were brought into it, as it was found neceſſary, either to defend with arms, or to protect with power and authority. In ſome monaſteries, they were only called *conſervators*; but theſe, without the name, had all the functions of *advowees*.

There were alſo ſometimes ſeveral *ſub-advowees*, or ſub-advocates, in each monaſtery, who officiated inſtead of the *advowees* themſelves; which, however, proved the ruin of monaſteries; thoſe inferior officers running into great abuſes.

Hence alſo, huſbands, tutors, and every perſon in general, who took upon him the defence of another, were denominated *advowees*, or advocates.—Hence ſeveral cities had their *advowees*; which were eſtabliſhed long after the eccleſiaſtical ones, and doubtleſs from their example.—Thus, we read in hiſtory of the *advowees* of Augſburg, of Arras, &c.

The VIDAMES aſſumed the quality of *advowees*; and hence it is, that ſeveral hiſtorians of the eighth century confound the two functions together.

Hence alſo it is, that ſeveral ſecular lords in Germany bear mitres for their creſts, as having anciently been *advowees* of the great churches.

Spelman diſtinguiſhes two kinds of eccleſiaſtical *advowees*.—The one, of cauſes, or proceſſes, *advocati cauſarum*; the other, of territory, or lands, *advocati ſoli*.

The former were nominated by the king, and were uſually lawyers, who undertook to plead the cauſes of the monaſteries.

The other, which ſtill ſubſiſt, and are ſometimes called by their primitive name, *advowees*, though more uſually PATRONS, were hereditary; as being the founders and endowers of churches, &c. or their heirs.

Women were ſometimes *advowees*, *advocatiſſæ*. And, in effect, the canon law mentions ſome who had this title, and who had the ſame right of preſentation, &c. in their churches, which the *advowees* themſelves had.

In a Stat. 25 Edw. III. we meet with *advowee paramount*, for the higheſt patron; that is, the king.

There were alſo *advowees* of countries and provinces.—In a charter of the year 1187, Berthold duke of Zeringhen is called *advowee* of Thuringia; and in the *Notitia* of the Belgic churches, publiſhed by Miræus, the count of Louvain is ſtyled count and *advowee* of Brabant.—In the eleventh and twelfth centuries, we alſo meet with the *advowees* of Alſatia, of Suabia, &c.

ADVOWING, or AVOWING, ADVOCARE, in *Law*, ſee AVOWRY.

ADVOWSON, ADVOCATIO, the quality or office of an *advowee*, or advocate.

ADVOWSON, or ADVOUZEN, in *Common Law*, ſignifies a right to preſent to a vacant benefice.

Advowſon is ſo called, becauſe the right of preſenting to the church was firſt gained by ſuch as were founders, benefactors, or maintainers of the church, viz. *ratione fundationis*, as where the anceſtor was founder of the church; or *ratione donationis*, where he endowed the church; or *ratione fundi*, as where he gave the ſoil whereupon the church was built; and therefore they were called *advocati*. They were alſo called *patroni*, and thereupon the *advowſon* is called *jus patronatus*. 1 Inſt. 119. Fleta, lib. v. cap. 14.

Though the nomination of fit perſons to officiate in every dioceſe was originally in the biſhop, yet they were content to let the founders of churches have the nomination of the perſons to the churches ſo founded, reſerving to themſelves a right to judge of the fitneſs of the perſons ſo nominated. Gibſ. 2 ed. 756.

Advowſons are of two kinds. 1. *Advowſon in groſs*, is a right ſubſiſting in itſelf, belonging to a perſon, and not adhering to any manor or lands as parcels thereof. 2. *Advowſon appendant*, which depends on a manor, as appurtenant to it.—This, Kitchen calls an *incident*, which may be ſeparated from its ſubject.

Advowſons formerly were moſt of them appendant to manors, and the patrons were parochial barons: the lordſhip of the manor, and patronage of the church, were ſeldom in different hands, until *advowſons* were given to religious houſes. But of late times the lordſhip of the manor, and *advowſon* of the church, have been divided.

Advowſons are alſo *preſentative*, *collative*, or *donative*: *preſentative*, where the patron preſents or offers his clerk to the biſhop of the dioceſe, to be inſtituted in his church; *collative*, where the benefice is given by the biſhop, as original patron thereof, or by means of a right he has acquired by *lapſe*; *donative*, as where the king, or other patron does, by a ſingle donation in writing, put the clerk into poſſeſſion, without *preſentation*, *inſtitution*, or *induction*.

Sometimes, anciently, the patron had the ſole nomination of the prelate, abbot, or prior; either by inveſtiture (i. e. delivery of a paſtoral ſtaff), or by direct preſentation to the dioceſan; and if a free election was left to the religious, yet a *conge d'elire*, or licence of election, was firſt to be obtained of the patron, and the perſon elected was confirmed by him.

If the founder's family became extinct, the patronage of the convent went to the lord of the manor.—Unleſs the ſeveral colleges in the univerſities be reſtrained in the number of *advowſons* they may receive; it is argued they will in time acquire ſuch a ſtock, as to fruſtrate the deſign of their foundation (which is the education of youth) by creating too quick a ſucceſſion of fellows; ſo that there will not be in the colleges a ſufficient number of perſons of competent age, knowlege, and experience, to inſtruct and form the minds of the youth.—In ſome colleges the number of *advowſons* is ſaid to be already two thirds, or more, of the number of fellows.—It is objected, on the other ſide, that the ſucceſſion of fellows may be too ſlow, as well as too quick; whereby perſons well qualified may be detained ſo long in colleges, as not to have ſtrength or activity enough left for the diſcharge of parochial functions.

Colleges holding more *advowſons* in number, than a moiety of the fellows, are not capable of purchaſing more. Grants of *advowſons* by papiſts are void.

Advowſons are temporal inheritances, and lay fees; they may be granted by deed or will, and are aſſets in the hands of heirs or executors.

Preſentations to *advowſons*, for money, or other reward, are void. 31 Eliz. cap. 6. See Burn's Eccl. Law, vol. i.

ADVOWTRY. See ADULTERY.

ADUST, ADUSTUS, among *Phyſicians*, &c. is applied to ſuch humours, as by long heat become of a hot and fiery nature.

The word is formed of the Latin *adurere*, *to burn*.

Such is choler ſuppoſed to be.—Melancholy is uſually conſidered as black, and *aduſt* bile.

Blood is ſaid to be *aduſt*, when, by reaſon of ſome extraordinary heat, its more ſubtile parts are all evaporated, leaving the groſſer, with all the impurities therein, half torrified.

ADUSTION, among *Phyſicians*, is uſed for an inflammation of the parts about the brain, and its membranes, attended with a hollowneſs of the *ſinciput* and eyes, a pale colour, and dryneſs of the body; in which caſe the yolk of an egg, with oil of roſes, applied by way of cataplaſm, is recommended; as are the leaves of turnſol, the parings of a gourd, the pulp of a pompion, applied in the ſame manner with oil of roſes.

ADY, in *Natural Hiſtory*, a name given to the palm-tree of the iſland of St. Thomas. It is a tall tree, with a thick, bare, upright ſtem, growing ſingle on its root, of a thin light timber, and full of juice. The head of this tree ſhoots into a vaſt number of branches, which being cut off, or an inciſion being made therein, afford a great quantity of ſweet juice, which fermenting, ſupplies the place of wine, among the Indians.

The fruit of this tree is called by the Portugueſe *caryoces*, and *carioſſe*; and by the black natives, ABANGA. This fruit is of the ſize and ſhape of a lemon, and contains a kernel, which is good to eat. The fruit itſelf is eat roaſted, and the raw kernels are often mixed with mandioc meal. Theſe kernels are ſuppoſed very cordial. An oil is alſo prepared from this fruit, which anſwers the purpoſe of oil, or butter, in Europe.

This oil is alſo uſed for anointing ſtiff and contracted parts of the body.

ADYNAMIA, in *Medicine*, debility, weakneſs from ſickneſs. It is formed of the privative α, and δυναμις, *ſtrength*.

ADYNAMON, among ancient *Phyſicians*, a kind of weak factitious wine, prepared with muſt boiled down with water; to be given patients, to whom genuine wine might be hurtful.

ADYTUM, a ſecret or retired place in the pagan temples, where oracles were given, and into which none but the prieſts were admitted.

The word originally ſignifies inacceſſible; being compounded of α, *not*, and δυω, or δυνω, *to enter*.

The *Sanctum Sanctorum* of the temple of Solomon was of the nature of the pagan *adytum*, none but the high prieſt being admitted into it, and he but once a year.

ADZE, or ADDICE, a cutting tool, of the ax-kind; having its blade made thin, and arching; and its edge at right angles to the handle; chiefly uſed for taking thin chips of timber or boards, and for paring away certain irregularities which the ax cannot come at.

The *adze* is uſed by carpenters, but more by coopers, as being convenient for cutting the hollow ſides of boards, &c. It is ground from a baſe on its inſide to its outer edge; ſo that, when it is blunt, they cannot conveniently grind it, without taking its helve out of the eye.

AE, or **Æ**, a dipthong, or double vowel, compounded of A and E.

Authors are by no means agreed as to the uſe of the *æ* in Engliſh words.—Some, out of regard to *Etymology*, inſiſt on its being retained in all words, particularly technical ones, borrowed from the Greek and Latin; while others, from a conſideration that it is no proper diphthong in our language, its ſound being no other than that of the ſimple *e*, contend, that it ought to be entirely diſuſed; and, in fact, the ſimple *e* has of late been adopted, inſtead of the Roman *æ*; as in the word *equator*, &c.

ÆACEA, in *Antiquity*, ſolemn feaſts and combats, celebrated in Ægina, in honour of Æacus, who had been their king, and who, on account of his ſingular juſtice upon earth, was ſuppoſed to have a commiſſion given him, to be a prince or judge, whoſe office it was to preſide over Elyſium, or the region of bliſs.

ÆCHMALOTARCHA, in *Antiquity*, a Greek term, ſignifying the chief, or leader of the Jewiſh captives in Babylonia.

The Jews, who refuſed to follow Zorobabel, and return with him to Jeruſalem, after the Babyloniſh captivity, created an *æchmalotarch* to govern them.—Not that the Jews themſelves called them by this name, as ſome authors have aſſerted; for that people ſpoke Hebrew, or Chaldee, not Greek. But Origen, and others, who wrote in the Greek tongue, rendered the Hebrew name ראש גלות *Roſch galuth*, q. d. *chief of the captivity*, by a Greek name of the like import, αιχμαλωταρχος, formed from αιχμαλωτος, *captive*; of αιχμη, *point*, *ſpear*, or *war*; and αρχων, *commander*, *chief*.

However, the Jews ſeemed to have had officers of this kind before the return from Babylon; witneſs the hiſtory of Suſannah; the two elders, who condemned her, being ſuppoſed to have been *æchmalotarchæ* that year.—The Jewiſh writers aſſure us, that the *æchmalotarchæ* were only to be choſen out of the tribe of Judah.

The eaſtern Jews had their princes of the captivity, as the weſtern Jews their patriarchs. The Jews are ſtill ſaid to have an *æchmalotarcha* at Babylon, but without the authority of the ancient ones.

ÆDES, in *Antiquity*, a chapel, or inferior kind of temple, diſtinguiſhed by this, that it was not conſecrated by the Augurs, as thoſe properly called TEMPLES were.

Such was the *ærarium*, or treaſury; called *Ædes Saturni.*

ÆDILE, Ædilis, in *Antiquity*, a Roman magiſtrate, veſted with divers functions, chiefly that of ſuperintending the buildings, both public and private; as baths, aqueducts, roads, bridges, cauſeways, &c.

The word is formed of *ædes*, *temple*, or *houſe*; on account of their having the care of temples, houſes, &c.

The *ædiles* at Rome correſponded to what the Greeks called *agoranomi*, and *aſtynomi*: they differed from *oeconomi* and *arcarii*, who were rather receivers of the revenues; alſo from *logiſtæ*, *curatores & patres civitatis.*

To the *ædiles* belonged the inſpection of the weights and meaſures. They fixed the rates of proviſions, and took care the people ſuffered no exactions. The inquiry and cognizance of debauchees, and diſorders in public houſes, likewiſe belonged to them: they were alſo to reviſe comedies; and it belonged to them to treat the people with grand games and ſpectacles, at their own expence. They were likewiſe to attend on the tribunes of the people.

To the *ædiles* alſo belonged the cuſtody of the plebiſcita, and the cenſure and examination of books. They had the power, on certain occaſions, of iſſuing edicts; and, by degrees, they procured to themſelves a conſiderable juriſdiction, the cognizance of various cauſes, &c.—This office ruined numbers, by its expenſiveneſs; ſo that, in Auguſtus's time, even many ſenators declined it, on that account.

All theſe functions, which rendered the *ædiles* ſo conſiderable, belonged at firſt to the *ædiles* of the people, *ædiles plebeii*, or *minores*: theſe were only two in number, and were firſt created in the ſame year as the tribunes: for the tribunes, finding themſelves oppreſſed with the multiplicity of affairs, demanded of the ſenate to have officers, with whom they might intruſt matters of leſs importance; and, accordingly, two *ædiles* were created; and hence it was, that the *ædiles* were elected every year, at the ſame aſſembly as the tribunes. But theſe plebeian *ædiles* having refuſed, on a ſignal occaſion, to treat the people with ſhews, as pleading themſelves unable to ſupport the expence thereof; the patricians made an offer to do it, provided they would admit them to the honours of the *ædilate*.

On this occaſion, there were two new *ædiles* created, of the number of the patricians, in the year of Rome 388; they were called *ædiles curules*, or *majores*; as having a right to ſit on a CURULE chair, enriched with ivory, when they gave audience; whereas the plebeian *ædiles* only ſat on benches.

Beſides that the *curule ædiles* ſhared all the ordinary functions with the plebeian, their chief employ was, to procure the celebration of the grand Roman games, and to exhibit comedies, ſhews of gladiators, &c. to the people; and they were alſo appointed judges in all caſes relating to the ſelling or exchanging eſtates.

To eaſe theſe four firſt *ædiles*, Cæſar created a new kind, called *ædiles cereales*, as being deputed chiefly to take care of the corn, which was called *donum Cereris*; for the heathens honoured Ceres as the goddeſs who preſided over corn, and attributed to her the invention of agriculture. Theſe *ædiles cereales* were alſo taken out of the order of patricians. In the municipal cities there were *ædiles*, with the ſame authority as at Rome.

We alſo read of an *ædilis alimentarius*, expreſſed in abbreviature by *Ædil. alim.* whoſe buſineſs ſeems to have been to provide diet for thoſe who were maintained at the public charge, though others aſſign him a different office.

In an ancient inſcription we alſo meet with *ædile* of the camp, *ædilis caſtrorum*.

ÆDILATE, Ædilatus, in *Antiquity*, the dignity or magiſtracy of the Roman ÆDILES.

This is otherwiſe called *ædilitas*, *ædility*. In inſcriptions we find it repreſented by the abbreviature AED.

ÆDILITIUM *edictum*, among the Romans, was that whereby a remedy was given a buyer, in caſe a vicious, or unſound beaſt, or ſlave, was ſold him. It was called *ædilitium*, becauſe the preventing of frauds in ſales and contracts belonged eſpecially to the curule *ædiles*.

ÆDITUUS, in *Antiquity*, the keeper of a ſacred manſion, who had the care of the offerings and ornaments of the deity to whom it was peculiarly devoted.

The word is compounded of *ædes* and *tueor*, *I defend*; q. d. *à tuendis ædibus*; originally it was written, *æditimus*.

The *æditus* is the ſame with what Scævola calls *hierophylax*, the Latins ſometimes *ædilis*, and the Greeks νεωκορος; anſwering to the ſexton among us.

The *æditui*, among the Romans, were officers of diſtinction, being the depoſitaries not only of the treaſure, but of the public acts, or records.—The *æditui* had their ſeveral cells, near the temples, the cuſtody of which was committed to them.

The female deities had a woman officer of the ſame kind, under the denomination *æditua*.

ÆDOIA, the ſame as PUDENDA.

ÆGAGROPILA, or Ægagropilus, in *Natural Hiſtory*, a ball generated in the ſtomach of the *rupicapra*, or *chamois goat*, hard on the outſide, and conſiſting of a ſubſtance like hair. See Ball, and *Hair* Ball.

The word is Greek, from αιγαγρος, the *rupicapra*, or rock-goat, and πιλος, *a ball*. The *ægagropilus* is ſometimes called *bezoar Germanicum*, or the German bezoard.

ÆGELETHRON, in *Botany*, is a name uſed by ſome authors for the common *mercurialis*, or Engliſh mercury, an eatable wild herb.

ÆGIAS, in ancient Greek *Phyſicians*, denotes a white ſpeck on the pupil of the eye, occaſioning a dimneſs of ſight, either ariſing from an excrementitious humour, or from the relics of the *cicatricular* of an ulcer on the part.

This is the ſame with what others write *ægis* and *æglia*.

ÆGIDES, a diſorder of the eyes mentioned by Hippocrates. It ſignifies ſmall white cicatrices in the eye, cauſed by an afflux of corroſive humour. See Albugo.

ÆGIDION, a name given to a *collyrium* for inflammations and defluxions of the eyes. It is alſo called *ægoproſopon*.

ÆGILOPS, is a tumor, or rather ulcer, in the great angle of the eye; either with, or without, an inflammation.

The word is compounded of αιξ, *goat*, and ωψ, *eye*; as goats are ſuppoſed extremely liable to this diſtemper. Authors frequently uſe the words *ægilops*, *anchilops*, and *fiſtula lachrymalis*, promiſcuouſly; but the more accurate, after Ægineta, make a difference.—The tumour, ere it becomes ulcerous, is properly called *anchilops*; and, after it is got into the lachrymal paſſages, and has rendered the *os lachrymale* carious, *fiſtula lachrymalis*.

If the *ægilops* be accompanied with an inflammation, it is ſuppoſed to take its riſe from the abundance of blood, which a plethoric habit diſcharges on the corner of the eye.—If it be without an inflammation, it is ſuppoſed to proceed from a viſcous pituitous humour, thrown upon this part. The method of cure is the ſame as that of the *ophthalmia*. But before it has reached the lachrymal paſſages, it is managed like other ulcers.

If the *ægilops* be neglected, it burſts, and degenerates into a FISTULA, which eats into the bone.

Ægilops is alſo a name given to a kind of oat, called alſo Cerris, and by the Latins Festuca, the flour of which, mixed with honey, has been reputed a remedy for this diſeaſe.

The *ægilops* ſignifies alſo *avena ſylveſtris*, the wild oat, common among corn, called Bromus; a decoction of the root of which kills worms. See Oat.

The *ægilops* is alſo a genus of the *polygamia monoecia* claſs of plants: the corolla of the hermaphrodite flower conſiſts of a bivalve glume, terminated by a double or triple ariſta or awn; the ſeed is ſingle and oblong; the corolla of the male flower is alſo a bivalve, ariſtated glume, as in the hermaphrodite flower.

ÆGILOPS is alſo uſed for the *holm* OAK, with great acorns; the CERRUS *mas majore glande, quercus calyce echinato, glande majore,* αιγιλωψ *idæorum, aſpris maurorum, cerrus latinorum.*

At Venice, they make cups of the acorns of this tree; which is alſo uſed, as we do oak-bark, to dreſs leather.

The cup of this acorn is an inch and an half in diameter, and ſomewhat leſs in depth. Theſe cups are alſo uſed, inſtead of galls, to dye woollen cloth black.

ÆGINETA, in *Botany*, the name given by Linnæus to a genus of plants, belonging to the claſs of *didynamia angioſpermia*; the characters of which are theſe: the cup is an oval, inflated, and coloured ſpatha; it is univalve, and opens longitudinally near the top. The flower conſiſts of one petal. Its baſe is large, round, and inflated. The tube is ſhort, cylindric, and open; and the mouth is ſmall, but expanded, and turns back at the edge. The ſtamina are four crooked filaments; two of them are of the length of the flower, and the other two a little ſhorter. The antheræ are oblong, and ſtand cloſe to one another at their tops. The germen of the piſtil is oval; the ſtyle is ſubulated, and of the length of the ſtamina; and the ſtigma is large, round, and bending. The Hortus Malabaricus is the only work in which we have a deſcription of this plant.

ÆGIPAN, in *Antiquity*, a denomination given to Pan, and the Panes.

The ancients alſo give the name *ægipans* to a ſort of monſters mentioned by Pliny, Solinus, and Pomp. Mela. Salmaſius, in his notes on Solinus, takes *ægipan* to have ſignified the ſame, in Libya, with *ſylvanus* among the Romans.

Voſſius rejects the opinion, and ſhews, that the *ægipans* had not faces like men, as the ſylvans had; but like goats. In effect, the whole upper part of the body reſembled that animal; and as to the lower, they painted it with a fiſh's tail. The monſter repreſented on ſome medals of Auguſtus, by antiquaries called *Capricornus*, appears to be the true *ægipan*.

The word is derived from αιξ, *a goat*; Pan being repreſented with the horns, feet, and legs of that animal.

ÆGIS, in the *Ancient Mythology*, a name given to the ſhield, or buckler, of Jupiter and Pallas.

The goat Amalthea, which had ſuckled Jove, being dead; that god is ſaid to have covered his buckler with the ſkin thereof; whence the appellation *ægis*, from αιξ, αιγος, *ſhe-goat*.

Jupiter, afterwards reſtoring the beaſt to life again, covered it with a new ſkin, and placed it among the ſtars.

As to his buckler, he made a preſent of it to Minerva; whence that goddeſs's buckler is alſo called *ægis*.

Minerva, having killed the Gorgon Meduſa, nailed her head in the middle of the *ægis*, which henceforth had the faculty of converting into ſtone all thoſe who looked thereon; as Meduſa herſelf had done during her life.

Others take the *ægis* not to have been a buckler, but a cuiraſs, or breaſt-plate; and it is certain, the *ægis* of Pallas, deſcribed by Virgil, Æn. lib. viii. ver. 435, muſt have been a cuiraſs; ſince that poet ſays expreſly, that Meduſa's head was on the breaſt of the goddeſs. But the *ægis* of Jupiter, mentioned a little higher, ver. 354, ſeems to have been a buckler. The words

Cum ſæpe nigrantem
Ægida *concuteret dextra*,

agreeing very well to a buckler; but not at all to a cuiraſs, or breaſt-plate.

Servius makes the ſame diſtinction on the two paſſages of Virgil; for on verſe 354, he takes the *ægis* for the buckler of Jupiter, made, as above-mentioned, of the ſkin of the goat Amalthea; and on verſe 435, he deſcribes the *ægis* as the armour which covers the breaſt; and which, in ſpeaking of men, is called *cuiraſs*; and *ægis*, in ſpeaking of the gods. Many authors have overlooked theſe diſtinctions for want of going to the ſources.

ÆGLEFINUS, in *Zoology*, the name given, by the generality of authors, to the haddock, called by others the *onos*, or ASINUS *antiquorum*. It is a well-known fiſh, and ſeems of a middle nature between the cod and the whiting.

ÆGLEUS, in *Botany*, a term of diſtinction for the white chamæleon-thiſtle. It is derived from the Greek αιγληεις of Galen; by which word he diſtinguiſhes the white chamæleon, which was an eſculent and medicinal plant, from the *erebennus*, or ἐρεϐεννος, which was what we call the black chamæleon-thiſtle, and was eſteemed poiſonous.

ÆGOBOLIUM, in *Antiquity*, the ſacrifice of a goat offered to Cybele.

The *ægobolium* was an expiatory ſacrifice, which bore a near reſemblance to the *taurobolium* and *criobolium*, and ſeems to have been ſometimes joined with them.

ÆGOCEPHALUS, in *Zoology*, the name by which the generality of authors call the bird, known in England by the name of the GODWIT, or in ſome places the *ſtone-*PLOVER, the *yarwhep*, or *yarwhip*.

ÆGOCERAS, a name given to FENUGREEK, and alſo to BOUCERAS, becauſe of its corniculated fruit, the word originally ſignifying *goat's-horn*.

ÆGOLETHRON, a plant deſcribed by Pliny; which appears to be the ſame with what Tournefort deſcribes under the name of *chamærododendros pontica maxima meſpili folio, floreo luteo*. The ancients attribute dangerous qualities to it.

ÆGOMANTIA, in *Antiquity*, a ſpecies of divination performed by means of a goat.

ÆGONYCHUS, in *Natural Hiſtory*, a name mentioned by Pliny, as a ſynonym of the *lithoſpermum*, or GROMWEL.

It had this name given it, by the Greek writers, from the words αιγος ὄνυξ, *the claw* or *hoof of a goat*.

The ancients had another name for this plant, of the ſame ſort or origin, which was *exonychon*: by this they expreſſed its being like the exterior part of the human nails on the fingers. The hardneſs and ſcaly nature of the ſeeds gave the idea of the reſemblance of a nail, or hoof.

ÆGOPHTHALMUS, the *goat's eye-ſtone*, a name given, by ſome authors, to thoſe pieces of agat, or other ſemipellucid gems, as have circular ſpots in them reſembling the eyes of that animal in colour, and in their round figure.

ÆGOPODIUM, GOUT-WEED, in *Botany*, a genus of the *pentandria digynia* claſs of plants; the general corolla whereof are uniform; the ſingle flowers conſiſt each of five oval, concave, and nearly equal petals; the fruit is naked, ovato-oblong, ſtriated, and ſeparated into two parts; the ſeeds are two, ovato-oblong and ſtriated, convex on one ſide, and plain on the other.

ÆGOPOGON, in *Botany*, a name uſed by Tragus, and ſome others, to expreſs the *common* MEADOWSWEET, or ULMARIA.

ÆGREFINUS, ſee ÆGLEFINUS.

ÆGRITUDO *bovina*. See BOVINA *affectio*.

ÆGYPTIACA ſignifies the PAPYRUS.

ÆGYPTIACUM, in *Medicine*, a name given to divers unguents of the detergent, or corroſive kind.

We meet with a *black*, a *red*, a *white*, a *ſimple*, a *compound*, and a magiſtral *Ægyptiacum*.

The *ſimple Ægyptiacum*, which is that uſually found in our ſhops, is a compoſition of verdigriſe, vinegar, and honey, boiled to a conſiſtence: the preſcription is Meſue's. —It is uſually ſuppoſed to take its name from its duſky colour, wherein it reſembles that of the natives of Ægypt. —It is improperly called an unguent; as there is no oil, or rather fat, in it. Some chuſe to call it *Mel Ægyptiacum*. It is chiefly uſed for eating off rotten fleſh, and cleanſing foul ulcers; particularly venereal ones in the throat, &c. It alſo deſtroys thoſe cancerous eroſions apt to grow in childrens mouths.

The German diſpenſaries have another compoſition called *Ægyptiacum compoſitum magiſtrale*, or *Hildani*, wherein treacle, mithridate, camphor, &c. are ingredients.

White *Ægyptiacum* is a compoſition of lily roots mixed up with aromatics: it is mentioned by Hippocrates, and is the ſame with what other ancients call CICINUM. It was uſed by the ladies of thoſe days to ſmear over their faces, to preſerve their complexions.

Hippocrates alſo ſpeaks of another unguent under the ſame name, compoſed of the flowers of the Egyptian thorn.

Farriers make a red, as well as black kind, of much the ſame ingredients, only with ſome difference in the proportions; uſed eſpecially to ſoften the hoofs of a horſe, when too hard.

ÆGYPTILLA, in *Natural Hiſtory*, the name of a ſtone deſcribed by the ancients, and ſaid, by ſome authors, to have the remarkable quality of giving water the colour and taſte of wine.

ÆGYPTION, the name of a topic uſed by the ancients in uterine diſorders.

ÆGYPTIUM *pharmacum ad aures*, Aetius Tetrab. ii. Serm. 2. cap. 83, ſpeaks of this as excellent for deterging fœtid ulcers of the ears, which he ſays it cures, though the patient were born with them.

ÆHOITULLA, in *Zoology*, the name of an Eaſt Indian ſpecies of ſerpent, found frequently in the iſland of Ceylon; it is a very long and ſlender ſnake, ſometimes wholly of a fine green, ſometimes green and white, and lives principally on trees, and among buſhes.

ÆICHRYSON is a name given to the SEDUM *majus*, called alſo *æithales*.

ÆINAUTÆ, in *Antiquity*, ſenators of Miletus, who held their deliberations on board a ſhip, far from ſhore, and till matters were reſolved upon, never returned to land.

The word is Greek, αειναυται; q. d. *ſemper nautæ, always mariners.*

AELQUAPPE, in *Zoology*, the common name, among the German nations, of a fiſh of the MUSTELA kind, the viviparous eelpout, called by Schonefeldt *muſtela vivipara*, and in ſome places *aelpute*, *aelmoder*, and *aelmutter*. It is uſually of a foot long or more. Its ſkin is perfectly ſmooth, and the colour of its back and head a browniſh yellow, marked with blotches of black; the colour of the back grows paler on the ſides, and on the belly is whitiſh. It has four gills on a ſide, and the head is ſhaped like that of the eel; the back fin reaches the whole length of the body, terminating near the tail. The belly fin begins at the anus, and reaches to the extremity of the fiſh, ending in a fine, ſlender, and ſomewhat reddiſh tail. Beſides theſe, it has two pair of fins, one at the bottom of the gills, which are ſomewhat broad, and the other very fine and ſlender under the throat. The young of this ſpecies are often found alive, to the number of three hundred in one individual: they are found of two fingers breadth long, and live ſome time after they are taken out.

ÆIZOON, αειζωον, from αει, *always*, and ζωη, *life*. *Sempervivum*, SEDUM, HOUSELEEK.

ÆLUROPO, a name given to a ſyrup made of the herb *cats-foot*, which is a ſpecies of GNAPHALIUM.

ÆLURUS, in *Mythology*, the god of the cats; he is repreſented by the ancient Egyptians, ſometimes as a cat, ſometimes as a man, with a cat's head.

ÆMOBOLIUM, in *Antiquity*, the blood of a bull, or ram, offered in the ſacrifices, called *taurobolia* and *criobolia*.

In which ſenſe the word occurs in ancient inſcriptions. Reineſius and Vandale take it for a corruption, and alter it to ÆGOBOLIUM. M. de Boze defends the *æmobolium*.

ÆNEATORES, in *Antiquity*, the muſicians in an army; including thoſe who played trumpets, horns, *litui*, *buccinæ*, &c.

The word is formed from *æneus*, on account of the brazen inſtruments uſed by them.

ÆNIGMA, a propoſition put in obſcure, ambiguous, and generally contradictory terms, to puzzle, or exerciſe the wit, in finding out its meaning; or, an obſcure diſcourſe, covering ſome common and well known thing, under remote and common terms.

The word is formed of αινιττεσθαι, *obſcurè innuere, to hint a thing darkly*; of αινος, *an obſcure ſpeech, diſcourſe.* The Latins ſometimes call it *ſcirpus*, *ſirpus*, or *ſcrupus*. The populace with us name it *riddle*; from the Belgic *raeden*, or the Saxon *araethan*, *to interpret.*

Fran. Junius defines an *ænigma* to be an obſcure parable, or allegory; and makes two kinds: the one *greater*, rendering the ſentence more intricate and knotty, by a multitude of words; the other *leſſer*, conſiſting of only one or two remote words, or alluſions; as in Iſaiah, ch. xi. 1. where Jeſus Chriſt is called נצר, *ſurculus*, *rod*, or *branch*. Fa. Bouhours, in the memoirs of Trevoux, defines an *ænigma*, a diſcourſe, or painting, including ſome hidden meaning, which is propoſed to be gueſſed.

ÆNIGMAS, *painted*, are repreſentations of the works of nature, or art, concealed under human figures, drawn from hiſtory, or fable. Thus Jeſus Chriſt, in the middle of the doctors, repreſents the Bible, &c.

A *verbal ænigma* is a witty, artful, and abſtruſe deſcription of any thing.

The uſe of *ænigmas* was very great among the Egyptians. Gale thinks, they might borrow their cuſtom from the Hebrews, among whom, it is certain, *ænigmas* were not leſs in uſe. Witneſs Samſon's riddle, Judg. xiv. 12, 13. *I will now put forth a riddle to you*, &c. חידה, i. e. according to Vatable, an *ænigmatical problem:* the LXX. render it, προβλημα. Solomon is ſaid to have been particularly ſkilful in the ſolution of *ænigmas*. Joſeph. Antiq. lib. v. cap. 2. Clemens aſſures us, that the Egyptians placed *ſphinges* before their temples; to intimate that the doctrines of God and religion were *ænigmatical* and obſcure. See HIEROGLYPHIC.

Some repreſent the *ænigma* as the ſame with *gryphus*; but the more exact writers make a diſtinction; though wherein the difference lies is not agreed on. Some make it conſiſt in this, that the *ænigma* properly imports ſomething merry or jocoſe, and *gryphus* a ſubject more grave and profound. Others reduce the difference to this, that in the *gryphus* there is ſomething captious, and capable of leading into a ſnare, which is not found in the *ænigma*.

The REBUS is alſo ranked by ſome in the number of *ænigmas*.

In a general ſenſe, every dark ſaying, every difficult queſtion, every parable, may paſs for an *ænigma*. Hence obſcure laws are called *Ænigmata Juris*.

The alchemiſts are great dealers in the ænigmatic language, their proceſſes for the philoſophers ſtone, being generally wrapped up in riddles; e. gr. *Fac ex mare et fœmina circulum, inde quadrangulum, hinc triangulum, fac circulum et habebis lapidem philoſophorum.* Barchuſen has publiſhed an explication of the riddles of chemiſts, alchemiſts, phyſicians, &c.

Among the *ænigmas* of chemiſts, that called the ſibylline *ænigma* is famous, of which we find a copy in a MS. of Stephanus Alexandrinus.

Εννέα γράμματ᾽ ἔχω, τετρασύλλαβός εἰμι, νόειμι.
Αἱ τρεῖς αἱ πρῶται δυὸ γράμματ᾽ ἔχουσιν ἑκάστη,
Ἡ λοιπὴ δὲ τὰ λοιπὰ, καὶ εἰσὶν ἄφωνα τὰ πέντε.
Τοῦ παντὸς δ᾽ ἀριθμοῦ ἑκατοντάδες εἰσὶ δὶς ἑπτά,
Καὶ τρεῖς τρὶς δεκάδες καὶ δὶς τρία. Γνοὺς δὲ τίς εἰμι,
Ουκ ἀμύητος ἔσῃ τῆς παρ᾽ ἐμοῦ σοφίης.

Thus tranſlated by M. Leibnitz.

Literulis noſcor quadriſyllabus ipſe novenis:
Syllaba habet binas, niſi quod tenet ultima ternas.
Vocales quatuor, quinis non propria vox eſt.
Bis ſeptem vicibus numerum centuria totum
Ingreditur, decadeſque novem, tum bis tria. Si me
Noveris, hinc aditus ad ſacra noſtra patent.

Stephanus gives a myſtical ſolution of this *ænigma*. Moret will have it ſignify the name Jehovah, which, according to him, comprehends the number 1696, abating one, the number contained in the *ænigma*. Brentius maintains that the whole ſum amounts to 1711, and that it repreſents the word φωσφορος. The generality underſtand it of the word arſenic, or ΑΡΣΕΝΙΚΟΝ. M. Leibnitz gives a very artful ſolution of it in this ſenſe, by only ſuppoſing the A to ſtand for a thouſand, and I for unity, as we ſometimes find them uſed by grammarians. F. Meneſtrier has attempted to reduce the compoſition and reſolution of *ænigmas* to a kind of art, with fixed rules, and principles, which he calls the philoſophy of *ænigmatic* images.

ÆNIGMA. The *ſubject* of an *ænigma* ſhould be ſomething eaſily conceived, and generally known.

ÆNIGMAS, *the form of*, conſiſts in the words, which, whether they be in proſe or verſe, contain either ſome deſcription, a queſtion, or a proſopopœia. The laſt kind are the moſt pleaſing, inaſmuch as they give life and action to things, which otherwiſe have them not. To make an *ænigma*, therefore, two things are to be pitched on, which bear ſome reſemblance to each other; as the ſun, and a monarch; or a ſhip, and a houſe; and on this reſemblance is to be raiſed a ſuperſtructure of contrarieties to amuſe and perplex. It is eaſier to find great ſubjects for *ænigmas* in figures than in words, inaſmuch as painting attracts the eyes, and excites the attention to diſcover the ſenſe. The ſubjects of *ænigmas* in painting, are to be taken either from hiſtory or fable; the compoſition here is a kind of metamorphoſis, wherein, e. gr. human figures are changed into trees, and rivers into metals. This converſion, however, does not depend merely on caprice; there muſt be ſomething of ſuitableneſs, and even erudition, to authorize it. Thus the battle of Conſtantine againſt Maxentius may be taken for the ſubject of an *ænigma*, to repreſent the game of cheſs: the ſign which appeared in the heavens with the words, *in hoc ſigno vinces*, may properly enough repreſent the ſecret of this game, which conſiſts in ſaving the king. It is much eaſier to turn *mythology* into *ænigmas*, than *hiſtory*. Accordingly ſeveral have imagined, that the conqueſt of the golden fleece, was no other than the tranſmutation of metals; and that the fable of Circe was the art of chemiſtry in *ænigma*.

ÆNIGMAS of pure invention are a kind of *poetry*, and more ſubtle than thoſe drawn from mythology; ſince here the matter itſelf is to be created: inſtead of adopting ſome hiſtory or received fable, ſomething probable is feigned, the chief action whereof is known, e. gr. a ſhipwreck, a conflagration, an amphitheatre, or the like. It is eſſential to *ænigmas*, that the hiſtory or fable, under which they are preſented, be known to every body; otherwiſe it will comprehend two *ænigmas* inſtead of one; the firſt of the hiſtory or fable, the ſecond of the ſenſe it is to be taken in. Another eſſential rule of the *ænigma* is, that it only admit of one ſenſe. Every *ænigma* which is ſuſceptive of different interpretations, all equally natural, is ſo far imperfect.

ÆNIGMATICAL, ſomething that relates to, or partakes of the nature of *ænigmas*.

The philoſophy of the DRUIDS was altogether *ænigmatical*. The ancient ſages in general affected an *ænigmatical* way of writing, to conceal their doctrines from the populace. The Romans in Nero's time were obliged to have recourſe

courſe to the like method, though for different reaſons.

The *ænigmatical* characters of the Egyptians were a ſpecies of HIEROGLYPHICS, conſiſting of ſuch as bore no natural reſemblance to the things they repreſented. Such was the beetle, uſed to expreſs the ſun; the ſerpent, to repreſent the ſtars.

We read of an *ænigmatical* medal preſented by the Huguenots to Henry III. Schott has publiſhed an explication of an *ænigmatical* coin of the emperor Auguſtus, concerning which, antiquaries have been long divided.

ÆNIGMATOGRAPHER, or ÆNIGMATIST, a maker or explainer of *ænigmas*.

Hardouin, Vander Hardt, &c. are great *ænigmatiſts*.

ÆNIGMATOGRAPHY, ÆNIGMATOGRAPHIA, the art of making and reſolving, or of collecting ÆNIGMAS.

The word is compounded of *αινιγμα*, and *γραφειν*, *to deſcribe*.

ÆNIGMATOGRAPHY, otherwiſe called *ænigmatology*, may be divided into general and particular. The firſt gives rules concerning the nature, kinds, compoſition, and uſe of *ænigmas*; the ſecond conſiders the *ænigmas* in particular ſciences, or languages, Greek, Latin, Hebrew, philological, philoſophical, theological, &c.

Nic. Reuſner has a treatiſe, under the title of ÆNIGMATOGRAPHIA.

ÆNITTOLOGIUS, in *Poetry*, a kind of verſe, conſiſting of two *dactyls*, and three *trochæi*. Such is,

Prælia dira placent truci juventæ.

ÆOLIC, or ÆOLIAN, in *Grammar*, denotes one of the five dialects of the Greek tongue.

It was firſt uſed in Bœotia; whence it paſſed into Æolia, and was that which Sappho and Alcæus wrote in.

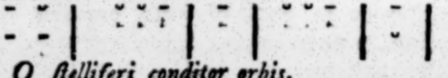
The *Æolic* dialect generally throws out the aſpirate or ſharp ſpirit, and agrees in ſo many things with the DORIC dialect, that the two are uſually confounded together.

The *Æolic digamma* is a name given to the letter F, which the Æolians uſed to prefix to words beginning with vowels, as Fοινος, for οινος; alſo to inſert between vowels, as οFις, for οις.

ÆOLIC *verſe*, *carmen Æolicum*, a kind of meaſure, conſiſting firſt of an *iambic*, or *ſpondee*, then of two *anapeſts*, divided by a ſyllable, and laſtly, a ſyllable common.

This is otherwiſe called *eulogic*, and, from the chief poets who uſed it, *Archilochian* and *Pindaric*.

Its type is



E. gr. *O ſtelliferi conditor orbis.*

ÆOLIPILE, ÆOLIPILA, an hydraulic inſtrument, conſiſting of a hollow metalline ball, with a ſlender neck, or pipe, ariſing from the ſame. This, being filled with water, and thus expoſed to the fire, produces a vehement blaſt of WIND.

This inſtrument, Des Cartes, and others, have made uſe of, to account for the natural cauſe, and generation, of wind.—And hence its name, *Æolipila*, q. d. *pila Æoli*, *Æolus's ball*; or Αιολȣ πυλαι, *the gates of Æolus*; Æolus being reputed the god of the winds.

Sometimes the neck is made to ſcrew into the ball, which is the moſt commodious way; becauſe, then, the cavity may the more readily be filled with water. If there be no ſcrew, it may be filled thus:—Heat the ball red hot, and throw it into a veſſel of water; the water will run in at the ſmall hole, and fill about two thirds of the cavity.

If, after this, the *Æolipile* be laid on, or before the fire, ſo that the water and veſſel become very much heated; the water, being rarefied into a kind of momentary air, will be forced out with very great noiſe and violence; but it will be by fits, and not with a conſtant and uniform blaſt. Great care ſhould be taken that the aperture of the pipe be not ſtopped, when the inſtrument is put on the fire, otherwiſe the *Æolipile* will burſt with a vaſt exploſion, and may occaſion great miſchief.

Theſe phænomena the reader will be eaſily enabled to ſolve, from what is ſhewn under the articles, AIR, WATER, and RAREFACTION.

The air or vapour iſſuing out of the *Æolipile* is found ſenſibly hot near the orifice; but, at a farther diſtance, cold; like what we obſerve of our own breath: the cauſe of which is controverted.—The Corpuſcularians account for it hence; that the FIRE contained in the rarefied vapour, though ſufficient to be felt near the orifice, diſengages itſelf in the progreſs of the ſtream, and becomes inſenſible ere it be arrived at the journey's end.—The mechanical philoſophers, on the other hand, hold, that the vapour, at its exit from the ball, is endued with that peculiar ſpecies of circular motion which conſtitutes the quality HEAT; and that the farther it recedes therefrom, the more is this motion deſtroyed, by the reaction of the contiguous AIR; till the heat, at length, becomes inſenſible.

Chauvin ſuggeſts ſome farther uſes of the *Æolipile*.—1. He thinks it might be applied, inſtead of a bellows, to blow the fire, where a very intenſe heat is required. Dr. Lewis condemns ſubſtituting the *Æolipile* inſtead of a bellows, and ſays, that upon trial he always found that inſtead of exciting, it extinguiſhed the fire. Com. Phil. Techn. p. 21.—2. If a trumpet, horn, or other ſonorous inſtrument, were fitted to its neck, it might be made to yield muſic. 3. If the neck were turned perpendicularly upwards, and prolonged by a tube or hollow cylinder fitted to it, and a hollow ball laid on the orifice of the tube, the ball would be blown up, and kept fluctuating, or playing up and down, as in the ſtream of a FOUNTAIN. And, 4. It might ſerve to ſcent or fumigate a room, if filled with perfumed, inſtead of common water. An *Æliopile* has been ſometimes placed in a chimney, where it can be heated, the vapour of which ſerves to drive the ſmoak up the chimney.

Dr. Plott gives an inſtance where the *Æolipile* is actually uſed to blow the fire: the lord of the manor of Eſſington is bound by his tenure to drive a gooſe every New-year's day three times round the hall of the lord of Hilton, while Jack of Hilton (a brazen figure having the ſtructure of an *Æolipile*) blows the fire.

In Italy it is ſaid, that the *Æliopile* is commonly made uſe of to cure ſmoaky chimnies: for being hung over the fire, the blaſt ariſing from it carries up the loitering ſmoak along with it.

F. Merſennus, and ſome others, have made uſe of this machine, to meaſure the gravity and degree of rarefaction of the air. But this method is liable to conſiderable objections.

Some late authors have diſcovered a ſtill more extraordinary uſe, to which the frauds of the heathen prieſthood applied the *Æolipile*, viz. the working of ſham miracles. Beſides Jack of Hilton, which had been an ancient Saxon image, or idol, Mr. Weber ſhews, that *Pluſter*, a celebrated German idol, is alſo of the *Æolipile* kind; and in virtue thereof, could do noble feats; being filled with a fluid, and thus ſet on the fire, it would be covered with ſweat; and as the heat increaſed, would at length burſt out into flames.

ÆOLUS, in the *Heathen Theology*, the god of the winds, painted with ſwoln cheeks, like one who with main force endeavours to blow a blaſt; alſo with two wings on his ſhoulders, and a high-coloured fiery countenance.

ÆOLUS alſo, in *Mechanics*, denotes a portable machine, not long ſince invented by Mr. Tidd, for refreſhing and changing the air in rooms.

This machine is adapted in its dimenſions to ſupply the place of a ſquare of glaſs in a ſaſh-window, and is executed in ſo ſmall a compaſs, as to project but a little way from the ſaſh, and in ſo neat a manner, ſays the inventor, as to be an elegant ornament to the place where it is fixed. It works without the leaſt noiſe, requires no attendance, and occaſions neither trouble nor expence to keep it in order. It throws in only ſuch a quantity of air as is agreeable; and leaves off working, of its own accord, whenever the door or window is opened.

ÆOLUS's *Harp*, an inſtrument ſo named, from its producing an agreeable melody, merely by the action of the wind. It is thus conſtructed.—Let a box be made of as thin deal as poſſible, (*Table Miſcellany*, *fig.* 18.) of the exact length anſwering to the width of the window in which it is intended to be placed; five or ſix inches deep, and ſeven or eight inches wide. Let there be glued upon it at *aa*, two pieces of wainſcot about half an inch high, and a quarter of an inch thick, to ſerve as bridges for the ſtrings; and within ſide, at each end, under *b b*, glue two pieces of beech, about an inch ſquare, of length equal to the width of the box, which are to ſuſtain the pegs. Into theſe fix as many pins, ſuch as are uſed in a harpſichord, as there are to be ſtrings in the inſtrument, half at one end, and half at the other, at equal diſtances. It now remains to ſtring it with ſmall catgut, or blue firſt fiddle ſtrings, fixing one end to a ſmall braſs pin, as at *e e*, (*fig.* 19.) and twiſting the other round the oppoſite pin at *b b*.

When theſe ſtrings are tuned uniſon, and the inſtrument placed with the ſtrings outward, in the window to which it is fitted, it will, provided the air blows on that window, give a ſound like a diſtant choir, increaſing or decreaſing, according to the ſtrength of the wind.

The roſes in the middle only repreſent ſound-holes; the thinner the top is, the better will the inſtrument perform.

Mr. Thompſon, in a note to his celebrated Ode on this inſtrument, aſcribes the invention of it to Mr. Oſwald; whereas it was known to Kircher above an hundred years ago; and the method of conſtructing and uſing it is deſcribed by him in a book intitled, Magia Phonotactica & Phonurgia.

ÆON, ΑΙΩΝ, *age*; literally ſignifies the duration of a thing.

Some have affixed another IDEA to the word *æon*; in order to which, they have made uſe of the philoſophy of Plato, giving reality to the ideas which that philoſopher had imagined in God; and even perſonifying them, and feigning them diſtinct from God, and to have been produced by him; ſome male, others female. See PLATONISM.

Theſe ideas they call *æons*; of an aſſembly whereof they compoſe their deity, calling it πληρωμα, a Greek word, ſignifying *fulneſs*.

Simon Magus is ſaid to have been the firſt inventor of theſe *æons*, which were afterwards brought to perfection by Valentinus; who, refining on thoſe who preceded him in this way, produced a long genealogy of *æons*, to the number of 30. The firſt, and moſt perfect, he particularly denominates Προων, *Proon*, that is, *pre-exiſtent*; beſide other names, the moſt uſual whereof was that of *Bythos*, Βυθος, *depth*.

This *Bythos*, he ſays, continued long alone with Εννοια, *Ennœa*, *Thought*; whom Valentinus alſo called Χαρις, *Grace*, and Σιγη, *Silence*. At length, *Bythos*, with *Sige*, produced *Nous*, Νȣς, *Underſtanding*; and Αληθεια, *Truth*, her ſiſter. *Nous* begat two *æons*; *Logos*, Λογος, *Word*; and *Zoe*, Ζωη, *Life*; which begot two others; *Anthropos*, Ανθρωπος, *Man*; and Εκκλησια, *Church*. And theſe eight *æons* were the chief of all the reſt.

The *Word*, Λογος, and *Life*, Ζωη, begat ten other *æons*; *Man* and the *Church*, begat twelve more; among whom were, the *Paraclete*, *Faith*, *Hope*, *Charity*, the *Perfect*, Τελειος, and *Wiſdom*, Σοφια. And thus were thirty *æons* made up; which, all together, made the *Pleroma*, Πληρωμα, or *ſpiritual and inviſible plenitude*. See GNOSTICS.

ÆON alſo ſignifies ſpinal marrow.

ÆON likewiſe, in the *Phœnician Theology*, was the firſt created woman.

ÆORA, in the *Medical Writings* of the ancients, is uſed for geſtation; which ſort of exerciſe was often preſcribed by the phyſicians of thoſe days. Other exerciſes conſiſted principally in the motion of the body, bnt in the *æora* the limbs were at reſt, while the body was carried about and moved from place to place, in ſuch a manner as the phyſician preſcribed. It had therefore the advantages of exerciſe, without the fatigue of it.

This exerciſe was promoted ſeveral ways: ſometimes the patient was laid in a ſort of hammoc, ſupported by ropes, and moved backward and forward; ſometimes his bed run nimbly on its feet. And beſide theſe, the ſeveral ways of travelling were accounted ſpecies of the *æora*, whether in the litter, in a boat or ſhip, or on even ground in a chariot.

Aſclepiades was the firſt who brought geſtation into practice, which was uſed as a means to recover ſtrength after a fever, &c.

ÆRA, in *Chronology*, a fixed point of time, from whence to begin a computation of the years enſuing.

The word is ſometimes alſo written in ancient authors, *era*. Its origin is conteſted, though it is generally allowed to have had its riſe in Spain. Sepulveda ſuppoſes it formed from A. ER. A. the notæ or abbreviatures of the words, *annus erat Auguſti*, occaſioned by the Spaniards beginning their computation from the time their country came under the dominion of Auguſtus, or that of their receiving the Roman calendar. This opinion, however ingenious, is rejected by Scaliger, not only on account that in the ancient abbreviatures *A* never ſtood for *annus*, unleſs when preceded by *V* for *vixit*; and that it ſeems improbable they ſhould put *ER* for *erat*, and the letter *A*, without any diſcrimination, both for *annus* and *Auguſtus*. Voſſius nevertheleſs favours the conjecture, and judges it at leaſt as probable, as either that of Iſidore, who derives *æra* from *æs*, the tribute-money, wherewith Auguſtus taxed the world: or that of Scaliger himſelf, who deduces it likewiſe from *æs*, though in a different manner. *Æs*, he obſerves, was uſed among the ancients for an *article*, or *item*, in an account; and hence it came alſo to ſtand for a ſum or number itſelf. From the plural *æra*, came by corruption *æra*, *æram*, in the ſingular; much as *Oſtia*, *Oſtiam*, the name of a place, from *Oſtia*, *the mouths of the Tyber*.

ÆRA amounts to the ſame with EPOCHA; though ſome authors make a difference between them; but wherein it conſiſts, they do not agree. A late critic aſſigns this difference, that in ſtrictneſs of ſpeech, *epocha* is that fixed point where an *æra* made uſe of commences. Thus the 26th of February, 747 (abating fifty-ſeven days) before the Chriſtian *æra*, may be ſaid to be the *epocha* of the *æra* of Nabonaſſar. Within this *æra* other *epochas* may be noted; as that of the death of Auguſtus, that of the death of Alexander, &c. But theſe cannot properly be called *epochas* of the *æra* of Nabonaſſar.

Vallemont makes another difference, viz. that an *epocha* is a point fixed by chronologers, and an *æra* a like point, only fixed by the popular uſage of a country, or nation. Perhaps it might not be amiſs, if chronologers would keep to this difference; but it is certain moſt of them hitherto uſe the two words promiſcuouſly. The particular *æras* are mentioned under EPOCHA.

ÆRA, *Spaniſh*, otherwiſe called the year of Cæſar, was introduced after the ſecond diviſion of the Roman provinces, between Auguſtus, Anthony, and Lepidus, in the year of Rome 714, the 4676th year of the Julian period, and the 38th year before Chriſt. In the 447th year of this *æra*, the Alani, the Vandals, Suevi, &c. entered Spain. We find frequent mention of it in the Spaniſh affairs; their councils, and other public acts, being all dated according to it. Some ſay it was aboliſhed under Peter IV. king of Arragon, in the year of Chriſt 1358, and the Chriſtian *æra* ſubſtituted in its place. Mariana obſerves, that it ceaſed in the year of Chriſt 1383, under John I. king of Caſtile. The like was afterwards done in Portugal.

If to any year of the Spaniſh *æra* we add the number 4675, the ſum is the Julian year; or if from the ſame year we ſubtract 38, the remainder is the year of the Chriſtian *æra*.

ÆRA, *Chriſtian*. It is generally allowed by chronologers, that the computation of time from the birth of Chriſt, was not introduced till the ſixth century, in the reign of Juſtinian, and is commonly aſcribed to Dionyſius Exiguus. This computation then came in uſe in deeds, &c. before which time either the Olympiads, the year of Rome, or that of the reign of the emperors, were uſed for thoſe ends.

ÆRA is alſo uſed, in ſome writers of the barbarous age, for any year.

In which ſenſe, we meet with *entering down the æra*, the *eleven hundred and eighth æra*, &c.

ÆRA ſignifies alſo *cockle* or *darnel*.

ÆRARIUM, the public treaſury of the Roman ſtate.

The temple of Saturn at Rome, being the great treaſury of the ſtate, was firſt called *ærarium*; from *æs*, *æris*, *copper*; that being the only money in uſe before the year of Rome 484, when ſilver began to be coined.

It was firſt erected under Auguſtus, and maintained by a yearly voluntarily contribution; but that proving inſufficient, the twentieth part of all legacies and inheritances, except of ſuch as fell to the next of kin, or to the poor, were conſigned to this treaſury.

For the cuſtody hereof, three of the emperor's life-guard were conſtituted *præfecti ærarii*.

ÆRARIUM differs from *fiſcus*, as the firſt contained the public money, the ſecond that of the prince. Yet the two are ſometimes uſed indiſcriminately for each other.

ÆRARIUM *ſanctius* was an appendage to the former, added on occaſion of the growth of the Roman ſtate, when there was not room enough for lodging all the public monies, and the public acts, which were depoſited with it.

It was called *ſanctius*, becauſe placed in an inner and ſafer part of the temple; or becauſe in it was lodged the *aurum viceſimarium*, or twentieth, which was kept as a fund, or reſerve, for extreme neceſſity of the ſtate. On which account it was alſo called *ærarium viceſimarium*.

ÆRARIUM *Ilithiæ*, or of *Juno Lucina*, was erected by Servius Tullius, ſixth king of the Romans, and compoſed of money paid in by parents, for the birth of each child.

ÆRARIUM *privatum*, or the privy-purſe, contained the money and effects which the prince was maſter of before his acceſſion to the empire. This was under the care of the COMES *rerum privatarum*.—We meet alſo with *ærarium juventutis*, *Veneris*, *libitinæ*, and other leſſer treaſuries, *æraria minora*, in the provinces.

ÆRARIUS, in *Antiquity*, an officer inſtituted by Alexander Severus, for the diſtribution of the money given in largeſſes to the ſoldiery, or people.

ÆRARIUS was alſo uſed for a perſon whoſe name was ſtruck out by the cenſors from the *album*, or liſt of his century, and was only conſidered as a citizen ſo far as to make him ſubject to pay taxes, *æra*, without being entitled to any privileges, or advantages, from the common-wealth.

Hence the phraſes, *ærarium facere*, *inter ærarios referre*, *ærariis eximere*, &c.—Not only plebeians, to whom ſome have reſtrained it, but alſo knights and ſenators were ſubject to this kind of degradation.

The *ærarii* were incapable of making a will, of inheriting, of voting in aſſemblies, of enjoying any poſt of honour or profit; in effect were only ſubject to the burdens, without the benefits of ſociety; yet they retained their freedom, and were not reduced to the condition of ſlaves. To be made an *ærarius* was a puniſhment inflicted for ſome offence, and reputed one degree more ſevere than to be expelled a tribe, *tribu moveri*.

Ærarius is alſo uſed for a perſon employed in coining, or working braſs.

Theſe are ſometimes called *ærarii fuſores*: at other times, *ærarius* is diſtinguiſhed from *fuſor*; the former anſwering to what we now call copper-ſmiths, the latter to founders.

Ærarius is alſo applied to a ſoldier, who receives pay.

ÆRATA *Aqua*. See ZIMENT-*Water*.

ÆREOLUS, anſwering to the Greek χαλκος, was a weight, according to Diodorus and Suidas equal to $\frac{1}{6}$th, and according to others equal to $\frac{1}{8}$th of the OBOLUS, which was $9\frac{3}{28}$ grains.

AERIAL, AERIUS, ſomething that conſiſts of, or has relation to, air.

The Eſſeni, the moſt refined and rational ſect among the Jews, held that the human ſoul conſiſted of an *aerial* ſubſtance.

And the Roſicrucians, and other viſionaries, fill the atmoſphere with *aerial* inhabitants.

Aerial *perſpective*, is that which repreſents bodies weakened and diminiſhed, in proportion to their diſtance from the eye.

Aerial perſpective chiefly reſpects the colours of objects, whoſe force and luſtre it takes off more, or leſs, to make them appear as if more, or leſs, remote.

It is founded on this, that the longer column of air an object is ſeen through, the more feebly do the viſual rays emitted from it affect the eye.

AERIANS, AERIANI, in *Antiquity*, a religious ſect denominated from Aerius, an Armenian prieſt of the fourth century.

The *Aerians* had much the ſame ſentiments, in reſpect of the Trinity, as the Arians; beſide which, they condemned prayers for the dead, ſtated faſts, the celebration of Eaſter, and other rites of the ſame nature; and they held that there is no difference between prieſts and biſhops, but that the prieſthood and epiſcopate are abſolutely one and the ſame order, or dignity: an opinion ſince ſtrenuouſly aſſerted by many modern divines.

Aerius built his doctrine chiefly on ſome paſſages in St. Paul; and, among others, that in the Firſt Epiſtle to Timothy, chap. iv. ver. 14. where that apoſtle exhorts him not to neglect *the gift he had received by the laying on of the hands of the preſbytery*. Here, obſerves Aerius, is no mention of biſhops; but Timothy evidently received his ordination from the preſbyters or prieſts.

Epiphanius zealouſly maintains the ſuperiority of biſhops, againſt the Aerians.—The word *preſbytery*, uſed by St. Paul, he obſerves, includes both biſhops and prieſts; the whole ſenate, or aſſembly, of the eccleſiaſtics of the place.

ÆRICA, or *Erica*, in *Natural Hiſtory*, a name given by Gaza, and others, to the common herring.

ÆRIRUSA, the ancient name for the ſky-coloured JASPER.

ÆRITIS is a name given to what is more commonly called ANAGALLIS.

AEROGRAPHY, a deſcription of the air, or atmoſphere, its limits, dimenſions, properties, &c.

This amounts to much the ſame with aerology, unleſs we ſuppoſe the latter to enter into the rational, and the former to confine itſelf to a deſcription of the more obvious affections thereof.

AEROLOGY, the doctrine or ſcience of the air, and its phænomena, its properties, good and bad qualities, &c.

Aerology, called alſo the *aerologica*, makes a part of the regimen of health, or the branch of medicine called by ſome *diaſoſtica*, or the NON-NATURALS, which treats of air, its properties and uſe in the animal œconomy, and its efficacy in preſerving and reſtoring health.

AEROMANCY, AEROMANTIA, an ancient ſpecies of divination, performed by the means of the air, and phænomena happening therein.

The word is compounded of αηρ, *air*, and μαντεια, *divination*.

Aeromancy included the buſineſs of AUGURY, and *auſpicia*; the rules of prediction from uncommon winds, ſtorms, ſhowers, and other prodigies.

Modern authors ſpeak of a more rational *aeromancy*, meaning by it, the art of foretelling the changes and variations in the air and weather, winds, ſtorms, and the like.

Morhof advances conſiderations for reducing *aeromancy* to a certainty, by means of a regular ſeries of meteorological obſervations. But though many ſuch have been inſtituted with great care in many parts, this art has hitherto made a very ſmall progreſs. Of this kind is Huxham's book De Aere.

Barometers, thermometers, hygrometers, and anemometers, are of conſiderable uſe in this kind of *aeromancy*.

Mizoldus has publiſhed a body of rules for foretelling ſtorms, &c. drawn partly from vulgar obſervation, and the experience of mariners, partly from aſtrological conſiderations; under the title of AEROMANTIA.

ÆROMELI, a name given to HONEY, and alſo to MANNA. See DROSOMELI.

AEROMETRY, AEROMETRIA, the art of meaſuring the AIR, its powers, and properties.

The word is compounded of αηρ, *air*; and μετρειν, *to meaſure*.

Aerometry includes the laws of the motion, gravitation, preſſure, elaſticity, rarefaction, condenſation, &c. of the atmoſpherical fluid.

The word *aerometry* is but little uſed: in lieu hereof, we commonly call this branch of philoſophy, PNEUMATICS.

C. Wolfius, profeſſor of mathematics at Hall, having reduced many of the affections of this fluid to geometrical demonſtration, firſt publiſhed Elements of Aerometry, at Leipſic, 1709, in High Dutch, and afterwards more largely in Latin.—Thus is the doctrine of the air incorporated into the mathematical ſciences.

AERONAUTICA, the pretended art of ſailing in a veſſel through the air, or atmoſphere, ſuſtained as a ſhip in the ſea.

AEROPHYLACEA, in *Natural Hiſtory*, denotes ſubterraneous receptacles of air or wind.

The word is compounded of αηρ, *air*, and φυλακη, *cuſtodia, keeping*.—In which ſenſe *aerophylacea* ſtands contradiſtinguiſhed from *hydrophylacea*, *pyrophilacea*, &c.

Kircher ſpeaks much of *aerophylacea*, or huge caverns, replete with air, diſpoſed under ground, from whence through numerous occult paſſages, that element is conveyed either to ſubterraneous receptacles of water, which are hereby raiſed into ſprings or rivers, or into the funds of ſubterraneous fire, which are hereby fed and kept alive for the reparation of metals, minerals, and the like.

AEROSIS, among the *Ancient Phyſicians*, denotes the act whereby the blood is attenuated and converted into an *aura*, for the ſupport of the vital ſpirits, and the maintenance of the flame of life.

AEROSTATICA, is uſed by ſome authors for the ſcience called by others AEROMETRY.

Aerostatica is properly the doctrine of the weight, preſſure, and balance of the AIR and ATMOSPHERE.

ÆRUGINOUS, ſomething partaking of, or like to, the ruſt of copper.

Authors do not ſeem perfectly agreed about the colour to be expreſſed by this word, ſome expreſſing by it green, others brown.

ÆRUGO denotes RUST, eſpecially that of copper.

Grew will have the TURCOIS-*ſtone* to be only a kind of petrified *ærugo*.

Naturaliſts ſpeak of two kinds of *ærugo*, one *native*, and the other *factitious*.

Ærugo, *native*, is only the ſuperficial particles of the metal diſſolved, and intimately mixed with acid ſalts; in which form it is ordinarily found in copper-mines, and other moiſt places.

Ærugo, *artificial*, is what we more vulgarly call VERDIGREASE.

One ſpecies of *natural ærugo* is a greeniſh marcaſite, like the drops of iron; it is found in copper-mines, but is of no uſe. There is alſo on ſome mountains in Moravia a ſort of green grains, like ſand, that is of a graſs green, when uſed in painting. It is called the Hungarian, *mountain*, or *ſea* VERDIGREASE.

Ærugo *raſilis*, is a ruſt formed on copper, by hanging a plate of it over the ſtrongeſt vinegar for ten days, without ſuffering it to touch it.

Ærugo *ſalis*, in *Natural Hiſtory*, a name given by Pliny, and ſeveral other ancient authors, to a reddiſh ſlimy matter, ſeparated from the Egyptian ſalt, called NATRUM, in purifying it. We find this matter remain in the filter, on diſſolving and filtring the Egyptian nitre, at this time; it ſeems to be a mixture of a bituminous matter, and a red earth, which had mixed themſelves among the cakes of the ſalt, during the time of their concreting from the water.

ÆRUSCATORES, in *Antiquity*, a kind of ſharping ſtrollers, who got their living by tricks, telling fortunes, and the like, much like modern gypſies. Alſo, oppreſſive tax-gatherers.

The word is formed from *æruſcari*, *to beg*, *mump*, &c.

The *Galli*, or prieſts of Cybele, were called *æruſcatores magnæ matris*, on account of their begging, or collecting alms in the ſtreets. To which end they had little bells, whereby to draw people's attention to them, much like ſome orders of mendicants abroad.

AERY, or AIRY, in ſpeaking of hawks, eagles, or the like, anſwers to the NEST of other birds.

ÆS, in *Antiquity*, has various ſignifications; but it properly denotes *braſs* or *copper*; and as *copper* was the firſt metal uſed in coinage by the Romans, the word *as* was uſed in their language to ſignify money in general. It likewiſe denoted a particular coin made of that metal.

Æs *caldarium*, or *caſt* BRASS, otherwiſe called *æs olarium*, or *pot* BRASS, is a ſpecies of *braſs* mentioned by Pliny, which was not capable of being hammered. This is likewiſe a term uſed by the German *mineraliſts*, for a ſubſtance which ſometimes occurs to thoſe who work upon COBALT, and is uſed for making the fine blue colour called SMALT.

Æs *candidum*, among the ancients, was different from that which we call *white* BRASS; it is a purer and whiter kind of metal found, it is ſaid, under the veins of ſilver, ſomewhat analogous to Venetian TALC. They had probably a method of making COPPER *white* as well as *yellow*, equal, if not ſuperior, to that now in uſe. The phraſes of *trichalcum album* in Virgil, and of λευκον κραμα, among the Greeks, ſtrictly ſignify *white* BRASS.

Æs *Corinthium*, a precious metallic compoſition, of a much finer colour than common braſs, and for its beauty little inferior to gold. Pliny ſays, that this was an accidental mixture of metals at the ſack and conflagration of Corinth by L. Mummius, 146 years before Chriſt; when the gold, ſilver, and braſs ſtatues, and all metallic ſubſtances, melting and mingling together, formed this maſs. But ſome refiners, who have ſtrictly examined this metal, find no gold in it; a circumſtance which, if true, ſuggeſts one reaſon, among others, for concluding, that this account is fabulous. However, the fable has been interpreted by ſome to ſignify, that the art of making COPPER into BRASS was firſt diſcovered by the Corinthians, who found the CALAMINE ſtone on the plains of Peloponneſus, or at leaſt that they brought this art to perfection.

Æs *coronarium* is uſed by Pliny to denote BRASS worked into thin plates.

Æs *Cyprium* was a kind of COPPER produced in the iſland of Cyprus.

Æs *flavum*, *yellow copper*. All the Roman authors have mentioned the method of making BRASS with *calamine* and *copper*; but their fineſt kind, which they called *orichalcum*, or *aurichalcum*, they diſtinguiſhed from the inferior ſorts, which had only the name of *æs flavum*.

Æs *grave* denoted money among the Romans, which was paid by weight, and not by tale. In this ſenſe it is uſed by Buddæus and Scaliger.

But others by *æs grave* underſtand large pieces of copper coined, containing, for inſtance, an *as*, or pound of that metal; ſuch as we find current in Sweden. Theſe they aſſert bore the title *æs grave*, till ſuch time as they were reduced to a ſmaller ſtandard.—Gronovius, on the contrary, maintains, that the *as*, or pound weight, did not acquire the appellation, *æs grave*, till after their reduction. Phil. Tranſ. N° 19.

Kuſter rejects all theſe opinions, and aſſerts, that the expreſſion is uſed to denote any kind of copper-money, compared with gold or ſilver; which, with regard to the bulk and ſize of the pieces, was much lighter, though of greater value.

But this ſyſtem, however plauſible, is rejected by ſeveral learned men, particularly Perizonius, and Mr. Ward. The former has a diſſertation on the ſubject, wherein the opinion of Gronovius is further examined and defended.

Æs *hepaticon* was of a ſilveriſh colour, and probably what the moderns call BRONZE; though ſome confound it with the *æs Corinthium*.

Æs *pauperum* is a name given to *copper ore*, diveſted of its ſilver, when it contains any.

Æs *rude*, that unſhaped, or not faſhioned for any particular purpoſe.—Some will have this to be the ſame with *æs grave*.—The money during the firſt ages of Rome was all of this kind.

Others, by *æs rude*, underſtand metal unſtamped; in oppoſition to *æs ſignatum*, that ſtamped, or coined.

Æs *uſtum*, among *Chemiſts*, is the ſame with what ſome call *æs veneris*, or ſaffron of Venus; others, *æs crematum*. If good, it is of an iron grey on the outſide, of a reddiſh grey within; and if two pieces are rubbed together, a vermillion red is produced; it muſt alſo be brittle, and glittering when broken.

There are various ways of preparing *æs uſtum*: the moſt frequent is, by expoſing the plates to a reverberatory, or a potter's furnace, ſo long, till they will crumble into a powder. Another is, by heating a long ſlip of copper in a vehement fire, till it ſparkles, then pulling it ſuddenly out, and applying a piece of ſulphur on it; this immediately liquifies the copper, which drops down into a veſſel of cold water, placed to receive it. A third is, by cutting thin plates of copper, which are put into a crucible with ſulphur and ſalt, *ſtratum ſuper ſtratum*, and ſet in a hot charcoal fire, until the ſulphur be conſumed. A fourth is, by ſteeping the metal in a ſolution of ſalt, or ſtrong vinegar; then ſtratifying it with ſulphur, as above. After this, it is put in vinegar impregnated with ſal ammoniac. The like is repeated till the plates are conſumed. The vinegar being diſtilled from it, what remains is *æs uſtum*.

Æs uſtum is very drying and deterſive, and, on that account, mixed with plaſters and unguents, for drying up fiſtulous ulcers, and the imbibing acrimonious humours, or ſanies. It alſo ſerves to eat off dead fleſh; to which end, it is ſaid, they heat it red-hot in the furnace nine times, and quench it as often in linſeed oil. It is then called SAFFRON of COPPER. But it is apt to render the bones carious. It is likewiſe uſed for colouring glaſs.

Æs *uxorium*, in *Antiquity*, a ſum paid, by bachelors, as a penalty, for living ſingle to old age.

This tax for not marrying ſeems to have been firſt impoſed in the year of Rome 350, under the cenſorſhip of M. Furius Camillus, and M. Poſthumus.

At the *cenſus*, or review of the people, each perſon was aſked, *Et tu ex animi ſententia uxorem habes liberûm quærendorum cauſâ?* He who had no wife, was hereupon fined after a certain rate, called *æs uxorium*.

Æs; *flos* ÆRIS, called by the Greeks, χαλκου ανθος (ſometimes confounded by moderns with *chalcanthum*) is prepared of COPPER melted, and removed into other furnaces, wherein being expoſed to a further and greater heat, and vehemently agitated by bellows, it depoſites an infinite number of ſmall ſcales, like millet grains, which being ſeparated by lotion, make the *flos æris*. The cold water is poured on the copper, as it runs out of the furnace into the receiver.

Æs; *ſquama* ÆRIS properly denotes flakes of that metal ſtruck off by the hammer, in the operations of the forge, &c. Theſe, from the Cyprian copper-works, are called HELITIS.

Æs; *per* Æs *&* *libram* was a *formula* in the Roman law, whereby purchaſes and ſales were ratified.

Originally the phraſe ſeems to have been only uſed in ſpeaking of things ſold by weight, or by the ſcales; but it afterwards was uſed on other occaſions. Hence even in ADOPTIONS, as there was a kind of imaginary purchaſe, the formula thereof expreſſed, that the perſon adopted was bought *per æs & libram*.

ÆSALON, in *Zoology*, the name of a ſpecies of hawk of the long-winged kind, called in Engliſh the MERLIN. It is the ſmalleſt of all the hawk-kind, uſed in the diverſion of hawking. It is of about the ſize of the blackbird. Its beak is blue, and its eyes hazel; it has a wreath of whitiſh yellow feathers behind its head; its chin is white, and its back and wings of a duſky blackiſh brown. Its larger wing feathers are black, with brown ſpots; and its tail long, and variegated with tranſverſe ſtreaks of black and whitiſh brown. Its breaſt and belly are of a whitiſh brown, variegated with blackiſh brown ſpots. Its legs are long and yellow. It feeds on partridges and other birds.

ÆSCH, in *Zoology*, a name by which ſome have called the grayling, or tumbler, a fiſh of the truttaceous kind, called in Latin THYMALLUS.

ÆSCHNA, in *Natural Hiſtory*, the name of a ſpecies of water-fly, of an aſh colour, with four wings, and a long body, hairy near the tail.

ÆSCHYNOMENE, in *Botany*, a genus of the *diadelphia decandria* claſs of plants, the corolla of which is papilionaceous; the fruit conſiſts of a long compreſſo-plane, articulated, unilocular pod, containing a ſingle kidney-ſhaped ſeed. See SENSITIVE-*Plant*.

ÆSCHYNOMENOUS *plants*, among *Botaniſts*, are thoſe popularly called SENSITIVE PLANTS.

ÆSCULAPII *anguis*, in *Zoology*, the name of a harmleſs ſpecies of ſerpent, common in Spain and Italy, called alſo PARÆA.

ÆSCULAPIUS, the ancient name for the conſtellation OPHIUCUS.

ÆSCULUS, *horſe-cheſnut*, in *Botany*, a genus of the *heptandria monogynia*. See CHESNUT.

ÆSNECY, in *Law*, priority of age, among copartners.

ÆSPING, in *Zoology*, a ſpecies of COLUBER.

ÆSTHPHARA, incineration, or burning of the fleſh, or any other part of the body.

ÆSTIMATIO *Capitis*, in our ancient law-books. See WERE, and WERELADE.

King Athelſtan, in a great aſſembly held at Exeter, declared what mulcts were to be paid *pro æſtimatione capitis*, for offence committed againſt ſeveral perſons according to their degrees: the *eſtimation* of the king's head to be 30000 thrymſæ; of an archbiſhop, or ſatapra, or prince, 15000; of a biſhop, or a ſenator, 8000; of a prieſt, or a thane, 2000, &c.

ÆSTIVAL, or ESTIVAL, of or belonging to ſummer.

Thus, we ſay, the *æſtival* SOLSTICE, &c. in oppoſition to *brumal*.

ÆSTIVAL *point* is that whereby the ſun's aſcent above the equator is determined.

Æstival *ſigns* are thoſe extended from the ſummer ſolſtitial point, i. e. the ſun's greateſt declination northward, to the interſection of the ecliptic and equinoctial ſouthward, including Cancer, Leo, Virgo.

ÆSTRUS, a name given to a particular ſpecies of the BEETLE.

ÆSTUARY, Æstuarium, in *Geography*, an ARM of the SEA, running up a good way into the land.

Such is Briſtol channel, many of the friths of Scotland, &c. See Bay.

Æstuary, is ſometimes alſo uſed in pharmacy, for a vapour-bath, *balneum vaporoſum.*

Æstuary, in the ancient baths, was applied to the occult paſſages, or openings from the *hypocauſtum*, or ſtove, penetrating into the chambers.

ÆSYMNETIC *monarchy*, among ancient writers on government, denotes a limited elective monarchy.

The word is formed from *αισυμναω*, *regno*, *I govern.*—An *æſymnetic* ſtate ſtands oppoſed to a barbaric, or hereditary one.

ÆTATE *probanda*, in *Law*, a writ that lay to inquire whether the king's tenant, holding in chief by chivalry, were of full age to receive his lands into his own hands. It was directed to the eſcheator of the county; but is now diſuſed, ſince wards and liveries are taken away by the ſtatute Car. II. Reg. Orig. 294.

ÆTHALE, in *Natural Hiſtory*, a name given by ſome writers to the *cadmia fornacum*, or TUTTY.

It had this name from its being the concreted ſoot, or vapour, of the *lapis calaminaris*, and copper, melted together, in the making of braſs.

ÆTHER, in *Phyſiology*, is uſually underſtood of a thin, ſubtile matter, or medium, much finer and rarer than air; which commencing from the limits of our atmoſphere, poſſeſſes the whole heavenly ſpace.

The word is ſuppoſed to be formed from the verb *αιθειν*, *to burn*, *to flame*; ſome of the ancients, particularly Anaxagoras, ſuppoſing it of the nature of fire.

The philoſophers cannot conceive that the largeſt part of the creation ſhould be perfectly void; and therefore fill it with a ſpecies of matter under the denomination of *æther.*—But they vary extremely as to the nature and character of this *æther.*—Some conceive it as a body *ſui generis*, appointed only to fill up the vacuities between the heavenly bodies; and therefore confined to the regions above our atmoſphere.—Others ſuppoſe it of ſo ſubtle and penetrating a nature, as to pervade the air, and other bodies; and poſſeſs the pores and intervals thereof.—Others deny the exiſtence of any ſuch ſpecific matter; and think the air itſelf, by that immenſe tenuity and expanſion it is found capable of, may diffuſe itſelf through the interſtellar ſpaces, and be the only matter found in them. In effect, *æther* being no object of our ſenſe, but the mere work of imagination, introduced only for the ſake of hypotheſis, or to ſolve ſome phænomenon, real or imaginary; authors take the liberty to modify it how they pleaſe.—Some ſuppoſe it of an elementary nature, like other bodies, and only diſtinguiſhed by its tenuity, and the other affections reſulting from it; which is the philoſophical *æther.*—Others will have it of another ſpecies, and not elementary; but rather a ſort of fifth element, of a pure, more refined, and ſpirituous nature, than the ſubſtances about our earth; and void of the common properties of matter, as gravity, &c. —Such is the ancient idea of *æther*, or *ætherial* matter.

The term *æther* being thus embarraſſed with a variety of ideas, and arbitrarily applied to ſo many different things, the later philoſophers chooſe to ſet it aſide; and accordingly, the Carteſians uſe the term *materia ſubtilis*; which is their *æther*; and Sir Iſaac Newton ſometimes a *ſubtile ſpirit*, as in the cloſe of his Principia; and ſometimes a *ſubtile* or *ætherial medium*; as in his Optics.

The truth is, there are abundance of conſiderations, which ſeem to evince the exiſtence of ſome matter in the air, much finer than the air itſelf. There is an unknown ſomething, which remains behind when the air is taken away; as appears from certain effects which we ſee produced *in vacuo.*—Heat, Sir Iſaac Newton obſerves, is communicated through a vacuum, almoſt as readily as through air: but ſuch communication cannot be without ſome interjacent body, to act as a medium. And ſuch body muſt be ſubtile enough to penetrate the pores of glaſs; and may be very well concluded to penetrate thoſe of all other bodies, and conſequently be diffuſed through all the parts of ſpace; which anſwers to the full character of an *æther.*

The exiſtence of ſuch an ætherial medium being ſettled, that author proceeds to its properties; inferring it to be not only rarer and more fluid than air, but exceedingly more elaſtic and active: in virtue of which properties, he ſhews, that a great part of the phænomena of nature may be produced by it.—To the weight, e. gr. of this medium he attributes gravitation, or the weight of all other bodies; and to its elaſticity, the elaſtic force of the air, and of nervous fibres, and the emiſſion, refraction, reflexion, and other phænomena of light; as alſo ſenſation, muſcular motion, &c.—In fine, this ſame matter ſeems the *primum mobile*, the firſt ſource or ſpring of phyſical action in the modern ſyſtem.

The Carteſian *æther* is ſuppoſed not only to pervade, but adequately to fill all the vacuities of bodies; and thus to make an abſolute *plenum* in the univerſe. See Materia *ſubtilis.*

But Sir Iſaac Newton overturns this opinion, from divers conſiderations; by ſhewing, that the celeſtial ſpaces are void of all ſenſible reſiſtance: for, hence it follows, that the matter contained in them muſt be immenſely rare, becauſe the reſiſtance of bodies is chiefly as their denſity; ſo that if the heavens were thus adequately filled with a medium or matter, how ſubtile ſoever, they would reſiſt the motion of the planets and comets much more than quickſilver or gold.

Some repreſent the *æther* as 7200 times more rare than air. Others make it more denſe than gold itſelf. See farther concerning the exiſtence of *æther*, Boyl. Philoſ. Works abr. tom. ii. p. 504. Vater, Phyſ. Exper. cap. 2. p. 72, ſeq. Its fluidity, circulation, elaſticity, &c. Vater, ib. p. 75, ſeq. Verdries, p. 2. cap. 3. § 1. p. 293. Hook, loc. cit. p. 171. Its being the *primum mobile*, or ſource of all motion, Verdries, p. 6, 63, & 107. Its influence on the air, Hook, ib. p. 380. Impediment to the moon's motion, Id. ib. p. 191. Its being the cauſe of the planetary motions, Giorn. de Letter. d'Ital. tom. x. p. 6, ſeq. Of colours and refrangibility, &c. Ib. tom. xxiii. p. 132. Of ſound, Ib. tom. ix. p. 315. and Mem. Acad. Scienc. Ann. 1720, p. 50. Philoſ. Tranſ. N° 100. p. 15.

Æther, in *Chemiſtry*, called alſo *ætherial ſpirits* of Frobenius, *dulcified ſpirit of vitriol*, *acidum vitrioli vinoſum*, by Pott, and *liquor anodynus mineralis*, by Hoffman, is a very ſubtile and penetrating fluid, produced by diſtillation from a mixture of rectified ſpirit of wine and the vitriolic acid. M. Macquer ſuppoſes, that, as ſpirit of wine conſiſts chiefly of an oil, exquiſitely attenuated by fermentation, and intimately combined with water, *æther* is no other than this ſubtilized oil, extricated by the vitriolic acid; which acid, having a ſtrong affinity or attraction to water, abſorbs the watery element of the ſpirit, and thus ſets the oily one at liberty.

Æther is the lighteſt, moſt volatile, and moſt inflammable of all known liquids: it ſwims upon the moſt highly rectified ſpirit of wine, as oil does upon water; and if dropped on a warm hand, it inſtantly exhales, diffuſing a penetrating fragrance, and leaving no moiſture behind. It takes fire on the approach of a candle, and goes off in a flaſh like lightning. As it is the moſt volatile and evaporable of all known liquors, it produces a proportionable degree of cold; inſomuch that M. Beaume has made the mercury of Reaumur's thermometer ſink to 40 degrees below the freezing point, by applying linens ſoaked in *æther* to the ball containing the mercury.

Æther does not eaſily mix with water; *ten* parts of water being neceſſary to diſſolve *one* part of *æther.* It diſcovers a remarkable attraction to gold, though it has no effect on other metals. *Æther*, mixed with a ſolution of gold made in acids, imbibes the gold from the acid, keeps it perfectly diſſolved and ſuſpended, and becomes of a yellow colour. This property renders it of great uſe in extracting gold from other metals, and in aſcertaining the ſmalleſt portions of it in liquids. Thus we may likewiſe very expeditiouſly obtain a tincture of gold, or *aurum potabile.*

Æther has been ſucceſsfully employed in medicine. Dr. Morris recites ſeveral inſtances, in which he has applied it externally as a remedy for head-achs, for the tooth-ach, and for rheumatic complaints; and he has likewiſe preſcribed it internally for the hooping-cough, and in hyſterical caſes; and he apprehends, that it may be adminiſtered in large quantities with ſafety, and prove an uſeful medicine in a *ſyncope* and lethargy. He has given the following ſafe, eaſy, and certain proceſs, for preparing it.

Take of rectified ſpirit of wine, three pounds; put it into a two gallon ſtone bottle; add to it by two ounces at a time, allowing the interval of a quarter of an hour between each addition, three pounds and ſix ounces of the ſtrong vitriolic acid; let the mixture digeſt without heat for the ſpace of a night: in the morning, decant it from one veſſel to another three or four times; convey it through a glaſs funnel, and long tube, into a retort, capable of containing three times the quantity; place it in an iron pot, with an inch of ſand at bottom; add more ſand round the retort, to the height of the mixture; ſet it over a quick fire; lute a large receiver to the retort, leaving a pin-hole in the luting, unleſs the receiver is perforated; continue the fire, till an ebullition, accompanied with large bubbles, is obſerved in the mixture; then remove the fire entirely: the heat of the ſand will be ſufficient to complete the diſtillation of the *æther*. The diſtilled liquor muſt then be put into a clean retort, with two or three ounces of fixed alkaline ſalt; about half the liquor ſhould be drawn off, by a very gentle heat, into a large receiver; and this being ſhaken with an equal quantity of pump-water, the pure *æther* will riſe immediately to the top. See Med. Obſ. and Inq. vol. ii. p. 177.

The nature and uſe of this ſubſtance were very little known to the ancient chemiſts. Mr. Boyle, and Sir Iſaac Newton, indeed, were not intirely unacquainted with it; but it firſt began to excite general attention, in conſequence of ſome experiments of Frobenius, the feigned name of a German chemiſt, publiſhed in the Philoſophical Tranſactions for the year 1730; and it was by him denominated *æther*. See Phil. Tranſ. Abr. vol. viii. p. 744; vol. ix. p. 372, 379.

Æther, though originally obtained from ſpirit of wine, by means of the vitriolic acid, has ſince been produced by means of the other acids; and it has been found, that the acid of vinegar is eſſentially fitter to produce *æther*, than the vitriolic acid. The firſt diſcovery of this kind of *æther* was made by the count de Lauraguais.

The marine acid unites with vinous ſpirits very ſlowly, and with great difficulty. Proceſſes for this purpoſe have been diſcovered by the marquis de Courtanvaux, M. Beaumè, and M. le Baron de Bormes. The marquis employed the *ſmoaking ſpirit of* Libavius; but M. de Bormes made uſe of *zinc*, as a medium for concentrating the marine acid. M. Navier, in a proceſs communicated to the Academy of Sciences in 1742, ſhews how to procure *æther* by means of ſpirit of nitre, and ſpirit of wine, without diſtillation. He directs to mix them together in a bottle, which is to be exactly cloſed and left at reſt, till the *æther* is formed, and collected like an oil upon the ſurface of the liquor. Other methods have been ſince publiſhed by M. Rouelle, and M. Beaumè.

See more on this ſubject in Macquer's Dictionary of Chemiſtry, under the article ETHER.

ÆTHERIA *Herba*, is a name given to ERINGO.

ÆTHERIAL, ÆTHERIUS, ſomething that belongs to, or partakes of the nature of *æther*.

Thus, we ſay, the *ætherial* ſpace, *ætherial* regions, &c.—Some of the ancients divided the univerſe, with reſpect to the matter contained in it, into *elementary* and *ætherial*. Under *æther*, or the *ætherial* world, was included all that ſpace above the uppermoſt element, viz. fire. This they ſuppoſed to be perfectly homogeneous, incorruptible, unchangeable, &c. See CORRUPTION.

The ancient Platoniſts and Pythagoreans ſuppoſe different bodies united within the human ſoul, viz. the groſs, or material one; a finer aerial one; and, thirdly, the fineſt of all, which they call *ætherial*, cœleſtial, &c.

The Chaldees placed an *ætherial* world between the *empyreum* and the region of the fixed ſtars. Beſide which, they ſometimes alſo ſpeak of a ſecond *ætherial* world, meaning by it the ſtarry orb; and a third *ætherial* world, by which is meant the planetary region.

ÆTHERIAL *phoſphorus* is a name generally given, by Bernouilli, to that otherwiſe called mercurial, or barometrical PHOSPHORUS.

ÆTHERIAL *oil*, is a fine, ſubtile, ESSENTIAL OIL, approaching nearly to the nature of a ſpirit.

Thus, the pure liquor riſing next after the ſpirit, in the diſtillation of turpentine, is called the *ætherial oil* of *turpentine*.

Some chemiſts diſtinguiſh two principles in URINE; the one a volatile urinous ſalt, reſembling ſpirit of nitre; the other an *ætherial oil*, or ſulphur, partaking of the nature of ſpirit of wine.

ÆTHERIAL *Heaven*. See HEAVEN.

ÆTHIOPIAN *crown*, in *Natural Hiſtory*, the name of a ſhell-fiſh, of the genus of the *dolium*, or *concha globoſa*. It is of a brown colour, but differs from the common ſhell of this genus, in having the top, or head, dentated, ſo as to repreſent a crown.

ÆTHIOPIS, ſignifies *Ethiopian clary*; a decoction of its root is commended in pleuriſies and rheumatiſms.

ÆTHIOPS *mineral*, a preparation of mercury, uſually made by grinding equal quantities of crude quickſilver and flower of ſulphur, in a ſtone or iron mortar; till they become incorporated into a black powder.

It is preſcribed for the worms, and all crudities and acrimony of the humours; and is reputed infallible againſt the itch, and other cutaneous diſeaſes.

A new preparation of *æthiops* is given by Cruger, a German phyſician, which is white and fair; and, on that account, called *æthiops minerale ſanguine regis ablutum*: in oppoſition to which, he calls the dark, or vulgar kind, *æthiops cum ſtercore ſuo*.

Authors are not agreed as to the merits of *æthiops mineral*. Cheyne, and many more, commend it highly. Boerhaave, on the contrary, and ſome other authors, reject it as uſeleſs.

ÆTHIOPS *albus*, in *Pharmacy*, quickſilver rubbed with a double quantity of crabs-eyes, or of ſugar-candy, till it is extinguiſhed. This has been taken by ſome, without any ſenſible effect; yet a very ſmall quantity of it has raiſed a high ſalivation in others. Quickſilver extinguiſhed in prunels, has operated much the ſame way. It is the ſame as *merc. alkalizat.*

ÆTHIOPS *antimonialis*, is prepared by fluxing equal parts of antimony and ſea-ſalt, in a crucible, for an hour; the matter is then left to cool, and the *ſcoria* are obtained by breaking the crucible; equal parts of the regulus thus made, and of mercury rubbed together, till they are incorporated, will give the compoſition of this name. Different preparations of the ſame kind have been preſcribed, and highly commended by ſome phyſicians, in venereal and ſcrophulous diſorders.

ÆTHIOPS *martialis*, is a preparation firſt introduced into medicine by M. Lemery, junior, and is made in the following manner. Put filings of ſteel into an unglazed earthen veſſel, with water enough to riſe four inches above the filings; ſtir it every day, and ſupply water as it exhales, ſo as to keep the filings always covered; and continue to do this till a powder of an inky blackneſs be produced; which powder is called *martial æthiops*.

ÆTHIOPS *vegetabilis*. The ſea-weed, burnt in the open air, and reduced into a black powder, is called *vegetable æthiops*. It is ſometimes uſed to remove ſcrophulous ſwellings.

ÆTHOLICES, in *Phyſic*, derived from αιθω, *to inflame*, is a name given to ſuperficial puſtules, or boils, in the ſkin, occaſioned by heat.

ÆTHUSA, in *Botany*, leſſer hemlock, or *fool's parſley*, a genus of the *pentandria digynia*. See HEMLOCK.

ÆTHYIA, in *Zoology*, a name by which the old authors have called one of the web-footed fowls, ſeeming to be the UTAMANIA of Crete, or the common AUK, or RAZOR-BILL.

AETIANS, AETIANI, in *Church Hiſtory*, a ſect or branch of ARIANS, ſo called from their leader Aetius, in the fourth century.

The *Aetians* were of the ſtricter kind of Arians, who held that the Son and Holy Ghoſt are in every reſpect diſſimilar to the Father.

Whence alſo they are called *Anomœi* and *Heterouſiani*; ſometimes *pure Arians*.

ÆTIOLOGICAL, ſomething that aſſigns the cauſe of an effect, or appearance.

ÆTIOLOGY, in *Medicine*, a *rationale*, or diſcourſe of the cauſe of a diſeaſe. The word is compounded of αιτια, *cauſe*, and λογος, *diſcourſe*. In this ſenſe, we ſay, the *ætiology* of the ſmall-pox, of the *hydrophobia*, of the gout, the dropſy, &c.

ÆTIOLOGY is uſed for a figure in *rhetoric*, whereby, in relating an event, we aſſign alſo the cauſe of it. In which ſenſe, *ætiology* differs from *color*, as the former aſſigns the true cauſe, the latter only a feigned or ſpecious one.

The ſceptics were profeſſed opponents of all *ætiology*, or argumentation from cauſes.

ÆTITES, or *eagle-ſtone*, in *Natural Hiſtory*, a flinty or cruſtated ſtone, hollow within, and containing a *nucleus*, which, on ſhaking, rattles within. It was formerly in repute for ſeveral extraordinary *magical*, as well as *medical* powers; ſuch as preventing abortion, diſcovering thieves, and other ridiculous properties.

The word is formed from αετος, *eagle*; the popular tradition being, that it is found in the eagle's neſt, whither it is ſuppoſed to be carried while the female ſits, to prevent her eggs from being rotten.

The LAPIS *ætites* is found in ſeveral parts: near Trevoux in France, one can ſcarce dig a few feet, without finding conſiderable ſtrata or beds, of the coarſer or ferruginous kind.—They are originally ſoft, and of the colour of yellow oker.

But the fineſt and moſt valued of all the eagle-ſtones, are accidental ſtates of one or other of our common PEBBLES. Theſe are ſo far from being a peculiar ſpecies of foſſil, though uſually accounted ſuch, that they are not determinately of any one ſpecies of pebble. That, however, which moſt uſually furniſhes them, is the brown centered pebble, with whitiſh, bluiſh, and brown cruſts. The plain hiſtory of this remarkable foſſil is this: the central *nucleus* of many ſpecies of pebbles, peculiarly of this, is coarſer than the reſt of the ſtone, that is, it is made up of more earth and leſs cryſtal; the natural conſequence of which muſt be, that being of a more looſe and rare texture, it is in drying more apt to ſhrink than ſuch maſſes as are compoſed of a harder and purer matter. The central *nucleus* in this ſpecies is alſo ſurrounded with a whitiſh cruſt, of a more looſe texture, and more ſubject to ſhrink in drying than even the *nu-*

cleus itſelf; and being compoſed of more earth and leſs cryſtal, is alſo more friable and ſoft. The outer circles of this ſtone are of a much harder ſubſtance. Whenever the earthy matter in the *nucleus*, and firſt cruſt of this pebble, a little exceeds its juſt proportion, the conſequence will be, that the ſtone will become an *ætites:* for the *nucleus* ſhrinking and contracting itſelf to a ſmall ſize on the evaporation of its fluid matter, muſt ſeparate itſelf from its firſt cruſt, and that alſo ſhrinking, muſt be drawn backward toward the other cruſts; whence the cavity will become larger between that and the *nucleus*, and conſequently, the *nucleus* will rattle in it when the ſtone is ſhaken. The pebble in this ſtate having been afterwards rolled about by waters, the *nucleus* has by rolling, broken to pieces all the inner cruſt, and is uſually found in the hollow of the ſtone, buried in a large quantity of a whitiſh powder.

Theſe eagle ſtones are not uncommon in our gravel-pits, but being by their hollowneſs rendered leſs ſtrong than the ſolid pebbles, we frequently find them broken.

The *ætites* is alſo known by the names *eutocium, echites, lapis aquilæ, erodialis, aquileius, & lapis prægnans*; ſome rank it under the claſs of precious ſtones, to which it has no title. Some think it may come properly enough under that of figured ſtones.

ÆTNA-*ſalt*, SAL *Ætnæ*, a name given by ſome authors to the *ſal armoniac*, which is found on the ſurface and ſides of the openings of *Ætna*, and other burning mountains after their eruptions; and ſometimes on the ſurface of the ferruginous matter which they throw out. This ſalt makes a very various appearance in many caſes; it is ſometimes found in large and thick cakes, ſometimes only in form of a thin powder, ſcattered over the ſurface of the earth and ſtones. Some of this ſalt is yellow, ſome white, and ſome greeniſh.

This ſalt is a CONCRETE of nitre, ſulphur, and vitriol, burnt and ſublimed together; Borelli found once a vaſt quantity of this ſalt on mount *Ætna*, and tried many experiments on it; from whence he concluded, that this SALT is ſo far from occaſioning the exploſions of that mountain, as ſome have ſuppoſed, that it does not exiſt in it, but is formed during the burning. Phil. Tranſ. N° 100.

AFDELLES, in *Ichthyology*, a name given by the Cretans to the fiſh called at Rome, *donzellina* and *zigurella*. It is the *julis* of authors, and, according to the Artedian ſyſtem, is a ſpecies of the LABRUS. Artedi diſtinguiſhes it from the others, by the name of the *palmar labrus*, with variegated ſides, and two large teeth in the upper-jaw.

AFFA, a weight uſed on the Gold Coaſt of Guinea. It is equal to an ounce, and the half of it is called *eggeba*. Moſt of the blacks on the Gold Coaſt give theſe names to thoſe weights.

AFFATOMIA, in *Ancient Law*, a kind of donation made by thruſting a wand into the perſon's boſom, to whom it was made.

AFFECTIO *bovina* is a diſeaſe incident to cattle, occaſioned by a little WORM, bred between the fleſh and the ſkin; which works its way over all parts of the body.

AFFECTION, in a proper ſenſe, denotes an ATTRIBUTE peculiar to ſome ſubject, and ariſing from the very idea or eſſence of it.

The word is formed from *afficere, to affect*; the SUBJECT being here ſuppoſed in ſome meaſure *affected*, or acted on, by the thing attributed to it.

In this ſenſe, *affection* is ſynonymous with *property*, or with what the ſchoolmen call *proprium quarto modo*.

Philoſophers are divided as to the doctrine and diviſion of *affections:* according to Ariſtotle, they are either *ſubordinating*, or *ſubordinated*; under the firſt of which comes only *mode*; and under the ſecond *finiteneſs*, *place*, and *time*. The generality of Peripatetics divide *affections* into *internal*, as motion and finiteneſs; and *external*, as place and time. According to Sperlingius, *affections* are better divided into *ſimple* or *united*, and *disjunct* or *ſeparate:* under the firſt come *quantity*, *quality*, *place*, and *time*; under the ſecond, *motion*, and *reſt*.

Sperlingius then ſeems to reject finiteneſs from the number of *affections*; and Ariſtotle, and the Peripatetics, *quantity* and *quality:* but the difference is not irreconcileable; ſince Sperlingius does not deny body to be finite, nor Ariſtotle, and his followers, that it has *quantum* and *quale*. Only they have not made peculiar heads and titles for theſe.

Affections are alſo diſtinguiſhed into thoſe of *body*, and thoſe of *mind*.

Affections *of body* are certain modifications of it; occaſioned or induced by motion; in virtue of which, a body comes to be ſo and ſo diſpoſed.

The *affections of body* are ſometimes ſubdivided into *primary* and *ſecondary*.

Affections, *primary*, are thoſe which ariſe either from the idea of matter; as quantity and figure; or from that of form, as quality and power; or from both together, as motion, place, and time.

Affections, *ſecondary*, or *derivative*, are thoſe which ariſe from ſome of the primary; e. gr. from quantity, as diviſibility, continuity, contiguity, finity, impenetrability; from *figure*, as regularity and irregularity; from *quality*, as health, ſtrength, &c.

Affections *of mind*, are what we more uſually call PASSIONS.

Affections, *mechanical*. See Mechanical *affection*.

Affection, in *Phyſiology*, is ſometimes uſed to expreſs that impreſſion which is made on our minds by ſubjects either within us, or without us; but *affection* more commonly denotes that lively ſenſe of pleaſure, or of averſion, which we feel from certain objects. Thus a picture repreſenting beings ſhocking to nature, is ſaid to *affect* us diſagreeably; and thus the relation of a generous or heroic action is ſaid to *affect* us agreeably.

Affection is more peculiarly uſed, in *Medicine*, for a morbid, or preternatural ſtate of the body, or ſome of its parts. Thus we ſay, an HYPOCHONDRIACAL, an HYSTERICAL *affection*. And, in like manner, ſuch a part of the body is *affected*, i. e. indiſpoſed, or ſeized with a DISEASE. The ſick are frequently miſtaken as to the place *affected*, by reaſon of the conſent between the ſeveral parts, which often makes a diſorder in one part be felt in another.

AFFEERORS, Afferatores, in *Law*, perſons appointed in court-leets, and other places, upon oath, to ſettle and moderate the FINES of ſuch as have committed faults arbitrarily puniſhable, or which have no expreſs penalty ſet down by ſtatute. See Stat. 25 Edw. III. cap. 7.

The word is formed, according to Cowel, of the French *affier, to affirm*; by reaſon thoſe appointed to this office do affirm, upon their oaths, what penalty they think, in conſcience, the offender hath deſerved. Others better derive it from *affeurer*, a word, in the cuſtomary of Normandy, rendered, by the Latin interpreters, *taxare, to ſet the price of a thing*; as *æſtimare*, *indicare*, &c.—Kitchin joins the three words as *ſynonyma*; *affidati, amerciatores, afferares*.

AFFERI, in *Law*. See Averia.

AFFETTUOSO, or *Con* Affetto, in the Italian muſic, is uſed to denote that kind of muſic, which muſt be performed in a very tender, moving, and affecting manner; and for that reaſon rather ſlow than faſt.

AFFIANCE, in *Law*, the plighting of troth between a man and a woman, upon an agreement of marriage to be had between them.

AFFIDATIO *Dominorum*, ſignifies an oath taken by the lords in parliament; thus called in the *Rot. Parl.* Hen. VI.

AFFIDATUS, or Affidiatus, in our *Law*-books, denotes a tenant by FEALTY.

Affidati are not properly vaſſals, but *quaſi* vaſſals, or perſons who vow fealty to, and put themſelves under the protection of, another.

In this ſenſe they amount to the ſame with what are otherwiſe called *commendati*, and *recommendati*.

AFFIDAVIT, an OATH, in writing, ſworn before ſome perſon who hath authority to take ſuch oath; and made uſe of, and read in court, upon motions; though not allowed upon trials.

In the court of Chancery is an *Affidavit*-OFFICE, under the direction of *a Maſter of* CHANCERY.

AFFILIATION, Adfiliatio, in *Middle-age Writers*, the ſame with adoption.

Among the ancient Gauls, *affiliation* was a ſort of adoption only practiſed among the great.—It was performed with military ceremonies: the father preſented a battle-ax to the perſon he was to adopt for his ſon, as an intimation that he was to preſerve the effects he thus called him to ſucceed to, by arms. See Adelphia.

AFFINAGE is ſometimes uſed, in *Ancient Law-books*, for the refining of metals.

AFFINITY, properly imports a relation contracted between one of two parties married, and the kindred of the other party.

The word is originally Latin, compounded of *ad, to,* and *finis, boundary, limit*; by reaſon, as the lawyers ſay, that one of the families here approaches to the bounds of the other: *Quod duæ cognationes per nuptias copulantur, & altera ad alterius cognationis finem accedit.* Or, as another expreſſes it, *Quod utriuſque cognationis fines in unum locum conferuntur.*

In which ſenſe the word ſtands contradiſtinguiſhed from *conſanguinity*, which is a relation by blood.

In the Moſaical LAW there are ſeveral degrees of *affinity*, wherein marriage is expreſly prohibited, which yet ſeem not at all prohibited by the law of nature.

The *canoniſts* diſtinguiſh three ſpecies of *affinity*.—The *firſt*, that contracted between the huſband and the relations by blood of his wife; and between the wife and the relations by blood of her huſband.

The *ſecond*, between the huſband and thoſe related to his wife by marriage; and the wife, and thoſe ſo related to her huſband.

The *third*, between the huſband and the relations of his wife's relations; and the wife, and the relations of her huſband's relations.

By the fourth council of Lateran, held in 1213, it was decreed, that none but the firſt kind was any real *affinity*; the reſt being mere refinements, which ought to be ſet aſide.

The degrees are reckoned after the ſame manner in *affinity*, as in *conſanguinity*; and therefore differently in the *Canon Law*, from what they are in the *Civil Law*.

Whatever line or degree of conſanguinity the kindred of one of the parties married are in, they are in the ſame line and degree of *affinity* to the other. And again, in whatever line or degree of *affinity* perſons are, in the firſt kind, they are in the ſame in the ſecond and third kinds of *affinity*. Hence ariſe what we may call a direct and collateral, an aſcending and a deſcending line of *affinity*.

The Romaniſts talk of a *ſpiritual affinity*, contracted by the ſacrament of baptiſm and confirmation.—In that church, a god-father may not marry with his god-daughter, without a diſpenſation.

Affinity does not found any real kinſhip; it is no more than a kind of fiction, introduced on account of the cloſe relation between huſband and wife. It is even ſaid to ceaſe, when the cauſe of it ceaſes. Hence a woman who is not capable of being a witneſs for her huſband's brother, during his life-time, is allowed for a witneſs, when a widow, by reaſon the *affinity* is diſſolved. Yet with regard to the contracting marriage, *affinity* is not diſſolved by death, though it be in every thing elſe.

The degrees and terms of *affinity* are chiefly, father-in-law, i. e. huſband's or wife's father, in Latin *ſocer*; ſtep-father, i. e. mother's huſband, *vitricus*; mother-in law, i. e. huſband's or wife's mother, *ſocra*; ſtep-mother, i. e. father's wife, *noverca*; ſon-in-law, *gener*; daughter-in-law, *nurus*; ſtep-daughter, i. e. huſband's or wife's daughter by another marriage, *privigna*; ſtep-ſon, i. e. huſband's or wife's ſon by a former marriage, *privignus*; which two laſt, conſidered in relation to each other, are called *comprivigni*; ſon-in-law, i. e. daughter's huſband; brother-in-law, i. e. huſband's brother, or ſiſter's huſband, *levir*; wife's brother; brother's wife; ſiſter-in-law, i. e. huſband's or wife's ſiſter.

AFFINITY, in the *Civil Law*, is divided into *civil*, that between free perſons; and *ſervile*, that between ſlaves.

AFFINITY, *legitimate*, is that contracted by a proper and legal matrimony; or, between ſlaves, by *contubernium*.

AFFINITY, *illegitimate*, that contracted out of legal marriage.

Affinity may be contracted by an unlawful commerce: thus a perſon who has impregnated two ſiſters, is prohibited marrying either of them; thus an *affinity* may commence between huſband and wife, by his lying with her ſiſter.

AFFINITY, *true*, is that ſubſiſting, while the marriage between the two parties ſubſiſts.

AFFINITY, *quaſi*, that ſubſiſting either after the diſſolution of the marriage, as between a huſband, and his wife's daughter, begot by another after her being divorced from him; or before the marriage is ſolemnized, as that between a father and a daughter, only eſpouſed, or betrothed to his ſon.

AFFINITY is alſo uſed figuratively, for a conformity, or agreement, between one thing and another.

In which ſenſe the word ſtands oppoſed to diverſity, variety, oppoſition, &c.

Biſhop Wilkins gives tables, wherein things are claſſed according to their *affinities*. Vid. Real Charact. p. ii. p. 22.

Henckelius has a treatiſe on the *affinity* between *vegetables* and *minerals*.

AFFINITY is more particularly uſed in ſpeaking of the relation or ſimilitude between LANGUAGES, occaſioned by their being derived from the ſame ſource.

We uſe alſo *affinity* of words, ſounds, &c.

AFFINITY, in *Chemiſtry*, is a term which correſponds to *attraction* in the mechanical philoſophy, and denotes the tendency which the conſtituent parts of bodies have to unite, and the power by which they adhere when united. It is ſometimes called *elective attraction*, or the *power of combination*.

AFFINITY, *ſimple*, is either that power of mutual union, which ſubſiſts between the integrant and homogeneous parts of the ſame body, more properly called *attraction of coheſion*; or that which produces the union and adherence of the heterogeneous parts of two different bodies, from which reſults a new compound body, whoſe properties are different from thoſe of the two principles whereby it is formed: e. g. two bodies, each by itſelf very eaſily fuſible in fire, as lead and ſulphur, ſhall form a compound very difficult of fuſion; and two which cannot ſeparately be made to melt at all, as pure clay and chalk, can melt with eaſe when joined together. This is ſometimes denominated

AFFINITY *of compoſition*; though this term is more generally applied to the powers of union, which are diſcoverable in a *number* of heterogeneous bodies, whoſe diſſimilar parts are blended together. Chemical union, and the properties thence reſulting, are exempt from all known mechaniſm; nor can the united bodies be ſeparated by any mechanical force. But a third body may have a ſtronger *affinity* to either of the component matters, than they have to one another; in which caſe, on preſenting to the compound this third body, the former union is broken, and one of the firſt bodies coaleſces with the third, while the other is detached and ſeparated. And the reſult of the combination will be very various, according to the nature and number of the ſubſtances employed.

M. Geoffroy, and M. Gellert, have given tables of the different degrees of *affinity*, between moſt of the bodies employed in *chemiſtry*, combined in various ways; whereby we may foretel the reſult of any mixture, what will be the iſſue of the combat, which will ſurmount, and which give way to the other.

Some objections to theſe tables, with illuſtrations of them, are given in the Mem. Acad. Scienc. for the year 1720, p. 24. and in the Hiſt. p. 42. and likewiſe in an appendix to the Engliſh edition of Macquer's Chem. Dict. See alſo the tables, with two additional columns, in that of M. Geoffroy, by Dr. Black.

A TABLE OF THE SOLUTIONS OF BODIES, BY Mr. GELLERT.

1. Siliceous Earth	2. Fluors	3. Clay	4. Earth Gypſeous	5. Earth Calcareous	6. Fixed Alkali	7. Volatile Alkali	8. Acetous Acid	9. Marine Acid	10. Nitrous Acid	11. Vitriolic Acid	12. Aqua Regia	13. Nitre	14. Sulphur	15. Hepar of Sulphur	16. Cobalt	17. Arſenic	18. Reg. of Antim.	19. Glaſs of Antim.	20. Biſmuth	21. Zinc	22. Lead	23. Tin	24. Iron	25. Copper	26. Silver	27. Mercury	28. Glaſs
Hepar of Sulphur	Hepar of Sulphur	Vitriolic Acid *partly*	Acids } *partly*	Vitriolic Acid	Phlogiſt.	Phlogiſt.	Phlogiſt.	Phlogiſt.	Phlogiſt.	Phlogiſt.	Phlogiſt.	Phlogiſt.	Iron	Gold	Copper	Zinc	Zinc	Zinc	Iron	Copper	Silver	Iron	Gold	Gold	Gold	Gold	Calx of Lead
Fixed Alkali	Fixed Alkali	Hepar of Sulphur	Hepar of Sulphur	Nitrous Acid	Vitriolic Acid	Vitriolic Acid	Zinc	Zinc	Zinc	Zinc	Zinc	Zinc	Copper	Silver	Iron	Iron	Iron	Copper	Copper	Iron	Gold	Copper	Silver	Silver		Silver	Calx of Cobalt
Borax	Borax	Fixed Alkali	Fixed Alkali	Marine Acid	Nitrous Acid	Nitrous Acid	Iron	Iron	Iron	Iron	Iron	Iron	Tin	Iron	Tin	Copper	Copper	Tin	Tin	Silver	Tin	Silver	Copper			Biſmuth	Calx of R. of Antim.
Calx of Lead	Calx of Lead	Borax	Borax	Acetous Acid	Marine Acid	Marine Acid	Copper	Copper	Cobalt	Copper	Cobalt	Copper	Lead	Copper	Zinc	Tin	Tin	Lead	Lead	Gold	Copper	Gold				Zinc	Calx of Gold
Calx of Antim.	Calx of Antim.	Calx of Lead	Calx of Lead	Hepar of Sulphur	Vegetable Acids	Acetous Acid	Lead	Tin	Copper	Silver	Copper	Arſenic	Silver	Lead	Reg. of Antim.	Lead	Lead	Iron	Silver	Tin						Tin	Calx of Silver
	Clay	Calx of Antim.	Calx of Antimony	Fixed Alkali	Zinc	Zinc	Biſmuth	Lead	Biſmuth	Tin	Tin	Lead	Biſmuth	Tin	Biſmuth	Silver	Silver	Silver	Gold	Lead *(partly)*						Lead	Calx of Copper
	Earth Calcareous	Gypſeous Earth		Borax	Iron	Iron		Biſmuth	Lead	Lead	Arſenic	Tin	Reg. of Antim.	Reg. of Antim.	Lead	Gold	Biſmuth									Copper	Calx of Iron
	Earth Gypſeous	Calcareous Earth		Calx of Lead	Copper	Copper		Reg. of Antim.	Mercury	Mercury	Biſmuth	Reg. of Antim.	Mercury	Biſmuth	Silver	Reg. of Antim.	Gold									Reg. of Antim.	Calx of Biſmuth
				Calx of Antim.	Lead	Biſmuth		Mercury	Reg. of Antim.	Biſmuth	Mercury	Cobalt	Arſenic	Zinc	Arſenic *(partly)*												Calx of Zinc
					Tin	Mercury		Arſenic	Silver	Reg. of Antim.	Lead	Biſmuth	Cobalt	Cobalt													Calx of Mercury
					Reg. of Antim.	Silver			Arſenic	Arſenic	Reg. of Antim.																
					Cobalt	Gold			Tin } *partly*		Gold																
					Arſenic																						
					Biſmuth																						
BODIES NOT SOLUBLE BY THE SUBSTANCES PLACED AT THE HEAD OF THE COLUMNS IMMEDIATELY ABOVE THEM.																											
	Siliceous Earth	Siliceous Earth	Siliceous Earth	Siliceous Earth	Gold		Gold	Gold	Gold	Gold	Silver	Gold	Gold			Biſmuth		Biſmuth	Zinc		Iron					Iron	
			Calcareous Earth		Silver		Silver	Silver *(partly by the dry way)*				Silver	Zinc													Cobalt	
							Tin																				
							Mercury																				

A TABLE of AFFINITIES between ſeveral SUBSTANCES, by Mr. GEOFFROY.

																Dr. BLACK's SUPPLEMENT.	
1. Acid Spirits	2. Marine Acid	3. Nitrous Acid	4. Vitriolic Acid	5. Abſorbent Earth	6. Fixed Alkali	7. Volatile Alkali	8. Metallic Subſtances	9. Sulphur	10. Mercury	11. Lead	12. Copper	13. Silver	14. Iron	Regulus of Antimony	Water	Acids	Fixed Air
Fixed Alkali	Tin	Iron	Phlogiſton	Vitriolic Acid	Vitriolic Acid	Vitriolic Acid	Marine Acid	Fixed Alkali	Gold	Silver	Mercury	Lead	Reg. of Antim.	Iron	Spirit of Wine	Fixed Alkali	Calcareous Earth
Volatile Alkali	Regulus of Antimony	Copper	Fixed Alkali	Nitrous Acid	Nitrous Acid	Nitrous Acid	Vitriolic Acid	Iron	Silver	Copper	Lapis Calaminaris	Copper	Silver Copper Lead	Silver Copper Lead	Neutral Salts	Calcareous Earth	Fixed Alkali
Abſorbent Earths	Copper	Lead	Volatile Alkali	Marine Acid	Marine Acid	Marine Acid	Nitrous Acid	Copper	Lead							Volatile Alkali	Magneſia
Metallic Subſtances	Silver	Mercury	Abſorbent Earths		Acetous Acid		Acetous Acid	Lead	Copper							Magneſia	Volatile Alkali
	Mercury	Silver	Iron		Sulphur			Silver	Zinc								
			Copper					Reg. of Antim.	Reg. of Antim.								
			Silver					Mercury									
	Gold							Gold									

Theſe tables, though in many reſpects inaccurate and defective, may be of conſiderable uſe. Each of them conſiſts of a number of columns. At the head of each column is placed the ſubſtance, the affinities of which are to be compared with the ſeveral ſubſtances placed below it in the ſame column; and they are diſpoſed in the order of their ſtrongeſt *affinities*.

It is likewiſe to be obſerved, that any ſubſtance in any of theſe columns may be ſeparated from the ſubſtance at the head of that column, by any of the intervening ſubſtances. For a farther explication of the nature and uſe, as well as the defects of theſe tables, conſult the Dictionary above cited.

AFFION, is a name given by the Arabians to opium; and alſo to an electary, in which opium is an ingredient.

AFFIRMATION, AFFIRMATIO, in *Logic*, a poſitive propoſition, alledging the truth or reality of ſomething.

Affirmation is defined, by the *Logicians*, an act whereby we attribute one idea to another; as ſuppoſing it to belong, or agree thereto.—As when, conceiving perfection to agree to the Deity, we ſay, *God is perfect.*

This, on other occaſions, is called *enunciation*, *propoſition*, *compoſition*, and *judging*.

AFFIRMATION, in *Law*, ſignifies the ratifying or confirming a former law, or judgment.

We ſay, to *affirm* a judgment: the houſe of lords, on an appeal, *affirmed* the lord chancellor's decree.

AFFIRMATION is alſo uſed, in *Grammar*, by ſome late refiners upon that art, for what is uſually called a VERB; becauſe the office of that part of ſpeech is to expreſs what we *affirm* or attribute to any ſubject.

AFFIRMATION is alſo uſed for a ſolemn form of atteſting the truth, allowed to be uſed by the QUAKERS, inſtead of an oath, which they hold abſolutely unlawful to take. See the form of the *affirmation*, &c. under the article QUAKER.

AFFIRMATION is of divers kinds, tacit, by words, by a nod, or geſture, &c.

In a civil law ſenſe, *affirmation* may be divided into *ſimple*, which is that from which no obligation ariſes; and *qualified*, which infers an obligation.

The requiſites of this latter are, that it be, 1. deliberate and free; 2. ſincere; 3. certain and ſpecific; 4. clear and perſpicuous.

AFFIRMATIVE, in *Logic*, ſee AFFIRMATION.

There are univerſal *affirmative* propoſitions; and ſuch, uſually, are the firſt of SYLLOGISMS.

In *Algebra* we have alſo *affirmative* or poſitive QUANTITIES, which have their appropriated CHARACTERS.

AFFIRMATIVE *ſign*, or character. See CHARACTER.

Affirmative, in *Grammar*. Authors diſtinguiſh *affirmative* particles; ſuch is, *yes*.

The term *affirmative* is ſometimes alſo uſed *ſubſtantively*.—Thus we ſay, the *affirmative* is the more probable ſide of the queſtion: there were ſo many votes, or voices, for the *affirmative*.

Affirmative is particularly applied, in the Roman inquiſition, to ſuch heretics as own the errors and opinions with which they are charged; and maintain them in their examination, with firmneſs and reſolution.

AFFIX, in *Grammar*, a particle added at the beginning of a word, either to diverſify its form, or alter its ſignification.

The word is Latin, *affixus*, compounded of *ad* and *figo*, *I fix*.

In which ſenſe, *affix* amounts to much the ſame with *prefix*, and ſtands oppoſed to *ſuffix*.

We meet with *affixes* in the Saxon, the German, and other northern languages; but more eſpecially in the Hebrew, and other oriental tongues.

The Hebrew *affixes* are ſingle ſyllables, frequently ſingle letters, *prefixed* to nouns and verbs, inſtead of pronouns poſſeſſive; and contribute not a little to the brevity of that language.

The oriental languages are much the ſame as to the RADICALS; and differ chiefly from each other as to *affixes* and *ſuffixes*.

AFFLATUS literally denotes a blaſt of wind, breath, or vapour, ſtriking with force againſt another body. It ſometimes affects the body with a diſeaſe, which is a ſpecies of the *eryſipelas*.

The word is formed from *ad* and *flare*, *to blow*.

Naturaliſts ſometimes ſpeak of the *afflatus* of ſerpents.

Tully uſes the word *figuratively*, for a divine INSPIRATION. In which ſenſe, he aſcribes all great and eminent accompliſhments, to a divine *afflatus*.

AFFLICTION, is not itſelf, in propriety of medical ſpeech, a diſeaſe, but it produces many; for whatever excites envy, anger, or hatred, produces diſeaſes from tenſe fibres; as whatever excites fear, grief, joy, or delight, begets diſeaſes from relaxation.

Many chronical diſeaſes, particularly the *pthiſia*, ſpring from *affliction*. For a very remarkable hiſtory of the effect of *affliction*, ſee Hiſt. de l'Acad. Roy. des Scienc. An. 1732.

AFFLUX, in *Electricity*, is oppoſed to *efflux*; and both terms were uſed by the abbé Nollet, and alſo by Dr. Watſon, previous to the diſcovery of poſitive and negative electrics. They apprehended, that in all electrical operations, there was both an *afflux* of electrical matter to the globe and the conductor, and likewiſe an *efflux* of the ſame matter from them. Dr. Watſon ſoon corrected this miſtaken opinion; but the abbé Nollet was more tenacious; and he was confirmed in his attachment to this favourite theory by obſerving, that bodies not inſulated, plunged in electric atmoſpheres, ſhewed ſigns of electricity; not perceiving, that the electricity of ſuch bodies was in its nature and effects different from, and directly oppoſite to that of the electrified body, in the atmoſphere of which they were involved. See Electricity.

AFFORAGE, in the French *Cuſtoms*, a duty paid to the lord of a diſtrict, for permiſſion to ſell wine, or other liquors, within his ſeignory.

Afforage is alſo uſed for the rate or price of proviſions laid and fixed, by the provoſt, or ſheriffs, of Paris.

AFFORCEMENT, Afforciamentum, in ſome ancient charters, denotes a FORTRESS, or work of FORTIFICATION and DEFENCE.

The word is derived from the barbarous Latin *afforciare*, *to ſtrengthen*, *confirm*.

AFFORESTING, Afforestatio, the turning ground into FOREST.

In this ſenſe, the word ſtands oppoſed to DEAFFORESTING.

The Conqueror, and his ſucceſſors, continued *afforeſting* the lands of the ſubject, for many reigns; till the grievance became ſo notorious, that the people of all degrees and denominations, were brought to ſue for relief; which was, at length, obtained, and commiſſions were granted to ſurvey and perambulate the foreſt, and ſeperate all the new *afforeſted* lands, and re-convert them to the uſes of their proprietors, under the name and quality of PURLIEU or POURALLE *land*.

AFFRANCHISEMENT. See Manumission.

AFFRAY, in *Law*, is derived from the French word *effrayer*, *to affright*, and it formerly meant no more; as where perſons appeared with armour, or weapons not uſually worn, to the terror of others. Stat. 2. Edw. III. cap. 3. But now it implies a ſkirmiſh or fighting between two or more, and there muſt be a ſtroke given or offered, or a weapon drawn, otherwiſe it is not an affray. 3 Inſt. 158. It is inquirable in the court leet, and puniſhable by juſtices of peace in their ſeſſions, by fine and impriſonment; and it differs from aſſault, in that it is a wrong to the public; whereas aſſault is of a private nature. Lamb. lib. ii. A conſtable, or private perſon, may ſeize offenders where they are aſſembled in a tumultuous manner. 3 Inſt. 158. H. P. C. 135.

AFFREIGHTMENT, or Affretament, Affretamentum, in *Law*, ſignifies the FREIGHT of a ſhip.

The word is formed from the French, *fret*, which expreſſes the ſame thing.

AFRICAN *Company*. See the article Company.

AFRICANUS *flos*. Gerard mentions four ſpecies of this flower; Miller enumerates and deſcribes thirteen; but they are of no repute in medicine.

AFRICTA denotes a kind of wafers, which the ancients uſed in their ſacrifices. Arnob. lib. vii.

AFFRONTE, in *Heraldry*, is underſtood of animals borne in an ESCUTCHEON as facing, or with their heads turned toward each other.—This is otherwiſe called *confronté*; and ſtands oppoſed to *adoſſé*.

The word is French, and literally ſignifies the ſame. It is compounded of *ad*, *to*; and *frons*, *forehead*.

AFFUIAGE, Affuiagium, in *Ancient Cuſtoms*, a right of cutting fuel-wood in a foreſt, or the like, for maintaining family-fire.

The word is derived from *affoer*, q. d. *affocare*, *to make a fire*, of *ad* and *focus*.

AFFUSION, the act of pouring ſome fluid ſubſtance on another body.

Dr. Grew gives ſeveral experiments of the luctation ariſing from the *affuſion* of divers menſtruums on all ſorts of bodies.

Divines and church hiſtorians ſpeak of BAPTISM by *affuſion*; which amounts to much the ſame with what we now call ſprinkling.

AFLOAT, a ſhip is ſaid to be *afloat*, when ſhe is buoyed up by the water from the ground.

AFOBA, in *Botany*, a name given, by the natives of Guinea, to a kind of plant, of the genus of the *phaſeolus*, or kidney-bean. They uſe it pounded and mixed with oil, to cure the itch, and other cutaneous foulneſſes. It is more hairy than the common kinds, and its leaves are very ſmall. Philoſ. Tranſ. N° 232.

AFRA *avis*, in *Natural Hiſtory*. See Pintado.

AFSAGERS, perſons appointed by the burgo-maſters of Amſterdam, to preſide over the public ſales made in that city. They muſt always have a clerk of the ſecretary's office with them, to take an account of the ſale.

AFT, behind, or near the ſtern of the ſhip.

AFTER-BIRTH, among *Midwives*, the coat, or membranes, wherein the fœtus is incloſed *in utero*.

It is thus called, becauſe it comes away ſome time after the fœtus; by way of a ſecond birth, or delivery.

Phyſicians uſually call it the SECUNDINE. It alſo includes the *placenta uterina*, popularly called the *womb-cake*.

In brutes it is denominated the HEAM, or CLEANING. See Collect. Acad. P. E. tom. iii. p. 464.

Authors ſpeak of a ſtrange kind of *after-birth*, of the mole kind, frequent among Dutch women, where it is called *ſuyger*, q. d. *leech*, by naturaliſts *mola volatilis*. The ſkeleton of one of theſe is deſcribed and repreſented by Thomas Bartholine. Ephem. Germ. dec. 1. Ann. 2. Obſ. 160, p. 255.

The *after-births* of ripe children are brought away more eaſily than thoſe of abortions. See Medic. Eſſ. Edinb. vol. ii. p. 212.

After-*math*, among *Huſbandmen*, the after-graſs, or ſecond mowings of graſs; or elſe graſs or ſtubble cut after corn.

After-*noon*, the latter half of the artificial day, or that ſpace between noon and night.

The ancient Romans dedicated their *afternoons* to diverſion, as their forenoons to buſineſs; and their uſual diverſions were the game called *pila*, and other exerciſes of the body, eſpecially walking, or riding. Theſe laſted till the eighth or ninth hour, anſwering to our three o'clock, which was the time for the baths. After bathing, they anointed and perfumed themſelves; and, about the tenth hour, went to *cœna*, *ſupper*, about three hours before ſun-ſet; which done, the day was ended at the public ſpectacles, theatrical, or amphitheatrical ſports; with muſic, ſinging, and the like.

After-*ſails* uſually comprehend all thoſe which are extended on the mizen-maſt, and on the ſtays, between the mizen and main-maſts.

After-*pains*, are pains felt in the loins, the groin, &c. after the birth is brought away.

They ſeem to ariſe from a diſtention of the ligaments of the *uterus* in time of DELIVERY, and are ſeldom dangerous, unleſs aggravated by a detention of the *lochia*.—To prevent them, oil of ſweet-almonds, ſpermaceti, ſyrup of *capillus veneris*, &c. are uſually preſcribed.

After-*ſwarms*, in ſpeaking of bees, are ſecondary or poſterior ſwarms, frequently found to quit the hives within a fortnight after the firſt.

Butler tells us, that the *after-ſwarms* differ from the prime, in that the latter are directed by the vulgar, or crowd of bees, whoſe only rule is the fulneſs of the hive; whereas the former are appointed by the ruling bees, and indicated by a noiſe or call, which theſe make for the ſpace of two or three days, as it were to give warning to the common herd to prepare for a march. Within eight or ten days after the prime-ſwarm is gone, if the princeſs next in order find a competent number fledged and ready, ſhe begins to tune her treble voice, in a mournful and begging note, as if ſhe prayed the queen-mother to let them go; to which voice, if ſhe vouchſafe a reply, by tuning her baſe to the other's treble, it marks her conſent: in conſequence of which, within a day or two after, if the weather allow, the new ſwarm appears. If the *prime* ſwarm be broken, the *after* will both call and ſwarm the ſooner, perhaps the next day; in which a third, ſometimes a fourth, ſucceeds in the ſame ſeaſon; but all uſually within a fortnight after the prime ſwarm. See Swarm.

AFTO, in *Botany*, a name given, by the natives of Guinea, to a plant of the *eryſimum* kind, which they grind to powder, and take as ſnuff, to cure the head-ach. Petiver has called this plant the woody and woolly *eryſimum*, or hedge-muſtard, of the coaſts of Guinea. Phil. Tranſ. N° 302.

AGA, in the language of the Moguls, &c. ſignifies a great man, lord, or commander.

In this laſt ſenſe, the term is alſo uſed among the Turks: thus, the *aga* of the Janizaries is their colonel; and is the only perſon who is allowed to appear before the Grand Signior, without his arms acroſs his breaſt, in the poſture of a ſlave. The *capi aga*, the captain of the gate of the ſeraglio.

The title *aga* is alſo given, by way of courteſy, to ſeveral perſons of diſtinction, though not in any office, or command, to intitle them to it; as, to the eunuchs of the ſeraglio.

The chief officers under the Khan of Tartary are called by this name. And among the Algerines, we read of *agas* choſen from among the *boluk baſhis* (the firſt rank of military officers) and ſent to govern in chief the towns and garriſons of that ſtate.

On ſome occaſions, in lieu of *aga*, they ſay, *agaſi*, or *agaſſi*. Thus, the *aga*, or governor of the pages, is called *capi-agaſſi*; and the *aga* or general of the horſe, *ſpahilar agaſſi*.

Aga *Cretenſium*, ſignifies the Spaniſh milk-thiſtle.

AGAI, ſee Agio.

AGALACTIA, in *Phyſic*, ſignifies a deficiency of milk in a mother, who is therefore called by Hippocrates αγαλακτος.

AGALLOCHUM, a medicinal wood imported from the Eaſt Indies, uſually in ſmall bits, of a very fragrant ſcent.

The word is derived from the verb αγαλλομαι, *I boaſt*; in alluſion to the excellency of its odour.

Agallochum is otherwiſe called *lignum-aloes* and *xyloaloe*, q. d. *aloe-wood*, not that it is produced from the common aloe-plant, which yields the inſpiſſated juice of that name. It is the produce of a tree of a very different kind, growing in the Eaſt Indies, particularly Sumatra and Cochinchina. Some call it likewiſe Lignum *paradiſi*. It yields a concrete oil. See its chemical hiſtory in Neumann's Works, p. 420.

It is of a bluiſh purple colour, marked with veins and ſpots, very heavy and bitter; when burnt it yields drops of an aſtringent liquor, and a ſweet aromatic fume. It is hot and drying, and eſteemed a great ſtrengthener of the nerves in general, but particularly of the head and ſtomach.

The various names and accounts given of the *agallochum* are ſo very different, as well as the ſpecimens of it common in our ſhops, that it does not ſeem to be properly known amongſt us.

AGALMATA, in *Antiquity*, originally denoted the ornaments of temples and ſtatues; but came afterwards to be popularly uſed for the ſtatues and temples themſelves.

AGAPES, or Agapæ, in *Church Hiſtory*, a kind of religious feſtival, celebrated, in the ancient church, to keep up a harmony and concord among its members.

The word is formed of the Greek αγαπη, *love*.

In the primitive days the *agapes* were held without ſcandal, or offence; but, in after-times, the heathens began to tax them with impurity.—This gave occaſion to a reformation of theſe *agapæ*.

The kiſs of charity, with which the ceremony uſed to end, was no longer given between different ſexes; and it was expreſly forbidden to have any beds, or couches, for the conveniency of thoſe who ſhould be diſpoſed to eat more at their eaſe. Notwithſtanding theſe precautions, the abuſes committed in them became ſo notorious, that the holding of them (in churches at leaſt) was ſolemnly condemned, at the council of Carthage, in the year 397.

Some authors imagine the *agapæ* to have been, not a commemoration of our Saviour, but a cuſtom borrowed from the heathens: *Mos vero ille, ut referunt*, ſays Sedulius, on the XIth chapter of the Epiſtle to the Corinth. *de Gentili adhuc ſuperſtitione veniebat*. And Fauſtus, the Manichee, is repreſented, by St. Auguſtine, as reproaching the Chriſtians with converting the heathen ſacrifices into *agapæ*.

Agape ſignifies alſo an afternoon, or evening's meal.

AGAPETÆ, in *Eccleſiaſtical Hiſtory*, a name given to certain virgins and widows, who, in the ancient church, aſſociated themſelves with, and attended on, eccleſiaſtics, out of a motive of piety and charity.

In the primitive days there were women inſtituted Deaconesses; who, devoting themſelves to the ſervice of the church, took up their abode with the miniſters, and aſſiſted them in their functions.

In the fervour of the primitive piety, there was nothing ſcandalous in theſe ſocieties; but they afterwards degenerated into libertiniſm: inſomuch, that St. Jerom aſks, with indignation, *unde Agapetarum peſtis in eccleſias introiit?* This gave occaſion to councils to ſuppreſs them.—St. Athanaſius mentions a prieſt, named Leontius, who, to remove all occaſion of ſuſpicion, offered to mutilate himſelf, to preſerve his beloved companion.

AGAPIS *lapis*, in *Natural Hiſtory*, a name given by ancient writers, to a ſtone of a duſky yellow, or the colour of a lion's ſkin; it was held in great eſteem in many nations, on account of its ſuppoſed virtues, as an anodyne and vulnerary.

AGARENI, or Agarenians, a name given by ſome to the followers of the religion of Mahomet.

The word is derived from Agar, or Hagar, handmaid of Abraham, and mother of Iſhmael.

AGARIC, in *Pharmacy*, a kind of fungous excreſcence, growing on the trunks and large branches of ſeveral trees; but, chiefly, on the larch-tree, and upon ſome kinds of oak, when old and decayed. Three fourths of it conſiſt of a reſinous ſubſtance, and the remainder is a ſlimy mucilaginous earthy matter, ſo tenacious, as ſcarcely, by any method, to be diſſolved by water. It comes forth on the tree in the beginning of the ſpring, and continues to increaſe till autumn. The beſt is eaſily cut with a knife, friable betwixt the fingers, and has no hard or gritty, or coloured veins. It has no pedicle, and is internally of a ſimple uniform ſtructure throughout its whole ſubſtance.

Agaric is an ingredient in the *Theriaca Andromachi*, where it is admitted in quality of a cordial; though its cardiac virtue is excepted to as much as its purgative.

Agaric was a purge in much eſteem among the ancients, but has deſervedly fallen into diſrepute of later years, as it occaſions unſupportable nauſeas.

Tournefort enumerates 18 ſpecies of *agaric*. Tournef. Inſt. 562. But it is more generally divided into three kinds; the *male*, the *female*, and that called *falſe*, or *ſpurious agaric*.

The *male agaric*, otherwiſe called the common or heavy *agaric*, is of a yellowiſh colour, and pretty ſolid. It is commonly uſed in dying black, and is reckoned among the *not-colouring* drugs, which the dyers of the beſt woollen cloth and ſerges are obliged to uſe in France.

It is called a *not-colouring* drug, becauſe it can produce no colour of itſelf, without being mixed with other ingredients.

The *female agaric* is the moſt eſteemed, becauſe it is much uſed in medicine. To be good it ought to be white, large, light, and brittle, ſo as to be eaſily pulveriſed; of a lively and penetrating ſcent, and of a bitter taſte. This was thought efficacious as a ſtyptic, to reſtrain not only venal, but arterial hæmorrhages, without the uſe of ligatures. Its reputation, however, did not long ſubſiſt; and after repeated trial, the ſurgeons of London were obliged to diſcontinue it as inefficacious and unſafe. See Neale on the uſe of *Agaric*.

The *falſe*, or *baſtard agaric*, or *oak agaric*, is that which grows on thoſe trees. It is commonly reddiſh, and very heavy, and is very little eſteemed, which probably occaſioned its being called the *falſe agaric*. The druggiſts look only upon that which grows upon the *larch-tree* to be the right ſort.

Agaric is brought from different places; the beſt comes from the Levant; that which comes from Savoy and Dauphiny being leſs eſteemed. Holland alſo ſupplies ſome, but that is reckoned the worſt; becauſe it is grated, and whitened at top with chalk. By a chemical ſolution it paſſes almoſt wholly into oil; it yields no volatile ſalt, but abounds with a ſort of flaky earth, and acid phlegm; as to texture, it ſeems much to reſemble COLOCYNTH.

The *agaric* is either *brute*, *cleanſed*, or in *trochiſks*.

AGARIC, *brute*, is juſt as it was taken from the tree, without any other preparation than what it has received from nature.

AGARIC, *cleanſed*, is that, which being cleared and purified from all its filth and imperfections, is fit for immediate uſe.

AGARIC in *trochiſks*, is commonly the female ſort, finely pulveriſed, incorporated with ſome liquid, and made into a maſs, of which cakes of different ſizes and figures are formed, which are dried in the air and ſhade, without coming near the fire.

There is alſo another ſort of *agaric*, which is called *mineral agaric*. This is a kind of ſtone, which is found in the cliffs of rocks, in different parts of Germany. It is very white and light, whence it is called milk of the moon. It is alſo named *marrow of ſtone*, or *lithomagra*; and others call it *ſtenomagra*. Some tell us that the calcination of this ſtone is performed by the vapours of the metals within the rocks where it is found. This *agaric* is ſcarcely uſed at all, except in medicine. See LAC *Lunæ*.

It is uſed internally againſt hæmorrhages, the ſtrangury, gravel, and eſpecially dyſenteries; externally, to dry and heal old ulcers, ſtop defluxions of the eyes, &c. See the chemical hiſtory of the *agaric* of the larch-tree, &c. Neumann's Works, p. 349.

AGARICUS, in the Linnæan ſyſtem of *Botany*, called *amanita* by Dillenius, the term uſed to expreſs that genus of funguſes belonging to the *cryptogamia fungi*, which have no pedicle, but grow to trees, &c. by one ſide, and are therefore called horizontal funguſes, and are lamellated underneath: by this laſt character they are diſtinguiſhed from the *boleti* of Linnæus, which are thoſe horizontal funguſes which are porous underneath.

AGASYLLIS, in the *Materia Medica*, a name given by ſome of the ancient Greek writers, to gum ammoniac; and by Dioſcorides, to the tree which produced that gum. By their deſcriptions of this medicine, it appears not to have been the ſame which we know by this name.

AGAT, in *Natural Hiſtory*, a precious ſtone, partly tranſparent, and partly opake; uſually diverſified with variety of colours, veins, ſpots, &c. and ſometimes exhibiting figures, or appearances, of natural objects.

The word is ſometimes alſo written *achat*; by the Greeks and Latins, *αχατης*, and *achates*; a denomination taken from that of a river in Sicily, on the banks of which it was firſt found.

Agats are compoſed of cryſtal, debaſed by a large quantity of earth, and not formed, either by repeated incruſtations round a central *nucleus*, or made up of plates laid evenly on one another, but are merely the effect of one ſimple concretion, and variegated only by the diſpoſition the fluid they were formed in, gave to their differently coloured veins, or matters.

Theſe are a very numerous genus of foſſils, and ſubject to great variegations in their colours. They are, however, arranged into ſome order, according to the different colours of their ground.

Of thoſe of a *white ground*, there are three ſpecies: 1. The DENDRACHATES, or *Mocoa-ſtone*. 2. The dull milky-looking *agat*. 3. The lead-coloured *agat*, called the PHASSACHATES, by the ancients.

Of the *agats* with a *reddiſh ground*, there are four ſpecies: 1. An impure one of a fleſh-coloured white. 2. The ſecond of the red grounded *agats*, is that ſpecies of a pure blood-colour, called HÆMACHATES, or the *bloody agat*, by the ancients. 3. The third is the clouded and ſpotted *agat*, of a pale fleſh-colour, called the *cornelian agat*, or SARDACHATES, by the ancients. 4. And the fourth, the red-lead coloured one, variegated with yellow, called the *coral agat*, or CORALLO-ACHATES, by the ancients.

Of the *agats* with a *yellowiſh ground*, there are only two known ſpecies: 1. The one of the colour of yellow wax, called *cerachates* by the ancients. 2. The other a very elegant ſtone, of a yellow ground, variegated with white, black, and green, called the LEONINA, and LEONTESERES, by the ancients.

Laſtly, of the *agats*, with a *greeniſh ground*; there is only one known ſpecies, which was the JASPACHATES of the ancients.

Some have attributed great medicinal, and imaginary, virtues to the *agat*.

Oriental *agats* are ſaid to be all brought from the river Gambay.

A mine of *agats* was lately diſcovered in Tranſylvania, of divers colours, ſome of a large ſize, weighing ſeveral pounds.

Agats have been diſtinguiſhed by other names, than thoſe before mentioned. Thus we find

AGAT, *vermilion*, that of a deep vermilion-colour.

AGAT, *white ringed*, *achates* PERILEUCOS, diſtinguiſhed by black and white circles. Plott mentions this under the denomination of CROW-*ſtone*.

AGAT, *white*, LEUCACHATES, that altogether white, or at leaſt diverſified with white ſtrokes, being frequently ſemi-tranſparent, and bearing a reſemblance to the white of an egg.

AGAT, *vitreous*, or *tranſparent*, of a thin ſtone-blue colour.

AGAT, *leopardine*, *achates* PARDALIOS, that ſpotted like the ſkin of a leopard. This is otherwiſe called *pandalion*, *pantachates*.

AGAT, *ſapphirine*, that of a ſky-blue colour, tranſparent; ſometimes found with *lapis lazuli*, and called alſo SAPPHIRO-ACHATES.

AGAT, *luminated*, diſtinguiſhed by divers colours, as white, black, yellow, brown, placed over each other, at equal diſtances.

AGATS are alſo divided, with regard to the objects repreſented on them, into

AGAT, *arboreſcent*, DENDRACHATES, and DENDRITES. This ſeems to be the ſame with what ſome authors call the *achates*, with roſemary in the middle; and others, *achates*, with little branches of black leaves.

AGAT, *horned*, CERACHATES, is ſaid by ſome to be that which, by lines and ſpots, repreſents the figure of a horn.

AGAT, *aphrodiſian*, *achates* APHRODISIUS, is a term given by Velſchius to an *agat* in his cuſtody, of a fleſh-colour, on one ſide of which appears a half-moon, in great perfection, repreſented by a milky ſemicircle; on the other ſide, the phaſes of Veſper, or the evening ſtar; whence the denomination *aphrodiſius*.

AGAT, *corſoid*, repreſenting human hair.

AGAT, *arithmetical*, repreſenting the numbers 4191, 191.

AGAT, *aſtronomical*, repreſenting the hemiſphere, with its ſeveral orbs, and the earth in the middle. To which head may be alſo referred an *agat* mentioned by Borrichius, repreſenting the five orbs in great perfection.

AGAT, *elementary*, conſiſting of four colours; blue, ſuppoſed to expreſs water; white, the air; red, the fire; and brown, the earth.

AGATS, *anthropomorphous*, thoſe wherein the figures of men or women are expreſſed. Such is that mentioned by Kircher, repreſenting a heroine armed; with many others of the *anthropomorphous* kind.

To the claſs of *anthropomorphous agats*, may alſo be referred an *agat* in the library of Francfort, repreſenting the heart, lungs, and part of the veins of a man.

AGATS, *leucophthalmous*, thoſe repreſenting the figures of eyes. Such is that mentioned by Velſchius, which he calls OMMATIA, or *omphopthalmus*; or thoſe by Cardan, and others, repreſenting the eyes of birds, fiſhes, wolves, called *lycophthalmi*; of goats, *ægophthalmi*; of oxen, *boophthalmi*.

Among the more curious, we meet with Tiberian *agat*, *achates Tiberianus*, a name given by ſome, to the famous *agat* in the treaſury of the French king's chapel, repreſenting the *apotheoſis* of Auguſtus, and the ſeries and portraits of the family of Tiberius and Julia, with divers foreign nations ſubdued in war; concerning which, many different explications and conjectures have been advanced by the learned.

AGAT, *Iſiac*, *achates Iſiacus annularis*, is a curious antique *agat* at Rome, ſo called, as repreſenting the head of Iſis, and being ſet in a ring.

AGATS are alſo divided with regard to the affinities they bear to other ſtones: hence the *jaſpachates*, *ſardachates*, &c. We find alſo *onychates*, between an *onyx* and an *agat*, compoſed not of zones, or balls, but of plates perſpicuous and aſh-coloured.

AGAT, *oriental ſardonyx*, of an oval figure, and a white colour, in the middle of which appears a body of water, which, upon ſhaking, is perceived to move. This ſpecies is otherwiſe called *coccus*, *ovum ſolis*, *coccus paraquanorum*, *venter cryſtallinus*, *ætites gemmata*, &c. and may be referred to the ÆTITES kind.

To this kind may alſo be referred the *agat* of Chili, which has cryſtals ſeen in it; and another called *berylloachates*, containing pieces of beryls.

The ANTACHATES is that which in burning yields a ſmell of myrrh. This, though mentioned by Pliny among *agats*, ſeems rather to belong to the head of ambers, or bitumens. Others write it *anchachates*; others, *ſtactachates*.

Authors alſo ſpeak of Roman *agats*, Egyptian *agats*.

The ancients mention a red *agat*, ſpotted with points of gold, found in Candia.

Agat has always been eſteemed for ſeals; as being a ſtone that no wax will ſtick to.

The gold wire-drawers burniſh their gold with an *agat*; whence the inſtrument made uſe of on that occaſion, is alſo called an *agat*.

Mr. Boyle takes *agats* to have been formed of ſeparate beds, or ſtrata of fine clay or earth, brought by a petrifying liquor to coagulate into a ſtone. The ſame author obſerves, that the fire will purge away the colours of *agat*. He alſo mentions an *agat* with a moveable ſpot or cloud in it.

See farther concerning the hiſtory of *agats*, Nicolſ. Lapid. cap. 26. p. 133. Grew, Muſ. p. 287. The figures of *agats*, Mercat. Melloth, p. 375. Their ſtructure, Woodward, Nat. Hiſt. Engl. Foſſ. tom. ii. p. 16. Experiments on them in the burning-glaſs, Giorn. de Letter. d'Ital. tom. viii. The commerce and manufacture of *agats*, Hought. Coll. tom. ii. The counterfeiting of *agats* in glaſs, Neri, Art of Glaſs, lib. ii. cap. 37.

Agats may be ſtained artificially, by a ſolution of ſilver in ſpirit of nitre, and afterwards expoſing the ſtone, for ſome hours, to the ſun. This operation ſucceeds beſt in whitiſh *agats*. See on this ſubject of ſtaining *agats*, Dr. Lewis's Com. P. Techn. p. 438, & ſeq.

But it is to be obſerved, that no art has hitherto been able to imitate the fineneſs and beauty of the vegetable repreſentations, formed by nature, in ſome *agats*; ſuch as are commonly called DENDRITES. And though art ſhould attain to ſuch a perfect imitation of nature in this caſe, as to deceive the eye, yet might the difference be otherwiſe diſcovered.

For if an *agat* be coloured by art, it will loſe a great part of its colour, by heating it; and this colour may again be reſtored, by adding the ſolution of ſilver in ſpirit of nitre.

Again, by putting a little aqua fortis, or ſpirit of nitre, on the ſuſpected *agat*, without expoſing it to the ſun, the artificial colours will diſappear in a night's time; and this colour may again be reſtored, by expoſing the ſtone to the ſun for ſome days. Vid. Du Fay, in Mem. Acad. Scienc. 1728.

But Monſ. de la Condamine has ſince obſerved, that even natural *agats*, which, by the fineneſs of the lines repreſented upon them, were beyond all ſuſpicion of art, yet ſuffered a great change in their colours, by the application of aqua-fortis. Vid. Hiſt. Acad. Scienc. 1733, p. 35, 36. Edit. Amſt.

Agats, and other ſtones, may be ſtained black, by applying to them a ſolution of copper in aqua fortis, and making them red-hot in a crucible. To imitate Mocha ſtones, moiſten the ſmooth ſurface of the *agat* with a ſolution of copper, and on the middle of it ſet an iron nail upright on its head; this abſorbs the acid from the copper, and the copper makes ramifications, which, after the ſtone is carefully waſhed, may be rendered of a black colour, by a red heat. Theſe vegetations are not fixed in the ſtone, which ought therefore to be covered with a plate of cryſtal glaſs.

Beccaria obſerves, that the electric ſparks will not be conducted by the ſurface of poliſhed *agat*; and Mr. Boſe has ſhewn that the *agat* was very early known to poſſeſs electrical powers.

For the chemical properties of *agats*, ſee EARTHS *vitrifiable*.

Agat, among *Antiquaries*, denotes a ſtone of this kind, engraven by art.

In which ſenſe, *agats* make a ſpecies of *antique gems*; in the workmanſhip whereof, we find eminent proofs of the great ſkill and dexterity of the ancient ſculptors. Several *agats* of exquiſite beauty are preſerved in the cabinets of the curious. The facts, or hiſtories, repreſented in *antique agats*, with how much addreſs ſoever conducted, are become, at this diſtance of time, many of them obſcure and dubious, and their explication difficult enough; whence divers miſtakes have been committed, and numerous conjectures and diſputes raiſed.

AGATHA. See ACHATES.

AGATHODÆMON, a beneficent GENIUS, or DÆMON.

The word is compounded of ἀγαθὸς, *good*, and δαιμων, *dæmon*.

Among ancient writers, *agathodæmon* is a denomination given to a kind of ſerpents, bred up and revered by the Egyptians, from an opinion of ſome ſanctity reſiding in them.

They are alſo called dragons, DRACONES, or *dracunculi*, and fabulouſly deſcribed as having wings.—They appear to be the ſame with thoſe otherwiſe called SIRENES.

AGATY, the name of a Malabar tree, bearing a fruit in taſte and ſhape like the kidney-bean. Ray's Hiſt.

AGAVE, a genus of the *hexandria monogynia*, a name given to the common American aloe. The characters are: the flower has no empalement, is funnel-ſhaped, and of one leaf, which is cut at the brim into ſix equal ſegments; the oblong germen is ſituated below the flower, upon which reſts the ſlender ſtyle, which is extended for a conſiderable length beyond the petals, and is crowned by a three-cornered ſtigma. This is attended by ſix erect ſtamina, of the ſame length, crowned by narrow ſummits; after the flower is paſt, the germen becomes an oblong three-cornered ſeed-veſſel, having three cells, which are filled with flat ſeeds. Miller reckons eight ſpecies of this plant. The common great American aloe generally riſes upwards of twenty feet, and branches on every ſide in the ſhape of a pyramid. When this plant flowers, it makes a beautiful appearance; and if it is protected from the cold in autumn, a ſucceſſion of new flowers will be produced for near three months, in favourable ſeaſons. It has been a common error, that this plant doth not flower till it is a hundred years old; the truth is, that its flowering depends on the growth of the plant; ſo that in hot countries it will flower in a few years; but in colder climates, the growth is ſlower, and the flowering leſs frequent.

AGAUPE, in *Botany*, a name uſed by ſome authors for the common white *water* LILY.

AGE, properly denotes the natural duration of the LIFE of man.

The ordinary *age* of mankind has been occaſionally varied, in ſuch manner as to afford a fine inſtance of the wiſdom of Providence. Dr. Woodward holds, that the ages to which men arrive, are proportioned to the number of their lacteals.

Age is alſo uſed, in *Chronology*, for a CENTURY; or a ſyſtem, or a period of an hundred years.

In which ſenſe, *age* amounts to much the ſame with *ſeculum*, and differs from *generation*.

Age is alſo underſtood of a certain ſtate or portion of the ordinary life of man; which is divided into four different *ages*; viz. INFANCY, YOUTH, MANHOOD, and OLD AGE.

Infancy, or childhood, *pueritia*, extends as far as the fourteenth year.

Youth, adoleſcence, or the *age* of puberty, commences at 14, and ends at about 25.

Manhood, or the virile *age*, terminates at 50.

Old age, *ſenectus*, ſucceeds, which is the laſt: though ſome divide this into two; calling it *decrepit age* after 75. See LONGEVITY.

Age, in *Horſemanſhip*, makes a conſiderable point of knowlege; the horſe being an animal that remarkably ſhews the progreſs of his years, by correſpondent alterations in his body.

We have characteriſtics from his teeth, hoofs, coat, tail, and eyes.

The firſt year he has his foal's teeth, which are only grinders and gatherers: the ſecond, the four foremoſt change, and appear browner and bigger than the reſt: the third, he changes the teeth next to theſe; leaving no apparent foal's teeth, but two on each ſide above, and two below: the fourth year, the teeth next to theſe are changed, and no foal's teeth are left, but one on each ſide above, and below: at five years, his foremoſt teeth are all changed, and the tuſhes on each ſide are complete: thoſe which come in the places of the laſt foal's teeth, being hollow, and having a little black ſpeck in the midſt; which is called the *mark in a horſe's mouth*: this continues till eight years of *age*.—At ſix years, he puts out new tuſhes; near which appears a little circle of young fleſh, at the bottom of the tuſh; the tuſhes, withal, being white, ſmall, ſhort, and ſharp.—At ſeven years, the teeth are all at their growth, and the mark in the mouth appears very plain.—At eight, all his teeth are full, ſmooth, and plain, and the mark ſcarce diſcernible; the tuſhes looking yellowiſh.—At nine, the foremoſt teeth ſhew longer, yellower, and fouler, than before; and the tuſhes become bluntiſh.—At ten, no holes are felt on the inſide of the upper tuſhes; which till then are very ſenſible: add, that the temples begin to be crooked and hollow.—At eleven years, his teeth are very long, yellow, black, and foul; but he will cut even, and his teeth ſtand directly oppoſite to one another.—At twelve, the upper teeth hang over the nether.—At thirteen, the tuſhes are worn cloſe to his chops, if he have been much ridden; otherwiſe they will be black, foul, and long.

2. As to the hoof.—If it be ſmooth, moiſt, hollow, and well-ſounding, it is a ſign of youth: on the contrary, if rugged, and as it were ſeamed, one ſeam over another, and withal dry, foul, and ruſty, it is a mark of old *age*.

3. For the tail.—Taking him by the ſtern thereof, cloſe at the ſetting on to the buttock, and griping it between the finger and thumb; if a joint be felt to ſtick out more than the reſt, the bigneſs of a nut, the horſe is under ten: but if the joints be all plain, he may be fifteen.

4. The eyes being round, full, and ſtaring, the pits that are over them filled, ſmooth, and even with his temples, and no wrinkles to be ſeen, either under or above, are marks of youth.

5. The ſkin being plucked up in any part betwixt the finger and thumb, and let go again; if it return ſuddenly to

its place, and remain without wrinkles, he may be believed to be young.

6. A dark-coloured horſe, growing griſly above the eyebrows, or under the main; or a whitiſh horſe, growing meanelled, either with white or black, all over; may be infallibly concluded extremely aged.

Laſtly, a horſe being young, the BARS of his mouth are ſoft and ſhallow; otherwiſe they are deep, and feel hard and rough.

Age, in HUNTING, is an article of conſequence.—Deer, and other beaſts of game, have different denominations, according to their *age*.

The *age* of a hart, &c. is chiefly judged of by the furniture of his head.

The firſt HEAD, called, in fallow deer, *broches*; and, in red deer, *pricks*, does not come till the ſecond year of their *age*: the next year, they bear four or ſix ſmall branches; the fourth year, eight or ten; the fifth, ten or twelve; the ſixth, fourteen or ſixteen; the ſeventh year, they bear their heads beamed, branched, and ſumed, as much as ever they will be. The huntſmen have ſeveral other marks, whereby to know an old hart without ſeeing him; as, the ſlot, entries, abatures, foils, fewmets, gate, and fraying poſts.

Age *of neat cattle*, viz. the *ox*, *cow*, and *bull*, is known by their teeth and horns. At the end of ten months they ſhed their firſt fore-teeth, which are replaced by others, larger, but not ſo white; and in three years all the inciſive teeth are renewed. Theſe teeth are at firſt equal, long, and pretty white; but as the animals advance in years, they wear, become unequal and black. They alſo ſhed their horns at the end of three years; and theſe alſo are replaced by other horns, which, like the ſecond teeth, continue. The growth of theſe horns is not uniform; at firſt, or in the fourth year of the animal's age, two ſmall pointed horns make their appearance, neatly formed, ſmooth, and towards the head terminated by a kind of button. In the following year, this button moves from the head, being impelled by a horny cylinder, which lengthening in the ſame manner, is alſo terminated by another button, and ſo on; for theſe horns continue growing as long as the animal lives. Theſe buttons become annular joints, which are eaſily diſtinguiſhed in the horn, and by means of which the age of the animal may be eaſily known; counting three years for the point of the horn, and one for each of the joints. Buffon.

Age *of ſheep*. Theſe animals in their ſecond year have two broad teeth; in their third year they have four broad teeth before; in their fourth year ſix broad teeth; and in their fifth year eight of the ſame kind; after which their age cannot certainly be known, in this way.—But the age of the ram, and horned ſheep, may be always known by their horns, which ſhew themſelves in their firſt year, and often at the birth, and continue to grow a ring annually to the laſt period of their lives. Ellis and Buffon.

Age *of goats* is known by the ſame tokens as that of the ſheep.

Age *of the moon*, in *Aſtronomy*, is underſtood of the number of days elapſed ſince the laſt conjunction, or new moon; called alſo her QUARTER. The method for diſcovering her age, is mentioned under the article MOON.

Age, in *Chronology* and *Antiquity*, is alſo uſed in ſpeaking of the time paſſed ſince the creation of the world.

The ſeveral *ages* of the world may be reduced to three grand epochas; viz. the *age* of the law of nature, called by the Jews the *void age*, from Adam to Moſes.—The *age* of the Jewiſh law, from Moſes to Chriſt.—And the *age* of Grace, from Chriſt to the preſent year. See INCARNATION and EPOCHA.

The Romans diſtinguiſhed the time that preceded them, into three *ages*: the *obſcure* or *uncertain age*, which reached down as low as Ogyges king of Attica; in whoſe reign the deluge happened in Greece.—The *fabulous*, or *heroic age*, which ended at the firſt Olympiad; and the *hiſtorical age*, which commenced at the building of Rome.

Among the poets, the four *ages* of the world are, the *golden*, the *ſilver*, the *brazen*, and the *iron age*. See the Metamorphoſis of Ovid, lib. i. or rather Heſiod, in his poem, Ερyα και ἡμεραι, *Opera & Dies*, ver. 108, &c. He is the firſt that has deſcribed theſe four *ages*.

The Eaſt-Indians alſo reckon four *ages* ſince the beginning.—The firſt, which they repreſent as a ſort of golden *age*, laſted, according to them, 1728000 years: in this the god Brahma was born, and the men were all giants; their manners were innocent: they were exempt from diſeaſes, and lived 400 years.—In the ſecond *age*, which laſted 1296000, their rajas were born: vice now crept into the world; men's lives were fallen to 300 years, and their ſize retrenched proportionally.—Under the third *age*, which laſted 8064000 years, vice being more increaſed, men only attained to 200 years.—The laſt *age* is that wherein we now live, of which 4027213 years are already gone; and the life of man ſunk to one fourth of its original duration.

By the Roman law we find different *ages* aſcertained for different purpoſes; as,

Age, *conſular*, or that wherein a perſon might regularly hold the conſulſhip, was the forty-third year, ſo that he might ſue for it in the forty-ſecond. Where it is to be obſerved, that it was not neceſſary either of thoſe years ſhould be expired, but only begun; beſides, that men of extraordinary merits towards the republic, were in this matter exempt from the ordinary laws. Hence Corvinus was conſul at twenty-three years, Scipio Æmilianus at thirty-ſix, and Pompey at thirty-five; others broke through the laws by violence, as C. Marius the younger, and Octavius Cæſar, who procured themſelves to be made CONSULS, before twenty years of *age*.

Age, *judiciary*, or that wherein a perſon was capable of ſitting as a judge, was not always the ſame; for by the *Lex Servilia Glauciæ*, none was allowed to be choſen under thirty years of *age*, or above ſixty. By ſome other laws the *age* ſeems to have been limited to thirty-five, but reduced afterwards by Auguſtus to thirty; though Pitiſcus ſuppoſes a miſtake here in the text, and that inſtead of thirty-five and thirty, it ought to be read twenty-five, and twenty.

Age, *military*, or that wherein the Romans were obliged to enter themſelves in the army, was at ſeventeen years; at forty-five, they might demand their diſmiſſion.

Among the Lombards, the *age* of entry was between eighteen and nineteen; among the Saxons, at thirteen.

Age *for holding offices in the city*, as quæſtor, ædile, tribune of the people, &c. is not determined by the annal-laws of Villius, but appears to have been the twenty-ſeventh year.

For it was neceſſary that the perſon who claimed any urban employment, had firſt ſerved ten years without interruption in the army, commencing from the ſeventeenth year. Though ſome think the quæſtorſhip might have been held at twenty-five years.

Age, *prætorian*, or that wherein a perſon might ſolicit for the prætorſhip, was at forty; two years earlier than the *age* required for conſul.

Age, *legitimate*, denotes the age of twenty-five, ſo called, as ſome imagine, becauſe youth were then by law allowed to take the direction of their affairs into their own hands.

Age, *diſpenſation of*, *ætatis venia*, is a right which a perſon obtained from the prince, or ſovereign, of ſetting aſide a tutor or curator, and taking the adminiſtration of his affairs into his own hands, before the legitimate *age*.

Age, *adoptive*, called alſo *plena pubertas*, requires the adoptor to be eighteen years older than the perſon adopted, that there may appear a probability of his being a natural child.

We likewiſe read of other *ages*; as,

Age, *rocky* or *ſtony*, in ſome ancient northern monuments, correſponds to the *brazen age* of Heſiod, and the Greeks; being called *rocky*, on account of Noah's Ark, which reſted on mount Arrarat.

Age, *aſhen*, the fourth *age* of the northern poets; ſo called from a Gothic king, Madenis, or Mannus, who, on account of his great ſtrength, was ſaid to be made of aſh; or becauſe in his time people began to make uſe of weapons made of that wood.

Age, *hiſtorical*, that which commenced from the firſt Olympiad, in the year of the world 3228, and ſtill continues. This diviſion, it is to be obſerved, only holds good with regard to the Greeks and Romans, who had no hiſtories earlier than the firſt Olympiad. The Jews, Egyptians, Phœnicians, Chaldees, not to ſay the Indians and Chineſe, who pretend to much earlier monuments, will not be concluded by it.

Age, *preſent*, among Jewiſh *Writers*, frequently denotes all the ſpace of time before the Meſſiah, in contradiſtinction from *future age*, or *age to come*, the time after the coming of the Meſſiah.

Age, *middle*, denotes the ſpace of time commencing from Conſtantine, and ending at the taking of Conſtantinople by the Turks, in the fifteenth century.

A late author chooſes rather to date the middle *age* from the diviſion of the empire made by Theodoſius, at the cloſe of the fourth century, and extend it to the time of the emperor Maximilian I. at the beginning of the ſixteenth century, when the empire was firſt divided into circles. But this ſeems more accommodated to the ſtate of Germany in particular, than of Europe in general.

The middle is by ſome denominated the barbarous *age*, and the latter part of it, the loweſt *age*. Some divide it into

Age, *non-academical*, the ſpace of time from the ſixth to the ninth century, during which ſchools or academies were loſt in Europe.

Age, *academical*, from the ninth century, when ſchools were reſtored, and univerſities eſtabliſhed, chiefly by the care of Charlemaign.

Age, *milliary*, or *millenary*, *ſæculum milliarium*, or *millenarium*, on *Medals*, denotes the laſt year of a *millennium*, or thouſandth year.

Several medals of the emperors Philip, ſtruck in the thouſandth year from the building of Rome, have this legend.

Age, *new*, on ancient *medals*, denotes the beginning, or firſt year of a new *ſæculum*, or century of years.

Age is alſo uſed among ancient poets for the ſpace of thirty years.

In which ſenſe, *age* amounts to much the ſame with generation. Neſtor is ſaid to haxe lived three *ages*, at the time when he was ninety.

Age is differently conſidered by *Naturaliſts* from what it is by *Lawyers*; and even in each of thoſe profeſſions we find various ſyſtems and diviſions of *age*.

Age *of Medals*. See the article MEDAL.

Age, in *Law*, is particularly underſtood of a certain ſtate or time of life, wherein a perſon is qualified for certain offices of civil ſociety, which before, for want of years and diſcretion, he was incapable of.

By the common law, there are two principal *ages* in a man: at fourteen, he is at the *age of diſcretion*; at twenty-one years, at *full age*.

With reſpect to a woman, there were anciently ſix *ages* obſerved: at ſeven years, her father might diſtrain the tenants of his manor for aid to marry her; for at thoſe years ſhe may conſent to matrimony.—At nine years old ſhe is dowable; for then, or within half a year after, ſhe is ſaid to be able *promerereri dotem, & virum ſuſtinere*.—At twelve years, ſhe is able finally to ratify, and confirm her former conſent to matrimony.—At fourteen, ſhe may take her lands into her own hands; and ſhould be out of ward, if ſhe were at this *age* at her anceſtor's death.—At ſixteen, ſhe ſhould be out of ward, though at the death of her anceſtor ſhe was under fourteen: the reaſon is, that then ſhe might take a huſband able to perform knight's-ſervice.—At twenty-one years, ſhe may alienate lands and tenements.

As for a man: the age of twelve years binds to appearance before the ſheriff and coroner, for inquiry after robberies, 52 Hen. III. 14. at the *age* of fourteen he may chuſe his own guardian, and claim his lands held in ſocage. Though Bracton limits this to fifteen years; with whom Glanville agrees.—At fourteen a man may conſent to marriage, as a woman at twelve.—At that age likewiſe, he may diſpoſe of perſonal eſtate by will, though not of lands until twenty-one: at fourteen alſo perſons may be witneſſes, though in ſome caſes they have been admitted much younger. 2 Hawkſ. 434. Perſons under fourteen are not in general puniſhable for crimes; but they muſt anſwer for any treſpaſs. 1 Inſt. 247.—At fifteen he ought to be ſworn to the peace, an. 24 Edw. I. Stat. 3.—At ſeventeen he may be an executor.—At the *age* of twenty-one, a man was obliged to be a knight, if he had twenty pounds land per annum in fee, or for term of life, anno 1 Edw. II. Stat. 1. But this ſtatute is repealed, 16 Car. I. cap. 20.—The ſame *age* alſo enables him to make contracts, and manage his own eſtate; which, till that time, he cannot do with ſecurity of thoſe who deal with him.

The *age* of twenty-four years enabled a man to enter into an order of religion, without conſent of parents, anno 4 Hen. IV. cap. 17. At thirty, he may be a biſhop. Though the *age* of twenty-one is the full age of either man or woman, yet they may under that *age* contract for neceſſaries ſuitable to their quality, and it ſhall bind them. If either man or woman do any act before the time preſcribed by law, they may retract it, when they come to the proper age; but if they do not, they are ſuppoſed to ratify it, and it ſhall be deemed valid. Thus if a man marry before fourteen, or a woman before twelve, they may either agree or diſagree to the marriage, when they attain thoſe reſpective ages. But the *age* of marriage has undergone divers modifications: in princes it is allowed earlier than in private perſons; in ſome countries than in others. In Perſia girls are married at nine, boys only at thirteen; in Holland, males are not allowed to marry without conſent of parents or curators, before twenty-five, girls not before twenty; the Romans choſe to marry their wives young, for the advantage of having them innocent and tractable. Others declaim againſt premature marriages. Some have pretended to limit the other extreme of marriageable *age* to forty-five, but this too will be variable in different conſtitutions. We meet with inſtances of generation from ſixty, to one hundred and four, or even one hundred and twenty-one years of *age*.

Various methods have been in uſe for determining this *age*. One ſect of ancient Roman lawyers, called Caſſiani, fixed it by the ſtate of the body, which Juſtinian, and others after him, ſuppoſe to have been done by ſearch, or inſpection of the genital parts, at leaſt in the male ſex; for as to the female, it is pretended the twelfth year was the only guide, though others alledge that the eruption of the menſes ſerved inſtead of it. The Proculiani, on the contrary, determined the puberty of males, by the expiration of the fourteenth year. Javolenus took a middle courſe, and made uſe of both methods.

The *Canon* or *Eccleſiaſtical Law* alſo notes divers *ages*, viz. of baptiſm; of ordination to prieſthood, which is not to be before twenty-four; and to epiſcopacy.

Age is alſo uſed for the duration of vegetable matters. In which ſenſe, we ſay the *age* of roots, of leaves, of corn, of wine, &c.

Trees after a certain *age* waſte. An oak at a hundred years old ceaſes to grow. The uſual rule for judging of the *age* of wood, is by the number of circles which appear in the ſubſtance of a trunk, or ſtock, cut perpendicularly, each circle being ſuppoſed the growth of a year; though ſome reject this method as precarious, alledging, that a ſimple circle is ſometimes the produce of ſeveral years; beſides that, after a certain *age*, no new circles are formed.

Age is alſo uſed for the duration of things inanimate, and even factitious.

In which ſenſe we ſay, the *age* of a houſe, of a country, a ſtate, a commonwealth, or the like.

Age *Prier*, *ætatem precari*, a petition, or motion made in court, by one in his minority, having an action brought againſt him for lands coming to him by deſcent; requeſting that the action may reſt till he come to full *age*.—This the court, in moſt caſes, ought to grant.—But minors, as purchaſers, ſhall not have it: nor intent of aſſiſe, dower, or partition; though they may in debt. Hob. 342. D. Air. 259.

It is otherwiſe in the *Civil Law*; which obliges children in their minority to anſwer to their TUTORS, or CURATORS. See PAROL DEMURRER.

AGED *of the mountain* is a title or denomination given to the chief or prince of the people called ASSASSINS.

AGEM, in *Botany*, is a name given to the Perſian LILAC.

AGEMA, in the *Ancient Military Art*, a kind of ſoldiery, chiefly in the Macedonian armies.

The word is Greek, and literally denotes vehemence; to expreſs the ſtrength and eagerneſs of this corps.

Some will rather have *agema* to have denoted a certain number of picked men, anſwering to a legion among the Romans, which is authorized by a paſſage in Livy; Arrian, on the contrary, ſpeaks of the *agema*, as a wing of horſe; not but the term is alſo applied to foot.

AGEMOGLANS, or AZAMOGLANS, children of tribute raiſed every third year by the Grand Seignior, among the Chriſtians whom he tolerates in his dominions.

The word, in its original, ſignifies a barbarian's child; that is, a child not a Turk.—It is compounded of two Arabic words, 1. אגם, *agem*, which among the Turks ſignifies as much as *barbarous* among the Greeks; the former people dividing the world into Arabs or Turks, and *agem*: as the latter into Grecians and *barbarians*. 2. עלאם, *child*.

The commiſſioners appointed for this levy take them by force even out of the houſes of Chriſtians; always claiming one in three, and pitching upon ſuch as ſeem the handſomeſt, and promiſe to be the moſt ſerviceable.

Theſe are immediately conveyed to Gallipoli or Conſtantinople; where they are firſt circumciſed, then inſtructed in the Mahometan faith, taught the Turkiſh language, and the exerciſes of war, till ſuch time as they become of age to bear arms: and out of theſe the order of JANIZARIES is formed.

Such as are not judged proper for the army, they employ in the loweſt and moſt ſervile offices of the ſeraglio; as in the kitchen, ſtables, &c.

The *agemoglans* only differ from the *ichoglans*, as the former are bred up for the lower, and the latter reſerved for the higher offices of the empire.

AGENDA, in a general ſenſe, denotes things to be done or performed, in conſequence of a man's duty.

The word is Latin, formed from *agere, to do*; and divines ſpeak of the *agenda* of a Chriſtian, meaning the things to be practiſed, by way of contradiſtinction from *credenda*, or the things to be believed; the former imports the articles of obedience, the latter of faith.

Agenda is alſo uſed for a book containing notes, or memorandums of things neceſſary to be done.

In which ſenſe, *agenda* amounts to much the ſame with table-book, &c. An anonymous French author has publiſhed the *agenda* of a man of the world, containing maxims or rules, proper for the conduct of life. Tablettes de l'Homme de Coſmop. 1715.

Agenda is more particularly uſed, among *Eccleſiaſtical Writers*, for the ſervice, or office of the church. We meet with *agenda matutina & veſpertina*, *morning and evening prayers*; *agenda diei*, *the office of the day*, whether feaſt or faſt day; *agenda mortuorum*, called alſo ſimply *agenda*, *the ſervice for the dead.*

Agenda is alſo applied to certain church-books, compiled by public authority, preſcribing the order and manner to be obſerved by the miniſters, and people, in the principal ceremonies, and devotions of the church.

In which ſenſe, *agenda* amounts to the ſame with what is otherwiſe called, *ritual*, *liturgy*, *acalouthia*, *miſſal*, *formulary*, *directory*, &c.

AGENFRIDA, in *Ancient Cuſtoms*, denotes own lord, or one who has the abſolute property, and dominion of a thing.

The word is alſo written *agenfriga*, and *agenfrie*. It is derived from the Saxon *agen*, *own*, and *frea*, *lord*.

AGENHINE, in our *Old Writers*, ſignifies a gueſt that has lodged at an inn for three nights, after which time he is accounted one of the family; and if he offended the king's peace, his hoſt was anſwerable for him. It is alſo written HOGENHINE and HOGENHYNE.

AGENT, Agens, in *Phyſics*, that whereby a thing is done, or effected; or that which has a power whereby it acts on another; or by its action induces ſome change in it. The word *agent* is uſed promiſcuouſly with EFFICIENT; and in contradiſtinction to PATIENT.

The ſchools divide *agents* into *natural* and *free*.

Agents, *natural or phyſical*, are thoſe immediately determined by the Author of nature, to produce one ſort of effect; with an incapacity to produce the contrary thereto.

Agents, *natural*, again, are ſubdivided into *univocal*; which are ſuch as produce effects of the ſame kind and denomination with the *agents* themſelves; and *equivocal*, whoſe effects are of a different kind, &c. from the *agents*.

The ſchoolmen reckon the following circumſtances neceſſary to the being of an *agent*; viz. that it be contiguous to the object, diſtinct from it, have a power over it, a ſphere of activity, and a proportion, or rate of acting.

Agent, *free* or *voluntary*, is that which may equally do any thing, or its oppoſite; as acting not from any predetermination, but from choice.—Such is the mind ſuppoſed to be; which has a ſpontaneous power of chooſing or refuſing.

It is a celebrated queſtion among *philoſophers* and *divines*, whether man be a free, or a neceſſary *agent?* It may be thus ſtated: man is a neceſſary *agent*, if all his actions are ſo determined by the cauſe preceding each action, that no one paſt action could poſſibly not have come to paſs, or have been otherwiſe than it was; nor one future action can poſſibly not come to paſs, or be otherwiſe than it ſhall be. On the contrary, man is a free *agent*, if he be able at any time, in certain circumſtances, to do different things; or in other words, if he is not ever unavoidably determined in every point of time, by the circumſtances he is in, to do that one thing he does, and not poſſibly to do any other.

Which of theſe two definitions agrees to man, is a queſtion of fact to be determined by what we experience in ourſelves, with regard to the operations of our own minds. See LIBERTY, NECESSITY, and WILL.

The term *agent* evidently implies a power of ſelf-determination; and the epithet *neceſſary*, applied to *agent*, forms a ſoleciſm both in ſenſe and language. Price's Review, &c. p. 315, &c.

Agent is more particularly uſed for the miniſter of a prince, or ſtate, at another court.

In which ſenſe, *agents* are commonly reputed a ſpecies of public miniſters, or EMBASSADORS; but they differ eſſentially, as *agents* are not inveſted with any repreſentative character, although intruſted with the affairs, and intereſts of their princes. See ENVOY.

Agent is alſo uſed for a perſon entruſted with the management of affairs, either of a corporation, or a private perſon.—In which ſenſe, the word coincides with *deputy*, *procurator*, *ſyndic*, *factor*, &c.

Among the officers in the EXCHEQUER, there are four *agents* for taxes.

Agents *of bank and exchange*, are public officers, eſtabliſhed in the trading cities of France, to negociate matters between merchants, relating to bills of exchange, and the buying and ſelling of goods. The ſame with thoſe who, among us, are called EXCHANGE-BROKERS.

Agents *of the victualling office* are officers under the commiſſioners, appointed to buy, and contract for proviſions, &c. Some of theſe are ſettled in the ports, where they have much the ſame office and authority as the commiſſioners at London.

Agent-*victualler* is uſed in the ſame ſenſe.

Agent is more particularly uſed in *Medicine*, for a being which has motion within itſelf.

In which ſenſe it ſtands oppoſed to patient, which receives motion from another; thus medicines are conſidered as *agents*, or as acting on the body; by way of contradiſtinction from aliments, which are ſuppoſed rather to be acted on, than to act.

Agent *and patient*, in *Common Law*, is where a perſon does, or gives, ſomething to himſelf; ſo that he is at the ſame time both the doer or giver, and the receiver or party it is done to.—Such is a woman, when ſhe endows herſelf with part of her huſband's inheritance.

Agent, in *Chemiſtry*, is ſometimes attributed to menſtrua, or ſuch bodies as in mixture have the greateſt ſhare of activity and motion.

That internal *agent* in man, whereby all the vital motions neceſſary to the preſervation and reſtoration of the body are managed, is by ſome called *nature*; by others *archæus*, *callidum innatum*, animal ſoul, vital ſpirit, or principle, &c.

Agent is ſometimes alſo uſed in *Chemiſtry* for what we more uſually call *inſtrument*.

In which ſenſe, fire, water, air, earth, and menſtrua, are chemical *agents*.

Agentes *in rebus*, one of the ranks of officers, in the court of the Conſtantinopolitan emperors, whoſe buſineſs was, to collect and convey the corn both for the army, and houſhold; carry letters and meſſages from court to all parts of the empire; regulate couriers, and their vehicles; to make frequent journeys and expeditions through the provinces; inſpect any motions, diſturbances, machinations tending that way, and give early notice thereof to the emperor.

The *agentes in rebus*, are by ſome made ſynonymous with our poſt-maſters, but their function was of greater extent. They correſpond to what the Greeks call ϖυροφοροι, and the Latins, *veredarii*.

There were divers orders or degrees of *agentes in rebus*, as *tribuni*, *primicerii*, *ſenatores*, *ducenarii*, *biarchi*, *circitores*, *equites*, *tyrones*, &c. through all which they roſe *gradatim*.

Their chief was denominated *princeps*, which was a poſt of great dignity, being reckoned on a level with that of proconſul.

The *princeps agentium in rebus*, reſided at Conſtantinople, others of them were ſettled in every part of the empire. They are alſo ſaid to have ſerved as interpreters.

AGEOMETRIA, a defect in point of GEOMETRY, or a deviation from the ſtrict principles and concluſions of that ſcience.

This is otherwiſe called *ageometreſia*.

Some have complained of the *ageometria* of the Scriptures in reſpect of the proportions of the *brazen* SEA, ARK, &c.

AGER *vectigalis privatus*, in Roman *Antiquity*, that whoſe property was granted to private perſons on the reſerve of a certain rent, or tribute.

Ager *vectigalis publicus*, that whoſe property was reſerved to the public, and being let out to farm, the rents or profits accrued to the public treaſury.

Ager is alſo uſed for a certain portion or meaſure of land, anciently allowed in the diviſion of grounds to each citizen.

In the early days of the Roman ſtate, the *ager* was only two *jugera*, amounting to $1\frac{1}{4}$ Engliſh acre.—After the expulſion of the kings, ſeven *jugera* were allowed a plebeian.—Under the conſulate of C. Licinius Stolo, in the year of Rome 376, a law was made to limit eſtates to 500 *jugera*, or 330 Engliſh acres. Under Julius Cæſar another *agrarian* law was publiſhed, by which thoſe who enlarged their pittance of land, were to pay 50 *aurei* to the public.

Ager is alſo uſed, in *Middle Age Writers*, for what we now call an ACRE.

Ager *mineralium*, among *Chemiſts*, denotes the element of WATER; conſidered as the field, or ſoil, wherein MINERAL bodies have their firſt root, and from whence they ſhoot their branches upon the earth.

Ager *naturæ*, ſignifies the womb.

AGERATUM, in *Botany*, the name of a genus of plants, of the *ſyngeneſia polygamia æquali*, the characters of which are theſe: the flower is monopetalous, of the perſonated kind, and tubular in its lower part, and in the upper divided into two lips, the upper of which is bifid, and the lower divided into three ſegments. The piſtil ariſes from the cup, and finally becomes an oblong membranaceous fruit, divided into two cells, which contain a number of very fine ſeeds affixed to a placenta.

Ageratum, in *Botany*, an officinal plant, popularly called *maudlin*.

The word is compounded of the privative α, and γηρας, *old age*, on account of its flowers, which do not eaſily wither or grow old.

Ageratum bears a near reſemblance to the coſtmary, from which it only differs, in that its flowers are formed into looſe umbels; there are divers ſpecies of it. The officinal is called *ageratum foliis ſerratis*, C. B. or *ageratum luteum*, and is the ſame with the *eupatorium meſues*, ſo called on account of its virtue in diſeaſes and obſtructions of the liver.

Ageratum is of an aſtringent quality, and as ſuch recommended by Rivierius, and others, againſt incontinence of urine; Geſner has alſo diſcovered a briſk purgative power in its roots. But it is rarely preſcribed in the preſent practice.

AGERATUS *lapis*, in the *Materia Medica* of the ancients, the name of a ſtone mentioned by Galen and other writers; and ſaid to be of the nature of the Phrygian ſtone, but more aſtringent; and as that was uſed in dying, this was in dreſſing of leather. We have no account of its external appearance, but probably it contained vitriol, and perhaps alum.

The great uſe of vitriol or copperas in the management of leather, is well known; and the ſtones which contain it, or pyritæ, are every where common. The method uſed alſo in the preparation of the *Phrygius lapis*, which was the wetting and ſlightly calcining it, muſt be very proper to make the vitriol contained in this appear and exert itſelf in the working with it. This ſtone is uſed by ſhoemakers to poliſh women's ſhoes.

AGERIUM. See AGISTMENT.

AGES, ſignifies the palm, or hollow of the hand.

AGGADA, in Jewiſh *Antiquity*, an ingenious tale, or ſtory; of which kind there are many in the Talmud.

There are ſeveral books extant among the Jews under this title. R. San-Iſrael Ben Juda has publiſhed *Novellas Aggadarum*, or new explanations of the ſtories and relations in the TALMUD, diſcovering the hidden meanings thereof.

AGGER, in ancient *Latin Writers*, denotes the middle part of a military road, raiſed into a ridge, with a gentle ſlope on either ſide, to make a drain for the water, and keep the way dry.

AGGER is alſo uſed for the whole road, or military way.

Where high-ways were to be made in low grounds, as between two hills, the Romans uſed to raiſe them above the adjacent land, ſo as to make them of a level with the hills. Theſe banks they called *aggeres*. Bergier mentions ſeveral in the *Gallia Belgica*, which were thus raiſed, ten, fifteen, or twenty feet above ground, and five or ſix leagues long.

They are ſometimes alſo called *aggeres calceati*, and now generally known by the name CHAUSSEES, or CAUSEWAYS.

AGGER alſo denotes a work of fortification, uſed both for the defence and the attack of towns, camps, &c.

In which ſenſe, *agger* is the ſame with what was otherwiſe called *vallum*, and in latter times *aggeſtum*, and among the moderns *lines*; ſometimes *cavaliers*, *terraſſes*, &c.

The *agger* was uſually a bank, or elevation of earth, or other matter, bound and ſupported with timber; having ſometimes turrets on the top, wherein the workmen, engineers, and ſoldiery, were placed. It was alſo accompanied with a ditch, which ſerved as its chief defence.

The uſual materials, of which it was made, were earth, boughs, faſcines, ſtakes, and even trunks of trees, ropes, &c. variouſly croſſed, and interwoven ſomewhat in the figure of ſtars; whence they were called *ſtellati axes*. Where theſe were wanting, ſtones, bricks, tyles, ſupplied the office: on ſome occaſions, arms, utenſils, pack-ſaddles, were thrown in to fill up. What is more, we read of *aggers* formed of the carcaſſes of the ſlain; ſometimes of dead bones mixed with lime; and even with the heads of ſlaughtered citizens. For want of due binding, or ſolid materials, *aggers* have ſometimes tumbled down, with infinite miſchief to the men.

The beſiegers uſed to carry on a work of this kind nearer and nearer towards the place, till, at length, they even reached the wall. The methods taken, on the other ſide, to defeat them, were by fire, eſpecially if the *agger* were of wood; by ſapping and undermining, if of earth; and, in ſome caſes, by erecting a counter *agger*.

The height of the *agger* was frequently equal to that of the wall of the place. Cæſar tells us of one he made, which was thirty feet high, and three hundred and thirty feet broad. Beſides the uſe of *aggers* before towns, the generals uſed to fortify their camps with the ſame; for want of which precaution divers armies have been ſurpriſed and ruined.

There were vaſt *aggers* made in towns, and places on the ſea-ſide, fortified with towers, caſtles, &c. Thoſe made by Cæſar and Pompey at Brunduſium, are famous. Sometimes *aggers* were even built acroſs arms of the ſea, lakes, and moraſſes; as was done by Alexander before Tyre, and by M. Antony and Caſſius.

The wall of Severus, in the north of England, may be conſidered as a grand *agger*, to which belong ſeveral leſſer ones. Beſides the principal *agger*, or *vallum*, on the brink of the ditch, Mr. Horſley deſcribes another *agger* on the ſouth-ſide of the former, about five paces diſtant from it, which he calls the ſouth *agger*; and another larger *agger* on the north-ſide of the ditch, called the north *agger*. This latter he conjectures to have ſerved as a military way; the former, probably, was made for an inner defence, in caſe the enemy ſhould beat them from any part of the principal *vallum*, or to protect the ſoldiers againſt any ſudden attack from the provincial Britains.

AGGER *Tarquinii*, *Tarquin's agger*, was a famous fence built by Tarquinius Superbus, on the eaſt ſide of Rome, to ſtop the incurſions of the Latins, and other enemies, whereby the city might be infeſted.

AGGER is alſo uſed for the earth dug out of a trench, and thrown upon the brink of it.

In which ſenſe, the chevalier Folard thinks the word to be underſtood, when uſed in the plural number, ſince we can hardly ſuppoſe they would raiſe a number of cavaliers, or terraſſes.

AGGER is alſo uſed for a bank, or wall, erected againſt the ſea, or ſome great river, to confine or keep it within bounds.

In which ſenſe, *agger* amounts to the ſame with what the ancients called *tumulus* and *moles*; the Dutch, *dyke*; we, *dam*, *ſea-wall*.

AGGER alſo denotes a heap of earth, raiſed over the graves of the ancients.

In which ſenſe, it amounts to the ſame with *tumulus*; and is ſometimes alſo called *aggeſtum*.

AGGLESTONE, otherwiſe called *Stone-Barrow*, and vulgarly the *Devil's Night Cap*, is a remarkable monument of antiquity, ſituated in the N. E. extremity of the iſle of Purbeck. Its dimenſions are 60 feet in circumference at the bottom, in the middle 80, and at or near the top 90; and it is computed to contain 407 tons of ſtone. The name ſeems to be derived from the Saxon *halig*, or *hælig*, *holy*, and *ſtan*, *ſtone*, which expreſſes its ancient uſe; as it was probably a rock-idol in the Britiſh age.

AGGLUTINANTS, AGGLUTINANTIA, in *Medicine*, a ſpecies of ſtrengthening medicines, whoſe office and effect is to adhere to the ſolid parts of the body, and thus recruit, and ſupply the place of what is worn off, and waſted, in the animal actions.

Agglutinants are moſt of them of the glutinous kind, or ſuch as eaſily form themſelves into jellies, and gummy conſiſtencies; whence the name *agglutinant*, which is formed of *ad*, *to*, and *gluten*, *glue*.

For the operation and uſe of *agglutinants*, ſee STRENGTHENERS.

The principal ſimples which come under this claſs, found in the ſhops, are iſinglaſs, olibanum, gum Arabic, dragon's blood, caſſia, ſago, vermicelli, pulſe, comfrey, plantain, &c.

AGGLUTINATIO *Pilorum*, a healing or reducing the hairs of the eye-lids, that grow inwards, to their natural order and ſituation. This may be done by maſtich applied with a probe, which bends the hairs back into their proper order. Bitumen, the ſlime of a ſnail taken off with a needle, the juice of hawks-weed, the liquor of agglutinants, or ammoniac, produce the ſame effect.

AGGLUTINATION, literally, denotes the act of joining, or cementing two bodies together, by means of a proper *gluten*, or GLUE. See CEMENT.

In *Medicine*, the term is peculiarly uſed for the appoſition or adherence of a new ſubſtance; or the giving a greater conſiſtence to the animal fluids, to fit them the more for nouriſhment.

Some aſſign a difference between *agglutination* and *aſſimilation*: in that ſpecies of leproſy, called λευκη, there is an adheſion, or *agglutination* of the nutriment, but no *aſſimilation*. In the anaſarcous dropſy, on the contrary, there is an *adjunction*, without any *agglutination*; i. e. there is an afflux of new matter, or nouriſhment, but this ſo thin and watery, that it wants the due ſtiffneſs and tenacity to make it bind.

Some will have *agglutination* to be effected by a *ferment*; others aſſert, that by reaſon of the glutinous quality of the chyle, a mere contact ſuffices to make it adhere to the parts.

AGGLUTINATION is uſed by ſome aſtronomers to denote the meeting of two or more ſtars in the ſame part of the ZODIAC.

AGGLUTINATION is more peculiarly underſtood of the ſeeming coalition of ſeveral ſtars, ſo as to form a NEBULOUS ſtar.

AGGRAVATION, the act of augmenting a CRIME, or the PUNISHMENT thereof.

The word is compounded of *ad*, *to*; and *gravis*, *heavy*.

Aggravation, in the Romiſh *Canon Law*, is particularly uſed for an *eccleſiaſtical* cenſure, threatening an EXCOMMUNICATION, after three admonitions uſed in vain.

From *aggravation*, they proceed to *re-aggravation*; which is the laſt EXCOMMUNICATION.

AGGREGATÆ *glandulæ*, the ſmall glands in the cellular, which is next to the villous coat of the inteſtines, are ſo called. But as theſe glands are not viſible in an uninjected gut, many anatomiſts ſuſpect them to be only little bits of ſeparated wax.

AGGREGATE, the ſum, or reſult of ſeveral things *aggregated*, or added together.

The word is formed of *ad*, *to*; and *grex*, *gregis*, *a flock*.

Natural bodies are *aggregates*, or aſſemblages of particles, or corpuſcles, bound together by the principle of attraction.

Bodies politic are likewiſe ſaid to be *aggregate*; ſuch as mayor and commonalty, dean and chapter, &c. in contradiſtinction to corporations *ſole*; ſuch as the king, a biſhop, &c.

Aggregate, in general, ſignifies a body reſulting from the union of others which are ſmaller, the whole ſum of which combined is called the *aggregate*. It is particularly uſed by ſome modern *chemiſts* and *naturaliſts*, for a numerous collection of atoms, or minuteſt corpuſcles, whether homogeneous or heterogeneous, joined together by contiguity, without regard to the quality of ſuch atoms. In which ſenſe, *aggregate* differs from MIXT, as the former ſuppoſes no particular ſituation, or poſition, of the corpuſcules, other than what ariſes from their proportion, and the relation they bear to the ambient bodies, among which the coalition is formed.

Aggregate alſo differs from *mixt*, as the latter is formed immediately out of the principles of matter, ſo firmly united, as that it is very difficult, if not impoſſible, to ſeparate them.

Aggregate again differs from *compound*, as the latter is formed out of *mixts*, and is eaſily diſſolvable.

Aggregates then are the ultimate compounds, or the laſt effects of compoſition; they reſolve into compounds as their next ingredients, theſe into mixts, and mixts into ſimples, or principles; though, in ſtrictneſs, *aggregates* may reſolve alſo into mixts, and mixts into ſimples, inaſmuch as they conſiſt of heterogeneous parts.

This doctrine and diſtinction of *aggregates*, *mixts*, and *compounds*, is the foundation of the *chemical theory* of Becker and Stahl; the laſt of whom has traced it with great exactneſs. Hence has riſen a new doctrine of earths, metals, &c. which has ſince been illuſtrated and extended by the beſt modern chemiſts.

Aggregate, in *Botany*, is a term uſed to expreſs thoſe flowers, which are compoſed of parts or florets, ſo united by means either of the receptacle or calyx, that no one of them can be taken away without deſtroying the form of the whole. They are oppoſed to *ſimple* flowers, which have no ſuch common part, and are uſually divided into ſeven kinds, viz. the *aggregate*, properly ſo called, whoſe receptacle is dilated, and whoſe florets are ſupported by foot-ſtalks; ſuch are the blue daiſy, thrift, or ſea-pink, &c. the *compound*; the *umbellati*; the *cymoſe*; the *amentaceous*; the *glumoſe*, and the *ſpadiceous*.

Aggregate *fund*. See FUND.

AGGREGATION, **Aggregatio**, in *Phyſics*, a ſpecies of UNION, whereby ſeveral things, which have no natural dependence, or connection with one another, are collected together, ſo as in ſome ſenſe to conſtitute one. Thus, a heap of ſand, or a maſs of ruins, are bodies by *aggregation*.

Aggregation, in *Chemiſtry*. See AGGREGATE.

Aggregation is alſo uſed *figuratively*, for ASSOCIATION.

We ſay, to be of a company, or community, by *aggregation*.—An *aggregation* of ſeveral doctors to the faculty of laws.—In Italy, *aggregations* are frequently made of houſes, or families; by virtue whereof, they all bear the ſame name and arms.

AGGRESSOR, in *Law*, he, of two contending parties, who makes the aſſault, or attack; or who began the quarrel, encounter, or difference.

In criminal matters, it is always firſt inquired who was the *aggreſſor*.

AGIADES, a kind of Turkiſh ſoldiery, employed in fortifying of camps, ſmoothing of roads, and the like offices.

AGIAHALID, the name of an Egyptian tree, called alſo *lycio* and *lycium*; it reſembles the wild pear.

AGIASMA, among *Ancient Writers*, is ſometimes uſed for the whole church, ſometimes for the more ſacred part, or *bema*, wherein maſs was ſaid.

AGILD, or **Agilde**, in our *Ancient Cuſtoms*, a perſon ſo vile, that whoever killed him was to pay no mulct for his death.

The word comes from the privative *α*, and the Saxon *gildan*, *to pay*.

AGILENSZ, in *Botany*, a name uſed, by ſome, for the common hazel.

AGILITY, **Agilitas**, a light, and active habitude, or diſpoſition of the members and parts, deſigned for motion.

Agility. Some define *agility*, the art or habit of directing our ſtrength, i. e. of intending, or remitting it to advantage.

The improving of *agility* was one of the chief objects of the inſtitution of games and exerciſes. The *athletæ* made particular profeſſion of the ſcience of cultivating and improving *agility*.

AGILLARIUS, in ancient *Law-books*, a hayward, or keeper of a herd of cattle in a common field.

The *agillarius*, or *heyward of a town*, or *village*, was to ſuperviſe the greater cattle, or common herd of beaſts, and keep them within their due bounds; and was otherwiſe called *bubulcus*, q. d. *cow-ward*, (whence the reproachful term *coward*.)—If he were a cottager, or other ſervile tenant, he was exempted from the cuſtomary ſervices, as being preſumed to be always attending on his herd, as a ſhepherd on his flock, who had therefore the like privilege.

The *agillarius of the lord of a manor*, or a *religious houſe*, was an officer appointed to take care of the tillage and harveſt-work, to pay the labourers, and ſee there were no incroachments made, or treſpaſſes committed: the ſame in effect with what has been otherwiſe called *fieldſman*, and *tithing-man*; and among us BAILIFF.

AGIO, in *Commerce*, an Italian word ſignifying *aid*, is a term uſed, chiefly in Holland, and at Venice, for the difference between the value of bank money, and current money.

So that if a merchant who ſells his merchandiſe, ſtipulated to be paid either 100 livres bank money, or 105 caſh, or current money, in ſuch caſe the *agio* is ſaid to be 5 per cent.

The bank *agio* varies in almoſt every place. At Amſterdam it is uſually from 3 to 5 per cent.; at Rome, near 25 per 1500; at Venice 20 per cent. fixed; at Genoa from 15 to 16 per cent.

Agio is alſo uſed for the profit ariſing from diſcounting a note, bill, or the like.

Agio is alſo uſed, though with ſome impropriety, for the rate of exchange of a ſum negociated, whether to profit or loſs. It is alſo ſometimes called AGAI.

Agio *of aſſurance* is uſed, by ſome, for what we more uſually call *policy of aſſurance*.

AGIOSYMANDRUM, a wooden inſtrument uſed by the Greek and other churches, under the dominion of the Turks, to call together aſſemblies of the people.

The word is compounded of *αγιος*, *holy*, and *σημαινω*, *I ſignify*.

The *agioſymandrum* was introduced in the place of bells, which the Turks prohibited their Chriſtian ſubjects the uſe of, leſt they ſhould make them ſubſervient to ſedition.

AGIS, a name for the THIGH. See FEMUR.

AGIST, in *Law*, ſignifies to take in and feed the cattle of ſtrangers in the king's foreſt, and to gather up the money due for the ſame. Chart. de Foreſta, 9 H. III. cap. 9.

The officers appointed for this purpoſe are called *agiſters*, or *giſtakers*, and are made by the king's letters patent: there are four of them in every foreſt, wherein the king hath any pannage. Manw. For. Laws. 8vo.

The time for this is fifteen days before Michaelmas, and as many after, when the running of the cattle cannot prejudice the game.

AGISTMENT, ſuppoſed to be formed of the French *giſte*, *a bed*, or lying place: though Kennet excepts to this etymon, and chooſes rather to derive it from *ager*, the field, or feeding place for cattle; imagining *agiſtment* to have originally been the ſame with *agrarium*, *agerium*, or *agreticum*, the profit of feeding cattle on ſuch a piece of ground.

Agistment, *agiſtamentum*, is where other men's cattle are taken into any ground, at a certain rate per week. It is ſo called, becauſe the cattle are ſuffered *agiſer*, that is, to be *levant* and *couchant* there; and many great farms are employed to this purpoſe. 2 Inſt. 643. Our graziers call cattle which they thus take in to keep, *giſements*; and to *giſe*, or *juice*, the ground, is when the occupier thereof feeds it not with his own ſtock, but takes in the cattle of others, to *agiſt* or paſture it. *Agiſtment* is likewiſe the profit of ſuch feeding in a ground or field; and extends to the depaſturing of barren cattle of the owner, for which tythes ſhall be paid to the parſon.

Agistment is alſo uſed metaphorically for a charge, or burden, on any thing.

In this ſenſe we meet with *terræ ad cuſtodiam maris agiſtatæ*, i. e. *charged with a tribute to keep out the ſea*.—So *terræ agiſtatæ*, are lands whoſe owners are bound to keep up the ſea-banks.

Agistment, the duty and levy for repairing the banks and walls in Romney-marſh was particularly called *agiſtamentum*;

ſtamentum; and the act of laying ſuch a proportion of this duty on the ſeveral eſtates was called *ægiſtatio.* Spelman.

AGISTOR, or AGISTATOR, ſee AGIST and AGISTMENT.

AGITATION, AGITATIO, properly ſignifies *ſhaking*; or reciprocal MOTION of a body.

The *prophets*, *quakers*, Pythian prieſteſſes, &c. were ſubject to violent *agitations* of body. See INSPIRATION.

Among phyſiologiſts, the term is ſometimes appropriated to that ſpecies of earthquake, called *tremor*, or *arietatio.*

Among the philoſophers, it is chiefly uſed for an inteſtine commotion of the parts of any natural body.

Thus, fire is ſaid to *agitate* the minute particles of bodies. —Fermentation, and effervеſcence, are attended with a briſk *agitation* of the particles.

Heat is ſuppoſed, by ſome, to conſiſt in the *agitation* of the parts of the hot body; and ſound is produced by a tremulous *agitation*, excited firſt in the ſonorous body, and communicated thence to the ambient air.

AGITATION is likewiſe uſed for a violent hurry or perturbation of ſpirits, occaſioned by ſome predominant paſſion.

AGITATION is alſo uſed, in *Medicine*, for a ſpecies of exerciſe, popularly called *ſwinging:* and, in general, for any exerciſe which ſhakes the body.

Bartholine mentions fits of the tooth-ach, deafneſs, &c. removed by vehement *agitations* of the body; and they have been found of eſpecial uſe for preventing and diſſolving concretions.

Dr. Sydenham attributes the great benefits of riding to *agitation*, which is very efficacious in removing obſtructions of the *viſcera.* See ÆORA.

Sanguification is in great meaſure effected by the *agitation* of the parts of the blood and chyle, in their continual circulation. Digeſtion itſelf is only ſuppoſed to be an inſenſible kind of *agitation.*

AGITATION *of beaſts in the foreſt*, anciently ſignified the DRIFT of beaſts in the foreſt.

AGITATIVE, ſomething having power to agitate or ſhake another.

AGITATIVE *force* of a *pendulum*, is that which produces motion in it.

The *agitative force* of the pendulum ariſes from three things: 1. The power of gravity. 2. The weight faſtened at the end of the rod. 3. The diſtance of that weight from the point of ſuſpenſion; or, which amounts to the ſame thing, the length of the rod, or *pendulum.*

AGITATOR, in *Antiquity*, a CHARIOTEER; or he who drove or directed a chariot, or horſes in a race.

In which ſenſe, *agitator* amounts to the ſame with what the Romans called *auriga*, and we a coachman, driver, &c.

AGITATOR was more particularly uſed for him who drove in the public *curule* games in the *circus.*

The *agitators* were diſtinguiſhed, by their habits, into *ruſſati, albati*, *praſini*, and *veneti*, which gave riſe and denomination to ſo many factions. Beſides which, they had other marks, or enſigns of their family, correſponding to what we call arms.

The conquerors, beſides the ordinary rewards, *braviæ*, as crowns, &c. had ſtatues erected to them in the circus; on the baſes whereof, their titles, atchievements, &c. were inſcribed; ſeveral of which are ſtill found among ancient inſcriptions, drawn in the following formulæ: *Vicit ſejuge*, *ſeptejuge*, *bigas*, *trigas*, *uno anno*, *alieno principio*, *duobus introjugis*, &c.

It has been diſputed, whether the *agitators* were on the footing of mimes and pantomimes, and by law held infamous?

AGITATORS, *miliarian*, *agitatores miliarii*, were thoſe who drove in the forum at Conſtantinople, a place adorned with ſtatues, &c. after the manner of the circus at Rome, having a *milium*, or *miliarium*, in the middle.

AGITATORS, in our Engliſh affairs, were certain officers, created by the army in 1647, to take care of its intereſts. Cromwell leagued himſelf with the *agitators*, whom he found to have greater intereſt than the council of war.—The *agitators* undertook to make propoſals relating to the reformation of religion, and the ſtate.

AGLAIA, the name of the youngeſt of the three Graces, eſpouſed to Vulcan.

AGLAOPHOTIS, in *Botany*, a name uſed, by ſome, for PIONY.

AGLECTS, AGLEETS, or AGLEEDS, among floriſts, the APICES, or pendants hanging on the tip-ends of CHIVES, or STAMINA; as in tulips, roſes, ſpike-graſs, &c.

AGLIA, among *Ancient Phyſicians*, a whitiſh cicatrix, or ſpot in the eye, formed by a congeſtion of humours.

AGLIBOLUS. The Palmyrines worſhipped the ſun under this title.

AGLITHES, uſed by Hippocrates for a clove of garlick.

AGME, in *Surgery*, ſignifies a fracture.

AGMEN, in *Antiquity*, properly denotes a Roman army in march.

In which ſenſe, it ſtands contradiſtinguiſhed from *acies*; which denoted the army in battle array; though, on ſome occaſions, we find the two words uſed indifferently for each other.

The Roman armies, in their marches, were divided into *primum agmen*, anſwering to our vanguard; *medium agmen*, our main-battle; and *poſtremum agmen*, the rear-guard.

The order of their march was thus: after the firſt ſignal with the trumpets, &c. the tents were taken down, and the baggage packed up; at the ſecond ſignal the baggage was to be loaden on the horſes and carriages; and at the third ſignal, they were to begin their march. Firſt came the *extraordinarii*; then the auxiliaries of the firſt wing, with their baggage; theſe were followed by the legions. The cavalry marched either on each ſide, or behind.

AGMEN *pilatum*, that diſpoſed in a narrow oblong form, or column; being withal cloſe and compact; thus called, as reſembling the figure of a *pila*, or pier. Vegetius compares it to that of a broach, or ſpit. This form was chiefly uſed in marching without their baggage, through bad ways and cloſe countries.

AGMEN *quadratum*, that ranged ſomewhat in a ſquare form; being the method ordinarily obſerved in the Roman armies. This was alſo called *agmen grave*, by the Greeks τετραγωνος ταξις. The three lines, or columns, in which the army uſually marched, were conſiderably more in length, or breadth, than in depth: but as the baggage marched ſomewhat in the ſame order, the whole approached to the figure of a ſquare.

AGMEN is alſo uſed for any number of perſons, or even animals, moving or advancing in ſome regular order.

AGNACAT, *Scaligeri pyri ſpecie*; in a country of America, beyond the Terra de Labrador, toward the iſthmus of Darien, there is a tree of the figure and ſize of the pear-tree, always covered with leaves, and of an extraordinary greeneſs and luſtre. It bears a fruit alſo like a pear, but green even when it is ripe; the pulp is of the ſame colour, ſweet, fat, and taſtes like butter. It is a powerful promoter of venereal vigour. Ray's Hiſt.

AGNANTHUS, in *Botany*, the name given by Vaillant to a genus of plants, called afterwards CORNUTIA, by Plumier and Linnæus. It is of no medical uſe.

The word is formed of αγνος, *chaſte*, and ανθος, *a flower.*

AGNATI, in the Roman *Law*, the male deſcendants from the ſame father.

AGNATION, in the *Civil Law*, the kinſhip, or relation, between the deſcendants of the ſame father, being males, and iſſued only from males.

The word is formed from *ad*, *to*; and *naſci*, *to be born.*

Agnation differs from *cognation*, as the latter is an univerſal name, under which the whole family, and even the *agnati* themſelves, are contained; and *agnation*, a particular branch of *cognation*, which only includes the deſcendants in the male line. Again, *agnation* is properly only a civil name, as that of *gens*, or family; *cognation*, a natural name, or derived from blood.

By the law of the *Twelve Tables*, males and females ſucceeded one another, according to the order of proximity, and without any regard to the ſex: but the laws were afterwards changed in this reſpect, by the *Lex Voconia*; and women were excluded from the privileges of *agnation*, excepting ſuch as were within the degree of conſanguinity; i. e. excepting the ſiſters of him who died abinteſtate; and it was hence that the difference between *agnati* and *cognati* firſt took its riſe.

But this difference was again aboliſhed by Juſtinian (Inſt. 3. 10.) and the females were reinſtated in the right of *agnation*; and all the deſcendants on the father's ſide, whether males or females, were appointed to ſucceed each other indiſcriminately, according to the order of proximity.

Hence, *cognation* came to take in all the relations of the mother as well as father; and *agnation* to be reſtrained to thoſe of the father alone.

Adoptive children enjoy the privileges of *agnation*; which was called *civil* in their reſpect, in oppoſition to the other, which was *natural.*

AGNEL, an ancient French gold coin, firſt ſtruck under the reign of St. Louis, worth about twelve ſols, ſix deniers. The *agnel* is alſo called ſometimes *mouton d'or*, and *agnel d'or.* The denomination is ſuppoſed to have ariſen from the figure of a lamb, or ſheep, ſtruck on one ſide.

AGNELET, an ancient French ſilver coin, firſt ſtruck under Philip le Bel, worth about twenty ſols.

AGNIFER is an appellation applied, by ſome *Eccleſiaſtical Writers*, to John the Baptiſt, and uſed in the ſame ſenſe with *præcurſor*, or *fore-runner.*

AGNIL, ſee INDICUM.

AGNINA *membrana*, the ſame as the AMNIOS.

AGNINA *lactuca*, ſee LACTUCA.

AGNOETÆ, in *Church Hiſtory*, a ſect of ancient heretics, who maintained that Chriſt, conſidered as to his human nature, was ignorant of certain things, and particularly of the time of the day of judgment.

The word is formed of αγνοεω, *ignoro*, *to be ignorant of.* Eulogius, patriarch of Alexandria, aſcribes this doctrine to certain ſolitaries in the neighbourhood of Jeruſalem, who, in defence hereof, alledged divers texts of the New Teſtament, and, among others, this of St. Mark, ch. xiii. ver. 32. *Of that day and hour knoweth no man; no not the angels who are in heaven, neither the Son, but the Father only.*

There ſeem to have been two kinds of *agnoetæ*, though they are uſually confounded.

AGNOIA, a word uſed by phyſicians, when a perſon in a fever does not know his acquaintance. When a rigor accompanies this ſymptom, Hippocrates ſays it is dangerous.

AGNOMEN, in *Antiquity*, an epithet given to a perſon, either by way of praiſe, or diſpraiſe, or from ſome remarkable event, which became, as it were, an additional name, but peculiar to the perſon, and not deſcendible to his iſſue. Thus, one of the Scipios was named *Africanus*, and the other *Aſiaticus*, from the brave atchievements which the one performed in Africa, and the other Aſia.

The *agnomen* was the third in order of the three Roman names.—Thus in Marcus Tullius Cicero, Marcus is the *prænomen*, Tullius the *nomen*, and Cicero the *agnomen*.

Others think the *agnomen* to have been the fourth or honorary name, ſuperadded on account of ſome extraordinary action or virtue. Some imagine *agnomen* and *cognomen* to have been the ſame, as they generally are, except in caſes of ADOPTION.

It was a cuſtom among the Romans, for a perſon, when *adopted* into another family, to lay aſide all his other names, and only retain his family name, to which he added the *prænomen*, *nomen*, and *cognomen* of the adopter. Thus P. Cornelius Scipio, being adopted by Q. Cæcilius Metellus, laid aſide his *prænomen* PUBLIUS, and *nomen* CORNELIUS, and was called Q. Cæcilius Metellus Scipio.

AGNOS, in *Ichthyology*, a name given by Athenæus, and many other of the Greek writers, to that fiſh called *callyonymus*, or *uranoſcopus*. It is a ſpecies of the *trachinus*, and is diſtinguiſhed, by Artedi, from the reſt of that genus, by the name of the *trachinus*, with a great number of beards growing from the lower jaw.

AGNUS *Caſtus*, the chaſte tree, in *Botany*. Its characters are theſe: the empalement of the flower is cylindrical, and indented in five parts; the flower has one ringent petal, the brim plain, and divided into two lips, which are trifid, and the middle ſegment broadeſt in both. It has four hair-like ſtamina, two of them ſhorter than the other, terminated by moveable ſummits; and a roundiſh germen ſupporting a ſlender ſtyle, crowned by two awl-ſhaped ſpreading ſtigmas. The germen turns to a globular berry with four cells, each containing one oval ſeed. There are four ſpecies.

This plant was famous among the ancients as a ſpecific for the preſervation of chaſtity, and the preventing of all venereal deſires, pollutions, &c.

The Greeks call it αγνος, *chaſte*; to which has ſince been added the reduplicative *caſtus*, v. d. *chaſte chaſte*.

The Athenian ladies, who made profeſſion of chaſtity, lay upon leaves of *agnus caſtus*, during the feaſt of Ceres. See CEREALIA.

This ſhrub is alſo called AGNON, VITEX, ſometimes *elæagnon*, SALIX *amerina*, *lygon*, *lygus*.

There are divers ſpecies of it. Pliny mentions two, the *greater*, called alſo the *white* kind, and the *leſſer*, or *black*. Miller ſpeaks of four; only one of which, called VITEX *foliis anguſtioribus, canabis modo diſpoſitis*, is pretty common in Engliſh gardens; the reſt are rare. Its ſeed is round, about the bigneſs of pepper, and having a pungent aromatic taſte: whence the French ſometimes call it *wild pepper*. This ſeed is ſaid to be more effectual than rue, in hardneſs of the liver or ſpleen; it is of the ſize of a pepper-corn. It grows in waſte grounds, about the banks of rivers, and contains a great deal of ſalt and oil, but little phlegm. The oil of it is inſipid, and of a ſaffron colour, and is eaſily obtained by expreſſion. It is a native of Italy.

AGNUS DEI, in the Romiſh *Church*, denotes a cake of wax, ſtamped with the figure of a lamb, ſupporting the banner of the croſs, conſecrated in due form by the pope, to be diſtributed in preſents among the people, and ſuppoſed to have great virtues annexed to it.

The name literally ſignifies *Lamb of God*; this being ſuppoſed an image, or repreſentation of the Lamb of God, who took away the ſins of the world.

They cover it up with a piece of ſtuff, cut in form of a heart, and carry it very devoutly in their proceſſions.—The Romiſh prieſts, and religious, derive conſiderable pecuniary advantage from ſelling theſe *Agnus Dei's* to ſome, and preſenting them to others. The pope provides a regular ſupply, by conſecrating once in ſeven years; they are diſtributed by the maſter of the wardrobe; and received by the cardinals, and other prelates, with great reverence, in their caps and mitres.—This ceremony they pretend to derive from an ancient cuſtom of the church, wherein part of the paſchal taper, conſecrated on Holy Thurſday, was diſtributed among the people, to perfume their houſes, fields, &c. in order to drive away devils, and to preſerve them from ſtorms and tempeſts. Other imaginary virtues are likewiſe attributed to them.

See concerning the origin of *Agnus Dei's*, Jour. des Sçav. tom. xxxi. p. 252. Mem. de Trev. ann. 1722. p. 2010. Their virtues, Act. Erud. Lipſ. Supp. tom. iv. p. 224. Their myſtic meanings, Du Pin, Bibl. Eccleſ. tom. xviii. p. 68. The order of conſecrating them, Magri, Notiz. de Vocab. Eccleſ. in voc.

Some authors alſo ſpeak of a kind of metalline *Agnus Dei's*, hung to chaplets, or pater-noſters.

The *Agnus Dei* is ſaid to have been firſt brought into the miſſal, by pope Sergius I.

The *Agnus Dei* is forbidden to be brought into England under pain of incurring a *premunire*. 13 Eliz. cap. 2.

AGNUS DEI, is alſo a name popularly given to that part of the maſs, wherein the prieſt, ſtriking his breaſt three times, rehearſes, with a loud voice, a prayer beginning with the words *Agnus Dei*.

AGNUS *Scythicus*, in *Natural Hiſtory*, a kind of *zoophyte*, or plant-animal, ſaid to grow in Tartary, reſembling the figure and ſtructure of a lamb. See ZOOPHYTON.

The *Scythian lamb* is alſo called *agnus vegetabilis*, *agnus Tartaricus*, and by the people of the country, *borometz*, *boramets*, or *boranetz*.

The uſual account given of this extraordinary production is, that the Tartars ſow in their ground a ſeed reſembling that of melon, but leſs oblong; from whence ariſes a plant called by them *borometz*, i. e. *lamb*, growing almoſt to the height of three feet, and having feet, hoofs, ears, and the whole head, excepting horns, reſembling that animal. In lieu of horns it has a peculiar ſort of hair, not unlike horns; it is covered with a fine thin ſkin, which being pulled off, is worn by the natives as a cover for the head. The pulp within reſembles that of the GAMMARUS; and when wounded, a liquor oozes out like blood. It lives as long as there is graſs and herbage around it; but when theſe are conſumed, it waſtes and dies. They add, that wolves are fond of it, while no other beaſts will feed on it.

Deuſingius ſeems to have been the firſt who ſuſpected this account to be fabulous; and Kempfer, when in the country, made diligent enquiry concerning it, but could hear of nothing like it.

As to the plants ſhewn under this denomination, in ſome repoſitories of rarities, they appear to be originally the roots, or ſtalks, of certain vegetables, probably of the capillary kind, covered with a woolly moſs, which naturally bearing reſemblance to the figure of a lamb, have been helped out and brought near to it by art, and the addition of new parts.

Sir Hans Sloane, and Breynius, gives us the figures and deſcriptions of ſuch *borometzes* in their collections. It is from theſe plants that the Indian moſs is gathered, famous for its uſe in ſtaunching blood. Breynius and Libavius have written expreſly on the *Agnus Scythicus*. Phil. Tranſ. Nº 390, and Nº 287.

AGOGA, in *Natural Hiſtory*, a ditch or drain for carrying off the water from a mine.

The word ſeems derived from αγωγη, *ductus*, of αγω, *duco*, *I draw*.

AGOGE, αγωγη, in the *Ancient Muſic*, a ſpecies of modulation, wherein the ſounds or notes proceed by continuous degrees of the ſcale, both riſing and falling. As when we ſing, re, mi, fa, ſol, la; la, ſol, fa, mi, re.

Agoge anſwers to what the Latins call *ductus*, and the Italians *conducimento*, and *di grado*: it ſtands contradiſtinguiſhed from *ploce*, *petteia*, &c.

Agoge makes the firſt part of the *melopœia*, or art of modulating.

There are three ſpecies or caſes of this modulation; firſt when the ſounds follow each other from grave to acute, i. e. riſing as in ſinging, BCDE. This the Latins call *ductus rectus*, and the Italians *conducimento retto*.

The ſecond, when they go from acute to grave, i. e. falling, as in the notes EDCB, called by the ancients *ductus revertens*, and by the modern Italians *conducimento ritornante*.

The third, when they riſe by flats and fall by ſharps, as in D, E, F *ſharp*, G, or, *vice verſa*, as in G, F *natural*, E *flat*, D. This the ancients call *ductus circumcurrens*, and the Italians *conducimento circoncorrente*.

AGOMPHIASIS, or GOMPHIASIS, a diſtemper of the teeth. It conſiſts in their being looſe in their ſockets.

AGON, in *Antiquity*, a diſpute or conteſt for the maſtery, either in ſome exerciſe of the body, or of the mind.

There were *agones* on certain days, in moſt of the ancient feaſts, and other ceremonies in honour of the gods, or heroes.

There were alſo *agones* eſtabliſhed expreſly, and not attached to any other ſolemnity.—Such was the *agon gymnicus*, at Athens; the *agon Nemæus*, inſtituted by the Argians in the 53d Olympiad; the *agon olympius*, inſtituted by Hercules, 430 years before the firſt Olympiad; the *agon Adrianalis*, inſtituted at Athens, by the emperor Adrian, called Παναθηναια, Πανελληνια, and Ολυμπιω Αδριανια.

The Romans had alſo *agones* inſtituted after the example of the Greeks: the emperor Aurelian eſtabliſhed the *agon ſolis*, *agon of the ſun*; and Diocleſian, the *agon capitolinus*, which was held every fourth year, after the manner of the Olympic games.—Hence, the years, inſtead of *luſtra*, are ſometimes numbered by *agones*. The *agon iſelaſticus*, inſtituted at Puzzuoli by the emperor Antoninus Pius, and held every fifth year, was a ſacred combat, and the victors at it were called *hieronicæ*: they were to be received into the city, through a breach in the wall, made on purpoſe. The *agon muſicus*, was that wherein either poets, or muſicians, diſputed for the prize; ſuch was that dedicated by Ptolemy to Apollo and the Muſes, with rewards aſſigned to the writers who gained the victory. Of this kind were alſo found in the Pythian, Nemæan, and Iſthmian games; alſo in the Olympic games, after Nero's time, who firſt introduced a muſical *agon* here; others were founded by the emperor Domitian, and others at Rome, Naples, Alba, &c. The *agon Neronianus*, a quinquennial combat, called alſo *Neronian*, from the name of its inſtitutor, who here bore away the prize for playing on the harp, *cithara*.

Agon is alſo uſed for a place near the Tyber, otherwiſe called *circus Flamineus*, wherein Curule games and combats were celebrated.

Agon is alſo uſed, by phyſicians, for the ſtruggle of death.

Agon was alſo a miniſter of ſacrifice, whoſe buſineſs was to ſtrike the victim. The name is ſuppoſed to have been derived hence, that ſtanding ready to give the ſtroke, he aſked *agon'*, or *agone? ſhall I ſtrike?*

The *agon* was alſo called *popa*, *cultrarius*, and *victimarius*.

AGONALES, in *Antiquity*, an epithet given to the Salii, conſecrated by Numa Pompilius to the god Mars, ſurnamed *Gradivus*.

They were alſo called *Quirinales*, from the *Mons Quirinalis*, where they officiated. Roſinus calls them *Agonenſes Salii*.

AGONALIA, in *Antiquity*, feaſts celebrated by the Romans, in honour of Janus; or, as ſome will have it, in honour of the god *Agonius*, whom the Romans uſed to invoke upon their undertaking any buſineſs of importance.

They appear to have been held thrice in the year, viz. on the fifth of the ides of January, on the twelfth of the calends of June, and the third of the ides of December.

AGONE. See Henbane.

AGONISMA, in *Antiquity*, the palm or prize given the victor in a game or combat.

AGONISTARCHA, in *Antiquity*, ſeems to have been much the ſame with *agonotheta*; though ſome ſuggeſt a difference, making it the office of the former to preſide at, and direct the private exerciſes of the *athletæ*, which they went through by way of practice, before they made their appearance on the public theatres or amphitheatres.

AGONISTIC, *agoniſtica*, the ſcience of what relates to the combats, or *agones* of the ancients.

In which ſenſe, *agoniſtic* amounts to much the ſame with *athletic*, and makes a branch of *gymnaſtics*.

Agonistic, αγονιστικον, is alſo uſed among *Ancient Phyſicians*, for cold ſpring-water.

The reaſon of the denomination is taken from the plentiful uſe of that element in the ſtate of an acute eryſipelaceous fever, wherein water was ſuppoſed to combat and ſtruggle with the febrile heat.

AGONISTICI, in *Antiquity*, a name given by Donatus to thoſe of his ſect, whom he ſent into the neighbouring places, fairs, markets, &c. to preach his doctrine; for which reaſon they were alſo called *circuitores*, *circelliones*, *catropitæ*, *coropitæ*, and, at Rome, *montenſes*.

They were called *agoniſtici*, from αγων, *combat*; becauſe they were ſent, as it were, to fight, and ſubdue the people to their opinion.

AGONIUM, in Roman *Antiquity*, was uſed for the day whereon the *rex ſacrorum* ſacrificed a victim. The ſame name was alſo given to the place wherein the games were anciently celebrated.

AGONOTHETA, **Agonothetes**, in *Antiquity*, a magiſtrate choſen, among the Greeks, to preſide, and have the ſuperintendency of their ſacred games, or combats; to defray the expences thereof, and to adjudge the prizes to the conquerors.

The word is compounded of αγων, *combat*, and θετης, *he who diſpoſes*.

Among the Romans, the like officer was denominated *deſignator*, and *munerarius*.

Middle age-writers uſually confound *agoniſtæ*, the combatants at the games, with the *agonothetæ*, or preſidents of them.

The *agonothetæ* had the immediate charge of the manner of life, diſcipline, and morals of the *athletæ*. They examined, and admitted, or expelled them the ſociety, or order. During the combats, the *agonothetæ* were cloathed in purple, and rode in a triumphal manner through the circus, holding in their hands an ivory ſceptre, with an eagle on it.

Van Dale has an expreſs diſſertation on the *agonothetæ*.

The name *agonotheta* is ſtill retained in ſchools and academies for him who defrays the charge of the prizes diſtributed. The founders of prizes are perpetual *agonothetæ*.

AGONOS, in *Phyſic*, a Greek word ſignifying *barren*.

Hippocrates applies it to women who have no children, though they might have them, if the impediment were removed.

AGONUS, in *Zoology*, a name uſed by the generality of authors, for the fiſh called by ſome *ſarachus*, by others *chalcis*, and by others *ſardella*.

It is in many particulars very like the *alauſa*, or ſhad, called the mother of herrings, but ſmaller, never arriving at more than a foot in length; and is always lean and lank in ſpring, and fat in autumn. But the diſtinctions between it and the *alauſa*, if real, are ſo very ſmall, that Mr. Ray, and many of the moſt accurate naturaliſts, have ſuſpected it the ſame fiſh, only in a different ſtate.

AGONY, **Agonia**, denotes the extremity of pain, or a diſeaſe; when nature makes her laſt effort, or ſtruggle, to throw off the evil that oppreſſes her.

The word is formed from the Greek αγων, *certamen*, *combat*; this being a kind of ſtrife between life and death.

Much of the terror of death conſiſts in the pangs and convulſions wherewith the *agony* ſeems attended; though we have reaſon to believe, that the pain in ſuch caſes is ordinarily not extremely acute; a courſe of pain and ſickneſs having uſually ſtupified, and indiſpoſed the nerves for any quick ſenſations. However various means have been thought of for mitigating the *agony* of death. Lord Bacon conſiders this as part of the province of a phyſician, and that not only, when ſuch a mitigation may tend to a recovery, but alſo when there being no further hopes of a recovery, it can only tend to make the paſſage out of life more calm and eaſy. Accordingly, he ranks *euthanaſia*, or the art of dying eaſily, among the *deſiderata* of ſcience; and does not even ſeem to diſapprove of the courſe Epicurus took for that end.

Opium has been applied for this purpoſe, with the applauſe of ſome, but the condemnation of more.

Baglivi promiſed a treatiſe expreſs, De Medicina Agonizantium, or the method of treating thoſe in the agonies of death. But perhaps one of the beſt recipes for this end, is that of Mr. Patin, viz. *abſtinence from all medicines*.

AGONYCLITÆ, or **Agonyclites**, in *Antiquity*, a ſect, in the ſeventh century, whoſe diſtinguiſhing principle it was, never to kneel, but to deliver all their prayers ſtanding. See Genuflection.

The word is compounded of the privative particle α, γονυ, *knee*, and κλινω, *to bend*.

AGORÆUS, in *Antiquity*, an appellation given to thoſe deities, who had ſtatues in the public markets, or *fora*.

The word is formed of αγορα, *market*.

AGORANOMUS, in *Antiquity*, a magiſtrate of Athens, eſtabliſhed for the maintenance of good order and policy in the markets, ſettling the prices of proviſions, excepting corn, and deciding diſputes relating to buying and ſelling, inſpecting the weights, meaſures, and the like.

The word is compounded of αγορα, *market*; and νομος, *law*.

The *agoranomus* among the Greeks was much the ſame with the *curule* Ædile among the Romans.

Ariſtotle diſtinguiſhes two kinds of magiſtrates, the *agoranomi*, who had the ſuperintendence of the markets; and the *aſtynomi*, who inſpected the buildings of the (αστεα) *cities*.

The *agoranomi*, at Athens, were ten in number, five belonging to the city, and as many to the Piræeus; though others make them fifteen in all, of whom they aſſign ten to the city. To theſe a certain toll or tribute was paid, by all who brought any thing to ſell in the market.

AGOSTUS, in *Anatomy*, ſignifies the part of the arm from the fingers to the elbow; alſo the palm or hollow of the hand.

AGRA, a kind of ſweet-ſcented wood, found in the iſland of Haiman, on the coaſt of China.

AGRA-*Caramba*, is another ſweet-ſcented wood, which alſo comes from the iſland of Hainan.

AGRARIÆ *ſtationes*, in the ancient *Military Art*, corps of guards poſted in the fields, and in the open air.

AGRARIÆ *naves* was uſed for veſſels placed to keep watch, or guard.

AGRARIAN, in a general ſenſe, ſomething relating to fields or lands.

The word is originally Latin, *agrarius*, formed of *ager*, *a field*.

AGRARIAN, in the Roman *Juriſprudence*, a denomination given to ſuch laws as relate to the partition or diſtribution of lands.

There are fifteen or twenty *agrarian* laws; whereof the principal are, the *Lex Caſſia*, in the year of Rome 268; the *Lex Licinia*, in 377; the *Lex Flaminia*, in 525; two Sempronian laws, in the year 620; the *Lex Apuleia*, in the year 653; the *Lex Bæbia*; the *Lex Cornelia*, in 673; the *Lex Servilia*, in 690; the *Lex Flavia*; the *Lex Julia*, in the year 691; the *Lex Ælia Licinia*; the *Lex Livia*; the *Lex Marcia*; the *Lex Roſcia*, made after the taking of Carthage; the *Lex Floria*, and the *Lex Titia*.

By the laws of Licinius, no Roman was allowed to occupy more than ſeven *jugera* of land; and by a ſimilar law of Romulus, every Roman was limited to two *jugera*.

AGRARIAN *Law*, *Lex* AGRARIA, abſolutely, and by way of eminence, ſo called, was a celebrated law, publiſhed by Spurius Caſſius, about the year 268, for an equal diviſion of the conquered lands among all the citizens, and for limiting the quantity of ground poſſeſſed by each perſon to a certain number of acres.—Thoſe other two in the Digeſt, the one publiſhed by Cæſar, and the other by Nerva, only relate to the limits or boundaries of grounds; and have no relation to that of Spurius Caſſius.

The Roman lands were of divers kinds, ſome conquered from the enemies, and not yet brought to the public account; others brought indeed to the public, but clandeſtinely uſurped by private great men: laſtly, others purchaſed with the public money, in order to be divided. *Agrarian* laws, either for dividing lands taken from the enemy, or the public lands, or thoſe purchaſed with the public money, were eaſily paſſed without diſturbance; but thoſe whereby private rich men were to be outed of their lands, and the common people put in poſſeſſion of what had been held by the nobility, were never attempted without great diſturbances.

Several have pleaded for the neceſſity of *agrarian* laws among us. William Sprigge, or, as ſome ſay, Fr. Oſborne, has written expreſly on the ſubject. See alſo the Supplement to Dr. Price's Obſervations on reverſionary Payments, &c. p. 381.

But the author who ſeems to have entered deepeſt into the nature and uſe of *agrarian* laws, is Harrington; he ſhews, that the balance of property in a ſtate cannot be fixed but by laws, and the laws whereby ſuch a proviſion is made are *agrarian* laws. Now theſe are neceſſary to the ſtability of government, becauſe governments will, according to the diverſe balance of property, be of diverſe or contrary natures, that is, monarchical, or popular. Thus monarchy requires of the ſtandard of property, that it be vaſt or great; and of *agrarian* laws, that they hinder receſs or diminution, at leaſt in ſo much as is thereby intailed upon honour. But popular government requires, that the ſtandard be moderate, and that its *agrarian* laws prevent accumulation.

This author thinks, that in a territory not exceeding England in revenue, if the balance be in more hands than three hundred, it is declining from monarchy; and if it be in fewer than five thouſand hands, it is ſwerving from a commonwealth.

The ſame writer defines an equal *agrarian*, a perpetual law eſtabliſhing and preſerving the balance of dominion by ſuch a diſtribution that no one man, or number of men, within the compaſs of the few or ariſtocracy, can come to overpower the whole people, by their poſſeſſions in lands.

He alſo obſerves, that the people of Rome by ſtriving for an *agrarian*, ſtrove to ſave their liberty; and that commonwealth, through want of ſuch a law, or the non-obſervance of it, came to ruin.

In the Grecian cities, the defect of an *agrarian* was ſupplied by *oſtraciſm*.

In Venice, the council of ten, and the officers of pomp, reſtrain thoſe who might be too powerful; and theſe two orders in a commonwealth, where the gentry have but ſmall eſtates in land, are as much as needs be in lieu of an *agrarian*.

Some German republics have no more to ſupply the place of this law, than that eſtates deſcending are divided among the children.—And the ſame law would eſtabliſh an *agrarian* in England.

Agrarian laws may be framed different ways, as by intailing the lands upon certain families, without power of alienation in any caſe, as in Iſrael and Lacedæmon: or, except with leave of the magiſtrate, as in Spain. But this by making ſome families too ſecure, as thoſe in poſſeſſion, and others too deſpairing, as thoſe not in poſſeſſion, may make the whole people leſs induſtrious.

Therefore Harrington prefers a law regulating eſtates, ſo that no man ſhall have above two thouſand pounds a year in land; and that the eſtates of thoſe who exceed this proportion, ſhall be divided in deſcending to their children, till the greater ſhare do not exceed 2000*l.* *per annum*. This is the rule he lays down for his commonwealth of Oceana, by which he means his ſcheme for the government of England.

By this law Harrington intended that the property of land in England, ſhould never fall into fewer hands than 5000; as he computes the rents of this country to be ten millions. But if theſe rents, as is probable, amount now to twenty millions, it would follow that, by our author's rule, the land could never be in leſs than 10000 hands, which, according to his ſyſtem, muſt effectually ſecure the liberties of the people.

It would exceed the limits of our deſign, to enter into the full detail of all the reaſonings of this ingenious author, on the ſubject of *agrarian* laws; we therefore refer to his works. See alſo GOVERNMENT, PROPERTY, &c.

AGRARIUM. See AGISTMENT.

AGREDULA, is a name given to a ſpecies of the FROG.

AGREEMENT, AGREAMENTUM, in *Law*, a joining, or putting together, of two or more minds in any thing done, or to be done.

Of this there may be three ſorts.—The firſt, an *agreement executed* at the beginning, mentioned in the ſtatute of 25 Edw. III. cap. 3, which ſays, 'That the goods 'bought by foreſtallers, being thereof attainted, ſhall be 'forfeited to the king; if the buyer thereof have made '*gree* with the ſeller:' where the word *gree*, otherwiſe called *agreement executed*, ſignifies payment for the things, or ſatisfaction.

The ſecond is, an *agreement after an act*, that is, where one does an act, and another *agrees* or aſſents thereto, afterwards. The third is, an *agreement executory*, which is, when both parties at one time are *agreed* that ſuch a thing ſhall be done in time to come. It is called executory, becauſe the thing is to be done afterwards.

Agreements are to be in writing, by Stat. 29 Car. II. cap. 3. of *frauds* and *perjuries*.

AGRESSES, or OGRESSES, in *Heraldry*, the ſame as PELLETS.

AGRESTA, in *Medicine*, an unripe grape; otherwiſe called *omphax* and *uva ucerba*, by the French *verjus*.

Agreſtæ are held cooling, deterſive, and aſtringent; they temper the acrimony of the bile, and chear the heart. Eaten plentifully, they have been found to deſtroy worms.

AGRESTA is ſometimes alſo applied to the juice of this fruit, more properly called *omphacium*.

AGRIA, a name given to HOLLY; and alſo to a malignant puſtule, of which there are two ſorts. The one is ſmall, with a roughneſs, redneſs, and ſlight corroſion of the ſkin; it is of a round figure, its centre is ſmooth, and it ſpreads ſlowly. It is cured by rubbing it with faſting ſpittle. The other ſort ulcerates with a violent redneſs and corroſion, ſo as to make the hair fall off; it is of an unequal form, and turns leprous. It is cured by poultices of PELLITORY *of the wall*.

AGRIÆ, in *Natural Hiſtory*, an order of quadrupeds, which have no teeth, but have a very long cylindric tongue. Of this order there are only two known genera, the *myrmecophaga*, and the *manis*.

AGRIAMPELOS, the *wild* VINE; and according to Gerard, the *black* BRIONY.

The word is formed of αγριος, *wild*, and αμπελος, *a vine*.

AGRICULTURE, the art of tilling, or cultivating the earth, in order to render it fertile, and make it bear plants, trees, fruits, &c.

The word is formed of the Latin *ager*, *field*; and *cultura*, *tilling*; of *colere*, *to till*.

The principal and moſt general operations in *agriculture*, are, manuring, ploughing, fallowing, ſowing, harrowing; as alſo, reaping and mowing. See the articles MANURE, PLOUGHING, SEMINATION, &c.

To the operations of *agriculture* do alſo belong the management of the productions of particular countries; as hops, hemp, vines, tobacco, ſaffron, liquorice, woad, &c.

To the ſame art belong, planting, tranſplanting, pruning, engrafting; the culture of foreſts, timber, copſes, &c. See PLANTING, PRUNING, ENGRAFTING, TIMBER, TREE, &c.

Even gardening, or horticulture itſelf, is only a branch of *agriculture*. See GARDEN.

Agriculture in its moſt extenſive ſenſe, beſides tillage, comprehends feeding and the management of cattle, and the rural ſports, hunting, fiſhing, &c. Some even include under it the buſineſs of mines, coal-pits, and other ſubterraneous matter.

Among the ancients, *agriculture* is frequently called *georgica.*

This art has been cultivated by many of the greateſt men among the ancients, and has been treated of by their moſt celebrated authors. The hiſtory of its riſe and progreſs may be eaſily traced from the firſt period of time; and it has been more or leſs the ſubject of attention in every age and nation of the world. The ancient patriarchs, though principally devoted to a paſtoral life, were not altogether ignorant of this art; and their deſcendants, as ſoon as they were ſettled in Paleſtine, conſidered it as a very honourable employment. From them it was tranſmitted to the Chaldeans and Egyptians, to the Phœnicians and Carthaginians; and it was in ſuch repute among the latter, that Mago, their famous general, wrote twenty-eight books on the ſubject, which were afterwards tranſlated into Latin by an expreſs decree of the Roman ſenate; and Servius obſerves, that theſe were adopted as a model by Virgil, when he wrote his Georgics. It has been ſaid, that *agriculture* was firſt introduced among the Europeans by Ceres queen of Sicily, in memory whereof ſhe was placed among the principal divinities: a fable, which imports, that Sicily, famed for its fertility in corn, was the ſcene of conſiderable improvements. The firſt Greek writer on *agriculture* was Heſiod; and he was ſucceeded by Democritus of Abdera, Xenophon, Ariſtotle, Theophraſtus, and many others. It is well known, that this art was in very high reputation among the Romans; and that it was cultivated by their emperors, dictators, and conſuls. The firſt Latin treatiſe on the ſubject of *agriculture* was compoſed by M. Cato, the cenſor; Varro likewiſe is the author of a very elaborate work on the ſame ſubject; Columella, in the reign of the emperor Claudius, wrote twelve books on huſbandry; and in the reign of Conſtantine IV. a new work, as ſome ſay, collected by himſelf from the beſt writers, was publiſhed nnder the title of Geoponics, with a view of reviving this art, which was now in a very declining ſtate.

In England, the firſt perſon who diſtinguiſhed himſelf by his attention to the practical part of huſbandry was Fitzherbert, who publiſhed two treatiſes on this ſubject; one intitled the Book of Huſbandry, in 1534; and the ſecond, called the Book of Surveying and Improvements, in 1539.

In 1600, the French made conſiderable efforts to revive huſbandry,* and ſeveral large works appeared for this purpoſe. It was likewiſe induſtriouſly cultivated about the ſame period by the Flemings, who, portioning out their lands in ſmall tenements, and diſcovering ſeveral new ſorts of manure, brought the ſoil hereby to a proper degree of cleanlineſs, health, and ſweetneſs; ſo that they were able to raiſe the more delicate graſſes; ſuch as LUCERN, SAINTFOIN, &c.

The moſt conſiderable Engliſh writers, previous to the Reſtoration, were Sir Hugh Platt, who made many very important diſcoveries with reſpect to the nature and qualities of manure; Gab. Plattes, and S. Hartlib; and ſince that period, Evelyn, Nourſe, Mortimer, Bradley, Lawrence, Tull, Ellis, and Miller; not to mention many more among our contemporaries. The attention generally given to this art both at home and abroad, and the numerous ſocieties eſtabliſhed for encouraging improvements in the theory and practice of it, both in Europe and America, promiſe a degree of perfection, of which none in former ages could have had any conception.

In France, there are no leſs than thirteen ſocieties eſtabliſhed by royal ſanction, beſide many ſubordinate aſſociations, for promoting *agriculture.* It is likewiſe publicly taught in the Swediſh, Daniſh, and German univerſities. The ſpirit and example of Linnæus and his diſciples have very much conduced to the progreſs of this important and uſeful art; and the emulation of improving has ſpread through moſt of the nations of Europe.

In England, the Royal Society, and the Society of Arts, &c. in particular, have been ſignally uſeful in this reſpect; and the other aſſociations, which are now eſtabliſhed in many parts of the country, co-operate with them in forwarding their laudable deſign.

Among the Japaneſe, *agriculture* is in great repute; and among the Chineſe it is diſtinguiſhed and encouraged by the court beyond all other ſciences. The emperor of China yearly, at the beginning of ſpring, goes to plow in perſon, attended by all the princes and grandees of the empire. The ceremony is performed with great ſolemnity; and is accompanied with a ſacrifice, which the emperor, as high prieſt, offers to Chang-Ti, to enſure a plentiful crop in favour of his people.

The reader will find a conciſe abſtract of the principal improvements in the various branches of *agriculture,* diſpoſed, in the courſe of this work, under their proper heads.

AGRIELÆA, the *wild* OLIVE.

AGRIFOLIUM, in *Botany*, the HOLLY-*tree.* See AQUIFOLIUM.

AGRIGINTINE *ſalt*, in *Natural Hiſtory*, a kind of eatable ſalt, famous among the ancients for its not crackling in the fire as common ſalt does. It might probably owe this quality to the fineneſs of the powder, in form of which it was generally uſed.

AGRIMONOIDES, in *Botany*, a ſpecies of AGRIMONY. This plant flowers in April, and comes to perfection in May; and grows in ſome mountainous parts of Italy; it is ſometimes called PIMPINELLA *folio agrimoniæ.*

AGRIMONY, AGRIMONIA, in *Botany*, the name of a genus of plants, belonging to the claſs of *dodecandria digynia*; the characters of which are theſe: the flower is of the roſaceous kind, conſiſting of five petals, which are arranged in a circular form, indented at their extremity, and ſtand upon a cup, which finally becomes an oblong echinated fruit, containing two oblong ſeeds. In the center ariſes a double ſtyle, reſting on the germen, attended by twelve ſtamina.

Miller reckons five ſpecies, viz. 1. The common *agrimony*. 2. The white *agrimony*. 3. The ſweet-ſcented *agrimony*. 4. The eaſtern *agrimony*, with narrow primated leaves, which are ſharply ſerrated, and a thick root. 5. Three leaved *agrimony*, with ſmooth fruit. Tournefort enumerates only the three firſt ſpecies; Linnæus includes the firſt, third, and fourth, under one ſpecies.

The firſt ſpecies of this genus is frequent in dry paſtures, by the ſide of hedges, and in woods, and flowers in June. The dried leaves make a very pleaſant infuſion, in the manner of tea; and are eſteemed a very proper medicine in obſtructions of the liver and ſpleen. It is celebrated in the jaundice, and in cachectic caſes; and is given in coughs and catarrhs, and in ſuppreſſions alſo of the menſes.

It uſed to be a very common ingredient in the baths of the ancients, prepared with the decoctions of detergent and emollient herbs.

Agrimony is otherwiſe called *eupatorium veterum*, or *Græcorum.*

From Mr. Geoffroy's analyſis of *agrimony*, it appears, that this plant contains very little ſalt of the ammoniacal kind, ſince no concrete urinous ſalt is got from it, but the acid ſalt wherewith it abounds, joined with earths, forms a concrete reſembling tartar, or ſalt of coral combined with a large proportion of ſulphur.

Agrimony has a ſaline taſte, ſubaſtringent and acid; its juice turns the tincture of heliotropium to a faint red, ſo that its aſtringent and aperitive virtues ſeem both owing to the ſame auſtere ſalt. For though theſe effects ſeem contrary to one another, yet they often flow from one and the ſame principle, the ſtrengthening of the weak and lax fibres of the ſolid parts. Experience ſhews, ſays Geoffroy, that *agrimony* has the virtues ſuppoſed to ariſe from its compoſition; for it is aſtringent, detergent, reſolvent, vulnerary, and aperient.

The country people uſe the common or eſſential *agrimony* bruiſed, or its juice, in contuſions, and freſh wounds. Etmuller ſays, it removes ſwellings and inflammations of the ſcrotum; yet it is rarely found in ſhop-compoſitions, though frequently preſcribed by the ſurgeons, in diſcutient and vulnerary fomentations.

AGRIMONY, *ſweet-ſmelling*, *agrimonia odorata*, is by ſome preferred, for medicinal purpoſes, to the former, as being more grateful to infuſe for pectoral decoctions. It may be infuſed in water, or in whey; and is efficacious in diſeaſes from a lax habit.

AGRIMONY, *hemp*, *eupatorium*, in *Botany*, a genus of the *ſyngeneſia polygamia æqualis* claſs of plants. Its characters are theſe: it has a compound flower compoſed of hermaphrodite florets, included in one common ſcaly empalement, whoſe ſcales are narrow, erect, and unequal; and the florets have each five ſhort ſtamina. In the bottom is ſituated a ſmall germen, which becomes an oblong ſeed, crowned with down, ſitting in the empalement. There are ſeveral ſpecies.

The common *hemp agrimony* is recommended as an hepatic and vulnerary, and has been alſo uſed in catarrhs; but it is at preſent very little known in the ſhops.

AGRIMONY, *water-hemp*, *bidens*, in *Botany*, belongs to the ſame claſs with the former. Its characters are theſe: it has a compound flower, the middle or diſh compoſed of hermaphrodite florets; theſe have five ſtamina, with an oblong germen. The female flowers which compoſe the border are naked, and are all ſucceeded by a ſingle angular obtuſe ſeed, having two or more briſtles or teeth. It grows in wet places, and flowers in Auguſt. Several ſpecies of this plant are common weeds; but there are five ſpecies cultivated in the gardens of the curious.

This herb is accounted hepatic and vulnerary.

AGRIOCARDAMUM, ſee CARDAMINE.

AGRIOCASTANUM, the ſame as EARTH-NUT, popularly called *pig-nut*, and *arnot*.

AGRIOCINARA, in *Botany*, a name uſed by ſome authors for that ſpecies of wild ARTICHOAK, the root of which is uſed inſtead of the *coſtus nigra*.

AGRIOCOCCIMELA, or *prunus ſylveſtris*. See PLUM-*tree*.

AGRIOMELA, a name for the *crab* APPLE.

AGRIOMELANZANION, in the *botanical* writings of the ancients, a word that has perplexed many of the later writers. The Arabian writers, Avicenna and Serapion, uſed the word *bedengian* for the fruit of the *pomum amoris*, a kind of eſculent nightſhade, or *ſolanum*, called by the old Greek writers, as Theophraſtus, &c. *ſtrychnus*, and only diſtinguiſhed from the other *ſtrychni*, or nightſhades, by its being deſcribed as wholeſome, not poiſonous. From this Arabic word *bedengian*, the Italians formed their word *melanzana*, and the late Greek writers their *melanzanion*, which they uſed as the name of the ſame fruit. This, when the plant was cultivated in gardens, was probably larger and fairer, than when it grew wild; but, in this latter ſtate, was not leſs uſed, but was diſtinguiſhed by the term *agriomelanzanion*. If the Greeks, who uſe this word, or the *melanzanion*, would have appropriated them to the *pomum amoris*, and diſtinguiſhed theſe from the other nightſhades, they would have done ſervice to the world.

AGRION ſignifies the PEUCEDANUM, called alſo *agriophyllon*.

AGRIOPHAGI, in *Antiquity*, a name given to thoſe who fed on wild beaſts.

The word is compounded of αγριος, *wild*, and φαγω, *I eat*.

AGRIORIGANUM, in *Botany*, wild *marjoram*.

AGRIOSELINUM, in *Botany*, ſignifies *wild* PARSLEY.

AGRIPALMA, in *Botany*, a name given to MOTHERWORT.

AGRIPPA, a name applied, among the ancients, to children born in an unuſual or irregular manner; particularly ſuch as come with the feet foremoſt, inſtead of the head.

They were called *agrippæ*, according to Pliny, on account of their being (*ægre parti*) *born with difficulty*.

Daventer has a particular chapter of *agrippas*, or infants coming with their feet foremoſt, which, according to him, is one of the moſt convenient and ſafe ways for a mature birth.

Agrippa gives the denomination to an unguent, deſcribed in the *Antidotarium Nicolai*, and in ſeveral other diſpenſatories, ſuppoſed, by ſome, to have been invented by Agrippa king of Judæa, but, as others ſuſpect, by Julius Agrippa, a Roman phyſician.

AGRIPPINIANS, in *Church Hiſtory*, the followers of Agrippinus biſhop of Carthage, in the third century, who firſt introduced and defended the practice of *rebaptization*.

AGRIUM, in the *Materia Medica* of the ancients, a name given to an impurer ſort of *natrum*. The purer ſort of this ſalt they called *halmyrhaga*, and the coarſer and dirtier kind *agrium*. The former of theſe they had from Media, the latter from Thrace.

AGROM, a diſeaſe frequent in Bengal, and other parts of the Indies, wherein the tongue chaps and cleaves in ſeveral places, being alſo extremely rough, and ſometimes covered with white ſpots. The Indians are very fearful of this diſeaſe, which they attribute to extreme heat of the ſtomach.

Their remedy is, to chew the black-ſeeded baſilica, drink ſome chalybeated liquor, or the juice of large mint.

AGROSTEMA, in *Botany*, the name given by Linnæus to a genus of plants of the *decandria pentagynia* claſs, uſually confounded by other authors among the ſpecies of LYCHNIS.

The characters of the genus are theſe: the *perianthium* conſiſts of one leaf, which forms an oblong tube, of a coriaceous texture, and ribbed with ten ſtriæ. The limb of this, which is of the ſame length with the flower, is divided into five ſegments, which are ſlender and permanent. The flower conſiſts of five petals, the ungues of which are as long as the tube of the cup; the limb is obtuſe and expanded. The ſtamina are ten ſubulated filaments affixed to the ungues of the flower. The antheræ are ſimple. The germen of the piſtil is oval. The ſtyles are capillary, and five in number: they are erect, and of the length of the ſtamina. The ſtigmata are ſimple. The fruit is an oblong capſule covered by the cup, and contains only one cell, in which are a number of ſpotted kidney-ſhaped ſeeds, in a looſe and free receptacle.

AGROSTIS, of the *triandria digynia*, in the Linnæan ſyſtem of *Botany*, the name of a diſtinct genus of plants, of the graſs kind; the diſtinguiſhing characteriſtics of which are theſe: the calyx is a pointed bivalve glume, containing only one flower. The flower is made of two pointed valves, ſhorter than the calyx, and has one of the valves larger than the other, and terminated by a beard or awn. The ſtamina are three capillary filaments longer than the flower; the antheræ are ſplit at their ends. The germen of the piſtil is roundiſh; the ſtyles are two, reflex and hairy; and the ſtigmata are of a like ſtructure. The flower cloſely ſhuts in the ſeed, and does not open to let it fall out. The ſeed is ſingle, roundiſh, and pointed at each end.

Agroſtis is commonly uſed for the ſpecies of graſs called *quick-graſs*, or *couch-graſs*.

This plant is ſaid to diſſolve ſtones, eſpecially bilious ones, and hence to cure oxen and ſheep that feed upon it.

AGROSTOGRAPHIA, in *Phyſiology*, the *hiſtory*, or deſcription of *gramens*, or plants of the graſſy kind.

The word is compounded of αγρωστις, *graſs*, and γραφη, *deſcription*.

AGROSTOGRAPHIA is alſo the title of a learned and laborious work of John Scheuchzer, containing an exact deſcription of about four hundred ſpecies of graſs; particularly dogs-tooth, *cyperus*, *cyperoides*, ruſhes, &c. all diſpoſed in a new method; yet the *hiſtory* is far from being complete.

A-GROUND expreſſes the ſituation of a ſhip, whoſe bottom, or any part of it, reſts upon the ground.

AGRYPNIA, ΑΓΡΥΠΝΙΑ, a privation of ſleep; otherwiſe called WATCHING, *waking*, *vigiliæ*, *pervigilium*, &c. In the Greek church, it is uſed for the vigil of any of the greater feaſt-days, obſerved by the monks and clergy.

AGUAGUIN, in *Botany*, the name of a ſhrub among the Africans, who eſteem it greatly as a balſamic and vulnerary. The leaves of this ſhrub reſemble thoſe of our common lilac; they grow alternately, and ſtand upon foot-ſtalks of half an inch long; and when held up to the light, they ſhew a fine texture of the ſmaller veins. Philoſ. Tranſact. N° 232.

AGUAPECACA, in *Zoology*, the name of a Braſilian bird of the moor-hen kind. It is of the ſize of a pigeon, very long-legged, and has a beak like that of the gallinaceous kind. Its back, and the upper part of its wings, are brown, and in each wing they have a ſharp horn, or prickle, ſerving for their defence.

AGUARA-QUIYA, in *Botany*, a Braſil plant, thought to be the *ſolanum vulgare*, or common nightſhade, by Ray.

AGUARA-PONDA, in *Botany*, a plant otherwiſe called, *viola ſpicata Braſiliana*. It grows to the height of a foot and an half, or more, with a ſmooth, round, green, and jointed ſtalk. At each joint come forth four, five, or more, narrow, ſerrated, pointed, green, and unequal leaves. The top of the ſtalk bears an ear a foot long, ſmooth, and covered with flowers of a fine violet azure, or the colour of our *viola martia*, conſiſting of five roundiſh leaves. The whole flower is not unlike the *viola martia*, and has ſomewhat of its ſmell. The root is ſtraight, of a moderate thickneſs, and ſhoots out into abundance of leſſer ones, and theſe again into filaments.

There is another kind, diſtinguiſhed by the wideneſs of its ear of flowers, which repreſents a helmet of a green colour. It is marked with cubic pits, from whence proceed azure flowers.

AGUE, a periodical diſeaſe, of the fever kind, conſiſting in a cold ſhivering fit, ſucceeded by a hot one; and going off in a diaphoreſis, or ſweating.

If the coldneſs and ſhivering be inconſiderable, and only the hot fit felt, the diſeaſe is called an *intermitting fever*.

According to the periods or times of the returns of the fit, the diſeaſe is either a QUOTIDIAN, TERTIAN, or QUARTAN *ague*, or fever.

The cauſe of *agues* ſeems to be, an obſtructed perſpiration, or whatever, by overloading the juices, retards their motion, or occaſions a *lentor* in the blood.—The *cauſa proxima* ſeems to be a corruption of the humours of the body.—The ſymptoms are, heavineſs, and reaching; a weak, ſlow pulſe; coldneſs and ſhivering felt firſt in the joints, thence creeping over the whole body; pain in the loins, and an involuntary motion of the under jaw.

A vernal *ague* is eaſily cured; but an autumnal one is more obſtinate, eſpecially in aged and cachectical perſons; and, particularly, if complicated with a dropſy, peripneumony, &c.

When an *ague* proves fatal, it is uſually in the cold fit, through the oppreſſion of the ſpirits.

The cure is uſually begun with an emetic of *ipecacuanha*, an hour before the acceſs, and completed with the *cortex Peruvianus*, adminiſtered in the interval between two fits; and continued, at times, to prevent a relapſe.

We meet with divers other methods of curing *agues*, beſides that by the *cortex*; as by means of tea, which taken an hour before the acceſs, is ſaid to remove the obſtruction,

tion, and correct the acidity; by *ſal volatile*, which acts by attenuating the blood: in the iſland of Tino, by an infuſion of flowers of little centaury. See Philoſ. Tranſ. Nº 145.

Etmuller gives divers inſtances of *agues* cured by putting the patient in a fit of paſſion. Others have been effected by a fright, a fit of drunkenneſs, &c. 'Do we not often ſee *agues* cured by amulets and *pericarpia?* I myſelf, ſays Mr. Boyle, was cured of a violent quotidian by applying to my wriſts a paſte made of bay-ſalt, new hops, and blue currants, which has alſo relieved many others both of quotidians and tertians.'

Lord Bacon ſays, 'It is often tried, that juices of ſtock-gilly-flowers, roſe-campion, garlick, and other things, applied to the wriſts, and renewed, have cured long *agues*.' He likewiſe recommends in the heats of *agues*, to hold eggs of alabaſter, and balls of cryſtal, in the hands.

Dr. Pringle accounts for them, by means of the principle of putrefaction. The heat of the body, he obſerves, varies little; and therefore the corruption produced in any of the humours muſt happen in a determinate time. If we ſuppoſe, that in the paroxyſm, the more corrupted particles of the blood do not at all paſs off through the ſkin with the ſweat, but that ſome part of them is diſcharged with the bile; their particles coming into the inteſtines, and being from thence taken up by the lacteals, and carried into the blood, may there act as a new ferment, and occaſion a return of the fit. Thus the corruption of the bile may be the cauſe of the firſt fit, as well as of thoſe that follow. He farther adds, that though all moiſt countries are ſubject to *agues* of ſome kind or other; yet if the moiſture is pure, and the ſummers are not cloſe and hot, they will moſtly be regular tertian *agues*, and admit an eaſy cure. But if the moiſture ariſes from long ſtagnating water, in which plants, fiſhes, and inſects, die and rot, then the damps, being of a putrid nature, occaſion not only more frequent, but more dangerous fevers, which more commonly appear in the form of quotidians, and double tertians, than that of ſingle ones. Accordingly they are found to vary with the ſeaſon, on which the degree of putrefaction in a great meaſure depends.

Though the bark be the moſt effectual remedy in this diſtemper, yet it has been known to cauſe worſe diſorders.

Ague-*cake*, the popular name for a hard tumour on the left ſide of the belly, lower than the falſe ribs, ſaid to be the effect of intermitting fevers.

Ague-*free* is a name given by ſome to SASSAFRAS, on account of its febrifuge virtue.

AGUGLIA, ſee OBELISK.

Aguglia is alſo the name given by the Italian fiſhermen to the ACUS of Oppian, called in Engliſh the GAR-FISH.

AGUILLANEUF, or **Augillaneuf**, a form of rejoicing uſed among the ancient Franks on the firſt day of the year.

The word is compounded of the French *a*, *to*, *gui*, *miſſleto*, and *l'an neuf*, i. e. *the new year*.

Its origin is traced from a druid ceremony: the prieſts uſed to go yearly in December, which with them was reputed a ſacred month, to gather miſsleto of the oak in great ſolemnity. The prophets marched in the front, ſinging hymns in honour of their deities; after theſe came a herald with a *caduceus* in his hand; theſe were followed by three druids a-breaſt, bearing the things neceſſary for ſacrifice. Laſt of all came the chief, or arch-druid, accompanied with the train of people.

The chief druid climbing the oak, cut off the miſsleto with a golden ſickle, and the other druids received it in a white cloth. On the firſt day of the year it was diſtributed among the people, after having bleſſed and conſecrated it by crying *au gui l'an neuf*, to proclaim the new year.

This cry is ſtill continued in Picardy, with the addition of *plantez, plantez*, to wiſh a plentiful year. In Burgundy, and ſome other parts, the children uſe the ſame word to beg a new year's gift.

Of later times the name *auguillaneuf* was alſo given to a ſort of begging, practiſed in ſome dioceſes, for church tapers, on new year's day, by a troop of young people of both ſexes, having a chief, &c. It was attended with divers ridiculous ceremonies, as dancing in the church, &c. which occaſioned the ſynods to ſuppreſs it.

AGUILLES, or **Auguilles**, cotton cloth, manufactured at Aleppo.

AGUL, in *Botany*, a ſmall ſhrub very prickly. Its leaves are longiſh, and reſemble thoſe of the knot-graſs. It abounds with flowers of a reddiſh colour. Theſe are ſucceeded by red huſks. Its root is long, and of a purple colour.

This plant is otherwiſe called *alhagi maurorum*, by Rauwolf: it grows in Arabia, Perſia, and Meſopotamia. Manna is found on its leaves, as large as the grains of coriander, of the ſame taſte and ſmell as ours, but it melts if the ſun ſhines upon it. The leaves of this plant are purgative.

AGURAH, in *Jewiſh Antiquity*, the twentieth part of an ancient ſilver SHEKEL.

The *agurah* is the ſame with what is otherwiſe called *gerah*, and *keſhitah*. The Septuagint tranſlation renders it οϐολος.

AGUSADURA, in *Ancient Cuſtoms*, a fee due from vaſſals to their lord, for ſharpening their plowing tackle.

Anciently the tenants in ſome manors were not allowed to have their rural implements ſharpened by any but whom the lord appointed; for which an acknowledgment was to be paid, called *aguſadura*, in ſome places *aguſage*, which ſome take to be the ſame with what was otherwiſe called *reillage*, from the ancient French *reille*, a *plough-ſhare*.

AGUTI, in *Zoology*, the name of an American animal, much reſembling the Guinea pig, as we call it, having the characters of the rat-kind, with the voice and hair of the hog.

The hairs are very hard, thick, and gloſſy, and are of a mixt colour, of a reddiſh and brown, with more or leſs black; thoſe on the belly however are yellowiſh; its head and whiſkers are like thoſe of the rabbit-kind, but that the noſe is ſharper, and the upper chop longer than the under one, as in the hog-kind; the upper lip is ſplit as in the hare, and the legs are naked, or have at the utmoſt only a few ſcattering hairs on them; the fore-feet have four toes, and the hinder ones ſix, and theſe are much longer than the fore-legs; its tail is very ſhort, and its eyes prominent; its voice altogether reſembles the grunting of a hog. It is a very voracious animal, devouring its food with extreme eagerneſs, and uſing its fore-feet for hands in the manner of the ſquirrel. It runs very ſwiftly, and is very expert at digging, ſo that it ſoon buries itſelf in the earth. When provoked, it raiſes all the hair of its back upright, and ſtrikes the earth with its hinder feet.

Aguti Treva *inſulæ Marignanæ*, in *Botany*, a plant mentioned by De Laet. It has the leaves of the orange-tree, only thinner, a dewy flower, a large fruit, with a greeniſh rind, which contains kernels like thoſe of the pomegranate, thin, ſweet, and not ill taſted.

AGUTIGUEPA *obi Braſilienſibus*, in *Medicine*, the name given by many authors to the arrow-root, or *ſagittaria alexipharmaca* of the Weſt-Indies.

AGYEI, in *Antiquity*, a kind of obeliſks conſecrated to Apollo, and placed in the veſtibules of houſes, for their ſecurity.

The *agyei* were no other than huge ſtones, or perhaps ſometimes timber, having either a circular or ſquare baſis, and terminating in a point at the top, ſacred to Apollo, or, as ſome ſay, to Bacchus, as protector of the high-ways. Others will have them to have been erected to both thoſe deities.

AGYNIANI, in *Church Hiſtory*, a ſect who condemned all uſe of fleſh, and marriage, as not inſtituted by God, but introduced at the inſtigation of the devil.

The word is compounded of the privative α, and γυνη, *woman*. They are ſometimes alſo called *agynnenſes* and *agynii*; and are ſaid to have appeared about the year 694.

AGYRTÆ, in *Antiquity*, a kind of ſtrolling impoſtors running about the country, to pick up money by telling fortunes at rich men's doors, pretending to cure diſeaſes, by charms, ſacrifices, and other religious myſteries; alſo to expiate the crimes of their deceaſed anceſtors, by virtue of certain odours and fumigations; to torment their enemies, by the uſe of magical verſes, and the like.

The word is formed of the verb αγυρω, *I congregate*; alluding to the practice of quacks, who gather a crowd about them.

AHALOTH, in the *Materia Medica*, a name uſed by ſome writers for the *lignum-aloes*, or *aloes-wood*. It is the Hebrew name.

AHANGIER, in *Ichthyology*, a name given by Albertus, and others, to the fiſh called by authors ACUS *vulgaris*, and by us the GARFISH. The ſhape of this fiſh, which is very long and ſlender, has cauſed it to be confounded with the *ſyngnathus*, or tobacco-pipe fiſh, called alſo *acus*; but they differ extremely when examined; that being a true ſpecies of the *ſyngnathus*, and this of the ESOX or pike.

A-HEAD, refers to any object that lies immediately before a ſhip, or towards that point of the compaſs to which her ſtem is directed.

AHICCYATLI, in *Zoology*, the name of an American ſerpent, approaching to the nature of the hæmorrhous and rattle-ſnake, but larger than the former, and wanting the rattle of the latter; it is as fatal in the effect of its poiſon as any known ſpecies of ſerpent.

AHIUS, ſee SALT-*ſtone*.

AHMELLA, in *Botany*, is a ſpecies of *bidens*, or water-hemp-agrimony. Its flowers are large, and reſemble thoſe of the marygold; they grow in large numbers on the tops of the ſtalk, and of the large branches, and are ſucceeded by oblong ſeeds, which have the ſame ſort of points at one end with thoſe of our common *bidens*, and all the other plants of that genus. The ſtalks are ſquare, and the leaves ſtand in pairs, and are in ſhape like thoſe of the common nettle. We have one ſpecies of it very common in all parts of England, about watry places; and eaſily known by its ſeeds, in Autumn, ſticking to the cloaths and ſtockings of people who go near the plant; by means of the three points at the end, which are ſharp and bearded. It would be worth while to try whether theſe ſeeds poſſeſs virtues worthy notice in phyſic, for at preſent they are neglected.

This plant, and the others of the ſame genus, are called by the name *bidens*, from the teeth or prickles at the ends of the ſeeds; but the word ſhould be *tridens*, for there are three of them. Philoſ. Tranſ. N° 257.

AHOUAI, in *Botany*, the name of a genus of plants, called by Linnæus CERBERA.

The ſpecies of *ahouai*, mentioned by Mr. Tournefort, are theſe: 1. The *ahouai* of Thevet, or the apple-leaved poiſonous *ahouai*. And, 2. The nerium-leaved *ahouai*. By inciſion into the bark a milky liquor is produced, that ſmells like garlick.

A-HULL denotes the ſituation of a ſhip, when all her ſails are furled, on account of the violence of a ſtorm, and when having laſhed her helm to the lee-ſide, ſhe lies nearly with her ſide to the wind and ſea, her head being ſomewhat inclined to the direction of the wind.

AIAIA, in *Zoology*, the name of a Braſilian bird, of the *platea*, or ſpoonbill-kind, called by the Portugueſe *colhorado*. It is exactly of the ſame ſhape, and much of the ſame ſize with the European ſpoonbill, and its beak is in the very ſame manner broad at the end. It is of a pale, but very bright and ſhining fleſh-colour, on the back and wings; the other parts of its body are perfectly white; it is common about the ſhores of rivers, and its fleſh is very well taſted.

AJAX, in *Antiquity*, a furious kind of dance, in uſe among the Grecians; intended to repreſent the madneſs of that hero, after his defeat by Ulyſſes, to whom the Greeks had given the preference in his conteſt for Achilles's arms.

Lucian, in his treatiſe of dancing, ſpeaks of dancing the *Ajax*. There was alſo an annual feaſt called *Ajantia*, Αἰάντεια, conſecrated to that prince, and obſerved with great ſolemnity in the iſland of Salamis, as well as in Attica; where, in memory of the valour of Ajax, a bier was expoſed, ſet out with a complete ſet of armour.

AICHMALOTARCHA, ſee ÆCHMALOTARCHA.

AID, or AYDE, AUXILIUM, literally denotes the help, ſuccour, or aſſiſtance, which any perſon lends another, when too weak to do, or avoid, ſomething.

The word is French; formed, according to M. Menage, from the Italian *aitare*; and that from the Latin *adjutare*, *to help* or *aſſiſt*.

AID, or AYDE, in *Law*, is when a petition is made in court, for the calling in of help from another perſon intereſted in the matter in queſtion; who, it is probable, may not only ſtrengthen the party's cauſe who thus prays for *aid*, but alſo prevent a prejudice ariſing to his own right.—This is called *aid prier*; but this courſe of proceeding is now much diſuſed.

A city, or corporation, holding a fee-farm of the king, may pray in *aid* of him, if any thing be demanded of them relating thereto.

The *aid prier* is ſometimes alſo uſed, in the king's behalf, to prevent any proceedings againſt him till his counſel be called, and heard what they have to ſay for avoiding the king's prejudice, or loſs. Jenk. Cent. 64. Terms de Ley, 35. Stat. 4. Edw. I. and 14 Edw. III.

AID *de camp*, an officer in an army, whoſe buſineſs is to attend the general officers, and receive and carry their orders, as occaſion requires.

When the king is in the field, he uſually appoints young volunteers of quality to carry his orders, who are called the king's *aids de camp*.

AID *major*, or *adjutant*, is an officer, whoſe buſineſs is to eaſe the MAJOR of part of his duty; and to perform it all in his abſence.

Some majors have ſeveral *aid majors*.—Each troop of guards has but one major, who has two *aid majors* under him, or more, according as the buſineſs requires.

Every regiment of foot has as many *aid majors* as it contains battalions.—When the battalion is drawn up, the *aid major's* poſt is on the left, beyond all the captains, and behind the lieutenant-colonel.

AID, AUXILIUM, in our *Ancient Cuſtoms*, denotes a ſubſidy or ſum of money due to the lord, from his tenants, on certain occaſions.

It differed from a *tax*, which is impoſed at any time when wanted; whereas the *aid* could only be levied where it was cuſtomary, and where the particular occaſion fell out.

Such was the *aid de relief*, due from the tenants in fee, upon the death of the lord meſn, to his heir, towards the charge of a relief of the fee, of the ſuperior lord.

Such alſo was the *aid chevel*, or *capital aid*, due by vaſſals, to the chief lord, or the king, of whom they held *in* CAPITE.—Of this there are three kinds.

The firſt, of chivalry; or, as they call it, *par faire fitz chevalier*, towards making his eldeſt ſon a knight, when arrived at the age of fifteen years: the ſecond of marriage, or *par fille marier*, towards marrying his eldeſt daughter.—Both theſe, with all charges incident thereto, are taken away by Stat. 12 Car. II. See TENURE, SERVICE, &c.—Some will have them to have been firſt eſtabliſhed in England, by William the Conqueror, and afterwards transferred to Normandy; but the more common opinion is, that the Conqueror brought them with him.—The third was of RANSOM, due when the lord was taken priſoner by the enemy.

In ſome provinces there was a fourth kind of *aid*; due whenever the lord ſhould undertake an expedition to the Holy Land.

We alſo read of *aids* paid the lord, when he was diſpoſed to purchaſe any new land, or tenement. Theſe were only granted once in his life.—Alſo *aids* for the repairing, and fortifying of caſtles, ſeats, &c.

Aids were at firſt impoſed by the lord, or king, at what rate he pleaſed; but by the ſtatute of 3 Edw. I. a reſtraint was laid on common perſons being lords, and they were tied down to a fixed proportion; and by a ſubſequent ſtatute, the ſame rate was extended even to the king.

By the Stat. 34 Edw. I. it is ordained that the king ſhall levy no *aid* or tax, without his parliament.

Aids ſeem to have been firſt eſtabliſhed with a view to the clients and freedmen of ancient Rome, who made preſents to their patron towards his daughter's fortune, as alſo on his birth-day, and on other ſolemn occaſions.—Accordingly, Bouteiller relates, that in his time, theſe *aids* depended on the courteſy and good will of the vaſſals; for which reaſon they were called, *droits de complaiſance*.

The biſhops alſo received *aids* from their eccleſiaſtics, called *ſynodals*, and *pentecoſtals*. They were to be paid at the time of their conſecration; or when they had a king to entertain; or when called by the pope to his court, or to a council; as alſo when they went to receive the *pallium*.

Add, that the archdeacons alſo exacted *aids* from the clergy of their juriſdiction. See PROCURATION.

A kind of feudal *aids* are ſtill levied in Germany, &c. under the title of *collectæ*.

AIDS are alſo uſed in matters of polity, for any extraordinary taxes, or impoſitions, occaſionally levied by the king and parliament, upon the ſubjects; to ſupport the charges of the government, when the ordinary revenue is deficient.

AID, *royal*, is a name frequently given to the land-tax.

AID, in *Theology*, the *aids* or aſſiſtances of divine favour, which are offered to man, have been the ſubject of much diſpute betwixt Janſeniſts and Jeſuits; for the compoſing whereof, a celebrated congregation was erected at Rome under the title of congregation of *aids*, *congregatio de auxiliis*.

Some divines, after St. Auguſtin, diſtinguiſh two kinds of *aids*, viz. *ſine quo*, and *quo*.

Auxilium ſine quo, that which the mind is at liberty either to uſe or refuſe; ſuch is ſuppoſed to have been the *aid* miniſtred to man in the ſtate of innocency, while his mind and will were ſound and upright.

Auxilium quo amounts to what is otherwiſe called efficacious grace, which ſurmounts and ſubdues the will; ſuch, according to the Calviniſts and Janſeniſts, is ſuppoſed to be the *aid* miniſtred by grace, in the preſent fallen ſtate of human nature.

AIDS, in the *Manege*, are helps, or aſſiſtances, which ſome call cheriſhings, by which the horſeman contributes towards the motion, or action, required of the horſe; by a diſcrete uſe of the bridle, caveſon, ſpur, poinſon, rod, calf of the leg, and voice; and alſo by a juſt and well-timed motion of the body.

Such a horſe knows his *aids*, anſwers his *aids*, takes his *aids* with vigour, &c.—The *aids* are made uſe of, to avoid the neceſſity of corrections.—The ſame *aids*, given in a different manner, become corrections.

The *aids* uſed to make a horſe go in airs, are very different from thoſe required in going upon the ground. Newcaſtle.

The inner heel, inner leg, and inner rein, are called *inner aids*.

aids.—The outer heel, outer leg, &c. are *outer aids.* See Berenger's Art of Horſemanſhip, vol. ii. p. 92, &c.

Aids, in the French *Law*, denote a duty paid on all goods ſold and tranſported either out of, or into the kingdom. In this ſenſe, *aids* anſwer to what the Latins call *vectigalia*, a *vehendis mercibus*, and are paid by all kinds of perſons, privileged, or non-privileged; by which they differ from *tailles*, *taxes*, which are only paid by the peaſants, being a ſort of capitation, anſwering to what the Latins call *tributum*. The farm of the *aids* was formerly diſtinct from, but now united to, that of the *gabelles*, and other impoſts.

Aids, *court of*, in France, is a ſovereign court, erected for the cognizance of matters relating to the taxes.—Appeals come to this from the court of elections, where matters relating to the *taille* are firſt heard.—The *court of aids* of a province is ſometimes ſeparated from the parliament of the province, and fixed in another city, as at Montpelier, Montauban, &c.—There are thirteen courts of *aids*, of which the principal is that at Paris.

AIEREBA, in *Zoology*, the name of a fiſh of the *paſtinacha marina* kind, but differing from all the others, in that the form of its body is regularly round, or oval, and its head placed far within the verge of its thin part. It is common in the weſtern ocean; but it is not much eſteemed for the table, being more looſe and flabby in its fleſh than the other kinds.

AIGEIROS, a name ſometimes given to *black* POPLAR.

AIGHENDALE, a liquid meaſure in Lancaſhire, containing ſeven quarts.

AIGITHALUS, αιγιθαλος, in *Zoology*, a name by which ſome of the old authors called the PARUS, or *titmouſe*.

AIGLETTE, in *Heraldry*, ſee Eaglet.

AIGRETTA, in *Zoology*, a name uſed by ſome authors, as the name of a diſtinct ſpecies of heron, but ſeeming to be no other than a ſynonym of the GAZA *giovane*, or ARDEA *alba minor*, the ſmall white heron.

AIGUE *marine*, in *Natural Hiſtory*. See Aqua *Marina*.

AIGUISCE', Aiguisse', or Eguisce', in *Heraldry*, a term applied to a CROSS, when its four ends are ſharpened, but ſo as to terminate in obtuſe angles.

The croſs *aiguiſcé* differs from the *croſs* FITCHE'E, in that the latter goes tapering by degrees to a ſharp point; whereas only the ends of the former are tapered.

AILE, or Aiel, in *Law*, a writ which lies where the grand-father, or great-grand-father, called *beſaile*, was ſeiſed of lands or tenements in fee-ſimple, on the day he died; and a ſtranger abates or enters the ſame day, and diſpoſſeſſeth the heir or grand-child. See Abatement.

The word is formed of the French *aieul*, *avus*, *grandfather*.

AILERONS, in *Natural Hiſtory*, petty-wings, a French term, expreſſing two ſmall ſhelly ſubſtances, reſembling parts of wings, or young and juſt growing wings, and found in the two-winged flies, ſituated at the root of the larger wings.

The word is a diminutive of the French *aile*, *wing*.

AILES *vitrées*, in *Natural Hiſtory*, a French term, uſed to expreſs the wings of a ſeries of inſects, which ſeem of a middle nature, between the fly and the butterfly kind, and are therefore called PAPILION *mouches* by theſe writers. The wings of theſe inſects are in part covered with duſt, or ſcales, and in part free from it, and tranſparent. In theſe free parts they look glaſſy; whence their name, ſignifying *glaſſy wings*.

AIPIMIXIRA, in *Zoology*, the name of an American fiſh, more uſually known by the name of PUDIANO. It is a ſmall fiſh, of the ſhape of a pearch, with a purple back, and yellow ſides and belly.

AIR, Aer, in *Phyſics*, a thin, fluid, elaſtic, tranſparent, ponderous, compreſſible, and dilatable body; ſurrounding the terraqueous globe to a conſiderable height.

Air was conſidered by ſome of the ancients as an *element*; but then, by *element*, they underſtood a different thing from what we do. See Elements.

It is certain, that *air*, taken in the popular ſenſe, is far from the ſimplicity of an *elementary* ſubſtance; though ſome of its properties and uſes in a ſtate of combination with various ſubſtances, from which it has been extricated by modern analyſis, may entitle it to this appellation.—Hence, *air* may be diſtinguiſhed into *proper* or *elementary*, and *vulgar* or *heterogeneous*.

Air, *elementary*, or Air *properly ſo called*, is a certain ſubtile, homogeneous, elaſtic matter; the baſis, or fundamental ingredient of the atmoſpherical *air*, and that which gives it the denomination.

In this ſenſe, it likewiſe enters into the compoſition of moſt, or perhaps all bodies, exiſting in them under a ſolid form, deprived of its elaſticity, and moſt of its diſtinguiſhing properties, and ſerving as their cement, and the univerſal bond of nature; but capable, by certain proceſſes, of being diſengaged from them, recovering its elaſticity, and reſembling the *air* of our atmoſphere. See Hales's Vegetable Statics, ch. vi.

The peculiar nature of this *aerial* matter we know but little of; what authors have advanced concerning it being chiefly conjectural. We have no way of altogether ſeparating it from the other matters with which in its pureſt ſtate it is more or leſs combined, and conſequently no way of aſcertaining, with ſatisfactory evidence, its peculiar properties, abſtractedly from thoſe of other bodies.

Dr. Hook, and ſome others, maintain, that it is the ſame with the *æther*, or that fine, fluid, active matter, diffuſed through the whole expanſe of the celeſtial regions: which coincides with Sir I. Newton's *ſubtile medium*, or ſpirit. In this view it is ſuppoſed to be a body *ſui generis*, ingenerable, incorruptible, immutable, preſent in all places, in all bodies.

Others, conſidering only its property of elaſticity, which they account its eſſential and conſtituent character, ſuppoſe it to be mechanically producible; and to be no other than the matter of other bodies ſo modified and altered, as to become permanently elaſtic.—Sir Iſaac Newton obſerves, that the particles of denſe, compact, and fixed ſubſtances, cohering by a ſtrong attractive force, are not ſeparable without a vehement heat, or perhaps not without fermentation; and ſuch bodies, being at length rarefied by ſuch heat or fermentation, become true *permanent air*; and diſtinguiſhable from vapour, which is only *apparent* or *tranſient air*, as is evident from the experiment with the *æolipile*. Optics, Qu. 31. p. 371, 372, Ed. 3. See Air, *atmoſpherical* and *fixed*.

Air, *vulgar*, or *heterogeneous*, is a coalition of corpuſcles of various kinds, which together conſtitute one fluid maſs, wherein we live and move, and which we are continually receiving and expelling by reſpiration.—The whole aſſemblage of this makes what we call the *atmoſphere*; where this *air*, or *atmoſphere*, terminates, there *æther* is ſuppoſed to commence; which is diſtinguiſhed from *air*, by its not making any ſenſible refraction of the rays of light, as *air* does.

Air, in this popular and extenſive meaning of the term, is acknowledged by Mr. Boyle to be the moſt heterogeneous body in the univerſe; Boerhaave ſhews it to be an univerſal chaos, or *colluvies*, of all kinds of created bodies. Beſide the matter of light or fire, which continually flows into it from the heavenly bodies, and probably the magnetic effluvia of the earth, whatever fire can volatilize is found in the *air*.

Hence, for inſtance, 1. The whole foſſil kingdom muſt neceſſarily be found in it: for all of that tribe, as ſalts, ſulphurs, ſtones, metals, &c. are convertible into fume, and thus capable of being rendered part of the *air*.—Gold itſelf, the moſt fixed of all natural bodies, is found to adhere cloſe to the ſulphur in mines; and thus to be raiſed along with it. Mr. Boyle obſerves, that beſide the ſaline *effluvia* of the common ſort, ſuch as the nitrous, vitriolic, marine, &c. there may be many compounded kinds of ſalts in the *air*, which we have not on earth, ariſing from different ſaline ſpirits, fortuitouſly meeting and mixing together. Thus, the glaſs windows of ancient buildings are ſometimes obſerved to be corroded, as if they had been worm-eaten; though none of the ſimple ſalts abovementioned have the faculty of corroding glaſs.

Sulphurs too muſt make a conſiderable ingredient of the *air*, on account of thoſe many volcanos, grottos, caverns, and other ſpiracles chiefly affording that mineral, diſperſed through the globe.

2. All the parts of the animal kingdom muſt alſo be in the *air*: for, beſide the copious *effluvia* continually emitted from their bodies, by the vital heat, in the ordinary proceſs of perſpiration; by means of which an animal, in the courſe of its duration, impregnates the *air* with many times the quantity of its own body; we find that any animal when dead, being expoſed to the *air*, is in a certain time wholly incorporated with it.

3. As to vegetables, none of that claſs can be ſuppoſed wanting; ſince we know that all vegetables by putrefaction, become volatile.

The aſſociations, ſeparations, attritions, diſſolutions, and other operations of one ſort of matter upon another, may likewiſe be conſidered as ſources of numerous other neutral, or anonymous bodies, unknown to us.

Air, in this general ſenſe, is one of the moſt conſiderable and univerſal agents in all nature; being concerned in preſervation of life, and the production of moſt of the *phænomena* relating to our world.—Its properties and effects, including a great part of the reſearches and diſcoveries of the modern philoſophers, have in a conſiderable degree been reduced to preciſe laws and demonſtrations; in which form they make a very extenſive and important branch of the mixed mathematics, called PNEUMATICS.

AIR, *mechanical properties and effects of.* The moſt conſiderable of theſe are its *fluidity*, *weight*, and *elaſticity*.

I. *Fluidity.*—That the *air* is a *fluid*, is evident from the eaſy paſſage it affords to bodies through it; as in the propagation of ſmells, and other *effluvia*, and the eaſy conveyance it affords to ſounds: for theſe, and ſimilar effects, prove it to be a body, whoſe parts give way to any force impreſſed, and, in yielding, are eaſily moved among themſelves; which is the definition of a *fluid*. Beſides, it is certain, that no degree of cold has ever yet been produced, natural or artificial, ſtrong enough to deprive it of its *fluidity*.

They who, with the Carteſians, make *fluidity* to conſiſt in a perpetual inteſtine motion of the parts, find that *air* anſwers alſo to that character: thus, in a darkened room, where the ſpecies of external objects are brought in by a ſingle ray, they appear in a continual fluctuation; and thus even the more accurate *thermometers* are obſerved never to remain a moment at reſt.

The cauſe of this *fluidity* of *air* is attributed by ſome late philoſophers to the fire intermixed with it; without which, they imagine, the atmoſphere would harden into a ſolid, impenetrable maſs.—And hence, the greater the degree of fire, the more fluid, moveable, and pervious, is the *air*: and thus, as the degree of fire is continually varying, according to the circumſtances and poſition of the heavenly bodies, the *air* is kept in a continual reciprocation. See Buffon's Hiſt. Nat. Supp. vol. i. Hence, in a great meaſure, it is, that on the tops of the higher mountains, the ſenſes of ſmelling, hearing, &c. are found very feeble. The increaſed rarity of the *air* at a conſiderable height may account for this effect; but the above hypotheſis is contradicted by the more ſenſible experience of cold: the *air* near the ſurface of the earth deriving greater heat from the reflected, than from the direct rays of the ſun. See MOUNTAINS.

II. *Weight* or *gravity*.—Galileo firſt diſcovered that *air* had weight, Dial. I. but the preſſure of the atmoſphere was obſerved by his diſciple Torricelli; and the variations of it depending on different heights, by M. Paſcal.—That the *air* is heavy, follows from its being a body; weight being an eſſential property of matter. But we have many arguments to the ſame purpoſe from ſenſe, and experiment: thus, the hand, applied on the orifice of a veſſel empty of *air*, ſoon feels the load of the incumbent atmoſphere.—Thus, glaſs veſſels, exhauſted of their *air*, are eaſily cruſhed to pieces by the weight of the *air* without. So, two ſmall hollow ſegments of a ſphere, four inches in diameter, exactly fitting each other, being emptied of *air*, are preſſed together with a force equal to 188 pounds, by the weight of the ambient *air*; and that they are kept together by the preſſure of the *air* is evident, by ſuſpending them in an exhauſted receiver, where they will ſeparate of themſelves. Farther, if a tube, cloſe at one end, be filled with mercury, and the other end immerged in a baſon of the ſame fluid, and thus erected, the mercury in the tube will be ſuſpended at the height of about thirty inches above the ſurface of that in the baſon. The reaſon of which ſuſpenſion is, that the mercury in the tube cannot fall lower, without raiſing that in the baſon; which being preſſed down by the weight of the incumbent atmoſphere, cannot give way, unleſs the weight of the mercury in the tube exceeds that of the *air* out of it.—That this is the caſe, is evident; becauſe, if the whole *apparatus* be included in the receiver of an *air*-pump, the mercury will fall in proportion as the *air* is exhauſted; and on gradually letting in the *air* again, the mercury reaſcends to its former height.—This makes what is uſually called the *Torricellian experiment*.

To ſay no more, we can actually weigh *air*; for a veſſel, full even of common *air* is found, by a very nice balance, to weigh more than when the *air* is exhauſted; a quart of *air* weighing about 17 grains; and the effect is proportionably more ſenſible, if the ſame veſſel be weighed full of condenſed *air* in a receiver void of *air*.

The weight of *air* is continually varying, according to the different degree of heat and cold, and the concurrence of other cauſes. Ricciolus eſtimates its weight to that of water, to be as 1 to 1000; Merſennus as 1 to 1300, or 1 to 1356; Lana, as 1 to 640; Galileo only makes it as 1 to 400. Mr. Boyle, by a more accurate experiment, found it about London, as 1 to 938; and thinks, all things conſidered, the proportion of 1 to 1000 may be taken as a *medium*; for there is no fixing any preciſe *ratio*, ſince not only the *air*, but the water itſelf, is continually varying. Add, that experiments made in different places neceſſarily vary, on account of the different heights of the places, the ſeaſons of making the experiment, and the different denſities of *air* correſponding to theſe circumſtances. It muſt be added, however, that by experiments made ſince, before the Royal Society, the proportion of *air* to water was, firſt, found as 1 to 840; then, as 1 to 852; and a third time, as 1 to 860. Phil. Tranſ. N° 181.—And laſtly, by a very ſimple and accurate experiment of Mr. Hauksbee, the proportion was ſettled as 1 to 885. Phyſ. Mechan. Exper.—But theſe experiments being all made in the ſummer months, when the barometer was $29\frac{3}{4}$ inches high, Dr. Jurin thinks, that at a *medium* between heat and cold, when the barometer is 30 inches high, the proportion between the two fluids may be taken as 1 to 800; which agrees with the obſervation of the honourable Mr. Cavendiſh, the thermometer being at 50°, and the barometer at $29\frac{3}{4}$ inches Phil. Tranſ. vol. lvi. p. 152.

Air, then, being heavy and fluid, the laws of its gravitation, or preſſure, may be inferred to be the ſame as in other fluids; and conſequently its preſſure muſt be as its perpendicular altitude. This is alſo confirmed by experiment.—For removing the *Torricellian tube* to a more elevated place, where the incumbent column of *air* is ſhorter, a proportionably ſhorter column of mercury is ſuſtained. On this principle depend the ſtructure and office of the BAROMETER.

From hence, alſo, it follows, that the *air*, like all other fluids, muſt preſs equally every way.—This is confirmed by obſerving, that ſoft bodies ſuſtain this preſſure without any change of figure, and brittle bodies, without breaking; though the preſſure upon them be equal to that of a column of mercury thirty inches high, or a column of water of thirty-two feet. It is obvious, that no other cauſe can preſerve ſuch bodies unchanged, but the equable preſſure on all ſides, which reſiſts as much as it is reſiſted. And hence, upon removing or diminiſhing the preſſure on one ſide only, the effect of the preſſure is ſoon perceived on the other. For the quantity and effect of this preſſure of the atmoſphere on the human body, and on the ſurface of the earth, ſee ATMOSPHERE.

From the *gravity* of the *air*, conſidered in connection with its *fluidity*, ſeveral of its uſes and effects are deducible.

1. By means of its *weight*, &c. it cloſely inveſts the earth, with all the bodies upon it; and conſtringes and binds them down with a force amounting, according to the computation of M. Paſchal, to 2232 pounds weight upon every ſquare foot, or upwards, of 15 pounds upon every inch ſquare. Hence it prevents, e. gr. the arterial veſſels of plants and animals from being too much diſtended by the impetus of the circulating juices, or by the elaſtic force of the *air* ſo plentifully contained in the blood.—Thus, we ſee, in the operation of cupping, that, upon a diminution of the preſſure of the *air*, the parts of the body grow tumid; which neceſſarily alters the manner of the circulation through the capillaries, &c.

The ſame cauſe hinders the juices from ouſing and eſcaping through the pores of their containing veſſels: this is experienced by ſuch as travel up high mountains, who, in proportion as they aſcend, find themſelves more and more relaxed; and at length become ſubject to a ſpitting of blood, and other hæmorrhages; becauſe the *air* doth not ſufficiently conſtringe the veſſels of the lungs. Similar effects are obſerved in animals that are incloſed under the receiver of the *air-pump*, who, as the *air* is taken from them, pant, ſwell, vomit, and diſcharge their urine and excrements. See VACUUM.

2. The *weight* of the *air* promotes the mixture of contiguous fluid bodies. Hence many liquids, as oils and ſalts, which readily and ſpontaneouſly mix in *air*, remain, on the removal of it, in a ſtate of ſeparation.

3. This *gravity* of *air* does in ſome caſes determine the action of one body upon another.

And, 4. to the ſame principle are chiefly owing our winds, which are only *air* put in motion by ſome alteration in its *equilibrium*.

III. *Elaſticity*—or a power of yielding to an impreſſion by contracting its dimenſions; and, upon removing or diminiſhing the impreſſive cauſe of returning to its former ſpace or figure. This *elaſtic* force has been long accounted the diſtinguiſhing property of *air*; the other properties hitherto enumerated being common to it with other fluids; though from late experiments it appears more than probable, that the capacity of being compreſſed and expanded is not peculiar to *air*. See WATER and COMPRESSION.

This property of *air* was firſt aſcertained by ſome experiments of lord Bacon, who, upon this principle, conſtructed his *vitrum calendare*, the firſt thermometer. Bacon. Nov. Organ. lib. ii. aph. 13.

Of this power we have numerous proofs.—Thus, a blown bladder being ſqueezed in the hand, we find the included *air* ſenſibly reſiſt; ſo that upon ceaſing to compreſs, the cavities or impreſſions, made in its ſurface, are readily expanded again, and filled up.

On this property of *elaſticity*, the ſtructure and office of the *air*-pump depend.

Every particle of *air* always exerts this *niſus*, or endeavour to expand, and thus ſtrives againſt an equal endeavour of the ambient particles; whoſe reſiſtance, happening by any means to be weakened, it immediately diffuſes into an immenſe extent.—Hence it is, that thin glaſs bubbles, or bladders, filled with *air*, and exactly cloſed, being included in the exhauſted receiver of an *air*-pump, burſt, by the force of the included *air*. So a bladder quite flaccid, containing only the ſmalleſt quantity of *air*, ſwells in the receiver, and appears quite full. The ſame effect is alſo found, by carrying the flaccid bladder to the top of an high mountain.

It has been queſtioned among philoſophers, whether this *elaſtic* power of the *air* is capable of being deſtroyed or diminiſhed. Mr. Boyle made ſeveral experiments, with a view to diſcover, how long *air*, brought to the greateſt degree of expanſion to which he could reduce it in his *air*-pump, would retain its ſpring; and could never obſerve any ſenſible diminution. Deſaguliers found that *air*, after having been incloſed for half a year in a wind-gun, had loſt none of its *elaſticity*; and Roberval, after preſerving it in the ſame manner for ſixteen years, obſerved, that its expanſive projectile force was the ſame, as if it had been recently condenſed. Nevertheleſs, Mr. Hauksbee concludes, from a later experiment, that the ſpring of the *air* may be ſo diſturbed by a violent preſſure, as to require ſome time to return to its natural tone. Dr. Hales inferred, from a number of experiments, that the *elaſticity* of the *air* is capable of being impaired and diminiſhed by a variety of cauſes. See Air, *fixed*.

The weight or preſſure of the *air*, it is obvious, has no dependence on its *elaſticity*; but would be the ſame, whether the *air* had ſuch a property or not.—But the *air*, being *elaſtic*, is neceſſarily affected by the preſſure, which reduces it into ſuch a ſpace, as that the *elaſticity* which re-acts againſt the compreſſing weight, is equal to that weight.

In effect, the *law* of this *elaſticity* is, that it increaſes as the denſity of the *air* increaſes; and the denſity increaſes, as the force increaſes by which it is preſſed. Now, there muſt neceſſarily be a balance between the action and re-action; i. e. the *gravity* of the *air*, which tends to compreſs it, and the *elaſticity* of the *air*, which endeavours to expand it, muſt be equal.

Hence, the *elaſticity* increaſing, or diminiſhing, univerſally, as the denſity increaſes, or diminiſhes, i. e. as the diſtance between the particles diminiſhes, or increaſes, it is no matter whether the *air* be compreſſed, and retained in ſuch ſpace, by the weight of the atmoſphere, or by any another means; it muſt endeavour, in either caſe, to expand with the ſame force.—And hence, if *air* near the earth be pent up in a veſſel, ſo as to cut off all communication with the external *air*, the preſſure of the incloſed *air* will be equal to the weight of the *atmoſphere*. Accordingly, we find *mercury* ſuſtained to the ſame height, by the *elaſtic* force of *air* incloſed in a glaſs veſſel, as by the whole *atmoſpherical* preſſure.

On the ſame principle *air* may be artificially condenſed; and hence the ſtructure of the WIND-*gun*.

The utmoſt limits to which *air*, of the denſity which it poſſeſſes at the ſurface of the earth, is capable of being compreſſed, have not been aſcertained. Mr. Boyle made it thirteen times more denſe; Dr. Halley ſays that he has ſeen it compreſſed ſo as to be 60 times denſer than in its natural ſtate, which is farther confirmed by M. Papin, and M. Huygens; Dr. Hales, by means of a preſs, condenſed it 38 times; and by forcing water in an iron ball or globe, into 1551 times leſs ſpace than it naturally occupies.

However Dr. Halley has aſſerted, in the Philoſophical Tranſactions, Abr. vol. ii. p. 17. that from the experiments made at London, and by the Academy del Cimento at Florence, it might be ſafely concluded, that no force whatever is able to reduce *air* into 800 times leſs ſpace than that which it naturally poſſeſſes on the ſurface of our earth. In anſwer to which, M. Amontons, in the Memoirs of the French Academy, maintains, that there is no fixing any bounds to its condenſation; that greater and greater weights will ſtill reduce it into leſs and leſs compaſs; that it is only *elaſtic* in virtue of the fire which it contains; and that as it is impoſſible ever abſolutely to drive all the fire out of it, it is impoſſible ever to make the utmoſt condenſation.

The dilatation of the *air*, by virtue of its *elaſtic* force, is found to be very ſurpriſing; and yet Dr. Wallis ſuggeſts, that we are far from knowing the utmoſt of which it is capable. In ſeveral experiments made by Mr. Boyle, it dilated firſt into 9 times its former ſpace; then into 31 times; then into 60; then into 150. Afterwards, it was brought to dilate into 8000 times its ſpace; then into 10000, and even at laſt into 13679 times its ſpace; and this altogether by its own expanſive force, without the help of fire.

On this depend the ſtructure and uſe of the MANOMETER.

Hence, it appears, that the *air* we breathe near the ſurface of the earth, is compreſſed by its own weight into at leaſt the 13679th part of the ſpace it would poſſeſs *in vacuo*.—But if the ſame *air* be condenſed by art, the ſpace it will take up when moſt dilated, to that it poſſeſſes when condenſed, will be, according to the ſame author's experiments, as 550000 to 1.

We hence ſee how wild and erroneous the obſervation of Ariſtotle was, that *air*, rendered ten times rarer than before, changes its nature, and becomes fire.

M. Amontons, and others, we have already obſerved, attribute the rarefaction of the *air* wholly to the fire contained in it; and therefore, by increaſing the degree of heat, the degree of rarefaction may be carried ſtill farther than its ſpontaneous dilatation. *Air* is expanded $\frac{1}{3}$ of its bulk by boiling water. Hiſt. Acad. Sc. 1699.

Dr. Hales found that the *air* in a retort, when the bottom of the veſſel was juſt beginning to be red-hot, was expanded through twice its former ſpace, and in a white, or almoſt melting heat, it occupied thrice its former ſpace; but Mr. Robins found, that *air* was expanded by the heat of iron, juſt beginning to be white, to four times its former bulk.

On this principle depend the ſtructure and office of the THERMOMETER.

M. Amontons firſt diſcovered that *air* will expand, in proportion to its denſity, with the ſame degree of heat. On this foundation, the ingenious author has a diſcourſe, to prove 'that the ſpring and weight of the *air*, 'with a moderate degree of warmth, may enable it to 'produce even earthquakes, and other of the moſt vehement commotions of nature.'

According to the experiments of this author, and M. de la Hire, a column of *air* on the ſurface of the earth, 36 fathoms high, is equal in weight to three lines depth of mercury; and it is found, that equal quantities of *air* poſſeſs ſpaces reciprocally proportional to the weights with which they are preſſed: the weight of the *air*, therefore, which would fill the whole ſpace poſſeſſed by the terreſtrial globe, would be equal to a cylinder of mercury, whoſe baſe is equal to the ſurface of the earth, and its height containing as many times three lines, as the atmoſpherical ſpace contains orbs equal in weight to 36 fathoms of that wherein the experiment was made.—Hence, taking the denſeſt of all bodies, e. gr. gold, whoſe gravity is about 14630 times greater than that of *air* in our orb, it is eaſy to compute, that this *air* would be reduced to the ſame denſity as gold, by the preſſure of a column of mercury 14630 times 28 inches high, i. e. 409640 inches: ſince the bulks of *air*, in that caſe, would be in the reciprocal ratio of the weights by which they are preſſed. Theſe 409640 inches, therefore, expreſs the height at which the barometer muſt ſtand, where the *air* would be as heavy as gold, and the number $2\frac{51632}{409640}$ lines, the thickneſs to which our column of 36 fathoms of *air* would be reduced in the ſame place. Now, we know, that 43528 fathoms, which is the depth, where the above preſſure, and conſequent reduction take place, are only the 74th part of the ſemidiameter of the earth; and therefore, beyond that depth, whatever matter exiſts, it muſt be heavier than gold. It is not improbable, therefore, that the remaining ſphere of 6451538 fathoms diameter may be full of denſe *air*, heavier, by many degrees, than the heavieſt bodies which we know. Hence, again, as it is proved, the more *air* is compreſſed, the more does the ſame degree of fire increaſe the force of its ſpring, and render it capable of a proportionably greater effect; we may infer, that a degree of heat, which in our orb can only produce a moderate effect, may have a very violent one in ſuch lower orb; and that, as there may be many degrees of heat in nature, beyond that of boiling water, it is probable there may be ſome, whoſe violence, thus aſſiſted by the weight of the *air*, may be ſufficient to tear aſunder the ſolid globe. Mem. de l'Acad. An. 1703. For the true cauſe of earthquakes, ſee EARTHQUAKES.

This *elaſtic* property of *air* is ſuppoſed by many philoſophers to depend on the figure of its corpuſcles, which they ſuppoſe to be ramous: ſome maintain that they are ſo many minute *flocculi*, reſembling fleeces of wool: others conceive them rolled up like hoops, and curled like wires, or ſhavings of wood, or coiled like the ſprings of watches, and endeavouring to reſtore themſelves in virtue of their texture: ſo that to produce *air*, muſt be to produce ſuch a figure and diſpoſition of parts; and thoſe bodies only are proper ſubjects, which are ſuſceptible of ſuch diſpoſition; which fluids, from the ſmoothneſs, roundneſs, and ſlipperineſs of their parts, are not.

But Sir Iſaac Newton (Optics, p. 371.) explains the matter otherwiſe; ſuch a texture he thinks by no means ſufficient to account for that vaſt power of *elaſticity* obſerved in *air*, which is capable of diffuſing into above a million of times more ſpace than it before poſſeſſed.—But, as all bodies are ſhewn to have an attractive and a repelling power; and as both theſe are ſtronger in bodies, the denſer, more compact, and ſolid they are; hence it follows, that when by heat, or any other powerful agent, the attractive force is ſurmounted, and the particles of the body ſeparated ſo far as to be out of the ſphere of attraction; the repelling power commencing thence, makes them recede from each other with a ſtrong force, proportionable to that wherewith they before cohered; and thus they become permanent *air*.—Hence, ſays the ſame author, it is, that as the particles of permanent *air* are groſſer, and riſe from denſer bodies, than thoſe of tranſient *air*, or vapour, true *air* is more ponderous than vapour; and a moiſt atmoſphere is lighter than a dry one.

The *elaſtic* power of the *air*, above illuſtrated and evinced, is the ſecond great ſource of the effects of this important fluid. By means of this, it inſinuates into the pores of bodies, poſſeſſing this prodigious faculty of expanding, which is ſo eaſily excited, that it muſt neceſſarily put the particles of bodies into which it inſinuates itſelf into perpetual oſcillations. Indeed, the degree of heat, and the *air's* gravity and denſity, and conſequently its elaſticity and expanſion, never remaining the ſame for the leaſt ſpace of time, there muſt be an inceſſant vibration, or dilatation and contraction in all bodies.

We obſerve this reciprocation in ſeveral inſtances, particularly in plants, the *tracheæ*, or *air*-veſſels, of which do the office of lungs; for the contained *air* alternately expanding and contracting, as the heat increaſes or diminiſhes, by turns preſſes the veſſels, and eaſes them again; and thus promotes a circulation of their juices. See Air-*veſſels*.

Hence, we find, that no vegetation or germination will proceed *in vacuo*. Indeed, beans have been obſerved to grow a little tumid therein; and this has led ſome to attribute that to vegetation, which was really owing to no other cauſe than the dilatation of the *air* within them. The *air* is very inſtrumental in the production and growth of vegetables, not only by invigorating their ſeveral juices, while in an *elaſtic* active ſtate, but, alſo, by greatly contributing in a fixed ſtate to the union and firm connection of their ſeveral conſtituent parts.

From the ſame cauſe it is, that the *air* contained in bubbles of ice, by its continual action, burſts the ice; and thus glaſſes and other veſſels frequently crack, when their contained liquors are frozen. Thus, alſo, entire columns of marble ſometimes cleave in the winter time, from ſome little bubble of included *air's* acquiring an increaſed elaſticity. From the ſame principle ariſe all PUTREFACTION and FERMENTATION; neither of which will proceed, even in the beſt diſpoſed ſubjects, *in vacuo*.

Since we find ſuch great quantities of *elaſtic air*, generated in the ſolution of animal and vegetable ſubſtances, a good deal muſt conſtantly ariſe from the diſſolution of theſe elements in the ſtomach and bowels, which is much promoted by it.

In reality, all natural corruption and alteration ſeem to depend on *air*; and metals, particularly gold, only ſeem to be durable and incorruptible, in virtue of their not being pervious to *air*.

Air, *effects of the different ingredients of it.*—*Air* not only acts by its common properties of *gravity* and *elaſticity*, but there are numerous other effects, ariſing from the peculiar ingredients of which it conſiſts.

Thus, 1. It not only diſſolves and attenuates bodies by its preſſure and attrition, but as a *chaos* containing all kinds of menſtrua, and conſequently poſſeſſing powers for diſſolving all bodies. It is known, that iron and copper readily diſſolve, and become ruſty in *air*, unleſs well defended with oil. Boerhaave aſſures us, that he has ſeen pillars of iron ſo reduced by *air*, that they might be crumbled to duſt between the fingers; and as for copper, it is converted by the *air* into a ſubſtance much like the verdigreaſe produced by vinegar.

Mr. Boyle relates, that in the ſouthern Engliſh colonies the great guns ruſt ſo faſt, that, after lying in the *air* for a few years, large cakes of *crocus martis* may be ſeparated from them.—Acoſta adds, that in Peru the *air* diſſolves lead, and conſiderably increaſes its weight.—Yet gold is generally eſteemed indiſſoluble by *air*; being never found to contract ruſt, though expoſed to it ever ſo long. The reaſon may be, that ſea-ſalt, which is the only menſtruum capable of acting on gold, being very difficult to volatilize, there is but a ſmall proportion of it in the atmoſphere. In the laboratories of chemiſts, where *aqua regia* is prepared, the *air* becoming impregnated with an unuſual quantity of this ſalt, gold contracts a ruſt like other bodies.

Stones alſo undergo the changes incident to metals.—Thus, Purbeck ſtone, of which Saliſbury cathedral conſiſts, is obſerved gradually to become ſofter, and to moulder away in the *air*; and Mr. Boyle gives the ſame account of Blackington ſtone. He adds, that *air* may have a conſiderable operation on vitriol, even when a ſtrong fire could act no farther upon it. And he has found, that the fumes of a corroſive liquor work more ſuddenly and manifeſtly on a certain metal, when ſuſtained in the *air*, than the menſtruum itſelf did, which emitted fumes, on thoſe parts of the metal, which it covered; referring to the effects of the *effluvia* of vinegar on COPPER.

The diſſolving power of *air* is increaſed by heat, and by other cauſes. It combines with water; and, by acceſs of cold, depoſits part of the matter which was kept diſſolved in it, by a greater degree of heat. Hence, the water, by being depoſited and condenſed upon any cold body, ſuch as glaſs, &c. in windows, forms fogs, and becomes viſible. *Air*, likewiſe, by means of its diſſolving power, accelerates EVAPORATION and DISTILLATION.

2. *Air* volatilizes fixed bodies. Thus, ſea-ſalt, being firſt calcined, then fuſed by the fire, and when fuſed expoſed to the *air* to liquify; when liquified ſet to dry, and then fuſed again, repeating the operation, will, by degrees, be almoſt wholly evaporated; nothing but a little earth remaining. Helmont mentions it as an arcanum in chemiſtry, to render fixed ſalt of tartar volatile; but this is eaſily effected by *air* alone: for, if ſome of this ſalt be expoſed to the *air*, in a place replete with acid vapours, the ſalt draws the acid to itſelf, and, when ſaturated with it, is volatile.

3. *Air* alſo fixes volatile bodies. Thus, though ſpirit of nitre, or aqua fortis, readily evaporate by the fire; yet if there be any putrefied urine near the place, the volatile ſpirit will be fixed, and fall down in form of aqua ſecunda.

4. *Air* brings many quieſcent bodies into action; i. e. excites their latent powers.—Thus, if an acid vapour be diffuſed through the *air*, all the bodies of which that is the proper menſtruum, being diſſolved by it, are brought into a ſtate proper for action.

In the various operations of chemiſtry, *air* is a very neceſſary and important agent; the reſult of particular proceſſes depending on its preſence or abſence, on its being open or incloſed. Thus, the parts of animals and vegetables can only be calcined in open *air*; in cloſe veſſels they never become any other than black coals. And theſe operations are affected by the changes to which the *air* is liable. Many inſtances might be adduced to this purpoſe. Let it ſuffice to obſerve, that it is very difficult to procure oil of ſulphur, *per campanam*, in a clear dry atmoſphere; but in a thick moiſt *air* it may be obtained with greater eaſe, and in larger quantities. So pure well-fermented wine, if it be carried to a place where the *air* is repleniſhed with the fumes of new wine, then fermenting, will begin to ferment afreſh.

The changes in the *air* ariſe from various cauſes, and are obſervable, not only in its mechanical properties, ſuch as gravity, denſity, &c. but in the ingredients that compoſe it. Thus, at Faſhlun in Sweden, noted for copper-mines, the mineral exhalations affect the *air* in ſuch a manner, as to diſcolour the ſilver coin in purſes; and the ſame effluvia change the colour of braſs. In Carniola, Campania, &c. where are mines of ſulphur, the *air* ſometimes becomes very unwholeſome, which occaſions frequent epidemic diſeaſes, &c.

The effluvia of animals alſo have their effect in varying the *air*; as is evident in contagious diſeaſes, plagues, murrains, and other mortalities, which are ſpread by an infected *air*.

The ſudden and fatal effects of noxious vapours has generally been ſuppoſed to be principally, if not wholly, owing to the loſs and waſte of the *vivifying ſpirit of air*. But Dr. Hales attributes this effect to the loſs of a conſiderable part of the *air's elaſticity*, and to the groſſneſs and denſity of the vapours with which the *air* is charged. He found, by an experiment made on himſelf, that the lungs will not riſe and dilate as uſual, when they draw in ſuch noxious *air*, the *elaſticity* of which has been conſiderably diminiſhed. For having made a bladder very ſupple by wetting it, and then cutting off ſo much of the neck, as would make a hole wide enough to admit the biggeſt end of a large foſſet, to which the bladder was bound; and then having blown the bladder, he put the ſmall end of the foſſet into his mouth, and, at the ſame time, pinched his noſtrils ſo cloſe, that no *air* might paſs that way, and he could only breathe to and fro the *air* contained in the bladder, which, with the foſſet, contained ſeventy-four cubic inches. In leſs than half a minute, he found a conſiderable difficulty in breathing; and, at the end of a minute, the bladder was become ſo flaccid, that he could not blow it above half full, with the greateſt expiration which he could make; and, at the ſame time, he could plainly perceive that his lungs were much fallen, in the ſame manner as when we breathe out of them all the *air* we can at once. Hence he concluded, that a conſiderable quantity of the *elaſticity* of the *air* was deſtroyed; and that when the ſuffocating quality of the *air* was the greateſt, it was with much difficulty that he could dilate his lungs in a very ſmall degree.

From this, and ſeveral other experiments, he inferred, that the life of animals is preſerved rather by the elaſtic force of the *air* acting on their lungs, than by its vivifying ſpirit; and that candles and matches ceaſe to burn, after having been confined in a ſmall quantity of *air*; not becauſe they have rendered the *air* effete, by conſuming its vivifying ſpirit, but becauſe they have diſcharged a great quantity of acid fuliginous vapours, which partly deſtroy its elaſticity, and retard the elaſtic motion of the remainder. He likewiſe found, that *air*, which paſſed through clothes dipped with vinegar, could be breathed to and fro as long again, as the like quantity of *air*, which was not thus purified; ſo that ſprinkling the decks of ſhips with vinegar may refreſh the *air*; and this is confirmed by experience. But where the corruption of the *air* is much greater, as in cloſe priſons, &c. nothing can be an adequate and effectual remedy but a VENTILATOR. He obſerved likewiſe, that *air* is not diſqualified for reſpiration, merely by the additional moiſture which it receives, but by ſome bad quality in that moiſture. See his Statical Eſſays, vol. ii.

Dr. Prieſtley obſerves, that, when animals die upon being put into *air*, in which other animals have died, after breathing in it as long as they could, it is plain, that the cauſe of their death is not the want of any *pabulum vitæ*, which has been ſuppoſed to be contained in the *air*; but becauſe the *air* is impregnated with ſomething ſtimulating to their lungs; for they almoſt always die in convulſions, and are ſometimes affected ſo ſuddenly, that they are irrecoverable after a ſingle inſpiration. And he has found the ſame effect from any other kind of noxious *air*. He concludes, from ſubſequent experiments, that the *air* becomes phlogiſticated in its paſſage through the lungs, by means of the blood. Experiments and Obſervations on Air, vol. i. p. 71. vol. ii. vol. iii. p. 55. See AIR *phlogiſticated*, BLOOD, and RESPIRATION.

Vegetables likewiſe produce a change in the ſtate of the *air*. Thus, when a great part of the clove-trees, which grew ſo plentifully in the iſland of Ternate, was felled at the ſolicitation of the Dutch, in order to heighten the value of that fruit, ſuch a change enſued in the *air*, as ſhewed the ſalutary effect of the effluvia, or rather of the vegetation, of the clove-trees, and their bloſſoms; the whole iſland, ſoon after they were cut down, being exceeding ſickly. See AIR *phlogiſticated*.

The *air* is alſo liable to alterations from the ſeaſon of the year. Thus, few ſubterraneous effluvia are emitted in the winter; becauſe the pores are locked up by the froſt, or covered by ſnow; the ſubterraneous heat being at work, and preparing a fund to be diſcharged in the enſuing ſpring. Again, from the winter ſolſtice to the ſummer ſolſtice, the ſun's rays become more and more perpendicular, and conſequently their impulſe on the earth's ſurface more powerful; ſo that the glebe, or ſoil, is more and more relaxed, ſoftened and putrefied, till he arrives at the tropic: where, with the force of a chemical agent, he reſolves the ſuperficial parts of the earth into their conſtituent principles, water, oil, ſalt, &c. which are all ſwept away into the atmoſphere.

The height and depth of the *air* produce a farther alteration; the exhalations not riſing high enough, in any great quantity, to aſcend above the tops of high mountains. Nor muſt drought and moiſture be denied their ſhare, in varying the ſtate of the atmoſphere: in Guinea, the heat, with the moiſture, conduces ſo much to putrefaction, that the pureſt white ſugars are often full of maggots; and their drugs ſoon loſe their virtue, and many of them grow verminous: it is added, that in the iſland of St. Jago, they are obliged to expoſe their ſweetmeats daily to the ſun, in order to exhale the moiſture contracted in the night, which would otherwiſe occaſion them to putrefy.

On this principle depend the ſtructure and uſe of the HYGROMETER.

For the refracting power of *air*, ſee REFRACTION.

After all, ſome of our more curious and penetrating naturaliſts have obſerved certain effects of *air*, which do not appear to follow from any of the properties, or materials, above recited. In this view, Mr. Boyle has compoſed a treatiſe of Suſpicions about ſome unknown Properties of the Air. The phænomena of fire and flame *in vacuo*, ſeem, according to him, to argue ſome unknown vital ſubſtance diffuſed through the *air*, on account of which that fluid becomes ſo neceſſary to the ſubſiſtence of flame. Buffon ſuppoſes, that *air* is neceſſary to the ſubſiſtence of fire, becauſe it is moſt adapted to acquire that expanſive motion, which is the principal property of fire. On this account fire combines with *air*, in preference to every other ſubſtance, and in a more intimate manner, as being of a nature moſt nearly approaching to its own; and therefore *air* is the proper aliment and moſt powerful aſſiſtant of fire. Hiſt. Nat. Supp. vol. i.

But Dr. Prieſtley has deduced, from experiments, a much more rational explication of this matter. The *air* is a menſtruum for the phlogiſton emitted by burning bodies; which muſt ceaſe to burn, when that menſtruum is ſaturated with it. And he accounts in the ſame manner for the ſuffocation of animals in a confined ſpace. When the phlogiſton, emitted by burning bodies, and breathing animals, can no longer be abſorbed by the ambient *air*, both life and flame are extinguiſhed. Exp. and Obſ. &c. vol. i.

Dr. Prieſtley, improving upon the experiments and inveſtigations of Boyle, Hales, Brownrigg, Black, Macbride, Cavendiſh, and others, has diſcovered many ſpecies of *air*, extracted by various proceſſes from different kinds of ſubſtances; of which a ſummary account will be given in the following articles. See alſo his curious and invaluable Experiments and Obſervations on different Kinds of Air, in three volumes. And for a compendium of the hiſtory of diſcoveries on this ſubject, Lavoiſier's Eſſays, Phyſical and Chemical, vol. i. See alſo AIR *fixed*.

AIR, *acid*, is a ſpecies of factitious *air*, which was firſt diſcovered by Mr. Cavendiſh; but its nature and properties were afterwards more fully inveſtigated by Dr. Prieſtley. It was firſt produced from copper, by means of ſpirit of ſalt; but Dr. Prieſtley expelled it by heat from ſpirit of ſalt only, without any metallic ſolution; and he afterwards procured it by the ſame kind of proceſs, whereby ſpirit of ſalt is made. For this purpoſe he filled a ſmall phial with common ſalt, and poured upon it a ſmall quantity of concentrated oil of vitriol; the fumes diſcharged in this proceſs were received in a veſſel previouſly filled with quickſilver, and ſtanding in a baſon of quickſilver, and appeared in the form of a perfectly tranſparent *air*; of ſuch a nature, that it is a permanent elaſtic ſubſtance, not liable to be condenſed by cold, like other vapours. This acid vapour extinguiſhes flame, which appears, before the candle goes out, and when it is firſt lighted again, of a beautifully green, or rather light-blue colour; and it is heavier than common *air*, though in what proportion is not yet determined. Water imbibes this *air*, changes its aerial or elaſtic form, acquires, when thus impregnated, a very acid taſte, becomes a very active ſolvent of iron, and generates *inflammable air*. Two grains and a half of rain-water will abſorb no leſs than three ounce meaſures of this fluid, and thus ſaturated, will weigh twice as much as it did before. This *acid air* has a very ſtrong affinity with phlogiſton, and attracts it from other ſubſtances; ſuch as inflammable ſpirits, expreſſed oils, oil of turpentine, charcoal, phoſphorus, bees-wax, and even ſulphur; and it is hereby converted into *inflammable air*.

The ſpecies of *air* now deſcribed may be called *marine acid air*, in order to diſtinguiſh it from the *vitriolic acid air*, which is obtained, by putting a ſmall quantity of common oil to oil of vitriol, and gently heating the phial which contains them. When this kind of *air* is generated in great plenty, the top of the phial is filled with white vapours; it is equally tranſparent with the former, and has no greater affinity with quickſilver. It is as readily abſorbed by water as the other, and by its union forms the volatile or ſulphureous *acid* of vitriol. It has the ſame property of extinguiſhing flame, and is heavier than common *air*. Ice is inſtantly diſſolved in both of them. The *alkaline air* being mixed with this kind of *acid* vapour, produced a beautiful white cloud, and evidently appeared to be the lighter of the two: the ſubſtance formed by this combination was the vitriolic *ſal ammoniac*, which is fixed or volatile, upon being expoſed to the common *air*, according to the proportion of the two kinds of *air* in the compound. This ſpecies of *air* differs from the *marine acid air*, in not diſſolving or corroding iron, though it becomes, when combined with water, a very powerful menſtruum for this metal.

Another kind of *acid air* is the *vegetable*, which Dr. Prieſtley expelled by heat from exceedingly ſtrong concentrated *acid* of vinegar. A quantity of olive oil imbibed ten times its bulk of this *air*, and in conſequence of the union became colourleſs like water, and leſs viſcid than before. In this reſpect it differs from the other kinds of *acid air*, which deepen the colour of every ſpecies of oil, making them brown, and at the ſame time viſcid, almoſt to the conſiſtence of reſin. The *vitriolic* and *vegetable acid air* very much reſemble one another; and the only real difference, beſide the ſmell, which is very remarkable, is that juſt mentioned.

In nature and properties the *fluor air acid* very much reſembles the *vitriolic acid air*. It is ſo called from the name of the ſubſtance, from which it is extracted. See Acid *fluor*.

Dr. Prieſtley procured this *air*, by pouring oil of vitriol upon the *fluor*, contained in a ſmall phial, fitted with a ground ſtopple and tube; and firſt without heat, and then by applying a very ſmall degree of it, *air* was produced in great plenty, perfectly tranſparent, and confined by quickſilver, like the other kinds already deſcribed. It formed a white cloud by iſſuing from the tube, and attaching itſelf to the water that floats in the atmoſphere, and yielded a very pungent ſmell. The ſurface of water, as ſoon as it came into contact with this *air*, was rendered white and opake, by a ſtrong film or incruſtation, which made a ſeparation between the *air* above, and the water below it. When this cruſt is broken, and the water riſes ſo as to form a new ſurface, a freſh incruſtation takes place; and thus ſucceſſive layers will be produced, till every particle of *air* is united to the water. Theſe films, being collected and dried, yield a white powdery ſubſtance, uſually a little acid to the taſte, but when waſhed in much pure water, perfectly inſipid. Dr. Prieſtley mentions another method, no leſs amuſing in its effect of combining this *air* with water. The incruſtation is ſo quick, that in leſs than an hour, two or three ounce meaſures of water have been converted into this ſolid maſs; and in this way a very ſtrong acid liquor may be obtained. Theſe appearances are explained, by ſuppoſing that the *vitriolic acid*, in uniting with the ſpar, is in part volatilized, by means of ſome phlogiſton contained in it, ſo as to form a *vitriolic acid air*; and that there is alſo combined with this *air* a portion of the ſolid earthy part of the ſpar, which continues in a ſtate of ſolution, till, coming into contact with the water, the fluid unites with the acid, and the earth is precipitated.

The effects of this vapour on fluids and ſolids are much the ſame with thoſe of the *vitriolic acid air*. There are two peculiar properties in which theſe two vapours agree; they both contain phlogiſton, and in ſuch a manner as to communicate it to the common *air* with which they are mixed, and to render it noxious. The electric ſpark will alſo by a ſingle exploſion incruſt the inſide ſurface of a tube containing this kind of *air* with a deep-brown or black matter, and it will at every ſtroke make the glaſs more and more opake. Some reflection on the nature of the ſpar which yielded this vapour, led Dr. Prieſtley to try, whether the ſame kind might not be procured from Mr. Canton's PHOSPHORUS, by means of oil of vitriol; and the trial ſucceeded.

Air, *alkaline*, is a ſpecies of *factitious air* extracted by heat from volatile ſpirit of ſal ammoniac. This vapour, received into a veſſel of quickſilver, ſtanding in a baſon of the ſame fluid, became a tranſparent and permanent *air*, not at all condenſed by cold. But Dr. Prieſtley ſoon found, that the moſt expeditious method of procuring it was from a mixture of $\frac{1}{4}$ of powdered ſal ammoniac, and $\frac{3}{4}$ of ſlaked lime. Large quantities of this vapour are readily imbibed and condenſed by water; and convert it into a volatile ſpirit of ſal ammoniac, ſtronger, Dr. Prieſtley ſays, than he had ever ſeen, and than any, he apprehends, which can be made in the common way. The *alkaline air*, upon being mixed with nitrous *air*, occaſioned a whitiſh cloud, without producing any neutral ſalt; when water was admitted to this mixture, the *alkaline air* was abſorbed, and the *nitrous air* remained, poſſeſſed of its peculiar properties. Alum undergoes a remarkable change by the action of this *air*. Its outward ſize and ſhape remain the ſame, but the internal ſtructure is quite changed; being hereby rendered opake, beautifully white, and in all reſpects, to appearance, like alum which had been roaſted. The *alkaline air* is ſlightly inflammable; it diſſolves ice as faſt as a hot fire can do it.

Air, *artificial* or *factitious*, was uſed by Mr. Boyle to expreſs what the more ancient chemiſts denominated *gas*, or *ſpiritus ſilveſtris*, and which is now more generally known by the name of *fixed air*. It comprehends all thoſe kinds of *air*, which are originally parts of ſome ſolid ſubſtance, and exiſt in an unelaſtic ſtate; but which, by various analytical proceſſes, are capable of being diſengaged, and recovering their elaſticity.

Air, *atmoſpherical* or *common*, conſiſts, according to Dr. Prieſtley, of the nitrous acid and earth, combined with ſo much phlogiſton as is neceſſary to its elaſticity, and likewiſe ſo much more as is requiſite to bring it from a ſtate of perfect purity, to the mean condition in which we find it. See Air and Atmosphere.

Air, *dephlogiſticated*, is a very extraordinary ſpecies of *air* lately diſcovered by Dr. Prieſtley, to which he has given this name, becauſe it is much purer than any other kind of *air*, and of courſe contains leſs phlogiſton; which, on his hypotheſis, verified by a variety of experiments, renders *air* noxious. This *air* was firſt extracted from *mercurius calcinatus per ſe*, by means of a burning lens; and, in a ſeries of ſubſequent experiments, it was procured from a variety of other ſubſtances, ſuch as red precipitate, minium, and ſeveral other preparations of lead, and from all kinds of earths mixed with ſpirit of nitre; the advantage being on the ſide of the metallic and calcareous earths. This pure *air* was alſo extracted from other ſubſtances, beſide *mercurius calcinatus* and red lead, without the addition of the ſpirit of nitre; viz. from ſedative ſalt, and Roman vitriol, ſlightly calcined. But the pureſt which Dr. Prieſtley ever obtained was from flowers of zinc, moiſtened with ſpirit of nitre, and put into a glaſs phial with a ground ſtopple and tube. This *air* is not imbibed by water, and appears to be a little heavier than common *air*. But the moſt remarkable property belonging to it is its ſuperior purity, which Dr. Prieſtley has evinced by a variety of indubitable teſts. A candle let down into a jar filled with this *air* burns with a very vigorous flame, and the heat produced by it in theſe circumſtances is remarkably great. The experiment is moſt pleaſing, when the *air* is only a little more than twice as good as common *air*; for when it is more highly dephlogiſticated, the candle burns with a crackling noiſe, as if it was full of ſome combuſtible matter. A mouſe was put into a glaſs veſſel, containing two ounce meaſures of the *air*, extracted from *mercurius calcinatis*, and, though it would not have lived in common *air* longer than about a quarter of an hour, it lived in this *air* a full half hour; and when it was taken out ſeemingly dead, it was only chilled by the extreme cold; for upon being held up to the fire it revived, and ſeemed to have received no injury. Another mouſe, in a ſubſequent trial, lived three quarters of an hour in leſs than the former quantity. But the moſt elegant and accurate teſt of the purity of any kind of *air*, is the *nitrous air*. Dr. Prieſtley put one meaſure of *nitrous air* to two meaſures of the *dephlogiſticated air* laſt mentioned; and he obſerved a greater diminution than common *air* would have received by the ſame treatment. A ſecond meaſure of *nitrous air* reduced it to two thirds of its original quantity, and a third meaſure to one half; adding another half meaſure, it was ſtill more diminiſhed, but not much; and another half meaſure made it more than half of its original quantity: ſo that, in this caſe, two meaſures of this *air* took more than two meaſures of *nitrous air*, and yet remained leſs than half of what it was. Five meaſures brought it pretty exactly to its original dimenſions. Now as common *air* takes about one half of its bulk of *nitrous air*, before it begins to receive any addition to its dimenſions from more *nitrous air*, and this *air* took more than four half meaſures before it ceaſed to be diminiſhed by more *nitrous air*, and even five half-meaſures made no addition to its original dimenſions, Dr. Prieſtley concludes, that it was between four and five times as good as common *air*. This *air* then being capable of taking more phlogiſton from *nitrous air*, it muſt originally contain leſs of this principle.

Dr. Prieſtley, in ſome farther proceſſes, obtained *air* between five and ſix times as good as the beſt common *air* he ever met with. Many experiments were made upon various ſubſtances, and upon red lead in particular, in order to determine by what means this kind of *air* came to be ſo pure; and Dr. Prieſtley was convinced in the reſult, that it was the nitrous acid which the red lead acquired from the *air*, that enabled it to yield this *dephlogiſticated air*; and he obſerves, that the red colour of *mercurius calcinatus*, and red lead, favours the ſuppoſition of their having extracted ſpirit of nitre from the *air*. He farther remarks, that *dephlogiſticated air* is purified by ſtanding in water; owing, probably, to its depoſiting more *fixed air* in thoſe circumſtances. He adds, that ſome mechanical contrivance may perhaps hereafter be thought of for conveying this pure *air* into rooms, for the purpoſe of purifying the noxious *air* contained in them. A mixture of one third of highly *dephlogiſticated air*, and the reſt *inflammable air*, in a phial, containing about an ounce meaſure and a half, will cauſe a report as loud as that of a common piſtol; and judging by the ear, not leſs than forty or fifty times as loud as with common *air*, of which there muſt be about two thirds in quantity, to make *inflammable air* explode to the greateſt advantage. And it may be inferred, that, if it were poſſible to fire gun-powder in this kind of *air*, a tenth part of the charge would in all caſes ſuffice. The force of

fire

fire would be very conſiderably augmented, by blowing it with *dephlogiſticated air*, inſtead of common *air*; and the prodigious heat which this *air* affords, may be uſefully applied by chemiſts in a variety of ways. It would likewiſe be very ſalutary as a medicine, in certain morbid caſes, when the common *air* would not be ſufficient to carry off the phlogiſtic putrid effluvium faſt enough. But in a healthful ſtate of the body, it might not be ſo proper; for, as a candle burns out much faſter in this than in common *air*, ſo we might *live out too faſt*, ſays Dr. Prieſtley, and the animal powers be too ſoon exhauſted in this pure kind of *air*. 'Who can tell, he adds, but that in time this pure *air* may become a faſhionable article in luxury. Hitherto only two mice and myſelf have had the privilege of breathing it.'

Air, *fixable* or *fixed*, may, in the largeſt ſenſe of the term, include all the different kinds of *air*, which are the ſubject of theſe articles; ſince they are all capable of being imbibed by ſome ſubſtance or other, and conſequently of being *fixed* in them, after they have been in an elaſtic ſtate. This kind of *air*, by being ſpecifically heavier than common *air*, is found at the bottom of pits; it extinguiſhes candles, &c. and kills animals that breathe it; and on this account has been called the *choke-damp*. However, the above appellation was firſt uſed by Dr. Black, profeſſor of chemiſtry at Edinburgh, to expreſs that particular ſpecies of *factitious air*, which adheres to all calcareous earths, magneſia and alkaline ſalts, with different degrees of force; and which may be ſeparated from theſe ſubſtances, and again combined with them.

This elaſtic matter was but very imperfectly known to the ancient chemiſts before the time of Paracelſus. It was called by them *ſpiritus ſilveſtris*. Paracelſus, and his cotemporaries, imagined, that this fluid is the ſame with the *air* which we breathe. Van Helmont, the diſciple of Paracelſus, made it the ſubject of particular inquiry, and gave it the name of *gas*. This ſubſtance, according to him, is diſcharged from fermenting bodies, and may be diſengaged from ſal ammoniac, and from vegetables. It is this likewiſe which eſcapes from ignited gunpowder and charcoal. To the effluvia of this *gas*, he alſo aſcribes the fatal effects of the Grotto del Cani in Naples, the ſuffocation of workmen in the mines, the accidents occaſioned by the vapour of charcoal, and that noxious *air* which is found in cellars, where ſpirituous liquors are fermenting. Van Helmont likewiſe obſerved, that a great quantity of this vapour is diſengaged from earths and metallic ſubſtances, by their efferveſcence with acids; and he has applied his theory to the explication of ſeveral phænomena in the animal œconomy. He ſuppoſed, that the *gas* was different from the *air* which we breathe, and that it has a great affinity with water; and he appears to have been acquainted with ſeveral properties of this fluid, which are now more generally known and underſtood. Tractatus de Flatibus; and, Complexionum atque Mixtionum Elementalium Figmentum.

Mr. Boyle repeated Van Helmont's experiments *in vacuo*, in condenſed and in open *air*; and he gave the *gas* of the foreign chemiſts the new name of *artificial* or *factitious air*. Both Van Helmont and Mr. Boyle obſerved, that this ſpecies of *air* eſſentially differs from that of the atmoſphere; as the latter is neceſſary to the exiſtence of animals, whilſt the other is noxious and fatal. Mr. Boyle demonſtrated, that artificial *air*, ſeparated from vegetable ſubſtances, is not always the ſame; and that the *air* which is produced by the exploſion of gunpowder, exhibits phænomena peculiar to itſelf; and he farther obſerved, that ſome bodies, ſuch as ſulphur, amber, camphor, &c. diminiſh the bulk of *air*, in which they burn. Boyle's Works, vol. iv.

Dr. Hales purſued this inquiry with great induſtry, and with very conſiderable ſucceſs. He not only ſhewed, that *air* entered into the compoſition of moſt bodies, animal, vegetable, and mineral, but eſtimated the proportion which it bore to the reſt of the compound. He obſerved, that certain ſubſtances and operations generate *air*, and others abſorb it; imagining, however, that the diminution of *air* was ſimply a deduction from the common maſs, without inducing any alteration in the properties of the remainder. Dr. Hales likewiſe examined the mineral waters, and particularly thoſe of Pyrmont; and to the great quantity of *air* which they contain, he attributed the ſpirit and briſkneſs of thoſe waters. But, though he made many important diſcoveries, ſome of which are recited in the courſe of theſe articles, and for the reſt of which the reader muſt be referred to his works, and particularly to chap. vi. of his Vegetable Statics, he ſtill apprehended, that the *air* ſeparated from bodies, as well as that which had been burned or reſpired from animals, was not different from that of the atmoſphere; and that its particular effects were owing to ſome noxious vapours, whereby its elaſticity was impaired or deſtroyed, foreign to its own nature. He likewiſe attributes the abſorption of this kind of *air* by water, not to the affinity which it bears to water in itſelf conſidered, but to the warmth of the water.

It has already been obſerved, that Dr. Seip was the firſt who diſcovered the impregnation of the mineral waters by the *mephitis* or *fixed air*; and that Dr. Brownrigg farther inveſtigated the nature of this principle which enters into their compoſition, and whence they derive their peculiar taſte and effect. See Acidulæ.

Dr. Black farther inveſtigated the chemical nature and effects of this principle, and explained many phænomena in this part of ſcience, which had been hitherto deemed unaccountable. Such was the efferveſcence of abſorbent earths, and alkaline ſalts, with acids, and the change of the mild calcareous earths into quick-lime, by heat, whereby they become cauſtic, or acquire the property of corroding, and burning animal and vegetable ſubſtances, in conſequence of the expulſion of the *fixed air*, which neutralizes them. And he has alſo informed us, that the lime-ſtone loſes nearly the ſame weight by diſſolution in acids, as by calcination; and that it recovers its former weight, when it has been precipitated in the form of a calcareous earth, or with all its *air*. Eſſ. and Obſ. Phyſ. and Liter. vol. ii.

For an account of the oppoſition which Dr. Black's theory met with in Germany, ſee Acidum *pingue*.

In 1764, Dr. Macbride publiſhed his Experimental Eſſays, containing a variety of curious facts and obſervations relating to the nature and properties of *fixed air*. From him we learn, that a conſiderable quantity of this *air* is diſcharged, not only from efferveſcing ſubſtances, and fermenting vegetables, but likewiſe from all putrefying animal ſubſtances; and to the preſence of this fluid he aſcribes their coheſion and firmneſs. He advances a ſtep farther, and obſerves, that fleſh which has begun to putrefy, by having loſt a portion of the *fixed air*, which entered into its compoſition, may recover its former ſweetneſs, by reſtoring to it the *fixed air*, of which it had been deprived. In the courſe of his experiments he diſcovered, that putrid diſeaſes, and the ſea-ſcurvy, owe their origin to the privation of that certain quantity of *air*, which is neceſſary to a ſtate of ſalubrity; and that the beſt antidote againſt theſe diſeaſes muſt be derived from ſubſtances and preparations capable of furniſhing an abundance of *fixed air*. On theſe principles he recommends the uſe of wort in the ſcurvy. The antiſeptic quality of this fluid was a very important and uſeful diſcovery. Dr. Macbride was led to it by a previous obſervation of Sir John Pringle.

Mr. Cavendiſh made ſeveral valuable additions to the knowledge which had been already gained on this ſubject. An account of his experiments may be found in the Phil. Tranſ. for 1766 and 1767, vol. lvi. and vol. lvii. He has accurately aſcertained the quantity of *fixed air* contained both in fixed and volatile alkali, according to their reſpective weight. He has alſo determined the ſpecific gravity of this fluid, as well as of *inflammable air*; ſhewing that the former is 1½ heavier than common *air*, and the latter ten times lighter. He has likewiſe ſhewn, that *fixed air* may be mixed with water, and that it will abſorb a quantity more than equal to its own bulk; that the quantity imbibed by it is greater as the water is colder, and that it flies off again upon being heated and expoſed to the common *air*. To him we owe the diſcovery, that water acquires from this fluid the power of diſſolving calcareous earths; in conſequence of which Mr. Lane found, that it would diſſolve a conſiderable quantity of iron, and become a ſtrong chalybeat. Phil. Tranſ. for 1769, vol. lix.

The next ſtep in this department of ſcience was the invention of a convenient apparatus for generating *fixed air*, and for impregnating water with it; and this was effected by Dr. Prieſtley in the year 1772, though he had made and uſed artificial waters impregnated by the ſame kind of *air*, ariſing from fermenting wort, as early as 1768. See Pyrmont.

Having brought down the hiſtory of *fixed air* to this period, the curious reader muſt be referred to Dr. Prieſtley's Obſervations, &c. ſo often cited in theſe articles, for an account of his numerous and valuable experiments; obſerving, that he has happily availed himſelf of every fact that had been previouſly diſcovered, and extended our acquaintance with this principle in all its various forms, and in the phænomena that attend it, far more than any of his predeceſſors in theſe inquiries. One obſervation however ſhould be mentioned; viz. that *fixed air* is capable of forming an union with phlogiſton, and in this ſtate it is immiſcible with water; and that it wants only phlogiſton to make it common *air*.

Mr. Bewley has proved, by very ſatisfactory experiments, that *fixed air* is an acid *ſui generis*; and Dr. Prieſtley apprehends,

prehends, that it is a modification of the nitrous acid, containing phlogiſton and earth.

The preceding diſcoveries, and others, the recital of which the nature of this work will not admit, have been already ſucceſsfully applied to medical purpoſes, and promiſe to be of very conſiderable utility. Dr. Percival, Mr. Hey, and others, have made various trials of this new medicine, as *fixed air* may be called, in putrid, and other diſorders, and found it efficacious and uſeful. Notice ſhall be taken of the caſes to which it has been applied, under ſubſequent articles, where it may be properly introduced.

M. Baumé, in his Chemiſtry, condemns the general application of the term *fixed air*; and he thinks that the fluid ſo called ſhould retain the denomination given it by Dr. Hales, viz. *detached* or *elaſtic air*; and that *fixed air* is only common *air*, impregnated with foreign ſubſtances, which it holds in ſolution, and that it ſhould be examined, only with reſpect to the nature and qualities of ſuch ſubſtances.

Air, *inflammable*, is that ſpecies of *air*, which, by being lighter than common *air*, occupies the upper parts of ſubterraneous places, and has been commonly found in mines and coal-pits, where it is called the *fire-damp*; becauſe it is liable to take fire, and to explode like gunpowder. It was little known, otherwiſe than as an object of curioſity, and by the fatal effects which it had often produced, till Mr. Cavendiſh began to make experiments upon it. We learn from him how to produce it in great abundance, by diſſolving zinc, iron, and tin, in the diluted vitriolic acid, or ſpirit of ſea-ſalt. He has ſhewn, that it is eſſentially different from the *mephitic*, or *fixed air*, being only the tenth part of the weight of common *air*; and produced a variety of inflammable mixtures, by combining it with common *air*. Dr. Prieſtley has extracted it from other ſubſtances, animal, vegetable, and mineral; and obſerves, that it emits a very offenſive ſmell, according to the nature of the ſubſtance by which it is generated; and the more violent the efferveſcence producing it, ſo much the more *inflammable* will be the *air*, and the more offenſive the ſmell; and the quantity obtained depends on the degree of heat employed in the proceſs. He ſhews, how this kind of *air* may be mixed with water, and deprived of its inflammability. Diſtilled water imbibed about one fourteenth of its bulk of this *air*, but occaſioned no ſenſible difference of taſte. The electric ſpark, which in *fixed air* is exceedingly white, is of a purple or red colour in *inflammable air*; and Dr. Prieſtley infers from hence, that the *inflammable air* may contain particles which conduct electricity, though very imperfectly. This *air*, he obſerves, conſiſts chiefly, if not wholly, of the union of the vitriolic or marine acid vapour with phlogiſton. Water, in which it is agitated, imbibes as much of the phlogiſton as contributes to make it *inflammable*; and in conſequence of this proceſs it becomes fit for reſpiration; and by a continuance of it, at length extinguiſhes flame. See Damps.

Air, *mephitic*, is applied to *fixed air*, to that which is *inflammable*, and to many other kinds, ſince they are equally noxious when breathed by animals; but it is uſually appropriated to the former ſpecies of *air*. See Air *fixable*.

Air, *nitrous*, a name given by Dr. Prieſtley to that kind of *air* which was firſt produced by Dr. Hales from the Walton pyrites, by means of ſpirit of nitre. Dr. Hales obſerves, that a mixture of this with common *air* occaſioned an efferveſcence, and was attended with a turbid red colour, and an abſorption of part of the common *air*. Dr. Prieſtley procured the ſame kind of *air* from the ſolution of iron, copper, braſs, tin, ſilver, quickſilver, biſmuth, and nickel, in the nitrous acid, and of gold, and regulus of antimony, in aqua regia. He aſcertained the phænomena taken notice of by Dr. Hales; and found, by many accurate trials, that upon a mixture of this *air* with common *air*, the latter is conſiderably diminiſhed in quantity; and that the former is wholly decompoſed, when the quantity of it admitted to common *air* is ſuch as is merely ſufficient to diminiſh it to the utmoſt. He adds, that the diminution and decompoſition, to which *nitrous air* is ſubject, reſult from two different cauſes: one is by ſubſtances, which ſeize upon its acid, and the other, thoſe which lay hold of the phlogiſton which it contains. One meaſure of *nitrous air*, applied to two meaſures of common *air*, will diminiſh the mixture about one ninth of the quantity of common *air*; and if both be very pure, the diminution will be gradual, and in a day or two, there will remain only one fifth of the original quantity of common *air*; and yet this mixture retains very nearly the ſame ſpecific gravity with common *air*. But the diminution of common *air*, by a mixture of *nitrous air*, is not more extraordinary, than the diminution which *nitrous air* itſelf is ſubject to, from a mixture of iron filings and brimſtone made into a paſte with water. When this is put to a quantity of *nitrous air*, it diminiſhes it ſo much, that no more than one fourth of the original quantity will be left. The proportion of common *air*, and *nitrous air*, above ſtated, forms the point of ſaturation between theſe two fluids; and if more *nitrous air* be afterwards added to the mixture, no efferveſcence nor redneſs will be produced; but it will make an addition equal to its bulk. *Nitrous air* makes no change either with *fixed* or *inflammable air*, or with any other *air* that is noxious; but the efferveſcence and diminution are peculiar to common *air*, or ſuch as is fit for reſpiration, and very nearly, if not exactly, proportional to its ſalubrity. And hence Dr. Prieſtley was led to adopt this ſpecies of *air* as a teſt, by which to eſtimate the goodneſs of *air*, and the kind as well as degree of the injury which it ſuſtains. In order to explain the peculiar effect produced by *nitrous air* on common *air*, he made uſe of a green precipitate, procured by a ſolution of copper in nitrous acid, and extracted from it, by means of a burning lens, a quantity of *nitrous air*. When any volatile alkali was added to a mixture of *nitrous* and common *air*, in a ſtate of efferveſcence, the jar was filled with white clouds, which precipitating in the form of fine ſnow, made a beautiful appearance, and proved to be a nitrous ammoniac. This, he ſuppoſes, was formed by the acid of the *nitrous air*, let looſe in the decompoſition of it by common *air*, while the phlogiſton, which muſt be another conſtituent part of *nitrous air*, entering the common *air*, was the cauſe of its diminution; as it is alſo the cauſe of a ſimilar diminution in a variety of other proceſſes; ſo that, in reality, phlogiſton is the teſt; and *air* is wholeſome, in proportion to the quantity of phlogiſton which it is able to take.

Nitrous air is extremely noxious both to plants and animals. It is capable of being mixed with water; diſtilled water imbibing about one tenth of its bulk of this kind of *air*; and it communicates to the water a very acid and aſtringent taſte. It is alſo abſorbed in different degrees by æther, oils, ſpirit of wine and alkali, the ſeveral ſorts of acids, and, in general, by any ſubſtance that has a near affinity either with its phlogiſton, or with any other of its conſtituent parts. It is likewiſe one of the ſtrongeſt antiſeptics; and Dr. Prieſtley ſuggeſts, that future preparations of it may be uſed with ſucceſs for checking or correcting putrefaction in the inteſtinal canal, or other parts of the animal ſyſtem.

Air, *phlogiſticated*. Under this general denomination may be included all thoſe different kinds of *air*, which are diminiſhed and rendered noxious by the burning of candles, inſomuch that a common candle conſumes, as it is called, a gallon of *air* in a minute, the reſpiration of animals, the putrefaction of vegetable or animal ſubſtances, the efferveſcence of iron filings and brimſtone, the calcination of metals, the fumes of charcoal, the effluvia of paint made of white lead and oil, a mixture of *nitrous air*, or other ſimilar proceſſes. All theſe proceſſes, Dr. Prieſtley obſerves, agree in this one circumſtance, and, he apprehends, in no other, that the principle, which the chemiſts call phlogiſton, is ſet looſe; and therefore the diminution of the *air* is in ſome way or other the conſequence of the *air* becoming overcharged with it.

Thus, we find, that many cauſes combine to produce very conſiderable alterations in the ſtate of the *air*, whereby it becomes leſs fit for reſpiration, and other purpoſes of nature; and if there were no proviſion for reſtoring its ſalubrity, it muſt, in time, become univerſally injurious and fatal. Dr. Prieſtley, in the courſe of his inquiries on this ſubject, has diſcovered the great reſtoratives, which are provided for this purpoſe. One of theſe is vegetation. In order to aſcertain this fact, he put a ſprig of mint, in a vigorous ſtate, under a glaſs jar, inverted in water; and he found, contrary to his expectation, that this plant not only continued to live, though in a languiſhing way, for two months; but that the confined *air* was ſo little corrupted by the effluvia of the mint, that it would neither extinguiſh a candle, nor kill a ſmall animal, which he conveyed into it. He found, likewiſe, that *air*, vitiated by a candle left in it till it was burnt out, was perfectly reſtored to its quality of ſupporting flame, after another ſprig of mint had vegetated in it for ſome time. And in order to ſhew, that the aromatic vapour of the plant had no ſhare in producing this effect, he obſerved, in a variety of other experiments, that vegetables of an offenſive ſmell, and even ſuch as had ſcarce any ſmell at all, but were of a quick growth, proved the beſt for this purpoſe. Nay more, the virtue of growing vegetables was found to be an antidote to the baneful quality of *air*, corrupted by animal reſpiration and putrefaction; and he infers from a number of ſimilar facts, that the injury, which is continually done to the atmoſphere, by the reſpiration of ſo many animals, and the putrefaction of ſuch maſſes of both vegetable and animal matter, is, in part at leaſt, repaired by the vegetable creation; and, notwithſtanding the prodigious maſs of *air* that is corrupted daily by the abovementioned cauſes; yet, if we conſider the immenſe profuſion of vegetables upon the face of the earth, growing in places ſuited to their nature, and conſequently at full liberty to exert all their powers, both inhaling and exhaling, it can hardly be thought, that the remedy is not adequate to the evil. Dr. Franklin, in a reflection on this diſcovery, expreſſes his hope, that it will give ſome check to the rage of deſtroying trees that grow near houſes, which has accompanied our late improvements in gardening, from an opinion of their being unwholeſome; adding, from long obſervation, that there is nothing unhealthy in the *air* of woods, 'ſince the 'Americans have their country habitations in the midſt 'of woods, and no people on earth enjoy better health, 'or are more prolific.'

The ſea, and other large bodies of water, are the ſecond reſource, which nature has provided for reſtoring the ſalubrity of corrupted *air*. Dr. Prieſtley found, that all kinds of noxious *air* were reſtored by continued agitation in a trough of water; the noxious effluvia being firſt imbibed by the water, and thereby tranſmitted to the common atmoſphere. And he hence concludes, that the agitation of the ſea, and of large lakes and rivers, muſt be highly uſeful for the purification of the atmoſphere; the putrid matter being abſorbed by the water, and imbibed by marine, and other aquatic plants, or applied to purpoſes yet unknown. Exp. and Obſ. vol. i. ſect. 2 and 4.

This ingenious philoſopher apprehends, that the agitation of water, and the vegetation of plants, purify noxious *air*, by abſorbing part of the phlogiſton with which it is loaded; and that this phlogiſtic matter is the moſt eſſential part of the food and ſupport of both vegetable and animal bodies. Ib. vol. i. p. 138, 139.

For an account of Dr. Prieſtley's numerous experiments and obſervations on theſe ſeveral ſpecies of *air*, the reader is referred to the excellent work already cited, and which has furniſhed the greateſt part of the preceding articles.

AIR, *innate*, in *Anatomy*, is a fine aerial ſubſtance, ſuppoſed, by ſome anatomiſts, to be incloſed in the labyrinth of the inner EAR, and to miniſter to the due conveyance of ſounds to the ſenſory.

But the exiſtence of ſuch *innate air* has been called in queſtion, and rendered very improbable. See EAR.

AIR, in *Medicine*, &c. makes one of the ſix NON-NATURALS.

From obſervations on bleeding in rheumatiſms, and after taking cold, it is evident, the *air* can enter with all its qualities, and vitiate the whole texture of the blood, and other juices.

From the palſies, vertigoes, and other nervous affections cauſed by damps, mines, &c. it is evident, that *air* thus qualified can relax and obſtruct the whole nervous ſyſtem. And from the colics, fluxes, coughs, and conſumptions produced by damp, moiſt, and nitrous *air*, it is evident it can corrupt and ſpoil the noble organs, &c. See ATMOSPHERE, and preceding articles.

AIR, in *Muſic*, ſignifies the MELODY, or the inflexion of a muſical compoſition.

The word is alſo uſed for a tune, or ſong itſelf, that is, for a compoſition whoſe movements are juſt and equal; and the times, eſpecially the firſt of ſuch meaſure, well marked—being uſually to be played pretty quick and lively, unleſs there be ſomething to indicate the contrary: as, *larga*, or *affettuoſa*, &c.

Thus we ſee an *air* of Lully: Handel's *airs*, with their ſymphonies and accompaniments, are made into concertos for the violin, &c.

AIR, in *Mythology*, was adored by the heathens under the names of Jupiter and Juno; the former repreſenting the ſuperior and finer parts of the *atmoſphere*, and the latter the inferior and groſſer part. The augurs alſo drew preſages from the clouds, thunder, lightning, &c.

AIR, in *Painting*, &c. denotes the manner and very life of action; or it is that which expreſſes the diſpoſition of the agent.

It is ſometimes alſo uſed in a ſenſe ſomewhat ſynonymous with geſture or attitude.

AIR-*bladder*, a kind of *veſicula* found in the bodies of fiſh, by means whereof they are enabled to ſuſtain themſelves in any depth of water, and either to riſe or ſink at pleaſure. The *air-bladder* is the ſame with what is otherwiſe called the *ſwim*, or *ſwimming-bladder*.

Dr. Prieſtley conjectures that this is not the only uſe of theſe *bladders*; but that the *air* incloſed in them may anſwer ſome farther purpoſe in the animal œconomy of fiſhes.

The diſcovery of the uſe of the *air-bladder* took its riſe from obſerving, that a bubble of *air* in riſing from the bottom of a fluid, continually dilates till it reaches the top, by reaſon of the continual diminution of the weight, or preſſure, of the incumbent water. For the *air* in the bladder is like the bubble, more or leſs compreſſed, according to the depth the fiſh ſwims at, and takes up more or leſs ſpace; and conſequently the body of the fiſh, part of whoſe bulk this bladder is, is greater or leſs, according to the ſeveral depths, though it retains the ſame weight. The rule of hydroſtatics is, that a body heavier than ſo much water as is equal in quantity to the bulk of it, will ſink; a body lighter, will ſwim; a body of equal weight will reſt in any part of the water. By which rule if the fiſh in the middle region of the water, be of equal weight with an equal bulk of the water, the fiſh will reſt there, without any tendency either upwards or downwards; and if the fiſh be deeper in the water, its bulk becoming leſs by the compreſſion of the bladder, and yet retaining the ſame weight, it will ſink and reſt at the bottom: on the other ſide, if the fiſh be higher than the middle region, the *air* dilating itſelf, and the bulk of the fiſh conſequently increaſing, without any increaſe of the weight, the fiſh will riſe and reſt at the top of the water.

Perhaps the fiſh by ſome action can emit *air* out of the bladder, and afterwards out of its body; and alſo when there is not enough, take in more *air*, and convey it to this bladder; in which caſe it will be no wonder, that there ſhould be always a fit proportion of *air* in the bodies of all fiſhes, to ſerve their uſe, according to the depth of water they live in: perhaps alſo by ſome muſcle, the fiſh can contract this bladder beyond the preſſure of the weight of water; and perhaps it can by its ſides, or ſome other defence, keep off the preſſure of the water, and give the *air* leave to dilate itſelf. In theſe caſes, the fiſh will be helped in all intermediate diſtances, and may riſe or ſink from any region without moving a fin. Phil. Tranſ. N° 114.

If the *air-bladder* of a fiſh be pricked or broken, the fiſh preſently ſinks to the bottom, unable either to ſupport or raiſe itſelf up again. Flat fiſhes, as ſoles, plaiſe, &c. which always lie groveling at the bottom, have no *air-bladder*.

In moſt fiſhes there is a manifeſt channel, leading from the gullet, or upper orifice of the ſtomach, to the *air-bladder*, which doubtleſs ſerves for conveying *air* into it. In a ſturgeon Mr. Willughby obſerved, that upon preſſing the bladder, the ſtomach preſently ſwelled; ſo in that fiſh it ſeems the *air* paſſes freely both ways. Poſſibly the fiſh while alive may have a power to raiſe up this valve, and let out *air* on occaſion.

All the cartilaginous kind want *air-bladders*: by what means it is they aſcend and deſcend in water, is yet unknown. The cetaceous kind, or ſea-beaſts, are alſo without the *air-bladder*: indeed, as theſe differ in little from quadrupeds, but the want of feet, the *air* which they receive into their lungs in inſpiration, may ſerve to render their bodies equiponderant to water; and the conſtriction or dilatation of it, by the help of the diaphragm and muſcles of reſpiration, may poſſibly aſſiſt them to aſcend, or deſcend, in the water, by a light impulſe thereof with their fins. Moſt of the EEL-kind have bladders, yet they can hardly raiſe themſelves in the water, by reaſon of the length and weight of their tails; the *air-bladder* being near their heads, may help them to lift up their heads and fore-part. Phil. Tranſ. N° 115.

There is great diverſity in *air-bladders*, in reſpect of figure, ſubſtance, ſituation, and connection, in different fiſh.

In ſome, the *air-bladder* is divided into two, e. gr. in *carps*; and in others, into three. Needham maintains, that all fiſh which have teeth in their jaws have only a ſingle *air-bladder*; whereas thoſe without teeth have a double one, or which amounts to the ſame, the *air-bladder* of theſe laſt is divided into two cells. Sig. Redi refutes this diſtinction; giving inſtances of fiſh with teeth, whoſe *air-bladder* is double; and of others without teeth, who have only a ſingle *air-bladder*.

The water-ſnake, in lieu of a bladder has a large membranous *air-bag* on its back, which it empties and fills with *air* at pleaſure, by an aperture, which it can ſhut very cloſe, from without inwards, by means of a ſort of valve, ſo that the leaſt globule of water cannot enter without its conſent. By this artifice it can enlarge or leſſen the bulk of its body, and inhabit all depths of the water; though a conjecture has been advanced by Mr. Ray, that it is by the help of water which they take in, and let out, by two holes in the lower part of their abdomen, near to the ventricle. They ſink in the water, by letting in ſome of it at theſe holes; the orifices whereof are opened and ſhut at pleaſure, by means of proper muſcles. The water being thus received into the cavity of their abdomen, by which they preponderate the water, and deſcend; when they would aſcend again, a compreſſion is made by the muſcles of their abdomen, and the water forced out again, at leaſt ſo much as ſuffices to give the degree of levity wanted. Ray's Wiſd. of God, p. ii, p. 546.

In the Phil. Tranſ. vol. lxiv. part i. p. 205. art. 29. an. 1774, there is an account of certain receptacles of *air* in birds, which communicate with the lungs, and are lodged both among the fleſhy parts, and in the hollow bones of thoſe animals, by John Hunter, F. R. S. who does not minutely deſcribe all the particular communications of this kind in birds; but mentions, however, a number of general facts, ſufficient for the introduction of this ſubject into natural hiſtory, and for opening a more particular inquiry into the final cauſe of this peculiarity in the ſtructure of birds, hitherto unobſerved or uninveſtigated.

Air-*chamber*, is a name given by Dr. Henſhaw to a room contrived for obtaining the benefit of change of *air*, without going out of the houſe. According to his whimſical propoſal, it is to be twelve feet ſquare, and *air*-tight, furniſhed with a very large pair of organ-bellows, to or from which, *air* is to be conveyed through the wall by a copper pipe, with valves for opening inwardly and outwardly, as occaſion ſhall require. With theſe bellows, the *air* in the room is either to be condenſed and made heavier, by forcing *air* in, or lighter and rarer, by conveying *air* out of the room. See his Aero-Chalinos, or Phil. Tranſ. N° 133. See **Ventilator** and *Blowing*-**Wheel**.

Air-*gun*, ſee **Wind**-*gun*.

Air-*pump*, a machine, by means whereof the *air* may be exhauſted out of proper veſſels.

The uſe and effect of the *air-pump* is, to make, what we popularly call, a *vacuum*; but this, in reality, is only a degree of rarefaction ſufficient to ſuſpend the ordinary effects of the atmoſphere.

By this machine, therefore, we learn, in ſome meaſure, what our earth would be without an atmoſphere; and how much all vital, generative, nutritive, and alterative power, depend thereon.

The principle on which the *air-pump* is conſtructed, is the elaſticity of the *air*; as that on which the common, or water-pump is founded, is the gravity of the ſame *air*.

The ſtructure of the *air-pump* is, in itſelf, more ſimple even than that of the water-pump.—The latter ſuppoſes two principles, gravity and elaſticity likewiſe: ſo that the water-pump muſt be firſt be an *air-pump*, i. e. it muſt rarefy the *air* before it can raiſe the water.—In effect, water, being a dormant unelaſtic fluid, needs ſome external agent to make it aſcend: whereas *air* aſcends in virtue of its own elaſtic activity: its natural tendency is, to ſeparate, and leave a *vacuum*; and all that remains for art, is to prevent the ambient *air* from ſupplying the place of that which thus ſpontaneouſly flies away.

To make water aſcend, the force wherewith it is preſſed downwards, is either to be diminiſhed or increaſed in one part, more than another; like a balance *in æquilibrio*, one of whoſe ſcales may be made to riſe, either by diminiſhing its own weight, or increaſing that of the other: the water, therefore, recedes from the common center of gravity, by the very power wherewith it tends towards it, indirectly or ſecondarily applied; becauſe, two ſimilar centripetal forces being made to act contrary to each other, what in the one over-balances the other, muſt have the effect of a centrifugal force.—Whereas, the principle whereby *air* rarefies or diminiſhes, does not reſpect the centre of the earth, but the centres of its own particles; being no other than a certain implanted power, whereby they immediately tend to recede from each other.

The invention of this noble inſtrument, to which the preſent age is indebted for ſo many fine diſcoveries, is aſcribed to Otto de Guerick, the celebrated conſul of Magdeburg, who exhibited his firſt public experiments therewith, before the emperor and the ſtates of Germany, at the breaking up of the imperial diet at Ratiſbon, in the year 1654.

Dr. Hook, and M. du Hamel, indeed, aſcribe the invention of it to Mr. Boyle; but that ingenious author frankly confeſſes de Guerick to have been beforehand with him. In a letter which he wrote to his nephew, lord Dungarvan, at Paris, about two years after Schottus's book was publiſhed, he introduces the acknowledgment of his obligation, for the diſcovery of this uſeful machine, to what he had heard of it, though he had not then peruſed it, by that well-applied paſſage of Pliny, *benignum eſt et plenum ingenui pudoris fateri per quos profeceris*. Some attempts, he aſſures us, he had made upon the ſame foundation, before he knew any thing of what had been done abroad: but the information he afterwards received from Schottus's Mechanica Hydraulico Pneumatica, publiſhed in 1657, wherein was an account of de Guerick's experiments, firſt enabled him to bring his deſign to any thing of maturity.—From hence, with the aſſiſtance of Dr. Hook, after two or three unſucceſsful trials, aroſe a new *air-pump*, more eaſy and manageable than the German one; and hence, or rather from the great variety of experiments that illuſtrious author applied it to, the engine came to be denominated *machina Boyliana*, and the *vacuum* produced by it, *vacuum Boylianum*.

Air-*pump*, *ſtructure and uſe of the*.—The *baſis* or eſſential part in the *air-pump*, is a metalline tube, anſwering to the barrel of a common pump, or ſyringe; having a valve at the bottom, opening upwards; and a moveable piſton or *embolus*, anſwering to the ſucker of a pump, furniſhed likewiſe with a valve opening upwards.—The whole, duly fitted to a veſſel, as a recipient.

The reſt, being only circumſtances chiefly reſpecting conveniency, has been diverſified and improved from time to time, according to the ſeveral views and addreſs of the makers.—That of Otto de Guerick, being leſs artful, laboured under ſeveral defects, in reſpect of the force neceſſary to work it, which was very great, and the progreſs very ſlow: beſide that it was to be kept under water; and allowed of no change of ſubjects for experiments.

Mr. Boyle, by degrees, removed ſeveral of theſe inconveniences, and alleviated others: but ſtill the working of his pump was laborious, by reaſon of the preſſure of the atmoſphere, a great part of which was to be removed at every exſuction, after a *vacuum* was nearly arrived at.—But this inconvenience has ſince been removed by Mr. Hawkſbee, who by adding a ſecond barrel and piſton to the former, to riſe as the other fell, and fall as it roſe, made the preſſure of the atmoſphere on the deſcending one, of as much ſervice as it was of diſſervice in the aſcending one.

Some of the Germans have alſo brought the *air-pump* to do the oppoſite office of a condenſer: but this is not to make the inſtrument ſo much the better, as more complex.

The ſtructure of the air-pump, as now made among us, with all its advantages, is repreſented in *Tab. Pneumatics*, *fig.* 16.

It conſiſts of two brazen barrels or cylinders, repreſented by *a a a a*; which communicate with each other by a canal paſſing between them at *d d*; and with the receiver *o o o o*, by means of the hollow wire *b b*, one end whereof opens into the canal of communication, and the other into a like canal *n n*; which penetrating the plate *i i i i*, opens into the receiver.

Within the cylinders are two emboli, or ſuckers, made of braſs, and fitted with cork and leather to the cavities of the barrels, ſo as exactly to fill the ſame; each being furniſhed with its valve, and terminating at top in a rack *c c*, by which it is worked.

At the bottom of either barrel is another valve, by which the *air* may paſs out of the communicating canal *d d*, and conſequently out of the hollow wire and the receiver itſelf, into the cylinder, below the piſton; from whence by the valves of the piſton it may proceed into the upper ſpace of the cylinder, and thus into the open *air*.

For the application of this mechaniſm—The winch *b b* being turned upward and downward, its ſpindle *f*, catching by its teeth into the racks, will raiſe and depreſs the two piſtons, alternately.

Mr. Vream, a late pneumatic operator, made an improvement in Hawkſbee's *air-pump*, by reducing the alternate motion of the hand and winch to a circular one. In his method, the winch is turned quite round, yet the piſtons are raiſed and depreſſed alternately: by which the trouble of ſhifting the hand backward and forward, as well as the loſs of time, and the ſhaking of the pump, are prevented. See the contrivance for this purpoſe deſcribed in Clare's Motion of Fluids, p. 154.

Now the conſequence of depreſſing a piſton is, that the *air* before incloſed between it and the bottom of the cylinder, being thus crouded into a leſs compaſs, will, by its elaſtic force, which now exceeds the preſſure of the atmoſphere, puſh up the valve of the piſton, and thus eſcape; till that little which remains be of the ſame denſity with the external *air* incumbent on the valve.

This done, and the ſame piſton being again raiſed in its turn, from the bottom of the cylinder to the top, the little *air* before left, will of neceſſity expand itſelf, ſo as to poſſeſs the whole ſpace of the cylinder thus deſerted by the piſton: upon which, its force or preſſure upon the valve at the bottom of the cylinder being now inconſiderable, the other denſer *air* of the receiver, hollow wire, and canal of communication, by their ſuperior elaſtic force, will lift up the valve, and thus paſs into the cylinder of rarefied *air*, till both be of the ſame degree of denſity.

And thus is the *air* in the receiver diminiſhed at each elevation of the piſton, by the quantity of a cylinder-full; abating for what little remained between the depreſſed

preſſed piſton, and the bottom: ſo that by thus repeating the operation again and again, the *air* in the receiver is at length rarefied to ſuch degree, that its denſity does not exceed the thin *air* remaining in the cylinder when the piſton is raiſed; which done, the effect of the *air-pump* is at an end; the valve cannot now be opened, or, if it could, no *air* would paſs it; there being a juſt equilibrium between the *air* on each ſide.

To judge of the degree of exhauſtion, there is added a gage, *l l*; conſiſting of a tube, whoſe upper orifice communicates with the receiver; the lower being immerged in a baſon of mercury, *m m*.—Hence, the *air* in the tube rarefying as faſt as that in the receiver, in proportion as the exhauſtion advances, the mercury will be raiſed by the preſſure of the column of external *air*, prevailing over that of the column of *air* included; till the column of *air*, and mercury together, become a balance to that of the external *air*. When the mercury is thus riſen to the ſame height as it ſtands in the barometer, which is indicated by the ſcale of inches added to the gage, the inſtrument is a juſt Torricellian tube; and the vacuum may be concluded to be as perfect as that in the upper end of the barometer.

To let *air* again into the exhauſted receiver, the cock *n* is to be turned, which makes a communication with the external *air*; upon which the *air* ruſhing impetuouſly in, the mercury in the gage immediately ſubſides into the baſon.

To the *air-pump* belongs a large apparatus of other veſſels, accommodated to the divers kinds of experiments.

There are ſeveral inconveniencies attending *air-pumps*, of the common form, though much improved from what they uſed to be formerly. Theſe inconveniences are enumerated, and a method ſhewn to remedy them, by Mr. Smeaton.

The principal improvements ſuggeſted by Mr. Smeaton reſpect the diſpoſition of the valves, of the piſton, and of the gage. Inſtead of one hole for the valves, he makes uſe of ſeven, all of an hexagonal ſhape, and of equal ſize; one being in the center, and the other ſix round it; ſo that the valve is ſupported at proper diſtances by a kind of grating, made by the ſolid parts between theſe holes. In order to remedy the inconvenience attending the piſton's not exactly fitting the barrel, the top of the barrel is ſhut up by a plate, having in the middle a collar of leather, through which the cylindrical rod works, that carries the piſton. His gage conſiſts of a bulb of glaſs, in ſhape reſembling a pear, and ſufficient to hold about half a pound of quickſilver. It is open at one end, and the other is a tube hermetically ſealed at top. A ſcale divided into parts of about one tenth part of an inch, and anſwering to a 1000th part of the whole capacity, is annexed to it. The gage, during the exhauſtion of the receiver, is ſuſpended therein by a ſlip-wire. When the pump is worked as much as is thought neceſſary, the gage is puſhed down, till the open end is immerged in a ciſtern of quickſilver placed underneath. The *air* being then let in, the quickſilver will be driven into the gage, till the *air* remaining in it becomes of the ſame denſity with the external; and as the *air* always takes the higheſt place, the tube being uppermoſt, the expanſion will be determined by the number of diviſions occupied by the *air* at the top. See Phil. Tranſ. vol. xlvii.

Mr. Smeaton's *air-pump* has only one barrel.

This ingenious artiſt has ſucceeded ſo well in his conſtruction of the *air-pump*, as to be able to rariſy *air* a thouſand times; whereas the beſt of the common *air-pumps*, eſteemed good in their kind, and in complete order, never rarified it above one hundred and forty times. Mr. Smeaton's *air-pump* is worked with much more eaſe than any other, and acts alſo as a condenſing engine, by the very ſimple *apparatus* of turning a cock. So that this *air-pump* is an univerſal engine, for ſhewing any effect ariſing from an alteration in the denſity or ſpring of the air; and with a little addition may be made to ſhew the experiments of the AIR-*fountain*, WIND-*gun*, &c. Phil. Tranſ. vol. xlvii. p. 422.

AIR-*pump*, *portable*, differs principally in ſize, and in the ſtructure of the gage, from that above deſcribed. The gage conſiſts of a glaſs tube, bent in the form of a ſyphon, hermetically ſealed at one end, and open at the other. The longeſt leg is four inches, each of which is divided on an adjoined ſcale into twenty equal parts. After conſiderable exhauſtion, the gage begins to act; and whilſt the quickſilver falls in one leg, it riſes in the other; and the quantity of air remaining will be determined by the difference of the height at which it ſtands in both tubes. This gage is placed under a ſmall receiver on a plate, communicating by a pipe with the main pipe, that leads from the receiver, to be exhauſted to the bottom of the barrels. See PUMP.

AIR-PUMP, *laws of rarefaction in the receiver of it.*—1. For the proportion of *air* remaining at any time in the receiver, we have the following general theorem.—'In a 'veſſel exhauſted by the *air-pump*, the primitive or na'tural *air* contained therein, is to the *air* remaining, as 'the aggregate of the capacity of the veſſel and of the 'pump (i. e. the cylinder left vacant in an elevation of 'the piſton, with the wire and other parts between the 'cylinder and the receiver) raiſed to a power whoſe ex'ponent is equal to the number of ſtrokes of the piſton, 'to the capacity of the veſſel alone raiſed to the ſame 'power.'

M. Varignon gives an algebraical demonſtration of this theorem, in the Memoires de l'Acad. Roy. an. 1693, p. 233, ſeq. Id. an. 1705, p. 397, ſeq. but it may be alſo demonſtrated pneumatically, thus:—Calling the *air* remaining after the firſt ſtroke, the *firſt reſidual*; that after the ſecond, the *ſecond reſidual*, &c. and remembering that the *air* in the receiver is of the ſame denſity as that in the cylinder, when the piſton is raiſed; it is evident, that the quantity of *air* in the receiver, is to the quantity of *air* in the cylinder, wire, &c. as the capacity of the receiver to that of the cylinder, and conſequently, the aggregate of the *air* in the receiver and the cylinder, i. e. the whole primitive *air*, is to the *air* in the veſſel alone, i. e. to the firſt reſidual *air*, as the aggregate of the capacity of the receiver and the cylinder, to the capacity of the receiver alone.—After the ſame manner it may be proved, that the quantity of the firſt reſidual *air*, is to the ſecond reſidual, as the aggregate of the capacity of the receiver and cylinder to the capacity of the veſſel alone. And the ſame proportion does the ſecond reſidual bear to the third, and ſo of the reſt.—Hence, the product of the primitive *air* into the firſt, ſecond, third, fourth, &c. reſiduals, is to the product of the firſt reſidual into the ſecond, third, fourth, fifth, &c. as the product of the capacity of the receiver and cylinder together, multiplied as oft into itſelf as the number of ſtrokes of the piſton contains units, is to the factum ariſing from the capacity of the receiver alone, multiplied ſo often by itſelf; that is, as the power of the aggregate of the capacity of the receiver and cylinder together, whoſe exponent is the number of ſtrokes of the piſton, to the capacity of the veſſel alone, raiſed to the ſame power.—Conſequently, the primitive *air* is to the laſt reſidual, in the ratio of thoſe powers. *Q. E. D.*

2. The number of ſtrokes of the piſton, together with the capacity of the receiver and cylinder with the wire, &c. being given; to find the ratio of the primitive *air* to the *air* remaining:

Subtract the logarithm of the capacity of the receiver, from that of the ſum of the capacity of the receiver and the cylinder; then, the remainder being multiplied by the number of ſtrokes of the piſton, the product will be a logarithm, whoſe natural number ſhews how oft the primitive *air* contains the remainder required.

Thus, if the capacity of the receiver be 460, that of the cylinder 580, and the number of ſtrokes of the piſton 6; the primitive *air* will be found to the remaining *air*, as 133,5 to 1.

For, ſuppoſe the capacity of the veſſel $= v$, that of the cylinder and veſſel together, $= a$; the number of ſtrokes of the piſton $= n$, and the remaining *air* $= 1$. Since the primitive is to the remaining *air* as a^n to v_n, the primitive *air* will alſo be to the remaining *air*, as $a_n \div v^n$ to 1. Conſequently, if the remaining *air* be 1, the logarithm of the primitive *air* is $a - v \times n$.

3. The capacity of the receiver and the barrel being given; to find the number of ſtrokes of the piſton required to rariſy the *air* to a given degree.

Subtract the logarithm of the remaining *air* from the logarithm of the primitive *air*; and the logarithm of the capacity of the receiver, from that of the aggregate of the capacity of the receiver and cylinder; then, dividing the former difference by the latter, the quotient is the number of ſtrokes required.

Thus, if the capacity of the cylinder be ſuppoſed 580, that of the receiver 460, and the primitive *air* to the remaining *air*, as 133,5 to 10: the number of ſtrokes required will be found to be 6. See Cotes's Hyd. and Pneum. Lectures, Lect. 13.

Beſides the effects, and the *phænomena* of the *air-pump*, recounted under the articles VACUUM, AIR, &c. we may add ſome others; which, related at large, make the ſubſtance of Mr. Boyle's Phyſico-Mech. Exper.—As, that the flame of a candle *in vacuo* uſually goes out in a minute, though it ſometimes laſts two, but the wick thereof continues ignited after; and even emits a ſmoke, which aſcends upwards. That a kindled charcoal is totally extinguiſhed in about five minutes, though in open *air* it remain alive half an hour; that it goes out by degrees, beginning from the top and the outſides.—That red-hot iron is not affected by the abſence of the *air*; and yet that ſulphur or gunpowder will not be lighted thereby, but only fuſed.—That a match, after lying ſeemingly extinct *in vacuo* a long time, revives again upon the re-admiſſion of the *air*.—That a flint and ſteel ſtrike ſparks of fire as copiouſly *in vacuo* as out of it; and that the ſparks move in all directions, upwards, downwards, &c. here as in the *air*.—That magnets and magnetic needles, are the ſame *in vacuo* as in *air*.—That ſmoke in an exhauſted receiver, the luminary being extinct, gradually ſettles to the bottom in a darkiſh body, leaving the upper part clear and tranſparent; and that inclining the veſſel ſometimes on one ſide, and ſometimes another, the fume keeps its ſurface horizontal, after the nature of other fluids.—That the ſiphon does not run *in vacuo*.—That water freezes *in vacuo*.—That heat may be produced by attrition in the exhauſted receiver.—That camphire will not take fire *in vacuo*; and that gun-powder, though ſome grains of a heap be kindled by a burning-glaſs *in vacuo*, will not give fire to the contiguous grains.—That glow-worms loſe their light in proportion as the *air* is exhauſted, and at length become totally obſcure; but upon the re-admiſſion of *air*, preſently recover it all.—That vipers and frogs ſwell much *in vacuo*, but will live an hour and half, or two hours; and though ſeemingly quite dead in that time, came to life again in ſome hours in the *air*.—That ſnails ſurvive ten hours; and efts, or ſlow-worms, two or three days; leeches five or ſix.—That oyſters will remain alive *in vacuo* twenty-four hours without harm.—That the heart of an eel taken out of the body, continues to beat *in vacuo*, more nimbly than in *air*; and this for a good part of an hour.—That warm blood, milk, gall, &c. undergo a conſiderable intumeſcence and ebullition *in vacuo*.—That a mouſe, or other animal, may be brought, by degrees, to ſurvive longer in a rarefied *air*, than naturally it does.—That *air* may retain its uſual preſſure, after it is become unfit for reſpiration.—And that ſilk-worms eggs will hatch *in vacuo*.

AIR-SHAFTS, among *Miners*, denote holes or ſhafts let down from the open *air* to meet the adits, and furniſh freſh *air*.

The damps, want, and impurity of *air*, which occur, when adits are wrought 30 or 40 fathoms long, make it neceſſary to let down *air-ſhafts*, in order to give the *air* liberty to play through the whole work, and thus diſcharge bad vapours, and furniſh good *air* for reſpiration: the expence of which *ſhafts*, in regard of their vaſt depths, hardneſs of the rock, drawing of water, &c. ſometimes equals, nay exceeds, the ordinary charge of the whole ADIT.

Sir Robert Murray deſcribes a method, uſed in the coal-mines at Liege, of working mines without *air-ſhafts*. Phil. Tranſ. Nº 5.

When the miners at Mendip have ſunk a groove, they will not be at the charge of an *air-ſhaft*, till they come at ore; and for the ſupply of *air* have boxes of elm exactly cloſed, of about ſix inches in the clear, by which they carry it down about twenty fathoms. They cut a trench at a little diſtance from the top of the groove, covering it with turf and rods diſpoſed to receive the pipe, which they contrive to come in ſide-ways to their groove, four feet from the top; which carries down the *air* to a great depth. When they come at ore, and need an *air-ſhaft*, they ſink it four or five fathoms diſtant, according to the convenience of the breadth, and of the ſame faſhion with the groove, to draw as well ore as *air*. Phil. Tranſ. Nº 39.

AIR-THREADS *of ſpiders*. See THREADS.

AIR-VESSEL, in *Hydraulics*, is a name given to thoſe metalline cylinders, which are placed between the two forcing-pumps in the improved fire-engines. The water is injected by the action of the piſtons through two pipes, with valves, into this veſſel; the *air* previouſly contained in it will be compreſſed by the water, in proportion to the quantity admitted, and by its ſpring force the water into a pipe, which will diſcharge a conſtant and equal ſtream; whereas in the common ſquirting engine, the ſtream is diſcontinued between the ſeveral ſtrokes.

AIR-*veſſels*, in PLANTS, are certain canals, or ducts, whereby a kind of RESPIRATION is effected in vegetable bodies.

Air-veſſels ſtand diſtinguiſhed from SAP-*veſſels*; the former anſwering to the *trachea*, and lungs of animals; the latter to their lacteals, and blood-veſſels.

Dr. Grew, in an inquiry into the motion and cauſe of the *air* in vegetables, ſhews, that it enters them various ways, not only by the trunk, leaves, and other parts above ground, but at the root. For the reception, as well as expulſion of *air*, the pores are ſo very large in the trunks of ſome plants, as in the better ſort of thick walking canes, that they are viſible to a good eye without a glaſs; but with a glaſs, the cane ſeems as if it were ſtuck full of large pin-holes, reſembling the pores of the ſkin in the ends of the fingers, and ball of the hand. In the leaves of the pine, through a glaſs they make an elegant ſhow, ſtanding almoſt exactly in rank and file throughout the length of the leaves.

But though the *air* enters in part at the trunk and other parts, eſpecially in ſome plants, yet its chief admiſſion is at the root: much as in animals, ſome part of the *air* may continually paſs into the body and blood by the pores of the ſkin; but the chief draught is at the mouth. If the chief entrance of the *air* were at the trunk, before it could be mixed with the ſap in the root, it muſt deſcend; and ſo move not only contrary to its own nature, but in a contrary courſe to the ſap: whereas by its reception at the root, and its tranſition from thence, it has a more natural and eaſy motion of aſcent.

The ſame is farther argued, from the fineneſs and ſmallneſs of the diametral apertures in the trunk, in compariſon of thoſe in the root; which nature has plainly deſigned for the ſeparation of the *air* from the ſap, after they are both together received thereinto. Grew, Anat. of Root, cap. iii. p. 127.

Air-veſſels are found in the leaves of all plants, and are even diſcoverable in many without the help of glaſſes; for upon breaking the ſtalk or chief fibres of a leaf, the likeneſs of a fine wooly ſubſtance, or rather of curious ſmall cob-webs, may be ſeen to hang at both the broken ends. This is taken notice of only in ſome few plants, as in *ſcabious*, where it is more viſible: but may alſo be ſeen more or leſs in moſt others, if the leaves be very tenderly broken. This wool is really a ſkein of *air-veſſels*, or rather of the fibres of the *air-veſſels*, looſed from their ſpiral poſition, and ſo drawn out in length. Id. ibid. cap. iv. p. 155.

That *air* is inſpired by vegetables, has been fully proved by Dr. Hales in his Statical Eſſays; and he has in many inſtances ſhewn, that *air* freely enters the veſſels of trees, and that it is in great abundance wrought into their ſubſtance. But as to particular *air-veſſels* in plants, he ſeems to ſpeak doubtfully. He ſays, by way of queſtion, may not the uſe of thoſe ſpiral wreaths, that are coiled round the inſides of thoſe veſſels, which are ſuppoſed to be *air-veſſels*, and which are manifeſtly to be ſeen in ſeveral trees; as alſo in the leaves of the vine and ſcabious, may not theſe be deſigned by nature to promote the quicker aſcent of *air*, by being in ſome meaſure conformed to its elaſtic contortions? For ſuch ſpiral wreaths ſeem to be altogether uſeleſs, for promoting the aſcent of any liquor, as the ſap, which aſcends moſt freely through innumerable other capillary veſſels, having no ſuch ſpiral coils in them: not that we are to ſuppoſe the *air* in its elaſtic ſtate actually to touch, and thereby to be determined in the courſe of theſe ſpirals, as any liquor would be. But as the rays of light, when they are reflected from a ſolid body, are found to be reflected, without actually touching the reflecting body in the point of reflection; ſo it is not unreaſonable to ſuppoſe, that elaſtic *air* may, like light, be diverted from one courſe, and ſo be determined to another, by the ſolid bodies it approaches, without touching them, but rebounding like light from thoſe ſolid bodies near the point of contact.

Dr. Hales has obſerved, that theſe ſpirals are coiled in a courſe oppoſite to the courſe of the ſun, that is, from weſt to eaſt. Vid. Static. Eſſ. vol. ii. p. 265, 266.

AIRA, in *Botany*, a genus of the *triandria digynia*, *hair-graſs*. See DARNEL.

AIRANI, in *Church Hiſtory*, a ſect of Arians, in the fourth century, who denied the conſubſtantiality of the Holy Ghoſt with the Father and the Son.

They are otherwiſe called *Airaniſtæ*, and are ſaid to have taken their name from one *Airas*, who diſtinguiſhed himſelf at the head of this party, in the reigns of Valentinian and Gratian.

AIRING, in the general ſenſe of taking, or going into the freſh air, is too well known to need any explanation.

The word is particularly uſed for exerciſing horſes in the open air; which is of the greateſt advantage to theſe animals. It purifies the blood, purges the body from groſs humours, and enures the creature to fatigue, ſo as not to be hurt by it, when much greater than on theſe occaſions; and it teaches him, as the jockies expreſs it, how to make his wind rake equally, and keep time with the other motions of his body. It alſo ſharpens the ſtomach, and keeps the creature hungry; which is a thing of great conſequence, as hunters and racers are very apt to have their ſtomach fall off, either for want of exerciſe, or from the too violent exerciſe which they are often expoſed to.

If the horſe be over fat, it is beſt to air him before ſun-riſe, and after ſun-ſetting; and, in general, it is allowed by all, that nothing is more beneficial to theſe creatures, than early and late *airings*.

Some of our modern managers, however, diſpute this;

they ſay, that the cold of theſe times is too great for the creature, and that if, in particular, he is ſubject to catarrhs, rheums, or the like complaints, the dews and cold fogs, in theſe early and late *airings*, will be apt to increaſe all thoſe diſorders. Nature, we ſee, alſo points out the ſun beams as of great uſe to theſe animals; thoſe which are kept hardy, and lie out all night, always running to thoſe places where the ſun-ſhine comes, as ſoon as it appears in a morning.

This ſhould ſeem to recommend thoſe *airings* that are to be made before ſun-ſet, and a little time after ſun-riſe; and as to the caution, ſo earneſtly inculcated by Markham, of uſing theſe early and late *airings* for fat horſes, it is found unneceſſary by many; for they ſay, that the ſame effect may be produced by *airings* at warmer times, provided only that they are made longer; and that, in general, it is from long *airings* that we are to expect to bring a horſe to a perfect wind, and ſound courage.

AIRS, in *Horſemanſhip*, denote the artificial or practiſed motions of a managed horſe.

Such are the *demi-volt*, *curvet*, *capriole*, *croupade*, *balotade*, *ſtep*, and *leap*; alſo, *advancing*, *yerking*, and *bounding*.

Some authors take *airs* in a more extenſive ſenſe; and divide them into *low* and *high*.

The *low airs* include the natural paces, as *walking*, *trotting*, *galloping*, and *terra-a-terra*. To which may be added, *prancing*, *ſidling*, *ſtopping*, and *turning*.

The *high*, or *raiſed airs*, are all ſuch motions as riſe higher than the *terra-a-terra*; as the *demi-volt*, *curvet*, &c.

AIRY *triplicity*, among *Aſtrologers*, the ſigns of Gemini, Libra, and Aquarius. See Triplicity.

AISIAMENTA, in *Law*. See Easement.

AJUBATIPITA *Braſilienſium*, in *Botany*, a name given to a ſhrub that bears a black fruit like an almond, which yields a great deal of oil.

AJUGA, in *Botany*, the name of a genus of plants, of the *didynamia gymnoſpermia*, according to Linnæus, which are called by Tournefort, and other authors, bugula.

Ajuru-Catinga, in *Zoology*, the name of a Braſilian parrot. It is of the ſize of a pullet, and all over of a very fine bright green; its eyes are red, and the ſkinny circle about them is white; its beak and legs are alſo white.

Ajuru-Curau, in *Zoology*, the name of a Braſilian ſpecies of parrot, of the ſize and ſhape of the common green parrot, of which there are two kinds. The firſt an extremely beautiful one with a blue crown; the throat and ſides of the head are of a fine yellow, and all the reſt of the body of a chearful green; the long-winged feathers are half black, and half of a fine ſtrong yellow, and at their ends variegated with blue and green; and the tail edged with red, black, and blue. The other kind has the ſame colours differently diſpoſed; its head is yellow, with a whitiſh caſt; the throat and ſides of the head about the eyes are of a clearer yellow; and there is a ſea-green ſpot near the head.

Beſides theſe, there is alſo yet another variety, the ſpecies of which have all the colours of the firſt kind, but have an admixture of black about the head, a yellow ſpot on the crown, another of the ſame colour below the eyes, and a blue one under the throat.

Ajuru-Para, in *Zoology*, the name of a Braſilian ſpecies of parrot of a ſmall ſize, all over of a beautiful green, and with white legs, a white beak, and white ſkinny circles round its eyes.

AJUTAGE, or **Adjutage**, in *Hydraulics*, part of the apparatus of an artificial fountain, or *jet d'eau*; being a ſort of tube, fitted to the mouth, or aperture of the veſſel; through which the water is to be played, and by it determined into this, or that figure.

The word is formed of the verb *ajouter*, *to adapt*.

It is chiefly the diverſity in the *ajutages*, that makes the different kinds of fountains.—And hence, by having ſeveral *ajutages* to be applied occaſionally, one fountain comes to have the effect of many.

Mariotte inquires into the beſt kind of *ajutages*, or ſpouts, for *jets d'eau*, affirming from experiment, that an even poliſhed round hole, in the end of the pipe, gives a higher jet than either a cylindric, or a conical *ajutage*; of which yet the latter is the better. V. Trait. du Mouvem. des Eaux, part 4. Phil. Tranſ. N° 181.

The various ſorts of *ajutages*, their ſtructure, application, &c. ſee under Fountain.

AIX-LA-CHAPELLE waters, are volatile, ſulphureous, ſaponaceous, powerfully penetrating, reſolvent, and contain a portion of iron. The three moſt noted hot waters in Europe, are thoſe of Aix-la-Chapelle, Bourbon, and Bath. Of theſe the firſt are the hotteſt, the moſt nauſeous, purgative, and abundant in ſulphur; the laſt is leaſt ſo.

AIZOON, in *Botany*, a name given by ſome authors to houseleek. It is a diſtinct genus of the *icoſandria pentagynia* claſs, in the Linnæan ſyſtem; the calyx of which is divided into five ſegments, without petals, and the capſule has five cells, with five valves.

AKOND, an officer of juſtice in Perſia, who takes cognizance of the cauſes of orphans and widows; of contracts, and other civil concerns.—He is the head of the ſchool of *law*, and gives lectures to all the ſubaltern officers; he has his deputies in all the courts of the kingdom, who, with the ſecond *ſadra*, make all contracts.

AL, an Arabic particle, prefixed to words, to exalt, or give them a more emphatical ſignification.—As, in *Al*koran, *Al*gebra, &c.

Al, or **Ald**, in our *Ancient Writings*, ſignifies as much as *old*, *ancient*.—This, being prefixed to the names of places, expreſſes their antiquity; as Aldborough, Algate, &c.

ALA, a Latin term, literally ſignifying *wing*, uſed, in *Anatomy*, for ſeveral parts of the body, which bear ſome reſemblance to the figure of a wing.

Thus, the lobes of the liver are ſometimes called *alæ*.

The ſoft, ſpongious bodies in the *pudendum muliebre*, uſually called the *nymphæ*, are denominated *alæ*.

The two cartilages of the noſe, which form the noſtrils, are called *alæ*.

And the ſame denomination is given to the tip of the auricle. It is alſo applied to the proceſs of the *os ſphenoides*.

Ala, in *Botany*, a name given by the Latin writers of *medicine*, in the later ages, to the *helenium*, or elecampane.

Ala is alſo uſed in *Botany*, for the angle which the leaves, or the ſtalks or pedicles of the leaves, form with the ſtem, or branches of the plant from which they ariſe. This angle is uſually acute, and always is directed upwards.

Ala is ſometimes alſo applied to the angle formed by the branches themſelves, with the ſtem; which is alſo obſerved to be very regular and uniform.

Ala has ſeveral other different ſignifications. It moſt frequently is uſed to expreſs the hollow of the ſtalk of a plant, which either the leaf, or the pedicle of the leaf, make with it; or it is that hollow turning, or *ſinus*, placed between the ſtalk, or branch of a plant, and its leaf, from whence a new offspring is wont to put forth. Sometimes it is taken alſo for a little branch, as when we ſay, a ſtock, or ſtem of a plant, is armed with many *alæ*; becauſe theſe ſmall branches ſtand out from it, in form of ſo many wings.

Alæ is alſo uſed to ſignify thoſe petals, or leaves of the papilionaceous flowers, placed between thoſe others which are called the *vexillum* and the *carina*, which make the top and bottom of the flower. Inſtances of flowers of this ſtructure are ſeen in the flowers of peas and beans, in which, the top-leaf, or petal, is the *vexillum*, the bottom the *carina*, and the ſide-ones the *alæ*.

Alæ is alſo uſed for thoſe extremely ſlender and membranaceous parts of ſome ſeeds, which appear as wings placed on them, as in the *plumeria*, the fruit of the trumpet-flower, the fruit of the maple, and the like, which are called by botaniſts *alated* ſeeds.

Alæ, is, finally, uſed alſo for thoſe membranaceous expanſions, which run all the way along the ſtems of ſome plants, which are therefore called *alated* ſtalks.

Alæ, in *Anatomy*, is ſometimes applied to the arm-pits, otherwiſe called *axillæ*. Theſe parts abound with glands, and are great receptacles of humours; whence a rank ſmell ſometimes exhales, called *fœtor alarum*.

Alæ, in the *Military Art*, the two wings or extremes of an army, ranged in form of battle.

ALABARCHA, in *Antiquity*, a kind of magiſtrate among the Jews of Alexandria, whom the emperors allowed them to elect, to have the ſuperintendency of their policy, and decide differences and diſputes which aroſe among them.

ALABARDA, the name of a ſpear anciently uſed by the Helvetians and Germans.

ALABASTER, in *Natural Hiſtory*, a kind of ſtone, ſofter than marble, yet harder than plaiſter of Paris: uſed for the making of figures, and other ornaments of ſculpture.

Some derive the word from *albus*, becauſe of the whiteneſs of this ſtone.—Others, from αλαϐαϛρον, which they form from the privative α, and λαμϐανω, *capio*, *to take*; this ſtone being too ſmooth and ſlippery for the hand to faſten-hold of it.

It is found of all colours; ſome extremely white and ſhining, which is the moſt common; ſome reddiſh or tawny; and ſome is called *onyx* from its colour, which reſembles that of the *onyx*, though very different from it in its nature.

Alabaſter cuts very ſmooth and eaſy, and is much uſed among ſculptors, for little ſtatues, vaſes, and columns.

They ſometimes alſo employ it as plaiſter of Paris: in order to which, they burn and calcine it; after which, mixing it up with water to a thin conſiſtence, it is caſt into a mould, where it readily coagulates into a firm body.

Alabaſter, Mr. Boyle obſerves, being finely powdered, and thus ſet in a baſon over the fire, will, when hot, aſſume the appearance of a FLUID, by rolling in waves, yielding to the ſmalleſt touch, and emitting vapour; all which properties it loſes again, on the departure of the heat, and diſcovers itſelf a mere incoherent powder.

The fineneſs and clearneſs of this ſtone renders it, in ſome meaſure, tranſparent; whence it has been ſometimes alſo employed for windows. There is a church at Florence ſtill illuminated by *alabaſter*-windows; inſtead of panes of glaſs, there are ſlabs of *alabaſter* near fifteen feet high, each of which forms a ſingle window, through which the light is conveyed.

Naturaliſts alſo mention divers extraordinary kinds of *alabaſter*, *ſoft*, *yellow*, *variegated*, *Indian*, *Caramanian*, *German*, &c. Grew ſpeaks of a *baſtard*-ALABASTER, ſpotted, which he calls GYPSUM *variegatum*, whereof there are divers ſorts and colours in the repoſitory of the Royal Society. Theſe all make a ſtrong effervеſcence with ſpirit of nitre. They are found in Burgundy, Miſnia, &c. Of theſe lightly burnt, is made that which is popularly called PLAISTER of Paris.

Ancient authors ſpeak much of the medicinal virtues of *alabaſter*, as a diſcutient. Some recommend it as a ſpecific in a dyſentery. But modern phyſicians ſcarce allow it in either of thoſe characters. Yet ſome diſpenſatories ſtill retain a preparation of it under the title of *unguentum alabaſtrinum*, preſcribed for the head-ach.

The countries in Europe which abound moſt in *alabaſter*, are Germany, toward Coblentz; the province of Maconnois, in the neighbourhood of Cluni in France; Italy, toward Rome; where that of Montaiout is particularly remarkable not only for its whiteneſs, but alſo for the bigneſs of its blocks, ſome of which are ſo large, that ſtatues as big as the life, may eaſily be cut out of them. F. Labat, in his journey to Italy, obſerves, that there are quarries of *alabaſter*, in the neighbourhood of the village called de la Toffa, near Civita Vecchia: there is alſo *alabaſter* to be found in ſome places of Lorrain; but it is not much eſteemed.

Cornelius le Brun, in his Voyage to the Levant (tom. v. p. 284) relates, that he has ſeen mountains of *alabaſter*, which are diſtant about a hundred and fifty leagues weſt from Archangel.

A new manufacture of *baſſo relievos*, from a ſingular ſpecies of factitious *alabaſter*, has been lately eſtabliſhed by M. Letapie, at the baths of St. Philip in Tuſcany. The ſtream at theſe baths depoſits a peculiar kind of ſand, which, when collected and condenſed in the cavities of any body employed to oppoſe its current, acquires the nature, hardneſs, and colour of *alabaſter*, and aſſumes the forms of thoſe cavities in which it is thus lodged. See Abbé Rozier's Obſervations, &c. for June, 1776.

ALABASTER is alſo uſed for a vaſe, wherein odoriferous liquors were anciently put.

The reaſon of the denomination is, that veſſels for this purpoſe were frequently made of the *alabaſter*-ſtone, which Pliny and other ancients repreſent as peculiarly proper for this purpoſe.

Several critics will have the box mentioned in the Goſpels as made of *alabaſter*, to have been of glaſs. And though the texts ſay, that the woman broke it, yet the pieces ſeem miraculouſly to have been united, ſince we are told, the entire box was purchaſed by the emperor Conſtantine, and preſerved as a relic of great price.

Others will have it, that the name *alabaſter* denotes the form, rather than the matter of this box. In this view, they define *alábaſter*, by a box without a handle, deriving the word from the privative *α*, and λαϐη, *anſa*, *handle*.

ALABASTER is alſo ſaid to have been uſed for an ancient liquid meaſure, containing ten ounces of wine, or nine of oil.

In this ſenſe, the *alabaſter* was equal to half the *ſextary*.

ALABASTRA, in a plant, are thoſe little herbaceous leaves which encompaſs the bottoms of flowers, particularly the roſe. See CALIX, &c.

Some, with Jungius, explain *alabaſtra*, by the globe or roundiſh bud of the roſe juſt peeping out.

ALABASTRITÆ, *alabaſters*, in *Natural Hiſtory*, the name of a genus of foſſils allied to the marbles, and defined to be ſtones compoſed of large ſeparate concretions, of great brightneſs, and an elegant, but ſhattery ſtructure, not very hard, not giving fire with ſteel, fermenting with and ſoluble in acids, and calcining in a ſlight fire.

ALABASTRITES is often uſed as ſynonymous with *alabaſter*. But Anſelmus Boetius diſtinguiſhes between *alabaſter* and *alabaſtrites*, in making the criterion of the former to be ſo ſoft, that it may be cut with a knife; and of the latter, that it is ſo hard that it cannot be ſo cut.

Grew ſpeaks of a ſort of *alabaſtrites*, repreſenting the tranſverſe ſection of the trunk of a tree.

ALABASTRUM *dendroide*, in *Natural Hiſtory*, a name given by authors to a ſpecies of alabaſter, found in great abundance in the province of Hohenſtein, and famous for the elegant delineations of trees, and other figures deſcribed in it. See GYPSUM.

ALACUOTH, among Arabian *Phyſicians*, an infirmity of the nerves, whereby a perſon in the act of venery, lets go at the ſame time his *fæces*.

ALADINISTS, a ſect among the Arabs, anſwering to free-thinkers among us.

The *aladiniſts* multiplied greatly under the two learned kings Almanſor and Miramolinus.

ALAISSEE, in *Heraldry*, the ſame with HUMETTY.

ALALCOMENIUS, in *Ancient Chronology*, the Bœotian name for the Athenian month MÆMACTERION, which was the fourth of their year, and anſwered to the latter part of our September, and beginning of October.

ALAMAK, ſee ALMAACK.

ALAMANNICUM, in *Antiquity*, a tribute impoſed on the people by the emperor Alexias Angelus; for raiſing the ſum of ſixteen talents of gold, to be paid the *Alamanti*, as the conditions of a peace ſtipulated with them.

The eccleſiaſtics themſelves were not exempted from this tax.

ALAMIRE, or A-LA-MI-RE, among *Muſicians*, a note of the modern SCALE of muſic. See NOTE.

ALAMODALITY, *alamodalitas*, is defined, by a late writer, a ſtudy or endeavour to accommodate a man's ſelf in point of behaviour, dreſs, converſation, and other actions of life, to the reigning taſte of cuſtom, from a motive of complaiſance, and to avoid the imputation of ill-breeding.

ALAMODALITY *of writing*, *alamodalitas ſcribendi*, is defined, by the ſame perſon, a particular ſtudy or endeavour of learned men to adapt the productions of their minds, both as to the choice of ſubject, and the manner of treating it, to the genius or taſte of the times, in order to render them more acceptable to the readers.

A German writer, under the name of Geamoenus, has a diſſertation on *alamodality* in writing.

ALAMODE, in *Commerce*, a thin, light, gloſſy black ſilk, not quilted or croſſed; chiefly uſed for women's hoods, and men's mourning ſcarves.

The name is French, though not given in the country to this fabric, for which they have no other name but *tafetas noir luſtré*.

The importation of theſe ſilks is regulated by ſeveral acts of parliament. See 4 and 5 W. and M. cap. 5.—5 and 6 W. and M. cap. 20.—6 and 7 W. III. cap. 18.—8 and 9 W. III. cap. 36.—9 and 10 W. III. cap. 43.—5 Anne, cap. 10. 20.

ALANA-GIEBA, a name given to the yellowiſh-white TRIPOLI.

ALANA-TERRA, Engliſh *oker*; it is eſteemed drying and aſtringent; its principal uſe is to mix with ſalts in diſtillation, in order to keep them from melting. It is thought that this ſtone is what the ancients called the SAMIAN *ſtone*.

ALANFUTA, in the Arabian *Phyſic*, the name given to a vein between the chin and under lip, anciently uſed to be opened againſt a ſtinking breath.

ALANORARIUS, in our *Ancient Cuſtoms*, a keeper or manager of ſpaniels, or ſetting-dogs, for the ſport of hunting, hawking, &c.

The word is formed from the Gothic, *alan*, a *greyhound*.

ALAPOULI, in *Natural Hiſtory*, the name of an Eaſt-Indian tree, a ſpecies of the *bilimbi*, which is uſed in medicine as a purge and vomit, mixt with the ſeeds of muſtard.

ALAQUECA, a medicinal ſtone brought from the Indies, in ſmall gloſſy fragments; much praiſed by ſome for its efficacy in hæmorrhages, when applied externally.

ALARAF, in the Mahometan *Theology*, the partition wall that ſeparates heaven from hell.

Alaraf gives the denomination to the ſeventh chapter of the Alcoran, wherein mention is made of this wall. Some take it for a ſort of *limbus* for the patriarchs, prophets, &c. others place here ſuch whoſe good and evil works ſo exactly balance each other, that they neither deſerve reward nor puniſhment.

ALARES, in *Antiquity*, are ſuppoſed by ſome authors to have been a kind of *militia*, or ſoldiery, among the Romans; ſo called from *ala*, a *wing*, becauſe of their lightneſs and ſwiftneſs in the combat.

Others make them a people of Pannonia; but others, with more probability, take *alares* for an adjective, or epithet, and apply it to the Roman cavalry; becauſe placed in the two wings, or *alæ*, of the army; for which reaſon, a body of horſe was called *ala*.

ALARES *muſculi*, in *Anatomy*. See PTERYGOIDEUS.

ALARIS *vena*, the inmoſt of the three veins in the bend of the arm.

ALARM, properly denotes a ſudden apprehenſion, conceived from ſome noiſe, or report, which makes men run to their arms, and ſtand on their guard.

The word is French, formed from the Italian *all' arme*, *to arms*; whence *gridare all' arme*, q. d. *to call to arms*.

Alarms are either true, that is, founded on juſt notice, or falſe.

Alarms, *falſe*, are frequently given by an enemy, either to fatigue the other's army, or by way of diverſion; to keep themſelves ſafe and quiet from attacks. To remedy the inconveniences of formal *alarms*, and prevent the horror and confuſion of trumpets, and noiſe of warlike cries, the captains uſually give the *alarm*, by ſilent advice, without noiſe.

Alarm-*poſt*, is the ground appointed to each regiment, by the quarter-maſter-general, for them to march to, in caſe of an *alarm*.

In a garriſon, the *alarm-poſt* is the place where every regiment is ordered to draw up, on ordinary occaſions.

Alarm, in *Fencing*, denotes a ſtep, or ſtamp, made on the ground with the advancing foot.

This coincides with what is otherwiſe called an appel, or challenge.

Alarm, or rather **Alarum**, is alſo uſed for an inſtrument to awaken perſons at a certain hour: one very ſimple contrivance of this kind, is that uſed by weavers. See Weaver's *Alarm*.

Alarm-*bell*, that which is rung to call the people together on ſome ſuch occaſion as a fire, mutiny, or the appearance of an enemy. This is what the French call *toeſin*.

ALASCANI, in *Church Hiſtory*, a ſect of Antilutherans, whoſe diſtinguiſhing tenet, beſides their denying baptiſm, is ſaid to have been this, that the words, *This is my body*, in the inſtitution of the euchariſt, are not to be underſtood of the bread, but of the whole action, or celebration of the ſupper.

They are ſaid to have taken the name from one Joannes a Laſco, a Poliſh baron, ſuperintendant of the church of that country, in England.

ALASTROB, among *Alchemiſts*, denotes lead; though ſome will have it to ſignify CALX.

ALATED *quadrupeds*. See Quadruped.

Alated *leaves*, among *Botaniſts*, thoſe made up of ſeveral pinnated ones; as in the *orobus*. See Leaf.

ALATERNOIDES, a name given by botaniſts to the CASSINE.

ALATERNUS, in *Botany*, the *rhamnus* of Linnæus. See Buckthorn, and Privet.

ALAUDA, in *Ornithology*, a genus of the order of *paſſeres*, and claſs of *aves*, in the Linnæan ſyſtem. See Lark.

Alauda, in *Ichthyology*, ſee Blennius.

ALB, **Alba**, **Albe**, a robe, or veſtment, of white linen, hanging down to the feet, and tied round the waſte of the wearer with a girdle or ſaſh. It was anciently embroidered with various colours, ornamented with fringe, wherein the Romiſh prieſts performed divine ſervice.

The *alb* correſponds to the ſurplice among us.—The rubric of Edward VI. diſtinguiſhes between them. It takes its name from its colour, *albus*, *white*.

In the ancient church it was uſual with thoſe newly baptiſed to wear an *alb*, or white veſtment, for eight days; and the Sunday after Eaſter was called *Dominica in albis*, on account of the *albs* worn by the neophytes, who were baptiſed on Eaſter-day. The *albs* were alſo worn by laymen living in monaſteries.

Alb. See Asper.

ALBADARA, ſignifies in Arabic the *ſeſamoide* bone of the firſt joint of the great toe, which is about the ſize of a ſmall pea. Its uſe is to that joint much the ſame as the *patella* is to that of the knee.

Alba Firma, or **Album**, was a yearly rent, payable to the chief lord of a hundred; ſo called, becauſe paid wholly in white money, or ſilver, and not in corn, which was called *black-mail*.

Alba Terra, among *Alchemiſts*, denotes the philoſophers ſtone, compounded of mercury and ſulphur.

ALBANENSES, ſee Albigenses.

ALBANI, in *Middle-aged Writers*, denotes ſtrangers or foreigners: anſwering to what we call aliens.

Albani, in *Antiquity*, a college of SALII, or prieſts of Mars, inſtituted by Tarquin, and denominated from mount Albanus, the place of their reſidence.

ALBANUM, among *Chemiſts*, denotes ſalt of urine.

ALBARA, or **Albora**, among *Phyſicians*, a mixt ſpecies of malignant itch, compounded of the *morphew*, *ſerpigo*, and *lepra*.

The *albora* partakes moſt of the nature of the leproſy; ſome make it the ſame with the LEUCE, VITILIGO, or MORPHEW. It ſignifies likewiſe the white POPLAR.

ALBARAZIN, or **Albazarin**, a kind of Spaniſh wool.

ALBARDEOLA, in *Zoology*, a name given by many authors to the PLATEA, or ſpoon-bill; a bird approaching to the nature of the HERON.

ALBARII, in *Antiquity*, properly denoted thoſe who gave the whitening to earthen veſſels, &c. In which ſenſe they ſtood contradiſtinguiſhed from *dealbatores*, who whitened walls.

ALBARIUM *opus*, in the *Ancient Building*, the incruſtation or covering of the roofs of houſes with white plaſter, made of mere lime. The workmen were called *albini*, or *albarii*.

This is otherwiſe called *opus album*. It differs from *tectorium*, which is a common name given to all roofing or cieling, including even that formed of lime and ſand, or even lime and marble; whereas *albarium* was reſtrained to that made of lime alone.

ALBATI *equi*, in *Antiquity*, was a denomination given to thoſe horſes in the games of the *Circus*, which were diſtinguiſhed by white cloths or furniture.

In which ſenſe, *albati* ſtands contradiſtinguiſhed from *ruſſati*, *praſini*, and *veneti*.

ALBATROSSE, the name of a large ſea-bird, common about the Cape of Good Hope, Cape Horn, and in many other places. This is a thieviſh creature, and principally feeds on the prey which another ſea-bird, called the *booby*, provides for itſelf.

It is ſaid that the head of the *albatroſſe* changes from brown to a fine ſcarlet, while it ſits on its eggs, and afterwards becomes brown again.

ALBELEN, in *Zoology*, the name of a fiſh of the truttaceous kind, called alſo *albula*, and much reſembling the *ferra*. It is caught in the German and other lakes, and is found from five or ſix to twelve pounds weight, but that more rarely. Its colour is a fine ſilvery white.

ALBELLUS, a ſpecies of *anſeres*, in the Linnæan ſyſtem, belonging to the order of MERGUS.

ALBEOLA, a ſpecies of *anas*.

ALBERNUO, a kind of camblet, or barracan, that comes from the Levant by the way of Marſeilles.

ALBERTISTS, a ſect of ſcholaſtics, denominated from their leader Albertus Magnus.

ALBESIA, a kind of ſhield uſed by the ancient Albenſes, a nation of the Marſi.

ALBICILLA, in *Natural Hiſtory*, a name given by ſome authors to that ſpecies of eagle commonly called PYGARGUS, from the whiteneſs of part of its tail.

ALBIGENSES, a ſect about Tholouſe and Alb, in Languedoc, whence they derived their name; who, in the twelfth century, became remarkable for their oppoſition to the diſcipline and ceremonies of the church of Rome. See Reformation.

They were alſo known by various other names; as, Petrobruſſians, Arnoldiſts, Cathari, Patarins, Publicans, Tiſſerans, Bons-hommes, Paſſagers, &c. Some will have them to be the ſame with the Albanenſes; and they who think them different, attribute the ſame opinions to both. They were a party of the Paulicians, who migrated from Bulgaria and Thrace into other countries. Their firſt ſettlement was in Italy, whence they ſent out colonies into almoſt all the other provinces of Europe. It is ſaid that Peter Bruys was the firſt that brought them into Languedoc, about the year 1126. See Petrobrussian.

The Romaniſts tax the *Albigenſes* with abundance of heterodox opinions; as, for inſtance, that there are two Gods, the one infinitely good, and the other infinitely evil: that the good God made the inviſible world, and the evil one that which we live in; with the reſt of the Manichean tenets.

But this ſeems to be one of thoſe pious frauds allowed particularly in that church, which eſteems it a kind of merit to blacken heretics, and thoſe whom they chuſe to call ſo.

However this be, the *Albigenſes* grew ſo formidable in a little time, that a holy league, or croizade, was agreed upon among the catholics; and war denounced againſt them, the pope himſelf raiſing the firſt ſtandard.—In 1229, a peace was ſtruck up, and an inquiſition eſtabliſhed at Tholouſe, from which time the *Albigenſes* dwindled by little and little, till the times of the reformation; when ſuch of them as were left, fell in with the Vaudois, and became conformable to the doctrine of Zuinglius, and the diſcipline of Geneva. See Waldenses.

ALBINI, in *Antiquity*, ſee Albarium *opus*.

ALBIREO, a ſtar of the third or fourth magnitude, in the conſtellation CYGNUS.

ALBOGALERUS, in Roman *Antiquity*, a ſacerdotal cap, or ornament, worn by the *flamen dialis*, which is otherwiſe called *galerus*.

ALBORAK, in the Mahometan *Theology*, the beaſt on which the prophet is ſaid to have rode in his extraordinary aerial journies. It is repreſented as of an intermediate ſhape and ſize between an aſs and a mule; and many fabulous accounts are given of it by the Arabian commentators.

ALBORO, in *Zoology*, a name by which the ERYTHRINUS, a ſmall red fiſh, caught in the Mediterranean, is commonly known in the markets of Rome and Venice.

ALBUCA, in *Botany*, a diſtinct genus in the Linnæan ſyſtem, belonging to the claſs of *hexandria monogynia*.

ALBUCUS, a name uſed by ſome for the white *aſphodel*.

ALBUGINEA, in *Anatomy*, the outermoſt coat, or tegument, of the eye; otherwiſe called *adnata*, and *conjunctiva*. It takes its name *albuginea* from its whiteneſs; it being this that forms what we call the *album*, or white of the EYE.

ALBUGINEA is alſo applied to the third coat of the teſticles; ſo called from its colour, which is white.

It is a ſtrong thick membrane, very ſmooth on the outer ſurface; the inner, which adheres to the ſubſtance of the teſticle, being rough and uneven. Into its upper part are inſerted blood-veſſels, nerves, and lymphatics, which from thence ſend divers branches into the ſubſtance of the teſticles. See TUNICA.

ALBUGINEUS is applied, by ſome, to denote the aqueous humour of the eye.

ALBUGO, or ALBUM *oculi*, the ſame with *albuginea*, or the *white of the eye*.

ALBUGO is a whitiſh, denſe, opaque ſpot, or film, growing on the horny tunic, by which it loſes its native colour, and becomes white and opaque.

The *albugo* is the ſame with what is otherwiſe called LEUCOMA.

It is moſt commonly the conſequence of inflammations, by the extravaſation of humours, between the membranes of this tunicle; and particularly in the ſmall-pox, by the ſuppuration of puſtules upon this part; but they ſometimes ariſe from ſcars left after punctures in the *cornea*, from ſwords, knives, glaſs, &c. from burns, or from cauſtic ſubſtances falling into the eye, or by a peculiar tunic growing to the eye itſelf.

The cure is various, according to circumſtances. If the diſorder ariſes from inſpiſſated humours, an attenuating diet and medicines, eſpecially ſudorific decoctions and infuſions, together with phlebotomy, ſcarifications, bliſters, and *pediluvia*, are uſeful. Cold and aſtringent *collyria*, eſpecially thoſe of white vitriol, are here pernicious; whereas warm applications are of the greateſt ſervice. But if theſe diſorders be of long ſtanding, there is little or no hope of a cure.

If the diſorder proceeds from abſceſſes, or a ſuppuration of matter, after an inflammation, betwixt the *laminæ* of the *cornea*, which they elevate like a pea, or pearl, whence they are ſometimes called *pearls*, an inciſion ought to be made into the *cornea*, to diſcharge the included matter. But neither this nor any other method will ſucceed, ſo as to preſerve the eye-ſight clear, if the matter be lodged deep.

If the puſtules take their riſe from burns, or the ſmall-pox, the contained matter muſt be diſcharged, and the pellicle muſt be removed with *alum. uſt. cum ſacchar. cand. & ovor. teſt. pp.* applied every day to the *cornea*.

Spots in the *cornea* ariſing from wounds, ſcars, or the abuſe of vitriolic *collyria*, are ſeldom curable.

Dr. Mead tells us of ſeveral cures of the *albugo*, performed by means of an eye-powder, which he recommends. The receipt is thus: take of common glaſs any quantity, pound it in a mortar to a very fine powder; then add an equal quantity of white ſugar-candy, and levigate the mixture till it becomes impalpable.

A little of this powder put into the eye with a quill, every day, gradually wears off the ſpot.

Another method of removing the ſpeck, is to have it pared by a ſurgeon every day with a knife: but this ſeems a doubtful remedy.

ALBULA, in *Ichthyology*, a genus of fiſhes of the truttaceous kind, having no teeth.

ALBULA *Indica*, the name of a ſmall fiſh, reſembling a herring, caught about the ſhores of the Eaſt-Indies, and called by the Dutch the WIT-fiſh.

ALBULA *nobilis*, the name of one of the truttaceous fiſhes, caught in great plenty in the lakes of Germany, and other places.

ALBULA is alſo a name given, by ſome naturaliſts, to mineral waters of the aluminous kind; hence endued with an aſtringent quality, and of uſe in wounds.

The word is Greek, in which language it ſignifies the ſame.

ALBUM, in *Literary Hiſtory*, is uſed to denote a kind of table, or pocket-book, wherein the men of letters with whom a perſon has converſed, inſcribe their names, with ſome ſentence, or motto.

This is called by divers names and titles, as *album amicorum*, *repoſitorium amicorum*, &c.

The famous Algernon Sydney being in Denmark, was by the univerſity of Copenhagen preſented with their *album*, whereupon he wrote theſe words:

———— *Manus haec inimica tyrannis*
Enſe petit placidam ſub libertate quietem.

ALBUM, in *Antiquity*, denotes a white table, or the like, whereon names, or other matters, were to be inſcribed, or entered.

Hence we meet with *album prætoris*, *album decurionum*, *album judicum*, &c.

The high-prieſt entered the chief tranſactions of each year into an *album*, or table, which was hung up in his houſe for the public uſe.

ALBUM, in *Natural Hiſtory*, is uſed for the white of an egg; more properly called *albumen*.

ALBUM, among *Chemiſts*, is uſed for white lead, popularly called *ceruſs*.

ALBUM is alſo uſed, among *Alchemiſts*, for a tincture pretended to tranſmute metals.

ALBUM is alſo applied, in *Pharmacy*, as a title, or epithet, of divers compound medicines. Thus we meet with *unguentum album cum camphora*, &c.

ALBUM *Græcum*, dogs white dung, is a medicinal drug, in the preſent practice, uſed with honey, to cleanſe and deterge, chiefly in inflammations in the throat; and for the moſt part outwardly, as a plaſter; but, as Dr. Quincy obſerves, ſeldom to any great purpoſe. See Neumann's Works, p. 585.

Some ſpeak of its uſe internally, in the *angina*, and other inflammations; as alſo in the dyſentery, colic, &c. and to prevent burns from riſing into bliſters.

ALBUM *nigrum* is uſed, among *Medical Writers*, for mice-dung, by ſome alſo called *muſcerda*.

ALBUM *oculi*, among *Anatomiſts*, denotes the *tunica adnata*; ſometimes alſo called *albugo*; popularly the white of the EYE.

ALBUMEN *ovi*, in *Natural Hiſtory*, and in *Medicine*, the white of an EGG.

ALBURN, or AUBURN *colour*, a whitiſh brown, or mixt colour, partaking of red and white.

ALBURNUM, in *Phytology*, the exterior part of the wood of a tree, next the BARK.

ALBURNUS, in *Zoology*, the name of a freſh water fiſh, commonly known in Engliſh by the name of the BLEAK. It is common in our rivers, and in thoſe of Germany and elſewhere, and is eſteemed a well taſted fiſh. It is moſt in ſeaſon in September. It is a ſpecies of the *cyprinus* of Linnæus.

ALBURNUS *lacuſtris*, in *Ichthyology*, a name given by the writers who have copied Geſner's errors, to the *ballerus* of the ancients, or the *pallerus*, or *pleyſta*, of the moderns.

ALBUS *piſcis*, the white fiſh, in *Ichthyology*, a name by which Salvian has called the fiſh more uſually called the *capito lacuſtris*, and ſeeming the ſame with the blue chub, or, as it is more frequently called, the JENTLING.

This fiſh is a ſpecies of the CYPRINUS, called by the Italians *albo*.

ALCA, in *Ornithology*, ſee ALKA.

ALCAHEST, ſee ALKAHEST.

ALCAICS, in the *Ancient Poetry*, a name common to ſeveral kinds of verſes; ſo called from the poet Alcæus, the inventor of them.

The firſt ſpecies of *Alcaics* conſiſts of five feet; of which the firſt may be either ſpondee, or iambic; the ſecond, is an iambic; the third, a long ſyllable; the fourth, a dactyl; and the fifth, a dactyl, or amphimacer: as theſe of Horace,

Omnes eodem cogimur, omnium
Verſatur urna, ſerius, ocyus,
Sors exitura.

The ſecond ſpecies of *Alcaics* conſiſts of two dactyls, and two trochees; as,

Exilium impoſitura cymbæ.

Beſides theſe two kinds of verſes, which are properly called *Dactylic Alcaics*, there is a third ſort, called ſimply *Alcaic*; whereof the firſt is an *Epitrite*, the ſecond and third are *Choriambuſes*, and the fourth a *Bacchius*; as,

Cur timet fla|vum Tiberim | tangere? cur | olivum?

ALCAIC *Ode* conſiſts of four ſtrophes, each of which contains four verſes: the two firſt are *Alcaic* verſes of the firſt kind; the third an iambic dimeter hypercatalectic, i.e. of four feet, and a long ſyllable: as,

Sors exitura, & nos in æternum.

The fourth is an *Alcaic* of the ſecond kind.—The entire *Alcaic* ſtrophe is as follows:

Omnes eodem cogimur, omnium
Verſatur urna, ſerius, ocyus,
Sors exitura, & nos in æternum
Exilium impoſitura cymbæ.

ALCAID, in matters of *Policy*, an officer of juſtice among the Moors, Spaniards, and Portugueſe.

The word is alſo written *alcade*, *alcalde*, and *alcayd*. Sometimes alſo *alvacide*.

It is originally Arabic, compounded of the particle *al*, and the verb *kad*, or *akad*, *to rule*, *govern*, *adminiſter*.

The emperor of Morocco's court conſiſts chiefly of ſeven or eight *alcaids*, his devoted ſlaves.

The *alcaid*, or governor of a city or caſtle in Barbary, hath ſovereign juriſdiction in civil and criminal concerns; and all fines and puniſhments are inflicted at his pleaſure.

In ſome places the *alcaids* are little elſe than the emperor's tax-gatherers.

Alcaid, among the Spaniards, &c. is a kind of inferior judge, or miniſter of juſtice, who takes cognizance of cauſes in the firſt inſtance, and anſwers in good meaſure to the French *prevoſt*, and an Engliſh juſtice of peace.

They had alſo their *alcaid* of the whores, who took cognizance of caſes of whoredom, and adultery. This officer was otherwiſe called *alcaid* of honour.

ALCALI, ſee Alkali.

ALCALIZATION, or Alkalization, which ſee.

ALCANNA, a coſmetic powder, much uſed in the Levant, made of the leaf of a ſpecies of ſhrub frequent in Barbary.

Alcanna, or Alcana, by the Turks called *knab*, a dying drug, brought from Egypt and the Levant, being the leaves of a plant called by botaniſts *liguſtrum Ægyptiacum*, or the Egyptian *privet*. The Egyptians call it *elle hanne*. The colour drawn from theſe leaves is either red or yellow, according to the manner of the preparation; yellow when ſteeped in common water, and red when infuſed in vinegar, or alum-water.

The people of Cairo make a conſiderable traffic of theſe leaves; which they reduce to a powder called *archenda*, much uſed by the women to dye their nails and hair of a golden-yellow hue.—From the berries of *alcana* an oil is extracted, of a very agreeable ſmell, and ſome uſe in phyſic, as a calmer, called oil of Cyprus, a name which is ſometimes alſo given to the plant. Phil. Tranſ. abr. vol. x. ii. 741.

Alcanna is alſo a denomination given by ſome to iſinglaſs, or ICHTHYOCOLLA, and the ANCHUSA.

ALCANTARA.—*Order of* Alcantara, an ancient military order. The preciſe year of its inſtitution is not ſettled among antiquarians.

The knights of *Alcantara* make the ſame vows as thoſe of Calatrava, and are only diſtinguiſhed from them by this, that the croſs fleur de lys, which they bear over a large white cloak, is of a green colour: they poſſeſs thirty-ſeven commandaries.

By the terms of the ſurrender of *Alcantara* to this order, it was ſtipulated, that there ſhould be a confraternity between the two orders, with the ſame practices and obſervances in both; and that the order of *Alcantara* ſhould be ſubject to be viſited by the grand-maſter of Calatrava. But the former ſoon releaſed themſelves from this engagement, on pretence that their grand-maſter had not been called to the election of that of Calatrava, as had been likewiſe ſtipulated in the articles.

After the expulſion of the Moors, and the taking of Granada, the ſovereignty of the order of *Alcantara*, and that of Calatrava, was ſettled in the crown of Caſtile, by Ferdinand and Iſabella.

In 1540, the knights of *Alcantara* ſued for leave to marry; which was granted them.

The hiſtory of this order is chiefly taken up in expeditions againſt the Moors, and broils with their neighbours.

ALCE, in *Zoology*, the ELK.

ALCEA, in *Botany*, VERVAIN-MALLOW.

Mr. Tournefort enumerates twenty ſpecies of this *alcea*, which is a medicinal herb, whoſe virtues are much the ſame with the mallow, but in leſs degree. It is uſed as an emollient, and is an ingredient in plaſters. Dioſcorides mentions the root, drank with wine or water, as a remedy againſt dyſenteries and ruptures.

There is a ſpecies of this plant called *alcea indica*, the ſeeds of which the Egyptians dry, and of which they mix the powder in their coffee, to make it more effectual in ſtrengthening their head, ſtomach, &c.

Alcea *veſicaria*, the *bladder alcea*, in *Botany*, the name of a ſpecies of KETMIA.

ALCEDO *vocalis*, in *Zoology*, a name by which Bellonius, Aldrovandus, and ſome others, have called the red ſparrow.

Alcedo, a genus of birds belonging to the order of *picæ*, and comprehending fifteen ſpecies. The characters are, that the beak is three cornered, thick, ſtrait, and long; the tongue is ſhort, fleſhy, ſmooth, and acute, and the feet are formed for walking.

ALCHATA, in *Zoology*, a ſpecies of the TETRAO.

ALCHEMIST, a perſon who profeſſes ALCHEMY.

ALCHIMELECH, the Egyptian *melilot*. Ray's Hiſt. Plant.

ALCHIMELLA, ſee Ladies-*mantle*.

ALCHITRAM, among the *Alchemiſts*, denotes ſometimes the oil of juniper, ſometimes liquid pitch, and ſometimes *arſenic*, prepared by ablution.

This is otherwiſe written *alchieram*, and *alchitran*; ſometimes *alchytran*, and *alkytran*.

ALCHOLLEA, a kind of food in uſe among the weſtern Moors, being fleſhy meat, pickled, dried, boiled, and potted.

ALCHYMY, or Alchemy, a higher, or more refined kind of CHYMISTRY, employed in the more myſterious reſearches of the art.

The word ſeems compounded of the Arabic augmentative particle *al*, and the Latin *chymia*, Egyptian *kemia*, or Greek χημια, *chymiſtry*. Though ſome object to this origin, and deny the Arabic any ſhare in the compoſition of the word; urging, that *alchemia* occurs in an author who wrote before the Europeans had any commerce with the Arabians, or the Arabians any learning, i. e. before the time of Mahomet.

The name *alchymy*, however, is really of no ancient ſtanding: the firſt time it occurs, is in Julius Firmicus Maternus, an author who lived under Conſtantine the Great, and who, in his Matheſis 3. 55. ſpeaking of the influences of the heavenly bodies, affirms, 'that if the 'moon be in the houſe of Saturn, at the time a child is 'born, he ſhall be ſkilled in *alchymy*.'

The great objects or ends purſued by *alchymy*, are, 1. The making of gold, which is attempted three different ways; by ſeparation, by maturation, and by tranſmutation; which laſt is to be effected by means of what they call the *philoſophers ſtone*.

With a view to this end, *alchymy*, in ſome ancient writers, is alſo called ποιητικη, *poetice*, and χρυσοποιητικη, *chryſo-poetice*, q. d. the art of making gold.—And hence, alſo, the artiſts themſelves are called ποιηται, *makers*; and χρυσοποιηται, *gold-makers*.

2. An univerſal medicine, adequate to all diſeaſes. See Elixir.

3. An univerſal diſſolvent, or ALKAHEST.

4. An univerſal ferment; or a matter, which, being applied to any ſeed, ſhall increaſe its fecundity to infinity: if, e. gr. it be applied to gold, it ſhall change the gold into the philoſophers ſtone of gold; if to ſilver, into the philoſophers ſtone of ſilver i. e. into a matter which tranſmutes every thing into ſilver; and if to a tree, the reſult is, the philoſophers ſtone of the tree, which tranſmutes every thing, to which it is applied, into trees. See a Hiſtory of *Alchymy*, and its Principles, &c. Dr. Lewis's Commerc. Philoſoph. Techn. p. 199, & ſeq.

The origin and antiquity of *alchymy* are much controverted.—If regard may be had to legend and tradition, it muſt be as old as the flood. But in effect, not one of the ancient poets, philoſophers, or phyſicians, from Homer, till four hundred years after Chriſt, mention any ſuch thing.—The firſt author who ſpeaks of making gold, is Zoſimus the Panopolite, who lived towards the beginning of the fifth century, and who has an expreſs treatiſe, Περι της ἱερας τεχνης της τȣ χρυσȣ και τȣ αργυρȣ ποιησεως, *Of the divine art of making gold and ſilver*, ſtill extant, in manuſcript, in the French king's library.

Kircher aſſerts, that the theory of the philoſophers ſtone is delivered at large in the table of Hermes; and that the ancient Egyptians were not ignorant of the art, but declined to proſecute it. They did not need to tranſmute gold; they had ways of ſeparating it from all kinds of bodies, from the very mud of the Nile, and ſtones of all kinds: however, he adds, theſe ſecrets were never written, or publiſhed, but confined to the royal family, and handed down traditionally from father to ſon.

Kircher, inſtructed in all the ſecrets of chemiſtry, has fully expoſed the artifices and impoſtures of *alchemiſts*.

An *alchemiſt* puts into a crucible the matter which is to be converted into gold; this he ſets on the fire, blows it, ſtirs it with rods; and, after divers operations, gold is found at the bottom of the crucible, inſtead of the matter firſt put in: this there are a thouſand ways of effecting, without any tranſmutation. Sometimes it is done, by dextrouſly dropping in a piece of gold concealed between the fingers, ſometimes by caſting in a little of the duſt of gold, or ſilver, diſguiſed under the appearance of ſome elixir, or other indifferent matter; ſometimes a crucible is uſed which has a double bottom, and gold put between the two; ſometimes the rod uſed to ſtir the matter is hollow, and filled with the duſt of the metal deſired; at other times there is metal mixed with the charcoal, the aſhes of the furnace, or the like.

Mr. Harris very properly diſtinguiſhes *alchemy* from *chemiſtry*; and defines the former to be *ars ſine arte, cujus principium eſt mentiri, medium laborare, et finis mendicare*; and the Italians have a proverb, *non ti fidiare al alchemiſta povero o medico amalato*. The ruin which has attended this deluſion has occaſioned ſeveral ſtates to make ſevere laws againſt pretences to *alchymy*. The Romans formerly baniſhed all ſuch as profeſſed it; and the ſacred canons likewiſe directed the thunder of their cenſure againſt them. Diocleſian and Cæſar directed all books which treated of this ſubject to be burnt. Rymer furniſhes us with a licence for practiſing *alchymy*, with all kinds of metals and minerals, granted to one Richard Carter in the year 1476. Rym. Fœd. tom. xii. Neverthleleſs, we have had ſevere laws againſt *alchymy*, and multiplying of metals, as much ſo as againſt coining itſelf.

The beſt writers in *alchymy*, according to the judgment of Boerhaave, are Geber, Morienus, Roger Bacon, Ripley, Raim. Lully, Bern. count Treviſanus, John and Iſaac Holandus, Sendivogius, Baſil Valentine, Artephius, Paracelſus, Irenæus Philalethes, and Van Helmont. See Petri Borelli, Bibliotheca Chymica, ſive Catalogus Librorum Philoſophicorum Hermeticorum, Par. 1654. 12mo. It contains an account of about four thouſand writers.

ALCHYMY is alſo uſed, in a leſs proper ſenſe, for the art of common *chemiſtry*.

In which ſenſe, Libavius has publiſhed a Practice of Alchymy, deſcribing the preparations of the chief chemical medicines. And. Libavii Praxis Alchemiæ, h. e. de Artificioſa Præparatione Præcipuorum Medicamentorum, Francof. 1604. 8vo.

ALCIBIADUM. See ALCIBIUM.

ALCIBIUM, in *Botany*, a word uſed ſometimes by the ancients, as an epithet, for a kind of *echium*, or viper's bugloſs, and ſometimes as the name of a peculiar plant.

ALCMANIAN, in the *Ancient Poetry*, a kind of lyric verſe, or metre, conſiſting of two dactyls, and two trochees. Such e. gr. is

Virginibus puerique canto.

The word is formed from *Alcman*, the name of an ancient Greek poet, in great eſteem for his Erotics, or amorous compoſitions.

Some authors aſſign other *Alcmanian* verſes, compoſed of three *dactyls*, and a long ſyllable:

E. gr. *Munera lætitiamque Dei.*

Others give an *Alcmanian*, compoſed of a *dactyl, ſpondee*, and another *dactyl*, and a long ſyllable:

E. gr. *Ne dubita, nam vera fides.*

ALCOHOL, or ALKOOL, in *Chemiſtry*, an Arabic term, chiefly underſtood of the pureſt ſpirit of wine, raiſed, or rectified, by repeated diſtillations, to its utmoſt ſubtilty and perfection.

The word is formed from the Arabic or Hebrew קאל, *kaal, to attenuate, ſubtilize.*

Alcohol is the moſt complete production of vegetable fermentation; and when brought to its higheſt degree of perfection, is the lighteſt *fluid* next to *air*; perfectly tranſparent, very thin, moſt ſimple, totally inflammable, without producing any ſmoke, or diffuſing any diſagreeable ſcent while it is burning; is exceeding volatile, without leaving any *fæces*; abſolutely immutable in diſtillation, extremely expanſible by heat, very eaſily diſpoſed to ebullition by fire, of a very pleaſant ſmell, and of a particular grateful taſte. All the humours of the human body that we are acquainted with, it coagulates in an inſtant, excepting the pure water and urine; whilſt it hardens all the ſolid parts, and thus preſerves both from putrefaction, or ſpontaneous colliquation. It preſerves the bodies of inſects, fiſh, birds, and other animals that are put into it, from corruption, or alteration, for ages, if cloſely ſtopped. With water, vinegar, any acid liquors, oils, and pure volatile alkaline ſalts, it ſuffers itſelf to be mixed, and that nearly of an equable mixture; gummy and reſinous ſubſtances it diſſolves. So that we are acquainted with no liquid, produced either by nature, or by the art of *chemiſtry*, that is capable of being united with more bodies than *alcohol*; but in a particular manner it proves an excellent vehicle for the *ſpiritus rector* of vegetables, which, by uniting with it, may be extracted from its proper body, retained, and applied to medicinal and other uſes.

In the human body, by its ſmell, taſte, and vapour, it wonderfully quickens, gratefully affects, and invigorates the animal, natural, and vital ſpirits, nerves, and brain. Flames fed by *alcohol* of wine, though of the ſame bigneſs with other flames, cauſe different degrees of dilatation in metals. See Collect. Acad. tom. i. p. 113.

Since there are various, and ſometimes very inviting occaſions, in which chemiſts, and other artificers, ſtand in need of the true and pureſt *alcohol*, the leaſt remainder of water rendering the operation unſucceſsful, it is abſolutely neceſſary we ſhould have ſome marks by which we may be able to diſtinguiſh whether our *alcohol* be pure or not. The principal of theſe are,

1. If the ſuppoſed *alcohol* contains any oil diſſolved in it, and ſo equally diſtributed through it, that it is no ways perceptible, than upon the pouring of water into it, the mixture will grow white, and the oil will ſeparate from the *alcohol*.

2. If any thing of an acid lies concealed in *alcohol*, a little of it mixed with the alcaline ſpirit of ſal ammoniac, will diſcover the acid by an effervеſcence; for otherwiſe there would be only a ſimple coagulation.

3. If there be any thing of an alcali intermixed, it will appear by the effervеſcence excited by the affuſion of an acid. As for other ſalts, they are ſeldom found in it.

4. But it is a matter of greater difficulty to diſcover whether there be any water intermixed with it; and therefore chemiſts have contrived certain methods by which this may alſo be determined, of which the beſt is this. Take a chemical vial with a long narrow neck, the bulb of which will hold four or ſix ounces of *alcohol*. Fill this two-thirds full with the *alcohol* you intend to examine, into which throw a dram of the pureſt and drieſt ſalt of tartar, coming very hot out of the fire; then mix them by ſhaking them together, and ſet them over the fire till the *alcohol* be juſt ready to boil. Being thus ſhaken and heated, if the ſalt of tartar remain perfectly dry, without the leaſt ſign of moiſture, we are ſure that there is no water in this *alcohol*.

The internal uſe of *alcohol* is highly deſtructive to the animal frame, as, among other inconveniencies, it dries and contracts the nerves, and coagulates the juices. *Alcohol*, however, and fermented ſpirits in general, are of good ſervice externally applied, in many caſes. Thus ſpirit of wine, eſpecially camphorated, is a very good addition to fomentations deſigned to reſolve inflammations, whether external or internal.

Pure *alcohol* likewiſe, according to Boerhaave, is the beſt of ſtyptics. According to Juncker, it is a combination of the acetous acid, phlogiſton, and water; but the ableſt chemiſts are not yet agreed as to the conſtituent principles of this fluid.

ALCOHOL is ſometimes alſo uſed for a very fine, impalpable powder, which women in the Eaſt make uſe of as a kind of *fucus*. Dr. Shaw in his Travels, ſpeaking of the women in Barbary, ſays, that none of theſe ladies think themſelves completely dreſſed, until they have tinged their hair, and edges of their eye-lids with *al-ka-hol*, the powder of lead ore. From this impalpable powder the name was transferred to other ſubtile powders, and afterwards to ſpirits of wine, exalted to its higheſt purity and perfection. See PORPHYRISATION.

ALCOHOL, in the Arabian *Aſtrology*, is when a heavy ſlow-paced planet receives another lighter one within its orb, ſo as to come in conjunction therewith.

ALCOHOL *Martis*, filings of ſteel reduced to an impalpable powder, by turning it into ruſt with urine, then levigating it, and mixing it with a large quantity of water; that is, about a gallon to two pounds and a half of filings. After it has ſtood a quarter of an hour, the upper part to the water is to be poured off, and evaporated to a dryneſs. The powder at the bottom is to be put into a paper, in the form of a ſugar-loaf, and waſhed, by gradually pouring in hot-water, till it is freed from the urinous ſalts. With regard to the remaining groſs powder, the ſame proceſs is to be repeated.

Muſgrave has a great opinion of this preparation, as a remedy to bring back the gout from the nobler parts to the joints. He preſcribes it thus: take of *alcohol martis* from five to ten grains, *theriaci andromachi* from half a ſcruple to one dram, mix theſe with as much ſyrup of clove july-flower, as is ſufficient to make a bolus.

ALCOHOLIZATION, in *Chemiſtry*, the rectification of a vinous ſpirit.

This is otherwiſe called *alcooliſation*.

Alcooliſation, according to Starkey, denotes the circulation of a volatile ſpirit on a fixed alkali, till ſuch time as out of the two ariſes only one neutral body, different from both the former. *Alcoholization* is one way of volatilizing alkalis.

ALCOHOLIZATION is alſo uſed for PULVERIZATION.

ALCOLA is uſed by alchemiſts, for the tartar of urine.

Alcola is found in three different forms, viz. 1. Reſolved, or reduced into an impalpable ſubſtance. 2. Sandy, or voided under the appearance of ſmall grains of whitiſh or reddiſh ſand. 3. Mucilaginous, or viſcous.

ALCOR, in *Aſtronomy*, a ſmall ſtar adjoining to the large bright one in the middle of the tail of URSA *major*.

The word is Arabic.—It is a proverb among the Arabians, applied to one who pretends to ſee ſmall things, but overlooks much greater, *Thou canſt ſee Alcor, and yet not ſee the full moon.*

ALCORAN, or AL KORAN, the Mahometan goſpel; or revelations, doctrine, and prophecies, of the pretended prophet Mahomet.

It is vulgarly called *Alcoran*; but the firſt ſyllable of the word is nothing more than an article ſignifying *the*; and therefore the true orthography of the word is *Al Coran*, or *Al Koran*, that is, the *Koran*. It is derived from the Arabic word *karoa, to read*, and ſignifies *the reading*, or what ought to be read. Thus Mahomet gave it this title by way of eminence, in imitation of the Jews and Chriſtians, who call the Old and New Teſtament *ſcripture*; and the *Bible*, i. e. the Book.

It is the common opinion among us, that Mahomet, aſſiſted by one Sergius, a monk, compoſed this book; but the Muſſulmen believe it as an article of their faith, that the prophet, who, they ſay, was an illiterate man, had no concern in inditing it; but that it was given him by God, who, to that end, made uſe of the miniſtry of the angel Gabriel; that, however, it was communicated to him by little and little, a verſe at a time, and in different places, during the courſe of twenty-three years.—'And hence, 'ſay they, proceeds that diſorder and confuſion viſible 'in the work;' which, in truth, is ſo great, that all their doctors have never been able to adjuſt it. For Mahomet, or rather his copyiſt, having put all theſe looſe verſes promiſcuouſly in a book together, it was impoſſible ever to retrieve the order wherein they were delivered.

Thoſe twenty-three years which the angel employed in conveying the *Alcoran* to Mahomet, are of wonderful ſervice to his followers: inaſmuch as they furniſh them with an anſwer to ſuch as tax them with thoſe glaring contradictions wherewith the book is full: thoſe contradictions they piouſly father upon God himſelf; alleging, that in the courſe of ſo long a time, he repealed and altered ſeveral doctrines and precepts which the prophet had before received of him.

M. D'Herbelot thinks it probable, that when the hereſies of the Neſtorians, Eutychians, &c. had been condemned by œcumenical councils; many biſhops, prieſts, monks, &c. being driven into the deſarts of Arabia and Egypt, furniſhed the impoſtor with paſſages, and crude ill-conceived doctrines, out of the Scriptures; and that it was hence that the *Alcoran* became ſo full of the wild and erroneous opinions of thoſe heretics.

The Jews alſo, who were very numerous in Arabia, furniſhed materials for the *Alcoran*; nor is it without ſome reaſon that they boaſt twelve of their chief doctors to have been the authors of this work.

The *Alcoran*, it is to be obſerved, while Mahomet lived, was only kept in looſe ſheets: his ſucceſſor, Abubeker, firſt collected them into a volume, and committed the keeping of it to Haphſa, the widow of Mahomet, in order to be conſulted as an original; and there being a good deal of diverſity between the ſeveral copies already diſperſed throughout the provinces, Ottoman, ſucceſſor of Abubeker, procured a great number of copies to be taken from that of Haphſa; at the ſame time ſuppreſſing all the others not conformable to the original.

The chief differences, in the preſent copies of this book, conſiſt in the points, which were not in uſe in the time of Mahomet, and his immediate ſucceſſors; but were added ſince, to aſcertain the reading; after the example of the Maſſoretes, who added the like points to the Hebrew text of Scripture.

The work is divided into *ſuras*, or chapters; and the *ſuras* are ſubdivided into little verſes, in Arabic called *ayat*, *ſigns* or *wonders*, which are all compoſed in a broken interrupted ſtyle, reſembling proſe rather than verſe.——The diviſion into *ſuras* is but of a late ſtanding; the uſual number of them is one hundred and fourteen.

Beſide theſe unequal diviſions of chapter and verſe, the *Koran* is divided into ſixty equal portions, called *ahzab*, each of which is again ſubdivided into four equal parts. The chapters bear different titles, which are uſually taken from the firſt word of note that occurs in them. Under the title, at the head of every chapter, except the ninth, is prefixed the following ſolemn form, called by the Mahometans the *biſmillah*, *in the name of the moſt merciful God*; which form, as well as the titles, are conſidered by ſome commentators of divine original, though others believe them to be human additions.

There are ſeven principal editions of the *Alcoran*; two at Medina, one at Mecca, one at Cufa, one at Baſſora, one in Syria, and the common, or vulgate edition. The firſt contains 6000 verſes, the others ſurpaſſing this number by 200 or 236 verſes; but the number of words and letters is the ſame in all; viz. 77639 words, and 323015 letters.

The *Alcoran* is held not only of divine original, but eternal and uncreated, remaining, as ſome expreſs it, in the very eſſence of God. The firſt tranſcript has been from everlaſting by God's throne, written on a table of vaſt bigneſs, in which are alſo recorded the divine decrees, paſt and future. A copy from this table, in one volume, on paper, was ſent down to the loweſt heaven, in the month of Ramadan, on the night of power. From whence it was delivered out to Mahomet by parcels, ſome at Mecca, and ſome at Medina; though he had the conſolation of ſeeing the whole once a year, and in the laſt part of his life twice. Ten new chapters were delivered entire, the greater part only in ſeparate periods, which were written down from time to time by the prophet's amanuenſis, in ſuch a part of any particular chapter, as he directed. The firſt parcel that was revealed, was the firſt five verſes of the ninety-ſixth chapter, which the prophet received in a cave of mount Harah, near Mecca.

The general aim of the *Alcoran* was, to unite the profeſſors of the three different religions, then followed in Arabia, idolaters, Jews, and Chriſtians, in the knowledge and worſhip of one God, under the ſanction of certain laws, and the outward ſigns of ceremonies, partly of ancient, and partly of novel inſtitution, enforced by the conſideration of rewards and puniſhments, both temporal and eternal, and to bring all to the obedience of Mahomet, as the prophet and embaſſador of God, who was to eſtabliſh the true religion on earth, and be acknowledged chief pontiff in ſpiritual matters. The chief point therefore inculcated in the *Alcoran*, is the unity of God, to reſtore which, the prophet pretended was the chief end of his miſſion. The reſt is taken up in preſcribing neceſſary laws and directions, frequent admonitions to moral and divine virtues, the worſhip and reverence of the Supreme Being, and reſignation to his will. One of their moſt learned commentators diſtinguiſhes the contents of the *Alcoran* into allegorical and literal; under the former are comprehended all the obſcure, parabolical, and ænigmatical paſſages, with ſuch as are repealed, or abrogated; the latter, ſuch as are clear, and in full force.

The Muſſulmen dare not ſo much as touch the *Alcoran*, without being firſt waſhed, or legally purified; to prevent which, an inſcription is put on the cover or label: *Let none touch but they who are clean.* It is read with great care and reſpect, being never held below the girdle. They ſwear by it, take omens from it on all weighty occaſions; carry it with them to war, write ſentences of it in their banners, adorn it with gold and precious ſtones, and knowingly ſuffer it not to be in the poſſeſſion of any of a different religion. Some ſay that it is puniſhable even with death in a Chriſtian to touch it; others, that the veneration of the Muſſulmen leads them to condemn the tranſlating it into any other language as a prophanation; but theſe ſeem to be aggravations. The Mahometans have taken care to have their Scripture tranſlated into the Perſian, the Javan, the Malayan, and other languages; though out of reſpect to the original, theſe verſions are generally, if not always, interlineated.

The ſtyle of the *Alcoran* is generally allowed to be beautiful and fluent; eſpecially where it affects to imitate the prophetic manner, and ſcripture phraſeology; adorned with bold figures after the eaſtern manner, enlivened with flowery and ſententious expreſſions, and in many places, particularly where the majeſty and attributes of God are deſcribed, truly ſublime. On this miraculous circumſtance, Mahomet reſts the credit of his divine miſſion. To this pomp and harmony of expreſſion, ſome aſcribe all the force and effect of the *Alcoran*; but others ſuppoſe that the ſenſual pleaſures of paradiſe, which are ſo frequently diſplayed to the imagination of the reader, are the chief allurements to which it owes its effect.

The number of commentaries on the *Alcoran* is ſo large, that the bare titles would make a huge volume.—Ben Oſchair has written the hiſtory of them, intituled, *Tarikh Ben Oſchair*. The principal among them are, Reidhaori Thaalebi, Zamalchſchari, and Bacai.

Beſide the *Alcoran*, which is the *baſis* of the Mahometan faith, they have alſo a book containing their traditions, which they call *Sonna*.

The Mahometans have a *poſitive* theology, built on the *Alcoran* and tradition; as well as a *ſcholaſtical* one, built on reaſon.—They have likewiſe their caſuiſts, and a kind of canon law; wherein they diſtinguiſh between what is of divine, and what of poſitive right.

They have their beneficiaries too, chaplains, almoners, and canons, who read a chapter every day out of the *Alcoran*, in the moſques; and have prebends annexed to their office.—The *hatib* of the moſque is what we call the parſon of the pariſh; and the *ſcheics* are the preachers, who take their text out of the *Alcoran*. See Sale's Tranſlation of the Koran, and Preliminary Diſcourſe.

ALCORAN is alſo uſed in a more limited ſenſe, for a portion or chapter of the Koran.

In which ſenſe, the word is ſynonymous with *ſura*.

ALCORAN is alſo figuratively applied to certain other books full of impieties and impoſtures.

In this ſenſe we meet with the *Alcoran* of the Cordeliers, which has made a great noiſe; wherein St. Francis is extravagantly magnified, and put on a level with Jeſus Chriſt.

ALCORAN, among the Perſians, likewiſe ſignifies a kind of tower, or ſteeple, very high, and narrow; ſurrounded without by two or three galleries, one over another; whence the moravites, a ſort of prieſts, repeat their prayers thrice a day, with a very loud voice; making the tour of the gallery all the while, that they may be the better heard all around.

ALCORANISTS, among Mahometans, thoſe who adhere ſtrictly to the letter or text of the *Alcoran*, from an opinion of its ultimate ſufficiency and perfection. The Perſians are generally *Alcoraniſts*, as admitting the *Alcoran* alone for their rule of faith. The Turks, Tartars, Arabs, &c. beſides the *Alcoran*, admit a multitude of traditions.

The *Alcoraniſts*, among Mahometans, amount to much the ſame with the *textuaries* among the Jews. The *Alcoraniſts* can find nothing excellent out of the *Alcoran*; are enemies of philoſophers, metaphyſicians, and ſcholaſtic writers. With them the *Alcoran* is every thing.

ALCOVE, in *Building*, a part of a chamber, ſeparated from the reſt by an eſtrade, or partition of columns, and other correſponding ornaments; in which is placed a bed of ſtate, and ſometimes ſeats, to entertain company.

The word is derived from the Spaniſh *alcoba*, and that from the Arabic *elcauf*, a *cabinet*, or *ſleeping-place*; or from *elcobat*, a *tent*.

The word is popularly uſed to denote an incloſed garden-ſeat.

ALCYON. See HALCYON.

ALCYON, a name given by the ancients to the ISPIDA, or king-fiſher.

ALCYONIUM, in *Botany*. See BYSSUS, BALLS *vegetable*, and SPUNGE.

ALCYONIUM, in *Ichthyology*, a ſpecies of ALCEDO.

ALCYONIUM is alſo a name given by Lloyd, to a peculiar kind of foſſile CORAL, of the ASTROITES kind, found in Wales. It is very plentiful in that country, and puts on the appearance of a ſort of marble, being bedded in a marbly matter for its matrix. Phil. Tranſ. N° 252.

ALDABARAM, in *Oſteology*, a name given by ſome to the *ſeſamoide* bones in the great toe.

ALDARU, in *Botany*, a name given by Avicenna, Serapion, and other writers of the Arabian nation, to the LENTISK tree.

ALDEBAC, in the *Materia Medica* of the ancient Arabian phyſicians, the name by which they have called BIRD-*lime*. They place this among the vegetable poiſons.

ALDEBARAN, an Arabian name for a fixed ſtar, of the firſt magnitude, in the eye of the ſign, or conſtellation, Taurus, or the Bull; and hence popularly called the *Bull's Eye*. Its longitude, latitude, &c. ſee among the reſt of the conſtellation TAURUS.

ALDER, *alnus*, in *Botany*, claſſed by Linnæus under the genus BETULA. Its characters are theſe: it hath male and female flowers, which are produced at remote diſtances on the ſame plant; the male flowers are digeſted into a long katkin, which is looſe, imbricated, and cylindrical. The female flowers are collected into a conical, ſcaly head, and are ſucceeded by ſcaly cones. The young fruit is of a ſquamoſe ſtructure, and loaded with *embrio* ſeeds; this finally increaſes in ſize, and becomes a regular fruit, containing a number of compreſſed ſeeds. There are two ſpecies, the wood of which is much eſteemed by turners, and is of great uſe for pipes to convey water, as it will laſt a long time under ground. See BORING.

The bark of the *alder*-tree is uſed by dyers in the preparation of ſome colours. It is a ſtrong ſtyptic, though rarely or never uſed medicinally, unleſs in fomentations and epithems, by the common people.

ALDER, *berry-bearing*, or *black*, *frangula*, in *Botany*. Tourn. Inſt. R. H. 612. Tab. 383. This is ranged under the genus of *rhamnus*, in the claſs of *pentandria monogynia*, by Linnæus. Its characters are theſe: the flower has one petal, cut into five ſegments; and it has five ſtamina, the length of the petal. In the center is ſituated a globular germen, which becomes a round berry, incloſing two plain roundiſh ſeeds. There are two ſpecies.

ALDERAIMIN, in *Aſtronomy*, a ſtar of the third magnitude on the right ſhoulder of the conſtellation of CEPHEUS.

ALDERMAN, among our ancient Saxon anceſtors, was the ſecond of the three orders, or degrees, of nobility.

The word, in its original, is *ealdorman*; compounded of *æld*, *old*; or *ældor*, *elder*; and *man*, q. d. *Elderman*.

Atheling was the firſt rank of nobility, *alderman* the ſecond, and *thane* the loweſt.

It muſt be obſerved, however, that among our Saxon anceſtors, there were ſeveral magiſtrates who bore the title of *alderman*. Among them there were *aldermannus totius Angliae*, *aldermannus regis*, *comitatus*, *civitatis*, *burgi*, *caſtelli*, *hundredi*, *ſive wapentachii*, & *novemdecimorum*.

According to Spelman, the *aldermannus totius Angliae*, ſeems to have been the ſame officer who was afterwards ſtiled *capitalis juſticiarius Angliae*, or chief-juſtice of England; the *aldermannus regis* ſeems to have been an occaſional magiſtrate, anſwering to our juſtice of aſſize; and the *aldermannus comitatus*, a magiſtrate who held a middle rank between what was afterward called the earl, and the ſheriff; he ſat at the trial of cauſes with the biſhop; the latter proceeding according to eccleſiaſtical law, and the former declaring and expounding the common law of the land.

ALDERMAN, in the Engliſh *Polity*, an aſſociate to the mayor, or civil magiſtrate, of a city or town, for the better adminiſtration of his office.

The *aldermen* are an order of magiſtrates, in our cities, and moſt of the municipal, or incorporate towns; who form a kind of council, and regulate things relating to the policy of the place.—They ſometimes alſo take cognizance of civil and criminal matters; but that very rarely, and only in certain caſes.

Their number is not limited; but in ſome places is more, in ſome leſs, from ſix to twenty-ſix.

Out of theſe are annually elected the mayors, or chief magiſtrates, of places; who, at the expiration of their mayoralty, return again into the body of the *aldermen*, whoſe delegates they were before.

The twenty-ſix *aldermen* of London preſide over the twenty-ſix wards of the city.

When one of them dies, or reſigns, the wardmote chuſe a ſucceſſor, who is admitted, and ſworn into office, by the lord-mayor and court of *aldermen*.

All the *aldermen* are juſtices of the peace, by a charter of 15 Geo. II.

The *aldermen* of London, &c. are exempted from ſerving inferior offices; nor ſhall they be put upon aſſizes, or ſerve on juries, ſo long as they continue to be *aldermen*. 2 Cro. 585. See COURT.

Formerly, there were alſo *aldermen* of the merchants, of hoſpitals, of hundreds, &c. See SENATOR.

ALDHAFERA, in the Arabian *Aſtronomy*, denotes a fixed ſtar of the third magnitude, in the Lion's mane.

ALDII, in *Antiquity*, ſervants who attended their maſters in expeditions to the wars.

Theſe were otherwiſe called *aldiones*, *aldionii*, and *aldinarii*.

ALDROVANDIA, in *Botany*, a genus of the *pentandria pentagynia* claſs of plants; the calyx of which is divided into five ſegments, with five petals; the capſule has five valves, one cell, and ten ſeeds.

ALE, a popular drink, made from malt.

For the method of brewing *ale*, ſee BREWING.

This liquor is of ſuch antiquity in England, that we find mention of it in the laws of Ina, king of Weſſex. But the firſt aſſize of *ale* was fixed by the famous Stat. 51 Hen. III.

Ale is chiefly diſtinguiſhed from beer, another potable liquor made from the ſame ingredients, by the quantity of hops uſed therein; which is greater in beer, and therefore renders the liquor bitterer, and fitter to keep.

The brewers alſo diſtinguiſh pale, or fine *ale*, brown *ale*, &c. Their ſeveral properties, effects, &c. ſee under MALT-*Liquor*.

The *zythum*, and *curmi*, mentioned by Tacitus, as the beverage of the ancient Germans, are ſuppoſed by Matthiolus to correſpond to our *ale* and beer.

The duties on *ale* and beer, make a principal branch of the revenue in England. They were firſt impoſed by the twelfth of Car. II. and have been continued by ſeveral ſubſequent acts of parliament to 1 Geo. III. which lays an additional duty of three-pence per barrel. In the whole, the brewer of *ale* and beer for ſale, ſhall pay eight ſhillings for every barrel of either, above ſix ſhillings a barrel; and for every barrel of ſix ſhillings, or under, the ſum of ſixteen pence.

ALE, *cereviſia*, is alſo a denomination given to divers medicated liquors, or diet-drinks, whereof *ale* is the baſis or vehicle. The medicated *ales* make a large article in our old diſpenſatories. Such are the *cereviſia oxydorica*, for the eyes; *ceriviſia anti-arthritica*, againſt the gout; *cereviſia cephalica*, for the head; *cereviſia epileptica*, &c.

ALE, *gill*, is prepared by infuſing the dry leaves of *hedera terreſtris*, i. e. ground-ivy, in malt-liquor; which hereby becomes impregnated with the virtues of that ſimple; and is therefore reputed abſterſive, and vulnerary; good in diſorders of the breaſt, and againſt obſtructions of the viſcera.

Gill is an Engliſh name of ground-ivy.

ALE, *Dr. Butler's purging*, is prepared of polypody, ſena, ſarſaparilla, aniſeeds, ſcurvygraſs, agrimony, and maidenhair, put up in a bag, and hung in a veſſel of *ale*.

We alſo meet in ſome diſpenſatories with ſyrup of *ale*, made by boiling that liquor to a conſiſtence: this is uſed againſt obſtructions in the kidneys, and the fluor albus.

ALE-*beer*. See BEER.

ALE-BERRY, is *ale* boiled with bread, and mace; ſweetened, ſtrained, and drunk hot.

ALE-CONNER, an officer in the city of London, whoſe buſineſs is to inſpect the meaſures of the public houſes.—There are four of them; and they are choſen by the common-hall of the city.

ALE-*houſes* muſt be licenſed by juſtices of the peace, who take recognizances of the perſons licenſed, and of their ſureties, viz. 10*l*. each, that they will not ſuffer unlawful gaming, nor other diſorderly practices in their houſes. Every perſon, excepting thoſe who ſell *ale* in fairs, neglecting to procure a licence, is liable to a penalty of 40*s*. for the firſt offence, 4*l*. for the ſecond, and 6*l*. for the third, with all coſts. The licence is granted on the firſt of September, or within twenty days after, at a general meeting of the juſtices for the diviſion to which he belongs, upon his producing a certificate to his character, unleſs, by living in a city or town-corporate, this laſt circumſtance is diſpenſed with, and continues in force for one year only. *Ale-houſe* keepers, ſelling *ale* in ſhort meaſure, are liable to a penalty not exceeding 40*s*. and not leſs than 10*s*. and likewiſe to a fine of 10*s*. for permitting tipling, &c.

ALE-*meaſure*. See MEASURE.

ALE-*ſilver*, a rent, or tribute, yearly paid to the lord-mayor of London, by thoſe who ſell *ale* within the city.

ALE-*taſter*, is an officer appointed, and ſworn, in every court-leet, to take heed that there be a due ſize, and goodneſs of bread, *ale*, and beer, ſold within the juriſdiction of the leet.

ALEA, in Roman *Antiquity*, ſignifies, in general, games of chance.

ALEA, in a more limited ſenſe, is applied by Roman writers to a particular game played with dice, in a pair of tables, ſomewhat after the manner of our back-gammon, or tric-trac. Inſtead of our men, they played with white and black ſtones, which were moved this way or that, as the dice directed.

Alea in this ſenſe appears to have been the ſame game with what the Greeks called *pettia* and *chivia*; the Romans ſometimes *tabula*, *teſſara*, and XII. *ſcripta*.

ALEATORIUM, in Roman *Antiquity*, was the place where they played at *alea*.

The *aleatorium* was near the *ſphæriſterium*; that the ſportſmen, when tired with the pila, or more robuſt exerciſes, might refreſh themſelves in the *aleatorium*.

ALEC, in *Ichthyology*, a name given by Gaza, in his commentaries on Ariſtotle, to the fiſh called by that author *mainis*, and by Ovid *menerela*. It is of the SPARUS kind.

ALECOST, ſee TANZY.

A-LEE, the ſituation of the helm, when it is puſhed down to the lee-ſide of the ſhip, in order to put the ſhip about, or lay her head to the windward.

ALECTO, in *Mythology*, one of the three Furies; ſhe is repreſented with vipers about her head and her wings, and armed with vipers, ſcourges, and torches. See a fine deſcription of this Fury in Virgil, Æn. vii.

ALECTORIA, in *Natural Hiſtory*, a ſtone ſaid to be found in the ſtomach, liver, or rather gall-bladder, of old cocks.

The word is derived from αλεκτωρ, *a cock*.

It is ordinarily of the figure of a lupine, and ſeldom exceeds the bigneſs of a bean.—It has abundance of virtues attributed to it; but moſt of them are fabulous.

This is otherwiſe called *alectorius lapis*, ſometimes *alectorolithos*, in Engliſh the cock-ſtone.

The more modern naturaliſts hold the *alectorius lapis* to be originally ſwallowed down, not generated in the ſtomach or gizzard of cocks and capons.

ALECTORICARDITES, in *Natural Hiſtory*, a name given by Plot, to a figured ſtone reſembling a pullet's heart, with the fat near the baſis of it, and the coronary veſſels deſcending from it.

The word is compounded of the Greek αλεκτωρ, *cock*, and καρδια, *heart*.

ALECTORIUS *lapis*, is uſed for a ſmall ſpecies of *bufonites*, or disjunct ſegment of a palate of a fiſh, approaching to the nature of the *cheledonius lapis*.

ALECTOROLOPHUS, ſee PEDICULARIS.

ALECTOROMANTIA, an ancient kind of divination, performed by means of a cock.

The word comes from αλεκτωρ, a *cock*, and μαντεια, *divination*.

This art was in uſe among the Greeks; and the uſual manner of it was this.—A circle was made on the ground, and divided into twenty-four equal portions, or ſpaces: in each of which ſpaces was written one of the letters of the alphabet, and upon each of theſe letters was laid a grain of wheat.—This done, a cock was turned looſe in the circle, and careful obſervation was made of the grains he pecked.—The letters correſponding to thoſe grains were afterwards formed into a word; which word was to be the anſwer deſired.

It was thus that Libanius and Jamblichus ſought who ſhould ſucceed the emperor Valens; and the cock anſwering to the ſpaces Θ Ο Δ, they concluded upon Theodore, but by a miſtake inſtead of Theodoſius.

There are alſo other ſpecies of *alectoromantia*; in ſome the augury was taken from the crowing of the cock, wherein regard was had to the time of day, whether before noon or after; to which ſome added the conſideration of the ſign the ſun was in, and the motion of the moon. Others ſpeak of a kind of *alectoromantia* performed by help of a ring. Phil. Tranſ. N° 162.

ALECTRUONURUS *gramen*, ſee FESTUCA.

ALEGER, a name given to an inferior ſort of vinegar, made of ale, or malt liquor, inſtead of wine. Power has given a deſcription of the *eels* in *aleger*. V. Power, Exper. Philoſ. Obſ. 3. p. 32.

ALEHOOF, in *Botany*, ſee GROUND-*ivy*.

ALEIPHA, in the *Materia Medica* of the ancients, a word uſed for all fatty bodies whatever. The oils of vegetables, and fat of animals, were all called by this general name. But theſe ſimple ſubſtances were not the only ones called by it, for it is very frequently uſed to expreſs any ſort of medicated oil impregnated with aromatic vegetables; but its general acceptation in this ſenſe, was for ſuch compoſitions as were intended to anoint the body; and therefore they were properly only vegetable or animal fats, impregnated with the lighter parts of plants, and not clogged with an addition of powders, nor with wax, or any thing of that kind, which might have given them the conſiſtence of ointments. The ancient phyſicians were very fond of theſe compoſitions, which they applied either to ſome diſeaſed part only, or to the whole body, and after they had made the patient uſe the warm bath to relax and open the pores.

ALEMBIC, or LIMBEC, a chemical veſſel, conſiſting of a matraſs or body, fitted with a roundiſh head, terminating in a ſloping tube, for the condenſed vapours to paſs through in diſtillation.

The word is formed of the Arabic particle *al*, and the Greek αμϐιξ, a ſort of earthen culinary veſſel, mentioned by Athenæus and Heſychius. Though Matthæus Sylvaticus, in his Pandecta Medicinæ, aſſerts the word *alembic* to be Arabic, and that it literally denotes the upper part of a diſtilling veſſel.

Alembic is popularly underſtood of the whole inſtrument of diſtillation, with all its apparatus; but in the proper ſenſe of the word, it is only a part of it; viz. a veſſel uſually of copper, whereto a concave, globular, metalline head is cloſely luted; ſo as to ſtop the riſing vapours, and direct them into its roſtrum, or beak.

The heat of the fire raiſing the volatile parts of the ſubject expoſed in the bottom of the veſſel, they are received into its head, where they are condenſed, either by the coldneſs of the ambient air, or by water externally applied, and become a liquor, which runs out at the beak into another veſſel called the RECIPIENT.

The head, or capital of the *alembic*, is ſometimes incompaſſed with a veſſel full of cold water, by way of refrigeratory; though this intention is now more commonly anſwered by a WORM-*tub*.

There are divers kinds of *alembics*; as an *open alembic*, which is alſo called *roſtratus*, where the head and cucurbit are two ſeparate parts; and a *blind alembic*, or blind head, where the capital is ſealed hermetically upon the cucurbit. But the invention of RETORTS ſeem to have ſuperſeded the uſe of *alembics*.

ALEMBROTH, in the writings of the *Alchemiſts*, a word uſed for a ſort of fixed alkaline ſalt, which had the power of the famous alcaheſt, in diſſolving bodies, opening the pores of moſt or all known ſubſtances, and thence, as well as by deſtroying ſulphurs, promoting the ſeparation of metals from their ores.

The word is ſaid to be of Chaldee origin, and its natural meaning to be *clavis artis*, the *key of art*.

Some uſe the term *alembroth dæſiccatum*, for ſalt of tartar.

ALEMDAR, an officer in the court of the Grand Signior, who bears the green ſtandard of Mahomet, when the ſultan appears in public on any ſolemn occaſion.

ALENON, a word uſed by ſome of the old medical writers, as a name for the oil of ſweet almonds.

ALEORE, a word uſed by the old medical writers, for an intermiſſion of eaſe, from the raging pains of any violent acute diſtemper.

ALES, a name given to a compound ſalt; it alſo ſignifies *contracted*, when uſed by phyſicians as an adjective.

ALETON, ſignifies meal, as Erotian and Heſychius explain it. It ſeems derived from αλεω, *to grind*, and to import the meal of any ſort of corn. The word is frequently uſed by Hippocrates.

ALETRIS, *baſtard* ALOE.

ALEUROMANCY, *aleuromantia*, is the ſame with what was otherwiſe called *alphitomantia*, and *crithomantia*, and means an ancient kind of divination performed by means of meal or flour.

ALEXANDERS, in *Botany*, a genus of umbelliferous flowers. See ALISANDERS.

ALEXANDRIAN, in a particular ſenſe, is applied to all thoſe who profeſſed or taught the ſciences in the ſchool of Alexandria.

ALEXANDRIAN is more particularly underſtood of a college of prieſts, conſecrated to the ſervice of Alexander Severus, after his deification.

ALEXANDRIAN *Copy*, is a manuſcript, conſiſting of four volumes, in a large quarto ſize; which contain the whole Bible in Greek, including the Old and New Teſtament, with the Apocrypha, and ſome ſmaller pieces, but not quite complete. This manuſcript is now preſerved in the Britiſh Muſeum. It was ſent as a preſent to king Charles I. from Cyrillus Lucaris, patriarch of Conſtantinople, by Sir Thomas Rowe, ambaſſador from England to the Grand Signior, about the year 1628. Cyrillus brought it with him from Alexandria, where, probably, it was written. In a ſchedule annexed to it, he gives this account; that it was written, as tradition informed them, by Thecla, a noble Egyptian lady, about thirteen hundred years ago, not long after the council of Nice. But this high antiquity, and the authority of the tradition to which the patriarch refers, have been diſputed; nor are the moſt accurate biblical writers agreed about its age. Grabe thinks that it might have been written before the end of the fourth century; others are of opinion, that it was not writ till near the end of the fifth century, or ſomewhat later. Thoſe who are deſirous of farther information concerning it, may conſult the Prolegomena of Mills, Wetſtein, and Grabe.

ALEXANDRIAN *Library* was firſt founded by Ptolemy Soter. Beſide the books which he procured, his ſon Ptolemy Philadelphus added many more, and left in this library at his death a hundred thouſand volumes; and the ſucceeding princes of this race enlarged it ſtill more, till at length the books lodged in it amounted to the number of ſeven hundred thouſand volumes. Part of this library, conſiſting of four hundred thouſand volumes, was deſtroyed in the war which Julius Cæſar waged with the inhabitants of Alexandria; but it was again ſupplied anew by Cleopatra and others, and continued, though frequently plundered, to be very conſiderable and famous, till it was burnt by the Saracens in the 642d year of the Chriſtian æra.

ALEXANDRIN, or ALEXANDRIAN, in *Poetry*, the name of a kind of verſe, which conſiſts of twelve, or of twelve and thirteen ſyllables, alternately; the reſt, or pauſe, being always on the ſixth ſyllable.

It is ſaid to have taken its name from a poem on the life of Alexander, intitled, the *Alexandriad*; written, or at leaſt tranſlated into this kind of verſe by ſome French poets; though others will have it ſo denominated from one of the tranſlators, Alexander Paris.

This verſe is thought by ſome very proper in the epopea, and the more ſublime kinds of poetry; for which reaſon it is alſo called *Heroic Verſe*.

It anſwers in our language to the hexameters in the Greek, and Latin; though, according to ſome, it rather anſwers to the *ſenarii* of the ancient tragic poets.—Chapman's tranſlation of Homer conſiſts wholly of *Alexandrians*.

The advantages of the *Alexandrin* verſe, are its keeping the rhimes from coming ſo near, and conſequently hindering them from being ſo much perceived. To this may be added, that coming nearer to the nature of proſe, it is fitter for theatrical dialogue, and ſupplies the office of the ancient iambics, better than any other verſe in rhime.

ALEXICACUS, ſomething that preſerves the body from harm or miſchief. The word is compounded of *αλεξω*, *I drive away*, and *κακον*, *malum*, *evil*.

Alexicacus amounts to much the ſame with alexiterial. Conſt. Rhodocanaces gives this name more peculiarly to the ſpirit of ſea-ſalt, and has publiſhed a work under that title.

ALEXICACUS, in *Antiquity*, was an attribute of Neptune, whom the tunny-fiſhers uſed to invoke under this appellation, that their nets might be preſerved from the *ξιφιας*, or SWORD-fiſh, which uſed to tear them, and prevent the aſſiſtance which it was pretended the dolphins uſed to give the tunnies on this occaſion.

ALEXIPHARMIC, in *Medicine*, expreſſes that property which a remedy, either ſimple or compound, hath to reſiſt or deſtroy every thing of a poiſonous or malignant nature.

The word is derived from *αλεξω*, *arceo*, *I expel*; and *φαρμακον*, *poiſon*.

The ancients had a notion, that there was a poiſon in all malignant diſeaſes, and in the generality of thoſe whoſe cauſe was unknown. Whence *alexipharmic* became a denomination for all remedies and antidotes againſt malignant diſeaſes, and for AMULETS.

Alexiterial, *cardiac*, *antidote*, *alexipharmic*, and *counterpoiſon*, are all terms nearly of the ſame ſignification.

Alexipharmics are ordinarily divided into ſuch as are general; and thoſe more particular, ſuppoſed only to combat ſome particular diſeaſe.—But this diviſion is founded more on ſpeculation, than experience.

Alexipharmic medicines in general contain a great number of volatile parts, and ſuch as render the maſs of blood fluid. The greateſt part of them are aromatic and pungent to the taſte.—Among the reſt, it is true, there are ſome acid plants and juices; but theſe are only reckoned in the number, on account of their uſe in malignant and colliquative fevers.

Alexipharmics chiefly act by exciting, or increaſing a diaphoreſis, or perſpiration; by which the noxious matter is thrown off. See SUDORIFIC.

Alexipharmics, whether ſimple or compound, are alſo eſteemed preſervatives againſt malignant and peſtilential fevers: but they are to be uſed with caution; ſome of them being only proper in condenſations, and others only in colliquations of the blood.

It is dangerous to adminiſter *alexipharmics* to young people of plethoric habits, without previous evacuations; and Celſus adviſes only to promote a ſweat, when the marks of one approaching are evident.

Alexipharmics are deemed proper correctors of OPIUM, when it produces ſickneſs, nauſeas, &c. They are alſo ſerviceable in thoſe diſeaſes which proceed from external cold, and obſtructed perſpiration; as catarrhs, rheumatiſms, fluxes, coughs, and glandular tumours. *Alexipharmics* make a large claſs of medicines; but the principal ones are theſe: 1. Of the animal kingdom, hartſhorn, bezoars, and the bones and teeth of different animals. 2. Of the vegetable kingdom, the leaves and flowers of all the aromatic plants, eſpecially ſuch as are umbelliferous. 3. Of the mineral kingdom, the different preparations of antimony, the dulcified ſpirit of vitriol with alcohol.

ALEXITERIAL, in *Medicine*, a term of the ſame import with *alexipharmic*; but chiefly applied to the milk-water of that name, and remedies againſt the poiſonous bites of animals.

But it is ſaid by ſome authors that *alexiterials* differ from alexipharmics: thus, alexipharmics ſignify medicines againſt poiſons taken internally; whereas *alexiterials* are remedies againſt the poiſons of venemous animals inflicted externally.

ALFANDIGA, the name of the cuſtom-houſe at Liſbon.

ALFAQUES, among the Spaniſh Moriſcos, were the clergy, or thoſe who inſtructed them in the Mahometan faith.

The *alfaques* differed from the *morabites*, who anſwered to monks, or religious, among Chriſtians.

ALFDOUCH, a name given by the Moors to a ſort of *vermicelli*, which they make of flour and water, and are very fond of in their entertainments.

ALFECCA, in *Aſtronomy*, a name given to the ſtar commonly called LUCIDA *coronæ*. It is alſo called *alfeta*.

ALFET, anciently ſignified a large caldron, in which boiling water was put, for the accuſed to plunge his hand in up to the elbow, by way of trial or purgation.

ALGA, in *Botany*, the name of a genus of plants of the ſame kind with the ſea FUCUS, or *zoſtera* of Linnæus, but they are compoſed of very long and narrow graſſy leaves, or of long capillaceous filaments. Tournefort enumerates three ſpecies. Tournef. Inſt. 569.

The *algas* are ſome *marine*, or growing in the ſea; others *fluviatile*, or produced in rivers; others *fontal*, growing in ſprings; and ſome again grow on ſtones at the bottom of the water; others on ſhells by the ſhore; others even float on the ſurface of the water.

One of the moſt conſiderable of the tribe of *algas*, is the common, called *alga marina*; ſometimes alſo *alga anguſtifolia vitriariorum*, as being uſed in the glaſs-works like kali.

Its aſhes afford great plenty of fixed ſalt.

Some ſpeak of its medicinal properties as aperient, vulnerary, and deſiccative.

It is ſaid that the *alga marina* put under the roots of colworts, and other plants, will forward their growth.

Alga is popularly known in Engliſh by the name of *wreck*, being generally conceived rather as excreſcences, than as regular plants; but this is unphiloſophical, and falſe.

ALGÆ, *flags*, form one of the ſeven families of plants in the Linnæan diſtribution.

ALGALI, a name given, by ſome of the old chemical writers, to nitre.

ALGAROT, or Algarel, in the Arabian *Chemiſtry*, a powder prepared of butter of antimony; being in reality no more than the *regulus* of that mineral, diſſolved in acids, and ſeparated again by means of ſeveral lotions with luke-warm water, which imbibes thoſe acids.

This is alſo called *mercurius vitæ*, or ſimply *emetic powder*. —It purges violently both upwards and downwards; and is more properly called *antimonium mortis*. See Butter *of* Antimony.

By collecting all the lotions, and evaporating two third parts, what remains is a very acid liquor, called *ſpirit of philoſophical vitriol*.

There are divers ways of preparing *algarot*, as by precipitating the butter, or by diſtilling antimony, together with the ſweet ſublimate, or white precipitate of mercury.

ALGATRANE, a ſort of pitch found in the bay formed by the point of the cape of St. Helena, on the ſouth of the iſle of Plata.

ALGAVAREIA, the language anciently ſpoken by the Moriſcos in Spain.

The *algavareia* was a ſort of Arabic, and ſtood contradiſtinguiſhed from the *aljameia*.

ALGEBRA, a method of reſolving problems, by means of equations.

Critics have given various etymologies of this word; but the moſt probable is from *geber*, a word whence, by prefixing the particle *al*, we have formed *algebra*, which is pure Arabic, and properly ſignifies the reduction of broken numbers to a whole number.—However, the Arabs, it is to be obſerved, never uſe the word *algebra* alone, to expreſs what we mean by it; but always add it to the word *macabelah*, which ſignifies *oppoſition* and *compariſon*.—Thus *algebra almocabelah*, is what we properly call *algebra*.

Some authors define *algebra* the art of ſolving all problems capable of being ſolved: but this is rather the idea of analyſis, or the analytic art.

The Arabs call it, the *art of reſtitution and compariſon*; or, the *art of reſolution and equation*.—Lucas de Burgo, the firſt European who wrote of *algebra*, calls it, the *rule of reſtoration, and oppoſition*.—The Italians call it, *regula rei & cenſus*, that is, the rule of the root and the ſquare; the root with them being called *res*, and the ſquare *cenſus*.—Others call it *ſpecious arithmetic*; others, *univerſal arithmetic*.

Algebra is a peculiar kind of Arithmetic, which takes the quantity ſought, whether it be a number, or a line, or any other quantity, as if it were granted; and by means of one or more quantities given, proceeds by conſequence, till the quantity at firſt only ſuppoſed to be known, or at leaſt ſome power thereof, is found to be equal to ſome quantity or quantities which are known, and conſequently itſelf is known.

Algebra is of two kinds, *numeral* and *literal*.

Algebra, *numeral*, or *vulgar*, is that of the ancients, which only had place in the reſolution of arithmetical queſtions.—In this, the quantity ſought is repreſented by ſome letter or character; but all the given quantities are expreſſed by numbers. This is thought by ſome to have proved an introduction to the art of keeping merchant's accounts by double entry.

Algebra, *ſpecious*, or *literal*, or the *new algebra*, is that wherein the given or known quantities, as well as the unknown, are all expreſſed or repreſented by their ſpecies, or letters of the alphabet.

This eaſes the memory and imagination of that vaſt ſtreſs or effort, required to keep ſeveral matters, neceſſary for the diſcovery of the truth in hand, preſent to the mind: for which reaſon this art may be properly denominated *metaphyſical geometry*.

Specious algebra is not, like the numeral, confined to certain kinds of problems; but ſerves univerſally for the inveſtigation or invention of theorems, as well as the ſolution and demonſtration of all kinds of problems, both arithmetical, and geometrical.

The letters uſed in *algebra* do each ſeparately repreſent either lines or numbers, as the problem is arithmetical or geometrical; and together, they repreſent planes, ſolids, and powers, more or leſs high, as the letters are in a greater or leſs number.—For inſtance, if there be two letters, *a*, *b*, they repreſent a rectangle, whoſe two ſides are expreſſed, one by the letter *a*, and the other by *b*; ſo that by their mutual multiplication they produce the plane *a b*. Where the ſame letter is repeated twice, as *a a*, they denote a ſquare. Three letters *a b c*, repreſent a ſolid, or a rectangled parallelopiped, whoſe three dimenſions are expreſſed by the three letters *a b c*; the length by *a*, the breadth by *b*, and the depth by *c*: ſo that by their mutual multiplication they produce the ſolid *a b c*.

As the multiplication of dimenſions is expreſſed by the multiplication of letters, and as the number of thoſe may be ſo great as to become incommodious; the method is, only to write down the root, and on the right hand to write the index of the power, that is, the number of letters whereof the power to be expreſſed does conſiſt; as a^2, a^3, a^4, a^5; the laſt of which ſignifies as much as *a* multiplied five times into itſelf; and ſo of the reſt.

For the ſymbols, characters, &c. uſed in *algebra*, with their application, &c. ſee Character, and Quantity, &c.

For the method of performing the ſeveral operations in *algebra*, ſee Addition, Subtraction, and Multiplication.

The origin of this art is very uncertain and obſcure.—The invention is uſually attributed to Diophantus, a Greek author, who wrote thirteen books, though only ſix of them are extant, firſt publiſhed by Xylander, in 1575, and ſince commented on and improved by Gaſper Bachet, of the French academy; and ſince by M. Fermat.

And yet *algebra* ſeems not to have been wholly unknown to the ancient mathematicians, long before the age of Diophantus: we ſee the traces, the effects of it, in many places, though it looks as if they had deſignedly concealed it.—Something of it there ſeems to be in Euclid, or at leaſt in Theon upon Euclid, who obſerves that Plato had begun to teach it.—And there are other inſtances of it in Pappius, and more in Archimedes and Apollonius.

But the truth is, the analyſis uſed by thoſe authors is rather geometrical than *algebraical*: as appears by the examples thereof which we find in their works: ſo that we make no ſcruple to ſay, that Diophantus is the firſt, and only author among the Greeks, who has treated of *algebra* profeſſedly. This art, however, was in uſe among the Arabs much earlier than among the Greeks. And it is ſaid, that the Arabs too borrowed it from the Perſians, and the Perſians from the Indians.—It is added, that the Arabs carried it into Spain; whence, ſome are of opinion, it paſſed into England, before Diophantus was known among us.

The firſt who wrote on the ſubject in this part of the world, was Lucas Pacciolus, or Lucas de Burgos, a Cordelier; whoſe book, in Italian, was printed at Venice in 1494.—This author makes mention of Leonardus Piſanus, and ſome others, of whom he had learned the art; but we have none of their writings.—He adds, that *algebra* came originally from the Arabs; and never mentions Diophantus; which makes it probable, that that author was not at that time known in Europe. His *algebra* goes no farther than ſimple and quadratic equations.

After Pacciolus appeared Stifelius, a good author; but neither did he advance any farther.

After him came Scipio Ferreus, Cardan, Tartaglia, and ſome others; who reached as far as the ſolution of ſome cubic equations. Bombelli followed theſe, and went a little farther.—At laſt came Nunnius, Ramus, Schoner, Salignac, Clavius, &c. who all of them took different courſes, but none of them went beyond quadratics.

About the ſame time, Diophantus was firſt made public; whoſe method is very different from that of the Arabs, which had been followed till then.

In 1590, Vieta entered on the ſtage, and introduced what he called his *ſpecious arithmetic*, which conſiſts in denoting the quantities, both known and unknown, by ſymbols or letters.—He alſo introduced an ingenious method of extracting the roots of equations, by approximations; ſince much facilitated by Raphſon, in his Analyſis Æquationum.

Vieta was followed by Oughtred, an Engliſhman, who, in his Clavis Mathematica, printed in 1631, improved Vieta's method; and has invented ſeveral compendious characters, to ſhew the ſums, differences, rectangles, ſquares, cubes, &c.

Mr. Harriot, another Engliſhman, cotemporary with Oughtred, left ſeveral treatiſes at his death; and among the reſt, an Analyſis, or Algebra, which was printed in 1631, where Vieta's method is brought into a ſtill more commodious form; and this is much eſteemed to this day.

In 1657, Des Cartes publiſhed his Geometry, wherein he made uſe of the literal calculus, and the *algebraic* rules of Harriot; and as Oughtred in his Clavis, and Marin Ghetaldus, in his books of Mathematical Compoſition and Reſolution, publiſhed in 1630, applied Vieta's arithmetic to elementary geometry, and gave the conſtruction of ſimple and quadratic equations; ſo Des Cartes applied Harriot's method to the higher geometry, explaining the nature of curves by equations, and adding the conſtructions of cubic, biquadratic, and other higher equations.

Des Cartes's rule for conſtructing cubic and biquadratic equations was farther improved by Tho. Baker, in his Clavis Geometrica Catholica, publiſhed in 1684, and the foundation of ſuch conſtructions, with the application of *algebra* to the quadratures of curves, queſtions de maximis & minimis, the centrobaryc method of Guldinus, &c. was given by R. Sluſius, in 1668, as alſo by Fermat, in his Opera Mathematica; Roberval, in the Mem. de Mathem. & de Phyſique; and Barrow, in his Lect. Geomet.—In 1708, *algebra* was applied to the laws of chance and gaming, by R. de Montmort; and ſince by de Moivre, and James Bernouilli, and others. Thus much for the progreſs of *algebra*.—The Elements of the Art were compiled and publiſhed by Kerſey in 1671, wherein the ſpecious arithmetic, and the nature of equations, are largely explained, and illuſtrated by variety of examples: the whole ſubſtance of Diophantus is here delivered; and many things added concerning mathematical compoſition and reſolution, from Ghetaldus. The like has been ſince done by Preſtet in 1694, and by Ozanam in 1703.—But theſe authors omit the application of *algebra* to geometry; which defect is ſupplied by Guiſnee in a French treatiſe expreſly on the ſubject, publiſhed in 1705, and L'Hopital in his Analytical Treatiſe of the Conic Sections, in 1707.—The rules of *algebra* are alſo compendiouſly delivered by Sir Iſaac Newton, in his Arithmetica Univerſalis, firſt publiſhed in 1707, which abounds in ſelect examples, and contains ſeveral rules and methods invented by the author.

This piece is rendered complete by Mr. Maclaurin's commentary on it, which is lately publiſhed, and intitled a Treatiſe of Algebra.

Other writers on *algebra*, are Dr. Pell, who reviſed and publiſhed a piece of *algebra*, firſt publiſhed in Dutch. In this the doctor has given us a peculiar method of his own for applying *algebra* to problems of various kinds; and introduced the way of regiſtering the whole proceſs in the margin. This method has been followed by Mr. Ward, and Mr. Hammond, in their treatiſes on this ſubject. Dr. Wallis publiſhed a treatiſe on *algebra*, both *hiſtorical* and *practical*, in the year 1664. There are many other treatiſes of *algebra*, of very various extent and value, that have been publiſhed ſince. See particularly Ward's Mathematicians Guide to *Algebra*; Jones's Synopſis; Wolfius's *Algebra*; Simpſon's *Algebra*; Dodſon's Mathematical Repoſitory; Clairaut's Elements of *Algebra*; and Dr. Saunderſon's Treatiſe of *Algebra*, in two volumes, quarto, which is the moſt comprehenſive of any.

Algebra has been alſo applied to the conſideration and calculus of infinities; from whence a new and extenſive branch of knowlege has ariſen, called the *doctrine of* FLUXIONS, or *analyſis of infinities*, or the *calculus differentialis*.—The authors on this ſubject ſee under ANALYSIS.

ALGEBRAICAL, ſomething that relates to *algebra*.

Thus we ſay, *algebraical* CHARACTERS, or ſymbols, curves, ſolutions, &c.

ALGEBRAICAL *curve*, is a curve, wherein the relation of the abſciſſes to the ſemiordinates may be defined by an *algebraical* equation.

Theſe are alſo called *geometrical lines*, or *curves*.

Algebraical curves ſtand contradiſtinguiſhed to MECHANICAL or TRANSCENDENTAL ones.

ALGEBRAICAL *ſolution*. See RESOLUTION.

ALGEBRAISM, or ALGEBRISM, is affectedly uſed, in ſome writers, for *algebra* itſelf. In which ſenſe, we read of the application of *algebraiſm*.

ALGEBRAIST, a perſon ſkilled in *algebra*.

ALGEDO, the name of an accident which ſometimes happens in a gonorrhœa, by the ſtoppage of the running ſoon after it appears. Calomel repeated ſo as to purge, brings back the running, and the difficulties and danger diſappear.

ALGENEB, or ALGENIB, in *Aſtronomy*, a fixed ſtar of the ſecond magnitude, on the right ſide of PERSEUS.

ALGIABARII, a Mahometan ſect of predeſtinarians, who attribute all the actions of men, good or evil, to the agency or influence of God.

The *algiabarii* ſtand oppoſed to the ALKADARII.

ALGOIDES, in *Botany*, a name given by Vaillant, to a genus of plants, called by Micheli and Linnæus, ZANNICHELLIA.

ALGOL, or *Meduſa's Head*, a fixed ſtar of the third magnitude, in the conſtellation PERSEUS.

ALGONQUIN, one of the chief American languages, ſpoken eſpecially in Canada, or New France. The *algonquin* is one of the two principal languages ſpoken in the Northern America, the other is the *huron*.

It takes its name from an ancient people of the ſame denomination, now almoſt extinct, the Iroquois being the only remains.

The *algonquin* tongue is ſpoken, with ſome diverſity of dialects, by moſt of the natives from the river St. Laurence to that of Miſſiſſippi.

The baron la Hontan has given a little dictionary of the *algonquin* language. Reland has alſo given a gloſs on ſeveral words of the ſame. The firſt is entitled Mem. de l'Americ. Septent. Hag. 1703; the laſt is in his Diſſ. Miſc. p. 3. Diſſ. 2.

ALGOR is uſed, by ſome *Medicinal Writers*, to denote a preternatural coldneſs or chilneſs in a part. Muys ſpeaks, in this ſenſe, of an *algor* of the arm, attended with an *atrophy*.

ALGORAB, a fixed ſtar, of the third magnitude, in the right wing of the conſtellation CORVUS.

ALGORITHM, an Arabic term, which ſome authors, and eſpecially the Spaniards, make uſe of to ſignify the practical operation of the ſeveral parts of *ſpecious* arithmetic, or *algebra*.

Sometimes it is alſo uſed for the practice of common arithmetic, by ten numeral figures.

Algorithm is properly the art of numbering truly, and readily; and comprehends the ſix common rules of arithmetic.—It is ſometimes called *logiſtica numeralis*.

We ſay, the *algorithm* of integers, the *algerithm* of fractions, the *algorithm* of ſurds, &c.

ALGOSAREL, in *Botany*, a name uſed by Avicenna, and ſome other authors, for the common wild carrot, or DAUCUS *ſylveſtris*.

ALGUAZIL, in the Spaniſh *Policy*, a ſerjeant or official of a judge, or magiſtrate, appointed to ſee his decrees executed.

ALHABOR, among the Arabian *Aſtronomers*, is that ſtar commonly called SIRIUS.

ALHAGI, the *pliant thorny* BROOM *of Syria*. The inhabitants of Aleppo gather from it a new kind of *manna*, the grains of which are ſomewhat larger than *coriander*. The leaves are of a hot drying nature, and the natives uſe the flowers as a purgative; one handful of which boiled in water ſuffices for a doſe.

ALHANDAL, a term in the Arabian *Pharmacy*, ſignifying *colocynth*.—The TROCHES of *alhandal*, *trochiſci alhandal*, are a kind of TROCHES, compoſed of *colocynthis*, *bdellium*, and *gum tragacanth*.

The word is formed of the Arabic *handal*, or *handhal*, a name for *colocynthis*.

They are eſteemed good purgatives, and are uſed on divers occaſions.

ALHEN, in *Natural Hiſtory*, a name by which Dr. Shaw, and others, have called a genus of plants, ſince named by Linnæus LAWSONIA.

ALHIDADE, or ALIDADE, the index or label of an aſtronomical, or geometrical inſtrument, for taking of heights or diſtances.

The word is Arabic, and it ſignifies the ſame thing.—In Greek and Latin, it is called *διοπτρα*, *dioptra*, and *linea fiduciæ*, *fiducial line*.

The *alhidade* is a kind of ruler, moveable on the centre of the inſtrument; and carrying two SIGHTS, which are erected perpendicularly at the two extremities of it.

ALHIRTO, in *Aſtronomy*, a fixed ſtar of the third magnitude, in the conſtellation CAPRICORN. This is otherwiſe called *roſtrum gallinæ*. Near this ſtar, in the year 1600, appeared a new ſtar, which laſted twenty-one years, and then diſappeared again.

ALI gives the denomination to a ſect, or diviſion, among the Mahometans, who adhere to the right of ſucceſſion of *Ali*, the fourth caliph, or ſucceſſor of Mahomet, and the reform of *Muſſulmaniſm* introduced by him.

The ſectaries of *Ali* are more particularly called *Schiites*, and ſtand oppoſed to the *Sunnites*, or ſect of Omar, who adhere to the law, as left by Mahomet, Abubeker, and Omar.

Ali was couſin of Mahomet, and ſon-in-law of that prophet, having married his daughter Fatimah. After Mahomet's death, great diſputes aroſe about the ſucceſſion; many ſtood for *Ali*, but Abubeker was preferred, and elected the firſt kaliph. *Ali* took his turn, after the death of Othman.

The Perſians are the chief adherents to the ſect of *Ali*, whom they hold to have been the legitimate ſucceſſor of Mahomet, and Abubeker an uſurper. On the contrary, the Turks are of the ſect of Omar, and hold *Ali* in execration, having raiſed a furious civil war among the *Muſſulmen*.

The Perſian emperors of the family of Sophi, pretend to be the direct deſcendants from *Ali*; but the deſcent is very darkly made out.

The diſtinguiſhing badge of the followers of *Ali*, is a red turban, which is worn by the Perſians, who are hence called in deriſion, by the Turks, *kiſilbachi*, q. d. *red heads*.

Ali is reputed the author of divers works, particularly a Centiloquium, in great repute among the Arabs and

Perſians; part of which has been publiſhed in Engliſh by Mr. Ockley.

ALJAMEIA is a name which the Moriſcoes in Spain give to the language of the Spaniards.

Among other articles agreed on by the junto, which was appointed by the emperor Charles V. in 1526, in favour of the Moriſcoes, this was one, that the Moriſcoes ſhould no longer ſpeak Algavareia, i. e. Mooriſh, or Arabic, but ſhould all ſpeak *Aljameia*, i. e. Spaniſh, as it was called by the Moors, and all their writings and contracts ſhould be in that language.

ALIARBUCHA, in *Natural Hiſtory*, the Arabian name for a large kind of rat, common in that country, and good to eat, according to Bochart, who thinks it the ſame as the *ſchaphan*, mentioned in Leviticus, and there declared unclean. Levit. xi. 5.

ALIAS, in *Law*, a ſecond or farther writ iſſued from the courts of Weſtminſter, after a *capias*, &c. ſued out without effect.

ALICA, in the *Ancient Phyſic* and *Diet*, a kind of food; but the various accounts given of it by authors, make it uncertain what it was; ſome repreſenting it as a ſort of grain, and others as an aliment made of grain.

The Greek word for *alica* was χονδρος, which term, and ϖτισσανη, ſeem to have been general names for all ſpelt or hulled grain, beaten or ground into a pulp.

Ray, in his hiſtory, ſays the *alica* differs from the χονδρος, as the *genus* from the *ſpecies*.

ALICARIÆ, in *Ancient Hiſtory*, a term ſynonymous with proſtitutes.

ALICATICA, an Arabian weight.

ALICES, in *Medicine*, ſpots preceding the ſmall-pox.

ALICULA, in *Antiquity*, a kind of puerile habit worn by the Roman children.

The *alicula* was a ſort of *chlamys*: ſome explained it by *tunica manicata*.

ALIDES, in the *Mahometan Hiſtory*, the deſcendants of *Ali*, otherwiſe called *Fatimites*.

The *Alides* had a long ſtruggle with the Ommiades, for the kaliphate, or ſucceſſion of Mahomet; which is the Mahometan papacy.

ALIE-Kruyk, a Dutch name given to a kind of ſea-ſnail, the hiſtory of which is given by Swammerdam. Bib. Nat. tom. i. p. 180.

ALJEMBUT, or, as ſome write it, *gembut*, a name given by the Arabians, Avicenna, and others, to a ſpecies of ACACIA, which they alſo called the Nabathæan pod, and ceration, or ſiliqua, and which ſome have ſuppoſed to be the ſame with the common carob; but they expreſly diſtinguiſh it, by ſaying that it is an aſtringent, whereas the other is gently purgative; and that the fruit of it was given in hæmorrhages. Nay, Iſidore goes ſo far as to ſay, that the acacia juice of the ſhops was made of its fruit, while unripe.

ALIEN, in *Law*, a ſtranger, or perſon born out of the king's allegiance; or under the juriſdiction of ſome other ſovereign; and not naturalized, or made a denizen.

Of theſe there are two kinds; viz. *alien friends*, who are of thoſe countries which are at peace and league with us; and *alien enemies*, who are of countries at war with us; to which ſome add a third, viz. *alien infidels*.

A man born out of the land, ſo it be within the limits of the king's obedience beyond the ſeas; or of Engliſh parents out of the king's obedience, ſo the parents at the time of the birth be of ſuch obedience, is no *alien*, but a ſubject of the king, ſtat. 2. 25 Edw. III. commonly called the ſtatute *De natis ultra mare*.

Add that if one born out of the king's allegiance come and dwell in England; his children begotten here are not *aliens*, but denizens.

By the ſtatute 11 and 12 W. III. cap. 6. all perſons being the king's natural born ſubjects, may inherit as heirs to their anceſtors, though their anceſtors were *aliens*. Children of an ambaſſador in a foreign country by a wife who is an Engliſh woman, are natural born ſubjects by the common law. 7 Rep. 11. And if an Engliſh merchant living beyond ſea, marries a wife there, and hath a child by her and dies, this child is born a denizen, and ſhall be heir to him, notwithſtanding the wife be an *alien*. Cro. Car. 605. Perſons born in Engliſh plantations are natural born ſubjects.

An *alien* can hold no land by deſcent or purchaſe, or be tenant by the courteſy, or in dower; and if he purchaſe, the king ſhall have it; but he may purchaſe a houſe for years for habitation, during his reſidence, as neceſſary for trade. If an *alien* merchant leaves the kingdom, the king ſhall have the leaſe; if he be no merchant, the king ſhall have his leaſe for years, though it were for his habitation; and by the ſtat. 32 H. VIII. there is a penalty for letting houſes to *aliens*. 5 Rep. 502.—7 Rep. 18.—1 Inſt. 2. 129.—2 Inſt. 741.

A deviſe of lands to an *alien* is void; and if a man be bound to an *alien* enemy in a bond, it is void to him, but the king ſhall have it.

Aliens, however, may obtain goods and perſonal eſtate by trade, &c. and may bring actions for the ſame; but an *alien* enemy cannot maintain any action whatever, nor obtain any thing lawfully within the realm. 1 Bulſt. 134. Terms des Ley, 36.

Aliens are not to be returned on any jury; but where an *alien* is party in a cauſe, the jury are to be half denizens, and half *aliens*, except in caſes of high treaſon. 2 Inſt. 17.

By the ſtat. 12 W. III. cap. 2. *aliens* are incapable of being members of parliament, or of enjoying offices; neither have they any vote for the election of members. Hob. 271. *Aliens* likewiſe are by ſeveral acts of parliament put under ſeveral other reſtrictions, with regard to exerciſing trades, taking apprentices, and are likewiſe diſabled from being factors in the plantations, &c.

Aliens *duty*, an impoſt laid on all goods imported into England by *aliens*, or denizens, and even on certain goods imported by natural ſubjects, if they be brought on foreign bottoms, over and above what is paid for the ſame goods imported by Britiſh, and in Britiſh ſhipping. 12 Stat. Car. II.

Aliens duty is otherwiſe called *petty cuſtoms*, and *navigation duty*.

Fiſh dried, or ſalted, and codfiſh, or herring, not caught in Britiſh veſſels, and cured by Britiſh, pay a double *aliens duty*.

Aliens duty outwards, is taken off by the following acts. 12 Car. II. cap. 4.—25 Car. II. cap. 6.—5 Ann, cap. 27.—6 Ann, cap. 10.—7 Ann, cap. 7.—9 Ann, cap. 6.—8 Geo. I. cap. 15.—11 Geo. I. cap. 29.

Scavage, *package*, and *balliage*, payable to the city of London, are properly *alien duties*. On what footing *aliens* are permitted to import foreign commodities into Great Britain, ſee Duty.

Alien is ſometimes uſed, in *Middle Age Writers*, for *exempt*.

Alien-*amy*, or *alien-friend*. See Alien.

Alien *priories*, a ſubordinate kind of monaſteries in England, belonging to, and dependent on, other monaſteries in foreign countries. Vid. Dugd. Monaſt. Abr. p. 44.

ALIENATION, Alienatio, in *Law*, the act of making a thing another man's; or the altering and transferring the property and poſſeſſion of lands, tenements, or other things, from one man to another.

To *alienate*, or alien, in MORTMAIN, is to make over lands or tenements to a religious community, or other body *politic*.

To *alienate* in FEE, is to ſell the fee-ſimple of any land, or other incorporeal right.

All perſons who have a right to lands, may generally *alien* them to others; but ſome *alienations* are prohibited: ſuch as *alienations* by tenant for life, &c. whereby they incur a forfeiture of their eſtate. 1 Inſt. 118.

By the ſtatute of Edward I. a bar was put to *alienations*, by what we call *entails*, which is an expedient for procuring *perpetuities* in families; but counter expedients were deviſed to defeat this intent, and a practice was introduced of cutting off entails by *fines*, and of barring remainders and reverſions by *recoveries*.

The ſtatute for *alienations* in Henry the ſeventh's time, had a great effect on the conſtitution of this kingdom; as among other regulations of that reign, it tended to throw the balance of power more into the hands of the people.

By the ſtat. 12 Car. II. cap. 24. fines for alienations are taken away.

Crown lands are only *alienable* under a faculty of perpetual redemption.

The council of Lateran, held in 1123, forbids any clerk to *alienate* his benefice, prebend, or the like.

By the laws of the ancient Jews, lands could only be *alienated* for the ſpace of fifty years. At each return of the jubilee, all returned again to the primitive owners, or their deſcendants, to whom the lands were originally allotted, at the firſt diſtribution of Canaan.

Alienatio *à familia*. See Abdication.

Alienation *office*, is an office to which all writs of covenants and entry, upon which fines are levied, and recoveries ſuffered, are carried, to have fines for *alienation* ſet and paid thereon.

ALIFORMES *muſculi*, a pair of muſcles, ariſing from the pterygoid bone, and ending in the neck of the lower-jaw, towards the internal ſeat of the head.

They are thus called from *ala*, *wing*, and *forma*, *ſhape*; as reſembling wings.

Aliformes *proceſſus*, in *Anatomy*, the prominences of the *os* CUNEIFORME.

ALII *multi*, or Alii *de regno*, are phraſes which often occur in our ancient records and hiſtorians. Their meaning has occaſioned much diſpute. Dr. Brady will have them to ſignify only tenants *in capite*; which Mr. Tyrhel endeavours to refute, and ſhew that they denote the whole commons of the kingdom.

ALIMA, among *Mineraliſts*, a kind of ſand found in gold mines, out of which lead is extracted.

ALIMENT, ALIMENTUM, in a phyſical ſenſe, is whatever may be diſſolved, and turned into chyle, ſo as to be afterwards converted into blood, for augmenting the body, or repairing its continual waſte.

The word is formed of *alere*, *to nouriſh*. See CHYLIFICATION, DIGESTION, FOOD, and NUTRITION.

ALIMENT *of plants*, ſee PLANTS.

ALIMENTARY, ALIMENTAL, ſomething that relates to aliment, or food.

The ancient phyſicians held, that every humour conſiſts of two parts; an *alimentary*, and an *excrementitious* one.

ALIMENTARY *duct*, *ductus alimentalis*, is a name given by Dr. Tyſon, and ſome others, to that part of the body through which the food paſſes, from its reception into the mouth, to its exit at the *anus*; including the *gula*, ſtomach, and inteſtines.

Dr. Morgan conſiders the whole *alimentary* tube (including the ſtomach, inteſtines, and lacteals), as conſtituting one gland; of the like nature, ſtructure, and uſe, with the other glands of the body.

Every gland has its *vaſa deferentia*, *ſecretoria*, and *expurgatoria*, together with its common ventricle, where the matter brought thither is firſt prepared by digeſtion, &c. —In this grand primary concoctive gland, the *gula*, from the mouth of the *œſophagus* to its *vas deferens* the ſtomach, is its common receptacle, the lacteals are its *vaſa ſecretoria*, or recipient ſtrainers, and the inteſtines from the *pylorus* to the *anus* conſtitute its *vas expurgatorium*, or common expurgatory duct. The actions therefore of this, as of every other gland, are principally four, viz. *ſolution*, *ſeparation*, glandular colature or *ſecretion*, and *evacuation* or expurgation.

The whole *ductus alimentalis*, from its uſes, may be ordinarily divided into four parts. 1. That which conveys the food, called the *œſophagus*. 2. That which digeſts, or corrodes it, called the *ſtomach*. 3. That which diſtributes the chyle, called the *inteſtines*. 4. That which empties the *fæces*, called the *rectum*. Phil. Tranſ. Nº 144, p. 32, and 33.

This duct is ſaid to be the true characteriſtic of an animal, or *proprium quarto modo*; there being no animal without it, and whatever has it, being properly enough ranged under the claſs of animals. Plants receive their nouriſhment by the numerous fibres of their roots, but have no common receptacle for digeſting the food received, or for carrying off the recrements. But in all, even the loweſt degree of animal life, we may obſerve a ſtomach, and inteſtines, even where we cannot perceive the leaſt formation of any organ of the ſenſes, unleſs that common one of feeling as in oyſters. Phil. Tranſ. Nº 269, p. 776, ſeq.

Dr. Wallis brings an argument from the ſtructure of the *alimentary* tube in man, to prove that he is not naturally carnivorous. To the cogency of which, Dr. Tyſon makes ſome objections. V. Phil. Tranſ. Nº 269, p. 777.

ALIMENTARY *duct* is ſometimes alſo underſtood of the thoracic duct.

ALIMENTARY *law*, *lex alimentaria*, was an old law among the Romans, whereby children were obliged to find ſuſtenance for their parents.

ALIMENTARII *pueri*, &c. were certain children, maintained and educated by the munificence of the emperors, in a ſort of public places, not unlike our hoſpitals.

Trajan was the firſt that brought up any of theſe *alimentary* boys. He was imitated by Adrian. Antoninus Pius did the ſame for a number of maids, at the ſolicitation of Fauſtina; and hence, in ſome medals of that empreſs, we read PVELLAE FAVSTINIANAE.— Alexander Severus did the like, at the requeſt of Mammæa; and the maids thus educated were called Mammæanæ.

ALIMENTATION is uſed by ſome naturaliſts, for what we more ordinarily call NUTRITION.

ALIMONY, ALIMONIA, properly ſignifies nouriſhment, or maintenance; but in a modern ſenſe, in *law*, it denotes that portion, or allowance, which a married woman ſues for, upon any occaſional ſeparation from her huſband, wherein ſhe is not charged with elopement or adultery.

This was anciently called *rationabile eſtoverium*, *reaſonable maintenance*, and was recoverable only in the ſpiritual court; but now it is recoverable alſo in chancery.

Where a woman is divorced *a menſa & thoro*, ſhe may ſue her huſband in her own name for *alimony*, or maintenance, out of her huſband's eſtate, during the ſeparation, either in the chancery, or in the ſpiritual court; and it will be allowed, except in the caſes of elopement and adultery, as aforeſaid. 1 Inſt. 235.

ALIMUS, in *Botany*, a name given, by ſome of the Greek writers, to the common liquorice. It has been thus called, from its quality of palling the appetite, and making it inſenſible either of hunger or thirſt.

ALINDESIS, in the *Ancient Gymnaſtic Medicine*, a kind of exerciſe, wherein perſons being beſmeared with oil, rolled themſelves naked in the duſt.

The word is ſometimes alſo written αλινδος.

ALIOS *baton*, in *Ichthyology*, a name given by Ariſtotle, to the ſtrange fiſh, called by Artedi, LOPHIUS, and by others RANA *piſcatrix*.

ALIPÆNOS, in the *Ancient Phyſic*, an appellation given to dry, topical medicines, or ſuch as have no fat mixed with them.

The word is ſometimes alſo written *alipantos*. It is purely Greek, αλιπαινος, compounded of the privative α, and λιπαινειν, *pingueſcere*, *to fatten*. In which ſenſe, *alipæna* ſtands oppoſed to *lipara*, or plaſters, which have fat in their compoſition; called alſo by Celſus, *lenia*.

Galen gives the name αλιπη, to the remedies applied to freſh wounds, to check the inflammation, and haſten their healing.

ALIPILARIUS, or ALIPILUS, in *Antiquity*, an officer belonging to the baths, who, by means of wax, and waxen plaſters, took off the hairs from the ALÆ, or arm-pits. The women who performed this office were called *picatrices*, and *partiltriæ*.

The *alipilus* anſwered to what the Greeks called δρωπακιστης.

The ancient Romans made it a point of cleanlineſs to keep the arm-pits clear and ſmooth. In after-times, they went further, and took off the hair from their arms, legs, and other parts, with pitch and roſin, and by the *volſella*, an inſtrument for that purpoſe.

ALIPOW-MONTIS-CETI, a kind of white *turbith*, which is a ſtrong purgative. It is to be found in ſeveral places of Languedoc, particularly near Cete, whence the modern botaniſts have given it its name. It is ſometimes uſed inſtead of *ſena*; which, however, may be dangerous, ſince it is a much ſtronger purgative.

ALIPTA, in the *Ancient Gymnaſtics*, an officer appointed to anoint the *athletæ*.

In which ſenſe, the *aliptæ* amount to the ſame with what are otherwiſe called *unctores*, and *jatraliptæ*.

ALIPTA is ſometimes alſo uſed, in a leſs proper ſenſe, for the director, or ſuperintendant of the exerciſes of the *athletæ*.

In which ſenſe, *alipta* is ſynonymous with *gymnaſtes*, and *pædotriba*.

ALIPTERIUM, αλειπτηριον, in *Antiquity*, a place in the ancient *paleſtræ*, where the *athletæ* were anointed before their exerciſes.

The *alipterium*, or *alipterion*, was otherwiſe called ELÆOTHESION, and *unctuarium*; ſometimes alſo *ceroma*.

ALIQUANT *part*, is that which will not meaſure or divide any number exactly.—Or an *aliquant part*, is that which, being taken any number of times, is always greater or leſs than the whole. See MEASURE.

Thus, 5 is an *aliquant part* of 12; for being taken twice, it falls ſhort; and when taken three times, it exceeds 12.

The *aliquant parts* of a pound, or 20*s.* are

3*s.* an *aliquant part* compoſed of a tenth and 20th,
6*s.* of a 5th and a 10th.
7*s.* of a 4th and a 10th.
8*s.* of two 5ths.
9*s.* of a 4th and a 5th.
11*s.* of a half and a 20th.
12*s.* of a half and a 10th.
13*s.* of a half, a 10th, and 20th.
14*s.* of a half and a 5th.
15*s.* of a half and a 4th.
16*s.* of a half, a 5th, and 10th.
17*s.* of a half, a 4th, and 10th.
18*s.* of a half, and two 5ths.
19*s.* of a half, a 4th, and 5th. See MULTIPLICATION.

ALIQUOT *part*, is ſuch part of any number, or quantity, as will exactly meaſure it, without any remainder. —Or, it is a part, which being taken a certain number of times, becomes equal to the whole, or integer.

The word is formed of *aliquoties*, any number of times.

Thus, 3 is an *aliquot part* of 12; becauſe, being taken four times, it will juſt meaſure it.

The *aliquot parts* of 20*s.* are

10*s.*	half of 20*s.*	2*s.* 6*d.*	an eighth.
5*s.*	a fourth.	1*s.* 8*d*	a twelfth.
4*s.*	a fifth,	1*s.* 4*d.*	a fifteenth.
2*s.*	a tenth.	1*s.* 3*d.*	a ſixteenth.
1*s.*	a twentieth.	10*d.*	a twenty-fourth.
6*s.* 8*d.*	a third.	5*d.*	a forty-eighth.
3*s.* 4*d.*	a ſixth.		

To multiply by the help of *aliquot parts*, ſee MULTIPLICATION.

We muſt not confound an *aliquot part* with that of a *commenſurable*; for every *aliquot part* is a *commenſurable*, but not *vice verſa*. Thus four is *commenſurable* with ſix, but is not an *aliquot part* of it. Phil. Tranſ. N° 41.

ALISANDERS, *ſmyrnium*, Tourn. Inſt. R. H. 315. Tab. 168. This genus belongs to the *pentandria digynia* of Linnæus. Its characters are theſe: it has an umbellated flower; the principal umbel is unequal, the ſmall ones are erect; they have no involucrum, and the empalement of the flowers are ſcarce diſcernible. The flowers have five ſpear-ſhaped petals, which are a little inflexed, and five ſtamina the length of the petals, terminated by ſingle ſummits. The germen is ſituated under the flower, ſupporting two ſtyles, crowned by headed ſtigmas. The germen afterward turns to an almoſt globular fruit, which is ſtreaked, and ſplits in two, each containing one moon-ſhaped ſeed, convex on one ſide, marked with three ſtreaks, and plain on the other. There are five ſpecies.

Aliſanders uſed to be ordered by the college for medicinal uſe, but is ſeldom now preſcribed; and at preſent is ſeldom cultivated in gardens, though formerly it was greatly uſed in the kitchen, before celery was ſo much cultivated, which hath taken place of *aliſanders*, and entirely ſuperſeded the uſe of it.

The ancient Greeks have plainly deſcribed two different plants under this name; the one the common *aliſanders*, the other the *petroſelinum Cilicium*, or Cicilian parſley. The former of theſe plants loves moiſt and rich ground, and the other grows no where but on rocky hills, and in the drieſt and moſt barren places. Pliny, not obſerving that the ancient writers knew two plants under this name, accuſes them of an error, in ſaying that the *ſmyrnium* loved dry and barren places, whereas the Romans, who cultivated the *ſmyrnium* at that time, found it delighted only in rich moiſt ſoils; but the ancients, whom he cenſures thus, had ſpoke what he records of the *petroſelinum*, not of the great water-SMYRNIUM.

ALISMA, in *Botany*, a name given by ſome to the *plantago aquatica*, or water-PLANTAIN. In the Linnæan ſyſtem, it is a genus of the *hexandria polygynia*.

ALITES, in *Antiquity*, a name given to thoſe birds which afforded auguries by their wings and flight.

In this ſenſe, *alites* ſtand oppoſed to OSCINES, or birds which gave auguries by their mouths, by ſinging, or croaking, &c.

To the claſs of *alites*, belong the buzzard, oſprey, &c.

To that of OSCINES, the crane, raven, owl, &c.

The word is Latin, formed from *ala*, a *wing*.

ALKA, in *Zoology*, the name of a water-bird, of the diver kind, belonging to the claſs of *anſeres* in the Linnæan ſyſtem, and called, in different parts of England, the *auk*, the *razor-bill*, and the *murre*. It approaches to the ſize of the common duck; and its head, neck, back, and tail, are all black; its belly and breaſt, and up half-way of the throat, is white. The *alk* in Norway very much reſembles this in ſize, ſhape, and colour; though Pontopiddan repreſents the latter as peculiar to that country. It is found in the rocks on the ſea-coaſts, and makes no neſt, laying its eggs in ſome hollow of the naked rock. The eggs are very large, and are white, with black ſpots.

ALKADARII, a ſect among the Mahometans, who deny any eternal, fixed, divine decrees; and are aſſerters of *free-will*.

The word is formed from the Arabic, *alkadar*, which ſignifies decree.

The *alkadarii* are a branch of MOATAZALITES.—They ſtand oppoſed to the ALGIABARII.

ALKAHEST, or ALCAHEST, in *Chemiſtry*, a word coined by Paracelſus to ſignify a moſt pure and univerſal *menſtruum*, or diſſolvent, wherewith ſome chemiſts have pretended adequately to reſolve all bodies into their firſt matter, and to perform other extraordinary and unaccountable operations.

The word *alcaheſt* is originally German, compounded of *al* and *geeſt*, i. e. *all ſpirit*.

The two eminent ADEPTS, Paracelſus and Helmont, expreſly declare, that there is a certain fluid in nature, capable of reducing all ſublunary bodies, as well homogeneous as mixed, into their *ens primum*, or original matter whereof they are compoſed; or into an uniform equable and potable liquor, that will unite with water, and the juices of our bodies; yet will retain its ſeminal virtues; and if mixed with itſelf again, will thereby be converted into pure elementary water.—Whence they alſo imagined it would at length reduce all things into water.

This declaration, ſeconded by the aſſeveration of Helmont, who religiouſly ſwears himſelf poſſeſſed of the ſecret, has excited the ſucceeding chemiſts and alchemiſts to the purſuit of ſo noble a *menſtruum*. Mr. Boyle was ſo fond of it, that he frankly acknowleges he had rather have been maſter thereof than of the philoſophers ſtone.

The different conjectures of chemiſts, with relation to the matter of the *alkaheſt*, are innumerable. Boerhaave ſeems to expect it from ſea-ſalt, and mercury together.—Few bodies but ſome alchemiſt or other has fixed on, as the object of his reſearches after the *alkaheſt*. Some have wrought on equinoctial dew; others on rain-water, others on talc, others on zinc, others on antimony itſelf.—Poterius and Glauber confined themſelves to nitre; Beguinus did the ſame, only concealing it under the name of hermaphrodite ſalt. Angel. Sala, Sir Kenelm Digby, and ſeveral others, preferred vitriol. The diſciples of Paracelſus, commonly chooſe ſea-ſalt; Sandivorgius, Tachenius, Beverovicius, Boyle, and ſome others, water. Pollemannus, Mullerus, &c. founded all their hopes on black lead; others preferred flint; ſome potters varniſh. Helmont pretends, that the *alkaheſt* is prepared from common ſalt and raddiſh juice, unleſs his words are to be taken figuratively. Becher will have it made of a moſt penetrating mercurial earth; others of a foliated earth of tartar, and an urinous ſalt, combined, digeſted, and circulated together; others of ſpirit of wine, and ſalt of urine, coupled in due form; others of ſublimate mercury, and vitriol; others of the ſame mercury, and highly rectified ſpirit of wine, frequently cohobated; others of the ſapa of urine, expoſed to the magnetiſm of the air, &c.

The generality of chemiſts take the *alkaheſts* of Paracelſus and Van Helmont for the ſame; ſome others conclude them to be entirely different things. It is certain theſe two authors ſpeak of their reſpective *alkaheſts*, in terms very different. Paracelſus only ſpeaks of his as a medicine for the liver, which would prevent diſorders of that viſcus, or even ſupply, and reſtore it, if entirely gone.—Van Helmont chiefly ſpeaks of his, as a menſtruum which would diſſolve all bodies.—Cnoeffelius, after an exact compariſon of the ſeveral paſſages of Van Helmont, wherein the *alkaheſt* is mentioned, concludes, that what he elſewhere calls *ignis gehennæ*, is not the ſame liquor with that which Paracelſus calls by the name of *alkaheſt*; but with that which Paracelſus calls his corroſive ſpecific, which appears to be a different thing from his *alkaheſt*; ſince Paracelſus never uſed his ſpecific internally, nor does Helmont, in all his writings, mention one word concerning the internal uſe of his *alkaheſt*, though he commends it externally for the leproſy. And it appears from Paracelſus himſelf, that it was only on account of its external application, that he ranked it among medicines.

Helmont is expreſs, that this *menſtruum* is entirely the product of art, and not of nature.—‘Though, ſays he, a homogeneal part of elementary earth may be artificially ‘ converted into water, yet I deny, that the ſame can be ‘ done by nature alone; for no natural agent is able to ‘ tranſmute one element into another.’ And this he offers as a reaſon why the elements always remain the ſame.—It may let ſome light into this affair, to obſerve that Helmont, as well as Paracelſus, took water for the univerſal inſtrument of chemiſtry, and natural philoſophy; and earth for the unchangeable baſis of all things; that fire was aſſigned as the efficient cauſe of all things; that ſeminal impreſſions were lodged in the mechaniſm of earth; and that water, by diſſolving and fermenting with this earth, as it does by means of fire, brings every thing forth; whence originally proceeded the animal, vegetable, and mineral kingdoms; even man himſelf being thus at firſt created, agreeably to the account of Moſes.

The great character or property of the *alkaheſt*, we have obſerved, is, to diſſolve and change all ſublunary bodies, water alone excepted.—The changes it induces proceed thus:

1. The ſubject expoſed to its operation, is converted into its three principles, ſalt, ſulphur, and mercury, and afterwards into ſalt alone, which then becomes volatile; and at length is wholly turned into inſipid water.—The manner of application is by touching the body propoſed to be diſſolved, e. gr. mercury, gold, ſand, or the like, once or twice with the pretended *alkaheſt*; and if the liquor be genuine, the body will on this be converted into its own quality of ſalt.

2. It does not deſtroy the ſeminal virtues of the bodies diſſolved thereby.—Thus, gold is, by its action, reduced to a ſalt of gold; antimony to a ſalt of antimony; ſaffron to a ſalt of ſaffron, &c. of the ſame ſeminal virtues or characters with the original concrete.—By ſeminal virtues, Helmont underſtands thoſe virtues which depend upon the ſtructure or mechaniſm of a body, and which make it what it is. Hence an actual and genuine *aurum potabile* might readily be gained by the *alkaheſt*, as converting the whole body of gold into ſalt, retaining its ſeminal virtues, and being withal ſoluble in water.

3. Whatever it diſſolves, may be rendered volatile by a

ſand-heat; and if, after volatilizing the ſolvend, it be diſtilled therefrom, the body is left pure inſipid water, equal in quantity to its original ſelf, but deprived of its ſeminal virtues.—Thus, if gold be diſſolved by the *alkaheſt*, the metal firſt becomes ſalt, which is potable gold; but when the *menſtruum* by a farther application of fire is diſtilled therefrom, it is left mere elementary water. Whence it appears, that pure water is the laſt production or effect of the *alkaheſt*.

4. It ſuffers no change or diminution of force by diſſolving the bodies it works on, and therefore ſuſtains no reaction from them; being the only immutable menſtruum in nature.

5. It is incapable of mixture, and therefore remains free from fermentation and putrefaction; coming off as pure from the body it has diſſolved, as when firſt put thereon; without leaving the leaſt foulneſs behind.

Van Helmont had another *menſtruum*, which he called *circulatum minus*, ſaid to be prepared by a circulation of nine weeks, from equal parts of ſpirit of urine rectified three times, alcohol, or highly rectified ſpirit of wine, and vinegar twice rectified. Thoſe who are acquainted with the great effects which may be produced by theſe ſeparately, will readily believe that theſe by an intimate union may be converted into a *menſtruum* capable of doing ſurpriſing things; eſpecially as we know that neutral *menſtrua*, as this muſt be, will act upon ſome very hard bodies, which are not otherwiſe diſſoluble by acid, alkaline, watry, or ſpirituous *menſtrua*.

There are various proceſſes deſcribed, whereby the *alkaheſt* may be procured, yet many, nevertheleſs, doubt of the poſſibility of ſuch a *menſtruum*. Though we have the expreſs teſtimonies of Paracelſus, Helmont, Philalethes, Starkey, Faber, and others, that they were actually poſſeſſed of the ſecret, yet many among the later writers, as Boyle, Wedelius, Major, Martini, and others, perſiſt in holding it impoſſible, and even to involve contradictions.

Either ſuch a *menſtruum* does not exiſt, or elſe there is not any body in nature which may not become an *alkaheſt*. For although certain ſubſtances have not hitherto been combined with others, the daily diſcoveries in *chemiſtry* of combinations formerly believed impoſſible, ſeem to prove, that by certain management, and certain circumſtances, any ſubſtance may be combined with all others; or, in other words, that all bodies may be diſſolved by any ſingle ſubſtance.

Kunckel very well ſhews the abſurdity of ſearching for an univerſal ſolvent, by aſking, 'If it diſſolves all ſub-'ſtances, in what veſſel can it be contained?'

The illuſtrious Boerhaave, after collecting every thing which has been ſaid by Helmont, and other chemiſts, with regard to this wonderful liquor, concludes in the following manner. 'Perhaps, ſays he, you may now 'be willing to know my opinion of this matter, and 'whether I believe that any of the chemiſts were ever 'maſters of this grand *arcanum*. To this I freely an-'ſwer: Van Helmont complains, that the bottle was 'once given him, but that it was taken away again; 'and therefore he could not make many experiments 'with that liquor. And Paracelſus does not ſay ſo 'many, and ſo great things of his ſolvent, and there-'fore I really do not know what to ſay to it. This, 'however, I will venture to ſay, that if you examine 'ſea-ſalt and mercury, by every chemical method poſ-'ſible, you will never repent of your trouble.'

ALKAHEST is alſo uſed in a more extenſive ſenſe, ſo as to comprehend all fixed ſalts volatilized, and reduced into a quinteſſence.

ALKAHESTIC is uſed by ſome to denote the quality of bodies which are powerfully ſolvent.

In which ſenſe, *alkaheſtic* amounts to much the ſame with menſtruous; except that the former imports a greater degree of the ſolutive power, than the latter. See MENSTRUUM.

ALKALESCENT, denotes a matter ſlightly *alkaline*, or which begins to turn to the *alkaline* and putrid fermentation.

ALKALI. See ALKALY.

ALKALI, in *Botany*. See SALICORNIA.

ALKALINE, in a general ſenſe, ſomething that has the properties of an ALKALY.

In this ſenſe we ſay, *alkaline* ſalts, *alkaline* ſpirits, *alkaline* ſubſtances, &c.

ALKALINE, in *Chemiſtry*, is more peculiarly applied to SALTS which will perſiſt in, and bear a ſtrong fire, without flying away and vaniſhing in the air. In which ſenſe theſe *alkaline* ſalts are ſaid to be *fixed*.

ALKALINE *acrimony*, in *Medicine*, ſignifies a morbid quality in the blood, which is indicated by a deſire of, and thirſt after four things, loſs of appetite, and averſion to alkaleſcent food, nidorous eructations, putrid ulcers on the lips, tongue, and other parts in the mouth, ſickneſs in the ſtomach, a frequent *diarrhœa*, a ſenſe of heat, laſſitude, and general uneaſineſs, a diſſolution of the texture of the blood, the urine high coloured, and red. It produces a putreſcency in the blood, &c. and is to be remedied by the ſame means as the ſea-ſcurvy, and other putrid diſorders.

ALKALINE, or ALKALIZATE *bodies*, among *Chemiſts*, are ſuch as have their pores naturally ſo formed, that they are fit to be pierced, and put into motion, by the points of an acid poured upon them.

ALKALIZATION, ALKALIZATIO, in *Chemiſtry*, the act of impregnating a liquor with an *alkaline* ſalt.

This is done either to make it a better diſſolvent, for ſome particular purpoſes; or to load the phlegm, ſo as it may not riſe in diſtillation, whereby the ſpirituous parts may go over more pure.

ALKALIZATION, is a name applied to operations, by which *alkaline* properties are communicated to bodies; or to thoſe by which *alkali* is extracted from bodies which contain it, or in which it may be formed; e. g. *ſpirit of wine* is ſaid to be *alkalized*, when it has been digeſted upon *alkali*; a part of which it diſſolves, and thence acquires *alkaline* properties. On the other hand, when a neutral ſalt is decompoſed, in order to obtain its *alkaline* baſis, this ſalt is ſaid to be *alkalized*. Vegetable ſubſtances, when reduced to aſhes, may alſo be ſaid to be *alkalized*; becauſe theſe aſhes contained fixed ALKALI.

ALKALY, ALKALI, or ALCALY, in *Chemiſtry*, a name originally given by the Arabians to a ſalt extracted from the aſhes of a plant called *kali*; and by us GLASS-*wort*; becauſe uſed in the making of glaſs.

Afterwards, the term *alkaly* became a common name for the lixivious ſalts of all plants; that is, for ſuch ſalts as are drawn by lotion from their aſhes.

And hence, again, becauſe the original *alkaly* was found to ferment with acids; the name has ſince become common to all volatile ſalts, and all terreſtrial ſubſtances, which have that property.

ALKALY, then, in its modern extenſive ſenſe, is any ſubſtance, which being mixed with an acid, occaſions an ebullition and effervescence.

And hence ariſes the grand diviſion of natural bodies into the two oppoſite claſſes of *acids* and *alkalies*.

Boerhaave ſcarce takes this circumſtance to be enough to conſtitute any determinate claſs of bodies.—In effect, *alkalies* are not of one ſimilar homogeneous nature; but there are two ſeveral ſorts of them.

The firſt are obtained from vegetable and animal ſubſtances, by calcination, diſtillation, putrefaction, &c. Such are ſpirit of urine, ſpirit of hartſhorn, ſalt of tartar, &c.—The ſecond are of the terreſtrial kind; as ſhells, chalk, &c.

Theſe two ſpecies of *alkalies*, Boerhaave obſerves, differ widely from each other; having ſcarce any thing in common, but their being effervеſcible with acids.—The one is a claſs of native, fixed, ſcentleſs, inſipid, mild, aſtringent bodies: the other a ſet of ſuch as are volatile, odorous, ſapid, cauſtic, aperitive, and are procured by art. Hence, adds the ſame author, mere effervеſcence with acids muſt be allowed to be of itſelf inſufficient to determine the nature of an *alkaly*; and that ſuch a name, which properly denotes a cauſtic, fiery ſubſtance, ſhould not be affixed to any mild and gentle body, as chalk, &c. but other properties and conſiderations are to be taken in, and particularly their taſte, which is pungent, the manner of procuring, and the change of colour they produce in bodies.

With regard to this laſt circumſtance, thoſe liquors which, being poured on ſyrup of violets, change it to a green colour, are *alkalies*; as thoſe which turn it red, are acids.—Thus oil of tartar turns it of a kindly green; and oil of vitriol of a carmine red; and if to the ſyrup thus made red by oil of vitriol, oil of tartar be poured, it turns that part, wherewith it comes in contact, green; leaving the reſt red; and the like holds of oil of vitriol, poured on ſyrup made green by oil of tartar. But this change of colour is not peculiar to *alkalies*; ſince a ſolution of quick-lime in the marine acid changes the colour of ſyrup of violets to a green.

To the like effect, M. Homberg obſerves, that 'a mere 'heat and bubbling ariſing upon the admixture of a body 'with an acid does not ſeem an adequate criterion of 'the *alkaline* nature; ſince diſtilled oils of all kinds are 'found to do thus much; and that many of them with 'more vehemence than *alkalies* themſelves; ſo as ſome-'times even to take fire, which *alkalies* never do.'

The opinion that *alkalies* ferment only with acids, ſeems too haſtily taken up; for the different *alkalies* will ferment with one another; ſpirit of hartſhorn, ſpirit of wine, ſpirit of ſal armoniac, and other volatile ſpirits of the *alkaline* kind, when in the dry form of ſalts, all ferment with ſalt of tartar, or other fixed *alkalies* of the lixivial kind. Spirit of ſalt is an *alkali*, in regard to ſpirit of nitre, and ferments with it; and many of the acids ferment with ſulphur. A ſpirit of ſulphur may be prepared ſo concentrated, that it will ferment violently with water, which will become hot, and as it were boiling, on mixing the one with the other; yet water is certainly neither an acid nor an *alkali*.

To the definition and character of an *alkali*, therefore, M. Homberg adds this circumſtance; ‘ that after the ‘ action, the mixture coaleſces and ſhoots into a ſalt, or ‘ ſaline matter.’—This excludes the oils above mentioned; which do not, after efferveſcence, unite with the acids into a ſaline ſubſtance, but rather compoſe a reſinous one.

All lixivious ſalts have theſe characters of *alkali.*—And not only lixivious, but alſo all urinous ſalts, which are conſtantly found to imbibe acids with great eagerneſs, and, after ebullition, to unite and cryſtallize with them. Hence we have two kinds of *alkali* ſalts, viz. *fixed*, or *lixivious*; and thoſe that are *volatile*, or *urinous*.

But beſide *alkali* ſalts, there are an infinity of other bodies, not ſaline, which anſwer to the characters of *alkali*, i. e. which produce much the ſame effects with acids as the *alkali* ſalts abovementioned.—And theſe *alkaline* matters are, in other reſpects, of different natures. Some, e. gr. are merely EARTHY; as quick-lime, marble, chalk, &c.—Others are METALLINE; among which, ſome have their peculiar and appropriate acids to act on them, as gold, tin, and antimony, which only diſſolve with aqua regia; ſilver, lead, and mercury, with aqua fortis; and the others with other ſorts of acids, as iron, copper, zinc, biſmuth, &c.—There are others of the ANIMAL claſs; conſiſting, 1. Of ſtony matters found in the viſcera of certain ſpecies; as the *calculus humanus*, bezoards, crabs eyes, &c.—2. Teſtaceous matters and ſhells; as pearls, oyſter-ſhells, cuttle-fiſh bones, the ſhells or coats of lobſters, crabs, &c.—3. The parts of animals, which by length of time, or ſome other cauſe, are become ſtony, or even earthy; as the foſſil unicorn's horn, &c.—And laſtly, almoſt all ſtony marine plants, as coral, &c.

After all, the *alkaline* property in fixed ſalts does not appear to be native, but rather producible by art.—This opinion ſeems to have been firſt ſtarted by Helmont; before him, it was the ſtanding opinion, that fixed *alkalies* pre-exiſted in mixed bodies; and were only ſeparated or extricated from the parts of the compound. Helmont advanced, that they did not thus pre-exiſt in their *alkaline* form, but were productions of the fire, by whoſe violent action, part of the ſalt, which in the concrete is all volatile, lays hold of ſome part of the ſulphur of the ſame body; and both melting together, are fixed into an *alkali*; which fixation he exemplifies, by this circumſtance, that, when ſalt-petre and arſenic, though both volatile, are expoſed to the fire, they are fluxed by the operation thereof, and made to fix each other.

Some late chemiſts, and particularly M. Geoffroy, carry the point ſomething farther; and aſſert, that all *alkali* ſalts whatever, both fixed and volatile, are wholly the effect of fire; becauſe, before any action of the fire, they did not pre-exiſt in the mixt, wherein they afterwards appeared.

Notwithſtanding all the ſeeming oppoſition and hoſtility between *acids* and *alkalies*, they may be converted into one another; at leaſt, *acids* are convertible into *alkalies*; as is ſhewn at large by M. Geoffroy, the elder, in the Mem. de l'Acad. an. 1717. where the nature and origin of *alkalies* are ingeniouſly explained, p. 226. Hiſt. 34.

Alkali ſalts, according to this author, are only acids concentrated in little molecules of earth, and united with certain particles of oil, by means of fire.

When an acid, which we conceive in the general as a ſmall, ſolid, pointed *ſpiculum*, happens to be abſorbed or concentrated in a proper portion of earth, the whole becomes denominated a *ſaline, compound*, *neutral*, or *intermediate ſalt*; by reaſon the acid, thus incloſed in a ſheath, cannot excite the ſame ſavour as when diſengaged therefrom; and yet excites a ſaline taſte; and for this reaſon is compound, &c.

Now, fire is the only agent capable of diſengaging the acid from the earth with which it is thus inveſted. Upon this, the acid, being lighter than the earth, riſes and evaporates, leaving the earth at the bottom of the veſſel; which for this reaſon is called FIXED, in contradiſtinction to the acid, which is VOLATILE. This earth, thus deprived of its acid, is left with its pores open and empty, which before were filled; and withal, in ſuſtaining the action of fire, it neceſſarily retains ſome of the particles thereof, which give it an acrimonious taſte, ſuch as mere earth could never have. From this taſte it is called *ſalt*; and from its pores being open, and thus diſpoſed to admit and imbibe new acids, it is called *alkali ſalt*.

Now, it is not to be imagined, that an earth, which has once been impregnated with acids, can ever be perfectly diveſted of it; there will ſtill remain ſome, though much leſs than before. So that an *alkali* may be conceived as only a too ſmall quantity of acid, incloſed in too large a quantity of earth.

The viſible and ſenſible fire is not the only agent capable of ſeparating acids from their earth; fermentation has the ſame effect, in virtue of that pure active fire produced or concerned therein. *Alkalies*, therefore, are the production either of the one, or of the other fire; and the ſame may be ſaid of the acids diſengaged from them; it being the diſunion of the parts of the ſame ſalt occaſioned by fire that produces both, the acids as well as the *alkalies*. All the difference is, that the *alkali* imbibes and retains certain corpuſcles of the fire, whereas nothing foreign is ſuperadded to the acid.

On this principle every acid is volatile, and every *alkali* ſhould be fixed, if the *alkali* were only earth; but in regard the little acid ſtill remaining in the *alkali*, may be united with a portion of oil, as well as a portion of earth, and oil is known to be volatile; the compound, that is, the *alkali*, muſt be volatile, in caſe the oil prevail in it.

In this caſe, the *alkali* is found to have a ſtrong, penetrating, urinous taſte and ſmell; and is what we call a *volatile urinous alkali ſalt*.

Theſe things well conſidered, it will be eaſy to aſſign what muſt enſue upon the ſeparations, or new unions, of the parts of a mixt.

An acid, it is evident, may become an *alkali*, becauſe, after having been ſeparated from its matrix, it may be reſtored in a ſmall quantity to another matrix, either wholly earthy, or earthy and oleaginous. In the firſt caſe, it will become a fixed *alkali*; in the ſecond, it may be a volatile *alkali*, if in the ſuppoſed matrix the proportion of oil prevail over that of earth; and in this caſe it will be urinous.

Again, what before was a fixed *alkali*, may become volatile and urinous, by depoſiting or diſcharging part of its earth, and taking oil in its ſtead.

Theſe tranſmutations are not found equally eaſy and practicable in the three different kinds of mixts, or the three kingdoms, by reaſon of the diverſity of circumſtances that muſt concur in the operation.—They are much the moſt rare and difficult in the mineral realm; becauſe, without doubt, the parts of minerals are more cloſely tied together, and have, as it were, leſs play. The only inſtance chemiſtry hath hitherto produced, of a mineral acid's being converted into a fixed *alkali*, is in the operation of fixing ſalt-petre.

The vegetable kingdom, it is obſerved, furniſhes a very large quantity of fixed *alkali* ſalt; and very little volatile *alkali*: the animal kingdom, on the contrary, affords much volatile *alkali* ſalt, and but little fixed. The foſſil kingdom affords a very little native fixed *alkali* ſalt, as the Egyptian *natrum*, and the ſalts procured by lotion from ſaline earths about Smyrna, and ſome other places of the Eaſt; and the chemiſts have alſo found a method of converting nitre into a fixed *alkali*; but nobody hath hitherto produced a volatile *alkali* from the acids of the mineral kingdom.—And yet, if acid ſalts of the vegetable kind be convertible either into FIXED or VOLATILE *alkalies*, why may not mineral acids be ſuſceptible of the ſame change, ſince vegetable acids are originally no other than mineral ones; for, from whence but the earth ſhould plants derive their acid juice?

In effect, M. Geoffroy has at length ſhewn the operation feaſible, by an actual transformation of the ſame acid nitre into a volatile urinous *alkali*. Mem. de l'Acad. an. 1717.

By the way, it is to be noted, that the inſtance of Egyptian *natrum*, or nitre, furniſhes an objection againſt the general aſſertion of all *alkalies* being artificial, or produced by fire. Mr. Boyle, who had ſome of this ſalt ſent him by the Engliſh embaſſador at the Porte, found that vinegar would work briſkly on it, even in the cold. ‘ Whence, ſays he, it appears, that the Egyptian nitre, ‘ acknowleged to be a native ſalt, and made only by the ‘ evaporation of the ſuperfluous water of the Nile, is ‘ yet of a lixivious nature, or at leaſt abounds with par‘ticles that are ſo, though produced without any prece‘dent incineration, and the matter of it expoſed to ‘ the violence of the fire, to make it afford an *alkali*.’ —He adds, ‘ however, he does not know any other ‘ body in nature, except this, wherein the *alkaline* pro‘perties are not produced.’ And proceeds to give inſtances of *alkalies* being made from ſea-ſalt, and other acids; and ſhews, ‘ how the ſame body, without the ‘ addition of any other ſalt, may, by varying the man‘ner of the fire's application, be made either to afford ‘ little elſe than acids, or a greater or leſs quantity of ‘ *alkali*.’ Producib. of Chym. Princip.

ALKALI *and acid, hypotheſis of.*—Tachenius and Sylvius de la Boe, followed by the tribe of vulgar chemiſts, ſtrenuouſly aſſert SAL *alkali* and *acid* to be the only univerſal principles of all bodies; and by means of theſe, they account for the qualities of bodies, and the reſt of the *phænomena* of nature; particularly thoſe in the animal œconomy. In a word, *alkali* and *acid* are ſubſtituted in the ſtead of matter and motion.

Mr. Boyle and Bohnius attack this hypotheſis with great force of argument. In effect, it is at beſt but precarious to affirm, that *acid* and *alkaline* parts are found in all bodies.

When the chemiſts ſee aqua fortis diſſolve filings of copper, they conclude, that the acid ſpirits of the menſtruum meet in the metal with an *alkali*, upon which they work; but how unſafe a way of arguing this is, appears hence, that ſpirit of urine, which is allowed a volatile *alkali*, and accordingly makes a great conflict with aqua fortis, readily diſſolves filings of copper, and that even more genuinely than the acid liquor.—So, when they ſee the magiſtery of pearl or coral, prepared by dropping oil of tartar into the ſolution of thoſe bodies made with ſpirit of vinegar, they aſcribe the precipitation to the fixed *alkali* of the tartar, which mortifies the acidity of the ſpirit of vinegar; whereas the precipitation would no leſs enſue, if, inſtead of the *alkalizate* oil of tartar, that ſtrong acid, oil of ſulphur *per campanam*, were uſed.

It may alſo be doubted, whether it be juſt to ſuppoſe, that when an acid is diſcovered in a body, the operation of that body on another, abounding with an *alkali*, muſt be the effect of a conflict between theſe two principles? For an acid body may do many things, not ſimply as an acid, but on account of a texture or modification, which endows it with other qualities as well as acidity. Thus, when the chemiſts ſee an acid menſtruum, as aqua fortis, ſpirit of ſalt, oil of vitriol, &c. diſſolve iron, they preſently aſcribe the effect to an acidity in the liquors; though well dephlegmated urinous ſpirits, which they hold to have a great antipathy to acids, will alſo readily diſſolve crude iron, even in the cold.

Farther, the patrons of this hypotheſis ſeem arbitrarily to have aſſigned offices to each of their two principles, as the chemiſts do to each of their *tria prima*, and the peripatetics to each of their four elements. But it is not enough to ſay, that an acid, for inſtance, performs theſe things, and an *alkali* thoſe; and that they divide the operations and phænomena of natural bodies between them: aſſertions of ſuch moment ought not to be received, without farther proof.

Indeed, the very diſtribution of ſalts into *acids* and *alkalies*, has ſomewhat arbitrary in it; there being not only ſeveral things wherein the acids agree with *alkalies*, but alſo ſeveral things wherein each differs from itſelf.—To ſay nothing of the diverſity of fixed and volatile *alkalies* above mentioned; ſome, as ſalt of tartar, will precipitate the ſolution of ſublimate into an orange-tawny; others, as ſpirit of blood and hartſhorn, precipitate the ſame ſolution into a milky ſubſtance; and oil of tartar very ſlowly operates upon filings of copper, which ſpirits of urine and hartſhorn will readily diſſolve on the fire. And among acids themſelves the difference is no leſs; for ſome of them will diſſolve bodies which others will not; and this even where the menſtruum that will not diſſolve the body, is reputed much ſtronger than that which does; as dephlegmated ſpirit of vinegar will diſſolve lead reduced to minute parts in the cold, which is an effect that chemiſts expect not from ſpirit of ſalt. Nay, one acid will often precipitate what another has diſſolved, and *è contra*; as, ſpirit of ſalt will precipitate ſilver out of ſpirit of nitre. Add, the properties peculiar to ſome particular acids; as, that ſpirit of nitre, or aqua fortis, diſſolves camphire into an oil, and coagulates common oil into a conſiſtent ſubſtance like tallow; and though it will both corrode ſilver, copper, lead, and mercury, and keep them diſſolved, it quickly lets fall almoſt the whole body of tin. It is no wonder that the definitions given of *acid* and *alkali* ſhould be inaccurate and ſuperficial, ſince the chemiſts themſelves do not ſeem to have any determinate notion, or ſure marks, whereby to know them diſtinctly. For to infer, that, becauſe a body diſſolves another, which is diſſoluble by this or that known acid, the ſolvent muſt alſo be acid; or to conclude, that, if a body precipitates a diſſolved metal out of a confeſſedly acid menſtruum, the precipitant muſt be an *alkali*, is precarious: ſince filings of ſpelter will be diſſolved by ſome *alkalies*, viz. ſpirit of ſal ammoniac, &c. as well as by acids; and bodies may be precipitated out of acid menſtrua, by other acids, and by other liquors wherein there appears not the leaſt *alkali*. Add, that a ſolution of biſmuth, made in aqua fortis, would be precipitated both by ſpirit of ſalt, and by common water.—Nor does that other criterion of *acids* and *alkalies*, viz. the heat, commotion, and bubbles, excited upon their being put together, appear more determinate; ſince almoſt any thing fitted variouſly and vehemently to agitate the minute parts of a body, will produce heat in it.—Thus, though water be neither an acid, nor an *alkali*, it will quickly grow very hot, not only with the highly acid oil of vitriol, but with the *alkalizate* ſalt of tartar.

Neither is the production of bubbles on the mixture, though accompanied with a hiſſing noiſe, a certain ſign; ſuch production not being a neceſſary effect of heat, excited by conflict, but depending on the peculiar diſpoſition of the bodies put together, to extricate, produce, or intercept, particles of air.—Hence, as oil of vitriol, mixed in a due proportion with fair water, may be brought to make the water very hot, without exciting bubbles; ſo Mr. Boyle has found, that *alkalizate* ſpirit of urine, drawn with ſome kinds of quick-lime, being mixed with oil of vitriol moderately ſtrong, would afford an intenſe heat, while it produced either no manifeſt bubbles at all, or ſcarce any; though the urinous ſpirit was ſtrong, and in other trials operated like an *alkali*; and though, with the ſpirit of urine made *per ſe*, in the common way, oil of vitriol will produce a great hiſſing, and a multitude of conſpicuous bubbles. On the other ſide, ſome acid ſpirits, as that of verdegris, made pure, poured on ſalt of tartar, will frequently make a conflict, and produce a large froth, though not accompanied with any manifeſt heat.

Many make the taſte the touchſtone whereby to try *acids* and *alkalies*; but there are a multitude of bodies, wherein we can ſo little diſcern by the taſte which of the principles is predominant, that one would not ſuſpect there was a grain of either of them therein: ſuch are diamonds, moſt gems, and many ignobler ſtones; gold, ſilver, mercury, &c. There are alſo bodies abounding with *acid* or *alkalizate* ſalts, which either have no taſte at all, or a quite different one from that of theſe chemical principles.—Thus, though glaſs be in great part compoſed of a fixed *alkali*, it is inſipid on the palate; and cryſtals of ſilver and lead, made with aqua fortis, and containing numerous acid particles of the menſtruum, manifeſt nothing of acidity in the mouth; the latter having a ſaccharine ſweetneſs, and the former an extreme bitterneſs. And even in vegetable ſubſtances of a manifeſt taſte, it is not eaſy to know by that, whether it be the *acid* or the *alkaline* principle which predominates in them: as, in the eſſential oil of ſpices, and the groſs empyreumatical oils of wood; and even in *alcohol* of wine, which ſome contend to be an ACID, and others an *alkali*.

The peculiar properties of *alkalies* and *acids*, and the effects of their combination with each other, have been conſiderably explained by the modern diſcoveries of Dr. Black, and others. *Alkaline* ſubſtances yield a quantity of fixable air, by combining them with acids, and by other proceſſes. As their combination with this fluid is weaker than with acids, *alkalies* may be deprived of it by acids. Fire likewiſe will diſcharge it; and it may be extricated by means of other *alkaline* ſubſtances, with which it has a ſtronger affinity. Thus mild volatile *alkali* may be deprived of its air, or rendered cauſtic, by applying to it uncombined magneſia, fixed *alkali*, or calcareous earth, while theſe ſubſtances unite with the air, and are thereby rendered mild. When by any of theſe means, *alkalies* have been deprived of their fixable air, and are expoſed to an atmoſphere in which particles of it float, they readily abſorb it; unleſs they have been previouſly combined with ſome other ſubſtance as an acid, with which they preferably unite, and reſume their former ſtate. Calcareous earth, combined with fixable air, forms the ſeveral maſſes of lime-ſtone, marble, chalk, &c. When any of theſe ſubſtances are deprived of the air combined with them, they become pure calcareous earth, or quick-lime. *Alkaline* ſubſtances combined with fixable air, become capable of cryſtallization; ſo that the extrication of this air deſtroys the uniform texture of marbles, calcareous ſpars, cryſtals of vegetable or of mineral *alkali*. The combination of *alkalies* with fixable air diminiſhes their power of combining with other ſubſtances, which are incapable of expelling this air from them. Hence the power of *alkaline* ſalts to diſſolve oil is leſſened, ſo that ſoap-boilers find it neceſſary, in the preparation of ſoap, to deprive theſe ſalts by quick-lime of all the fixable air united with them. *Alkaline* ſubſtances combined with fixable air are called mild, and when uncombined with it, cauſtic. In the former caſe they efferveſce with acids, which they do not when rendered perfectly cauſtic; the efferveſcence being occaſioned by the diſcharge of the fixable air. See Neumann's Chemical Works, by Dr. Lewis, and Macquer's Chem. Dict. See AIR, *fixable*.

Phyſicians have various methods of adminiſtring *fixed alkaline ſalts*. When ſuch medicines are required, ſmall doſes are given warm every three or four hours, interpoſing a purge now and then. When intermitting fevers return, this method, for a few days, is thought an excellent preparation for the bark. The *volatile alkaline ſalt* is either in a dry or liquid form; when dry it is called *ſalt*, when liquid, *ſpirit*; the firſt is obtained by *ſublimation*, the ſecond by *diſtillation*.

ALKANET, ſee Anchusa, and Lithospermum.

ALKEBLA, or Alkiblia. See Kebla.

ALKEKENGI, in *Botany*. See Winter-Cherry.

Alkekengi, a medicinal fruit or berry, produced by the beforementioned plant, popularly alſo called the *winter-cherry*; of ſome uſe as an abſtergent, diſſolvent, and diuretic.

The fruit is celebrated for its lithontriptic quality; and preſcribed to cleanſe the urinary paſſages of gravel, and other obſtructions. Its deterſive quality alſo recommends it againſt the jaundice, and other diſorders of the *viſcera*.

ALKERMES, in *Medicine*, &c. a term borrowed from the Arabs, denoting a celebrated remedy, of the form and conſiſtence of a confection; whereof the *kermes* are the baſis.

The other ingredients are roſe-water, ſugar, ambergris, muſk, cinnamon, aloes wood, pearls, and leaf-gold, &c. But the ſweets are uſually omitted.

The *confectio alkermes* is chiefly made at Montpelier, which place ſupplies moſt parts of Europe with it. It is ſaid to be better made there, than it can be elſewhere; the reaſon of which doubtleſs is, that the drug, which gives it the denomination, is no where found ſo plentifully as there. The manner of preparing the grain for making the confection is deſcribed in the Phil. Tranſ. N° 20.

It is much uſed as a cordial; eſpecially, ſays Dr. Quincy, among female preſcribers, and in complaiſance to them; but that author decries its value in that intention, and thinks it ought only to be regarded as a ſweetener.

Count Marſigli, in an enquiry into the compoſition of this medicine, ſhews, that many of the ingredients, wherewith the ancients ſo plenteouſly loaded it, and which are ſtill retained in it by the moderns, are not only uſeleſs, but hurtful; more particularly the *lapis lazuli*, by many miſtakenly held cordial, on account of the appearance of veins of gold in it; whereas, in reality, it is only a marcaſite of ſulphur and vitriol, and contains a great quantity of acid, directly repugnant to the alkaline nature of the kermes, and highly prejudicial in diſeaſes, where the blood tends to coagulation.

ALKES, a ſtar in the conſtellation crater.

ALKOOL. See Alcohol.

ALKORAN. See Alcoran.

ALKUSSA, in *Ichthyology*, a name given by the Swedes to a fiſh, which they alſo call *lake*. It is a ſpecies of the silurus, and is diſtinguiſhed by Artedi by the name of the *ſilurus* with only one *cirrus*, or beard, under the chin. The common *ſilurus*, which is the *glanus* of the ancients, has four *cirri*.

ALKY *of lead*, among *Alchemiſts*, denotes a ſweet ſubſtance procured from lead.

ALL *Saints*, in the *Calendar*, denotes a feſtival celebrated on the firſt of November, in commemoration of all the ſaints in general; which is otherwiſe called *All-hallows*.

The number of ſaints being ſo exceſſively multiplied, it was found too burdenſome to dedicate a feaſt-day to each. In reality there were not days enough, ſcarce hours enough, in the year for this purpoſe. Hence an expedient was had recourſe to, by commemorating ſuch in combination, who had no peculiar days of their own. Boniface IV. in the ninth century, introduced the feaſt of *All Saints* into Italy, which was ſoon after adopted into the other churches.

ALL *Souls*, in the *Calendar*, denotes a feaſt-day, held on the ſecond of November, in commemoration of all the faithful deceaſed.

The feaſt of *All Souls* was firſt introduced in the eleventh century, by Odilon abbot of Cluny, who enjoined it on his own order; but it was not long before it became adopted by the neighbouring churches.

ALLAH, or Alla, an Arabic word, and the name which all who profeſs Mahometaniſm give to God, and make frequent repetitions of in their prayers.

ALLANTOIS, Allantoides, otherwiſe called *farciminalis*, in *Anatomy*, a thin, ſmooth, membranous ſubſtance, or veſicle, inveſting the *fœtus* of divers animals, and replete with urinous liquor conveyed to it from the *urachus*.

The word is derived from αλλας, *farcimen*, a *gut*; and ειδος, *forma*, *ſhape*; becauſe in many brutes it is in this form, though in ſome others it is round.

The *allantois* makes a part of the secundine.—It is conceived as an urinary tunic, placed between the *amnion* and *chorion*; which, by the navel and *urachus*, receives the urine that comes out of the bladder.

The *allantois* appears differently in different animals. Fabricius ab Aquapendente will have dogs, cats, and the like animals, which have teeth both in the upper and nether jaw, to be without it. It is moſt conſpicuous in the cow and ſheep kind. Its length in the former extends to about twelve feet. It is very dilatable, and may be blown up to above a foot diameter. The inhabitants of Iceland make uſe of it, inſtead of glaſs for windows.

It is a point controverted among anatomiſts, whether the *allantois* be found in the human ſpecies?—M. Dreſincourt, profeſſor of anatomy at Leyden, in an expreſs diſſertation on this membrane, maintains it peculiar to the ruminating kind.

Several anatomiſts who diſpute the exiſtence of the human *allantois*, allow of an intermediate membrane in the human ſpecies, between the *chorion* and *amnios*, but deny it the appellation of an *allantois*, as holding it to differ from the *allantoides* of brutes, in ſtructure, as well as office. Neither artery nor vein can be diſcovered in this membrane. See Mem. Acad. des Scienc. 1701.

Dr. Hale, on the contrary, has given an accurate deſcription of the human *allantois*; and aſſigned the reaſon why even thoſe, who believed its exiſtence, had not before fully found it out; and alſo an anſwer to thoſe who yet deny its reality. See Phil. Tranſ. N° 271.

ALLAT, derived from the Arabic *Allah*, *God*, is the name of an idol among the Arabians, and idolatrous Jews.

ALLAY. See Alloy.

ALLAZÆZIS, in the language of the *Chemiſts*, denotes a philoſophical braſs, or copper, called alſo *æs album*, *aqua mercurii*, and by divers other names.

ALLE, a ſpecies of the *alea*. It is met with among fragments of ice in the northern ſeas of Europe and America.

ALLECTOR, a ſpecies of the crax.

ALLEGATA, a word anciently ſubſcribed at the bottom of reſcripts and conſtitutions of the emperors, as *ſignata*, or *teſtata*, was under other inſtruments.

In this ſenſe, *allegata* imports as much as verified, *verificata*.

Allegata was a kind of ſubſcription, ſomewhat leſs uſual than *data*, *propoſitum*, *accepta*, *ſubdita*, *ſuppoſita*, or *ſubſcripta*.

ALLEGATION, is uſed for the producing of acts, or inſtruments, to authorize a thing.

Allegation, in a literary ſenſe, denotes the act of citing or quoting an author, or paſſage of ſome book.

ALLEGEAS, or Allegias, a ſtuff manufactured in the Eaſt Indies. There are two ſorts of them; ſome are of cotton, and others of ſeveral kinds of herbs, which are ſpun like flax and hemp. Their length and breadth are of eight ells, by five, ſix, or ſeven eighths; and of twelve ells, by three fourths, or five eighths.

ALLEGIANCE, the legal faith and obedience, which every ſubject owes to his prince.

This was anciently called *ligeantia*, or *ligence*; from the Latin *ligare*, and *alligare*, *to bind*; q. d. *ligamen fidei*.

The oath of *allegiance*, taken by the people to the king, is only the counter-part to the coronation oath, taken by the king to the people, and as ſuch, partakes of the nature of a covenant; that is, is conditional, and ceaſes on a violation of the contract by the prince; at leaſt this is the doctrine of ſome of the chief advocates for the revolution. The anti-revolutioners, on the contrary, hold the oath of *allegiance* to be abſolute and unconditional.

The convention of eſtates having offered the crown to the prince and princeſs of Orange, who accepted of it, the old oaths of *allegiance* impoſed by the ſtat. 1 Q. Eliz. and 3 James I. were abrogated; and a new oath was drawn up, to be taken by all the ſubjects of England, on penalty of being deprived of all employments, civil, military, and eccleſiaſtical. Seſſ. 1. cap. 8. Stat. Abridg. tom. iii. p. 8. ſeq. 8vo.

The form of the oath of *allegiance* by 1 G. ſtat. 2. cap. 13. is: 'I A. B. do ſincerely promiſe and ſwear, that 'I will be faithful, and bear true *allegiance* to his majeſty 'king George. So help me God.'

This oath is given to the king, in quality of a temporal prince, or ſovereign; to diſtinguiſh it from the oath given to him as primate, or ſupreme head of the church, which is called the *Oath of Supremacy*.

Allegiance is either perpetual, where one is a ſubject born, or where one hath the right of a ſubject by naturalization, &c. Or it is temporary, by reaſon of reſidence in the king's dominions. To ſubjects born it is an incident inſeparable; and as ſoon as born, they owe by birth-right obedience to their ſovereign; and it cannot be confined to any kingdom, but follows the ſubject wheresoever he goes. All perſons above the age of twelve years are to be required to take the oath of *allegiance* in courts-leet.

The Quakers are excuſed from taking the oath of *allegiance*;

allegiance; and, in lieu thereof, are only enjoined a declaration of fidelity. 8 G. cap. 6.

ALLEGORICAL, ſomething containing an *allegory*.

The divines find divers ſenſes in Scripture; as a *literal*, a *myſtical*, and an *allegorical* ſenſe. See PROPHECY, TYPE.

ALLEGORY, ALLEGORIA, a figure in rhetoric, whereby we make uſe of terms which, in their proper ſignification, mean ſomething elſe than what they are brought to denote; or it is a figure whereby we ſay one thing, expecting it ſhall be underſtood of another, to which it alludes.

An *allegory* is, properly, a ſeries or ſtring of metaphors. Such is that beautiful *allegory* in Horace, lib. i. Od. 14.

O navis, referunt in mare te novi
Fluctus, &c.

Where the *ſhip* is uſually held to ſtand for the *republic*; *waves*, for *civil war*; *port*, for *peace* and *concord*; *oars*, for *ſoldiers*; and *mariners*, for *magiſtrates*.

Allegory includes parable, apologue, μυθος, or *fable*, and *parœmia*, or *proverbs*; at leaſt, under *allegories* are comprehended ſuch proverbs as are applicable to ſubjects of different kinds.

Scaliger conſiders *allegory* as one part, or ſide, of a compariſon. It differs from *irony*, in that *allegory* imports a ſimilitude between the thing ſpoken and intended; *irony* a contrariety between them.

The Old Teſtament is ſuppoſed, by many, to be a perpetual *allegory*, or typical repreſentation of the myſteries of the New.

In effect, *allegories* have entered into moſt religions.—The Jews, we know, abound with them. Philo Judæus has three books, of the *allegories* in the hiſtory of the ſix days.

Nor are the heathens without *allegories* in their religion: it may be even ſaid, that the uſe hereof is of a much earlier ſtanding in the Gentile, than in the Jewiſh world.—Some of their philoſophers, undertaking to give a *rationale* of their faith, and to ſhew the reaſon and ſcope of their fables, and the ancient hiſtories of their gods, found it neceſſary to put another conſtruction on them, and maintain, that they ſignified ſomething very different from what they ſeemed to expreſs.—And hence came the word *allegory*, or a diſcourſe that, in its natural ſenſe, αλλο αγορευει, ſignifies ſomething other than what ſeems intended by it.

This ſhift they had recourſe to, in order to prevent people from being ſhocked with thoſe abſurdities which the poets had introduced into their religion; and to convince the world, that the gods of Greece had not been thoſe vile perſons which their hiſtories repreſented them to be. By this means, the hiſtory, as well as religion, of Greece, was at once converted into *allegory*; and the world left to ſeek for them both in a heap of fables, few of which have been ſatisfactorily ſolved, either by ancient or modern writers.

The Jews, finding the advantages of this way of explaining religion, made uſe of it to interpret the ſacred writings, ſo as to render them more palatable to the pagans.

The ſame method was adopted by the primitive writers of Chriſtianity.

Allegories are diſtinguiſhed into divers kinds: as, *verbal*, *real*, *ſimple*, *alluſive*, *phyſical*, *moral*, *political*, *theological*, &c.

ALLEGORY, *ſimple*, according to ſome writers, is that which is taken from any kind of natural things.

ALLEGORY, *alluſive*, is that which relates to other words, or things.

ALLEGORY, *verbal*, is a thread, or ſeries of metaphors; or a continuation of the ſame trope, chiefly metaphor, through many words.—Such is that in Virgil:

Claudite jam rivos pueri, ſat prata biberunt.

Where the metaphor of watering the ground is carried on to the ſhutting of the ſluices, &c.

ALLEGORY, *perpetual*, or *continued*, is that where the allegorical thread is purſued through all the parts of a conſiderable diſcourſe.—Such are the books of Jonah, of Canticles, of Job, not to ſay the whole Old Teſtament, according to the hypotheſis of ſome divines.

ALLEGORIES, *phyſical*, thoſe wherein ſome point of natural philoſophy is repreſented: ſuch in Homer, are Juno, who repreſents the air; Jupiter, the æther, &c.

ALLEGORIES, *medical*, thoſe wherein ſome ſecret of phyſic is revealed: ſuch is Solomon's deſcription of old age, Eccleſ. xii. 1, &c, wherein, according to certain authors, the circulation of the blood is indicated: ſuch alſo, according to a modern writer, is the ſtory of the labours of Hercules.

ALLEGORIES, *chemical*, thoſe relating to chemiſtry: ſuch, according to Suidas, and many moderns, is the ſtory of the Argonautic expedition, wherein the proceſs of making gold is exactly deſcribed: ſuch alſo, according to Tollius, is the name and title of Baſil, Valentine, Benedictine, Monk; under which are concealed the ſecret of the philoſophical mercury.

ALLEGORIES, *moral*, thoſe whereby ſome uſeful moral inſtruction is held forth: ſuch, in Homer, is the victory of Diomede over Venus, or fleſhly luſt: ſuch alſo are the Pythagorean metempſychoſis, and the ſtory of the judgment of Hercules, related by Prodicus. To which may be added, the fables of avarice and luxury; of the grotto of grief, and others in the Spectators and Tatlers. Spectat. N° 55. Tatl. N° 97.

ALLEGORIES, *political*, thoſe wherein ſome maxim of good government is artfully wrapped up: ſuch is that celebrated one of Menenius Agrippa, whereby he prevailed on the Roman people, who had withdrawn in diſcontent at the magiſtrates, to return into the city; to which purpoſe, he related to them the parable of a war raiſed by the ſeveral parts of the human body againſt the ſtomach.

ALLEGORIES, *theological*, thoſe wherein ſome truth relating to the nature or attributes of God is couched.

ALLEGORY is alſo uſed for the drawing ſome words, plainly and literally intended at firſt, from their natural and proper meaning, to a foreign ſenſe; for the better inſtructing of our minds in ſome point of faith, or manners. This coincides with what is otherwiſe called ACCOMMODATION.

ALLEGRO, in *Muſic*, a word uſed by the Italians to denote one of the ſix diſtinctions of TIME.

Allegro expreſſes a ſprightly, quick motion, the quickeſt of all excepting *preſto*.

The uſual diſtinctions ſucceed each other in the following order: *grave*, *adagio*, *largo*, *vivace*, *allegro*, and *preſto*.

It is to be obſerved, that the movements of the ſame name, as *adagio*, or *allegro*, are ſwifter in triple than in common time.—The triple $\frac{3}{8}$ is uſually *allegro*, or *vivace*; the triples $\frac{6}{4}$, $\frac{6}{8}$, $\frac{9}{8}$, $\frac{12}{8}$, are moſt commonly *allegro*.

ALLEGRO, *piu*, in the Italian *Muſic*, intimates to play, or ſing, a little quicker.

ALLEGRO, *poco piu*, ſignifies, that the part it is joined to muſt be played, or ſung, a little more briſk and lively, than *allegro* alone requires.

ALLELENGYON, in *Antiquity*, a kind of tax, or tribute, which the rich paid for the poor, when abſent in the armies.

ALLELOPHAGI, in *Natural Hiſtory*, a term uſed by Mouffet, and other writers on inſects, to expreſs a peculiar genus of flies, which feed on one another. They are thus called in diſtinction from another claſs, called the *heterophagi*, from their feeding on different ſubſtances, not on one another.

ALLELUJA, in *Botany*, a name uſed by many for the common *wood*-SORREL.

ALLELUJAH. See HALLELUJAH.

ALLEMAND, ALMAIN, a kind of grave, ſolemn muſic, originally invented by the Germans, where the meaſure is good, and the movement ſlow.

ALLEMANNIC, in a general ſenſe, ſomething relating to the ancient Germans. The word is alſo written *Alamannic*, *Alemannic*, and *Alemanic*. It is formed from *Alemanni*, *Allemanni*, or *Alamanni*; the name whereby the German nation was anciently known.

In this ſenſe we meet with *Allemannic* hiſtory, *Allemannic* language, *Allemannic* laws, &c. Goldaſtus, and others, have publiſhed collections of writers on *Allemannic* affairs: *Allemannicarum rerum ſcriptores*.

Allemannic language was ſpoken throughout the ſouthern parts of Germany. It is divided into ſeveral dialects; the principal of which are the Suevic, and Helvetic.

The *Allemannic* differed from the Francic, which was the language in uſe through the northern parts of Germany; the chief dialects of this, are the Palatine, Franconian, and Saxon.

ALLEMANNIC *law*, *jus Allemannicum*, is the ſame with what is otherwiſe called the Suevic law, being that which obtained in the more ſouthern parts of the country, as the Saxon law did throughout the northern.

Schilter has publiſhed the provincial *Allemannic law*, and alſo the code of the feudal *Allemannic law*.

ALLER, *good*, in our *Ancient Writers*.—The word *aller* ſerves to make the expreſſion of ſuperlative ſignification. So, *aller good*, is the greateſt good. Sometimes it is written *alder*.

ALLERION, or ALERION, in *Heraldry*, a ſort of eaglet, repreſented without either beak, or feet.

The name is French; and is ſaid to have been introduced for the word *eaglet*; it is added, that the practice of calling eaglets, *allerions*, and of repreſenting them ſpread, without feet and beaks, is not above an hundred years old, and is of French invention; introduced to repreſent the Imperialiſts as ſubdued. Hence, Menage derives the word from *aquilario*, a diminutive of *aquila*.

The *allerion*, repreſented *Tab. Heraldry, fig.* 1. appears much the ſame with the *martlet*, except that the wings of the latter are cloſe, and it is repreſented, as it were, *paſſant*; whereas the *allerion* is ſpread, and is repreſented in *pale*. Add, that among our heralds, the *martlet* has a beak, which the *allerion* wants.

ALLEU, or ALLODE, in our *Ancient Cuſtoms*. See ALLODIUM.

ALLEVEURE, the ſmalleſt copper coin that is ſtruck in Sweden; it is not worth quite two *deniers Tournois* of France.

ALLEVIARE, in *Old Records*, to LEVY or pay an accuſtomed fine or compoſition.

ALLEVIATION, denotes the art of making a thing lighter, and eaſier to bear or endure.

The word is originally Latin, compounded of *ad*, *to*; and *levis*, *light*.

In which ſenſe, *alleviation* is ſynonymous with *lightening*, and ſtands oppoſed to *aggravation*.

ALLEY, in *Gardening*, a ſtrait parallel walk, bordered or bounded on each hand with trees, ſhrubs, or the like.

The word *alley* is derived from *aller*, *to go*; the ordinary uſe of an *alley* being for a walk, paſſage, or thoroughfare, from one place to another.

Alleys are uſually laid either with graſs or gravel.

According to lord Bacon, ‘ where *alleys* are cloſe gra‘ velled, the earth putteth forth the firſt year knot-graſs, ‘ and after ſpire-graſs. The cauſe is, that the hard ‘ gravel, or pebble, at the firſt laying, will not ſuffer the ‘ graſs to come forth upright, but turneth it to find way ‘ where it can; but after that the earth is ſomewhat ‘ looſened at the top, the ordinary graſs cometh up.’

An *alley* is diſtinguiſhed from a *path*, in this; that in an *alley* there muſt be always room enough for two perſons, at leaſt, to walk a-breaſt; ſo that it muſt never be leſs than five feet in breadth; and there are ſome who hold, that it ought never to have more than fifteen.

ALLEYS, *counter*, are the little *alleys* by the ſides of the great ones.

ALLEY, *front*, is that which runs ſtraight in the face of a building.

ALLEY, *tranſverſe*, that which cuts the former at right angles.

ALLEY, *diagonal*, is that which cuts a ſquare, thicket, parterre, &c. from angle to angle.

ALLEY, *ſloping*, is that which, either by reaſon of the lowneſs of the point of ſight, or of the ground, is neither parallel to the front, nor to the tranſverſe *alleys*.

ALLEY, in the *New Huſbandry*, implies the vacant ſpace between the outermoſt row of corn on one bed, and the neareſt row to it on the next parallel bed; and it is uſually about four feet in breadth, excluſive of the partitions between the rows of corn in the beds. The firſt hoeing of wheat is performed in the beginning of winter, and the earth is ploughed away from the rows into the intervals, which forms ſmall ridges in the middle between the double rows. The ſecond hoeing is in the ſpring, which turns it back to the rows, leaving a furrow in the middle of the *alley*. The third hoeing is from the rows, after the wheat has bloſſomed; this turns the earth into the intervals, forming ſmall ridges there, as at the firſt hoeing. The fourth hoeing returns the earth to the ridges, which is performed a month or more after the third hoeing. This commonly finiſhes the horſe-hoeings, if the land is in good heart; otherwiſe one or two more hoeings are neceſſary.

ALLEY *in ziczac*, is that which has too great a deſcent, and which, on that account, is liable to be damaged by floods; to prevent the ill effects whereof, it has platbands of turf run acroſs it from ſpace to ſpace, which help to keep up the gravel.

This laſt name is likewiſe given to an *alley* in a labyrinth, or wilderneſs, formed by ſeveral returns of angles, in order to render it the more ſolitary and obſcure, and to hide its exit.

ALLEY, in *Perſpective*, is that which is larger at the entrance than at the exit; to give it the greater appearance of length.

ALLEY *of compartiment* is that which ſeparates the ſquares of a *parterre*.

ALL-GOOD, in *Botany*, *chenopodium*. See GOOSE-*foot*.

ALL-HEAL, *Hercules's*, in *Botany*, a name given to WOUNDWORT.

ALL-HEAL, *clowns*, ſtachys. See HOREHOUND.

ALLIANCE, the union or connection of two perſons, or two families, by means of marriage; otherwiſe called AFFINITY.

The word ſeems formed of the Latin *adligatio*, q. d. a *tying together*.

The law of the *Twelve Tables* forbids all *alliance* between perſons of unequal rank and condition.—And, in Portugal, we are told, the daughters of the nobility are prohibited to *ally* with ſuch as have never been in the wars.

ALLIANCE is alſo extended to the leagues or treaties concluded between ſovereign princes, and ſtates, for their mutual ſafety and defence; in which ſenſe they are the ſame with what we otherwiſe call *confederacy*, *league*, &c.

Alliances make a ſpecies of treaties; which are uſually divided into treaties of peace, of commerce, and of *alliance*, properly ſo called. Theſe are ſometimes particularly denominated foreign *alliances*.

Alliances are variouſly diſtinguiſhed, according to their object, the parties in them, &c. Hence we read of equal, unequal, triple, quadruple, grand, offenſive, defenſive, &c. *alliances*.

ALLIANCES, *unequal*, *fœdera inequalia*, are thoſe wherein one of the contracting powers promiſes patronage, or protection, and the other fidelity and obſervance; by which they ſtand contradiſtinguiſhed from equal *alliances*, wherein the ſeveral powers treat on a par.

ALLIANCE, *offenſive*, that whereby the parties oblige themſelves jointly to attack ſome other power. This ſtands contradiſtinguiſhed from defenſive *alliances*.

The *triple alliance*, between England, Holland, and Sweden, is famous.—So is the *quadruple alliance*, between England, Holland, the emperor, and the king of France.

Though the title of *allies*, *ſocii*, of the Romans, was a ſort of ſervitude, it was much coveted. Ariarathes, we are told by Polybius, offered a ſacrifice to the gods by way of thankſgiving for having obtained this *alliance*. The reaſon was, that thenceforwards people were ſure not to receive any injuries except from them.

There were divers ſorts of *allies*: ſome only united to them, by a participation of the privileges of Romans, as the Latini and Hernici; others by their very foundation, as the colonies; others by the benefactions they received from them, as Maſſiniſſa, Eumenes, and Attalus, who owed their kingdoms to Rome; others by free treaties, which laſt by a long *alliance* became ſubjects, as the kings of Bithynia, Cappadocia, Egypt, and moſt of the cities of Greece: laſtly, others by compulſive treaties, and the law of ſubjection, as Philip and Antiochus. For they never granted peace to an enemy, without making an *alliance* with him; that is, they never ſubdued any people without uſing it as a means of ſubduing others.

The forms or ceremonies of *alliances* have been various in different ages and countries. Among us, ſigning and ſwearing, ſometimes at the altar, are the chief; anciently eating and drinking together, chiefly offering ſacrifices together, were the cuſtomary rite of ratifying an *alliance*. Among the Jews and Chaldeans, heifers or calves; among the Greeks, bulls or goats; and among the Romans, hogs were ſacrificed on this occaſion. Among the ancient Arabs, *alliances* were confirmed by drawing blood out of the palms of the hands of the two contracting princes with a ſharp ſtone, dipping herein a piece of their garments, and therewith ſmearing ſeven ſtones, at the ſame time invoking the gods Vrotalt and Alilat, i. e. according to Herodotus, Bacchus, and Urania. Among the people of Cholchis, the confirmation of *alliances* is ſaid to be effected by one of the princes offering his wife's breaſts to the other to ſuck, which he was obliged to do till there iſſued blood.

It has been diſputed, whether the ſtates of the empire have a right of making *alliances*, without the emperor's participation. And whether the king of England be veſted with abſolute power of making *alliances* at diſcretion, without conſent of parliament. Dr. Davenant aſſerts the negative. According to him, the contrary opinion owes its riſe to the mere flattery of modern courtiers, having no foundation in the ancient laws and conſtitution of the kingdom. King John and Richard II. were, according to this author, the firſt that attempted any thing like it. It is certain there occur numerous inſtances in hiſtory, where the king has aſked, or the parliament have offered, their advice, concerning *alliances* to be made; but there are many others, at leaſt of later times, wherein no footſteps of any ſuch conſultation appear.

There are inſtances likewiſe where the parliament have declined giving any advice concerning ſuch arduous matters.

ALLIARIA, in *Botany*. See *Dame's* VIOLET.

ALLIGATION, in *Arithmetic*, a rule or operation, whereby queſtions are reſolved, relating to the mixture of divers commodities or ingredients together, with the value, effect, &c. thereof in compoſition.

The word is formed of *alligare*, *to tie together*, by reaſon, perhaps, of a ſort of *vincula*, or circular ligatures, ordinarily uſed to connect the ſeveral numbers together.

Alligation is of two kinds, *medial* and *alternate*.

Alligation *medial* is, when, from the ſeveral quantities and rates of divers ſimples given, we diſcover the mean rate of a mixture compounded out of them.

The ſeveral caſes will come under the following rules.

1. The quantity of the ingredients, and the prices of each, being given; to find the price or value of ſome part of the mixture.

Rule. As the ſum of the quantities given,
Is to the ſum of the ſaid products;
So is one ounce of the mixture,
To its value.

Example. A refiner, or goldſmith, hath 12℥ of gold at 4*l*. per ℥, 8℥ at 4*l*. 5*s*. 3℥ at 4*l*. 6*s*. 8*d*. and 9℥ at 4*l*. 13*s*. 4*d*. per ℥; what is an ounce worth of all theſe melted together.

℥ of gold		*l.*	*s.*	*d.*		*l.*
12 ×	by	4	0	0	the product is	48
8	by	4	5	0		34
3	by	4	6	8		13
9	by	4	13	4		42
32 total.						137 ſum.

Then as 32 ℥ : 137*l*. :: 1 ℥ : 4*l*. $\frac{9}{32}$, or to 4*l*. 5*s*. 7*d*. $\frac{1}{2}$. By the ſame rule the value of any other quantity of that compoſition is to be found: as ſuppoſing 7 ℥.

For as 32 : 137 :: 7 : $29\frac{31}{32}$.

2. The prices of the ſeveral ingredients, and the ſum paid or received for the mixture, being given; to find what quantity of each was bought or ſold.—Divide the ſum paid or received, by the ſum of the particular prices; the quotient is the anſwer.

3. The ingredients of a mixture being given, to augment or diminiſh the mixture proportionally.

Rule. As the ſum of the particular quantities of the compound given,
Is to the whole quantity propoſed to be augmented or leſſened;
So is each particular quantity in the given compound,
To the due proportion required of that ſpecies, fineneſs, &c.

Example. The compound in the foregoing inſtance is required to be augmented to 48 ℥: that is, 16 is to be added to 32, how much of each ingredient muſt be taken?

$$\begin{array}{r} 12\\ 8\\ 3\\ \underline{9}\\ 32\ \text{ſum.}\end{array}\quad \text{Then, as } 32 : 16 :: \left\{\begin{array}{rcl} 12 & : & 6\ \text{℥}\\ 8 & : & 4\\ 3 & : & 1\frac{1}{2}\\ 9 & : & \underline{4\frac{1}{2}}\\ & & 16\ \text{ſum.}\end{array}\right.$$

		l.	*s.*	*d.*	
So that there muſt be	18 ℥ of gold at	4	0	0	per ℥.
	12	4	5	0	
	4½	4	6	8	
	13½	4	13	4	
Sum =	48 for proof of the operation.				

4. The nature, quality, &c. of the ſeveral ingredients of a mixture being given, to find the temperament or degree of fineneſs reſulting from the whole.—Place the ſeveral quantities of the mixtures in rows; againſt which place orderly their ſeveral qualities or fineneſs; and multiply each quantity by its own quality or degree of fineneſs: then, as the ſum of the quantities is to their products, ſo is unity to the quality or fineneſs of the mixture.

5. The quantities of a mixture being given; to find the particular quantities of any ingredient in any part of the mixture.

Rule. As the total of the compoſition,
Is to the quantity of any ſimple in that compoſition;
So is the total quantity propoſed, to be proportionably compounded
To the quantity of each ſimple to be in that propoſed quantity.

Example. How much of each ingredient (or price of gold mentioned in the firſt caſe) is in a pound, or 12 ℥ of the 32, being the compound given?

$$\text{As } 32 : 12 :: \left\{\begin{array}{rclcccc} & & & & l. & s. & d.\\ 12\,\text{℥} & : & 4\frac{1}{2} & \text{at} & 4 & 0 & 0\ \text{per ℥.}\\ 8 & : & 3 & \text{at} & 4 & 5 & 0\\ 3 & : & 1\frac{1}{8} & \text{at} & 4 & 6 & 8\\ 9 & : & \underline{3\frac{3}{8}} & \text{at} & 4 & 13 & 4\\ & & 12\ \text{proof.} & & & & \end{array}\right.$$

6. Given the total of a mixture, with the whole value, and the values of the ſeveral ingredients; to find the ſeveral quantities mixed, though unequally.

This caſe admits of two varieties; firſt, where the mixture is of two ſimples; and ſecondly, when it conſiſts of more than of two. For the firſt, the rule is—Multiply the total of the mixture by the leaſt value, ſubtract the product from the total value; and the remainder is the firſt dividend: then take the ſaid leaſt value from the greateſt valued ingredient, and the remainder is the firſt diviſor. The quotient of this diviſion ſhews the quantity of the higheſt-priced ingredient, and the other is the complement to the whole.

Thus, ſtill referring to the firſt example, and aſſuming the two firſt terms of it:

Gold at 4*l*. per ℥
Ditto at 4*l*. 5*s*.

$$\text{Total of the compoſition} = \begin{array}{r} 20\ \text{℥}\\ \times\ \underline{4}\\ 80 \end{array}\qquad \text{Total value } \begin{array}{r} 82l.\\ \underline{-\ 80}\\ \div \text{ by } \tfrac{1}{4}l.\,)\,2\,(8 \end{array}$$

the quantity of the higheſt priced ingredient.

Secondly, when the quantities are more than two in number.

Theſe kinds of queſtions, as in thoſe of *alligation* alternate, admit of various anſwers, all of them true, and are called INDETERMINATE *problems*. They are beſt done by parcel, two at a time, as in the preceding operation.

Alligation *alternate* is, when the rates or qualities of divers ſimples are given; and the quantity of each is required, neceſſary to make a mixture of the given rate or quality.

Alligation alternate ſhews the due proportion of ſeveral ingredients; and counterchanges the places of ſuch exceſſes or differences as ariſe between the mean price and the extremes; aſcribing that to the greater extreme, which proceeds from the leſſer; and contrarily.

The rules which obtain in *alligation* alternate are as follow:

Every greater extreme is to be linked with one leſſer.

If either of the extremes be ſingle, and the other extremes plural, the ſingle extreme is to be linked to all the reſt.

If both greater and leſſer extremes be not plural, they may be linked ſo diverſly, that ſeveral differences may be taken, and a variety of anſwers may be made to the queſtion, yet all true; but if one of the extremes be ſingle, there can be but one anſwer.

The numbers being linked, take the difference of each from the mean or common price; and place this difference againſt the number it is linked to, alternately.

Every number, linked with more than one, muſt have all the differences of the numbers it is linked to, ſet againſt it.

Theſe differences reſolve the queſtion, when the price of every one of the ingredients is given without their quantities; and the demand is, to mix them ſo as to ſell a certain quantity at a mean rate.

But when the quantity of one, with the price of all the ingredients, is given, and the demand is to know the quantities of the other ingredients; then, the rule of three is to be uſed.

And when the price of every ingredient is given, without any of their quantities, and the demand is to make up a certain quantity to be ſold at a mean rate; then all the differences added together will be the firſt number in the rule of three; the whole quantity to be mixed, the ſecond number; and each difference apart, the ſeveral third numbers; and ſo many ſorts mixed, ſo many operations of the rule of three.

We ſhall add an example, wherein both the kinds of *alligation* have place.—Suppoſe a mixture of wine of 119 quarts, required to be made of wines of the following prices, 7*d*. 8*d*. 14*d*. and 15*d*. per quart; and ſo, as that the whole may be afforded at 12*d*. per quart.

Having linked 8 to 14, and 7 to 15, and counterchanged their differences from the common price, 12*d*. the ſum of their difference is found to be 14; by which dividing 119, the quotient is $8\frac{7}{14}$, or $8\frac{1}{2}$, or for convenience in operation $\frac{17}{2}$.

$$\begin{array}{rr} 8 & 2\\ 14 & 4\\ 7 & 3\\ \underline{15} & \underline{5}\\ & 14 \end{array}\qquad \begin{array}{r} \text{Quarts.}\\ \frac{17}{2}\times 2=\frac{34}{2}=17\\ \frac{17}{2}\times 4=\frac{68}{2}=34\\ \frac{17}{2}\times 3=\frac{51}{2}=25\frac{1}{2}\\ \frac{17}{2}\times 5=\frac{85}{2}=\underline{42\frac{1}{2}}\\ 119 \end{array}$$

Thoſe who are curious to have a fuller explanation of this rule, may conſult Ward, Wallis, Jaquet, Malcolm, and other books of *arithmetic*.

ALLIGATI, in *Antiquity*, the baſeſt and worſt kind of ſlaves, whom they kept locked up, or with fetters on.

The Romans had three degrees, or orders of ſlaves, or ſervants, the firſt employed in the management of their eſtates, the ſecond in menial or lower functions of the family, the third called *alligati* above mentioned.

ALLIGATOR, in *Zoology*, a name given to the ſmaller kind of CROCODILE in the Weſt Indies.

An *alligator* ſmells ſo ſtrong of muſk, as to affect the water and air at a conſiderable diſtance.

Alligator *Pear*, a *ſpecies* of PEAR.

ALLIONIA, in *Botany*, a genus of the *tetrandria monogynia* claſs.

ALLIOTH, in *Aſtronomy*, a ſtar in the tail of the great bear, whoſe obſervation is much uſed at ſea.

It is alſo written *alliot*, and *aliot*, and literally denotes a *horſe*. The Arabs give this name to each of the three ſtars, in the tail of the *great* BEAR, on account of their appearing like three horſes, ranged for the drawing a waggon. See URSA *major*.

To find the latitude, or elevation of the pole, by this ſtar, ſee LATITUDE, and POLE.

ALLIOTICUM, (from αλλιοω, *to vary*) a *galenical medicine*, which alters and purifies the blood, conſiſting chiefly of the roots of dandelion, ſuccory, fennel, and raiſins; with the herbs endive, common ox-eye, lettuce, ſorrel, fumitory, &c.

ALLIUM, *garlick*, a genus of the *hexandria monogynia*. See GARLICK.

ALLOCATION, ALLOCATIO, the admitting or allowing of an article in an ACCOUNT; and paſſing it as ſuch.

ALLOCATION is alſo an allowance made upon an account; uſed in the *exchequer*.

ALLOCATIONE *facienda*, a writ directed to the lord-treaſurer, and barons of the exchequer, upon the complaint of ſome accountant; commanding him to allow him ſuch ſums as he hath in execution of his office lawfully expended. Reg. Orig. p. 206.

ALLOCATO *comitatu*, is a new writ of exigent allowed, before any other county-court holden, when the former has not been fully ſerved, or complied with, &c. Fitz. Exig. 14.

ALLODIAL, in *Ancient Cuſtoms*. See ALLODIUM.

ALLODIARIUS, the owner or proprietor of an *allodium*, or *allodial* lands: alſo uſed to denote a lord paramount of a manor.

This is otherwiſe written *alodiarius*, *alodarius*, *aloarius*, *aloer*, *aloerius*, and *aleutier*.

ALLODIUM, or ALLEUD, land held of a man's own right, without acknowlegement of ſervice, or payment of any new rent to another; and this is a property in the higheſt degree; but *feudum* is ſuch land as is held of another, for which ſervice is done, or rent is paid, as an acknowlegement thereof. All the lands in England, except the crown-lands in the king's own hands, in right of his crown, are of the nature of FEUDUM, or FEE; for although many have lands by deſcent from their anceſtors, and others have bought land, it cannot come to any either by deſcent or purchaſe, but with the burden that was laid upon him who had *novel-fee*, or firſt of all received it from his lord; ſo that there is no perſon hath *directum dominium*, i. e. the very property or demeſne in any land, but the king, in right of his crown.

The origin of the word is controverted. Caſſeneuve ſays, it is almoſt as obſcure as the head of the Nile. There are few of the European languages, from which one etymologiſt or other has not derived it; yet ſome, not improbably, take it for a primitive French word without etymon.

Bollandus explains *allodium*, to be *prædium, ſeu quævis poſſeſſio libera, juriſque proprii, & non in feudam clientelari onere accepta.*

After the conqueſt of the Gauls, the lands were divided in two manners; viz. into benefices, *beneficia*; and *allodia*. Benefices conſiſted in lands given by the king to his officers and ſoldiers; either for life, or for a time fixed.

Allodia, or *alleuds*, were ſuch lands as were left in property to the ancient poſſeſſors.—The ſixty-ſecond title of the Salic law, is *de allodiis*; where the word ſignifies hereditary lands, or thoſe derived from a man's anceſtors. Whence, *allodium* and *patrimonium* are frequently uſed indiſcriminately.

In the ancient capitulars of Charlemaign, and his ſucceſſors, we find *allodium* conſtantly oppoſed to *fee*; but, toward the period of the ſecond race of kings, it loſt the prerogative; the feudal lords obliging the proprietors of *allodial* lands to hold of them for the future. The ſame change alſo happened in Germany, &c.

The uſurpation of the feudal lords over the *allodial* lands went ſo far, that they were almoſt all either ſubjected to them, or converted into fees: whence the maxim, *nulla terra ſine domino*, *no land without a lord*.

In the cuſtomary laws of France, we find mention made of two kinds of *allodiums*, viz.

ALLODIUM *nobile*, *aleu noble*, that to which *juſtitia* or juriſdiction was annexed; and which was alſo free from all homage, or ſervice.

ALLODIUM *villanum*, *aleu raturier*, that to which no juriſdiction was annexed.

ALLOGIA, in *Antiquity*, denote winter-quarters appointed for the ſoldiery.

Some will have the word of French origin from *logement*; others with more probability from the Italian *alloggio*, formed of *locus*, *place*.

ALLOM. See ALLUM.

ALLONGE, in *Fencing*, a thruſt, or PASS at the enemy.

The word is French, formed of the verb *allonger*, *to lengthen out a thing*.

ALLOPHYLLUS, in *Botany*, a genus of the *octandria monogynia* claſs, the calyx of which is a perianthium compoſed of four leaves of an orbicular figure, and two oppoſite ones, ſmaller than the others; the corolla conſiſts of four petals leſs than the cup; the germen is didymous, and the ſtigma divided into four parts.

ALL-SEED. See FLAX.

ALL-SPICE. See PIMENTO.

ALLOTTING, or ALLOTMENT *of goods*, in matters of *Commerce*, is when a ſhip's cargo is divided into ſeveral parts, bought by divers perſons, whoſe names are written on as many pieces of paper, which are applied by an indifferent perſon to the ſeveral lots or parcels; by which means the goods are divided without partiality; every man having the parcel which the lot with his name on is appropriated to. See INCH *of Candle*.

ALLOY, or ALLAY, in matters of *Coinage*, &c. a proportion of a baſer metal, mingled with a finer, or purer.

The word ſeems derived from the French *loy*, *law*; in regard the *alloy* is fixed by law.

Minters never ſtrike any gold or ſilver coin without *alloy*, always mixing ſome copper with thoſe two metals, according to a certain proportion, ſettled by the rules of the MINT; which in France cannot be altered but by the king's edicts, proclamations. or ordinances.

Braſs coin is made of an *alloy* of copper, mixed with a few parts of fine ſilver, regulated alſo by the prince. The jewellers, gold-wire-drawers, gold-beaters, and gold and ſilverſmiths, are obliged to uſe *alloy* in the gold and ſilver they work; but it ought to be leſs than that of coin, to prevent their melting it in order to uſe it in their works; called by the French *billonage*, which is an unlawful melting of gold or ſilver coin. The braſs-founders alſo have their *alloy* of copper, pewter, and tin. This *alloy* differs according to what they deſign to caſt, whether ſtatues, guns, or bells. The pewterers, in making their ſeveral veſſels, diſhes, plates, &c. alſo make uſe of an *alloy* of red copper, *regulus* of antimony, and ſome other minerals.

There are ſeveral kinds of *alloy*; ſuch as BRONZE, TOMBAC, BRASS, WHITE COPPER, &c.

Metallic ſubſtances cannot unite directly with earthy matters, not even with their own earths when deprived of their inflammable principle, and conſequently of their metallic properties. But in general it may be ſaid, that all metals may be *alloyed* with each other, although more or leſs eaſily, and although ſome of them have not yet been made to unite. As *metals* are bodies naturally ſolid, the firſt condition for their union is that they be fuſed; they then unite like all bodies that reciprocally diſſolve each other; and from theſe combinations new compounds reſult, which have the mixed properties of the component ſubſtances.

In *metallic alloys*, as in almoſt all other *metallic* combinations, phænomena appear which depart from the general rules of combination; and ſome of the properties of metals forming an *alloy* are altered, increaſed, or diminiſhed by their union. The ductility, for inſtance, of a *metallic* compoſition is generally leſs than the ductility of the component metals alone and pure. The denſity or ſpecific gravity of metals and ſemi-metals, is alſo changed by *alloying* them with each other. Sometimes the ſpecific gravity of the compound is intermediate betwixt the ſpecific gravity of the component metals; ſometimes it is leſs, and frequently greater; this depends upon the nature of the metal.

ALLOYS, *metallic*, are either *natural* or *artificial*.

ALLOYS, *natural*, are thoſe made by *nature*, ſuch as moſt minerals containing ſeveral metals *alloyed* with each other.

Native gold is always more or leſs *alloyed* with ſilver; and native ſilver with gold.

ALLOYS, *artificial*, are thoſe made expreſsly for different uſes, or for the ſake of examining their properties.

There are two ſorts of *alloys* practiſed in the coinage of money: the one when gold and ſilver are uſed which have not yet been coined; the other when ſeveral ſpecies of coin, or ingots of different fineneſs are melted together to coin new money. The proportion of the *alloy* with the finer metal is eaſy in the firſt caſe; ſince when once the fineneſs of the gold or ſilver is known by refining, it is only adding to it the *alloy* of copper required by law, to bring it to the legal ſtandard.

In England the ſtandard of gold coin is 22 *carats* of fine gold and 2 *carats* of *alloy*, in the pound troy: the French, Spaniſh, and Flemiſh gold are nearly of the ſame fineneſs.

neſs. The pound weight is cut into 44 pieces and $\frac{1}{2}$, each current for 21 ſhillings.

The ſtandard of ſilver is 11 oz. 2 pennyweights troy of ſilver, and 18 pennyweights of *alloy* of copper. The *alloy* in gold coin is ſilver and copper, and in ſilver coin copper alone. Whether gold or ſilver be above or below ſtandard, is to be found by ASSAY.

The chief reaſons alleged for the alloying of coin are, 1. The mixture of the metals, which when ſmelted from the mine are not perfectly pure. 2. The ſaving the expence it muſt otherwiſe coſt if they were to be refined. 3. The neceſſity of rendering them harder, by mixing ſome parts of other metals with them, to prevent the diminution of weight by wearing, in paſſing from hand to hand. 4. The melting of foreign gold or coin which is *alloyed*. 5. The charges of coinage, which muſt be made good by the profit ariſing from the money coined. 6. and laſtly, the duty belonging to the ſovereign, on account of the power he has to cauſe money to be coined in his dominions. See GOLD, SILVER, REFINING, and ASSAY. See a particular account of the *alloy* of gold, its uſefulneſs, and its proportion in different coins, in Dr. Lewis's Commerc. D. Techn. p. 114. & ſeq.

According to the different proportions of *alloy*, money is of different degrees of fineneſs or baſeneſs; and is valued accordingly in foreign exchanges.

The ſilver coin among the Romans, was long kept to a great degree of purity; which was firſt broke in upon by the tribune Livius Druſus; who mixed with them an eighth part of copper. But the acts of his tribunate were afterwarns annulled, and the money reſtored to its ancient fineneſs. Thus things remained till the time of the emperor Severus, who increaſed the *alloy* ſtill more; yet on his medals, he took the title of *reſtitutor monetæ*.

ALLUM, ALLOM, or ALUM, a kind of mineral ſalt, of an auſtere taſte, leaving in the mouth a ſenſe of ſweetneſs, accompanied with a conſiderable degree of aſtringency.

The word *allum* comes from ἅλς, *ſalt*; or perhaps from the Latin *lumen*, *light*; becauſe it gives luſtre to colours.

ALLUM is a cryſtallizable ſalt, compoſed of vitriolic acid, united with an argillaceous earth. It diſſolves ſufficiently well in cold, but in much larger quantity in boiling water. Neuman ſays that *allum* requires ten times, and other authors ſay that it requires fourteen times its weight of water to diſſolve it. It retains half its weight of water in cryſtallizing; of which cryſtallization it is ſuſceptible by the evaporation and cooling of the water in which it is diſſolved. The figure of its cryſtals, like that of the cryſtals of other ſalts, vary according to the circumſtances concurring during the cryſtallization.

In Italy this ſalt is obtained from a ſoft reddiſh ſtone, about Putcoli, from ſeveral kinds of earth; and in England from a whitiſh or bluiſh ſtone, called Iriſh ſlate.

ALLUM, *its generation and nature.*

As *vitriol* is produced from a ſulphureous mineral, either ſimple or compound, that is, of iron and copper, ſo *allum*, which is, as it were, a kind of white vitriol, is alſo generated of a kind of ſulphureous mineral, partly bituminous, partly luteous. Therefore the acid which is extracted from *allum*, called *ſpirit* of *allum*, ſeems to be of the ſame nature and properties, with what is afforded by *vitriol*, whatever difference there is in the earths or receptacles in which both theſe kinds of ſalts are coagulated. For the *caput mortuum* of *vitriol* is of a metalline, that is to ſay, of an irony or copper like quality; but the earth of *allum* ſeems to be a peculiar kind of BOLE, very ſpungy and ſubtle.

Chemiſts are generally agreed in opinion, that the acid of *allum* is the pure vitriolic; but the preciſe nature of its earthy baſe has been a ſubject of diſpute. For a long time it was conſidered as a calcareous earth; but the late experiments of Pott, Margraaf and Baron, have ſhewn that calcareous earths, united with vitriolic acid, form ſelenites, and not *allum*; and that theſe and the earth of *allum* have no common diſtinguiſhing properties. M. Baron therefore conjectures, that the earth of *allum* is of a metallic nature. Others, on the contrary, as M. Geoffroy, Hellot, and Macquer have urged experiments to prove, that the earth of *alum* is contained in clays. M. Macquer, in particular, in a Memoir read to the Academy of Sciences at Paris in 1762, expreſſes his full conviction that the earth of *allum* has an entire and perfect reſemblance to the pureſt clay; and he recites a variety of experiments and obſervations in ſupport of this opinion.

Though *vitriol* and *allum* be produced, as it were, from the ſame matter, and from one ſulphureous matrix; yet each of them is endued with peculiar properties and virtues. For *allum* and *vitriol* are very different in taſte, and the common *vitriol* leaves no ſuch aſtringency on the palate as is obſerved in *allum*. Again, a ſolution of *allum* makes no commotion nor precipitation in a ſolution of gold or ſilver, which a ſolution of *vitriol* is known to effect. Nor will a decoction of galls, or pomgranate flowers grow black, and be converted to ink, by the mixture and ſolution of *allum*, as with a ſolution of *vitriol*. Laſtly, in *allum* the acid may be readily ſeparated by the help of fire, from its earthy principle, in which it is inherent; but the caſe is otherwiſe with *vitriol*.

Allum and *ſulphur* are both formed from the ſame ſaline ſpirit, which, if it meets with a ſtony ſubſtance, forms *allum*; if with a bituminous one, *ſulphur*.

Allum may eaſily be decompoſed by various intermediate ſubſtances, ſaline alkalies, calcareous earths, iron, and any matter containing *phlogiſton*, treated properly, &c. It is formed on the univerſal acid, or fluid ſalt combining with a chalky earth.—The ſame acid with a mercurial earth forms common *ſea* SALT, and with a moiſt rocky, or clay earth, SAL *gemmæ*.

This ſyſtem is confirmed, by what naturaliſts have obſerved concerning the origin of the native *alum* in the iſle of Chio. That iſland is a hollow ſpungy rock, penetrated on all parts by the ſea-water. M. Tournefort conſiders the whole as a natural laboratory, wherein the ſea-water undergoes much the ſame action in it as in our retorts. By this means, an acid ſpirit is ſeparated from it, which penetrating the ſubſtance of the rocks, diſſolves and incorporates with them, and forms mines of *allum*. This ſeems hardly to be doubted, inaſmuch as by pouring ſpirit of ſalt on common ſtones, or chalk, aluminous concretions are readily formed. The ſame ſpirit mixing with a BITUMEN under-ground, forms SULPHUR.

Some attribute the origin of *allum* chiefly to a ſulphureous principle acting on, corroding of, and coagulating with a mineral ſubſtance, uſually of a terrene and ſtony, rather than metallic nature, though that metal be often contained in the *allum* ſtone. That the ſulphur is the chief efficient and material cauſe of this production, ſeems to appear hence, that many *allum* ſtones diſtilled *per deſcenſum*, yield good brimſtone, and all *allum* ſtones during calcination, emit a ſulphureous ſteam. An inquiſitive naturaliſt gathered from the very ſame rock, and that within a few inches of each other, both *vitriol*, *allum*, and *ſulphur*, all of them excellent in their kind. Indeed thoſe three minerals are ſo nearly allied, that an ingenious chemiſt aſſures us, he can by ſome artifices convert *allum* into *vitriol*, or *vitriol* into *allum*, the ſame to all intents and purpoſes, with the natural. Phil Tranſ. N° 104.

Allum is ranked by Homberg, and others, as an urinous neutral ſalt, on account of the urinous ſmell it exhales by burning, and its uſe in the volatilization of fixed ſalts. Yet ſome deny *allum* to belong to the claſs of ſalts, and rank it rather among ſtony ſubſtances; by reaſon that after diſſolving *allum*, and precipitating the ſolution with oil of tartar *per deliquinm*, the coagulation at the bottom reſembles a ſtony *calx*, and being expoſed to the fire will neither melt nor ſublime. The *ore* of *allum*, if mature, yields its ſalt immediately, and without trouble; but if leſs mature, it requires a previous calcination, as is the caſe in many of our Engliſh *allum* ſtones; and if very crude or immature, it muſt not only be burnt, but a long time expoſed to the air before it will yield its ſalt. From this it appears, that the *allum* is not a genuine and native ſalt, but is compoſed by the acid of ſulphur corroding ſome peculiar earth or ſtone, as vitriol is by its corroding ſome metal; and that, in both theſe operations, this corroding acid can ſometimes perform its buſineſs, while it lies in the bowels of the earth; and ſometimes while it lies in the open air, though it failed of it while buried. Phil. Tranſ. N° 104.

Allum diſtilled into an acid ſpirit, with copper, or iron, becomes good *vitriol*; and *vitriol* freed from its metallic parts becomes aluminous; and, being diſtilled, yields a ſpirit not to be diſtinguiſhed by the taſte from that of *allum*, and even ſcarce by the moſt accurate ſcrutiny.

Rectified oil of *vitriol*, or ſpirit of *ſulphur*, of the ſame degree of ſtrength, will ſometimes concrete into a ſolid and tranſparent ſubſtance, reſembling cryſtallized *allum*; and this ſubſtance is no way different whether prepared by one or the other of theſe ways, and in both reſembles the pureſt *allum*, ſo as not to be diſtinguiſhable from it unleſs by taſting it. *Aqua fortis* is as well made with *allum* as with *vitriol* and *nitre*.

Alum ores generally contain *vitriol* as well as *alum*, and are capable of great fermentation, when expoſed to the air, though they would never have been ſubject to it while buried in the earth. They will become ſo hot in the heap, that it is ſcarce poſſible to endure the hand upon them; and ſometimes will break out into abſolute flame. The acid and the ſulphur they contain are the occaſion of this, as, according to Sympſon and ſome others, they are the cauſe of all ſubterranean fermentations and heats; and the whole is not badly explained by the familiar inſtance of adding water to rectified oil of *vitriol*. The acid and the ſulphur of that fluid are, as in theſe ores, ſo combined as not to exert their forces naturally againſt one another, but all is quiet as in theſe ſtones while under ground, but the water does to the one what the air does to the other; ſends in a third, which not agreeing with either of the other, diſturbs and ſets their particles in motion, and the veſſel containing the liquid becomes as hot to the touch in the one caſe, as the ſolids themſelves are in the other.

Allum diſſolves in water; what remains undiſſolved at bottom is a ſort of *calx*, which ſoon diſſolves in oil, or in ſpirit of vitriol; and hence ariſes ſome doubt whether *allum*, as it does not leave an earth behind, does properly belong to the claſs of ſalts. Mr. Boyle aſſures us that *allum-ore*, robbed of its ſalt, does, in tract of time, recover it again from the air.

Allum, *the proceſs of making it.*

The proceſs of making *allum* at Whitby in Yorkſhire is thus deſcribed by Mr. Ray, at the end of his collection of Engliſh words not generally uſed. They take the mine or ore picked from the deſſe or rock, and laying it in great heaps, burn it with whins or wood, till it be white. When it is ſufficiently burnt, they barrow it into a pit, ten feet long, ſix broad, and ſeven fourths of a yard deep, where it is ſteeped in water the ſpace of eight or ten hours; then they draw out the liquor, which is only a lixivium impregnated with the *allum* mine, into troughs, by which it is conveyed to the *allum* houſe, into a deep ciſtern, about twenty yards in circumference, and three yards and a half deep. After this firſt water is drawn off the mine into the pits, they do not preſently caſt away the mine, but pour freſh water on it a ſecond time; and after the ſecond water is drawn off, which is much weaker than the firſt, they caſt out the mine, and put in new, and pour on freſh water as before. Out of the ciſtern they convey the lixivium by troughs into the pans, where it is boiled the ſpace of twenty-four hours ordinarily. Then they take the liquor out of the pans, and examine it by weight, to know how much lye made of kelp, it will require, which for the moſt part is ſix inches of the pan's depth. This being put in, as ſoon as the liquor boils or flows up, by the putting in of an iron coal-rake, or other iron inſtrument, they draw it off into a ſettler, and let it ſtand about an hour, that the ſulphur and other dregs may ſettle to the bottom; which being done, it is drawn off into coolers, where it continues about four days and nights. The cooler being drawn about half full, they pour into it a quantity of urine, viz. about eight gallons into a cooler that contains about two half tuns. Having thus ſtood about four days and nights, it is quite cool, and the *allum* cryſtallized to the ſides of the cooler. Then they ſcoop out the liquor, which they call the mother, into a ciſtern, and put it into the pans again with new lixivium, to be evaporated by boiling, &c. The *allum* that is ſhotten and cryſtallized on the ſides of the cooler they ſcrape off, and waſh with fair ſpring water, then throw it into a bing, where the water drains from it. Thence it is caſt into a pan, called the *roching* pan, and there melted; after which it is ſcooped out, and conveyed by troughs into tuns, in which it ſtands about ten days, till it be perfectly cool and condenſed. Then they unhoop and ſtave the tuns, and taking out the *allum*, chip it and carry it into the ſtore-houſe. The exact proportion of kelp does not appear in this proceſs; for though the workmen told Mr. Ray, that the lye was ſix inches of the pans depth, yet they did not tell him how deep the pans were. Phil. Tranſ. N° 142. See **Doggers**.

At Solfatara, near Puzzuoli, there is a conſiderable oval plain, the ſoil whereof is wholly ſaline; and ſo hot, that the hand cannot long endure it.—From the ſurface hereof, in ſummer time, there ariſes a ſort of flour, or ſaltiſh duſt; which being ſwept up, and caſt into pits of water at the bottom of the plain, the heat of the ground, i. e. of certain ſubterraneous ſpiracles, over which the coppers are placed, without any other fire, evaporates the water, and leaves an *allum* behind.

Allum is made at Cypſella in Thrace, by gently calcining the ſtone, and letting it diſſolve afterwards in the air by the dews and rains; then boiling and cryſtallizing the impregnated waters.

Allum, *its properties and uſes.*

Allum is of ſome uſe in medicine, in quality of an aſtringent; but, being apt to excite vomiting, is not much uſed inwardly, and rarely without ſome ſmooth aromatic, as a corrector. It is proper for diſeaſes where the principal indications are to fortify and conſtringe. It is ſaid to be good in hæmorrhages of all kinds, eſpecially uterine hæmorrhages; whether to correct the frequent return of the *menſes*, or their too great abundance; to ſtop the flooding to which women with child are ſubject, or to moderate the flow of the too plentiful *lochia*. It is alſo ſaid to be efficacious in the caſe of a *fluor albus*. *Allum* mixed with honey cures the *aphthæ*, and with the juice of *knot*-GRASS is good for *exanthemata* and rheums in the ears; with cabbage-leaves and boiled honey it is effectual in the leproſy; and very good in warm water to make a fomentation for the itch, *paronychia pterygia*, and kibes; to ſcour away all nits and lice, and to anoint ſcalds or burns. It is uſed outwardly alſo in aſtringent lotions, and is an ingredient in ſeveral dentifrices and coſmetics.

It is a principal ingredient in dying and colouring; neither of which can be well performed without it.—It ſerves to bind the colour upon the ſtuffs, and has the ſame uſes there, that gum water and glutinous oils have in painting. It likewiſe diſpoſes ſtuffs to take the colour, and adds a degree of briſkneſs and delicacy to it; as we ſee viſibly in cochineal, and the ſcarlet-grain. Without *allum* theſe dyes would be only confuſed ſtains, which might be waſhed out by water.

This effect of *allum* ſeems alſo owing to its ſtyptic, or aſtringent quality, by which it binds the finer parts of colours together, and prevents their exhaling. Hence alſo it preſerves paper that has been dipped in its water, from ſinking when wrote upon.

Vintners fine down their wines, &c. with *allum*; fiſhers uſe it to try codfiſh with; and bakers have mixed it with the flour to make their bread compact and white; to this laſt uſe of it, great objections have been made, but unjuſtly, for it is entirely innocent, and now ſeldom uſed. It is recommended from ten to twenty grains, mixed with an equal proportion of ſugar, gum arabic, or ſpermaceti, as a cure for colics. Dr. Percival adds, that in about fifteen caſes he has employed it with ſucceſs. Percival's Eſſays, vol. ii. p. 194.

Naturaliſts ſpeak of divers kinds of *allum*, which may be reduced to two, *native* and *artificial*.

Allums, *native*, are thoſe prepared and perfected under ground, by the ſpontaneous operations of nature, mixing the proper ingredients, water, earth, and ſalt, or ſulphur. It is found in the coal-mines near Whitehaven. Theſe are either *liquid*, or *ſolid*, and *concrete*.

Allum, *liquid*, appears to be the primitive kind, as being that out of which the reſt is formed.

It is not uncommon to find *liquid allum* in the places where ſubterraneous fires have raged. It is a milky thick liquor, and is found lodged in cavities of the ſtrata of ſtone, when the ſulphur and ſal armoniac have been ſublimed away. The acid aluminous part of the matter will alſo eſcape with a great degree of heat, leaving in the place of the liquor only a dry ſtyptic, and hard ſtony matter. The liquor itſelf is of a very ſtyptic taſte, and will yield one half its weight of pure cryſtalline *allum* on evaporation. Phil. Tranſ. N° 130.

Allum, *ſolid*, or *concrete*, is divided into ſciſſile *allum*, called by the Greeks σχιϛη, as being ſoft and eaſily ſeparable. This is ſaid to bear a near reſemblance to our *plumoſe alum*, only differing in this, that the former inſtead of whitiſh, is of a greeniſh hue. Some pretend to have done wonders with it againſt hæmorrhages, looſeneſs of the teeth, the itch, *pterygium*, *pernios*, &c. In ſome of which its aluminous or aſtringent quality might be expected to do more harm than good.

Allum, *round*, *alumen rotundum*, called alſo ϛρογγυλη, as being found ordinarily in roundiſh maſſes, though ſometimes angular.

Allum, *ſciſſile*, or *foſſile*, is either compoſed of thin flakes, very friable to the fingers, or of *ſtriæ*, or whitiſh hairs, hence called *capillary*, uſually *plume* ALLUM.

Allum, *rock*, or *roche*, is prepared from pyritous ſtones cut from the rocks of the quarry; and ſtands contradiſtinguiſhed from the common *allum*, or that prepared from earths. It is ſometimes called *ice-allum*. The method of making *allum* in Italy, is ſomewhat different from that deſcribed above.

It appears, that the names *ice allum*, and *rock allum*, are ſynonymous, and confounded in *commerce*, becauſe there is no difference in the price. There is this remarkable circumſtance attends the cryſtallization of *allum*, that good cryſtals of this ſalt cannot be formed, unleſs an *alkaline lixivium* be added to the *lixivium* of *allum*, when ſet to cryſtallize.

Mr. Geoffroy had an exact information in Italy of the method of making *roche allum*, at Civita Vecchia. Near that city are quarries of a greyiſh or reddiſh ſtone, pretty hard, like the *travertin*. They calcine theſe ſtones in kilns, and then boil the *calx* in water over a ſtrong fire. The water diſſolves all the ſalt contained in the *calx*, and there remains an inſipid earth. The water thus impregnated is left to cool, and the ſalt ſhoots into cryſtals like tartar, about the ſides and bottoms of the caſk, which is a ſpecies of the *roche allum*, called ROMAN *allum*, the price of which is greater than that of common *rock allum*.

Allum, *ſaccharine*, bears a near reſemblance to ſugar.—It is a compoſition of common *allum* with roſe-water, and whites of eggs, boiled together to the conſiſtence of a paſte, and thus moulded at pleaſure. As it cools, it grows hard as ſtone. It is uſed as a coſmetic.

Allum, *burnt*, *alumen uſtum*, is prepared by melting the ſalt in a fire-ſhovel, or crucible, and letting it bubble till it comes to a white hard ſubſtance. This is uſed as an eſcharotic; it gently eats proud fleſh, but leaves ſuch a hardneſs on the part, as makes it little eſteemed in that intention.

Allum, *plume*, *alumen plumoſum*, is a ſort of ſaline mineral, of various colours, moſt commonly white bordering on green, reſembling Venetian TALC, except that inſtead of ſcales, it riſes in threads or fibres, reſembling thoſe of a feather; whence its name, from *pluma*, *feather*.

Some will have this to be the *lapis amianthus* of the ancients. It is chiefly found in the iſlands of Rhodes and Crete, where there are whole mountains of it. See Phil. Tranſ. vol. lxiv. art. 48. an. 1774, p. 489.

Allumen *plumoſum*, is alſo a name given, by ſome chemiſts, to a peculiar kind of ſublimate of mercury, invented by Baſil Valentine, whoſe name it alſo bears. It is a compound formed of arſenic, united with vitriolic acid.

Allumen *ſcagliolæ*, or *ſcalolæ*, a ſquamoſe or flaky ſtone, the ſame with what is otherwiſe called *lapis* SPECULARIS.

Some take this for the ſame with what the ancients called SCHISTON.

Allumen *catini* is a name which ſome have given to the aſhes, or rather ſalt of the herb *kali*, uſed chiefly in the making of glaſs.

In this ſenſe, *allumen catini* amounts to the ſame with what is more frequently called ALKALI.

Allumen *fæcis* is made of the lees of wine, formed into round maſſes, dried by the ſun, and then burnt or torrified ſo long by the fire, as to turn white. Its chief uſe is among the women of Italy, to dye the hair of a yellow colour, much affected in that country.

Allum, *purified*, is that prepared by diſſolving it in hot rain water, and evaporating it again, till it ſhoot into cryſtals.

By repeating this operation divers times, the ſourneſs of the *allum* is much abated.

Allum, *crude*, is the ſalt, ſuch as produced at the *allum*-works, without further preparation. This ſtands contradiſtinguiſhed from prepared *allum*.

It is, by ſome, uſed as a *noſtrum* againſt the itch and ſwellings of the feet; but rather palliates than works a thorough cure.

Allum, *prepared*, is of divers kinds.—Under this claſs come *purified allum*, *ſaccharine allum*, *burnt allum*, *allum majeſteries*, *tinctures* of *allum*, water, ſpirit, *dulcedo* of *allum*.

Allum, *Roman*, properly denotes a *rock allum*, of a red colour, prepared in the country near Rome.

In the genuine Roman *allum*, the red colour is not ſuperficial, but diffuſed through the whole ſubſtance of it; by which it may be diſtinguiſhed from the ſpurious, or counterfeit kind, which is only the common Engliſh *allum* dyed red.

Allum mines are ſaid to have been firſt found in Italy in the year 1460; and in 1506 king Henry VII. made a monopolizing grant of this commodity to Auguſtine Chigi, a merchant of Sienna. In the year 1608 the manufacture of *allum* was firſt invented, and ſucceſsfully practiſed in England, meeting with great encouragement in Yorkſhire, where it was firſt made, from lord Sheffield, and other gentlemen of that county. King James I. by advice of his miniſtry, aſſumed the monopoly of it to himſelf, and therefore prohibited the importation of foreign *allum*; and in 1625 the importation of it was farther prohibited by the proclamation of Charles I.

All the *allum* which is in *commerce*, is extracted by different operations from ſeveral *pyritous*, earthy, or ſtony matters, containing the vitriolic acid, and the earth, proper for forming this ſalt. See PYRITES.

Allum Water, ſee ALLUMINOUS *waters*.

Allum Works, places where *allum* is prepared, and manufactured in quantities for ſale. They differ from *allum* mines, as in the former an *artificial* ALLUM, and in the latter *natural* ALLUM is produced.

ALLUMINOR, from the French *allumer*, *to lighten*, is uſed for one who coloureth or painteth upon paper, or parchment; and the reaſon is, becauſe he gives light and ornament by his colours to the letters, or other figures. Such ornaments are ſtyled illuminations. The word is uſed in ſtat. 1. R. III. cap. 9. But now ſuch a perſon is called a *limner*.

ALLUMINOUS, any thing that contains *allum*, or partakes of the nature and qualities of that SALT.

Grew deſcribes ſome extraordinary kinds of *alluminous* earths in the repoſitory of the Royal Society.

Alluminous *waters* are thoſe impregnated with the particles of that ſalt.

Alluminous waters make a ſpecies of thoſe called mineral or medicinal waters.

Such is the Spa at Scarborough obſerved to be by Witty, Simpſon, &c.

According to the laſt author, that which gives the eſſence to this water is an acid *alluminous* mineral ſalt, preying on, and diſſolving a ſlight mixture of iron. Dr. Highmore objects, that ſuppoſing *allum* the principal ingredient in theſe waters, the properties of *allum* being to dry, to aſtringe, and to incraſſate, how comes it to paſs that they are pretended to be ſo highly deoppilative, and ſo beneficial to hypochondriac and cachectical perſons, where their aſtringency ſhould rather be noxious? Dr. Witty anſwers, that they do not derive theſe virtues from the *allum*, but from the other ingredients in them.—It is diſputed whether or no the bath at Lucca be *alluminous*. Phil. Tranſ. N° 42, N° 56, and N° 160.

We have alſo factitious waters, under the denomination of *alluminous*; ſuch is that called in the ſhops *aqua aluminoſa magiſterialis*.

Its preparation is thus: take of *rock allum*, and white ſublimate, *ana* ℥ii, boil them in roſe and plantain water, *ana* ℔ i, till half is conſumed; filter the remainder, and keep it for uſe.

This is preſcribed againſt deformities of the ſkin, and often for the itch; but it is an uncertain remedy, and not to be uſed without caution.

ALLUSION, ALLUSIO, in *Rhetoric*, a figure whereby ſomething is applied to, or underſtood of another, by reaſon of ſome ſimilitude of name, or ſound.

The word is formed of *ad*, and *ludere*, *to play*.

Camden defines *alluſion* a dalliance, or playing with words alike in ſound, but unlike in ſenſe; by changing, adding, or ſubtracting a letter, or two; whence words reſembling one another become applicable to different ſubjects.

Thus the Almighty, if we may uſe ſacred authority, changed Abram, i. e. high father, into Abraham, i. e. father of many.—Thus the Romans played on their tippling emperor Tiberius Nero, by calling him Biberius Mero; and thus in Quintilian the four fellow Placidus is called Acidus.

Alluſions come very near to what we popularly call *puns*.

ALLUVION, ALLUVIO, in the *Civil Law*, a gradual addition or accretion made along the ſea-ſhore, or the banks of large rivers.

The word is formed of *adluo*, *I waſh to*, compounded of *ad*, and *lavo*.

The civil law places *alluvion* among the lawful means of acquiſition; and defines it to be a latent, imperceptible accretion.—Hence, where any conſiderable portion of ground is torn away at once, by an inundation, and joined to ſome neighbouring eſtate, this is not acquired by right of *alluvion*, but may be claimed again by the former owner.

Great alterations are made in the face and limits of countries, by *alluvions* of the ſea, rivers, &c. Whole plains are ſometimes formed by *alluvions*. It is controverted whether *alluvions* ſhould be conſidered as fruits, and as ſuch accruing to *uſufructuaries*.

ALLY. See ALLIANCE.

ALMACANTARS, ALMACANTARAS, or ALMICANCHARATH, in *Aſtronomy*. See ALMUCANTARS.

Almacantars *ſtaff*. See ALMUCANTARS *ſtaff*.

ALMADE, in SHIP-*Building*, a ſmall veſſel uſed by the negroes of Africa, about four fathom long; and made uſually of the bark of a tree.

The ſame name is alſo given to the veſſels of Calicut in India, which are eighty feet long, and ſix or ſeven broad, and ſquare ſterned.

Theſe are otherwiſe denominated *cathuri*. They go with great ſwiftneſs. Witſen ſays, that they are twelve or thirteen paces long, ſharp at head and ſtern, and that they are moved both by ſails and oars. In time of war, the king of Calicut fits out two or three hundred of theſe veſſels.

ALMAGEST, the name of a celebrated book, compoſed by Ptolemy; being a collection of many of the obſervations and problems of the ancients, relating both to geometry and aſtronomy.

In the original Greek it was called *συνταξις μεγιστη*, q. d. *greateſt conſtruction*, or *collection*; which laſt word *megiſte*, Joined to the particle *al*, gave occaſion to its being called *almageſt* by the Arabians, who tranſlated it into their tongue about the year 800, by order of the caliph Al Maimon.—The Arabic word is *almagheſti*.

Ricciolus has alſo publiſhed a body of *aſtronomy*, which he intitles, after Ptolemy, the New Algameſt; being a collection of ancient and modern obſervations and diſcoveries in that ſcience.

We have alſo a botanical *almageſt*, compoſed by Plukenet, being a kind of *pinax*, or general index of plants, containing the proper, and deſcriptive names, of upwards of ſix thouſand. To which in a ſupplement, ſince publiſhed by the ſame author, have been added above one thouſand others. Almageſtum Botanicum, ſive Phytographiæ Plucnetianæ Onomaſticon, &c. Lond. 1696. fol.

ALMAGRA, in *Natural Hiſtory*, a name given in later ages to an earth of the OCHRE kind, called *ſil atticum* by the ancients. It is an ochre of a fine and deep red, with ſome admixture of purple, very heavy, and of a denſe yet friable ſtructure, and rough duſty ſurface. It adheres very firmly to the tongue, and melts freely and eaſily in the mouth, and is of an auſtere and ſtrongly aſtringent taſte, it ſtains the ſkin in touching it, and ferments very violently with acid menſtruums; by which ſingle quality, it is ſufficiently diſtinguiſhed from the *ſil ſyricum*, to which it has in many reſpects a great affinity. It is found in immenſe quantities, in many parts of Spain; and in Andaluſia there are in a manner whole mountains of it. It is uſed in *painting*, and in *medicine*, being a very valuable aſtringent.

ALMAGRA, in the cant of chemiſts, denotes red *bole*, or RUDDLE, ſometimes a lotion, or waſh.

ALMALECI, in *Medical Hiſtory*, a celebrated work, containing a ſyſtem of the ancient Arabian phyſic.

The word imports as much as the *royal work*.

Concerning the hiſtory, contents, &c. of the *almaleci*, ſee Friend's Hiſt. of Phyſ. p. ii. p. 36.

ALMANAC, a *calendar* or *table*, wherein are ſet down the days and feaſts of the year, the courſe of the moon, &c. for each month of the year.

The original of the word is much controverted among grammarians.—Some derive it from the Arabic particle *al*, and *manah*, *to count*.—Others, and among them Scaliger, rather derive it from *al*, and μανακος, the courſe of the months; which is contradicted by Golius, who advances another opinion. He ſays, that, throughout the Eaſt, it is the cuſtom for ſubjects, at the beginning of the year, to make preſents to their princes; and, among the reſt, the aſtrologers preſent them with their ephemerides for the year enſuing; whence thoſe ephemerides came to be called *almanha*, i. e. handſels, or new-year's gifts.—To ſay no more, Verſtegan writes the name *almon-at*; and makes it of Saxon original. Our anceſtors, he obſerves, uſed to carve the courſes of the moon, of the whole year, upon a ſquare ſtick, or block of wood, which they called *al-monaght*, q. d. *all-moonheed*.

The modern *almanac* anſwers to the *faſti* of the ancient Romans.

The neceſſaries for making an *almanac*, the reader will find under the article CALENDAR.

Henry III. of France very prudently decreed, by an ordonnance of 1579, that 'no *almanac*-maker ſhould pre-
'ſume to give predictions relating to civil affairs, either
'of ſtates, or private perſons, in terms either expreſs or
'covert.'

In the Philoſoph. Collect. we have a perpetual *almanac*, deſcribed by Mr. R. Wood.

Many forms of a head-*almanac* have been propoſed in ſome of our periodical publications; but the following diſtich will very well anſwer the purpoſe:

At Dover dwells George Brown, Eſquire;
Good Chriſtopher Fimb, and David Frier.

The twelve words anſwer to the twelve months; the firſt letter of each word ſtands in the Calendar againſt the firſt day of the correſponding month; and if the Dominical letter is known, it is eaſy to find on what day of the week any day of the month will fall throughout the year. In 1776, F being the Dominical letter, Dec. 25, is Wedneſday, becauſe the firſt day denoted by F is Sunday.

ALMANAC, *nautical*, is publiſhed annually, by anticipation, under direction of the commiſſioners of longitude. Beſide every thing eſſential to general uſe that is to be found in any *almanac* hitherto publiſhed, it contains many new and intereſting particulars; more eſpecially, the diſtances of the moon from the ſun and fixed ſtars for every three hours of apparent time, adapted to the meridian of Greenwich, by comparing which with the diſtances carefully obſerved at ſea, the mariner may readily, and with little danger of miſtake, infer his longitude to a degree of exactneſs, that may be thought ſufficient for moſt nautical purpoſes. And the publication of it is chiefly deſigned to facilitate the uſe of Mayer's lunar tables, by ſuperſeding the neceſſity of intricate calculations, in determining the longitude at ſea. It began with the year 1767, and has been continued ever ſince.

ALMANAR, in the Arabian *Aſtrology*, denotes the preeminence, or prevalency of one planet over another.

ALMANDIN, or ALABANDIN, a precious ſtone, of the RUBY kind, ſomething ſofter than the oriental ruby; and, as to colour, partaking more of that of the granate than the ruby.

It is ranked among the richeſt of ſtones, and takes its name from Alabanda, a city of Caria, whence Pliny ſays it was brought.

ALMARIA, in our *Ancient Records*, the archives of a church, or the like.

ALMEHRAB, among *Mahometans*, denotes a niche in their moſques, which directs to the *kebla*, that is, to the temple of Mecca, to which they are obliged to bow their faces in praying.

The word is Arabic, where it is properly written *al mehrab*.

ALMEISAR, a celebrated game among the ancient Arabs, performed by a kind of caſting of lots, with arrows, ſtrictly forbid by the law of Mahomet, on account of the frequent quarrels occaſioned by it.

The manner of the game was thus: a young camel being brought and killed, was divided into a number of parts. The adventurers, to the number of ſeven, being met, eleven arrows were provided without heads or feathers; ſeven of whcih were marked, the firſt with one notch, the ſecond with two, the third with three, &c. the other four had no marks. Theſe arrows were put promiſcuouſly into a bag, and thus drawn by an indifferent perſon. Thoſe to whom the marked arrows fell, won ſhares in proportion to their lot; the reſt to whom the blanks fell, were intitled to no part of the camel, but obliged to pay the whole price of it.

Even the winners taſted not of the fleſh themſelves, more than the loſers; but the whole was diſtributed to the poor.

ALMELILETU is uſed, by Avicenna, for a preternatural kind of heat, a degree more remiſs than that of a fever, and which ſometimes remains after a fever is gone.

ALMENE, a name given, by ſome of the Arabian writers, to the prickly *lotus* of Africa, called by ſome of the ancients *lotus acanthos*, and by Virgil *acanthus* only.

ALMERICANS, were the followers of Almeric, or Amauri, in the thirteenth century. They maintained that the power of the Father continued no longer than the Moſaic diſpenſation; that the empire of the Son extended only to the thirteenth century; and that then the reign of the Holy Ghoſt commenced, when all ſacraments and external worſhip were to be aboliſhed, and the ſalvation of Chriſtians was to be accompliſhed merely by internal acts of illuminating grace. Their morals were as infamous as their doctrine was abſurd. Their tenets were condemned by a public decree of the council of Sens, in the year 1209.

ALMERY. See AMBRY.

ALMIGGIM *wood*, a word uſed in the Scriptures, to ſignify a beautiful and light ſort of wood. It has been conjectured to be ſeveral different ſorts of woods now in uſe; others think it has been loſt long ſince. But Meibomius proves, from the accounts of Joſephus, that it was the wood of the Indian pine, or fir-tree. This was excellent for its whiteneſs, as well as remarkably light, and therefore was uſed in muſical inſtruments.

ALMIZADIR, among *Alchemiſts*, is ſometimes uſed for verdegris; ſometimes for the proceſs of the philoſophers ſtone; and ſometimes for the *aqua mercurialis*, or *aqua philoſophorum*. See ALKAHEST.

ALMOGIZA, among Arabian *Writers*, denotes the limb, or circumference of the ASTROLABE.

ALMOHARRAM, one of the ſacred months of the ancient Arabs.

The word is Arabic, *al moharram*. It was the firſt month of the Arab year.—On ſome occaſions they put off the obſervance of this month, to the following month Safar.

ALMOIN, in *Law*. See FRANK-*almoin*.

ALMOND, *amygdala*, a kind of medicinal fruit, the produce of the ALMOND-*tree*.

ALMOND-*tree*, *amygdalus*, in *Botany*, the name of a genus of trees, of the *icoſandria monogynia*, the characters of which are theſe: it hath a tubulous empalement of one leaf, which is cut at the brim into five obtuſe ſegments; the flower hath five oval, obtuſe, concave petals, which are inſerted in the empalement. After the flower is paſt, the germen becomes an oval compreſſed large fruit, with a thin, tough, hairy covering, having a longitudinal furrow; this opens and falls away, leaving an oval compreſſed nut.

Mr. Miller enumerates four ſpecies of this tree; which is propagated by inoculating a bud of any of the ſpecies into the ſtock of a plum, peach, or *almond*, of another ſpecies, in the month of July.

The ſecond year after their budding, they are to be removed to the places where they are to remain.

The beſt ſeaſon for tranſplanting them, if for dry ground, is in October; but for a wet ſoil, February is always found the propereſt ſeaſon.

The fruit of this tree is of two kinds, the ſweet *almonds*, and the bitter *almonds*.

ALMONDS, *ſweet*, are of a ſoft, grateful taſte; and are reputed cooling, healing, emollient, and nutritive: they are much preſcribed in emulſions, and found of good effect in all diſorders from choleric and acrimonious humours. Neumann ſays, that when roaſted they are a *ſuccedaneum* to coffee.—The oil of ſweet *almonds*, drawn without fire, is a ſafe and uſeful remedy in nephritic pains: it is alſo of good repute for coſtiveneſs, and for gripes in children.

For the manner of procuring it, ſee OIL.

Half an ounce of it may be taken for a doſe, with thirty drops of the mineral anodyne liquor. Neuman, p. 389.

Some reckon two kinds of ſweet *almonds*. 1. Jordan, which are the larger, longer, and dearer kind, chiefly ſold to be eat with raiſins. 2. Valentian and Barbary *almonds*, which are thoſe from whence the oil is procured. Hought. Collect. N° 434. tom. ii. p. 76.

The tree that bears them is called *amygdalus ſativa*. Their chief medical uſes are to ſoften and obtund acrimony, and to render reſinous ſubſtances ſoluble in water, and in the animal fluids. Neumann's Works, p. 389.

ALMONDS, *bitter*, are held aperient, deterſive, and diuretic; and, on thoſe accounts, they are commended in obſtructions of the liver, ſpleen, uterus, &c.—Some eſteem them good to take off the effects of drunkenneſs. Accordingly, Plutarch relates, that Druſius's phyſician, a ſtout drinker, took down at every cup five bitter *almonds*, to allay the heat and fumes of the wine.

The expreſſed oil of bitter *almonds* is as taſteleſs as that of the ſweet: it is much uſed to ſoften and deterge the wax out of the ear.—Some affirm, that *bitter almonds* are poiſonous to birds, particularly; and Neuman adds, to all animals that come into the world blind. It is ſaid that bruiſed, they ſtupify fowl, ſo that they may be eaſily taken with the hand; that this is a ſecret practiſed among the Bohemians; and that the huſks, remaining after the oil is expreſſed, have the ſame effect.

The kernels of bitter *almonds* give much the ſame reliſh in diſtillation, as the kernel of the cherry; on which account, ſome practiſe the making a counterfeit cherry brandy with them. They are alſo frequently uſed inſtead of apricot kernels, in RATAFIA. See the Chemical Hiſtory of *almonds*, in Neumann, ut ſupra.

ALMONDS, *ſweet*, and *bitter*, contain an expreſſible oil, and farinaceous earth; the bitter part of *bitter almonds* is not expreſſed with the oil, but may be diſſolved by digeſtion in aqueous, and in ſpirituous liquors, and with theſe may be diſtilled. Waters diſtilled from *bitter almonds*, or from moſt other bitter vegetables, fruits, and flowers, which have a ſimilar flavour to them, are poiſonous to birds, to ſome animals, and have ſometimes been ſo to men. It is chiefly, if not ſolely, in the matter which ariſes in diſtillation, that the noxious qualities of the *bitter almonds* reſide. Dr. Lewis. See more in Neumann's Works, p. 389, & n.

Almonds give the denomination to a great number of preparations in confectionary, cookery, &c. whereof they are the baſis; as *almond* cakes, *almond* cream, criſped *almonds*, *almond* milk, *almond* paſte, *almond* ſnow, &c.—With ſweet *almonds* blanched (that is, put into warm water a while, which makes them ſlip their ſkins) and water, is made *almond* milk, frequently uſed as a cooler in emulſions, &c. V. Hought. Collect. N° 434.

There is a preparation alſo called ALMOND-*butter*, made of cream and whites of eggs boiled; to which is afterwards added, blanched *almonds*; the whole ſet over a ſlow fire, till it become thick.

ALMONDS are alſo a fruit which ſerves inſtead of ſmall money, in ſeveral parts of the Eaſt Indies; particularly where the *cowries*, thoſe ſmall ſhells which come from the Maldivies, are not current.

ALMOND-*dwarf*. See PERSICA.

ALMOND, *African*. See BRABEJUM.

ALMONDS, *amygdalæ*, in *Anatomy*, denote two glands of the *fauces*, more properly called the *tonſils*.

Theſe are commonly called *almonds of the ears*; but ought rather to be denominated *almonds of the throat*.

They are two rough glands placed on the ſides of the *baſis* of the tongue, under the common membrane of the *fauces*, with which they are covered.

Each of them has a large oval *ſinus*, which opens into the *fauces*; wherein are contained a great number of leſſer ones, which diſcharge through the great *ſinus* a mucous and ſlippery matter into the *fauces*, *larynx*, and *æſophagus*, for the moiſtening and lubricating of thoſe parts.

When the *æſophagus* muſcle acts, it compreſſes the *almonds*; and as they are ſubject to inflammation, they frequently are the occaſion of what the common people call a *ſore throat*.

ALMOND, or **ALMAN**-*furnace*, is a peculiar kind of furnace, uſed in refining; to ſeparate all kinds of metals from cinders, parts of melting-pots, teſts, bricks, &c.

The *almond-furnace*, called alſo the *ſweep*, is uſually ſix feet high, four wide, and two thick: it is built of brick, and having a hole in the middle of the top, eight inches over, which grows narrower towards the bottom, where, on the fore-part, it ends in a point, encompaſſed with a ſemicircle of iron, to keep in the melted metal.—About the middle of the back, there is another hole, to receive the noſe of a pair of bellows, which require the continual ſtrength of two men to work.

The matter, then, on which the operation is to be performed, being beat ſmall, they kindle charcoal in the furnace, to anneal it; and, when hot, they throw in two or three ſhovels of coals to one of the forementioned ſtuff; and ſo proceed during the whole work, putting lay upon lay, of one and the other. After eight or ten hours, the metal begins to run; and when the receiver below is pretty full, they lade it out with an iron ladle, and caſt it in ſows, in cavities or forms made with aſhes.

In this furnace the refiners of ſilver out of lead melt the ſlags of the LITHARGE left in this operation, and reduce them into lead again.

ALMOND, a meaſure in Portugal for OIL. The Portugueſe ſell their oil by *almonds*, twenty-ſix of which make a butt, or pipe.

ALMONDS, *amandes*. Thus the French lapidaries, and looking-glaſs makers, call thoſe pieces of rock cryſtal, or caſt cryſtal, which they cut with a wheel, giving them a figure ſomething like that fruit. They are uſed to adorn branch candleſticks, and other furniture made of glaſs or cryſtal.

ALMONER, anciently alſo written AMNER, an officer in a king's, prince's, or prelate's houſhold, whoſe buſineſs is to diſtribute alms to the poor.

The *lord almoner*, or *lord high almoner*, of England, is an eccleſiaſtical officer, uſually a biſhop; who is to viſit and relieve the ſick, poor widows, priſoners, and others in neceſſity: for which purpoſe, he has the forfeiture of all deodands, and the goods of *felos de ſe*, which he is to diſpoſe of to the poor.

He has likewiſe, by an ancient cuſtom, a privilege to give the firſt diſh, from the royal table, to whatſoever poor perſon he pleaſes; or, inſtead thereof, an alms in money.

He alſo diſtributes to twenty-four poor men, nominated by the pariſhioners of the pariſh adjacent to the king's place of reſidence, to each, four-pence a day in money, and an alms of bread and ſmall beer; each perſon firſt repeating the Creed, and the Lord's prayer, in preſence of one of the king's chaplains, deputed by the lord *almoner* to be his *ſub-almoner*; who is alſo to ſcatter new-coined two-pences in the towns and places through which the king paſſes in his progreſs. See MAUNDY-*Thurſday*.

He has alſo the charge of ſeveral poor penſioners to the crown, below ſtairs; conſiſting of ſuch as have ſpent their youth, and become ſuperannuated, in the king's ſervice; or the widows of ſuch houſhold ſervants as died poor, and were not able to provide for their wives and children; whom he duly pays. Chamberlayne's State of Great Britain, p. 98.

Under the lord *almoner*, beſides the *ſub-almoner*, there is a yeoman, and two grooms of the *almonry*, choſen by his lordſhip.

The French kings have their great *almoners*, firſt *almoners*, ordinary or quarterly *almoners*, &c.

Great *almoner*, *grand aumonier*, is the higheſt eccleſiaſtical dignity in that kingdom. To him belongs the ſuperintendency of all hoſpitals, and houſes of lepers. The king receives the ſacrament from his hand. He ſays maſs before the king, in all grand ceremonies and ſolemnities.

ALMONER is alſo applied, in *Eccleſiaſtical Writers*, to the DEACONS of churches.

ALMONER is alſo uſed, in *Hiſtorians of the Middle Age*, for him appointed by a perſon to diſtribute his alms to the poor. In this ſenſe, *almoner* amounts to much the ſame with what has been ſince denominated executor.

ALMONER is alſo ſometimes uſed for a perſon who left alms to the poor, by his laſt will.

ALMONER is ſometimes alſo uſed for a legatee.

In this ſenſe, it is the rule, that the ſame perſon could not both be *almoner* and heir.

ALMONER is alſo a more faſhionable title given, by ſome writers, to chaplains.

In this ſenſe, we meet with *almoner* of a ſhip, *almoner* of a regiment.

ALMONRY, or AUMBRY, the office or lodgings of the almoner; alſo the place where the alms are given. See AMBRY.

ALMS, *eleemoſyna*, ſomething given out of charity or pity to the poor.

The eccleſiaſtics anciently ſubſiſted wholly on *alms*.—The *alms* of the primitive Chriſtians were divided into three parts; one whereof belonged to the biſhops, another to the prieſts, and a third to the deacons and ſubdeacons.—Sometimes they divided them into four; the laſt of which went to the poor, and to the repairing of churches.

The Romaniſts extend the term *alms*, to that which is given to the church, or to other pious uſes.—Hence, what the church holds on this footing, is called *tenure in alms*. See AUMONE.

Alms are of divers kinds.

ALMS, *paſchal*, *eleemoſynæ paſchales*, were thoſe diſtributed at the ſolemnity of Eaſter, attended, in ſome places, with other acts of humility, as waſhing of feet, &c.

ALMS, *reaſonable*, *eleemoſyna rationalis*, a certain portion of the effects of perſons dying inteſtate, ſet apart for the uſe of the church and the poor.

ALMS *of plough-lands*, *eleemoſyna carucarum*, or *eleemoſyna pro aratris*, was a tax anciently paid for the benefit of the poor, at the rate of a penny for each plough-land.

ALMS *of the king*, denote what was otherwiſe called *Peter-pence*.

Theſe were ſometimes alſo called *alms* of St. Peter.

ALMS are divided by Mahometans, into *voluntary* and *legal*.

ALMS, *voluntary*, are thoſe left to every man's diſcretion, to give more or leſs, as he ſees fit.

The *voluntary alms* are properly denominated, by the Arabs, *ſerdeckad*.

No religious ſyſtem is more frequent or warm in its exhortations to *alms*-giving, than the Mahometan. The Alcoran repreſents *alms* as a neceſſary means to make prayer be heard.

ALMS, *legal*, thoſe of indiſpenſible obligation, as being commanded by the law, which directs and determines both the portion to be given, and the kind of things it is to be given of.

The *legal alms* are properly called, by the Mahometans, *zacat*, either on account of their increaſing a man's ſtore, or of their purifying the remaining part of his ſubſtance.

Some writers have given theſe the denomination of tithes, but improperly; ſince, in ſome caſes, they fall ſhort, and in others, exceed the proportion of a tenth.

ALMS, *charter of*, *charta eleemoſynaria*, that whereby a thing is given to the church.

ALMS, *aumone*, among the French, is alſo uſed for a compulſory payment, impoſed by way of puniſhment, to be converted to pious or charitable uſes.

In all adjudications to the king's right, there is an *alms* reſerved. This amounts to what among us is uſually called *forfeiture to the poor*.

ALMS-*box*, or *cheſt*, a ſmall cheſt, or coffer, wherein anciently the *alms* were collected, both at church and at private houſes. This is alſo in common uſe in ſeveral places.

The *alms-cheſt*, in churches, is a ſtrong box, with a hole in the upper part, having three keys, one to be kept by the parſon, or curate, the other two by the church-wardens.

The erecting of ſuch *alms-cheſt* in every church, was introduced by an act in 27 H. VIII. and it is enjoined by the book of Canons, as alſo the manner of diſtributing what is thus collected among the poor of the pariſh.

ALMSFEOH, or ALMESFEOH, among our Saxon anceſtors, *alms-money*; that is, PETER-PENCE, anciently paid in England on the firſt of Auguſt; called alſo *romeſeoh*, *romeſcot*, and *hearthpening*.

ALMS-HOUSE, a petty hoſpital; or an edifice built by a perſon in a private capacity, and endowed with a revenue, for the maintenance of a certain number of poor, aged, or diſabled people.

ALMUCANTARS, in *Aſtronomy*, are circles parallel to the HORIZON, imagined to paſs through all the degrees of the MERIDIAN.

The word is formed of the Arabic *almocantharat*.

As the meridians paſs through the ſeveral degrees of the equator, the *almucantars* paſs through thoſe of the meridian of any place.

The *almucantars* are the ſame thing with regard to the azimuths and horizon, that the parallels are with regard to the meridians and horizon.

They ſerve to ſhew the height of the ſun and ſtars; and are deſcribed on many quadrants, &c. being alſo called PARALLELS *of altitude*.

ALMUCANTARS-*ſtaff*, is an inſtrument uſually made of pear-tree or box, having an arch of fifteen degrees; uſed to take obſervations of the ſun, about the time of its riſing and ſetting; in order to find the amplitude, and conſequently the variation of the compaſs.

ALMUCIUM, or ALMUTIUM, in *Middle Age Writers*, denotes a kind of cover of the head, part of it pendant over the neck and ſhoulders, worn chiefly by the ancient canons and monks.

The word is alſo written, *almucia*, *aumucia*, *almucella*, *armutia*, and *amicia*.

The *almucium* appears to have been much the ſame with what is otherwiſe denominated *caputium*.

The *almucium*, though proper only to religious, was ſometimes alſo aſſumed by laymen, princes, and even women of quality.

The part which covered the head was of a ſquare form, making, as it were, four horns, as may be ſeen from the ancient pictures of canons. Hence appears the origin of the ſquare caps, bonnets, &c. ſtill retained in cathedrals and univerſities, which are no other than the upper part of the *almucium*, without the lower.

ALMUCIA is alſo uſed, in ſome *Ancient Writers*, for the furs, or ſkins, worn by the canons, on their left arms, in the manner of muffs.

ALMUDHEBIS, in the Arabian *Aſtrology*, a kind of dignity, or pre-eminence accruing to a planet in ſome place, either from its diſpoſition, or benign aſpect.

ALMUG-*tree*, a kind of wood mentioned in Scripture, imported by Solomon from Ophir, and uſed in the making of rails, or pillars of the temple. 1 Kings, ch. x. ver. 11, 12. 2 Chron. ch. ii. ver. 8.

ALMUGEA, in *Aſtrology*, denotes a certain configuration of the five planets, in reſpect of the ſun and moon, correſpondent to that which is between the hours of thoſe planets, and the ſun's and moon's hours.

Thus Saturn will be in the *almugea* of the ſun, when diſtant from him the ſpace of five ſigns in ſucceſſion, or in the *almugea* of the moon, when he is at the ſame diſtance, only contrary to the ſucceſſion of the ſign.

ALMUTAZAPHUS, a magiſtrate of Arragon, whoſe office is to ſearch houſes for ſtolen goods, weigh the bread, meaſure the wine, &c.

ALMUTHEN, in the Arabian *Aſtrology*, the planet which has the diſpoſal of a place, that is, ſurpaſſes the reſt in the number and efficacy of dignities, regard being had to the eſſential points, viz. *exaltation*, *terms*, *trigon*, and *phaſes*. This is otherwiſe called ALMUSTEULI.

ALNABATI, in the *Materia Medica*, a name given, by Avicenna and Serapion, to the SILIQUA *dulcis*, or carob-tree. They called both this and the ACACIA, by the common name *charnub*, or *charub*; but they ſufficiently diſtinguiſh this, not only by this appellation, but by telling us it was a gentle purge, whereas the other was aſtringent.

ALNAGE, or AULNAGE, q. d. ell-meaſure; the meaſuring of woollen manufactures with an ell, and the other functions of the ALNAGER.

The word is French, formed of *aune*, or *alne*, an *ell*.

All the attempts which our forefathers made for regulating manufactures, when left to the execution of any particular officer, in a ſhort time reſolved into a tax on the commodity, without reſpect to the goodneſs thereof.—As is moſt notorious in the caſe of *aulnage*, which was intended for a proof of the goodneſs of the commodity; and to that purpoſe a ſeal was invented, as a ſignal that the commodity was made according to their ſtatute; which ſeals, it is ſaid, may now be bought by thouſands, and put on what the buyers pleaſe. Sir Joſ. Child's Diſc. on Trade.

It is probable that the abuſes here mentioned by Sir Joſiah Child did, among other reaſons, give occaſion to the clauſe 11 and 12 W. III. cap. 20. by which *aulnage* duties are wholly taken away.

ALNAGER, ALNEGER, or AULNEGER, q. d. *meaſurer by the ell*; ſignifies a ſworn public officer, who by himſelf, or deputy, is to look to the aſſize of woollen cloth made throughout the land, i. e. the length, width, and work thereof; and to the ſeals for that purpoſe ordained. The office of king's *aulnager* ſeems to have been derived from the ſtatute of Richard I. A. D. 1197, which ordained, that there ſhould be only one weight, and one meaſure, throughout the kingdom; and that the cuſtody of the aſſiſe, or ſtandard of weights and meaſures, ſhould be committed to certain perſons in every city and borough. His buſineſs was, for a certain fee, to meaſure all cloths made for ſale, till the office was aboliſhed by the ſtatute 11 and 12 W. III. cap. 20.

ALNAM, in *Botany*, a name uſed, by ſome, for PENNY-ROYAL.

ALNASI, in the Mahometan *Law*, the transferring the obſervation of a ſacred month to a profane month.

ALNUS, in *Botany*, the ALDER.

ALNUS *baccifera*, the berry-bearing *alder*, in *Botany*, a name given, by ſome writers, to the FRANGULA.

ALNUS alſo denotes a part in the ancient theatres at the greateſt diſtance from the ſtage.

ALOA, in *Antiquity*, a Grecian feaſt, celebrated by the Athenian huſbandmen, in honour of Ceres, as inventreſs and protrectreſs of corn and tillage.

The word is ſometimes alſo written *ἀλῶα*. It is formed of *αλως*, *grange*, or *barn*; it being in theſe places that much of the ſolemnity paſſed.

Authors are not agreed as to the time or occaſion of the celebration of the *aloa*. Some ſuppoſe it to have been before the beginning of harveſt; others will it have it to have been a rejoicing after harveſt, not unlike our *harveſt-home*.

ALOE, a name applied to three different things. 1. To a very precious and ſcarce tree. 2. To a plant, from the roots and leaves of which a drug, very uſeful in phyſic, is extracted. 3. To that drug itſelf.

Moſt authors miſtake the plant and tree for each other; becauſe, no doubt, we have but little knowledge of the tree; and the drug which the plant produces is much better known, and of much greater uſe.

The *aloe* tree grows in China, in the kingdom of Lao, and in Cochinchina, Champac, and Sumatra. It is about the ſame height and form as the olive tree; its trunk is of three colours, and contains three ſorts of wood: the heart is that of *tambac*, or *calombac*, which is dearer in the Indies than even gold itſelf; it ſerves to perfume cloaths and apartments, is a ſovereign cordial in fainting fits, and againſt the palſy. It deſtroys the *tineæ* and *aſcarides* in children. It is uſed at ſacrifices, as incenſe, by the Chineſe, and all the heathen Moors. It is alſo uſed to ſet the moſt precious jewels that are worked in the Indies.

The *aloes* wood is very highly valued; and divers ſtrange fables have been invented as to the origin of the tree that yields it; ſome feign that it grew in Paradiſe, and was only conveyed to us by means of the rivers overflowing their banks, and ſweeping off the trees in their way. Others ſuppoſe it to grow on inacceſſible mountains, where it is guarded by certain wild beaſts, &c.—The Siameſe ambaſſadors to the court of France, in 1686, who brought a preſent of this wood from their emperor, firſt gave the Europeans any conſiſtent account of it.

ALOE-*plant*. The characters of this plant are theſe: the flower is liliaceous, and conſiſts of one petal, which is of a tubular form, and is divided into ſix ſegments at the edge. In ſome ſpecies of this genus, the cup, and in others the piſtil, finally becomes a fruit, or ſeed-veſſel, of an oblong cylindric form, divided into three cells, and containing flat and ſemicular ſeeds. Tournefort ranges this plant in his ninth claſs, and Linnæus in his ſixth, called *hexandria monogynia*; becauſe the flowers have ſix ſtamina, and one ſtyle.

Mr. Miller enumerates twenty-five ſpecies of this plant, which grow in divers parts of the Eaſt and Weſt Indies; and is alſo found in ſome countries of Europe, as Spain, and particularly the mountains of Sierra Morena.—Its leaves are green, very thick, hard, and prickly, yielding a kind of ſtrong threads, whereof laces may be made.

The ſoil in which theſe plants thrive beſt, is one half freſh, light earth, from a common; and if the turf is taken with it, and rotted, it is much better; the reſt ſhould be white ſea-ſand, and ſifted lime rubbiſh, each of theſe two, a fourth part; mix theſe together ſix or eight months at leaſt before it is uſed, obſerving to turn it over often in this time. The middle of July is a very proper ſeaſon to ſhift the plants; at which time you may take them out of the pots, and with your fingers open the roots, and ſhake out as much of the earth as poſſible, taking off all dead or mouldy roots, without wounding the young freſh ones: then fill the pot about three parts full of the above mentioned earth, putting a few ſtones at the bottom of the pot to drain off the moiſture; and after diſpoſing the roots in ſuch a manner as to prevent their interfering too much with each other, put in as much of the ſame earth, as to fill the pot almoſt to the brim, ſhaking the plant ſo as to let the earth in between the roots, and ſettling it cloſe to the roots with your hand, to place it ſteady in the pot; then water them gently, and ſet them abroad in a ſhady place, where they may remain for three weeks, giving them gentle waterings, if the weather be hot and dry. Toward the latter end of September, in a dry day, remove them into the houſe again, obſerving to give them as much free open air as poſſible, while the weather holds warm; but if the nights are cool, you muſt ſhut up the glaſſes, and give them air only in the day; and as the cold increaſes, you muſt decreaſe opening the glaſſes, only giving them gentle waterings till the middle of October, when you muſt abate them according to the heat of the houſe in which they are kept. For thoſe plants which are placed in a ſtove, will require to be watered at leaſt once a week, moſt part of the winter, whereas thoſe which are kept in a green-houſe, without artificial heat, ſhould not be watered in the winter oftener than once in a month.

The tender ſorts ſhould conſtantly remain in the ſtove, or be removed in the ſummer to an airy glaſs-caſe, where they may have free air in warm weather, but be protected from the rain and cold. With this management the plants will thrive and increaſe; and ſuch of them as uſually flower, may be expected to produce them in beauty at their ſeaſons.

Some *aloes* are arboreſcent, inclining to make large trees, breaking forth into branches; others are ſo ſmall, that a whole plant does not exceed the bigneſs of a crown piece. Some grow cloſe to the ground, others are more aſpiring, and have their crown of leaves raiſed upon a ſtem, ſomewhat above the earth. The kind moſt common in our gardens, with ſome few other ſorts, are brought from America; but the greateſt varieties, and as ſome think, the beſt kinds, come from Africa, chiefly from the Cape of Good Hope.

The two kinds moſt conſiderable, the one for its curioſity, the other for its uſe, are the *aloe Americana*, or flowering *aloe*, and the *aloe Aſiatica*, or drug *aloe*.

The American *aloe* ſeldom flowers in cold climates. See AGAVE.

ALOE, *baſtard*, *aletris*, in *Botany*, a genus of the *hexandria monogynia* claſs; the corolla is funnel-ſhaped, and furrowed; the ſtamina are inſerted in the baſe of the ſegments, and the capſula has three cells.

ALOE, *water*, *ſtratiotes*, in *Botany*, of the *polyandria hexagynia*. Its characters are theſe: it has but one flower incloſed in a compreſſed obtuſe ſheath, compoſed of two leaves, which are keel-ſhaped, and permanent. The empalement of the flower is of one leaf, trifid, and erect. It has three almoſt heart-ſhaped petals, which are twice the ſize of the empalement, and about twenty ſtamina inſerted in the receptacle of the flower, terminated by ſingle ſummits. The germen is ſituated under the empalement, ſupporting ſix ſtyles, divided in two parts, crowned by ſingle ſtigmas. The germen becomes an oval capſule, narrowed on every ſide, having ſix angles, and as many cells, filled with oblong incurved ſeeds. We know but one ſpecies, which is ſhaped like the *aloe*, and grows plentifully in ſtanding waters in the iſle of Ely, and other places.

ALOES, in *Medicine* and *Pharmacy*, the inſpiſſated juice of a particular ſpecies of the foregoing plant, much uſed as a purgative remedy, but very improper for ſuch as are ſubject to the piles.

The juice, or extract, for Neumann thinks it is the true extract, of *aloes*, is uſually diſtinguiſhed into three kinds.—The firſt, which is called *Socotorine*, as being brought from Socotora, is the pureſt and moſt tranſparent; being friable, inodorous, black in the lump, but of a beautiful yellow colour when broken.—It is brought in ſkins from the Levant and Eaſt Indies.

The ſecond is called *hepatic*, becauſe of its liver-colour: it is reſinous, ſmells ſomewhat like myrrh, has a yellow colour when pounded, and is brought from China and Barbadoes.—Some confound this with the following ſort; as, in effect, there are but two ſorts commonly known in our ſhops.

The third is the moſt impure, the blackeſt, and the ſtrongeſt.—It was formerly uſed by the Indians to pitch their veſſels with; and is of little uſe among us, excepting for horſes and cattle; for which reaſon it is called *caballine*, i. e. *horſe-aloes*.—It is prepared in Jamaica and Barbadoes, and brought over in large gourds.

A late writer deſcribes the preparation of *aloes* thus: the leaves being pulled from the roots of the tree with the hand, or an inſtrument, and preſſed, diſtil a juice, of which the thick parts will ſubſide, and the thinner are poured off, and put in the ſun till it dries and hardens, in which time it gains a yellow colour. This is called *aloe Socotorina*. The thicker part remaining is put into another veſſel, and by being inſpiſſated in the ſun, gains a liver-colour, and is called *aloe hepatica*. The thickeſt part is called *caballina*, or horſe-*aloes*.

The general nature of theſe three kinds is the ſame; their particular differences conſiſt in the different proportions of gum to their reſin, and in their flavours, which render them more or leſs diſguſtful for internal uſe. Good *aloes*, Neumann ſays, muſt be gloſſy, not very black, but brown; when chewed, rubbed, or cut, of a yellow colour; compact, but eaſy to break; eaſily ſoluble, of an unpleaſant ſmell, and an extremely bitter taſte. Such as is black, firm, and hard to break, we may ſuſpect, he ſays, to be adulterated.

From M. Boulduc's analyſis by extraction, it appears, that the *Socotorine aloes* contains ſcarce half the quantity of reſin or ſulphureous matter, and about a third more, of ſaline ſubſtance, than the *hepatic*. As for the horſe-*aloes*, it is ſo impure, and contains ſo much earth in proportion to its ſulphur and ſalts, that it deſerves not to be regarded.

The different proportion of the principles of the *Socotorine* and *hepatic aloes*, might well be the cauſe of their different properties. As the reſinous part of *aloes*, contrary to other cathartics charged with reſin, is little or nothing purgative; the *Socotorine*, which has the leaſt of that reſin, has been always preferred to the *hepatic* for inward uſes; and on the contrary, the *hepatic*, which has more of it, excels as much the other in its external uſefulneſs, for cleaſing wounds, and cloſing the lips of recent cuts, &c. M. Boulduc equals it in that reſpect to the natural balſams. It is plain enough that theſe effects are the natural reſult of the reſinous and balſamic parts. The ſalts of *aloes* are very active, and corrode the extremities of the veins, where the fibres are fineſt; whence proceed hæmorrhages. Therefore it highly concerns us that the ſaline part, which wants to be reſtrained by the reſinous, be not ſeparated from it; and yet this is the caſe in ſeveral preparations of *aloes*, when they have not been made by ſkilful hands. They have rejected the reſinous part as too groſs and good for nothing, becauſe it kept at the bottom of the ſolution. Hiſt. de l'Acad. Roy. des Scienc. 1708.—It is very obſervable that the eſſence of *aloes* ſtains the glaſs wherein it has been kept for ſome time of a deep red colour, covering it as it were with a coat of fine tranſparent varniſh, which no other eſſence does. Neumann's Works, p. 307.

Aloes is extremely bitter, and purgative, whence ſome have called it *fel naturæ*; externally applied, either in ſubſtance or tincture, it prevents putrefaction and gangrene.—Its bitterneſs makes it ſo nauſeous, that it is rarely uſed in liquid forms, but it is generally made into pills, whereof half a dram is an ordinary doſe.—Scarce any of the officinal purging pills are without this in their compoſition.

Its cathartic virtue is beſt employed in watery, cold, and corpulent conſtitutions, as it heats and attenuates; being bad for thin and hectic conſtitutions. It is accounted efficacious in promoting the menſes; and is alſo good to deſtroy worms.—Guy Patin decries *aloes* as a ſorry and noxious drug, which heats and dries the liver, diſpoſes towards a dropſy, cauſes the piles, &c.

The *aloes*, as imported, is uſually too foul for medicinal purpoſes; as having a mixture of ſtraws, ſticks, or gritty matter. To purify it, they gently diſſolve it in water, enough to paſs it conveniently through a flannel cloth when warm, and afterwards evaporate it to a conſiſtence. Some for this purpoſe uſe ſpirit of wine, and others ſpirit of tartar, under the notion of better correcting the *aloes*; but that diſſolvent ſeems moſt ſuitable, which leaves the drug its native qualities, after refinement, referring it to the phyſician afterwards to correct it in preſcription as he pleaſes.

This drug applied to ſores will cauſe a purging. Thus we find in the Medical Eſſays, that a paſtil made of myrrh, *aloes*, and honey, having been put every day into a cavity formed by an ulcer in the bone, the patient had a conſtant purging, which ceaſed the day after the *aloes* was omitted. Med. Eſſ. Edinb. vol. v. art. 241.

Where it is alſo obſerved, that the tincture of *aloes*, applied to ulcers and carious bones, frequently brings on a purging.

Aloes is a prime ingredient in *elixir proprietatis*, and *ſpecies hiræ picræ*, with which the *tinctura ſacra* is made.

Aloes was uſed among the ancients, in embalming, to preſerve bodies from putrefaction. Of this *aloes*, interpreters underſtand that to have been which Nicodemus in the Goſpel brought to embalm the body of Chriſt. John, ch. xix. ver. 39.

Several authors have treated expreſly on *aloes*; as Bejer and Major; Duroſtantis on its ſubſtance; Marquis on its virtue; Martinez on its choices; Fuchſius and Puteanus on its opening the veins.—Many particulars alſo relating to *aloes* are given occaſionally by botanic and pharmaceutical writers.

Aloe *roſata*, is a preparation of the *Socotorine aloes*, made by diſſolving it in juice of damaſk roſes, and evaporating it to the conſiſtence of a paſte. Then, more juice is added, and the evaporation repeated, again and again.—This is held a gentler and ſafer cathartic than the *aloes* alone. If this be diſſolved in a good quantity of the freſh juices of roſes, violets, borage, and bugloſs, mixed in equal proportions, and afterwards reduced by evaporation to its former conſiſtence, the extract, thus prepared, is called ALOE *inſuccata*, and with the addition of one third its weight of cream of tartar, ALOE *inſuccata tartarizata*.

Aloe *violata*, is prepared by means of the expreſſed juice of violet flowers; and mixed with half its weight of cream of tartar, it is called *aloe violata tartarea*.

Aloe is applied by ſome writers, to a kind of mineral juice produced in Judea.

This is called foſſile, mineral, or metalline *aloe*.—Some diſpute the exiſtence of any ſuch *aloe*. Others ſuppoſe it to be no other than the ASPHALTUS.

Aloes, *lignum*. This wood, of which we have ſpoken before, by the Indians and Portugueſe is called *calamba*, or *calambac*, being the ſame with what is otherwiſe called by medical writers *xyloaloes*, and *agallochum*.

Grew deſcribes a piece of *lignum aloes*, with its own gum growing on it, in the repoſitory of the Royal Society. See Grew, Muſ. Reg. Soc. p. ii. c. 1. p. 179.

ALOEDARY, *aloedarium*, αλοηδαριον, denotes a purging medicine, wherein *aloes* is an ingredient.

This amounts to the ſame with what we otherwiſe call an ALOETIC.

Aloedary is alſo uſed for a hiſtory of the claſs of plants, under the denomination of ALOES.

ALOETICS, medicines wherein *aloes* is the chief, or fundamental ingredient.

Aloetics open the orifices of the veſſels, and are on this account found hurtful in caſes of hæmorrhages, particularly at the noſe; alſo in the *teneſmus*, *hemicranium*, &c. The immoderate uſe of *aloetics* tends to produce hæmorrhoids, hypocondriac pains, and inflations.

Joannius has a treatiſe expreſs on *aloetic* pills.

ALOEUS, a ſpecies of *ſcarabæus*, or *beetle*, found in America.

ALOGIANS, ALOGI, or ALOGIANI, a ſect who denied that Jeſus Chriſt was the *Logos*, or eternal word; and on this ground alſo rejected the Goſpel of St. John as ſpurious.

The word is compounded of the privative α, and λογος, q. d. *without Logos*, or *Word*.

Some aſcribe the origin of the name, as well as of the ſect of *Alogians*, to Theodore of Byzantium, by trade a currier, who, having apoſtatized under the perſecution of the emperor Severus, to defend himſelf againſt thoſe who reproached him therewith, ſaid, that it was not God he denied, but only man. Whence his followers were called in Greek αλογοι, becauſe they rejected the Word. But others, with more probability, ſuppoſe the name to have been firſt given them by Epiphanius in the way of reproach. They made their appearance toward the cloſe of the ſecond century.

ALOGOTROPHIA, in *Medicine*, an irregular nutrition of ſome part, attended with a vicious figure or conformation thereof, as in the rickets.

If the bones of the *vertebræ* of the back receive too much nutriment on one ſide, as ſometimes happens in children, an incurvation neceſſarily enſues, which, as Charleton expreſſes it, is produced by an *alogotrophia*.

ALOIDES, in *Botany*, a name uſed by ſome for the *aloe paluſtris*, or freſh water aloe, called in ſome parts of England *water*-SOLDUC; and by Linnæus, *ſtratiotes*.

ALOOF. See LUFF.

ALOPECIA, in *Medicine*, a total falling off of the hair from certain parts, occaſioned either by the defect of nutritious juice, or by its vicious quality corroding the roots of it, and leaving the ſkin rough and colourleſs.

The word is formed from αλωπηξ, *vulpes*, a *fox*; whoſe urine, it is ſaid, will occaſion baldneſs; or becauſe it is a diſeaſe which is common to that creature.

The *alopecia* properly differs from *defluvium capillorum*, as in the former, certain parts or patches are left entirely bald, whereas in the latter, the hair only grows immoderately thin. It alſo differs from the *ophiaſis*, as this latter creeps in ſpires about the head, like the windings of a ſerpent, whereas the former is not confined to any figure. See PLICA *Polonica*.

The cauſe as well as cure of the *alopecia* is the ſame as that of the *ophiaſis*; though ſome would make a difference; urging that the primary intention in the former, is to correct or carry off the vicious humour; in the latter, to ſupply the want of nutriment to the cutaneous parts. The remedies which remove the proximate cauſe of this malady, are called μετασυγκριτικα, *metaſyncritica*. Here, firſt, if any corrupt hairs ſtill remain, they are to be drawn out either with tweezers, or by *dropaciſm*; or the place muſt be ſhaved by a razor. Then the head is to be waſhed every night at going to bed, with a lye prepared

pared by boiling the aſhes of vine branches in red wine. A powder made by reducing hermodactyls to fine flour, is alſo recommended for the ſame purpoſe.

In caſes where the baldneſs is total, a quantity of the fineſt burdock roots are to be bruiſed in a marble mortar, and then boiled in white wine, until there remains only as much as will cover them. This liquor, carefully ſtrained off, is ſaid to cure baldneſs, by waſhing the head every night with ſome of it warm. A lye made by boiling aſhes of vine branches in common water, is alſo recommended with this intention. A freſh cut onion rubbed on the part, until it be red and itch, is likewiſe ſaid to cure baldneſs.

A multitude of ſuch remedies are every where to be found in the works of Valeſcus de Taranta, Rondeletius, Hollerius, Trincavellius, Celſus, Senertay, and other practical phyſicians.

ALOPECIA is alſo uſed, by Galen, for a change of the hair to another colour.

ALOPECIAS, in *Ichthyology*, a name of the *vulpes marina*, or *Sea*-FOX.

ALOPECOPITHECOS, in *Natural Hiſtory*, a name derived from the Greek, and given by Aldrovand and others to that ſtrange creature, the OPOSSUM.

ALOPECUROS, ſee Fox-*tail graſs*, a genus of the *triandria digynia*.

ALOPEX, in *Zoology*, a ſpecies of the CANIS, with a ſtrait tail, and black tip. It is commonly called the *field fox*.

ALOSE, a ſort of fiſh, ſomewhat like the *ſardine*, or *pilchard*, in ſhape, but much larger. Some will have it to be the ſhad, but it is quite another fiſh, and is very ſcarce in England. It is one of thoſe called paſſage-fiſh, or fiſh of a ſeaſon, becauſe it never ſwims out of the ſea into rivers, but in the ſpring.

The roes of *aloſes* are as much valued in the Eaſt Indies, as thoſe of the ſturgeon in Ruſſia, and form a very lucrative article of trade.

ALOUCHI, a kind of ſweet-ſcented gum, which runs from the tree that produces white cinnamon.

ALP, in *Zoology*, an Engliſh name uſed by ſome for the BULL-FINCH.

ALPAGE, *alpagium*, in *Ancient Writers*, denotes the privilege of feeding cattle on the ALPS or high mountains, or a ſum paid for the purchaſe of ſuch a right.

This is otherwiſe called *Alpaticum*.

ALPAGNA, an animal much like the *llamus* and *vigognas*, except that its legs are ſhorter, and its muzzle thicker and flatter, ſo that it ſomewhat reſembles a human face. The inhabitants of Peru reckon this animal among the beaſts of burden, and make it carry a hundred weight. Of its wool they make ſtuffs, ropes, and bags, and of its bones tools for weavers. They even make an advantage of its excrement, uſing it for fuel.

ALPAM, is the *ſiliquoſa indica flore tripetalo ſiliquis teretibus pulpa abſque ſeminibus repletis*.

The ſtem of this plant, which divides itſelf twice or thrice, is covered with a bark of an aſhy green colour, inodorous, and of an acid aſtringent taſte. The branches are of a whitiſh wood, have a green pith running through them, and are diſtinguiſhed into joints. The root is red, compoſed of a great number of capillary fibres. The leaves are of a narrow, oblong form, terminating in a point, of a deep green on the outſide, but pale within. They have a ſmell not ungrateful, and taſte ſomewhat acrid. The flowers, which are of a dark purple colour, and inodorous, grow on very ſlender round pedicles, ſometimes two or three together. To the flowers ſucceed the pod, which are ſharp, pointed, round, and full of a carnoſe pulp, without any diſcernible ſeeds. It bears flowers and fruit as well at the end of the year as at the beginning, and is always full of leaves.

Any part of this ſhrub made into an ointment with oil, is a powerful remedy in caſe of the ſcab, and old ulcers. The juice of the leaves, with *calamus aromaticus*, is good againſt the venom of ſerpents.

ALPHA, the name of the firſt letter of the Greek alphabet.

The word is originally Hebrew, formed from *aleph*, the name of the firſt letter in the Hebrew alphabet.

The Greek *alpha* anſwers to what in Engliſh we call ſimply A.

Alpha, according to Plutarch, was placed at the head of all the letters, becauſe in the Phœnician language, it denotes an ox; which, with regard to uſe and ſervice, is the firſt among beaſts.

ALPHA, in *Compoſition*, denotes, ſometimes, *privation*, in the ſame ſenſe with *ατερ*, *without*; ſometimes augmentation, as *αγαν*, *much*; and ſometimes union, as *αμα*, *together*. See A.

ALPHA is alſo uſed as a letter of order, to denote the *firſt*; and of number, to ſignify *one*; but when it was a numerical letter, a little ſtroke, or an acute accent, was drawn above it thus ʹA, to diſtinguiſh it from the mere A, which was a letter of order.

ALPHA and *Omega*, in the *Divine Writings*, ſignify the beginning and the end, or the firſt and the laſt, (viz. before and after all things); and therefore the hieroglyphic of God is formed of theſe two letters A and Ω.

Theſe two letters were made the ſymbol of Chriſtianity, and were accordingly engraved on the tombs of the ancient Chriſtians, to diſtinguiſh them from thoſe of idolaters.

ALPHA is particularly uſed among *Ancient Writers*, to denote the chief or firſt man of his claſs or rank.

In this ſenſe the word ſtands contradiſtinguiſhed from *beta*, which denotes the *ſecond* perſon.

Plato was called the *alpha* of the wits; Eratoſthenes, keeper of the Alexandrian Library, whom ſome called a ſecond Plato, is frequently named *beta*.

ALPHA is alſo a title given by ſome ancient writers to the Jewiſh legiſlator Moſes. The reaſon of the appellation is much controverted.

ALPHABET, the ſeveral letters of a language, diſpoſed in their natural, or accuſtomed order.

The word is formed from the names of the two firſt letters of the Greek *alphabet*, *alpha*, *beta*; which were borrowed from thoſe of the Hebrew, *aleph*, *beth*.

In the Engliſh *alphabet* we reckon 26 letters, viz. *a b c d e f g h i j k l m n o p q r ſ t u v w x y z*. See each under its proper article, A, B, C, &c.

But as there is a much greater number of different ſounds in our language, it is not without reaſon that ſome grammarians maintain, that there ought to be a greater number of letters: as alſo, that the double letters, *x*, *y*, and *w*, and the ſuperfluous ones, *k* and *g*, ſhould be retrenched.

The French *alphabet* contains only 23 letters.—Paſquier indeed maintains it to conſiſt of 25, becauſe he adds the two double letters. & for *et*, and ꝰ for *us*; but thoſe are only abbreviatures. The abbé d'Angeau, on better grounds, reckons 34 different ſounds in the French tongue; and urges, that the *alphabet* ought of conſequence to conſiſt of 34 different characters, ſetting aſide the double letters *x* and *y*, and the ſuperfluous one *q*.

The difference between languages, with reſpect to the number of letters, in their *alphabets*, is very conſiderable: the Hebrew, Chaldee, Syriac, and Samaritan *alphabets*, have each 22; the Arabic 28; the Perſian 31; the Turkiſh 33; the Georgian 36; the Cophtic 32; the Muſcovite 43; the Greek 24; the Latin 22; the Sclavonic 27; the Dutch 26; the Spaniſh 27; the Italian 20; the Indians of Bengal 21; the Bramas 19.

The Ethiopic has no leſs than 202 letters in its *alphabet*, there being 7 vowels, which they combine with each of their 26 conſonants; to which they add 20 other aſpirated ſyllables.—The like is ſaid of the Tartarian; each of their letters is a ſyllable, having one of the vowels joined to its conſonant; as *la*, *le*, *li*, &c.

The Chineſe have no *alphabet*, properly ſpeaking; except we call their whole language their *alphabet*; their letters are words, or rather hieroglyphics, and are in number about 80,000. See Phil. Tranſ. vol. lix. an. 1769, N° 66.

In effect, *alphabets* were not contrived with deſign, according to the juſt rules of reaſon and analogy; but have been ſucceſſively framed, altered, &c. as occaſion offered.—And hence many grievous complaints as to their deficiencies; and divers attempts to eſtabliſh new, and more adequate ones, in their places. Biſhop Wilkins charges all the *alphabets* extant with great irregularities, with reſpect both to the order, number, power, figure, &c.—As to the order, it appears inartificial, precarious, and confuſed; in that the vowels and conſonants are not reduced into claſſes, with ſuch order of precedence and ſubſequence as their natures will bear.—Even the Hebrew order is not free from this imperfection.

As to number, they are both redundant and deficient; redundant, either by allotting ſeveral letters to the ſame power and ſound; as in the Hebrew ס and ש, and the ordinary Latin *c* and *k*, *f* and *ph*; or by reckoning double letters among the ſimple elements of ſpeech; as in the Hebrew צ, the Greek ξ and ψ, the Latin *q*, *cu*, *x*, *cs*, and the *j* conſonant, or jod.—Deficient in divers reſpects, eſpecially in regard of vowels, of which there are ſeven or eight kinds commonly uſed, though the Latin *alphabet* only takes notice of five; whereof two, viz. *i* and *u*, according to our Engliſh pronunciation, are not properly vowels, but diphthongs.

Add, that the difference among vowels, in reſpect of long and ſhort, is not ſufficiently provided for: the ancients, we know, uſed to expreſs a long vowel by doubling its character; as *amaabam*, *naata*, *ree*, *ſeedes*, *ſanctiſſimiis*; though the vowel *i*, inſtead of being doubled, was frequently prolonged, as ÆDILIS, PISO, VIVUS.—The ways uſed in Engliſh for lengthening and abbreviating vowels, viz. by adding *e* quieſcent to the end of a word, for prolonging a ſyllable; and doubling the following conſonants, for the ſhortening of a vowel, as *wane wann*, *ware warr*, &c. or elſe by inſerting ſome other vowel, for the lengthening of it, as *meet met*, *read red*, &c. are all improper; becauſe the ſign ought ever to be where the ſound is.

As to their powers, again, thoſe are not always fixed to the ſame ſignification: the vowels, for inſtance, are generally acknowledged to have each of them ſeveral ſounds: *vocales omnes pluriſonæ*, ſays Lipſius; and Voſſius aſſures us, the ancients uſed their vowels in very different ways, *aliquando tenuius exiliuſque, nunc craſſius, nunc intermedio ſono*. Thus the power of the vowel *i* is expreſſed in writing no leſs than in ſix ſeveral ways, viz. by *e*; as in *be*, *me*, *ſhe*, *ye*; by *ee*, in *three*, *free*, *wee*; by *ie*, in *field*, *yield*, *ſhield*, *chief*; by *ea*, in *near*, *dear*, *hear*; by *eo*, in *people*; by *i*, in *privilege*. So is the power of the vowel *a*; as in *all*, *aul*, *aw*, *fault*, *caught*; which are only various ways of writing the ſame long vowel; beſides the other diſtinct ways of expreſſing the ſame vowel when uſed ſhort: again, the power of the vowel *o* is written five ways: *o*, as in *to*, *who*, *move*; *oe*, as in *doe*; *oo*, in *ſhoo*, *moon*, *noon*; *ou*, in *could*, *would*; *wo*, in *two*; and ſo of the reſt.—Nor are the conſonants of more determinate powers; witneſs the different pronounciation of the ſame letter *c* in the ſame word *circo*; and of *g* in *negligence*.—To ſay no more, the letters *c*, *ſ*, *t*, are uſed alike, to denote the ſame power; and the letter *ſ* is commonly uſed for *z*; and which is yet worſe, ſome letters of the ſame name and ſhape, are uſed at one time for vowels, and at another for conſonants; as *j*, *v*, *w*, *y*; which yet differ from one another, ſays biſhop Wilkins, *ſicut corpus & anima*.

From this confuſion in the power of letters, there ariſe divers irregularities; as, that ſome words are diſtinguiſhed in writing, which are the ſame in pronunciation, e. gr. *ceſſio* and *ſeſſio*, &c. and others are diſtinguiſhed in pronunciation, which are the ſame in writing; as *get*, *acquirire*, and *get*, *gagates*, &c. Hence alſo the Latin *malè* is a diſſyllable, and the Engliſh *male* is a monoſyllable.

The names alſo, in moſt *alphabets*, are very improperly expreſſed by words of divers ſyllables; *alpha*, *beta*, &c. in which reſpect, the Roman and our Engliſh *alphabets*, which only name the letters by their powers, have a great advantage over the reſt.

Laſtly, their figures are not well concerted; there being nothing in the characters of the vowels anſwerable to the different degrees of apertion; nor in the conſonants, analogous to the agreements or diſagreements thereof. Wilkins's Eſſ. towards a real Character, &c. b. i. c. 4.

All theſe imperfections are obviated in the *univerſal alphabets*, or characters, of Mr. Lodowic, biſhop Wilkins, &c. See *Univerſal* CHARACTER.

In the French king's library, is an Arabic work, intitled *Sephat Alacham*; containing divers ſorts of imaginary *alphabets*, which the author diſtributes into *prophetical*, *myſtical*, *philoſophical*, *magical*, *taliſmanical*, &c.

Monſieur Leibnitz had it in view to compoſe an *Alphabet of Human Thoughts*. Mem. de l'Acad. Roy. an. 1716.

It is no wonder that the number of letters in moſt languages ſhould be ſo ſmall, and that of the words ſo great; ſince from a calculation made by Mr. Preſtet, it appears, that, allowing only twenty-four letters to an *alphabet*, the different words or combinations that may be made out of thoſe twenty-four letters, taking them firſt one by one, then two by two, three by three, &c. would amount to the following number, 1391,724288,887252,999425. 128493,402200. See COMBINATION.

It may be here obſerved, that every combination may make a word, even though that combination have not any vowel in it; becauſe the *e* mute, or quieſcent, inſinuates itſelf imperceptibly between the conſonants, or after the conſonants, where they are but two, the latter of which would not be heard without it.—The uſe of this ſilent *e* is very remarkable in the Armenian, Welſh, and Dutch languages; wherein the generality of words have ſeveral conſonants together.

Nor muſt it be omitted, that every ſingle letter may make a word: which is very apparent, where the letter is a vowel; words of that kind being found in moſt languages. Thus, *α* and *ω* make words in the Greek; *a*, *o*, in the Latin; *a*, *i*, *o*, in Engliſh; *a*, *o*, *y*, in French; *a*, *e*, *i*, *o*, in Italian; *a*, *y*, in Spaniſh; *a*, *o*, in the Portugueſe; *o*, in moſt languages, and even in the Dutch and Swediſh. Any conſonant alſo becomes a word, by adding an *e* mute to it in pronunciation.

In fine, though a conſiderable number of the poſſible combinations of twenty-four letters were retrenched, yet the number remaining would ſtill be immenſe, and vaſtly ſuperior to that of the words in any language known.

Of all known languages, the Greek is looked upon as one of the moſt copious, the radices only of which are eſteemed about 3244; but then it abounds exceedingly in compounds, and derivatives. Biſhop Wilkins thinks theſe may be moderately computed at about ten thouſand. Hermannus Hugo, indeed, aſſerts, that no language has ſo few as 100000 words; and Varro is frequently quoted by learned men, as if he affirmed that there are in the Latin no leſs than 5000000; but upon enquiring into the ſcope of the paſſage, biſhop Wilkins obſerves, that this number is not intended by him to expreſs the juſt number of words in the Latin; but the great variety made thereof, by the inflexion and compoſition of verbs.—To this purpoſe he lays it down, that there are above one thouſand radical verbs in the Latin; and that each verb admits of five hundred ſeveral varieties. He further ſuppoſes, that each of theſe may be compounded with nine prepoſitions; as *ceſſit*, *receſſit*, *acceſſit*, *deceſſit*, *præceſſit*, *proceſſit*, *ſucceſſit*, &c. which amounts to five millions. See WORD.

Concerning the origin and progreſs of *alphabetical* writing, ſee LETTERS.

ALPHABET, in matter of *Polygraphy*, is a duplicate of the key or cypher, which each of the parties correſponding are to keep by them.

It is properly an *alphabet* of the uſual letters diſpoſed in their order; oppoſite, or underneath which, are the ſecret characters correſponding thereto, with the blank or uſeleſs letters, and the other ſigns or ſymbols ſerving to obſcure, and render it difficult to DECIPHER.

ALPHABET, among *Merchants* and *Traders*, is a kind of index, with the twenty-four letters in their natural order, in which are ſet down the names and ſurnames of thoſe with whom open accounts are kept; and which refers to the folios of the ledger where thoſe accounts are written, in the form of debtor and creditor; ſerving to find eaſily, and without any trouble, ſuch accounts as are neceſſary to be turned to.

ALPHABET, among the French, ſignifies alſo thoſe punches of iron tools, which engravers upon metal uſe to engrave the ſeveral letters, or characters, which belong to their works, either for legends, or for other inſcriptions. The book-binders have alſo ſmall braſs tools, which they call alphabets, and with which they put the titles, and the number of the volume, on the back of books.

ALPHÆNIX, white barley-ſugar, to which is given an extraordinary name, to render it more valuable. This ſugar, which is thought good for colds, is made of common ſugar, which is boiled until it becomes eaſy to crack, when they pour it upon a marble table, greaſed with oil of ſweet almonds, and mould it into various figures with a braſs crotchet. It is eaſily falſified with ſtarch.

ALPHARD. See COR *hydræ*.

ALPHERATZ, in *Aſtronomy*, a fixed ſtar of the third magnitude in AQUARIUS.

This is otherwiſe called *alpharatz*. Some alſo give the denomination *enif alpharatz*, and *marchab alpharatz*, to two other ſtars in the right ſhoulder of PEGASUS.

ALPHESERA, in *Botany*, a name by which the Arabian, and ſome other authors, expreſs the white BRYONY.

ALPHESTES, in *Ichthyology*, the name of a fiſh, called by others CINÆDUS, ſeeming to approach very much to the *turdus*, or *wraſſe* kind, but having the rays or nerves of its back-fin prickly all the way to the tail; whereas the *turdi* have only the anterior rays of that fin prickly, the reſt ſmooth. It is a ſmall fiſh, and is always caught about the ſhores, and among rocks: its back is purple, and its ſides and belly yellowiſh. Its mouth is ſmall, and has thick and fleſhy lips. Geſner.

ALPHETA, in *Aſtronomy*, a fixed ſtar in the northern crown; otherwiſe called *lucida coronæ*.

ALPHITIDON, in *Surgery*, a ſpecies of fracture, wherein the bone is broken into a great number of ſmall parts, or particles.

The word is formed of αλφιτον, *farina*, *flour*; q. d. a bone ground to flour or powder.

ALPHITOMANTIA, in *Antiquity*. See ALEUROMANCY.

ALPHONSIN, is the name of a ſurgeon's inſtrument, uſed in the extraction of bullets from the body.

The *Alphonſin*, ſo called from its inventor Alphonſus Ferrier, a phyſician of Naples, conſiſts of three branches, which are cloſed together by means of a ring. The inſtrument thus cloſed, being conveyed into the wound to the bullet, the operator draws back the ring towards the handle, upon which the branches opening themſelves, lay hold of the ball: after this he puſhes the ring again, from the haſt, whereby the branches graſp the bullet ſo firmly, that it muſt needs come out with them.

ALPHONSINE *Tables*. See TABLES.

ALPHOS, in *Medicine*, a diſtemper deſcribed by Celſus, under the name of *vitiligo*; wherein the ſkin is rough, and becomes ſprinkled as it were with drops of white; and are thence denominated *leuce*. Where the ſpots are black, it is called *nigra*; and is alſo called *melane*. It bears the ſame relation to the *leuce*, as the *ſcabies* to the *lepra*; the firſt is ſuperficial and cutaneous, the ſecond ſinks deeper into the fleſh. The *alphos melas*, and *leuce*, are but one and the ſame diſorder, only differing in its degree of inveteracy.

ALPIEU, ſee BASSET.

ALPINE, ſee CISALPINE.

ALPINIA, in *Botany*, ſo called from Proſper Alpinus, a celebrated botaniſt, who died in 1616, a genus of the *monandria monogynia* claſs. Its characters are theſe: the flower has one *ſtamen*, and one ſtyle; it is cut into ſix parts at the top, and has a ſwelling tube, with three ſpreading lobes.

We know but one ſpecies of this genus, viz. the white branching *alpinia*, with leaves like the flowering reed. This plant is a native of the Weſt Indies, from whence it has been brought into ſome of the curious gardens of Europe, where it muſt be preſerved in a warm ſtove, and the pots plunged into a hot-bed of tanner's bark, otherwiſe it will not thrive in this country. The leaves decay every winter, and are puſhed out from the roots every ſpring like the ginger and *maranta*, ſo ſhould be managed in the ſame manner as is directed for thoſe two plants; and may be propagated by parting the roots, when the leaves decay. It grows naturally in moiſt places in the Weſt Indies.

ALPISTE, or ALPIA, a ſort of ſeed uſed to feed birds with, eſpecially when they are to be nouriſhed for breeding. The *alpiſte* ſeed is of an oval figure, of a pale yellow, inclining to an iſabel colour, bright and gloſſy. It is an article of the corn-chandlers and ſeedſmen's trade.

ALPS, in *Geography*, beſides its proper ſignification, by which it denotes a certain chain of mountains, which ſeparate Italy from France and Germany, is ſometimes uſed as an appellative to denote any mountains of extraordinary height.

In this ſenſe, Auſonius, and others, call the Pyrenean mountains, *Alps*; and Gellius, the Spaniſh *Alps*, *Alpini Hiſpani*.

Sidonius gives the ſame appellation of *Alps*, to mount Athos. Other authors ſpeak of Norman *Alps*, *Alps Arvennæ*, *Alpes Aſtoricenſes*, *Alpes Dofrinæ*, *Alpes Romaniæ*, *Alpes Baſtarnicæ*.—The Appennines are alſo called by Johannes Villeneuf, *Alpi D'Appennini*.

ALPS is alſo uſed to denote paſtures on the mountains, wherein cattle are fed in the ſummer time; or rather in the vallies, and ſpaces between the mountain tops. Some will have this to be the primary ſignification of the word *Alps*, which is ſuppoſed by theſe authors literally to denote the ſtreights or apertures between hills.

ALQUIER, which is alſo called *cantar*, a liquid meaſure for oil, uſed in Portugal. It contains ſix *cavadas*, or *canadors*. Two *alquiers* make an *almeede*, or *almonde*.

ALQUIER is alſo a meaſure for grain, at Liſbon.

ALQUIFOU, or ARQUIFOU, as the merchants ſpell it, is a ſort of mineral *lead*, very heavy, eaſily reduced into powder, and hard to melt. When it is broken, it parts into ſhining ſcales, much like the colour of needles of antimony. The potters uſe it to give their works a green varniſh. In England it is commonly called *potter's* ORE. It is found in Cornwall; the potters mix manganeze with it, and then the varniſh, or glazing, on their wares, becomes of a blackiſh colour.

ALRAMECH, or ARAMECH, in *Aſtronomy*, the Arabic name of a ſtar of the firſt magnitude, otherwiſe called ARCTURUS.

ALRATICA, among the Arabian *Phyſicians*, is where the *vulva*, or *vagina*, of a woman is imperforate, or at leaſt the *foramen* ſmaller than ordinary, whether naturally, or by accident.

ALRAUPE, in *Ichthyology*, a name given by the Germans, to the *muſtela fluviatalis*, or eelpout, a ſpecies of the GADUS

ALRUKAK, in the *Materia Medica*, a word uſed by Avicenna, and others of his nation, for what was called by the Greeks *leptos libanotis*, and *manna thuris*. This was the fragments of frankincenſe, which were broken off from the larger pieces in the collecting or packing up, and were moſt eſteemed in medicine, as being the drieſt and pureſt kind.

ALRUM, in the *Botanical Writings of the Ancients*, a name given to the tree which produces the *bdellium*. This gum was originally known to be the exſudation of a tree growing in Arabia and the Eaſt Indies, and well known to Avicenna and others, and by all of them called by that name.

ALRUNES, a name given by the ancient Germans to ſmall figures of wood of which they made their LARES.

ALSADAF, in the *Materia Medica*, a name given by Avicenna and Serapio, to the *unguis odoratus*, and alſo to the *murex*, or purple fiſh, of the ſhell of which it was ſuppoſed to be a part

ALSAHARATICA, a name uſed in *Botany*, by ſome, to ſignify the *parthenium*, or FEVERFEW.

ALSCHARCUR, in the *Materia Medica*, a name given by Rhaſes, and ſome other of the old writers, to the SKINK, a ſmall animal of the lizard kind, uſed in medicine as a cordial, and as a provocative to venery.

ALSCNEFU, in *Botany*, a name uſed, by ſome authors, for WORMWOOD.

ALSEBON, a name given by ſome of the chemical writers, to ſea-ſalt.

ALSIMBEL, in the *Materia Medica*, a name given, by Avicenna and others, to the *ſpikenard* of India. It is thus called from its having the appearance of a ſpike, or ear, and alſo *ſimbalath*, a word which ſignifies its being a *congeries* of many ſpikes, or ears, and ſuch is much of the *nardus Indica*, or Indian *ſpikenard*, that we receive at this day.

ALSINASTRUM, in *Botany*, the *elatine* of Linnæus; a name given by Vaillant to a genus of plants, on account of their general reſemblance to the *alſines*, or *chickweeds*. The characters of the *alſinaſtra* are theſe: the flower and fruit are the ſame with thoſe of the *alſine*; but the flower-cup in theſe is compoſed only of one leaf, whereas in thoſe it is made up of ſeveral. Tournefort mentions two ſpecies. Inſt. 244.

ALSINE, CHICKWEED, in *Botany*, a genus of the *pentandria trigynia* claſs of plants, the calyx of which is a perianthium, conſiſting of five concave, oblong, and acuminated leaves; the corolla conſiſts of five equal petals, longer than the cup; the fruit is an oval covered capſule, containing only one cell, with three valves; the ſeeds are numerous and roundiſh.

ALSINELLA, in *Botany*, the name by which Dillenius calls the plant *ſagina*.

ALSINOIDES, the *buſonia* and *montia* of Linnæus.

ALSIRAT, in the Mahometan *Theology*, a bridge laid over the middle of hell, finer than a hair, and ſharper than the edge of a ſword, over which people are to paſs, after their trial, on the day of judgment.

To add to the difficulty of the paſſage, Mahomet aſſures, that the *alſirat*, narrow as it is, is beſet with briars and thorns; none of which, however, will be any impediment to the good, who ſhall fly over it like the wind; Mahomet and his muſſulmen lead the way; whereas the wicked by the narrowneſs of the path, the entangling of the thorns, and extinction of the light, which directed the former to paradiſe, will ſoon miſs their footing, and tumble headlong into hell, which is gaping beneath to receive them. Vid. Sale's Prelim. Diſc. to Koran, ſec. iv. p. 90.

ALSTROEMERIA, in *Botany*, a genus of the *hexandria monogynia* claſs; the corolla of which hath ſix petals, with two lower petals, tubulous at the baſe, and declining ſtamina.

ALT, in *Muſic*. See DIAGRAM and SCALE.

The word is formed of the Latin, *altus*, *high*,

ALTAR, ALTARE, ARA, a place or pile whereon to offer ſacrifice to ſome deity.

The Jews had their brazen *altar*, for burnt-offerings, and a golden *altar*, or *altar* of incenſe.

Among the Romans, the *altar* was a kind of pedeſtal, either ſquare, round, or triangular; adorned with ſculpture, with baſſo relievos, and inſcriptions, whereon were burnt the victims ſacrificed to idols.

According to Servius, thoſe *altars* ſet apart for the honour of the celeſtial gods, and gods of the higher claſs, were placed on ſome pretty tall pile of building; and for that reaſon were called *altaria*, from the words *alta* and *ara*, a high elevated *altar*.—Thoſe appointed for the terreſtrial gods, were laid on the ſurface of the earth, and called *aræ*.—And on the contrary, they dug into the earth, and opened a pit, for thoſe of the infernal gods, which they called βοϑροι λακκοι, *ſcrobiculi*. But this diſtinction is not every where obſerved: the beſt authors frequently uſe *ara* as a general word, under which are included the *altars* of the celeſtial and infernal, as well as thoſe of the terreſtrial gods. Witneſs Virgil, Ecl. 5.

——*En quatuor aras.*

Where *aræ* plainly includes *altaria*; for whatever we make of Daphnis, Phœbus was certainly a celeſtial god. So Cicero, pro Quint. *Aras delubraque Hecates in Græcia vidimus.*

The Greeks alſo diſtinguiſhed two ſorts of *altars*; that whereon they ſacrificed to the gods, was called βωμος, and was a real *altar*, different from the other, whereon they ſacrificed to the heroes, which was ſmaller, and called εσχαρα. Pollux makes this diſtinction of *altars* in his Onomaſticon; he adds, however, that ſome poets uſed the word εσχαρα, for the *altar* whereon ſacrifice was offered to the gods.—The Septuagint verſion does ſometimes alſo uſe the word εσχαρα, for a ſort of little low *altar*, which may be expreſſed in Latin by *craticula*; being a hearth, rather than an *altar*.

The Jews alſo gave the name *altars* to a kind of tables occaſionally raiſed in the country or field, whereon to ſacrifice to God.—In ſuch a place, *he built an* altar *to the Lord.*

Altars were of divers kinds, with regard to their qualities, uſe, matter, form, accidents, and the like, and were ſacred to gods, heroes, virtues, vices, diſeaſes, &c. Thus we read of inner and outer, ſtationary and portable, public and private *altars*, &c.

Altars are doubtleſs as ancient as ſacrifices themſelves; conſequently their origin is not much later than that of the world. Gen. ch. iv.

Some attribute their origin to the Egyptians; others to the Jews; others to the patriarchs before the flood. Some carry them as far back as Adam, whoſe *altar* is much ſpoken of by Jewiſh, and even Chriſtian writers. —Others are contented to make the patriarch Enoch the firſt who conſecrated a public *altar*. Be this as it will, the earlieſt *altars* we find any expreſs teſtimony of, are thoſe erected by Abraham.

ALTAR *of Adam*, in *Antiquity*, is pretended, by ſome rabbins, and others, to have been erected by the firſt man, ſoon after the fall; when being overwhelmed with ſorrow, a promiſe was made him, by the miniſtry of the angel Haziel, that a redeemer ſhould be ſent. In gratitude for this news, and for a perpetual remembrance thereof, Adam is ſaid to have built an *altar*, and ſacrificed on it a heifer.

The reliques of this *altar* have been mentioned by ſeveral writers of late ages.

ALTAR is ſometimes alſo uſed, among Chriſtians, for a ſquare table, placed on the eaſtern ſide of a church, raiſed a little above the floor, and ſet apart for the celebration of the euchariſt.

Its form is not borrowed, either from that of the heathen *altars*, or even from that of the Jews in the temple; but, as the euchariſt was inſtituted by Jeſus Chriſt at ſupper, and upon a table, the modern *altar* is made in form of a table; whence it is more uſually, and even more ſignificantly, denominated *Communion Table.*

In effect, the denomination *altar* is founded on this ſuppoſition, that the euchariſt is a proper ſacrifice; which, though the ſtanding doctrine of the church of Rome, is utterly denied by moſt of the reformed.

In the primitive church, the *altars* were only of wood; as being frequently to be removed from place to place. But the council of Paris, in 509, decreed that no *altar* ſhould be built but of ſtone.

At firſt there was but one *altar* in each church; but the number ſoon increaſed; and from the writings of Gregory the Great, who lived in the ſixth century, we learn, that there were ſometimes in the ſame church twelve or thirteen.—In the cathedral of Magdeburg there are no leſs than forty-nine *altars.*

The *altar* is ſometimes ſuſtained on a ſingle column, as in the ſubteraneous chapels of St. Cæcilia, at Rome, &c. and ſometimes by four columns, as the *altar* of St. Sebaſtian of Crypta Arenaria; but the cuſtomary form is, to be a maſſive of ſtone-work, ſuſtaining the *altar-table.*

Theſe *altars* bear a reſemblance to tombs: to this purpoſe, we read in church-hiſtory, that the primitive Chriſtians chiefly held their meeting at the tombs of the martyrs, and celebrated the myſteries of religion upon them. For which reaſon, it is a ſtanding rule to this day in the church of Rome, never to build an *altar*, without incloſing the relics of ſome ſaint in it.

In lieu of proper *altars*, the Greeks in proceſs of time made uſe of ANTIMENSIA.

ALTAR *of Protheſis*, is a name given by the modern Greeks to a ſmaller, preparatory kind of *altar*, whereon they bleſs the bread, before it be carried to the large *altar*, where the ſolemn liturgy is performed.

F. Goar maintains, that the table of *protheſis* was anciently in the ſacriſty, or veſtry; which he makes appear from ſome Greek copies, where ſacriſty it made uſe of in lieu of *protheſis.*

ALTAR is alſo uſed, in *Church Hiſtory*, for the oblations, or contingent incomes of a church.

In ancient days they diſtinguiſhed between the church and the *altar.*—The tithes, and other ſettled revenues, were called the *church*, *eccleſia*; and the other incidental incomes, the *altar.*

ALTAR, in *Aſtronomy*. See ARA.

ALTAR-*thane*, in our *Ancient Law Books*, denotes a prieſt, or parſon of a pariſh.

In this ſenſe, the word is ſynonymous with *church-thane.*

ALTARAGE, includes not only the offerings made upon the altar, but alſo the profit that ariſes to the prieſt on account of the altar.

ALTARIST, *altariſta*, properly denotes the vicar of a church, who ſerves the altar, and to whom the altarage, or produce of the altar, is aſſigned for his maintenance. Du-Cange.

The *altariſt* is ſometimes alſo called *altararius*, ſometimes *altar-prieſt.*

ALTARIST is alſo uſed for *chaplain.*

ALTASRIF, in *Literary Hiſtory*, the title of a medicinal book, written in Arabic, deſcribing the method of practice in uſe among the Arabs.

It was written by Alſaharavius, an author in the fifteenth century, and tranſlated into Latin by P. Ricius, in 1519. Concerning the hiſtory and contents of the *Al-Taſrif*, ſee Freind, Hiſt. Phyſ. p. ii. p. 124, ſeq.

ALTAVELA, in *Ichthyology*, the name of a flat cartilaginous fiſh, of the *aquila marina* kind; but with its wings, as they are called, that is, its thin and flat ſides, broad and obtuſe toward their lower part. The fiſhermen, from the reſemblance theſe flat ſides have to wings, have an opinion that this fiſh can fly. The tail is very ſhort, ſcarce being of half the length of the body. Its fleſh is ſolid, and well taſted, and it always ſells well in the markets. It is caught in the Mediterranean, and is frequently brought to market at Rome. Fab. Columna.

ALTE' *& baſſe*, in *Middle Age Writers*, denotes ſovereignty, or a thing done with the ſupreme power. Du-Cange.

ALTERANT, or ALTERATIVE, in *Medicine*, a property, or power, in certain remedies, whereby they induce an *alteration* in the body, and diſpoſe it for health or recovery, by correcting ſome indiſpoſition, without occaſioning any ſenſible evacuation.

Alteratives, therefore, muſt generally be either ſuch remedies as deſtroy ſome prevailing acrimony in the *primæ viæ*, or in the juices; or elſe ſuch as reſolve concretions in the blood-veſſels, and diſpoſe them, when thus reſolved, to paſs out of the body by perſpiration, or ſome of the leaſt remarkable evacuations.

Alteratives are generally divided into four kinds, which are, *abſorbents* for imbibing and blunting the acid juices; *temperating medicines* for checking and mitigating the rage of the bilious intemperies; *penetrating medicines* for diſſolving and attenuating the thick and viſcid juices; and, in fine, *demulcents* for ſheathing and mitigating their burning and corroſive acrimony.

We meet with medicines of the purgative kind, repreſented by practical writers as *alterants*; the *colocynth* particularly by Helmont; for all medicines which operate in the fartheſt paſſages, they frequently include under that appellation. Phil. Tranſ. Nº 365.

Dr. Woodward inquires into the efficacy of ſeveral of the moſt celebrated *alterants*, and endeavours to ſhew on what little foundation their great uſe is eſtabliſhed. Of this number, according to him, are the abſorbents, *cortex Peruvianus*, bitters, ſalts, ſteel, and its preparations, mineral waters, &c.

The more efficacious and uſeful *alterants*, according to the ſame writer, are cordials, ſtomachics, attenuants, *mercurius dulcis*, vegetable oils, mucilages, certain abſorbents, and ſome preparations of opium.

According to this learned phyſician, all that is commonly alledged concerning the change of the principles, or ferments of diſeaſes, by *alterant* remedies, is merely chimerical and imaginary; that there is no change made to the advantage of the human body, without a ſucceſſive renovation, and diſcharge of what is hurtful, and a ſupply of its place by ſomething innocent.

The primitive or conſtituent elements of bodies never change their figure, magnitude, ſolidity, or gravity, but remain ſtill the ſame as at the creation. Hence ſome infer, 1. The vanity of all pretences to the tranſmutation of metals. And, 2. The folly of pretending to change the maſs of blood, by thoſe remedies called *alterants.*

The mixtures and combinations of the primitive elements are almoſt infinite, and their alterations as to ſenſe and external appearance is ſo too. It may be added, that among *alterant* medicines, there are ſeveral which change the ſcene of the ſymptoms; others ſuſpend the action of the morbific matter for a time; and others diminiſh the ſenſibility of the organs. But theſe remedies, which hold the morbific principles captive for a time, are only palliatives, and even, on ſome accounts, dangerous, ſince they may as well captivate other principles neceſſary to life. Woodward gives the preference to evacuants, as being the only medicines capable of freeing the machine from that which incommodes it.

Some take a contrary courſe, and aſcribe even the ſalutary effects of evacuants to their *alterative* nature. This has been alledged of mercury in the venereal diſeaſe; the like is urged concerning minoratives, which ſome maintain do not work a cure by evacuation, ſo much as by alteration. The like is alledged of *ipecacuanha* in the cure of dyſenteries, and of divers other emetics, in caſes of apoplexies. In effect, evacuating medicines, as they do not ſeparate the good from the bad, ſeem indifferently diſpoſed, either to do harm or good. See Woodward's State of Phyſic, *paſſim.*

ALTERATE. See SESQUIALTERATE.

ALTERATION, **Alteratio**, in *Phyſic*, the act of changing the circumſtances and manner of a thing; its general nature and appearance remaining the ſame.—Or, it is an accidental, and partial change in a body; without proceeding ſo far, as to make the ſubject quite unknown, or to take a new denomination thereupon.—Or, it may be defined, the acquiſition or loſs of ſuch qualities as are not eſſential to the form of the body.

Thus, a piece of iron, which before was cold, is ſaid to be *altered*, when it is made hot; ſince it may ſtill be perceived to be iron, is called by that name, and has all the properties thereof.

By this, *alteration* is diſtinguiſhed from *generation* and *corruption*; thoſe terms expreſſing an acquiſition or loſs of the eſſential qualities of a thing.

The modern philoſophers, after the ancient chemiſts and corpuſcularians, hold all *alteration* to be effected by means of local motion. According to them, it always conſiſts either in the emiſſion, acceſſion, union, ſeparation, or tranſpoſition, of the component particles.

Ariſtotle makes a peculiar kind of motion, which he calls the *motion of alteration*.

Alteration, is uſed, in *Medicine*, to denote a change in the ſtate and qualities of an animal body, in reſpect of temperature or conſtitution, health or ſickneſs.

In this ſenſe, *alteration* includes both *evacuation* and *accretion*.

Alteration is more ſtrictly taken for a change in the quality of the body, contradiſtinguiſhed from *evacuation* and *appoſition*.

In which ſenſe, *alteration* is the effect of medicines called ALTERANTS.

Alteration is chiefly applied in reſpect of the fluids, or humours of the body. When applied to the ſolids, it is chiefly in reſpect of the humours, or the motions of them.

Alteration is ſometimes alſo applied in reſpect of the vital motions of the body.

Thus ſpecifics are applied to alter and rectify convulſive and other diſorderly motions. The *alteration* of the humours is either extrinſic, or intrinſic.

Alteration, *extrinſic*, is a change produced in the ſenſible appearances, as colour, thickneſs, and the like.

Alteration, *intrinſic*, is a change in the primitive craſis, or conſtitution of a fluid.

Alteration, in a ſenſe ſtill more ſtrict, denotes that converſion which the food undergoes, to render it nouriſhment.

In this ſenſe *alteration* both includes the digeſtion performed in the ſtomach, and the aſſimilation in the habit of the body.

It is diſputed among phyſicians what the *alteration* is which the food undergoes.—Some reduce it to a mere comminution or trituration.—Others aſſert a total tranſubſtantiation. See DIGESTION.

Alteration, in *Alchemy*, denotes the converſion of one body into another by ſimilitude.

Alteration *of quantities*, among *Algebraiſts*, denote what we otherwiſe call variations, or permutations.

ALTERATIVE, in *Medicine*, the ſame with ALTERANT.

ALTERCATION, a debate or conteſt between two friends, or acquaintance.

The word comes from *altercari*; which anciently ſignified to converſe or hold diſcourſe together.

Thus, we ſay, they never come to an open quarrel; but there is continually ſome little *altercation* or other.

ALTERCUM, in *Botany*, a name by which ſome of the old authors expreſs the HYOSCYAMUS, or HENBANE.

ALTERITY is uſed by ſome philoſophers for DIVERSITY.

The word is formed of the Latin, *alter*, *another*.

Alterity amounts to the ſame with what others call *aliety*, *alietas*.

ALTERN *baſe*, a term in *Trigonometry*, contradiſtinguiſhed from *true baſe*, thus—In an oblique triangle, the true baſe is either the ſum of the ſides; in which caſe, the difference of the ſides is called the *altern baſe*; or, the true baſe is the difference of the ſides; in which caſe, the ſum of the ſides is called the *altern baſe*.

ALTERNATE, or ALTERNATIVE, is underſtood of ſeveral things which ſucceed, or are diſpoſed after each other by turns.

We ſay, an *alternate*, or *alternative* office, or truſt, which is that diſcharged by turns; ſo, two general officers, who command each his day, are ſaid to have the command *alternately*.

In *Botany*, the leaves of a plant are ſaid to be *alternate*, or placed *alternatively*, when there is a correſpondence between the two ſides of a branch; the leaves of the one ſtanding a little above thoſe of the other, not one oppoſite to the other.

Alternate, in *Arithmetic*. See ALLIGATION.

Alternate *angles*, in *Geometry*, are the internal angles made by a line cutting two parallels, and lying on the oppoſite ſide of the cutting line; the one below the firſt parallel, and the other above the ſecond.

Thus, x and u, and z and y (*Tab. Geometry*, *fig.* 46.) are *alternate* angles.

There are alſo two external angles, *alternately* oppoſite to the internal ones. See PARALLEL.

Alternate *ratio*, or *proportion*, is where the antecedent of one ratio is to its conſequent, as the antecedent of another to its conſequent; the very ſame ratio, in this caſe, holding *alternately* in reſpect of the antecedents to each other, and the conſequents to each other.

Thus, if $A : B :: C : D$; then, *alternately*, $A : C :: B : D$.

Alternate, in *Heraldry*, is uſed in reſpect of the ſituation of the QUARTERS.

Thus in quarterly *ecartelé*, the firſt and fourth quarters are *alternate*; and are uſually of the ſame nature. And the like holds of the ſecond and third.

ALTERNATION, in its primary ſenſe, denotes a ſucceſſion by turns.

Alternation is more particularly uſed, among *Civilians*, for disjunction, as in ſaying this or that.

ALTERNATIONS, a term ſometimes uſed to expreſs the divers changes, or alterations of orders, in any number of things propoſed.

This is alſo called *permutation*, &c. and is eaſily found by a continual multiplication of all the numbers, beginning at unity.

Thus, if it be required to know how many changes or *alternations* can be rung on ſix bells, multiply the numbers 1, 2, 3, 4, 5, 6, continually one into another; and the laſt product gives the number of changes.

ALTERNATIVE, is particularly uſed for the choice of two things propoſed.—In this ſenſe we ſay, to take the *alternative* of two propoſitions.

ALTHÆA, in *Botany*, a genus of the *monodelphia polyandria* claſs. See MARSH-MALLOW.

ALTIMETRY, **Altimetria**, the art of taking or meaſuring ALTITUDES or heights, whether acceſſible or inacceſſible.

The word is compounded of *altus*, *high*, and *μετρεω*, *metior*, *to meaſure*.

Altimetria makes the firſt part of geometry; including the doctrine and practice of meaſuring both perpendicular and oblique lines; whether in reſpect of height, or depth.

ALTIN, a money of account in Muſcovy; worth three *copecs*, one hundred of which make a *ruble*, worth about four ſhillings and ſix pence ſterling.

ALTINCAR, among *Mineraliſts*, a ſpecies of factitious ſalt uſed in the fuſion and purification of metals.

The *altincar* is a ſort of flux powder. Divers ways of preparing it are given by Libavius.

ALTITH, in *Botany*, a name given by ſome authors to the plant of which the *aſſafœtida* of the ſhops is the gum.

ALTITUDE, **Altitudo**, in *Geometry*, the third dimenſion of body, conſidered with regard to its elevation above the ground—called alſo *height* or *depth*.

Altitude *of a figure*, is the diſtance of its vertex from its baſe, or the length of a perpendicular let fall from the vertex to the baſe.

Thus, K L (*Tab. Geometry*, *fig.* 19.) being taken for the baſe of the rectangle-triangle, K L M; the perpendicular K M will be the *altitude* of the triangle.

Triangles of equal baſes and *altitudes* are equal; and parallelograms, whoſe baſes and *altitudes* are equal to thoſe of triangles, are juſt the double thereof.

Altitude, in *Optics*, is uſually conſidered as the angle ſubtended between a line drawn through the eye, parallel to the horizon, and a viſual ray emitted from an object to the eye.

For the laws of the viſion of *altitude*, ſee VISION.

If through the two extremes of an object, S and T (*Tab. Optics*, *fig.* 13.) two parallels, T V and S Q be drawn; the angle TVS, intercepted between a ray paſſing through the vertex S, and terminating the ſhadow thereof in V, makes, with the right line TV, what is called, by ſome writers, the *Altitude of the Luminary*.

Altitude, in *Coſmography*, is the perpendicular height of an object, or its diſtance from the horizon, upwards.

Altitudes are diveſted into *acceſſible* and *inacceſſible*.

Altitude, *acceſſible*, of an object, is that whoſe baſe you can have acceſs to, i. e. meaſure the neareſt diſtance between your ſtation, and the foot of the object on the ground.

Altitude, *inacceſſible*, of an object, is that when the foot or bottom of it cannot be approached, by reaſon of ſome impediment; ſuch as water, or the like.

There are three ways of meaſuring *altitudes*, viz. *geometrically*, *trigonometrically*, and *optically*.—The firſt is ſomewhat indirect and unartful; the ſecond is performed by means of inſtruments for thv purpoſe: and the third by ſhadows

The inſtruments chiefly uſed in meaſuring of *altitudes*, are the quadrant, theodolite, geometric quadrat, or line of ſhadows, &c. the deſcriptions, applications, &c. whereof, ſee under their reſpective articles QUADRANT, THEODOLITE, and QUADRAT.

ALTITUDES, *to take acceſſible.* To meaſure an acceſſible *altitude, geometrically.*—Suppoſe it required to find the *altitude* AB (*Tab. Geometry, fig.* 88.) plant a ſtaff DE perpendicularly in the ground, of ſuch height as may equal the height of the eye. Then, lying proſtrate on the ground, with your feet to the ſtaff; if E and B prove in the ſame right line with the eye C; the length CA is equal to the *altitude* AB. If ſome other lower point, as F, prove in the line with E, and the eye, you muſt remove the ſtaff, &c. nearer to the object: on the contrary, if the line continued from the eye over E, mark out ſome point above the *altitude* required; the ſtaff, &c. are to be removed farther off, till the line CE raſe the very point required.—Thus, meaſuring the diſtance of the eye C from the foot of the object A, the *altitude* is had; ſince CA=AB.

Or thus: at the diſtance of thirty, forty, or more feet, plant a ſtaff DE (*fig.* 89.) and at a diſtance from this, in C, plant another ſhorter one, ſo as that the eye being in F, E and B may be in the ſame right line therewith. Meaſure the diſtance between the two ſtaves, GF; and between the ſhorteſt ſtaff, and the object, HF; as alſo, the difference of the heights of the ſtaves, GE.—To GF, GE, and HF, find a fourth proportional BH.—To this add the *altitude* of the ſhorter ſtaff, FC. The ſum is the *altitude* required, AB.

To meaſure an acceſſible *altitude*, trigonometrically—Suppoſe it required to find the *altitude* AB (*Tab. Trigonom. fig.* 23.) chooſe a ſtation in E; and with a quadrant, theodolite, or other graduated inſtrument duly placed, find the quantity of the angle of *altitude* ADC. Meaſure the ſhorteſt diſtance of the ſtation from the object, viz. DC; and this of conſequence is perpendicular to AC.

Now, C being a right angle, it is eaſy to find the line AC; ſince, in the triangle ACD, we have two angles, viz. D and A its complement, and a ſide oppoſite to one of them, CD, the ſide oppoſite to the other may be eaſily found by this canon.—As the ſine of the angle A is to the given ſide oppoſite thereto DC; ſo is the ſine of the other angle D to the ſide required CA. See TRIANGLE.

To the ſide thus found, adding BC, the ſum is the perpendicular *altitude* required.

The operation is beſt performed by logarithms. See LOGARITHM.

If there happen an error in taking the quantity of the angle A (*fig.* 24.) the true *altitude* BD will be to the falſe one BC, as the tangent of the true angle DAB, to the tangent of the erroneous angle CAB.

Hence, ſuch error will be greater in a greature *altitude* than in a leſs; and hence alſo, the error is greater, if the angle be leſſer, than if it be greater. To avoid the inconveniences of both which, the ſtation is to be pitched on at a moderate diſtance; ſo that the angle of *altitude*, DAB, may be nearly half right.

Again, if the inſtrument were not horizontally placed, but inclined, e. gr. to the horizon in any angle, the true *altitude* will be to the erroneous one, as the tangent of the true angle to that of the erroneous one.

To meaſure an acceſſible *altitude* optically, by the ſhadow of the body, ſee SHADOW.

To meaſure an acceſſible *altitude* by the geometrical quadrat.—Suppoſe it required to find the *altitude* AB (*Tab. Geom. fig.* 90.) chooſing a ſtation at pleaſure in D, and meaſuring the diſtance thereof from the object DB; turn the quadrat this and that way, till the top of the tower A appear through the ſights.

If, then, the thread cut the right ſhadows, ſay, as the part of the right ſhadow cut off, is to the ſide of the quadrant, ſo is the diſtance of the ſtation DB, to the part of the *altitude* AE.—If the thread cut the verſed ſhadows, ſay, as the ſide of the quadrant is to the part of the verſed ſhadow cut off, ſo is the diſtance of the ſtation DB, to the part of the *altitude* AE.

AE, therefore, being found in either caſe, by the rule of three, and the part of the *altitude* BE added thereto, the ſum is the *altitude* required. See QUADRAT.

ALTITUDE, *to meaſure an acceſſible, geometrically.*—Suppoſe AB (*fig.* 89.) an inacceſſible *altitude*, ſo that you cannot meaſure to the foot of it. Find the diſtance CA, or FH, as taught under the article DISTANCE; then proceed with the reſt as in the article for acceſſible diſtances.

To meaſure an inacceſſible *altitude*, *trigonometrically.*—Chooſe two ſtations, G and F (*Tab. Trigonom. fig.* 25.) in the ſame right line with the required *altitude* AB, and at ſuch diſtance from each other, DF, as that neither the angle FAD be too ſmall, nor the other ſtation G too near the object AB.—With a proper inſtrument take the quantity of the angles ADC, AFC, and CFB. See ANGLE.—And alſo meaſure the interval FD.

Then, in the triangle AFD, we have the angle D, given by obſervation; and the angle AFD, by ſubtracting the obſerved *altitude* AFC, from two right angles; and conſequently the third angle DAF, by ſubtracting the other two from two right ones; and alſo the ſide FD; from whence the ſide AF is found by the canon above laid down, in the problem of acceſſible *altitudes*. And again, in the triangle ACF, having a right angle C, an obſerved angle F, and a ſide AF, the ſide AC, and the other CF, are found by the ſame canon. Laſtly, in the triangle FCB, having a right angle C, obſerved angle CFB, and a ſide CF; the other ſide CB, is found by the ſame canon.

Adding, therefore, AC, and CB, the ſum is the *altitude* required, AB.

To find an inacceſſible *altitude* by the ſhadow, or the geometrical quadrat.—Chooſe two ſtations in D and H (*Tab. Geom. fig.* 90.) and find the diſtance DH, or CG: obſerve what part of either the right or verſed ſhadow is cut by the thread.

If the right ſhadows be cut in both ſtations, ſay, As the difference of the right ſhadows in the two ſtations, is to the ſide of the ſquare; ſo is the diſtance of ſtations GC to the *altitude* EA.—If the thread cut the verſed ſhadow at both ſtations, ſay, As the difference of the verſed ſhadows marked at the two ſtations, is to the leſſer verſed ſhadow; ſo is the diſtance of the ſtations GC, to the interval GE.—Which being had, the *altitude* EB is alſo found by means of the verſed ſhadow in G; as in the problem for acceſſible *altitudes*. Laſtly, if the thread in the firſt ſtation G, cut the right ſhadows, and in the latter, the verſed ſhadows; ſay, As the difference of the product of the right ſhadow into the verſed, ſubtracted from the ſquare of the ſide of the quadrat, is to the product of the ſide of the quadrat into the verſed ſhadow; ſo is the diſtance of the ſtations GC, to the *altitude* required AE.

The utmoſt diſtance at which an object may be ſeen, being given, to find its *altitude.*—Suppoſe the diſtance DB (*Tab. Geography, fig.* 9.) turn this into degrees; by which means, you will have the quantity of the angle C: from the ſecant of this angle ſubtract the whole ſide BC, the remainder will be AB, in ſuch parts, whereof BC, is 10000000—Then ſay, as 10000000 is to the value of AB in ſuch parts, ſo is the ſemidiameter of the earth BC 19695539, to the value of the *altitude* AB in Paris feet.

Suppoſe, e. gr. the *altitude* be required of a tower AB, whoſe top is viſible at the diſtance of five miles: then will DCB 20′, from whoſe ſecant 10000168, ſubtracting the whole ſine 10000000; the remainder AB is 168, which will be found 331 Paris feet.

The method of taking conſiderable terreſtrial *altitudes*, of which thoſe of mountains are the greateſt, by means of the BAROMETER, is very eaſy and expeditious. This is done by obſerving on the top of the mountain how many inches, &c. the mercury is fallen below what it was at the foot of the mountain. When this is done, you will have its *altitude* by the help of a table calculated for that purpoſe. A very accurate table of this kind may be found in the Hiſt. de l'Acad. Roy. des Scien. 1703, and 1705, calculated by M. Caſſini; and alſo in the Phil. Tranſ. Eame's and Martin's Abr. vol. vi. p. 34.

ALTITUDE, *determinative*, in *Mechanics*, is ſometimes uſed for the height, whence a falling body acquires, by acceleration, a certain velocity. Hermannus, Phoron. lib. i.

ALTITUDE *of the eye*, in *Perſpective*, is a right line let fall from the eye, perpendicular to the geometrical plane.

ALTITUDE, in *Aſtronomy*, is the diſtance of a ſtar, or other point, in the mundane ſphere, from the horizon.

This *altitude* may be either TRUE or APPARENT.—If it be taken from the rational, or real horrizon, the *altitude* is ſaid to be *true*, or *real*; if from the apparent or ſenſible horizon, the *altitude* is *apparent.*—Or rather, the apparent *altitude* is ſuch as it appears to our obſervation; and the *true* is that from which the refraction has been ſubtracted.

The true *altitudes* of the ſun, fixed ſtars, and planets, differ but very little from their apparent *altitudes*; becauſe of their great diſtance from the center of the earth, and the ſmallneſs of the earth's ſemidiameter, when compared thereto. But the difference between the true and apparent *altitude* of the moon is about 52′.

The *altitude* of a ſtar, or other point, is properly an arch of a VERTICAL circle, intercepted between the aſſigned point and the HORIZON. Hence

ALTITUDE, *meridian.*—The meridian being a vertical circle; a *meridian altitude*, that is, the *altitude* of a point in the meridian, is an arch of the meridian intercepted between it and the horizon.

To obſerve the *meridian altitude* of the ſun, of a ſtar, or other phænomenon, by means of the quadrant, ſee MERIDIAN *Altitude*.

To obſerve a *meridian altitude* by means of a gnomon, ſee GNOMON.

The ſun's *altitude* may alſo be found without a quadrant, or any the like inſtrument, by erecting a pin or wire perpendicularly, as in the point C (*Tab. Aſtronomy, fig.* 62.) from which point you have deſcribed the quadrantal arch AF. Make CE equal to the height of the pin or wire, and through E draw ED parallel to CA, and make it equal to CG, the length of the ſhadow; then will a ruler, laid from C to D, interſect the quadrant in B; and BA is the arch of the ſun's *altitude*, when meaſured on the line of chords.

An irregularity has been obſerved in the apparent *altitudes* of the ſtars near the MERIDIAN. On ſome occaſions, when they are mounting towards the meridian, they appear to fall, and after paſſing the meridian, to riſe. Hiſt. Acad. Scienc. 1719. p. 75.

M. Parent ſuggeſts a new method of taking *altitudes* at ſea, by a common watch. It is obvious, that in an oblique ſphere, the difference between the riſing and ſetting of two ſtars, on the ſame meridian, is greater, as they are farther diſtant from one another.

Now, the aſtronomical tables furniſhing us with tables of the right aſcenſions and declinations of all the fixed ſtars, it is eaſy, after obſerving the difference of time between the riſing of two ſtars, to diſtinguiſh that part of the difference which accrues from their different poſition from that which ariſes from the obliquity of the ſphere.—But ſuch difference is the preciſe height of the pole of the place of obſervation.

Indeed, the ſhip not being immoveable, but changing place between the two obſervations, ſeems to lay the method under ſome difficulty; but to this M. Parent anſwers, that a ſmall alteration either of the ſhip's longitude or latitude, will make no ſenſible error; and that if ſhe have gone a large diſtance between the two obſervations, it is eaſy reckoning how much it is, and accordingly allowing for it. See SAILING.

ALTITUDE, *the, of the Sun*, may be computed by the following rule, propoſed by Mr. Lyons for nautical purpoſes. By the rules in the Nautical Almanac, for 1771, find the logarithm ratio; ſubtract it from the riſing found anſwering to the given diſtance of time from noon, in the tables of the ſame Almanac; the remainder is the logarithm of a number, which ſubtracted from the natural ſine of the ſun's meridian *altitude*, leaves the natural ſine of the *altitude* at the required time. For finding the *altitude* of the moon or a ſtar, he gives the following rule. From the tables abovementioned, take out the riſing, correſponding to the horary angle in the diſtance of time from the ſtar's paſſing the meridian; add to it the logarithmic coſine of the ſtar's declination, and the logarithmic coſine of the latitude of the place; the ſum, abating twenty from the index, is the logarithm of a number, which ſubtracted from the natural ſine of the ſtar's meridian *altitude*, leaves the natural ſine of the *altitude* at the given time. Theſe rules are of great importance in determining the longitude at ſea. See Naut. Alm. for 1778.

In taking of *altitudes* from the viſible horizon, where great exactneſs is required, an allowance is to be made for refraction, and the height of the obſerver's eye above the ſurface of the ſea.

ALTITUDE *of the pole*, is an arch of the meridian, intercepted between the pole and the horizon.

The *altitude of the pole* coincides with the latitude of the place.

To obſerve the *altitude* or elevation of the pole, ſee POLE.

ALTITUDE *of the equator*, is the complement of the *altitude* of the pole to a quadrant of a circle. See ELEVATION *of the equator*.

To find the *altitude* of the ſtars, &c. by the globe, ſee GLOBE.

ALTITUDE *of the tropics* amounts to the ſame with what is otherwiſe called the *ſolſtitial altitude* of the ſun.

ALTITUDE *of the horizon*, or of ſtars ſeen in it, is variable by the refraction, according to the quantity of which the horizon is either elated or depreſſed more or leſs.

ALTITUDE *of the moon's atmoſphere* is thought, by ſome, to be much greater than that of the earth; the former being not leſs than ſixty four French leagues. But the exiſtence of this atmoſphere has been diſputed and denied by modern aſtronomers. See MOON.

M. de la Hire propoſed a method of diſcovering the *altitude* of the earth's atmoſphere, the hint of which was firſt given by Kepler, viz. by the magnitude of the arch whereby the ſun is ſunk below the horizon, when the CREPUSCULUM begins or ends.

ALTITUDE *of the aurora borealis* in 1719, has been much conteſted, viz. whether it were above the atmoſphere, or within the limits of it: the former opinion being defended by Dr. Halley, the latter by Mr. Whiſton. The name meteor, which is given it, ſeems to favour the latter.—Beſides, it appears not by any obſervation to have been above thirty-eight miles high. See AURORA *Borealis*. Phil. Tranſ. Nº 360.

ALTITUDE, in ſpeaking of fluids, is more frequently expreſſed by the term depth.

The ingenious Dr. Hales, in his Vegetable Statics, propoſed a method for meaſuring unfathomable depths of the ſea; on the principles of which Dr. Deſaguliers contrived an inſtrument called a SEA-GAGE, which was tried before the Royal Society; and is deſcribed in the Phil. Tranſ. Nº 405. A more particular deſcription of this inſtrument by Dr. Hales himſelf, is as follows.

Suppoſe AB (*Tab. Miſcellany, fig.* 20.) to be an iron tube, or muſquet-barrel, of any length, as fifty inches, having its upper end A well cloſed; if this tube be let down in this poſition about thirty-three feet into the ſea, a column of water of that height is nearly equal to the mean weight of our atmoſphere, and conſequently from a known property of the air's elaſticity, it will be compreſſed into half the ſpace it took up before, ſo that the water will aſcend half way up the tube; and if the tube be let down thirty-three feet deeper, the air will be compreſſed into $\frac{1}{3}$ of its firſt dimenſions, and ſo on $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$. &c. the air being conſtantly compreſſible in proportion to the incumbent weight; whence by knowing to what height the water has aſcended in the tube, we may readily know to what depth the tube has deſcended into the ſea.

Now to meaſure the depth of one of theſe columns of ſea-water: firſt, by a line let the iron tube, with a weight at its bottom, ſink about thirty-three feet, which depth in ſalt-water will nearly anſwer to the weight of the air at a mean height of the barometer; then draw up the tube, and obſerve how far the water roſe. If thirty-three feet of water is equal to one atmoſphere, then will the water riſe ſo high as to fill exactly one half of the tube. But if the water riſes higher or lower than half-way, then by the rule of three ſay, as the number to which the water riſes is to one, ſo is thirty-three to the number of feet, meaſuring the depth of the column required. For example, ſuppoſe the water riſes, when the tube is let down thirty-three feet, only $\frac{9}{10}$ of half-way, then ſay, 9 : 10 :: 33 : $36\frac{1}{2}$ feet the depth of each column, which being once known, the number of columns of water is to be multiplied by this number of feet, whereby the depth of the ſea in feet will be known.

But ſince, when the inſtrument has deſcended to the depth of 99 columns, or 99 times 33 feet, the air will be compreſſed into the $\frac{1}{100}$ part of 50 inches, that is, into half an inch, the diviſions both for ſome time and after that will be ſo very ſmall, that the difference in depth of ſeveral columns of water will not be ſenſible. So that an inſtrument of no greater length than this would ſcarcely give an eſtimate of half a mile's depth, that is 2640 feet, or 80 columns depth of water. The lengthening of this inſtrument to 4, 5, or 10 times this length, would obviate this defect, and make the difference of the degrees of deſcent much more ſenſible. But ſince it is impracticable to make a metalline tube of ſo great a length, and if it were made, would be ſo unweildy as to be eaſily broken, the difficulty may be obviated in the following manner.

Let there be a globoſe, metalline body, of iron or copper, nearly of this form (*fig.* 21.) K, L, M, N, Q, whoſe capacity within may be equal to nine times the capacity of the metalline tube, Z, K, L; let this globoſe body be firmly ſcrewed to the metalline tube, at K, L, with a leathern collar well ſoaked in ſome unctuous matter at the ſhoulder, or joining, thereby to ſecure that joint in the moſt effectual manner. Let there be a ſmall hole at X for the ſea-water to enter freely in, and let ſome coloured oil be poured into the globoſe body, to fill it up to the hole X. Let there be alſo provided a ſlender rod *d b*, ſcrewed, or faſtened into the metalline diameter *s s*, which diameter muſt alſo be made to ſcrew in and out, thereby to take out the rod at pleaſure; the rod muſt alſo have a ſmall button *d* faſtened to its upper end, which will prevent its being daubed by falling againſt the ſides of the tube.

The capacity of the tube muſt be eſtimated by pouring water in, when the rod and metalline diameter are fixed in their places.

Now ſince the lower veſſel is ſuppoſed to contain nine times as much air as the tube ZL, which is the ſame thing as if the tube were nine times as long, therefore the air in the globoſe veſſel will not all be forced within the capacity of the tube, till the veſſel has deſcended to the depth of nine columns, or nine times 33 feet; for then the air will be compreſſed within one tenth of the ſpace it firſt took up. Suppoſing, therefore, the inſtrument to have deſcended to the depth of 99 columns of water, or 99 times 33 feet=2367: then the air will be compreſſed within $\frac{1}{100}$ part of 500 inches (the capacity of the whole veſſel being ſuppoſed equal to a tube of that length) that is, within five inches of the top of the tube; and conſequently the rod *d b* will be found tinged with the oil, within five inches of its top.

Suppoſe again the inſtrument to have deſcended to the depth of 199 columns, of 33 feet each, then the air will be compreſſed within $\frac{1}{200}$ part of the whole, that is, nearly within $2\frac{1}{2}$ inches of the top of the tube. In this caſe the inſtrument will have deſcended 6567 feet; that is, one mile and a quarter, and 132 feet.

Suppoſe again the inſtrument to have deſcended to the depth of 399 columns, then the air will be compreſſed into $\frac{1}{400}$ part of the whole, that is, nearly within one inch and a quarter of the top of the tube. In this caſe the inſtrument will have deſcended two miles and a half, wanting 53 feet, which may probably be the greateſt depth of the ſea.

The larger the capacity of the veſſel K, L, M, N, Q the deeper will the gage be enabled to ſink, the inſtrument being made ſtronger, and its joints being ſecured in proportion.

The inſtrument being thus prepared, a larger buoy, *i*, muſt be fixed to it, which ought to be a ſolid piece of light wood, well tarred, to prevent the waters being preſſed into the ſap-veſſels; and as it may riſe at a conſiderable diſtance from the ſhip, it may be adviſeable to fix on the top of the buoy broad fans of tin, properly painted, ſo as to be eaſily ſeen.

In order to ſink the inſtrument, a weight muſt be fixed to it in the following manner. See the diagram. W is a weight of ballaſt, hanging by its ſheet ſhank T, in the ſocket *f f*, which ſocket is ſcrewed faſt to NQ. The ſhank is retained in its place by the ketch *k* of the ſpring O, while the machine is deſcending; but as ſoon as W touches the ground at the bottom of the ſea, the ketch O *k* ſinking by the deſcending force, a little below the upper part of the hole *k*, is thereby at liberty to fly back, and ſo lets go the weight; then the buoy riſes up to the ſurface of the water with the machine. Springs might alſo be fixed on the inſide of the ſocket *f f*, ſo as to fly back in the ſame manner, when the weight touches the ground.

It might be adviſeable to keep an exact account of the ſtay of the machine under water, which might be done by a watch, or by a pendulum vibrating ſeconds. As Dr. Hooke found upon trial, that a leaden ball which weighed two pounds, fixed to a wooden ball of the ſame weight, and both let down in fourteen fathom water, reached the bottom in ſeventeen ſeconds, and the detached wooden ball aſcended to the ſurface in ſeventeen more. See Phil. Tranſ. Lowthorp's Abr. vol. i. p. 258. So that if this machine deſcended and aſcended greater depths with the ſame velocity, it would reach to the depth of a mile in ſeventeen minutes, and reaſcend in the like time. This, however, might be a vague eſtimate, until experience has furniſhed a rule.

This machine was tried in various depths of the Thames, and anſwered very well, always returning, and leaving the ballaſt behind. It was afterwards tried near the Bermudas, when ſeveral ſhips were in company; but though a good look-out was kept for three or four hours, it was not ſeen to return.

ALTITUDE *of the ſea's ſurface* is not every where the ſame, as appears from the drift or CURRENTS ſetting ſtrong out of one SEA into another.

ALTITUDE *of the mercury*, in the BAROMETER, is marked by degrees placed on the face of that inſtrument, the variations of which are the chief object of *barometrical* obſervations.

The mean *altitude* of the mercury at London is about 29 inches.—The extreme *altitudes* are $27\frac{1}{2}$ inches, and $31\frac{1}{2}$ inches. Some ſuggeſtions have been made, as if the *altitude* of the mercury were regularly greater in the morning than in the evening; at leaſt ſomething of this kind was obſerved to hold for a conſiderable time at Berlin. Hiſt. Crit. Rep. Lett. tom. xiv. p. 239.

ALTITUDE *of the pyramids in Egypt* was meaſured ſo long ago as the time of Thales, by means of their ſhadow, which makes one of the firſt geometrical obſervations we have an exact account of. Plutarch has given an account of the manner of this operation, which according to this author, was done by erecting a ſtaff perpendicular upon the end of the ſhadow of the pyramid; and by two triangles made by the beams of the ſun, he demonſtrated, that there was the ſame proportion between the ſhadows as between the pyramid and the ſtaff. Stanl. Hiſt. Phil. P. i. p. 9.

ALTITUDE, in *Aſtrology*, denotes the ſecond of the five eſſential dignities, which the plants acquire in virtue of the ſigns they are found in.

In this ſenſe, *altitude* is otherwiſe called *exaltation*.

ALTITUDE *of the nonageſimal*, is the *altitude* of the 90th degree of the ecliptic, reckoned from the orient, or eaſt point. See NONAGESIMAL.

ALTITUDE, *refraction of*, is an arch of a vertical circle, as S *s* (*Tab. Aſtronomy, fig.* 28.) whereby the *altitude* SE, of a ſtar, or other body, is increaſed by means of the refraction.

ALTITUDE, *parallax of*, is the difference CB (*Tab. Aſtron. fig.* 27.) between the true and apparent place of a ſtar; or, the difference BC, between the true diſtance of a ſtar AB, and the obſerved diſtance AC, from the zenith A. The parallax diminiſhes the *altitude* of a ſtar, or increaſes its diſtance from the zenith.—To find the parallax of *altitude*, &c. ſee PARALLAX.

ALTITUDE *of motion*, is a term uſed by Dr. Wallis for the meaſure of any motion, eſtimated according to the line of direction of the moving force.

ALTITUDE, *circles of*. See CIRCLES.

ALTITUDE, *parallels of*. See PARALLELS.

ALTITUDE, *quadrant of*. See QUADRANT.

ALTITUDE *inſtrument*, *equal*, is that uſed to obſerve a celeſtial object, when it has the ſame *altitude* on the eaſt and weſt ſides of the meridian, or in the morning and afternoon. This inſtrument conſiſts of a teleſcope about thirty inches long (with two vertical, and three or five horizontal wires in its focus) ſupported on the end of an iron bar, or axis, thirty inches long, and about an inch in diameter; the axis being ſuſtained in a vertical poſition, by paſſing through a hole in one end of a braſs box, whoſe other, or lower end, ſuſtains the lower joint of the axis. The box, which is about twenty-one inches long, with ends about four inches ſquare, has only two ſides, which are fixed at right angles. From one of theſe ſides project four flat arms, with a hole in each, whereby the box is, by ſcrews, fixed in a vertical poſition to an upright poſt. On the lower end of the box lies a braſs plate, which ſlides in grooves, and can, by means of a ſcrew, be gently moved forwards or backwards; in this plate is a fine punched hole, to receive the ſmooth conical point, into which the lower end of the axis is formed. On the upper end of the box are two plates, which ſlide alſo in grooves; and, by the means of ſcrews, can be gently moved ſideways, till their angular notches embrace the axis, which, in this part, is made perfectly cylindrical, and very ſmooth To the upper part of the axis is fixed, by its radius, a braſs ſextant (or arch of 60°, to a radius of ſeven or eight inches) with the arch downwards, ſo that the center is juſt above the top of the axis: alſo a ſpirit-level is fixed at right angles acroſs the axis, juſt under the arch, ſo as to be clear of the upper end of the box. To the under part of the teleſcope is fixed a braſs ſemicircle, of the ſame radius with the ſextant, both arches having a common center-pin. In the ſemicircle is a groove cut through the plate parallel to its limb, to receive two ſcrew-pins, which go into the ſextantal arch, near its ends; by theſe ſcrew-pins, the two arches may be preſſed cloſe, and the teleſcope fixed in any deſired elevation; which might be nearly aſcertained, by graduating the ſemicircle, and putting a Vernier's ſcale on the ſextant.

When this inſtrument is uſed, the box is fixed to the poſt, and the axis put into the box, letting the conical point drop into the punched hole; the level is ſcrewed on, and the teleſcope is annexed, obſerving to inſert the center and arch-pins: then, by the help of the ſcrew-plates at the bottom and top ends of the box, the vertical poſition of the axis is corrected, ſo that the ſame end of the air-bubble in the level may ſtand at the ſame point through the whole revolution of the axis, which will thereby be known to be then truly vertical, ſo that the teleſcope will deſcribe a parallel of *altitude*. The tube, thus adjuſted, is to be directed to the ſun, or ſtar, and fixed at the deſired elevation, by preſſing the two arches together with the two ſcrew-pins. This inſtrument is very uſeful in adjuſting clocks, &c. and comparing *equal* and *apparent* time.

ALTO & BASSO, or *in* ALTO & in BASSO, in *Law*, ſignifies the abſolute reference of all differences, ſmall and great, high and low, to ſome arbitrator, or indifferent perſon.—*Pateat univerſis per præſentes, quod Willielmus Tylar de Yetton, & Thomas Gower de Almeſtre, poſuerunt ſe in* Alto & *in* Baſſo, *in arbitrio quatuor hominum*; viz. *de quadam querela pendente inter eos in curia.—Nos & terram noſtram* altè & baſſè *ipſius domini Regis ſuppoſuimus voluntati.*

ALTO *relievo*. See RELIEVO.

ALTOLIZOIM, among ſome *Chemiſts*, denotes the *lutum Paracelſi*, well beaten, calcined, and boiled to the form of an oil, called alſo *fel terræ*; becauſe it is a bitter ſalt.

ALTUMAL, a term uſed to denote the mercantile ſtyle, or dialect.

In this ſenſe, we meet with *altumal cant*, to denote the language of petty traders and tars.

ALVAH, the wood wherewith Moſes ſweetened the waters of Marah. Exod. ch. xv. ver. 25.

The name of this wood is not found in Scripture, but the Mahometans give it that of *alvah*, and pretend to trace its hiſtory from the patriarchs before the flood. Joſephus, on the contrary, ſays, that Moſes uſed the wood, which he found next lying before him.

ALVARID, among the Spaniſh Moors, denoted a judge. The word is alſo written *alvarilus*.—In this ſenſe, *alvaridus* amounts to much the ſame with what is otherwiſe called ALCAID.

ALVARISTS, in *Church Hiſtory*, a ſect or branch of modern Thomiſts, denominated from Alvares whoſe method and principles they follow.

The *Alvariſts* differ from the ancient Thomiſts, in that the former are aſſerters of ſufficient grace, the latter of efficacious grace. The former come near to the Jeſuits, the latter to the Janſeniſts.

ALUCITÆ, a genus of inſects of the *lepidoptera* order, in the Linnæan ſyſtem.

ALUCO, in *Ornithology*, the name by which authors have called the common white OWL, or, as we commonly call it, the barn-owl, or church-owl.

ALUDELS, in *Chemiſtry*, ſubliming pots, or veſſels uſed for the ſublimation of mineral flowers. *Tab.* CHEMICAL, &c. fig. 20.

Aludels are a large range of earthen tubes, or pots, without bottoms; fitted one over another, and diminiſhing as they advance towards the top.—The loweſt is adapted to a pot, placed in the furnace, wherein the matter to be ſublimed is lodged. And at the top is a head, to retain the flowers which aſcend the higheſt.

The *aludel*, which terminates this tube above, ought to be cloſed in its upper part, or to have but a very ſmall opening. The tube compoſed of theſe *aludels* is nothing but a kind of capital, or head, that may be enlarged or lengthened at pleaſure, and adapted to a cucurbit. This apparatus is intended to collect and retain dry and volatile matters, which may be reduced into flowers by SUBLIMATION. It may be employed for the preparation of flowers of *ſulphur*, of *arſenic*, of *antimony*, of benjamin, &c.

ALVEARIUM, in *Anatomy*, the bottom of the *concha*, or hollow of the auricle, or outer EAR.

The *alvearium auriculæ* is a cavity, terminating at the *meatus auditorius*, wherein that bitter yellowiſh excrement is collected, called *cerumen*, or ear-wax.

ALVEARIUM alſo ſignifies a bee-hive.

The word is formed of *alveus*, a *channel*, or *cavity*; in alluſion to the *alveoli*, or cells, in bee-hives.

Some of the ancients uſe alſo the word *alvearium* for a bee-houſe, more uſually called among us, APIARY.

ALVEARIUM is ſometimes alſo uſed figuratively, to denote a collection.

In which ſenſe, *alvearium* amounts to much the ſame with what we otherwiſe call *theſaurus*, *cornucopia*, or the like.

Vinc. Boreus has publiſhed an *alvearium* of law.

ALVEHEZIT, among *Arabian Writers*, denotes what we ordinarily call *falling-ſtars*, or STAR-SHOT.

ALVEOLI, in *Anatomy*, thoſe little ſockets in the jaws, wherein the teeth are ſet.

The *alveoli* are lined with a membrane of exquiſite ſenſe, which ſeems to be nervous, and is wrapt about the roots of each tooth; from whence, and from the nerve, proceeds that pain called *odontalgy*, or tooth-ach. Of theſe *alveoli* there are uſually ſixteen in each jaw.

ALVEOLI is more eſpecially uſed, among *Naturaliſts*, for thoſe waxen cells in the combs of bees, wherein their honey is depoſited.

ALVEOLUS, in *Natural Hiſtory*, the name of a marine body, found frequently foſſile, ſometimes lodged in the cavity, at the end of the *belemnitæ*, and ſometimes looſe; and in this laſt caſe, often ſo large, that we cannot ſuppoſe any *belemnitæ* ever to have exiſted ſo large as to have been able to contain it. We do not meet with theſe at this day in their recent ſtate, but what we find of them foſſile, are ever larger at one end, and tapering to a point at the other, and are compoſed of ſeveral hemiſpheric cells, like ſo many bee-hives jointed into one another, and having a *ſiphunculus*, or pipe of communication, like that in the thick *nautilus*. Theſe are ſometimes found perfect and whole, but much more frequently truncated, or wanting a part of their ſmaller end. Klein.

ALUESEN, in *Botany*, a name uſed, by ſome, for the *peucedanum*, or *hogs*-FENNEL.

ALVEUS properly denotes a channel.

Alveus is applied, by ſome *Anatomiſts*, to the tumid lacteal branches ariſing from the *receptaculum chyli* under the *diaphragm*.

ALVEUS is alſo uſed, in *Antiquity*, to denote a ſmall veſſel, or boat, made out of the trunk of a ſingle tree, by boring or cutting it hollow.

Such was that wherein Romulus and Remus are ſaid to have been expoſed.

ALVIDUCA, a term uſed by ſome writers for laxative or purgative medicines.

The word is compounded of *alvus* and *duco*, *I draw*.

ALUM, ALUMEN. See ALLUM.

ALUMTA, in *Botany*, a name given by ſome of the old Latin writers to the plant otherwiſe called *lutum* and *coniola*, and by the Greeks *cymene*. It was the ſame with our *geniſtella tinctoria*, or dyer's weed, and was uſed by the dyers, and by the ladies, to tinge their hair yellow, the colour that was eſteemed moſt beautiful in thoſe times.

ALUNGU, in *Natural Hiſtory*, is a word of the Malabar language, and the name given by the Malabarians to an animal reſembling a large lizard, except as to head and tail, which are both pointed. It is a German ell, and $\frac{5}{8}$ long, and its breadth is half an ell. It is a ſpecies of the MANIS of Linnæus, and belongs to the family of ANT-*eaters*, which have no teeth, but a long round tongue, with which they catch the ants. Phil. Tranſ. vol. lx. Nº 5. an. 1770.

ALUS, in the *Materia Medica* of the ancients, a name given to two different plants.

ALUSMA *Caramanica*, in *Botany*, a term uſed ſometimes to expreſs a plant growing in Caramania, and ſometimes a preparation of that plant, or pigment made from it. The word frequently occurs in the writings of Avicenna and Serapion.

ALVUS, among *Anatomiſts*, is ſometimes uſed to expreſs the lower belly, or *venter*.

ALVUS is more uſually taken among *Phyſicians*, for the ſtate and condition of the *fæces*, or excrements, contained within that cavity.

Thus, when a perſon is laxative, it is called *alvus liquida*; and when coſtive, *alvus adſtricta*.

They who are of a looſe belly in their youth are generally coſtive in their old age; and they who are bound in youth, are often looſe when old. A laxer ſtate in youth, and rather bound than looſe in old age, is moſt deſirable.

Binders of the belly are labour, ſitting in a chair, fuller's clay laid over the body, diminution of food, eating once a day inſtead of twice, little drinking, and that only after a full meal, reſt after meals. On the contrary, things which looſen the belly, are, walking and eating more than uſual, ſtirring after meat, intermixing draughts with eating; and it ought to be obſerved, that a vomit binds a looſe belly, and looſens a bound one; and that a vomit taken immediately after meat binds the belly, but delayed until a conſiderable time after, looſens the ſame. Celſus.

ALWAIDII, a ſect of Mahometans, who hold that all great crimes are unpardonable, and the criminals reprobated to eternity.

The *alwaidii* ſtand in oppoſition to the MORGII.—They attribute leſs efficacy to the true belief in the ſalvation of men, than the reſt of the muſſulmen.

ALYPIAS, in the *Materia Medica*, a ſpecies of *turbith*, preſcribed by ſome phyſicians for the purging of bile.

Some write the word *alypon*, and define it by white *turbith*. Galen uſed *alypum*, αλυπον, for a minorative, or medicine that gently purges.

ALYPON MONTIS CETI, otherwiſe WHITE TURBITH, a plant which grows in ſeveral parts of France, particularly in Provence and Languedoc. It is a kind of SENA.

ALYPUM, in *Botany*, a name given, by ſome authors, to a ſpecies of ſpurge, the TITHYMALUS *amygdaloides anguſtifolius*, or narrow-leaved almond ſpurge of Tournefort. See SPURGE.

ALYPUM is likewiſe a name given, by ſome authors, to a ſpecies of DOGS-*bane*, diſtinguiſhed by Mr. Tournefort, by the name of APOCYNUM *maritimum Venetum*, *ſalicis folio*, *flore purpureo*; the purple-flowered ſea *apocynum* of Venice, with willow-like leaves.

ALYPUM is alſo a name given to the *globularia* of Linnæus.

ALYSSON, in *Botany*, a name given, by ſome authors, to the MYAGRUM, or gold of pleaſure.

ALYSSON, *rough-leaved*, the SUBULARIA of Linnæus.

ALLYSUM, called *alyſſoides*, by Tournefort. See MADWORT.

ALYTARCHA, in *Antiquity*, a prieſt of Antioch in Syria, whoſe office was to lead up the *maſtigophori*, or *flagelliphori*, officers with whips in their hands, who attended at the games or combats of the *athletæ*, encouraged them to behave ſtoutly, and, on occaſion, ſerved to preſerve good order, and keep off the crowd.

The officer who preſided at the Olympic games was alſo ſometimes denominated *alytarcha*.

Some will have the *alytarcha* to be the ſame with the *hellenodicus*, of which opinion are Faber and Prideaux.

Van Dale ſhews them to be different offices; not but that the *alytarchi* might ſometimes be ſubſtituted for the *hellenodici*, to perform ſome parts of their function.

The *alytarchi* were the ſame with what were called, in ſome other places, *alytæ*.

ALZACHI, in the *Materia Medica*, the name given, by the Arabian *Phyſicians*, to that kind of gourd called in the ſhops the CITRUL, and by the people of ſome parts of Italy, the *anguria*. It is an oblong, and uſually crooked gourd, and contains in its cavity a conſiderable quantity of water, which is drank by people of the places where the plant is common, to quench thirſt. It contains ſeeds of an oblong figure, flatted, and covered with a hard ſkin.

ALZAGIAT, in the *Materia Medica*, a name given, by the Arabian writers, to all the vitriolic minerals. It is alſo written *zagi*, or ZEGI.

ALZARAC, in the *Materia Medica* of the Arabians, a name given to a kind of CAMPHOR, which was coarſe, and of a brown colour. It ſeems to have been the ſame with our rough camphor, as imported from the Indies, before being purified.

ALZIZ, in the *Materia Medica*, a name given by Serapio and Avicenna, to the roots of the *traſi*. The word Ziz is the name of a river in Africa, according to Leo; and the roots probably had this name from their being found in great plenty on the banks of that river, the *traſi* always growing in wet places.

ALZUM, in *Botany*, a name given, by the ancients, to the tree which produces the gum BDELLIUM. It is alſo written *alrum* and *aldum*, which laſt ſeems the proper way. The gum of this tree was called, by the Arabians, *mokel*, and the ſame word *mokel* is uſed as the name of a fruit of a palm-tree.

AMA, in *Eccleſiaſtical Writers*, denotes a veſſel wherein wine, water, or the like, were held, for the ſervice of the euchariſt.

In this ſenſe, the word is alſo written *amula*; ſometimes alſo *hama*, and *hamula*.

AMA is ſometimes alſo uſed for a wine-meaſure, as a caſk, pipe, or the like.

AMA, AME, or rather AMES, *αμης*, a ſort of cake. Aretæus uſes this word to expreſs the quantity of hellebore which is ſufficient for a doſe in ſtrong conſtitutions, when given in a *vertigo*.

AMABYR, or AMVABYR, in ſome *Ancient Cuſtoms*, the price of a maidenhead; or a ſum of money to be paid the lord upon marrying a maid of his manor.—This cuſtom is ſaid to have anciently obtained in Wales, where *amabyr* was paid to the prince: alſo in the honour of Clun belonging to the earl of Arundel, till earl Henry, in the time of queen Mary, in conſideration of ſixty pounds, releaſed it to all his tenants by the name of the cuſtom of *amabyr* and *chevage*.

AMADOW, a kind of *black-match*, tinder, or touch-wood, which comes from Germany. It is made of a ſort of large muſhrooms, or ſpungy excreſcences, which commonly grow on old trees, eſpecially oaks, aſh, and firs. This ſubſtance being boiled in common water, and afterwards dried and well beaten, is then put into a ſtrong lye prepared with ſalt-petre, after which it is again put to dry in an oven. The druggiſts ſell this match wholeſale in France, and ſeveral hawkers retail it.

Some give to the *amadow* the name of *pyrotechnical ſpunge*, becauſe of its aptneſs to take fire.

AMADOWRY, a kind of cotton which comes from Alexandria, by the way of Marſeilles.

AMAIN, or AMAYNE, a ſea term, uſed by a man of war, to his enemy; and ſignifying, *yield*.

Hence, *to ſtrike amain*, is, to lower, or let fall, the top-ſails.

The word is alſo written *amayne*.—Waving *amain*, is to make a ſign to another veſſel, by waving a bright ſword, or other thing, as a demand for ſtriking its top-ſails.—This is commonly done either in the fore-top, or on the poop.

AMAIN is alſo a term uſed in letting down a thing, by a tackle, into the hold, or elſewhere, in the lowering a yard, or the like, to denote, that the ſailors are to let go that part of the rope which they held before, and let down the thing eaſily, and by degrees.

AMALGAMA, or AMALGAM, in *Chemiſtry*, a maſs of MERCURY, united and incorporated with a METAL.

The word *amalgama* is formed of the Greek *αμα*, *together*, and *γαμειν*, *to join*; and is applied to the ALLAYS of metallic metals with *mercury*, which is capable of being *allayed* more or leſs eaſily with almoſt all metallic ſubſtances.

The *amalgama* of *mercury* with lead, is a ſoft, friable ſubſtance, of a ſilver colour.

By waſhing and grinding this *amalgama* with fair warm water in a glaſs mortar, the impurities of the metal will mix with the water; and by changing the water, and repeating the lotion again and again, the metal will be farther and farther purified.—Boerhaave mentions it as one of the greateſt ſecrets in chemiſtry, to contrive to bring off the liquor, at laſt, as clear and unſullied as when firſt poured on the *amalgama*; which, he ſays, might afford a method of making the nobler metals, or procuring them from the baſer.

This philoſophical way of purifying metals, may be eaſily applied to all the metals, except iron and copper.

AMALGAMATION is either done in the *dry*, or in the *humid* way.

AMALGAMATION *in the dry way*, is performed in a mortar for the purpoſe, deſcribed by Becher and others.

AMALGAMATION *in the humid way*, is when part of the metal is firſt diſſolved in its proper *menſtruum*, and afterwards precipitated into an *amalgama*, by the addition of MERCURY.

This operation is denoted by chemiſts by the letters A A A.

The *amalgams* of gold, ſilver, tin, lead, zink, biſmuth, and copper, with quickſilver, are all white; and when the quantity of metal is large in proportion to that of the mercury, they thicken into a kind of paſte.

All METALS, except iron and copper, ſpontaneouſly unite and *amalgamate* with mercury; but gold with the greateſt facility; ſilver the next; then lead, and tin; copper, and regulus of antimony, with difficulty; iron, and, as Mr. Gellert ſays, cobalt, ſcarce at all; but with all other metals and ſemi-metals, mercury may eaſily be *amalgamated*: The *amalgamation* of all metals with mercury is much facilitated by heat; but with reſpect to the metals which unite with difficulty with mercury, it cannot be effected without heat. All metals ought to be divided into very ſmall parts, when they are to be *amalgamated* by *trituration*, without fuſion or heat.

AMALGAMATION *of copper*.—The *amalgamating* mercury with copper is a very difficult proceſs, mercury not mixing well with that metal unleſs when in fuſion, and the heat ſufficient to keep it in that ſtate being great enough to evaporate the mercury. *Trituration*, however, may be made to ſupply the place of heat, firſt reducing the copper to an exceeding fine powder. This *amalgama* boiled in river water, and then diſtilled in a retort, and cohobated twice, leaves the copper, in form of a new metal, of the colour of gold, and more ductile than before. Shaw's Lectures, p. 433.

Amalgamations of copper may likewiſe be performed by diſſolving the metal in *aqua fortis*, diluting the ſolution with twelve times the quantity of pure water, then heating it, and putting into it poliſhed plates of iron; by this means the copper will be precipitated to the bottom, and the iron diſſolved. Pour off the liquor, and waſh the precipitated powder with hot water, till it become inſipid. The powder being well dried, and put into a glaſs mortar, with an equal quantity of hot mercury, an *amalgama* will be made.

AMALGAMATION *of gold* is uſually performed by heating the *laminæ* or plates of that metal red-hot; after which, quickſilver, previouſly heated, is to be poured upon them, and the mixture is to be ſtirred with a little iron rod, till it begins to riſe into ſmoke.—It is then thrown into a veſſel full of water, where it coagulates, and becomes manageable.

This *amalgamation* is in great uſe among goldſmiths and gilders; who, by this means, render gold fluid and ductile for their purpoſes.—Such mixture or *amalgama* being laid on any other metal, for inſtance, copper; and this afterwards placed on the fire to evaporate, the gold will be left alone on the ſurface of the copper; which makes what we call GILDING.

The blackneſs adhering to the *amalgama* may be waſhed away with water; and a great part of the mercury may be preſſed out through a linen cloth; and the reſt being evaporated in a crucible, by a gentle and gradual heat, the gold remains behind in an impalpable powder, which admits better of being burniſhed, than that which is procured by grinding of gold-leaf.—Gold retains about thrice its own weight of mercury. See *Tables of* AFFINITY.

The method of extracting gold by *amalgamation* is thus deſcribed by Dr. Lewis: the gold ſands, firſt cleared of groſſer particles by water, are dried, and a ſmall proportion, leſs than a hundredth part of their weight, of mercury, is poured on them; the whole is well kneaded together, that the mercury may penetrate, as much as poſſible, into all the interſtices between the grains; upon which it imbibes the atoms of gold it meets with, and the ſand is afterwards waſhed off with water. In the mines of the Spaniſh Weſt Indies, where the gold is bedded in ſtones, the ſtony matter is reduced to a very fine powder, that every atom of the gold may be laid open to the mercury. The powder is ſoaked for ſome time in a ſolution of common ſalt; the mercury is ſqueezed in through a linen cloth, ſo as to fall like dew all over the ſurface; and the mixture being well ſtirred and kneaded, a gentle heat is applied, by which the activity of the mercury is ſo far increaſed, that the incorporation of the gold with it, which in the cold requires about thirty days, is effected by this method in five or ſix days.

There is another method of expediting the *amalgamation*, deſcribed by Alonſo Barba. He puts the powder, with a ſuitable quantity of mercury and water, into a deep copper veſſel fixed in a furnace, and applies a fire ſufficient to keep the water boiling. He likewiſe employs a ſmall wooden mill to aſſiſt the ebullition of the water in giving motion to the earthy powder, which continually riſing and falling down again, is brought into frequent contact with the mercury at the bottom, ſo as to give out its gold to the mercury in as many hours as the common proceſs without heat requires days.

When the gold is judged to be united with the mercury, the earthy powder is waſhed off by water, ſo as to leave the *amalgam* clean. The gold-duſt, or filings, diſperſed through the ſweepings of the goldſmiths ſhops, are recovered alſo by *amalgamation* with mercury. Com. Phil. p. 193, &c.

AMALGAMATION *of iron.* It is well known, that this operation has been reckoned extremely difficult, if not abſolutely impoſſible. However, M. Navier ſucceeded in combining mercury with iron by the following proceſs. Having made ſtrong ſolutions of iron and of mercury ſeparately in diſtilled vinegar, he put equal quantities of each into a matraſs, which he placed in *balneo mariæ*. As ſoon as the liquor became very hot, there began to be formed on its ſurface, and within it, an extremely light, fine, white ſubſtance, reſembling ſnow, which evidently contained mercury and iron, in a ſaline form, intimately united with each other. The liquor being filtered, left behind this ſnowy ſubſtance, which, when waſhed and dried, appeared to be a ſilvery maſs, made by the union of innumerable cryſtals in the form of thin plates, without acidity or acrimony. Mem. de Math. & de Phyſ. vol. vi. Mem. 2.

AMALGAMATION *of lead* is thus performed. Melt a proper quantity of pure lead in an iron crucible, remove the veſſel from the fire, and when the metal is a little cooled, pour to it an equal weight of clean mercury, which will immediately enter the lead with a hiſſing noiſe. Stir the mixture well together with an iron rod, and when cold, it will appear in the form of a ſoftiſh brittle maſs, called the *amalgam* of mercury with lead.

Biſmuth promotes the action of mercury upon lead in a remarkable manner. Mercury impregnated with one fourth, one eighth, one twelfth its weight of biſmuth, diſſolves maſſes of lead, in a gentle warmth, without the agitation, or triture, or comminution, or melting heat, neceſſary for uniting lead with pure mercury. Lewis's Ed. of Neumann's Works, p. 93.

AMALGAMATION *of platina.* Dr. Lewis rubbed together one ounce of *platina* with ſix ounces of pure quickſilver, together with a little common ſalt and water, and a few drops of ſpirit of ſalt, in an iron mortar. After the grinding had been continued for about ſix hours, the grains of *platina* appeared to be coated with the quickſilver, ſo as to cohere together into a kind of imperfect *amalgam*. After repeating the experiment ſeveral times, and evaporating the mixture, he always found, upon examining the dark coloured powder, intermingled with ſhining particles which remained, that a part of the *platina* was diſſolved by the mercury, and that the undiſſolved grains were coated with it. Com. Phil. &c. p. 508.

AMALGAMATION *of ſilver* is performed much after the ſame manner with that of gold; or it may be previouſly diſſolved in *aqua fortis*, and then precipitated. Mr. Gellert obſerves concerning this *amalgam*, that its ſpecific gravity is not only greater than the intermediate ſpecific gravity of the mercury, and of the ſilver, but that it is even greater than the ſpecific gravity of mercury, although ſilver is much lighter. Metall. Chym. tom. i.

This *amalgam* is uſed in the operation of ſilvering, and alſo in making the *Arbor Dianæ*.

Method of extracting ſilver by *amalgamation* is this: waſh the ores, earths, ſtones, ſands, &c. in which ſilver lies hidden in its metallic form, and when well waſhed, infuſe them in very ſour vinegar, in a clean wooden, or glaſs veſſel; about one tenth part of alum muſt alſo be firſt boiled, and diſſolved in this vinegar; let the vinegar entirely cover the ore, and leave it thus for one or two days. Decant off the vinegar, and waſh the macerated powder in pure warm water, till the water becomes quite inſipid, when juſt poured upon it; dry the powder, and put it into an iron mortar; then add mercury four times the quantity of the dried powder, and with a wooden peſtle fitted to the ſize of the mortar with a large round head, beat the whole till every part of the powder is rendered of a blackiſh colour, by the minute globules of mercury mixt with it; at this time pour water on the whole, and continue rubbing it with the peſtle for ſome time; pour out the turbid water, and add freſh, till all the looſe powder is waſhed off; then dry the *amalgama* with a ſpunge. Cramer's Art of Aſſaying, p. 232.

To ſeparate the ſilver from this *amalgama*, ſpread a thin leather over a wide earthen or glaſs veſſel, fold it up in the form of a bag, and put the *amalgama* into it; tie the bag very firmly at the top, and ſqueeze it very hard, and the greateſt part of the mercury will be forced through into the veſſel placed underneath; untie the bag, and all the ſilver and gold, if there be any there, will be found remaining in it, with about an equal quantity of the mercury mixed with it. Put this paſte into a glaſs retort, ſet it in a ſand heat, adapt on a receiver, with a quantity of water in it; let the noſe of the retort be immerſed in the water, make a fire conſiderably ſtrong, and the mercury will all be driven into the receiver, falling into the water with a hiſſing noiſe. If you hear a crackling in the retort, diminiſh the fire a little; when no more quickſilver can be driven over by a great fire, let the retort grow cool, then take it away, and ſplit it by means of a thread dipped in brimſtone tied round the belly of the retort, and then ſet on fire: take out the maſs, and in an open fire run it, with the help of borax, into a maſs. Ibid.

AMALGAMATION *of tin* is made in the ſame way with that of lead. This is uſed for tinning looking-glaſſes, and for making mercury-balls, uſed in purifying water. Mr. Canton firſt obſerved, that a ſmall quantity of this *amalgama*, with a very little chalk or whiting, being rubbed on the cuſhion of a glaſs globe, or on the oiled ſilk-rubber of a tube, would contribute to increaſe the power of electricity; ſo that they might be excited by this means to a very great degree with very little friction, eſpecially if the rubbers be made more damp or dry, as occaſion may require. Phil. Tranſ. vol. lii. p. 461.

AMALGAMATION is alſo applied, in a leſs proper ſenſe, to a ſolution of ſulphur with mercury.

In this ſenſe *amalgamation* amounts to the ſame with mollification, or ſoftening; in which ſenſe the word is uſed by ſome ancient chemiſts.

AMALOZQUE, in *Zoology*, a name under which Nieremberg deſcribes a Mexican bird. The neck of this is red; it is of the ſize of the turtle, and lives about the lakes and rivers, but has not webbed feet; the breaſt, belly, and under-part of the wings are white; the tail is variegated with black and yellow, and it has two black circles, a finger's ſpace aſunder, round the neck and breaſt. It has a very long and ſlender beak, and feeds on the inſects common in watery places. Ray.

AMAN, a ſort of blue cotton cloth, which comes from the Levant by the way of Aleppo.

AMANDAVAS, in *Ornithology*, a ſpecies of the FRINGILLA, common in the Eaſt Indies.

AMANITA; ſee AGARICUS.

AMARACUS, among *Ancient Naturaliſts*; ſee SAMPSUCHUS.

AMARACUS, in *Botany*; ſee *Baſtard* FEVERFEW.

AMARADULUS, in *Botany*, a name ſometimes given to the woody NIGHTSHADE.

AMARANTH, an order of knighthood, inſtituted in Sweden by queen Chriſtina in 1645, at the cloſe of an annual feaſt, celebrated in that country, and called *Wirtſchaft*.

This feaſt was ſolemnized with entertainments, balls, maſquerades, and the like diverſions, and held from evening till the next morning.—That princeſs, thinking the name too vulgar, changed it into that of the *feaſt of the gods*, becauſe each perſon here repreſented ſome deity, according as it fell to his lot. The queen aſſumed the name of *Amarante*, that is, *unfading*, or *immortal*. The young nobility, dreſſed in the habit of nymphs and ſhepherds, ſerved the gods at the table.—At the end of the feaſt, the queen threw off her habit, which was covered with diamonds, leaving it to be pulled in pieces by the maſques; and, in memory of ſo gallant a feaſt, founded a military order, called, in Swediſh, *geſcilſchafft*, into which all that had been preſent at the feaſt were admitted, including ſixteen lords, and as many ladies, beſides the queen. Their device was the cypher of *amarante*, compoſed of two A's, the one erect, the other inverted, and interwoven together; the whole incloſed by a laurel crown, with this motto, *dolce nella memoria*. Bulſtrode Whitlock, the Engliſh embaſſador from Cromwell to the court of Sweden, was made a knight of the order of *amarante*.—On which account it ſeems to be, that we ſometimes find him ſtyled Sir Bulſtrode Whitlock.

AMARANTH, AMARANTHUS, of the *monoecia pentandria* claſs; *flower-gentle*, or *prince's feather*, in *Botany*. The characters are theſe: it hath male and female flowers on the ſame plant. The flower hath no petals, but the empalement conſiſts of three or five leaves, which is common to both ſexes. The male flowers have in ſome ſpecies three, in others five ſlender ſtamina. The female flowers have three ſhort ſtyles; the ſeed-veſſel hath one cell, in which is lodged a ſingle globular ſeed. There are ſeveral ſpecies.

The ſpecies of this plant cultivated in gardens for their beauty, are raiſed on hot-beds; and in June or July may be planted into the borders of the pleaſure garden, ſhading them until they have taken new root; and in dry weather they ſhould be well watered.

All the ſpecies of this plant are drying and aſtringent, but heat not in a violent degree. Schroder recommends the flowers of the common large garden-kind dried and powdered, as good in diarrhœas, dyſenteries, hæmorrhages of all kinds, and incontinence of urine; but they are very little uſed in the preſent practice.

AMARANTH expreſſes a colour inclining to purple. The name is derived from the flower.

AMARANTHOIDES, in *Botany*, *globe amaranth*, or GOMPHRENA of Linnæus.

The culture and propagation of theſe plants is, in all reſpects, the ſame with that of the AMARANTH; only that they muſt have a greater ſhare of heat, and muſt be forwarded more in the ſpring.

The flowers of this plant are commonly known by the name of *everlaſting flowers*; and, if kept in a dry place, after having been gathered in their full perfection, and before they begin to decay on the plant, they will retain their full beauty many years.

AMARYLLIS, in the Linnæan ſyſtem of *Botany*, the name of a genus of plants of the *hexandria monogynia* claſs, called in Engliſh *daffodil-lily*, and by other botanical writers LILIO-*narciſſus*; the corolla is bell-ſhaped, with ſix petals; the ſtigma is divided into three ſegments.

AMATIDES, in *Natural Hiſtory*, a name given by Bartholomæus Anglus, and other writers of his time, to a ſtone, of which they recorded a wonderful virtue in reſiſting the fire.

AMATORII *muſculi*, in *Anatomy*, an appellation ſometimes given to thoſe muſcles of the eyes which give them a caſt ſideways, and aſſiſt in that particular look by ſome called *ogling*.

When the *abductor* and *humilis* act together, they give this oblique motion.

AMAUROSIS, in *Medicine*, a deprivation of ſight; the eye remaining fair, and ſeemingly unaffected.

The word is formed of αμαυροω, *I darken*.

Amauroſis is the ſame with what the Latins more uſually call *gutta ſerena*.

A *perfect amauroſis* is when the blindneſs is total; when there is ſtill a power of diſtinguiſhing light from darkneſs, the diſeaſe is called by M. de St. Ives an *imperfect amauroſis*. There is a periodical ſort which comes on inſtantaneouſly, continues for hours, or days, and then diſappears. The *nyctalops* is conſidered by ſome as a ſpecies of this diſeaſe. This diſorder muſt be carefully diſtinguiſhed from the *glaucoma*, or CATARACT, and a vertigo, which require different methods of treatment. If the *amauroſis* ſucceeds a fever, or comes upon the aged, or very infirm, a cure is not to be expected; if one eye fails, the other uſually ſoon follows. But if the caſe be ſlight, and the habit of the body robuſt, if it happens after the meaſles, or ſmall-pox, or in pubertine virgins, it is ſometimes cured.

Mr. Hey, ſurgeon at Leeds, mentions ſeveral caſes of patients afflicted with the *amauroſis*, who were relieved by being electrified. Med. Obſ. and Inq. vol. v.

This diſtemper is ſometimes denominated *ſuffuſio nigra*, the black cataract.

The *amauroſis* differs from the AMBLYOPIA, this being in an inferior degree. For methods of cure, &c. ſee Heiſter, Hoffman, St. Ives, &c.

AMAUSA, a name by which the chemiſts have called the PASTES made of lead and cryſtal with various admixtures, for imitating gems.

AMAXOBII; ſee HAMAXOBII.

AMAZON, in *Antiquity*, denotes a bold, courageous woman, capable of daring, hardy atchievements.

AMAZONS, in a more peculiar ſenſe, denote an ancient nation of warlike women, who founded an empire in Aſia Minor, upon the river Thermodoon, along the coaſts of the Black Sea.

The *Amazons* are ſaid to have formed a ſtate out of which men were excluded. What commerce they had with that ſex, was only with ſtrangers; they killed all their male children, and cut off the right breaſts of their females, to make them more fit for the combat.—From which laſt circumſtance it is, that they are ſuppoſed to take their name, viz. from the privative α, and μαζος, *mamma, breaſt*.

It is a point controverted, even among ancient writers, whether ever there really were ſuch a nation of *Amazons*?—Strabo, Palæphatus, and others, abſolutely deny it: on the contrary, Herodotus, Pauſanias, Diodorus Siculus, Trogus Pompeius, Juſtin, Pliny, Mela, Plutarch, &c. expreſly aſſert it.

Hippocrates mentions a law among the *Amazons*, whereby they were doomed to remain virgins, till ſuch time as they had ſlain three men of their enemies.—He adds, that the reaſon of their cutting off the right breaſt was, to make the right arm the ſtronger; as ſuppoſing this would now receive the whole nutriment, which would otherwiſe have been divided between both.

Some authors relate, that, inſtead of killing, they only twiſted the legs of their male children, to prevent their being able to contend with them for the maſtery.

Dr. Bryant, in his Analyſis of Ancient Mythology, explodes the above account of the etymology and eſtabliſhment of the *Amazons* as fabulous; and obſerves, that they were, in general, Cuthite colonies from Egypt and Syria, who formed ſettlements in different countries, and that they derived their name from *zon*, the *ſun*, which was the national object of worſhip. Vol. iii. p. 463.

M. Petit, a French phyſician, publiſhed a Latin diſſertation, in 1685, to prove, that there was really a nation of *Amazons*; it contains abundance of curious inquiries, relating to their habit, their arms, the cities built by them, &c.—On medals, the *Amazons* buſt is uſually armed with a little ax, called *bipennis*, or *ſecuris*, borne on the ſhoulder, and a buckler, in form of a half-moon, by the Latins called *pelta*, on the left arm.—Hence that of the poet:

> *Non tibia Amazonia eſt pro me ſumenda ſecuris,*
> *Aut exciſa levi pelta gerenda manu.*
> Ov. ex Pont.

We read of Scythian *Amazons* in Herodotus; of Lybian *Amazons*, in Diodorus Siculus; and of German *Amazons*, in Lucius Florus. Later geographers and travellers alſo ſpeak of Mingrelian and Georgian *Amazons*; *Amazons* in America, in Monomotopa, in the Philippine iſlands, in Denmark, &c.

The *Amazons* of South America, living on the banks of the great river which bears their name, make the greateſt figure in modern ſtory. They are repreſented as governed and led to war only by their queen. No men are ſuffered to live among them; though thoſe of ſome neighbouring nations are ſuffered to viſit them, at a certain ſeaſon, for the ſake of procreation. The females iſſuing from this commerce are bred up with care, and inſtructed in what relates to war and government; as to the males, they are ſent away into the country of their fathers.

Some modern geographers and travellers mention *Amazons* ſtill in being.—John de los Sanctos, a Portugueſe Capuchin, in his deſcription of Æthiopia, ſpeaks of a race of *Amazons* in Africa; and Æneas Silvius gives us a very preciſe account of a republic of real *Amazons*, in Bohemia, which laſted nine years; founded by the courage of a maid named Valaſca.

AMAZON is alſo applied, in a figurative ſenſe, to bees, becauſe among theſe inſects the females alone are commonly ſuppoſed to bear ſway.

Ariſtotle, treating of the breeding of bees, profeſſes himſelf ignorant of their ſex; and therefore, willing to keep up the prerogative of the males, calls their governor βασιλευς, *rex*, in which he has been followed by the generality of authors.

An ingenious writer of our own country, takes the liberty to ſtrain the ordinary ſignification of the word *rex*, and in ſuch places tranſlates it *queen*, this being an *Amazonian*, or female kingdom.

Mr. Warder has publiſhed a work under the title of the True *Amazons*, or the Commonwealth of BEES.

AMAZONIAN, ſomething relating to, or reſembling AMAZONS.

AMAZONIAN *kingdom*, is particularly uſed for a feminine one, or that wherein the females alone bear rule.

AMAZONIAN *habit*, in *Antiquity*, denotes a dreſs formed in imitation of the Amazons.

Martia, the famous concubine of the emperor Commodus, had the appellation *Amazonian*, becauſe ſhe charmed him moſt in a habit of this kind.—Hence alſo that prince himſelf engaged in combat, in the amphitheatre, in an *Amazonian* habit; and of all titles the *Amazonius* was one of thoſe he moſt delighted in.—In honour either of the gallant, or his miſtreſs, the month December was alſo denominated *Amazonius*.

Some alſo apply *Amazonian habit* to the hunting dreſs worn by many ladies among us.

AMAZONIUS is an appellation given to a kind of paſtil, or *troche*, anciently uſed againſt riſings of the ſtomach, and vomitings.—The ingredients of which it is compoſed,

poſed, are ſmallage, aniſe-ſeed, wormwood, myrrh, pepper, *caſtoreum*, *opium*, and cinnamon.

AMBA, in *Botany*, a name by which ſome authors have called the *manga Indica*, or MANGO-*tree*, called alſo *ambalam*, and *ambe*.

AMBACHT, in *Topography*, denotes a kind of juriſdiction, or territory, the poſſeſſor whereof has the adminiſtration of juſtice, both in *alto* and *baſſo*; or of what is called in the Scotch law a power of pit and gallows, i. e. a power of drowning and hanging.

In ſome ancient writers *ambacht* is particularly uſed for the juriſdiction, government, or chief magiſtracy of a city. The word is very ancient, though uſed originally in a ſenſe ſomewhat different. Ennius calls a mercenary, or ſlave hired for money, *ambactus*; and Cæſar gives the ſame appellation to a kind of dependents among the Gauls, who, without being ſlaves, were attached to the ſervice of great lords.

AMBAGES, *circumlocution*; an indirect diſcourſe, or phraſe, tending to expreſs or ſhew ſomething by a compaſs of words or ſentiments fetched from afar.

AMBAIBA, the name of a tree in Braſil, called by the Indians, *tipioca*. Ray's Hiſt. Plant.

AMBAITINGA, the name of a tree, whoſe leaves are ſo rough, that they may be uſed to poliſh hard wood. Ray's Hiſt. Plant.

AMBAR-*ſeed*, in the *Materia Medica*, a name by which ſome have called muſk-ſeed.

AMBARVALIA, in *Antiquity*, a feaſt, or ceremony, among the Romans, celebrated annually, in honour of the goddeſs Ceres, in order to procure a happy harveſt.

At theſe feaſts they ſacrificed a bull, a ſow, and a ſheep; which, before the ſacrifice, were led in proceſſion thrice around the fields; whence the feaſt is ſuppoſed to have taken its name: from the Greek *αμφι*, *about*; or the Latin *ambio*, *I go round*; and *arvum*, *field*.—Though others write it *ambarbalia*, and *ambarbia*, and deduce it from *ambire urbem*, *to go round the city*.

From the beaſts offered in ſacrifice, the ceremony was alſo called SUOVETAURILIA.

Some will have the *ambarvalia* to have been held twice a year; the firſt time towards the end of January, or, as others think, in April; and the ſecond time in July, or, as Roſinus imagines, in Auguſt; at the time when the harveſt was ripe, *maturis frigibus*. Which opinion is the more probable, in that Ovid, who, in his Faſti, deſcribes the feaſts in the firſt ſix months of the year, from January to June incluſive, ſays nothing of the *ambarvalia*.

The ſacrifice offered on this occaſion was hence called *ambarvale ſacrum*, and *hoſtia ambarvalis*.

The *ambarvalia* were of two kinds, *public* and *private*.

The *private* were thoſe ſolemnized by the maſters of families, accompanied with their children and ſervants, in the villages and farms out of Rome.—They walked three times round the grounds, every one being crowned with leaves of oak, and ſinging hymns in honour of Ceres. After the proceſſion, they went to ſacrifice.

The *ambarvale carmen* was a prayer preferred on this occaſion; whereof we have the *formula* preſerved in Cato.

The *public ambarvalia* were thoſe celebrated in the boundaries of the city; and in which the twelve FRATRES *arvales* officiated pontifically, walking at the head of a proceſſion of the citizens, who had lands and vineyards at Rome.

The prayer, or *formula*, here uſed, was *avertas morbum, mortem, tabem, nebulam, impetiginem, peſeſtatem*.

Some make a quinquennial as well as an annual *ambarvalia*, the one performed once every *luſtrum*, the other once a year.

The prieſts who chiefly officiated at the ſolemnity, were called *fratres* ARVALES.

AMBARVALIS *flos*, in *Botany*, a name given, by ſome authors, to the *polygala*, or milkwort.

AMBASSADOR; ſee EMBASSADOR.

AMBE, in *Anatomy*, a ſuperficial jutting out of a BONE.

AMBE, in *Surgery*, is alſo uſed as the name of an ancient inſtrument, with which they reduced diſlocated bones. —The *ambe*, or *commander*, is mentioned by Hippocrates, and has its partizans among the moderns, eſpecially for replacing the arm.

It conſiſts of an horizontal lever, and a fixed point made of a piece of wood ſtanding vertically, to the extremity of which the lever is jointed by a hinge. The patient ſitting, and his arm that is hurt being raiſed, the machine is puſhed forward under the arm-pit, as far as can be, *curandum*, ſays Hippocrates, *ut quam penitiſſimè alam ſubeat*. The arm is tied to this horizontal piece, and then an aſſiſtant bears upon the ſcapula and the clavicula, whilſt another preſſes down the lever, and thus makes the bone come into its place again.

The capital defect of the *ambe* is, that it puſhes the head of the bone into its cavity, before the extenſion and counter extenſion are made; the dangerous conſequences of which are, firſt, that the reduction is very difficult, becauſe the bone is not conducted by the ſame way it took in luxating itſelf, and that one meets with obſtacles from the parts that ſurround it, even the *ſcapula* itſelf, on which it articulates. Secondly, in making efforts for ſurmounting thoſe obſtacles, one runs the riſque of turning inwards the cartilaginous edge of the cavity of the *ſcapula*, or the *capſula ligamentoſa*. The third defect of the *ambe* of Hippocrates is, that it cannot move the luxated bone, but from below upwards; conſequently the machine is only proper in luxations directly downwards; and yet it is certain, that the arm luxates itſelf both outwards and inwards, and luxations forward are very frequent. In thoſe caſes, the *ambe* is uſeleſs, and being dangerous in luxations downwards, it follows, that this machine labours under very great defects.

Mr. le Cat, in the Phil. Tranſ. N° 469, has endeavoured to remedy theſe defects, by giving the deſcription and uſe of a new *ambe*, not ſubject to the inconveniencies of the old one.

AMBER, *ſuccinum*, or *karabe*, in *Natural Hiſtory*, &c. a yellow tranſparent ſubſtance, of a gummous or bituminous form or conſiſtence, of a reſinous taſte, and a ſmell like oil of turpentine; chiefly found in the Baltic ſea, along the coaſts of Pruſſia, &c. of uſe in medicine, and in divers arts.

The word is originally Arabic, *ambar*, or *anbar*, which ſignifies the ſame.

This ſubſtance has been of great repute in the world from the very earlieſt times we have any knowledge of; many years before Chriſt it was in eſteem as a medicine; and Plato, Ariſtotle, and Herodotus, and among the poets, Æſchylus, and others, have commended its virtues. In the times of the Romans it became in high eſteem as a gem; and in the luxurious reign of Nero, immenſe quantities of it were brought to Rome, and uſed for ornamenting works of various kinds. Long after this, Theodoric king of the Goths ſhewed a high eſteem for it. However well known, and however highly eſteemed this ſubſtance was in theſe ages, its nature and origin yet remained unknown through a long ſeries of time, and various conjectures were made about it in the different places where people were poſſeſſed of it among their gems.

The generality of the falſe accounts of *amber* have been owing to the ignorance of the perſons who have taken upon them to give the hiſtory of it: they have, in general, taken upon hearſay what they have related, or borrowed it from books they were not able to underſtand. Thus we find the many places in Aſia and Africa celebrated for producing large ſtores of *amber*, are taken upon credit from the old authors, who have mentioned *ambra* as being found there: theſe copiers not diſtinguiſhing, that *ambra* in theſe places is not given as the name of *ſuccinum*, or *amber*, but that of the rich perfume called *ambergris*, which is found there, though the real *amber* never was.

The name of *oriental amber*, ſo common with ſome, ſeems to have been alſo owing to a miſtake, but of another kind; the GUM *copal*, brought from the Eaſt Indies, is very like *amber*, and ſome of the fantaſtic writers in chemiſtry have called this by the forced name of *oriental amber*. Hence thoſe who read their works, without perfectly underſtanding them, have ſuppoſed that *amber* was common in the Eaſt Indies; and as all the gems of that part of the world are ſuperior to thoſe of other places, they began to call all the fine pieces of this foſſil, by the pompous name of *oriental amber*. But it is certain, that we have no authentic account of its ever having been found in any of thoſe regions. All the intelligent perſons, who have reſided in the Eaſt Indies, ſay, that they never ſaw or heard of *amber* being found there. And, upon the whole, it ſeems very rational to conclude, that *oriental amber* never exiſted, otherwiſe than in the error before mentioned, of calling COPAL by that name. This we are very well aſſured of, that the Chineſe, who are as cunning a people as any in the world, expend annually with us vaſt ſums of money in buying European *amber*, and have done ſo at all times ſince we have trafficked with them; and it is by no means to be ſuppoſed that they would purchaſe it of us, if they had it nearer home. Europe ſeems the only region of the world where *amber* is produced: it ſeems alſo to be produced almoſt all over Europe, but not in equal plenty, nor perfection; the German dominions, and the country about the Baltic, claim the prerogative above all other places. Hartman, who has given the above mentioned account of the errors of the ancients, &c. in regard to the places of its origin, has been too free in cenſuring the moderns for giving it to ſome parts even of Europe: he ſcruples to believe that Italy, Spain, and even England, produce *amber*;

but in this he errs: he ſuppoſes that *jet*, which is called by ſome *black amber*, being found in theſe places, has impoſed upon the authors of theſe accounts, and made them ſay *amber* was found there; but nothing is more certain, than that *amber*, and that of the fineſt kind in the world, is found in England at leaſt, if not in the other places where he doubts of its production.

Amber is at this time thrown on the ſhores of Yorkſhire, and many other places, and found even in our clay-pits; the pits dug for tile-clay, between Tyburn and Kenſington Gravel-pits, have afforded many ſpecimens; and that behind St. George's Hoſpital, at Hyde-park Corner, has afforded fine ſpecimens, one of which has been wrought into a beautiful cane-head of three inches long; and if we mention Dr. Woodward, and the other authors, who have themſelves taken it up, we ſhall have no room to doubt of its being real *amber*, not JET, as Hartman ſuppoſes.

Poland, Sileſia, and Bohemia, are famous for the *amber* dug up there at this time. Germany affords great quantities of *amber*, as well dug up from the bowels of the earth, as toſſed about on the ſhores of the ſea and rivers there. Saxony, Miſnia, and Sweden, and many other places in this tract of Europe, abound with it. Denmark has afforded, at different times, ſeveral quantities of foſſile *amber*; and the ſhores of the Baltic abound with it. But the countries lying on the Baltic afford it in greateſt abundance of all; and of theſe the moſt plentiful country is Pruſſia, and the next is Pomerania. Pruſſia was, as early as the times of Theodoric the Goth, famous for *amber*; for this ſubſtance coming into great repute with this prince, ſome natives of Pruſſia, who were about his court, offered their ſervice to go to their own country, where that ſubſtance, they ſaid, was produced, and bring back great ſtores of it. They accordingly did ſo; and from this time Pruſſia had the honour to be called *The Country of Amber*, inſtead of Italy, which had before undeſervedly that title.

The *amber* of Pruſſia is not only found on the ſea-coaſts, but in digging; and though that of Pomerania is generally brought from the ſhores, yet people, who dig on different occaſions in the very heart of the country, at times find *amber*. Phil. Tranſ. N° 248. p. 5. See MATRIX *Succini*.

Junker deſcribes, after Neumann, the Pruſſian *amber-mines*, which are the richeſt known.

Firſt, at the ſurface of the earth, is found a *ſtratum* of ſand. Immediately under this ſand is a bed of clay, filled with ſmall flints of about an inch diameter each. Under this clay lies a *ſtratum* of black earth, or turf, filled with foſſile wood, half decompoſed, and bituminous; this ſtratum is extended upon a bank of minerals, containing little metal, except iron, which are conſequently pyrites. Laſtly, under this bed the *amber* is found, ſcattered about in pieces, or ſometimes accumulated in heaps.

Naturaliſts are greatly divided as to the origin of *amber*, and what claſs of bodies it belongs to; ſome referring it to the vegetable, others to the mineral, and ſome even to the animal kingdom.—Its natural hiſtory, and its chemical analyſis, afford ſomething in favour of each opinion.

Pliny deſcribes it as 'a reſinous juice, ouſing from aged 'pines and firs (others ſay from poplars, whereof there 'are whole foreſts on the coaſts of Sweden), and diſ'charged thence into the ſea, where, undergoing ſome 'alteration, it is thrown, in this form, upon the ſhores 'of Pruſſia, which lie very low: he adds, that it was 'hence the ancients gave it the denomination *ſuccinum*; 'from *ſuccus, juice*.'

This opinion of the ancient naturaliſt ſeems confirmed by obſervations of many of the modern ones; particularly of the learned father Camelli. Phil. Tranſ. N° 290.

Some ſuppoſe it a BITUMEN, trickling into the ſea from ſubterraneous ſources; and there concreted into this form, and thrown aſhore by the waves. But as good *amber* has been found in digging at a conſiderable diſtance from the ſea, as that gathered on the coaſt.

Others ſuppoſe *amber* a compound ſubſtance.—Pruſſia, ſay they, and the other countries which produce *amber*, are moiſtened with a bituminous juice, which mixing with the vitriolic ſalts abounding in thoſe places, the points of thoſe ſalts fix its fluidity, whence it congeals; and the reſult of that congelation makes what we call *amber*; which is more or leſs pure, tranſparent, and firm, as thoſe parts of ſalt and bitumen are more or leſs pure, and are mixed in this or that proportion.

Mr. Brydone, in his Tour to Sicily and Malta, ſays, that the river Gearretta, formerly celebrated by the poets under the name of Simetus, throws up near its mouth great quantities of *amber*. Vol. i. Lett. 12. p. 282.

He mentions alſo a kind of artificial *amber*, not uncommon there, made, as he was told, from COPAL, but very different from the natural. Ib. p. 284.

If the people, who collect *amber* on the ſhores of the Baltic, were more curious and particular in their obſervations of the maſſes they find, we ſhould doubtleſs have much more lights into its true hiſtory and nature. There is no queſtion, but that ſome pieces of it are toſſed up there ſo imperfectly formed, that the proceſs of nature may be ſeen in their different ſtages. Pieces have been ſometimes found ſo ſoft, as to receive the impreſſion of a ſeal: theſe are always not only perfect *amber* in other reſpects, but they are obſerved to have a ſmell ſtronger than the common *amber* has. Theſe pieces ſometimes harden immediately, on being expoſed to the air, but ſometimes they retain this ſoftneſs many months. We have an account of ſuch a piece in the Philoſophical Tranſactions, which had retained this ſoftneſs a whole year, in which time it had lain among other pieces of *amber*; and of another maſs very ſoft on one ſide, and hard on the other, and containing in the ſoft part a fly buried. Phil. Tranſ. N° 57.

Hartman has evidently proved, that *amber* is formed of a BITUMEN, mixed with vitriol and other ſalts; and though this is allowed him in regard to the foſſile *amber*, many diſpute whether the ſea or *hauſtile amber*, as they expreſs it, be ſo produced. It is, however, very evident, that all *amber* is of the ſame origin, and probably all the *hauſtile amber* is firſt waſhed into the ſea out of the cliffs; though Hartman thinks it very poſſible, that ſome of it may be formed in the earth under the ſea, and be waſhed up thence. The *hauſtile*, or *ſea-amber*, is uſually finer to the eye than the *foſſile*; but the reaſon is, that it is diveſted of that coarſe coat with which the other is covered while in the earth. Hartman's Hiſt. Succini.

The chemiſts are as much divided on this head as the naturaliſts. *Amber* being found by diſtillation to yield an acid ſpirit, which precipitates into a ſalt, is inferred, by ſome, to be of a mineral nature; this being a circumſtance peculiar to that kingdom, and never found in the diſtillation of vegetables: to which may be added, that *amber* diſſolves in *alcohol*, not in water; and melts at the fire, and is inflammable; which are characters that ſeem to refer it to the claſs of ſulphurs, or bitumens.

Others, on the contrary, argue it to be of the vegetable kind, from its reſolving into the ſame principles with vegetables, viz. water, ſpirit, ſalt, and oil.—Boerhaave reſembles it to camphire, which is a concrete oil of the aromatic plants of hot countries, elaborated by heat into a cryſtalline form.

Amber, though fuſible with a ſmall fire, and concreting again when cold, yet differs from the metals, and other fuſible bodies of that kind, in this, that as ſoon as cold they are the ſame as before melting; but *amber*, when it has once been melted, is no longer *amber*, it loſes its beauty and hardneſs; and the true reaſon of this is, that being compoſed of BITUMEN and ſalt, the ſalt flies off in the heating, and leaves the remainder little better than the ſimple *reſiduum* of an evaporated *petroleum*, or any other liquid bitumen. There have been people, at different times, who have pretended to have an art of melting ſmall pieces of *amber* into a maſs, and conſtituting large ones of them; but this ſeems ſuch another undertaking as the making of gold; all the trials that have yet been made by the moſt curious experimenters, proving, that the heat which is neceſſary to melt *amber*, is ſufficient to deſtroy it. Phil. Tranſ. N° 248. p. 25.

Hartman indeed mentions an accident, which ſhews a poſſibility of many pieces of *amber* being combined into one by an operation of nature, though it never could be effected by art. A ſheep was once killed in Pruſſia, in whoſe ſtomach a large piece of *amber* was found, which was compoſed of ſeveral other ſmaller pieces, the joinings of all which might be ſeen, though as firm as the pieces themſelves. This is a proof that the creature had ſwallowed the whole in ſmall pieces with its food, and that nature, by the heat and juices of its ſtomach, had ſoftened thoſe pieces without melting them, ſo as to make them unite firmly, tho' not ſo as to be thoroughly blended with each other. Could art arrive at this, which it is not probable it ever will, even this is far ſhort of what is pretended of melting *amber*, and caſting it into what form is deſired.

There are ſeveral indications which diſcover where *amber* is to be found.—The ſurface of the earth is there covered with a ſoft ſcaly ſtone; and vitriol in particular always abounds there, which is ſometimes found white, ſometimes reduced into a matter, like melted glaſs, and ſometimes figured like petrified wood.

Amber aſſumes all figures in the ground: that of a pear, an almond, a pea, &c. In *amber* there have been ſaid to be letters found very well formed; and even Hebrew and Arabic characters.—Within ſome pieces of *amber* have likewiſe been found leaves, inſects, &c. included; which ſeems to indicate, either that the *amber* was originally in a fluid ſtate, or that having been expoſed to the ſun, it was once ſoftened, and rendered ſuſceptible of the leaves, inſects, &c. which came in its way. The latter of theſe ſeems the more agreeable to the *phænomenon*, becauſe thoſe inſects, &c. are never found in the centre of the pieces of *amber*, but always near the ſurface.

It is obſerved by the inhabitants of the places where *amber* is produced, that all animals, whether terreſtrial, aereal, or aquatic, are extremely fond of it; and that they frequently find pieces of it in their excrements, and in their bodies when opened.

The bodies of inſects, found buried in *amber*, are viewed with admiration by all the world; but of the moſt remarkable of theſe, many are to be ſuſpected as counterfeit, the great price, beautiful ſpecimens of this kind ſell at, having tempted ingenious cheats to introduce animal bodies in ſuch artful manners into ſeemingly whole pieces of *amber*, that it is not eaſy to detect the fraud. The factitious curioſities in *amber*, which are pretended to be pieces of this foſſil, with inſects embedded in it, are uſually no other than a hardened varniſh, not having the hardneſs, or other qualities of *amber*. Some few of them are *amber* melted, into which the inſects have been put in that ſtate, but theſe are very coarſe and brittle. Theſe two kinds of cheat are diſcovered by their want of hardneſs, or by obſerving the ſides of the piece, to find the joining where it has been ſplit.

Many ſpecies of the fly kind, however, are obviouſly and indiſputably lodged by nature there. Among this tribe of animals, the ſeveral ſpecies of the *ichneumon* fly are found the moſt numerous; the common houſe and fleſh flies are alſo frequently found thus preſerved; and it is remarkable, that of theſe ſome have preſerved, and others have wholly loſt their natural colours. Theſe are ſometimes found in cloudy pieces of *amber*, but much more frequently in the perfectly clear and fine ones; and in theſe many are ſeen plainly to be encruſted with a thin coat of the matter of the *amber*, ſeparate from the maſs.

Some of theſe, which are incloſed in it, are plainly ſeen to have ſtruggled hard for their liberty, and even to have left their limbs behind them in the attempt; it being no unuſual thing to ſee, in a maſs of *amber* that contains a ſtout beetle, the animal wanting one, or perhaps two of its legs; and thoſe legs left in different places, nearer that part of the maſs from which it has travelled. This alſo may account for the common accident of finding legs, or wings of flies, without the reſt of their bodies, in pieces of *amber*; the inſects, to which theſe have belonged, having, when entangled in the yet ſoft and viſcid matter of the *amber*, eſcaped, at the expence of leaving theſe limbs behind them. Drops of clear water are ſometimes alſo preſerved in *amber*. Theſe have doubtleſs been received into it while ſoft, and preſerved by its hardening round them. They are uſually contained in cavities too large for them, though ſometimes the holes are filled up. In ſome ſpecimens, the holes alone remain without any moiſture. Naturaliſts, who have been ſo curious as to examine this liquor contained in the *amber*, have found it to be of an auſtere taſte, like that in which vitriol had been diſſolved: others mention the having met with it wholly inſipid, and ſome taſting of ſea-ſalt. It is eaſy to account for a drop of water, of any of the three kinds, being found in *amber*, but the vitriolic water is the moſt natural there, as there is always great plenty of vitriol where the *amber* is found.

Beautiful leaves of a pinnated ſtructure, reſembling ſome of the ferns, or maiden-hairs, have been found in ſome pieces; but theſe are rare, and the ſpecimens of great value.

Mineral ſubſtances are alſo found at times lodged in maſſes of *amber*. Some of the pompous collections of the German princes boaſt of ſpecimens of native gold and ſilver in maſſes of *amber*; but as there are many ſubſtances of the marcaſite, and other kinds, that have all the glittering appearance of gold and ſilver, it is not to be too haſtily concluded, that theſe metals are really lodged in theſe beds of *amber*. Iron is found in various ſhapes immerſed in *amber*, and as it is often ſeen eroded, and ſometimes in the ſtate of vitriol, it is not impoſſible but that copper, and the other metals, may be alſo ſometimes immerſed in it in the ſame ſtate; and that the bluiſh and greeniſh colours, ſometimes found in the recent pieces of timber, may be owing, like the particles of the gem colours, to thoſe metals; but as the gems, by their denſe texture, always retain their colours, this lighter and more lax bitumen uſually loſes what it gets of this kind, by keeping ſome time. Small pebbles, grains of ſand, and fragments of other ſtones, are not unfrequently alſo found immerſed in *amber*.

There is one very eaſy way of diſtinguiſhing alſo whether theſe are real and natural curioſities, or whether art has been concerned in them; which is by examining at what depth in the maſs the creature lies. *Inſects* naturally embedded in *amber* are always found near its ſurface, or, at leaſt, there are few found otherwiſe. The artificially buried creatures are always lodged in or near the center. The reaſon of this is plain; for the artiſt knows the deeper the creature lies, the better his art will be concealed; and that if he had lodged it near the ſurface, the natural tranſparence of the thin plate of *amber* which lay over it, would have ſhewn the fallacy, by bringing the artificial hollow too near the eye. Phil. Tranſ. N° 248. p. 21.

The moſt remarkable property of *amber* is, that, when rubbed, it draws or attracts other bodies to it; and this, it is obſerved, it does, even to thoſe bodies which the ancients thought it had an antipathy to; as oily bodies, drops of water, ſweat of human bodies, &c.

Add, that by the friction it is brought to yield light pretty copiouſly in the dark; whence it is reckoned among the native *phoſphori*.

This property which *amber* poſſeſſes of attracting light bodies, was very anciently obſerved. Thales of Miletus, ſix hundred years before Chriſt, concluded from hence that it was animated. But the firſt perſon, who expreſly mentions this ſubſtance, is Theophraſtus, about the year 300, before Chriſt. The attractive property of *amber* is likewiſe occaſionally taken notice of by Pliny, and other later naturaliſts, particularly by Gaſſendus, Kenelm Digby, and Sir Thomas Brown; but it was generally apprehended that this quality was peculiar to *amber* and jet, and perhaps agate, till Gilbert publiſhed his treatiſe De Magnete, in the year 1600. From ηλεκτρον, the Greek name for *amber*, is derived the term ELECTRICITY, which is now very extenſively applied not only to the power of attracting light bodies inherent in *amber*, but to other ſimilar powers, and their various effects, in whatever bodies they reſide, or to whatever bodies they may be communicated.

Some diſtinguiſh *amber* with regard to its colours, into *yellow*, *white*, *grey*, and *black*.—But the two latter are properly of a different nature and denomination; the one called JET, the other AMBERGRIS.

The *white* is moſt valued for medicinal uſes, as being beſt digeſted, of the moſt odoriferous ſmell, and containing the greateſt quantity of volatile ſalt.—The *yellow* is moſt prized by thoſe who work it into beads, and other toys, by reaſon of its tranſparency.

There are two methods of rendering *amber* tranſparent; either by cementing lumps of it with ſand, during forty hours, in an iron pot; or by digeſting them, during twenty hours, in boiling rape-ſeed oil.

AMBER is the baſis of all varniſhes. For the method of diſſolving this ſubſtance into varniſh, ſee VARNISH.

But if *amber* could be diſſolved without impairing its tranſparency, or one large maſs be made of it by uniting ſeveral ſmall ones, it is eaſy to ſee what would be the advantages of ſuch a proceſs. The art of embalming might poſſibly be alſo carried to a great height by this, if we could preſerve the human corpſe in a tranſparent caſe of *amber*, as the bodies of flies, ſpiders, graſhoppers, &c. are to a great perfection. Something of a ſubſtitute of this kind we have in fine roſin, boiled to a great hardneſs, and perfect tranſparence; this being diſſolved by heat, and the bodies of ſmall animals ſeveral times dipped in it, they are thus coated with colophony, that in ſome degree reſembles *amber*; but this muſt be kept from duſt. Shaw's Lectures, p. 425.

For the methods of diſſolving *amber* in oils, the advantages of ſuch ſolutions, and a farther account of its preparation for varniſhes, the curious may conſult Dr. Lewis's Commerc. Phil. Techn. p. 366, & ſeq.

AMBER is reputed of ſome medicinal efficacy; being uſed in ſuffumigations, to remove defluxions; and in powder, as an alterant, abſorbent, ſweetner, and aſtringent.

In times of the plague, thoſe who work in *amber* at Koningſberg, are ſaid to be never infected; whence it is held a preſervative.—It is alſo eſteemed a lithontriptic, diuretic, and promoter of the *menſes*.

It is preſcribed in the *fluor albus*, in convulſions, and in all diſorders of the nerves. It is alſo given in coughs, and diſeaſes of the lungs; and is by ſome greatly recommended in inveterate head-achs. Its doſe is from one ſcruple to two.

Its preparations are,

Amber, *ſpirit of*, is an acid liquor, procured from *amber*, by pulverizing and diſtilling it with a ſand heat, with or without the addition of tobacco-pipes, bricks, ſand, &c.

It is chiefly uſed externally in rheumatic pains and aches; and internally, in inveterate gleets, &c.

Amber, *oil of*, is a fine, tranſparent, ponderous, yellow oil, procured after the ſpirit, by increaſing the degree of fire.—This, by rectification, becomes a good antihyſteric, and emmenagogue; being very ſubtile and penetrative.

To purify the dark muddy *oil of amber* drawn *per ſe*, take two pounds of good brandy, one of ſea-ſalt, half a pound of the oil; mix them, and diſtil them together, and a large proportion will come over very tranſparent, and finely coloured.

Amber, *volatile ſalt of*.—The principal chemical production of *amber*, is a peculiar acid ſalt; which riſes after the oil, and fixes in the neck of the retort, &c. Mr. Potts concludes from ſeveral experiments, that the acid of this *ſalt* is eſſentially different from the three mineral acids, and approaches neareſt to thoſe of the vegetable kingdom. See Acid *of Amber*.

It is a good cephalic, and detergent; and Quincy ſays, it extremely attenuates, and cuts, and penetrates, the moſt remote and minute receſſes; and thus ſcours, as it were, the whole nervous ſyſtem. Its chief tendency, he adds, is to ſecretion, and what it carries along with it, is by urine. It alſo contributes, with alexipharmics, to promote a *diaphoreſis*; and is ſcarce ever omitted in preſcription for chronic caſes, as epilepſies, palſies, &c. The great conſumption of this medicine, and the ſmall proportion that *amber* yields of it, occaſions it to be frequently adulterated with ſal ammoniac, nitre, cream of tartar, ſalt of coral, &c.

Amber, *tincture of*, is procured by digeſtion in ſpirit of wine with a ſand-heat.—It is preſcribed with the ſame intentions as the ſalt of *amber*.

Amber, *black, gagates*. See Jet.

Amber, *liquid*, and *balſam of*, ſee Balsam.

Amber-seed, or *muſk-ſeed*, is a ſeed that is ſomewhat like the millet, of a bitteriſh taſte, and brought dry to us from Martinico and Egypt.—The Egyptians uſe it internally, as a cordial, to fortify the heart, ſtomach, and head, and to provoke luſt.—It gives a grateful ſcent to the breath, after eating; but it is not proper for thoſe who are inclinable to vapours.

Amber-tree, *anthoſpermum*, in *Botany*, a genus of the *polygamia dioecia*. Its characters are theſe: it is male and female in different plants, and the male flowers have no petals. The female flowers have the ſame ſtructure as the male, but have no ſtamina; an oval germen is ſituated in the bottom, which becomes a roundiſh capſule, having four cells, and containing ſeveral angular ſeeds. There is but one ſpecies.

The beauty of this ſhrub is its ſmall evergreen leaves, which grow as cloſe as heath, and being bruiſed between the fingers emit a very fragrant odour.

It is but of late years, that this plant could be propagated by ſeeds, no female plants being in our gardens; they were, therefore, continued from cuttings, until ſeeds were procured from the Cape of Good Hope, from which both kinds were raiſed.

AMBERBEI, in *Botany*. See Centaury.

AMBERGRIS, Amber-grease, Ambra Grisia, a fragrant drug, that melts almoſt like wax; and is commonly of a greyiſh or aſh-colour, and is uſed both as a perfume, and a cordial.

It is found on the ſea-coaſts, in ſeveral countries; as, along the ſouthern, and eaſtern parts of Africa, Madagaſcar, the Maldives, ſome parts of the Mediterranean, and in the Weſt Indies, about the iſlands of Bermudas and Jamaica; alſo on the coaſts of Carolina, and the weſtern coaſts of Ireland. It is likewiſe ſaid to be found on the coaſts of Norfolk, and in the iſlands of Orkney. It is ſometimes whitiſh, browniſh, and ſtreaked with yellowiſh, blackiſh, &c.

There is a great variety of opinions among naturaliſts with regard to its origin and production: to rehearſe them all, would make a volume. Klobius recites eighteen, to which we could add half as many more.—The principal may be reduced to theſe which follow.

1. Some take it for the excrement of a bird, called in the Madagaſcar language *aſchibobuch*; which being melted by the heat of the ſun, and waſhed off the ſhore by the waves, they ſay is ſwallowed up by whales, who return it back in the condition we find it.

2. Others ſpeak of it as the excrement of a cetaceous fiſh; becauſe ſometimes found in the inteſtines, and ſometimes in the *fæces* themſelves, of ſuch animals. But to both theſe hypotheſes it is objected, that we have no inſtance of any excrement capable of melting like wax. Beſides, the error of theſe opinions may be detected by chemical experiments; the dung of all animals admitting of a ſolution in aqueous menſtrua, but obſtinately reſiſting the moſt highly rectified ſpirit of wine. Add, that if it were the excrement of a whale, it ſhould rather be found in ſuch places where thoſe animals abound, as about Greenland, &c. than about the Maldive iſlands, Soffala, Melinda, Cape Comorin, &c. where no whales are found.

3. Others take it for a kind of wax, or gum, which diſtils from trees, and drops into the ſea, where it congeals, and becomes *ambergris*.

4. Others, and particularly many of the orientals, imagine it ſprings out of the bottom of the ſea, as *naphtha* does out of ſome fountains.—They add, that the only ſprings hereof are in the ſea of Ormus, between the Arabian and Perſian gulphs. Edriſſi, who is of this opinion, in the firſt climate of his Geography, mentions pieces of *ambergris* on thoſe coaſts, weighing a full quintal.—Paludanus and Linſchotten alſo ſpeak of it as a ſort of bitumen, gradually working up from the bottom of the ſea, and hardening in the ſun.

5. Others take it for a ſea-muſhroom, torn up from the bottom by the violence of tempeſts; it being obſerved, that *ambergris* is never found but during the ſouth-weſt monſoons, after ſtorms.

6. Others aſſert that it is a vegetable production, iſſuing out of the root of a tree, whoſe roots always ſhoot toward the ſea, and diſcharge themſelves into the ſame.—This account we have in the Philoſophical Tranſactions, from one of the Dutch factors at Batavia; and the ſame is confirmed by Mr. Boyle.

7. Others ſuppoſe it a ſpongious kind of earth, which the working of the ſea waſhes from off the rocks, where, being lighter than water, it floats.—Others are of opinion, that it is a bituminous matter; that it is at firſt liquid, and runs into the ſea; and that it is there condenſed, and reduced into a maſs.

8. Others maintain, that *ambergris* is made from the honey-combs which fall into the ſea from the rocks, where the bees had formed their neſts.—This opinion ſeems to have ſomething of experience on its ſide; ſeveral perſons having ſeen pieces that were half *ambergris*, and half plain honey-comb; and others, again, having found large pieces of *ambergris*, in the middle of which, when broken, they diſcovered both honey-comb, and honey. But the error of this hypotheſis may be detected by chemical experiments; as honey likewiſe admits of a ſolution in aqueous *menſtrua*, but reſiſts the moſt highly rectified ſpirit of wine.

9. Dr. Boylſton, and Mr. Dudley, in the Philoſophical Tranſactions, aſſert, that the *ambergris* is a true, animal concrete, formed in balls, in the body of the male ſpermaceti whale, and lodged in a large oval bag, over the teſticles, at the root of the penis. Phil. Tranſ. N° 385, and 387.

It is certain, the whale-catchers have divers times found *ambergris* in their ſpermaceti whales, and that chiefly in the larger and older ſort; and it is from the informations of Mr. Atkins, and other whale-catchers, that Mr. Dudley chiefly drew his account.—But it is added, that it is not one ſpermaceti whale in a hundred that is found to have *ambergris*. Mr. Neumann abſolutely denies it to be an animal ſubſtance, as not yielding, in the analyſis, any one animal principle.—It may indeed, he ſays, be found in whales; but it muſt have been ſwallowed by them.

Mr. Neumann, chemiſt to the king of Pruſſia, after an ample recital of all the different opinions advanced by others, gives us his own; which is, that *ambergris* is a Bitumen, iſſuing out of the earth into the ſea; at firſt of a viſcous conſiſtence, but hardening, by its mixture with ſome liquid *naphtha*, into the form wherein we find it. Phil. Tranſ. N° 433, N° 434, N° 435. Mr. Cartheuſer is of the ſame opinion.

This opinion ſeems to be the beſt founded, and is ſtrengthened by this circumſtance, that *ambergris* is found in the greateſt quantities in the ſea, about the iſland of Madagaſcar, where the ſubterranean parts are ſuppoſed to be impregnated with bituminous matter.

The pieces are frequently ſeen compoſed of divers ſtrata, laid one over another, with ſtones and other bodies incloſed therein, and the ſtrata are ſometimes full of little ſhells, which ſeem a ſpecies of *concha anatifera*; whence it may be conjectured, that the *ambergris* has originally been in a fluid ſtate, or, at leaſt, that it has been diſſolved, and in that ſtate has formed itſelf afreſh, and inveloped ſuch bodies as happened to be in its way.

Ambergris is of conſiderable uſe among perfumers, who melt it over a gentle fire, and make extracts, eſſences, and tinctures of it.—It would be of more uſe in phyſic too, were not its ſmell apt to occaſion vapours.

There is a preparation, however, recommended by Hoffman, which is ſaid not to be attended with theſe ill conſequences. The preparation is made in the following manner.

Let the ſpirit of roſes, perfectly dephlegmated, be, not only once, but twice, at leaſt, drawn off from the ſalt of tartar, which is burnt, or calcined, in a vehement fire. By this means there is produced a ſpirit, which by its penetrating quality, enters into the inmoſt ſubſtance of the *ambergris*, and ſo ſeparates and reſolves its oleous contexture.

This, we are aſſured, will not excite commotions and agitations in a weak body, as does the common preparation of *ambergris*, which is made with a mixture of muſk or civet. Hoffm. Obſerv. Phyſic. Chem. lib. i. cap. 18.

It enters into the compoſition of many cordial, ſudorific, and alexeterial waters. But its chief virtue conſiſts in its antiſpaſmodic and ſedative qualities, ſimilar to thoſe of muſk and caſtor, and its power of relieving certain hyſterical, convulſive, and other nervous affections. It may be taken inwardly from half a grain to ten or twelve grains, or more; for as to doſes there can be no fixed rules about remedies and diſeaſes of theſe kinds.

Ambergris is very commonly counterfeited and adulterated. The firſt generally conſiſts of muſk, civet, ſtorax, laudanum, and aloes wood, mixed together; the latter of a large quantity of bullock's blood, duly flavoured with muſk and civet. It is one of the moſt agreeable perfumes; but muſt be proportioned ſo ſparingly, as that while it improves the ſmell of what it is added to, its own may not be felt.

Neumann gives the chemical characters of this bitumen, and its analyſis, by diſtillation. He diſtinguiſhes the ſophiſtications of *ambergris*, and obſerves, that it is totally ſoluble in oils and vinous ſpirits, and that it yields the ſame products as AMBER. See the particulars and the proofs of this in Neumann's Works, p. 239, & ſeq.

We have various inſtances in authors, of vaſt pieces of this matter: one of the largeſt that has been known in Europe, was brought by the Dutch Eaſt-India company, toward the cloſe of the laſt century, and kept in their houſe for ſome years. It was almoſt round; meaſured two feet in diameter, and weighed an hundred and eighty-two pounds. The great duke of Tuſcany offered fifty thouſand crowns for it. We are told, however, that one was taken up near the Cape of Good Hope, which weighed three hundred pounds; and another, if we may credit the relation, fifteen thouſand pounds. Phil. Tranſ. N° 263, N° 232.

AMBERGRIS may be known to be genuine by its fragrant ſcent, when a hot needle or pin is thruſt into it, and its melting like fat, of an uniform conſiſtence. Whereas the counterfeit will not yield ſuch a ſmell, nor prove of ſuch a fat texture.

One thing however is very remarkable, that this drug, which is the moſt ſweet of all the perfumes, ſhould be capable of being reſembled in ſmell, by a preparation of one of the moſt odious of all ſtinks. Mr. Homberg found, that a veſſel in which he had made a long digeſtion of the human *fæces*, acquired a very ſtrong and perfect ſmell of *ambergris*, inſomuch that any one would have thought a great quantity of eſſence of *ambergris* had been made in it. The perfume was ſo ſtrong and offenſive, that the veſſel was forced to be removed out of the elaboratory. Mem. Acad. Roy. 1700.

AMBERING is uſed, by ſome writers, to denote the giving a ſcent or perfume of *amber* to any thing.

This is otherwiſe called *enambering*. Hook, Phil. Collect. N° 4.

Dr. Hook mentions an extraordinary method of *ambering in infinitum*, i. e. with a ſmall quantity of *amber*, and other requiſites, *enambering* an hundred, or a thouſand pounds of ſugar, or the like, ſo as the firſt matter ſtill remains undecayed, to be uſed again. Ibid.

AMBIDEXTER, one who uſes both hands alike, the left as well as right, or in caſes where only the uſe of one is neceſſary.

The word is compounded of *ambo*, *both*, and *dexter*, *right hand*; by analogy to the Greek αμφιδεξιος, which ſignifies the ſame.

Women, according to the obſervation of Hippocrates, are never *ambidextrous*. But this is denied by ſome moderns, who give inſtances of the contrary; though it is owned, they are but few in compariſon of thoſe that are found in the other ſex.

It may be imputed to education and habit, that men as well as brutes are not all *ambidexters*, there being no difference of right and left in the nature of things. Nurſes are even forced to be at ſome pains to enure the infants under their care to forego the uſe of their left-hand. How far it may be our advantage to be deprived of half our natural dexterity, may be doubted. It is certain, there are infinite occaſions in life, when it would be better to have the equal uſe of both hands. Surgeons and oculiſts are of neceſſity obliged to be *ambidexters*; bleeding, &c. in the left-arm, or left-ankle, and operations on the left-eyes, cannot be well performed but with the left-hand. Divers inſtances occur in hiſtory, where the left-hand has been cultivated preferably to the right. But by the laws of the ancient Scythians, people were enjoined to exerciſe both hands alike, without partiality either for the right or left; and Plato enjoins *ambidexterity* to be obſerved and encouraged in his republic.

In the Grecian armies, their more diſtinguiſhed ſoldiers, their pikemen and halbardeers, as thoſe who formed the firſt line of their battalions, were to be able to fight indifferently with left-hand or right. We find it mentioned in Scripture, that, on an extraordinary occaſion, the ſingle tribe of Gad produced 700 brave men, who fought with the left-hand as well as the right. And the Roman hiſtorians aſſure us, that they had gladiators who were trained up to the ſame exerciſe. An ingenious French writer is ſurpriſed, that among all the modern refinements in the art of war, none have thought of reſtoring the ancient practice of forming *ambidexters*, which it is certain might be of conſiderable ſervice in the way of ſtratagem.

AMBIDEXTER, in a legal ſenſe, denotes a perſon who takes money from both of the contending parties to further them in their cauſe.—In this ſenſe the word may be applied to a judge, juror, a ſollicitor, or the like.—The penalty on a juror, in ſuch caſe, is to forfeit DECIES TANTUM, ten times as much as he receives.

AMBIEGNA, in *Antiquity*, an appellation given to a victim, which was ſurrounded, or attended at the time of offering it, with other leſſer ones.

In this ſenſe, the word is alſo written *ambegui*. We read of *ambiegnæ oves* uſed in ſacrificing to Juno, which were ſheep, having brought forth twins, and offered up with their two lambs faſtened on either ſide.

AMBIENT, a term applied to ſuch things as encompaſs others round about.

The word is formed of *ambire*, *to encompaſs*.

Thus, the bodies ſituate around another body, are called *ambient*, and often the CIRCUM-AMBIENT bodies.—The whole body of air, becauſe it encompaſſes all things on the face of the earth, is often by phyſical writers called, by way of eminence, the *ambient*, or *ambient* air.

AMBIGENAL *hyperbola*. See HYPERBOLA.

AMBIGU denotes a kind of mixed entertainment, wherein both fleſh and fruit are ſerved together; ſo that it ſeems doubtful whether to denominate it a mere collation, or a meal.

AMBIGUOUS, ſomething dubious, obſcure, or which may be taken in different ſenſes. See EQUIVOCAL.

The word is formed of *ambo*, *both*, and *ago*, *I drive*; q. d. that which keeps the mind wavering, or in ſuſpenſe; not knowing which ſide to chooſe.

The anſwers of the ancient oracles were always *ambiguous*.

An anonymous writer has publiſhed a dictionary of *ambiguous* words. Lexicon Philoſophicum de Ambiguitate Vocabulorum, Francof. 1597. 4to.

Ambiguity is occaſioned either by a wrong choice of words, and the uſe of equivocal terms, or by an improper arrangement of them. *Ambiguities* of the laſt kind are either, where the arrangement leads to a wrong ſenſe, or where the ſenſe is left doubtful. Dr. Campbell expreſſes the former by the term equivocation, and appropriates that of *ambiguity* to the latter. See Elem. of Criticiſm, vol. ii. p. 20, 54; and Campbell's Philoſophy of Rhetoric, vol. ii. p. 28, 38.

AMBIT, AMBITUS, of a figure, in *Geometry*, denotes the *perimeter*; or the ſum of all the lines, that conſtitute, or include it.

Iſaac Voſſius has a particular inquiry concerning the *ambit*, or circumference of ancient Rome. That of the city he makes to be 60¼ miles, or *mille paſſus*, and that of the city and ſuburbs together 72 miles; exceeding ancient Babylon, whoſe *ambit* was only 60 miles.

AMBIT, *ambitus*, was particularly uſed, in *Antiquity*, to denote a ſpace of ground to be left vacant betwixt one building and another. By the laws of the Twelve Tables, houſes were not to be built contiguous, but an *ambit*, or ſpace of 2½ feet, was to be left about each, for fear of fire.

The *ambitus* of a tomb, or monument, denoted a certain number of feet, in length and breadth, around the ſame, within which the ſanctity aſſigned to it was limited. The whole ground wherein a tomb was erected, was not to be ſeparated from the common uſes; for this reaſon, it was frequent to inſcribe the *ambit* on it, that it might be known how far its ſanctity extended: thus, *in fronte pedes tot, in agrum pedes tot.*

AMBITUS, among the ancient Romans, the act of ſoliciting, or making intereſt, for offices, or honours.

The candidates, in this caſe, went about the city, and into all public places and aſſemblies, to beg votes; which was called *ambitus*; *am*, in the ancient Latin, ſignifying *circum*, *about*, and *ire*, *to go*.

Among the Romans, it differed from *ambition*, as the former lies in the act, the latter in the mind.

Ambitus was of two kinds, one lawful, and even laudable; the other infamous.

The firſt, called alſo *ambitus popularis*, was when a perſon offered his ſervice to the republic frankly, leaving it to every body to judge of his pretenſions as they found reaſonable.

This kind was not prohibited by any law, but always approved and practiſed by the beſt and greateſt men.

The means and inſtruments here made uſe of were various, 1. *amici*, or friends, under divers relations, including *cognati*, *affines*, *neceſſarii*, *familiares*, *vicini*, *tribules*, *clientes*, *municipes*, *ſodales*, *collegæ*. 2. *Nomenclatura*, or the calling and ſaluting every perſon by his name; to which purpoſe, the candidates were attended with an officer, under the denomination of *interpres*, or *nomenclator*. 3. *Blanditia*, or obliging perſons by ſerving them, or their friends, patrons, or the like, with their vote and intereſt on other occaſions. 4. *Prenſatio*, the ſhaking every perſon by the hand, offering him his ſervice, friendſhip, &c. 5. *Aſſiduitas*. 6. The *toga candida*, worn looſe. 7. *Benignitas*, the diſtributing largeſſes, *congiaria*, &c.

The ſecond kind was that wherein force, cajoling, money, or other extraordinary influence, was made uſe of.—This was held infamous, and ſeverely puniſhed, as a ſource of corruption, and other miſchiefs.

This kind of *ambitus* was at one time the great trade of Rome, and demanded a conſtant ſupply of great ſums of money. Tully aſſigns this as the cauſe of the high rate of intereſt, and tells us it had raiſed it from 4 to 8 per cent.—Bribery was come to the pitch of 80729*l.* per tribe; and there being no leſs than thirty-five tribes, it is obvious how expenſive this corruption was grown.—It is alſo well known where it ended.

Several laws were made againſt it, as the *Lex Acilia, Calpurnia, Aufidia, Bæbia, Æmilia, Cornelia, Fulvia, Fabia, Julia Auguſti, Julia Cæſaris, Licinia, Maria, Pœtelia, Pompeia, Tullia Vetus.*

In the year of Rome 321, the uſe of the *toga candida* was prohibited. In the year 398, the candidates were forbid to go to the markets and meetings in the neighbouring towns. In 571, ſevere penalties were laid on the givers of largeſſes. In 594, this was made puniſhable by baniſhment. In 697, heavy fines were impoſed. By the *Lex Tullia*, made in the conſulſhip of Cicero, the candidates were forbidden to beſtow any combats of gladiators on the people, to make any public feaſts, or to cauſe themſelves to be followed by a crowd of clients, for two years before they put in for any place.

A ſenator, who was guilty of a breach of this law, was puniſhed with ten years baniſhment; others were fined, and rendered incapable of any dignity for ever.

Ambitus was not only practiſed at Rome and in the forum, but in the meetings and aſſemblies of other towns in Italy, where numbers of citizens were uſually found, on account of trade and buſineſs.

The practice ceaſed in the city from the time of the emperors, becauſe poſts were not then to be had by courting the people, but by favour from the prince.

Perſons who had cauſes depending, practiſed the ſame, going about among the judges to implore their favour and mercy.

They who practiſed this were called *ambitioſi*. Hence we alſo meet with *ambitioſa decreta*, and *ambitioſa juſſa*; uſed for ſuch ſentences and decrees as were thus procured from the judges, contrary to reaſon and equity, either gratuitouſly, or for money.

Ambitus, in *Muſic*, a name ſometimes appropriated to ſignify the particular extent of each tone, or modification of grave and ſharp.

AMBIX, in *Ancient Writers*, denotes a veſſel of glaſs, or ſhell.

Hence the origin of the word *alembic*, which we ſometimes alſo find denoted by the word *ambix*.

AMBLE, Ambling, in *Horſemanſhip*, a peculiar kind of pace, wherein a horſe's two legs, of the ſame ſide, move at the ſame time.

The *ambling* horſe changes ſides at each remove; two legs of a ſide being always in the air, and two on the ground, at the ſame time: an *amble* is uſually the firſt natural pace of young colts; which, as ſoon as they have ſtrength enough to trot, they quit.—There is no ſuch thing as an *amble*, in the manege; the riding-maſters allowing of no other paces beſide walk, trot, and gallop: their reaſon is, that a horſe may be put from a trot to a gallop, without ſtopping him; but not from an *amble* to a gallop, without ſtopping; which loſes time, and interrupts the juſtneſs and cadence of the manege.

There are various practices and methods of diſcipline, for bringing a young horſe to *amble*; ſome chooſe to toil him in his foot-pace through new-plowed lands; which naturally inures him to the ſtroke required in the *amble*. But its inconveniences are, the weakneſs and lameneſs that ſuch diſorderly toil may bring on a young horſe.

Others attempt it by ſudden ſtopping, or checking him in the cheeks, when in a gallop; and thus putting him into an amazedneſs, between gallop and trot; ſo that loſing both, he neceſſarily ſtumbles upon an *amble*.—But this is apt to ſpoil a good mouth and rein, and expoſes the horſe to the danger of a hoof-reach, or ſinew-ſtrain, by over-reaching, &c.

Others prefer *ambling* by weights, as the beſt way; and to this end, ſome overload the horſe with exceſſive heavy ſhoes, which is apt to make him interfere, or ſtrike ſhort, with his hind feet.—Others fold leaden weights about the fetlock paſterns; which are not only liable to the miſchiefs of the former, but put the horſe in danger of incurable ſtrains, cruſhing of the coronet, and breeding of ring-bones, &c.—Others load the horſe's back with earth, lead, or the like maſſy ſubſtance; but this may occaſion a ſwaying of the back, overſtraining the fillets, &c.

Some endeavour to make him *amble* in hand, before they mount his back, by means of ſome wall, ſmooth pail or rail, and by checking him in the mouth with the bridle-hand, and correcting him with a rod on the hinder hoofs, and under the belly, when he treads falſe. But this is apt to drive a horſe to a deſperate phrenſy, before he can be made to underſtand what they would have of him; and to rear, ſprawl out his legs, and to make other antic poſtures, which are not eaſily quitted again. Others think to effect it by a pair of hind ſhoes, with long ſpurns or plates before the toes; and of ſuch length, that if the horſe offers to trot, the hind-foot beats the fore-foot. But this occaſions wounds of the back-ſinews, which often bring on an incurable lameneſs.

Some attempt to procure an *amble*, by folding fine, ſoft liſts ſtrait about his gambrels, in the place where he is gartered for a ſtiffle ſtrain; and turn him thus to graſs for two or three weeks, and afterwards take away the liſt.—This is a Spaniſh method, but diſapproved; for though a horſe cannot then trot but with pain, yet the members muſt be ſufferers; and though the *amble* be gained, it muſt be ſlow and unſightly; becauſe attended with a cringing in the hind-parts.—In effect, *ambling* by the tramel, as practiſed by us, appears the neareſt to nature, and the beſt and moſt aſſured way.

There are divers errors, however, uſually practiſed in this method: as, that the tramel is often made too long, and ſo gives no ſtroke, but makes a horſe hackle and ſhuffle his feet confuſedly; or too ſhort, which makes him volt and twitch up his hind-feet ſo ſuddenly, that by cuſtom it brings him to a ſtring-halt, from which he will ſcarce ever be recovered.—Sometimes the tramel is miſplaced, and to prevent falling put about the knee, and the hind-hoof.—In which caſe, the beaſt cannot give any true ſtroke, nor can the fore-leg compel the hind to follow it: or if, to evade this, the tramel be made ſhort and ſtrait, it will preſs the main ſinew of the hind-leg, and the fleſhy part of the fore-thighs; ſo that the horſe cannot go without halting before, and cringing behind.

As to the matter of the tramel; ſome make it all of leather, which is inconvenient; in that it will either ſtretch or break, and thus confound the certainty of the operation. In a true tramel, the ſide ropes are to be ſo firm, as not to yield a hair's breadth; the hoſe ſoft; and to lie ſo cloſe, as not to move from its firſt place; and the back-band flat, no matter how light, and to deſcend from the fillet ſo as not to gall.

When the horſe, by being trameled on one ſide, has attained to *amble* perfectly in the hand, it is to be changed to the other ſide, and that is to be likewiſe brought to rule.

When by this changing from one ſide to another, with a half-tramel, the horſe will run and *amble* in the hand readily and ſwiftly, without ſnappering and ſtumbling; which is ordinarily done by two or three hours labour; the whole tramel is to be put on, with a broad, flat, back-band, and both ſides trameled alike. See Tramel.

AMBLYGON, or **Amblygonium**, in *Geometry*, denotes a triangle, one of whoſe angles is obtuſe, or conſiſting of more than ninety degrees.

The word is compoſed of *αμϐλυς*, *obtuſe*; and *γωνια*, *angle*.

AMBLYOPY, **Amblyopia**, in *Medicine*, a diſeaſe of the eyes, otherwiſe called GUTTA *ſerena*, and *amauroſis*.

The word comes from *αμϐλυς*, *dull*; and *οπτομαι*, *I ſee*.

AMBO, or **Ambon**, a kind of pulpit or deſk, in the ancient churches, where the prieſts and deacons ſtood to read or ſing part of the ſervice, and preach to the people; called alſo *analogium*.

The term is derived from *αναϐαινειν*, *to mount*.—The *ambo* was mounted upon two ſides; whence ſome alſo derive the appellation from *ambo*, *both*.

The *ambo* was aſcended by ſteps; which occaſioned that part of the office performed there to be called the *gradual*.—The Goſpel was read at the top of the *ambo*; the Epiſtle a ſtep lower.

The modern reading deſks and pulpits have been generally ſubſtituted inſtead of the ancient *ambos*, though, in ſome churches, remains of the *ambos* are ſtill ſeen. In that of St. John de Lateran at Rome, there are two moveable *ambos*. M. Thiers inveighs againſt the diſuſe of the ancient *ambo*.—Thoſe by whom this innovation has been effected, he calls, by a new word, *ambonoclaſtes*. It was in the *ambo* that publication was made of feaſts, faſts, proceſſions, &c. Here were read the acts of the martyrs, the *ſancta ſanctis*, the diptychs, or commemoration of the dead; the letters of peace and communion, which one church ſent to another. Here new converts made their public profeſſion of faith, and biſhops their defence againſt accuſations brought againſt them. Here treaties of peace were ſometimes alſo concluded, and coronations of kings and emperors performed, &c.

Divers antiquaries hold, that the *ambo* was anciently the place from whence the biſhops and preſbyters made their ſermons; pulpits for that purpoſe having only been introduced by the mendicants at the beginning of the thirteenth century.

A late writer combats this opinion, and ſhews, that the uſual place from whence the ancients preached, was the ſteps of the altar; not but St. Chryſoſtom and St. Auguſtin both appear to have preached from the *ambo*; but this was looked on as a thing ſomewhat extraordinary.

AMBONOCLASTES, a name given, by a late writer, to the demoliſhers of the *ambos* uſed in the primitive church.

AMBONUM, in *Natural Hiſtory*, a term uſed, by ſome of the old writers, to expreſs the prominent tubercles on certain ſtones.

AMBREADA, thus they call the falſe or factitious amber, which the Europeans uſe in their trade with the negroes on the coaſt of Africa, and particularly on the river Senegal. There are ſome large and red pieces of it, a thouſand of which making twenty ropes or ſtrings, weigh three pounds. There are others ſmall, and alſo red, which weigh but two pounds and a half.

AMBROSE.—*St. Ambroſe in the wood*, by the Italians called *al nemo*, is an order of religious, confirmed in 1431, under the rule of St. Auguſtine.

The monks of *St. Ambroſe al nemo* wear the image of the ſaint engraven on a little plate, and make uſe of the Ambroſian office.

In the province of Berry in France, the title *fathers of St. Ambroſe* is alſo given to the canons regular of St. Auguſtine, becauſe their abbey at Bourges is dedicated to St. Ambroſe de Cahors.

AMBROSIA, in the *Heathen Theology*, &c. a delicious kind of food, whereon the gods were ſuppoſed to feed.

The word is compounded of the privative particle *α*, and *βροτος*, *mortal*; becauſe it rendered thoſe who fed thereon immortal, or becauſe it was the food of the immortals.

Lucian, rallying the poetical gods, tells us, that *ambroſia* and *nectar*, of which one is the meat, and the other the drink of the gods, were not ſo excellent as the poets deſcribe them; ſince theſe deities would leave them for blood and fat, which they come to ſuck from the altars like flies.

But though the *ambroſia* is commonly repreſented as the ſolid food of the gods, by way of contradiſtinction from the fluid, which was called *nectar*; yet the appellations are ſometimes inverted, and the name *ambroſia* given to the drink of the deities, as that of nectar to the meat.

Wedelius has a diſſertation on *ambroſia* and nectar, wherein he ſhews, that the term is ſometimes uſed to denote honey, ſometimes wine, ſometimes perfumes, and particularly ambergris; ſometimes the method or ingredients for embalming or preſerving dead bodies from putrefaction, and ſometimes alſo for a ſtate of unchangeableneſs, or immortality.

Ambrosia is alſo a ſplendid kind of title, given, by ſome phyſicians, to certain alexipharmic compoſitions, of extraordinary virtue.

In this ſenſe, *ambroſia*, *αμϐροσια*, amounts to much the ſame with *αθανασια*, *athanaſia*, as being ſuppoſed to conduce to immortality.

This name was particularly given to a famous antidote of Philip of Macedon, againſt all poiſons, bites, and ſtings of venomous creatures, as well as many internal diſeaſes.

Ambrosia is alſo uſed for a pure ſpirituous kind of medicine, artfully extracted from the groſs elementary parts of a body, and which being adminiſtered in the ſmalleſt doſe is of conſiderable virtue, and may be taken without diſguſt, or inconvenience.

In this ſenſe, *ambroſia* amounts to much the ſame with what we otherwiſe call QUINTESSENCE.

Nic. Abr. Frambeſa has a treatiſe on the preparation of theſe *ambroſiæ*. Ambroſiopœa, Lugd. Bat. 1628. 12mo. Francof. 1629. 4to.

Ambrosia, in *Botany*, the name of a genus of plants belonging to the *monoecia pentandria*; the characters of which are theſe: it hath male and female flowers on the ſame plant; the male flowers are of one leaf, funnel-ſhaped, and cut into five parts at the brim; the female flowers are placed under the male in the ſame ſpike; they have no petals, but an oval germen placed in the bottom of the empalement; the germen afterward becomes an oval capſule with one cell, incloſing one roundiſh ſeed. There are five ſpecies of this plant, which is perennial, and may be propagated by cuttings, or by ſeeds; if by the former, they ſhould be planted in a ſhady border, in either of the ſummer months. In a month or five weeks they will have good roots, and therefore ſhould be then taken up and potted; for when they are left longer in the full ground, they will grow very luxuriant, and will not ſo ſoon recover their removal as thoſe which are tranſplanted earlier. The plants are hardy, ſo may be expoſed to the open air in the ſummer; and in winter, if they are ſheltered in a common green-houſe with myrtles, and other hardy exotic plants, they will live ſeveral years.

The ſeed of this ſort ſeldom come up the ſame year when they are ſown in the ſpring; but thoſe which have fallen in autumn, have grown in the following year as well as thoſe ſown at the ſame ſeaſon.

It revives the heart and brain; it ſtops fluxes; it reſolves and fortifies; and is preſcribed both internally and externally.

Ambrosia is alſo uſed, by ſome of the *Ancient Writers*, to expreſs what they judged to be the food of the BEES.

This ſubſtance is, by ſome, taken to be a groſs or ſolid honey; and is contradiſtinguiſhed from the liquid or purer ſort, which is denominated *nectar*.

The *ambroſia* will not keep, and, if not ſpeedily ſpent, corrupts and turns ſour, making what is ſometimes called *coom*, or *ſtopping*, or, after the Greeks, *ſandarak*; highly offenſive and pernicious to the hive. See PAIN *des Abeiles*.

Ambrosia, in *Antiquity*, denotes a feaſt celebrated by the Aconians, in honour of Bacchus.

The *ambroſia* were alſo denominated *ehoa* and *lenæa*. They were held in the month called Lenæon.

AMBROSIAN *rite*, or office, denotes a particular office or formula of worſhip, uſed in the church of Milan, which is ſometimes alſo called the *Ambroſian* church.

The denomination takes its riſe from St. Ambroſe, archbiſhop of Milan, in the fourth century, who is uſually ſuppoſed to have been the author of this office. Yet ſome are of opinion the church of Milan had an office different from that of the Roman, and other churches of Italy, before the time of that father. In effect, till the time of Charlemaign, each church had its ſeveral office; and when in after-days the pope took on him to impoſe the Roman office on all the other churches of the weſt, that of Milan ſheltered itſelf from the impoſition, under the name and authority of St. Ambroſe; from which time, the phraſe *Ambroſian rite*, has obtained, in contradiſtinction to the Roman rite.

We alſo meet with the *Ambroſian chant*, or ſong; which was diſtinguiſhed from the Roman, in that it was ſtronger and higher.

The public library of Milan is alſo called the *Ambroſian Library*.

AMBROSIN, in *Middle Age Writers*, denotes a coin ſtruck by the lords or dukes of Milan, whereon was repreſented St. Ambroſe on horſe-back, with a whip in his right-hand. The occaſion of this coinage is ſaid to have been a viſion of that ſaint, who appeared to the Milaneſe general, in 1339, during the time of a battle.

AMBROSINIA, in *Botany*, a genus of the *gynandria polyandria* claſs of plants, with a ſingle-leaved and divided *ſpatha*.

AMBRY, the place where the arms, plate, veſſels, and every thing belonging to houſe-keeping, were formerly kept.

Hence, probably, the *ambry* at Weſtminſter was ſo called, becauſe formerly ſet apart for that uſe; or rather, from *aumonery*, a houſe adjoining to an abbey, in which the charities were laid up and diſtributed to the poor. The word is ſtill uſed in Scotland, in the ſame ſenſe.

AMBUBAJÆ, in *Antiquity*, a kind of wanton minſtrels about Rome, who lived by playing and dancing in places of reſort, and proſtituting their bodies for hire.

Authors ſpeak as if there had been a regular college, or community of *ambubajæ*, and that theſe were the ſame with what were otherwiſe called *tibicinæ*. Some ſuggeſt that the *ambubajæ* were of the male kind, only dreſſed in the habit of women.

Antiquaries have been greatly divided about the *ambubajæ*; ſome will have them to have come to Rome out of Syria; others ſuppoſe them to have been Roman women, though called by a name of Syriac origin.

Torrentius, Turnebus, and Pulmannus, derive the name from *ambu*, or *am*, an old Latin prepoſition, denoting *circum*, *about*, and *bajæ*, a delicious place near Naples; and maintain, that the *ambubajæ* were a kind of courtezans, who frequented the baths of that city. Cruquius is of a different opinion, taking the word *ambubajæ* to have been uſed for *ambubeja*, and primarily to denote a ſeller of *ambubeja*, an herb mentioned by ancient naturaliſts. Theſe ſellers of *ambubeja* being a kind of empirics, their name became afterwards applied to all charletans, and quacks.

Hoffman has a diſcourſe on the *ambubajæ*.

AMBUBEIA, in *Botany*, a name given, by ſome authors, to wild ſuccory.

AMBULANT, or AMBULATORY; they give in France the name of *ambulant* commiſſioners to thoſe commiſſioners, or clerks of the king's farms, who have no ſettled office, but viſit all the offices within a certain diſtrict, to ſee that nothing be done in them againſt the king's right, and the intereſt of the farm.

AMBULANT is alſo uſed to denote thoſe brokers at Amſterdam, or exchange agents, who have not been ſworn before the magiſtrates. They tranſact brokerage buſineſs, but their teſtimony is not received in the courts of juſtice.

AMBULATION, or walking. See EXERCISE.

AMBULATION, in *Phyſic*, is uſed by ſome for the ſpreading of a gangrene or mortification.

AMBULATORY, a term anciently applied to ſuch courts, &c. as were not fixed to any certain place; but held ſometimes in one place, and ſometimes in another.—In oppoſition to ſtationary courts.

The word is formed from *ambulare*, *to walk*.

The court of parliament was anciently *ambulatory*; ſo alſo were the courts of king's-bench, &c.

We ſometimes alſo ſay, in a legal ſenſe, a man's will is *ambulatory*, to the time of his death; meaning, that he has it always in his power to revoke it.

AMBULON, in *Botany*. See *Sweet* WILLOW.

AMBURBIUM, or AMBURBIALE *Sacrum*, in *Antiquity*, a religious feaſt, or ceremony, practiſed among the Romans, wherein they made proceſſions around their city. Hence alſo we have *amburbiales victimæ*, the victims carried along in the proceſſion, and afterward ſacrificed.

The word is compounded of *ambio*, *I go round*; or of *amb*, or *ambu*, an ancient prepoſition, ſignifying *around*, and *urbs*, *a city*.

Scaliger, in his notes on Feſtus, followed by many others, maintains the *amburbia* to be the ſame with *ambarvalia*. Servius, however, expreſly diſtinguiſhes between the *amburbia* and *ambarvalia*, and ſays, the one was performed in the city, the other in the country.

AMBURY, or ANBURY, a name given, by our farriers, to a kind of ſoft and ſpungy ſwelling growing on the bodies of horſes, ſomewhat ſore to the touch, and full of blood. The method of curing it is, to tie a horſe-hair very hard round it, at the root; in about a week after this, it will fall off, and the part is then to have ſome powder of verdigreaſe ſtrewed upon it, to prevent the return of the complaint, and finally to be healed up with the common green ointment.

This is the common method when the *ambury* is high and prominent; but ſometimes it is flat and low, with a broad baſe: in this caſe, it is impoſſible to take it off by ligature, and there is a neceſſity of having recourſe to a ſeverer operation. It muſt in this circumſtance be taken away either by the knife or fire: if the former way be agreed on, the method is this; the ſkin is to be drawn back tight, and then the whole ſwelling cut off cloſe to the common level of the reſt of the fleſh: if in the other way, an iron is to be heated red-hot, and applied to it, continuing it on till the whole is burnt down to the even fleſh. In both caſes, care muſt be taken not to ſpare in the cutting or burning, ſo as to leave any root behind, for then the complaint will be renewed. When it is taken off, the common ointment of hogs-lard and turpentine will complete a cure. There are ſome circumſtances, however, in which the knife and cautery may be both improper, as, if it grows in a ſinewy part, or the like; in this caſe, the proper method is, to eat out the core with oil of vitriol, or white ſublimate, and then ſtop the hole with flax dipped in honey, and lime unſlaked. Some for the firſt day or two dip it only in the white of an egg, and after that, in the mixture of quick-lime and honey; and this ſeems the better way.

Many of our farriers boaſt of a ſecret, which infallibly cures all kinds of protuberances of this kind, the preparation of which is this: Take three ounces of green vitriol, and one ounce of white arſenic, beat them to a coarſe powder, and put them into a crucible; place the crucible in the midſt of a charcoal-fire, ſtirring the ſubſtance, but carefully avoiding the poiſonous ſteams; when the whole grows reddiſh, take the crucible out of the fire, and when cool, break it and take out the matter at the bottom; beat this to powder in a mortar, and add to four ounces of this powder five ounces of *album rhoſis*; make the whole into an ointment, and let it be applied cold to warts, rubbing them with it every day: they will, by this means, fall off gently and eaſily, without leaving any ſwellings. It is beſt to keep the horſe quiet, and without working, during the cure. What ſores remain on the parts which the ſwellings fall off from, may be cured with the common application, called the *counteſs's* ointment.

AMBUSCADE, AMBUSH, AMBUSHMENT, a body of men who lie in a wood, &c. in readineſs to ruſh out upon, or incloſe an enemy unawares.—Or, the place wherein ſuch a corps hide themſelves.

AMBUSTIO, in *Medicine*, a BURN.

AMBUTUA. See PAREIRA *Brava*.

AMEA, in *Botany*, a name given, by the natives of Guinea, to a plant which they uſe in bleedings at the noſe, drying and powdering the leaves, and ſnuffing up the powder. It ſeems to be of the family of the plant called *pajamirioba*, by Sir Hans Sloane, in his Jamaica Catalogue. Its leaves are large and alated, and of a beautiful green, even when dried. Phil. Tranſ. Nº 232.

AMEDEI, *Amedians*, a congregation of religious in Italy, inſtituted in 1400.

Their name is formed of the Latin, *amans Deum*, q. d. *lover of God*, or rather of *amatus Deo*, *beloved of God*.

The *Amadei* wore a grey habit, and wooden ſhoes, had no breeches, and girt themſelves with a cord. They had twenty-eight convents, and were united by pope Pius V. partly with the Ciſtercian order, and partly with that of the Soccolanti, or wooden-ſhoe wearers.

AMEIVA, in *Zoology*, the name of a Braſilian ſpecies of lizard, reſembling the *taraguira* in figure, but having a bifid tail. This is Marcgrave's account of it; but Mr. Ray very judiciouſly queſtions the fact, not believing that there is in nature any ſuch ſpecies. Probably indeed it is only an accidental variety of the TARAGUIRA, or ſome other common lizard, perhaps from a wound, or other accident; perhaps from the egg, as we have lately ſeen from Barbadoes a ſnake with two heads, taken out of an egg of ſome common kind; for aſſuredly there never was any ſuch ſpecies as a two-headed ſerpent.

AMEL, ſee ENAMEL.

AMELLUS, in *Botany*, a name uſed, by ſome authors, to expreſs the CALTHA *paluſtris*, or *marſh*-MARYGOLD; and by Virgil, for the ASTER *atticus*.

AMELLUS is uſed by Linnæus to denote a genus of plants of the *ſyngeneſia polygamia ſuperflua* claſs.

AMEN, a church-term, uſed as the concluſion of all ſolemn prayers, &c. and ſignifying, *ſo be it*, or *fiat*.

The Hebrews had four kinds of *amen*. That juſt mentioned they called *amen paſt*; which was accompanied with the greateſt attention and devotion: in this ſenſe, the word has paſſed into almoſt all languages, without any alteration.

Some authors are of opinion, that the word *amen* is formed of the initial letters of theſe words, *Adonai Melech Neeman*, *Dominus Rex Fidelus*; an uſual expreſſion among the Jews, when they would give weight or ſanction to any thing they ſaid. In effect, it is known, that to expreſs the words אדני מלך נאמן *Adonai Melach Neeman*, in the ordinary way of abbreviatures; the rabbins only take the initial letters; which, joined together, are really the letters of the word אמן *amen*.

On the other hand, there are ſome of their Cabbaliſts, who according to their uſual manner of finding a hidden meaning in words, which they call *notaricon*, out of the letters of the word *amen* form the whole phraſe, *Adonai Melech Neeman*.

Yet it is certain alſo, that the word *amen* was in the Hebrew

brew tongue before ever there were any ſuch things as cabbala or cabbaliſts in the world; as appears from Deuteronomy, chap. xxvii. ver. 15.

The primitive of the word *amen* is the verb *aman*, which, in the paſſive voice, ſignifies to be true, faithful, conſtant, &c.—Hence came the noun אמן *amen*, which ſignifies *truth*. And, laſtly, of this noun *amen* they made a kind of affirmative adverb, which, when placed at the end of any phraſe, or propoſition, ſignifies, *ſo be it*, *be it true*, *I acquieſce in it*, &c. Thus, in the paſſage above cited from Deuteronomy, Moſes ordered the Levites to cry aloud to the people, *Curſed is he that makes any graven or molten image, &c. and all the people ſhall ſay, amen*, i. e. yes, may he be curſed, we deſire, we agree to it.—But at the beginning of a phraſe, as in ſeveral paſſages of the New Teſtament, it ſignifies, truly, verily.—When it is redoubled, or repeated twice together, as is always done by St. John, it has the effect of a ſuperlative; agreeably to the genius of the Hebrew tongue, and her two daughters, the Chaldee and Syriac.—In this ſenſe we are to underſtand *amen, amen, dico vobis.* The Evangeliſts uſually preſerve the Hebrew word *amen*, in their Greek αμην, though St. Luke ſometimes renders it by αληθως, *truly*, or ναι, *certainly*.

AMENABLE, or **AMAINABLE**, is applied in our law-books to a woman, who is ſuppoſed to be governable by her huſband.

It is likewiſe uſed to ſignify a right or power of bringing perſons before a particular juriſdiction: thus, we ſay, a perſon is *amenable* before ſuch a court, or magiſtrate.

AMEND, or **AMENDE**, in the French *Cuſtoms*, a mulct, or pecuniary puniſhment, impoſed by a ſentence of the judge; for any crime, falſe proſecution, or groundleſs appeal.

AMENDE HONORABLE denotes an infamous kind of puniſhment, uſed in France, &c. on traitors, parricides, ſacrilegious perſons, and other heinous criminals.

It conſiſts in this, that the offender is delivered up to the common hangman; who having ſtript him to his ſhirt, and put a rope about his neck, and a wax taper in his hand, leads him to the court, where he is to beg pardon of God, the king, the court, and his country.

Sometimes the puniſhment ends here; and ſometimes death, or the galleys, are added.

The phraſe *amende honorable* is alſo uſed by way of alluſion, where a perſon is condemned to come into court, or into the preſence of ſome perſon injured, and make an open recantation, aſk pardon, &c.

AMENDMENT, in a general ſenſe, a change made in a thing for the better.

Amendment amounts to much the ſame with melioration, reformation, correction, &c.

AMENDMENT is more particularly uſed for a MANURE laid on the ground, to fatten or enrich it.

AMENDMENT, in a literary ſenſe, is uſed to denote the corrections and other alterations made in the poſterior editions of books.

In this ſenſe, *amendments* are alſo denominated emendations.

AMENDMENT, in *Law*, the correction of an error committed in a proceſs, and diſcovered before judgment.

If the error be committed in giving judgment, *viz.* if a wrong judgment be given, there they cannot amend it; but the party aggrieved muſt bring his writ of error.—However, where the fault appears to be in the clerk who writ the record, it may be amended; chiefly if it be in matter of *fact*, not in point of *law*.

Original writs are not amendable at common law, for if the writ be not good, the party may have another: judicial writs may and have been often amended. Indictments of treaſon and felony, writs of appeal &c. are excepted out of the ſtatutes of *amendments*; though ſome things in them are *amendable* at common law. *Amendments* are uſually made in affirmance of judgments; and ſeldom or never to deſtroy them: and where *amendments* were at common law, the party was to pay a fine for leave to *amend*. Terms de Ley, 39. 8 Rep. 157. Palmer, 258. Mod. Caſ. 269. 3 Salk. 29.

AMENDMENT *of Bills in Parliament*, means ſome alteration made in the original draught; and we read of *amendments* of *amendments*, *amendments* of returns of repreſentatives, &c.

In caſes of wrong returns, ſo reported by the committee of privileges and elections, and voted by the houſe of commons, it is uſually ordered, that the returns be *amended* by the returning officer, according to the directions of the houſe, without iſſuing a new writ.

Amendments ought always to be in that houſe from whence the thing to be *amended* originally proceeded, though the directions for the *amendments* came from the other houſe. Hakew. Mann. of Paſſing Bills, p. 167.

AMENTACEOUS, in *Botany*, a term applied to the flowers of certain trees and plants, which are compoſed of a vaſt number of *apices*, or *antheræ*, hanging down in form of a rope, ſuch as the hazel, &c.

AMENTUM, among *Alchemiſts*, denotes *alumen ſciſſum.*

AMENTUM, in *Antiquity*, a leathern thong faſtened about the middle of a dart, or javelin, whereby, after caſting it at the enemy, it might be drawn back again to the owner.

The *amentum* ſerved alſo to increaſe the force of the ſtroke; for which reaſon, ſome of their great men refuſed to uſe it, as confiding wholly in the natural ſtrength of their own arms.

AMENTUM, in *Botany*, ſee CATKIN.

AMERADE, a kind of officers among the Saracens, anſwering to the governors of provinces among the Europeans.

The name is originally the ſame with that of *emir*.

AMERCEMENT, or **AMERCIAMENT**, in *Law*, a pecuniary puniſhment impoſed upon offenders, at the diſcretion of the court; frequently alſo called *miſericordia*.

There is this ſtated difference beteen fines and *amercements*; that fines are puniſhments certain, and determined by ſome ſtatutes; but *amercements* are arbitrary impoſitions, proportioned to the fault, and wholly at the mercy of the court.—Manwood, in his *Foreſt Law*, makes another difference; as if an *amercement* were a more eaſy and merciful penalty, and a fine a more ſharp and grievous one.

If *amercements* were too grievous, releaſe might be ſued by an ancient writ called *moderata miſericordia*.

Fines alſo are impoſed and aſſeſſed by the court; *amercements* by the country: and no court can impoſe a fine, but a court of record; other courts can only *amerce*. 8 Rep. 39. 41. A town ſhall be *amerced* for the eſcape of a murderer in the day time; and if the town be walled, it is ſaid it ſhall be ſubject to *amercement* whether by day or night. 3 Inſt. 53.

By the ſtatute of *Magna Charta*, a freeman is not to be *amerced* for a ſmall fault, but proportionable to the offence, and that by his peers. 9 Hen. III. c. 4.

In the new terms of the law, *amercement* is ſaid to be properly a penalty aſſeſſed by the peers or equals of the party *amerced*, for an offence done; for which he puts himſelf upon the mercy of the lord.

Amerciament royal is uſed by ſome to denote a pecuniary puniſhment laid upon a ſheriff, coroner, or ſuch-like officer of the king, by juſtices, for ſome offence or abuſe in his office.

AMERICAN *ſea-ſun-crown*; CORONA *ſolis marina Americana*, a name given by John Andrew Peyſſonel, M. D. F. R. S. to a marine inſect, becauſe of the reſemblance it bears to the flower called *corona ſolis*. The curious may ſee a very particular deſcription of it in the Phil. Tranſ. vol. l. part 2. N° 112. an. 1758. The gentleman who deſcribes it could not tell how it lived, or what its mechaniſm was, not being able, as he ſays, to diſtinguiſh either a mouth, or any *viſcera*, nor any other organ ſerving to its nouriſhment.

AMERICIMA, in *Zoology*, the name of a Braſilian ſpecies of lizard, very ſmall, being not above three fingers breadth long, and of the thickneſs of a ſwan's quill. Its body appears ſquare; its whole back is covered with deep grey ſcales, and its head, legs, and ſides, with brown ones, and its tail with blue. All of them are very gloſſy, and extremely ſmooth to the touch. Its feet are ſcarce thicker than hogs briſtles. It is generally eſteemed a poiſonous animal. See *Tab. of Quadrupeds and Serpents.* N° 35.

AMETHYST, in *Natural Hiſtory*, a precious ſtone, of a violet colour, bordering on purple, frequently yellowiſh or reddiſh.

Plutarch ſays, the *amethyſt* takes its name from its colour; which, according to him, reſembles that of wine mixed with water; and not from its preventing drunkenneſs: which, however, was a common opinion, and gave occaſion to its being hung about the necks of great drinkers.—Thoſe who aſcribe this virtue to the *Amethyſt*, derive its name from the privative α, and μεθυσκω, *to inebriate.* See GEM.

There are divers ſorts of *amethyſts.*—The oriental, which is the hardeſt, the ſcarceſt, and moſt valuable, and which is of a deep-purple colour; the German, which is of a *violet* colour; and the Spaniſh, which has the colour of a *panſy*.

This *gem* is pellucid, the ſeventh in degree of hardneſs from diamonds, fuſible by fire which alſo deſtroys its colour. It is found among *quartz*, and is probably only a coloured quartz cryſtal. This ſtone may be imitated by adding to a frit of cryſtal glaſs eight parts of magneſia and one part of zaffre. The purple of the *amethyſt* as well as the blue of the ſapphire, and the green of the emerald, are very periſhable, being all totally deſtroyed by a moderate degree of heat. *Lewis.*

There are ſome orientals alſo of a paler colour, and others white, and like the diamond.—There are alſo beautiful ones found in the Pyrenean mountains, and in thoſe of Auvergne.

Amethyſts are dug in a hill named St. Sigminont, two leagues from Vict in Catalonia.—They find the ſtones by following a vein of reddiſh or black earth, or a vein in the rock ſo coloured. They are all hexangular, and pointed like cryſtal. There are three ſorts: the beſt are the blackeſt or deepeſt violet; others are almoſt quite white; and ſome few are tinctured with yellow. Sometimes there is a great number found ſticking together, like the Briſtol diamonds; but theſe are never good: the beſt are found looſe in the chinks of the rock, in a fatty reddiſh or yellowiſh earth. They rake out this earth with long narrow knives, which enter the chinks; and then crumble it with their fingers to feel for the ſtones. Ray's Trav. p. 402.

The occidental *amethyſt* is not extremely hard, but may be cut with a leaden wheel, ſmeared with emery moiſtened in water.—It is poliſhed on a pewter wheel with *tripoli*.—It is eaſily engraven on, either in CREUX or RELIEVO.

Mr. Morin ſhewed Dr. Liſter a huge block of French *amethyſt*, 2 or 300 pounds weight. Ray ſpeaks of a mountain of *amethyſts*. Spars and cryſtals tinged red and yellow, &c. are ſold for *amethyſts*. The falſe ones come from Germany, are tinged by vapours in the mines, and contain ſome lead.

Amethyſts may be counterfeited with glaſs, to which the proper colour or ſtain is given. There were fine ones made in France, about the year 1690, which may even impoſe on connoiſſeurs, unleſs the ſtone be taken out of the collet.

The method of giving this colour to glaſs is as follows: Take cryſtal-frit, made with the moſt perfect and fine tarſo; then prepare a mixture of manganeſe in powder, one pound; zaffer prepared, one ounce and a half; mix theſe powders well together, and add to every pound of the frit, an ounce of this powder. Let it be put into the pots with the frit, not into the already made metal. When the whole has ſtood long enough in fuſion to be perfectly pure, work it into veſſels, and they will reſemble the colour of the *amethyſt*.

Some phyſicians diſtinguiſh a particular claſs of medicines, under the denomination of *amethyſta*, αμεθυϛα; under which they comprehend all preſervatives from drunkenneſs.

Among the medicinal qualities attributed to this ſtone, it is ſaid to be good to ſtop a looſeneſs, and to abſorb the acid particles, when too much abounding in the ſtomach; which virtue it has in common with other alkaline ſubſtances.

Amethyst, in *Heraldry*, ſignifies the purple colour in the coat of a nobleman, which in gentlemens eſcutcheons below that degree, is called *purpure*; and in thoſe of ſovereign princes, *Mercury*.

AMETHYSTEA, in *Botany*, *amethyſt*; a genus of the *diandria monogynia*. The characters are: the flower has one leaf, which is cut into five equal pointed ſegments at the brim; it hath two ſlender ſtamina, which ſtand under the upper lip. After the flower is paſt, the germen becomes four naked ſeeds, ſhut up in the empalement.

We know but one ſpecies of this genus, viz. *amethyſtea, Hort. Upſal.* 9. Mountain upright *amethyſt*. This plant is a native of the mountains in Siberia, from whence the ſeeds were ſent to the imperial garden at Peterſburgh.

It is annual, and hath an upright ſtalk, which riſes about a foot high, and towards the top puts out two or three ſmall lateral branches; theſe are garniſhed with ſmall trifid leaves, ſawed on their edges, and of a very dark green colour; at the extremity of the branches the flowers are produced in ſmall umbells; theſe are of a fine blue colour, as are alſo the upper part of the branches, and the leaves immediately under the umbel; ſo that though the flowers are ſmall, yet from their colour with thoſe of the upper part of the ſtalks, the plants make a pretty appearance, during their continuance in flower. If the ſeeds of this plant are ſown in the autumn, or are permitted to ſcatter, the plants will come up early in the following ſpring, and theſe will flower the beginning of June; but thoſe ſown in the ſpring will not flower until July.

When the plants come up, they will require no other care than to keep them clean from weeds, and where they are too cloſe, to thin them, for they do not thrive when tranſplanted; the ſeeds, therefore, ſhould be ſown where they are to remain.

AMETHYSTINE is applied, in *Antiquity*, to a kind of purple garment dyed of the hue of *amethyſt*.

In this ſenſe, *amethyſtine* differed from *Tyrian*, as well as from *hyacinthine* purple, being a kind of medium between both.

AMGAILA, or **Amgailam**, in the *Materia Medica* of the ancients, a name given by Avicenna, and others, to a plant ſometimes called ACANTHA *Arabica*, and *leucacantha* by the Greeks; the roots of which were called *bunkon*, and much uſed in medicine by the Arabian phyſicians.

The *amgaila*, called alſo *ſucaha*, or *zucahai*, is deſcribed as a prickly herb, having roots like thoſe of the cypreſs, formed of ſeveral joints, or knots. They were uſed in ſtomachic and cardiac compoſitions, and were choſen by their lightneſs and good ſmell.

AMIA, in *Zoology*, the name of a very large ſea-fiſh, called by ſome alſo *glaucus*, and by others *leccia*. It grows to a vaſt ſize, and in figure reſembles the ſalmon. It is very common in the Mediterranean, and grows to four or five feet long.

Amia is alſo the name of a fiſh called, by ſome authors, *pelamys*, but different both from the *pelamys ſarda*, more uſually called ſimply *pelamys*, and from the *pelamys* of the ancients, which was no other than the *thynnus*, or tunnyfiſh, at a certain time of its growth.

This is, in ſhape and figure, very like the mackrel; it is common in the Mediterranean, and is brought to the markets of Italy, &c.

The *amia* is a ſpecies of the SCOMBER, in the Linnæan arrangement, and alſo the name of a genus of *abdominal* fiſhes.

AMIABLE *numbers*, denote numbers which are mutually equal to the whole ſum of each other's aliquot parts.—Such are the numbers 284 and 220. See NUMBER.

AMIANTHUS, in *Natural Hiſtory*, the name of a genus of foſſils, of the claſs of the FIBRARIÆ; the characters of which are, that the bodies of it are flexile and elaſtic, and compoſed of ſhort and abrupt filaments. See *Tab. of Foſſils, Claſs* 1.

It has been a common error to confound the ſpecies of this genus one with another, and all with the ſeveral ſpecies of the *aſbeſtos*, the conſequence of which has been the loſs of the art of ſpinning, and working the ASBESTOS into incombuſtible cloth.

Dr. Grew, in his Coſmologia Sacra, printed at London in Engliſh in the year 1701, obſerves, that the *amianthus* is full of parallel threads like ſilk ſtuffs; and that it ſeems that diamonds, *amianthus*, and talc, both on account of their hardneſs, and becauſe fire cannot ſpoil them, are compoſed of earthy or ſtony particles properly ſo called; and that it may be inferred from hence, that thoſe bodies being of regular figures, are compoſed of regular atoms.

With regard to its medicinal virtues, not to ſpeak of the fabulous properties attributed to it by Pliny, and others, it is ſaid to reſiſt poiſon, and to cure the itch.

It is the lighteſt and ſofteſt of all ſtones; its fibres are ſo flexible, that cloth has been made of them. It is indiſſoluble by acids, and was long thought unfuſible by fire, till Monſ. d'Aſcet diſcovered, that by violent and long continued heat it is fuſible, and forms a black glaſs. By ſtrong heat it is whitened and hardened ſo as to ſtrike fire with ſteel, and become brittle. This ſtony concrete is of the talcy kind, though differing from talc in its external appearance. The ſhorter filaments that ſeparate in the waſhing of the ſtone, may be made into paper in the common manner. For the method of its preparation for manufacture into cloth, ſee Phil. Tranſ. N° 273, and Dr. Lewis in his edition of Neumann, p. 30.

The ſpecies of this genus, at preſent known in the world, are four, two of which are compoſed of larger, and two of finer or ſmaller filaments.

AMICABLE *benches*, *ſcamna amicabilia*, in *Antiquity*, are generally ſuppoſed to denote the ſeats in the Roman courts, whereon the advocates were placed.—Some think, that theſe had but little title to the denomination of *amicable*, and therefore will have the word to be here uſed for the benches whereon the *aſſeſſors*, or thoſe called *judices pedanei*, were placed.

Amicable *compounder*, *amicabilis compoſitor*, is uſed, by ſome ancient LAW-writers, for an ARBITRATOR.

Amicable, or *amiable compounder*, among the French, is a perſon who acts the part of a common friend, to reconcile two merchants or traders who have diſputes, or are at law together. He differs from the *arbiter*, in that, in order to make the two diſputants agree, he often prevails upon both to give up ſome part of their right or claim; which an *arbiter*, who performs the functions of a judge, is not, it ſeems, at liberty to do.

Amicable *Society*. See INSURANCE.

AMICIA, ſee ALMUCIUM.

AMICITIA.—*Tenure in* AMICITIA, *tenere in amicitiam*, is applied, in *Ancient Writers*, to land granted freely, and of mere good-will, to be enjoyed at the diſcretion of the donor.

AMICTUS, in our *Ancient Writers*, the uppermoſt of the ſix garments, worn by prieſts; the others are *alba*, *cingulum*, *ſtola*, *manipulus*, and *planeta*.—It was tied round the neck, *Ne inde ad linguam tranſeat mendacium*; and covered the breaſt and heart, *Ne vanitates cogitet*.

This garment is otherwiſe called *anabolagium*; ſometimes *ambolagium*, *anagolagium*, and *humerale*. In ancient Engliſh writers it is called *amitte*.

The *amict* is alſo worn by deacons, ſub-deacons, and *acoluthi*, when they officiate at the altar.

The prieſts and deacons, in ſome dioceſes, wear *amicts* on their heads, from All-ſaints to Eaſter; though, by the canons, they be expreſly forbid to wear the *amict*, without ſome conſiderable occaſion.

Mr. Thiers aſſerts, that the uſe of *amicts* was not introduced into the Latin church before the twelfth century. Dom. de Vert maintains the contrary, chiefly from a figure of St. Firmin, firſt biſhop of Amiens, ſuppoſed to have ſuffered martyrdom towards the beginning of the ſeventh century, whereon he is repreſented in his pontifical habit, with the *amict* on his head.

AMICTUS, in Roman *Antiquity*, denotes any upper garment worn over the tunica.

AMICULUM, in *Antiquity*, denoted an upper garment worn by the women.—The *amiculum* is ſaid to have differed from the *palla*; but wherein the preciſe difference lay does not appear. An *amiculum* was alſo in uſe among the men. This ſeems to have been the ſame with the *chlamys*, or *paludamentum*.

AMIDA, a god worſhipped by the Japaneſe, has many temples erected to him in the iſland of Japan, of which the principal is at Jedo. The Japaneſe have ſuch a confidence in their idol *Amida* that they hope to attain eternal felicity by the frequent invocation of his name. One of the figures of this idol is repreſented at Rome.

AMID-SHIPS, a nautical term, denoting the middle of a ſhip, either with regard to her length or breadth.

AMIESTES, cotton cloths which come from the Eaſt Indies.

AMILICTI, in the Chaldaic *Theology*, denote a kind of intellectual powers, or perſons in the divine hierarchy.

The *amilicti* are repreſented as three in number, and conſtitute one of the tryads, in the third order of the hierarchy.

AMINEUM *acetum*, a name by which ſome of the medical writers have called white-wine vinegar, to diſtinguiſh it from other kinds.

AMIRANTE, a great officer in Spain, anſwering to the lord high admiral in England.

AMISS *drawing*, ſee DRAWING.

AMISSA *lex*, ſee LEX.

AMITTERE *legem terræ*, a law-phraſe, ſignifying the forfeiture of the right of ſwearing in any court or cauſe; or the becoming infamous.

This is the puniſhment of a champion overcome, or yielding in the combat; of jurors found guilty in a writ of attaint; and of perſons outlawed. Vid. Glanvil. lib. ii. and ſee the ſtat. 5 Eliz. cap. 9. againſt *perjury*.

AM-KAS, in *Hiſtory*, a name given to a ſpacious ſaloon in the palace of the Great Mogul, where he gives audience to his ſubjects; and where he appears on ſolemn feſtivals with extraordinary magnificence. His throne is ſupported by ſix large ſteps of maſſy gold, ſet with rubies, emeralds, and diamonds; and is eſtimated at 60000000*l*.

AMMA, or HAMMA, a girdle or truſs uſed in ruptures; to hinder the inteſtines from bearing down too much.

AMMA, in *Middle Age Writers*, denotes a ſpiritual mother. In this ſenſe, the word was chiefly underſtood of an abbeſs, or ſuperior of a nunnery.

AMMAN, in the German and Belgic *Policy*, denotes a judge who has the cognizance of civil cauſes.

The word is alſo written *amant*. Thus it occurs in writers on the French officers, where it ſtands for a notary, or parochial officer, who draws acts or inſtruments.

AMMANNIA, in *Botany*, of the *tetrandria monogynia*, in the Linnæan ſyſtem; a plant, of which the characters are theſe. It has a bell-ſhaped empalement, divided at the brim into four ſlender parts; the flower hath no petals; it has four ſlender ſtamina, which are inſerted in the empalement; the empalement afterward becomes a round capſule with four cells, which are filled with ſmall ſeeds. There are two ſpecies of it; the firſt grows naturally in moiſt places in Jamaica, from whence Dr. Houſton ſent the ſeeds to England. It grows about a foot high, with an upright ſquare ſtalk, and long narrow leaves, ſet in form of a triangle, whoſe baſe half ſurround it. The ſecond ſort grows naturally in Virginia and Carolina; this is an annual plant, which riſes about a foot high, with red ſucculent ſtalks, putting out ſide branches, which grow oppoſite: the flowers are produced ſingle from the wings, on the lower part of the branches.

AMMI, in *Botany*, called *ammoides* by Boerhaave, ſee BISHOP'S *Weed*.

AMMI, or *Semen* AMMEOS, a kind of aromatic ſeed, of ſome uſe in medicine; the produce of the plant above-mentioned.

The ſeed is brought from the Levant: it is found to contain a great deal of eſſential oil, and volatile ſalt; and to be attenuating, apperitive, hyſteric, carminative, cephalic, and alexipharmic; being one of the four leſſer hot ſeeds.—It expels wind, provokes the menſes, &c. It is alſo thought to have the property of reſiſting poiſon, and to be good againſt the bites of ſerpents.

According to Lemery, the plant takes its name *ammeos* from *αμμος*, *arena*; its ſeed being very like grains of ſand.

AMMINEA *uva*, in *Botany*, a name given, by the old writers, to the grapes of a wild vine, common in the hedges of Italy, and ſome other places. They uſed to make wine of theſe grapes, which they mixed with other richer wines, and had in common uſe.

Some write the word *taminea*, inſtead of *aminea*.

AMMITES, in *Mineralogy*, a kind of figured ſtone, of a looſe open contexture, formed of a number of ſmall globular ſtones.

Ammites is the ſame with what is otherwiſe called *ammonites*. The word is derived from *αμμος*, *ſand*; in regard the *ammites* appears to the eye as a compoſition of large ſand.

The *ammites* is found in divers countries of Germany, &c. of different colours, as well as different degrees of hardneſs. It bears a near reſemblance to the COCCODES.

AMMOCŒTUS, in *Ichthyology*, a name given, by Geſner and ſome others, to the AMMODYTES, or ſand-eel; called alſo *tobianus*, by Schoneveldt and others.

AMMOCHOSIA, in the *Ancient Phyſic*, a kind of remedy, or operation for drying the body, by lying along on warm ſand, and having the body covered with it. Some prefer ſalt for this purpoſe to ſand.

AMMOCHRYSOS, a name given by authors, to a ſtone very common in Germany, and ſeeming to be compoſed of a golden ſand. It is of a yellow gold-like colour, and its particles are all very gloſſy, being all fragments of a coloured talc. It is uſually ſo ſoft, as to be eaſily rubbed to a powder in the hand; ſometimes it requires grinding to powder in a mortar, or otherwiſe. It is uſed only as ſand to ſtrew over writing.

The Germans call it *katzengold*; and there is another kind of it leſs common, but much more beautiful, conſiſting of the ſame ſort of gloſſy ſpangles, but thoſe not of a gold colour, but of a bright red, like vermilion.

AMMOCHYSUS, in *Natural Hiſtory*, a kind of gem, ſuppoſed to be the ſame with the *venturine*.

AMMODYTES, in *Zoology*, the name of a ſpecies of ſerpent, called alſo *ſerpens cornutus* by ſome, from certain protuberances on the head. It is about the ſize of the viper, and is of a yellowiſh or ſand colour. Its head is ſhaped like that of the viper, but its jaws are wider; and, in the upper part of its head, it has a ſort of wart-like excreſcence, which is ſuppoſed to reſemble a horn; and thence its name of *ſerpens cornutus*, as it has its other of *ammodytes*, or ſand-ſnake, from its ſand-like colour, or from its quality of ſometimes running under the ſands. It is found in Lybia, and in ſome parts of Italy.

AMMODYTES, in *Ichthyology*, the name of a genus of fiſh, the characters of which, according to Artedi, are theſe: the *branchioſtege* membrane contains on each ſide ſeven bones, but theſe are, in great part, hid by the *laminæ* of the *branchia*. The head is compreſſed, the body oblong and ſlender, nearly cylindrical, but a little compreſſed, and it has no belly-fins. The fiſh is of the *malacopterygious*, or ſoft-finned kind; and the characters of the ſpecies, enumerated by Artedi, are theſe: the lower-jaw is the longeſt; the lateral lines are double, or two on each ſide. The pectoral fins have each twelve rays; the back-fin has fifty-four; that of the anus twenty-eight. The tail is bifid, and has fifteen long rays; the mouth is toothleſs; the anus is nearer to the tail than the head. We call the fiſh the *ſand-eel*; Schoneveldt, the *tobianus*. The fiſh is commonly found at about half a foot deep under the ſand, when the tide has run out, and caught there with iron hooks, with which the fiſhermen pull them out.

The name is formed of *αμμος*, *ſand*, and *δυτης*, a *diver*, expreſſing the quality of this creature, to dive into, or bury itſelf under the ſand.

This genus belongs to the order of *apodes*, in the Linnæan ſyſtem.

AMMON, or HAMMON, in *Antiquity*, an epithet given to Jupiter in Lybia; where was a celebrated temple of that deity under the denomination of *Jupiter Ammon*.

There has been a great diſpute about the origin of this name.—Some derive it from *αμμος*, *ſand*; becauſe the temple was ſituate in the burning ſands of Libya; others borrow it from the Egyptian *anam*, a *ram*; as having been firſt diſcovered by that animal.—Others will have

Ammon to ſignify the ſun, originally derived from *Ham*; and the horns wherewith he is repreſented, the ſun-beams. Plutarch ſays, that of all the Egyptian names which ſeemed to have any correſpondence with the Zeus of Greece, *Amon* or *Ammon* was the moſt peculiar and adequate. Bryant's Mythol. vol. i. p. 5.

However this be, Jupiter *Ammon* was uſually repreſented under the figure of a ram; though in ſome medals he appears of a human ſhape, having only two rams horns growing out beneath his ears.

AMMONIAC.—*Gum* **AMMONIAC**, or as it is ſometimes, though improperly, called **ARMONIAC**, is a kind of gum, brought from the Eaſt Indies, and is ſaid to ooſe from an umbelliferous plant.

Dioſcorides ſays, it is the juice of a kind of *ferula* growing in Barbary; and that the plant which produces it was called *agaſyllis*.

Pliny calls the plant whence it flows, *metopion*; and ſays, the gum takes its name from the temple of Jupiter *Ammon*, nigh which it grows. But it is much to be queſtioned whether we have at preſent the *gum ammoniacum* deſcribed by the ancients; and indeed their deſcriptions of that drug ſeem to evince that we have not.

The good *ammoniac* ought to be in dry drops, white within, yellowiſh without, eaſily fuſible, reſinous, ſomewhat bitter, and of a very ſharp taſte and ſmell, ſomewhat like garlick. It ſhould alſo be of a pale colour, and not mixed with any ſcrapings of wood, ſtone, or ſand; this by the Greeks was called ϑραυσμα, *fragment*.—The other, which is full of ſtone or ſand, was called φυραμα, that is, *mixture*.

Some ſay, this gum ſerved the ancients for incenſe in their ſacrifices. It is a *gum* reſin, from an ounce of which ſix drams may be diſſolved by ſpirit of wine, or ſix drams, two ſcruples, and an half, may be diſſolved by water. Neumann.

It enters ſeveral medicinal compoſitions, as an attenuant and detergent, againſt diſorders ariſing from viſcidities, and grumes.—Outwardly applied, it is reſolutive and ſuppurative; and, as ſome ſay, will of itſelf draw out ſplinters, &c. This gum contains plenty of eſſential, or volatile oil, ſome phlegm, and earth.

Some diſſolve the gum in vinegar, and other liquors, and call theſe *lac ammoniaci*; much uſed in aſthmas, and obſtructions of the lungs. It is frequently alſo given in pills. It is often adulterated with common roſin.

AMMONIAC, *ſal*, is *natural* and *artificial*.

AMMONIAC, *ſal*, *natural*, is a neutral ſalt, compoſed of marine acid, and of volatile alkali; combinations of other ſalts with volatile alkalies, are alſo called, from the name of this ſalt, *ſal ammoniac*, more uſually written *armoniac*.

AMMONIAC, *ſal*, *natural*, uſed by the ancients, was found in the ſands of Lybia, near the temple of Jupiter *Ammon*, from whence it derives its name. It was ſuppoſed to be generated in theſe ſands from the urine of camels. Nor will this appear ſtrange, if we ſuppoſe theſe ſands to be naturally impregnated with common ſalt; for then the urine of theſe animals, by the intenſe heat of the ſun, muſt cauſe a fermentation, which will unite the acid of the common ſalt with the urinous ſalt, and conſequently produce *ſal ammoniac*. What the ancients called by this name is ſuppoſed to be a ſpecies of *ſal* gem. M. Lemery had a ſalt taken from mount Veſuvius, which they call *natural ſal ammoniac*. It was of a compact ſubſtance, pretty ponderous, very white, and the inſide cryſtalline; it would not attract much humidity from the air, had no ſmell, was of an acrid, ſaline taſte, and very much like that of *ſal ammoniac*. Hiſt. de l'Acad. Roy. des Scien. 1705.

The true modern *ſal ammoniac* is never found *native*, at leaſt in any tolerable pure ſtate, or in ſuch quantities as to anſwer the demands of artiſts.

AMMONIAC, *ſal*, *artificial*, or common *ſal ammoniac*, is chiefly brought from Egypt; and though there is hardly a more common drug, it is but very lately we have known in what manner it is made. M. Lemery, who was conſul at Grand Cairo, in the year 1720, has given us the following account of the method uſed by the Egyptians in making *ſal ammoniac*.

‘Concerning *ſal ammoniac* (ſays he), I ſhall obſerve, 1. The matter. 2. The veſſels that contain it. 3. The diſpoſition of the furnaces. 4. The manner of working. 5. The quantity and uſe of that ſalt.

‘1. The *matter* is pure ſoot, and nothing elſe; but ſuch as is ſwept from chimneys where they burn turfs of the dung of animals fed with ſtraw, which is the common fuel of the country. Theſe turfs, which are impregnated with alkaline and urinous ſalts, communicate to the ſoot certain properties, which it could not be expected to receive from the ſmoak of wood or coal, and yet are abſolutely neceſſary for the production of *ſal ammoniac*.

‘2. The veſſels which contain the matter, are exactly of the figure of bombs. They are great round glaſs bottles, a foot and a half in diameter, with a neck two fingers in height. They caſe over theſe bottles with a fat earth, and fill them with ſoot to four fingers ſhort of their neck, which continues void and open. They contain each about forty pounds of ſoot, which, at the end of the operation, yield ſix pounds or more of *ſal ammoniac*, according to the goodneſs of the ſoot.

‘3. The furnaces are built like our common ovens, excepting that their vaults are perforated with ſeveral longitudinal clefts; upon each cleft are four bottles, placed in ſuch a manner, that the bottom of the bottle being ſunk in, and expoſed to the action of the flame, only the neck of the bottle continues expoſed to the air, the parts of the cleft contained between the bottles being ſtrongly cloſed with cement. Every furnace has four clefts, and conſequently contains ſixteen bottles, and a very great laboratory conſiſts of eight furnaces, diſpoſed in two rooms; ſo that there are at once an hundred and twenty-eight bottles employed.

‘4. In each furnace, for three days and nights ſucceſſively, there is kept up a conſtant fire, made of the dung of animals, mixed with ſtraw. The firſt day the thick phlegm of the ſoot exhales in a thick fume through the neck of the bottle. On the ſecond, the acid and alkaline ſalts being ſublimed, coaleſce and harden near the necks of the bottles. The third day the coagulation continues, depurates, and is finiſhed. In the mean time, they make a ſmall hole in the ſide, a little below the neck of each bottle, to ſee if the matter be ſufficiently baked, and all the ſalt ſublimed. After making theſe obſervations, they carefully ſtop the hole with lute, and open it from time to time as they ſee occaſion. When the operation is finiſhed, they take out the fire, break the bottles, and ſeparate the aſhes from the ſublimed maſs, or *ſal ammoniac*, which is a round, white, tranſparent ſubſtance, three or four fingers thick.

‘5. In two towns of the Delta, near each other, a league from the city of Munſoure, there are twenty-five large laboratories, and ſome ſmall ones, which make every year fifteen hundred, or two thouſand quintals, of *ſal ammoniac*. In all Egypt beſide there are but three laboratories more, two of which are alſo in the Delta, and the other in Grand Cairo, which do not produce above twenty or thirty quintals of this ſalt.’ Mem. de l'Acad. Roy. des Scienc. 1720.

Some, however, doubt, whether ſo prodigious a quantity of ſoot can be furniſhed by ſuch a country as Egypt, whoſe climate is ſo warm, that fires are only uſed for culinary purpoſes, and for bagnios; and therefore conclude, that the Egyptians have had the addreſs to keep the proceſs a ſecret from the Europeans, and that they uſe ſome other materials than ſoot; and it is ſaid that very good *ſal ammoniac* may be made without any ſoot at all.

Ammoniac ſalt is principally uſed by whiteners of copper-veſſels, and goldſmiths; and is a noted drug with chemiſts and phyſicians. F. Sicara, a miſſionary, and an eye-witneſs, ſays they add a little ſea-ſalt, and urine of beaſts. Mem. de l'Acad. Roy. des Scien. 1720.

See the method of making *ſal ammoniac* in Egypt, as communicated by Dr. Linnæus, from his pupil Dr. Haſſelquiſt. His account does not eſſentially differ from that above recited. Phil. Tranſ. vol. li. N° 48. an. 1760.

AMMONIAC is ſometimes made by the chemiſts of urine, ſea-ſalt, and wood-ſoot, boiled into a maſs, and then ſublimed.

We are told, that at the works carried on lately at Newcaſtle, *ſal ammoniac* was made from *bittern* and urine; and it is farther ſaid, that from one hundred weight of ſalt made from *bittern*, ſold under the name of Epſom ſalt, and three hogſheads of urine, fifty-ſix pounds of *ſal ammoniac* may be procured.

AMMONIAC, *ſal*, *properties of*. It is ſoluble in four times its quantity of water; and if the ſolution be duly evaporated, it ſhoots into thin fibrous ſubſtances, reſembling feathers. *Sal ammoniac* neither coagulates milk, nor changes the colour of a ſolution of ſublimate. It makes a conſiderable effervescence with the vitriolic acid, attended with a great degree of cold. Expoſed to a conſiderable heat, it totally ſublimes; and if previouſly ground with metallic, and certain other ponderous ſubſtances, elevates ſome part of them along with itſelf, and concretes with the reſt into a maſs, which expoſed to a moiſt air, readily flows into a liquor. Mixed with a due quantity of alkaline ſalts, it yields, by a ſmall degree of heat, two thirds its weight of pure volatile alkali; what remains in the ſubliming veſſel, being diſſolved in water, and cryſtallized, readily aſſumes the form of cubical cryſtals, like thoſe of common ſalt, the properties of which it likewiſe poſſeſſes.—*Sal ammoniac* mixed with nitre, and injected into a red-hot crucible, boils up, and emits flaſhes of light, and thus betrays its animal original. Sublimed in a retort, with double its weight of chalk, it is ſaid to be increaſed in its weight. See Mem. de l'Acad. des Scien. 1735.

In this operation, as M. Duhamel has obſerved, a true decompoſition of the *ſal ammoniac* takes place by the intervention of the chalk; which combining with the acid of the ſalt, diſcharges its *fixable air*. This again combines with the volatile alkali of the *ſal ammoniac*, and occaſions that increaſe of weight, which Duhamel, and other chemiſts, erroneouſly aſcribed to a part of the calcareous earth carried off during the operation.

A mixture of quick-lime and *ſal ammoniac* ſet to ſublime, affords an exceeding penetrating ſpirit, but gives nothing in the form of a ſolid ſalt; if the quantity of lime be conſiderable, the volatile alkaline part of the *ſal ammoniac* will be almoſt totally abſorbed by it.

The volatile alkali obtained by this proceſs is called *volatile ſpirit* of *ſal ammoniac*; as it is cauſtic, or uncombined with *fixable air*, it is always in a liquid ſtate. Moreover, fixed alkali, either vegetable or mineral, and moſt metallic ſubſtances, are capable of decompoſing *ſal ammoniac*.

Laſtly, of all ſalts, *ſal ammoniac* moſt intenſely cools the water in which it is diſſolved, whoſe coldneſs in hot weather equals that of water ready to freeze.

From what has been ſaid, it appears, that *ſal ammoniac* is a neutral ſalt, compounded of a volatile alkaline ſalt, and an acid.

The *ſal ammoniac* derives its name from the various kinds of acid forming the compoſition. And accordingly we have *ſal ammoniac animal*, *nitrous*, *vitriolic*, and *vegetable*, denoting the different combinations of volatile alkali with theſe acids reſpectively. That formed by volatile alkali and vinegar is called *ſpirit of Mindererus*.

But it muſt be obſerved, that *ſal ammoniac* is a very different ſubſtance from moſt of the preparations made from it; for when alkaline ſalts are mixed with the crude *ſal ammoniac* they abſorb the acid, which renders the *ſal ammoniac* neutral; and then the volatile urinous ſalts, being freed from the acid, riſe in diſtillation.

Boerhaave ſays, that *ſal ammoniac* preſerves all animal ſubſtances from putrefaction; that its brine penetrates into the moſt minute parts; and that it is the nobleſt aperient, attenuant, reſolvant, ſtimulant, errhine, ſternutatory, diaphoretic, ſudorific, antiſeptic, and diuretic. It is made uſe of in ſundry mechanic buſineſſes, by the dyers and glaſs-makers, but eſpecially by thoſe who work on metals, for the purpoſe of ſoldering.

There are ſeveral preparations of this ſalt made uſe of in the preſent practice of phyſic, as,

AMMONIAC, *ſal, volatile*, made by ſubliming *ſal ammoniac* mixed with ſalt of tartar. It is uſed for pocket ſmelling bottles; but Boerhaave, with the greateſt appearance of reaſon, condemns the cuſtom of ſmelling to theſe ſalts as highly pernicious. Some put aromatics into the retort, which gives it a more agreeable ſmell. It is preſcribed in malignant fevers as a ſudorific.

AMMONIACI, *ſpiritus ſalis, ſpirit of ſal ammoniac*. This is a ſpirit diſtilled from *ſal ammoniac*, mixed with ſalt of tartar, or pot-aſh, and diſſolved in a proper quantity of water. Some uſe lime inſtead of ſalt of tartar, in order to increaſe its volatility; but this ſhould never be uſed internally.

The *aqua regia*, with which ſo many experiments are made, particularly in diſſolving gold, is made from *ſal ammoniac* and nitre. But the moſt celebrated medicine now in the ſhops from this ſubſtance, is the

Spiritus ſalis volatilis oleoſus, generally called *ſal volatile*, the oily ſpirit of volatile ſalt. This is a ſpirit diſtilled from *ſal ammoniac*, ſalt of tartar, and ſpirit of wine, impregnated with aromatic oil. There is alſo the

AMMONIACI, *ſpiritus ſalis, ſuccinatus*, ſpirit of *ſal ammoniac* with amber; which is reckoned to be cephalic, and exceedingly well ſuited to all nervous indiſpoſitions; its doſe is from ten drops to forty.

AMMONIAC, *fixed*, is a name given to the *reſiduum* formed by decompoſing *ſal ammoniac*, with a calcareous earth. It is a ſalt compoſed of that earth, and marine acid.

AMMONIACUM *regeneratum*, in *Chemiſtry*, the name given to a ſort of *ſal ammoniac*, procured by *chemiſtry* from its principles.

The method of preparing it is this: take four ounces of alkaline ſpirit of *ſal ammoniac*, dilute it with three times its weight of water, in a tall glaſs, and drop in ſpirit of ſea-ſalt, till the alkali is ſaturated, and no more efferveſcence happens. The ſaturation being nicely hit, the liquor will be ſcentleſs, and of the taſte of *ſal ammoniac*; let it be filtrated and evaporated, and it will ſhoot out a fine woolly ſalt; or if it be evaporated to a dryneſs, a white ſalt will remain, and either one or the other of theſe will be found to be true genuine *ſal ammoniac*, capable of riſing in flowers, and ſtanding all the teſts of the common *ſal ammoniac*.

The volatile alkali of animal and vegetable ſubſtances, which of itſelf indifferently receives all acids, is here determined, by the acid of ſea-ſalt, into a ſemi-volatile ſea-ſalt; hence the chemical rule, that acids are capable of determining alkalies into their own nature, ſeems to receive confirmation, while the alkali either gives fixedneſs, or volatility, as itſelf is fixed, or volatile; and therefore, as a large quantity of volatile alkali is continually generated from putrified animals and vegetables, if there was in nature a ſpirit of ſea-ſalt floating about in ſeveral places, *ſal ammoniac* would, in theſe places, be continually produced; and the ſame ſpirit meeting with a fixed alkali, produced from the aſhes of vegetables, would immediately produce a true fixed ſea-ſalt, as appears by the proceſs of the regenerated ſea-ſalt.

But though it is eaſy to manifeſt theſe fixed alkalies by experiments, yet it is very difficult to ſhew the exiſtence of ſuch acids in nature, unleſs we had the ſecret of Mr. Boyle, who, in his treatiſe of Mechanical Experiments, declares, that, by a ſecret and long continued digeſtion, ſea-ſalt may be ſo diſpoſed as to part with its acid, by a gentle heat, and that before its water, and without any addition of any other ſubſtance. Boerh. Chem. part ii. p. 261.

For the chemical hiſtory of this ſubſtance, ſee Neumann's Works, p. 312.

AMMONIS, *cornu*, in *Natural Hiſtory*. See CORNU *Ammonis*.

AMMONITÆ, in *Natural Hiſtory*. See SNAKE-*ſtone*, and Phil. Tranſ. abr. vol. x. part ii. p. 641.

AMMOSCHISTA, in *Natural Hiſtory*, a genus of ſtones of a laminated ſtructure, and ſplitting only horizontally, or into flat plates.

The *ammoſchiſta* are coarſe, harſh, and rough ſtones, of a very looſe texture, and appearing ſomething porous. They are conſiderably heavy, and compoſed of a large, coarſe, and obtuſely angular GRITT, ſurrounded, and in part held together, by a looſe earthy ſpar. They are very ſoft and friable in the maſs, but much more ſo when reduced to ſmall pieces. They make a violent efferveſcence with *aqua fortis*, and will not eaſily ſtrike fire with ſteel.

The ſpecies of *ammoſchiſta* are ſix.

AMMUNITION, in general, ſignifies all ſorts of warlike ſtores and proviſions, more eſpecially powder and ball. The word is *amonitio*, which, according to Du Cange, was uſed in the corrupt ſtate of that language for *ſubſiſtence*.

Ammunition, or gun-powder, may be prohibited to be exported at the king's pleaſure, by 12 Car. II. cap. 4. § 13.

By 1 Jac. II. cap. 8. § 2. *ammunition*, arms, utenſils of war, or gun-powder, imported without licence from his majeſty, are to be forfeited with treble the value. Such licence obtained, except for the furniſhing his majeſty's public ſtores, is to be void, and the offender to incur a premunire; and be diſabled to hold any office from the crown.

Whoever is curious to know the quantity of *ammunition* neceſſary for the ſiege of a place, may conſult the chevalier de St. Julien's treatiſe De la Forge de Vulcain; and the quantity requiſite for the defence of a place, will be found in Suireg de St. Remy's Memoires d'Artillerie.

AMMUNITION-*bread*, ſhoes, &c. what is provided for, and diſtributed to, the ſoldiers of an army or garriſon.

Such an officer has ſo many rations of *ammunition-bread*, &c.

AMNA, in *Phyſical Writers*, denotes the water found in limy ſoils, and which is conſequently tinged with a whitiſh colour, as in many places of England.

In this ſenſe, Paracelſus ſpeaks of the medical virtues and uſes of *amna*.

AMNESTY, or AMNISTY, a kind of general pardon, which a prince grants to his ſubjects, by a treaty or edict, wherein he declares, that he forgets and annuls all that is paſt, and promiſes not to make any farther inquiry into the ſame.

The word is αμνηστια, *amneſtia*; which was the name of an ancient law of this kind, paſſed by Thraſybulus upon the expulſion of the thirty tyrants out of Athens.—Andocides, an Athenian orator, whoſe life is written by Plutarch, and of whom we have an edition of the year 1575, gives us, in his Oration upon Myſteries, a *formula* of the *amneſty*, and the oaths taken thereupon.

Amneſties are uſually practiſed upon reconciliations of the ſovereign with his people, after rebellions, general defections, &c.

Amneſty is either general and unlimited, or particular and reſtrained, though moſt commonly univerſal, without condition or exceptions: ſuch as that which paſſed in

Germany, at the peace of Oſnabrug, in the year 1648.

Amneſty, in a more limited ſenſe, denotes a pardon granted by a prince to his rebellious ſubjects, uſually with ſome exceptions: ſuch was that granted by king Charles II. at his reſtoration.

Amneſty alſo, in a military ſenſe, ſignifies the pardon granted by a ſovereign to deſerters, on condition of their rejoining their regiments.

AMNIMODAR, in *Aſtrology*, the planet that rectifies a geniture, or rather a method of rectifying a nativity, and finding the preciſe degree in the horoſcope at the time of an infant's birth, from the condition of the planet, which had the rule in the laſt preceding conjunction, or oppoſition of the luminaries.

AMNIOS, or **Amnion**, in *Anatomy*, the innermoſt membrane, wherewith the *fœtus* of the womb is immediately inveſted.

The word ſeems to be derived from αμνος, a *lamb*; q. d. *pellis agnina, lamb's ſkin.*

The *amnios* is a white, ſoft, thin, tranſparent membrane; making part of the ſecundine, and lying under the *chorion*. The exiſtence of the *allantois* in human ſubjects is queſtioned; but the *amnios* is found in all animals both viviparous and oviparous. Dr. Hunter ſays, that the *amnios*, viewed in the microſcope, appears to have blood veſſels, but that they are really lymphatics.

It contains a limpid liquor, like a thin jelly-broth; which, becauſe the ſtomach of the *fœtus* is always found full of it, is ſuppoſed to be the matter of its nouriſhment.

But authors differ widely as to the quantity and quality of the liquor of the *amnios*.

The liquor of the *amnios*, according to Mr. Monro, ſerves to keep the *fœtus* and its membranes ſoft and extenſible, hinders them from cohering, and defends the *fœtus* from preſſure, or other violence, which it needs moſt to be protected from, while its parts are very tender.

It is a queſtion, however, whether the liquor of the *amnios* be a proper food for the *fœtus*. Mr. Monro is of opinion, that whether the liquor of the *amnios* be in a ſound or in a morbid ſtate, it appears to be very ill calculated for ſerving as food to be taken into the ſtomach of a *fœtus*.

It is alſo controverted, whether the liquor of the *amnios* paſſes into the ſtomach of the *fœtus*. Mr. Monro aſſerts, that the liquor of the *amnios* does not paſs into the ſtomach of the *fœtus*; and anſwers the arguments brought by ſeveral learned men for the contrary opinion. Medic. Eſſ. Edinb. *paſſim*.

On its outſide lies the *allantois*, or urinary membrane. In ſome ſubjects, the urinary membrane and *chorion* ſtick ſo cloſe to one another, that they appear to be but one. The *amnios* hath all its veſſels from the ſame origin as the *chorion*.

See ſome obſervations, proving that the *fœtus* is in part nouriſhed by the liquor *amnii*, by Malcolm Fleming, M. D. Philoſ. Tranſact. vol. xlix. part 1. N° 42. an. 1755.

AMNIS *alkaliſatus*, among *Chemiſts*, denotes water impregnated with an alkalious quality, by paſſing through a limy or other alkaline ſubſtance under ground.

This amounts to much the ſame with what Paracelſus calls AMNA.

AMNITES, in *Natural Hiſtory*, a name uſed by ſome for the *hammites*, or ſpawn ſtone, a ſtone ſuppoſed to be compoſed of the petrified ſpawn of fiſhes; but they are, in reality, a *congeries* of ſmall STALAGMITÆ, or dropſtones.

AMOEBÆUM, in the *Ancient Poetry*, denotes a kind of poem, or compoſition, wherein two parties ſpeak alternately in the ſame number of verſes, but ſo, as that he who anſwers either goes beyond, or contradicts the other.

The word is αμοιϐαιος, ſignifying *mutual*, or *alternate*. Hence alſo we meet with *epiſtolæ amœbææ*. Such, e. g. are thoſe of Pliny and Trajan.

AMOGABARI, a kind of ancient Spaniſh ſoldiery, in great repute for their bravery.—Theſe are otherwiſe denominated, in ſome writers, ALMUGAVEIRI.

AMOGLOSSUS, in *Zoology*, a name of a peculiar kind of flat fiſh, ſomewhat reſembling the ſoal, and called in ſome parts of England, the *lantern*. It is of a very ſlender, pellucid, and white body, never exceeds three inches in length, and is exceeding ſmooth to the touch, being covered only with a number of very thin ſcales, which fall off on touching it. Its fleſh is very finely taſted, and requires very little dreſſing.

AMOMI is uſed, by the Dutch traders, for what we otherwiſe call Jamaica pepper.

AMOMUM, in *Botany*. See Ginger.

Amomum *of Pliny*. See Solanum.

Amomum, in the *Materia Medica*, a ſmall and rich aromatic fruit, growing in bunches like grapes, valued highly for its medicinal virtues. It is commonly claſſed among the *ſeeds*.

The commentators on Pliny, and Dioſcorides, have never been able to agree upon the ancient *amomum*; the generality of them ſeek it in fruits different from ours.—Some will have the roſe of Jericho paſs for it.—F. Camelli is poſitive he has diſcovered the real *amomum* of Dioſcorides, and that it is the *tugus*, or *birao*, or *caropi*, growing in the Philippine iſlands; the grains or berries whereof are worn by the natives about their necks; both on account of their agreeable odour, and of their ſuppoſed virtue in preſerving from infection, curing the ſting of the ſcolopendra, &c. Phil. Tranſ. N° 248.

Scaliger is confident, that the *amomum* of the ancients was not a fruit, but the wood itſelf, which bore ſome reſemblance to a bunch of grapes, and was particularly uſed in embalming of bodies; and hence, ſays he, the term MUMMY was given to the bodies of Egyptians, embalmed with it. On this account, likewiſe, all medicines and unguents uſed in the embalming and preſerving dead bodies, were called AMOMIA.

The ancient *amomum* was of divers kinds; but the Armenian was moſt eſteemed. It was a heater, dryer, and aſtringent; uſed as a narcotic, to appeaſe pain, cure poiſonous bites, inflammations of the eyes, &c.

The true *amomum* of the ancients reſembles the muſcat grape, and grows like it, in cluſters; it is about the bigneſs of a large chich-pea, round, membranous, and divided into three cells, which contain ſeveral brown angular grains; of a very ſtrong aromatic taſte and ſmell; and is of the cardomom kind.

This fruit is brought from the Eaſt Indies; and makes part of the compoſition of Venice treacle.—It is of a hot, ſpicy taſte and ſmell.

Beſides this, there is likewiſe another paler ſeed, which bears the name *amomum*; but neither this nor the former are in much uſe in phyſic.

The modern *amomum*, uſed in the ſhops, under the denomination of *amomum vulgare*, or *amomum officinarum*, appears to be the ſeed of the *ſiſon* or *ſium* of the ancients, anſwering to what in Engliſh we call *baſtard-ſtone*-PARSLEY.

It is eſteemed a powerful diuretic, and is good in all nephritic caſes. It is alſo commended as an aperient in general, and preſcribed in obſtructions of the liver and ſpleen, and in ſuppreſſions of the menſes. The people in ſome parts of England bruiſe the ſeeds, and give them in warm ale, in colics; but thoſe of caraway, or aniſe, are better. See Skirret.

AMORÆANS, a ſect or order of *gemaric* doctors, or commentators on the Jeruſalem Talmud.

The word is otherwiſe written *amoræi*, and *amoraitæ*, *amoraim*.—The *amoræans* are alſo called, by Scaliger, *ſophiſtæ*; by Atling, γνωμολογι, or *ſpeakers of ſentences*; by Bartoloccius, *dicentes*, or *diſceptantes*, becauſe they conferred and diſputed together in a ſcholaſtic manner.

The *amoræans* ſucceeded the *miſchnic* doctors. They ſubſiſted 250 years; and were ſucceeded by the *ſeburæans*.

AMORE, in *Zoology*, the name of a genus of fiſhes, of which there are three ſpecies. 1. The *amore pixuma*. 2. The *amore guacu*. And, 3. The *amore tinga*.

The *amore pixuma* has a very broad head, and a very large mouth, but has no teeth. Its body is oblong, and its back and ſides are of a duſky iron colour. Its belly, which is protuberant, is white. Its ſkin is ſoft; and it has ſeven fins, beſide the tail, which is rounded at the end. Its fleſh is firm, and well-taſted.

The *amore guacu* is like the former, of an oblong figure; but it grows to ſix inches in length. Its head is thick, its gills large, and its mouth is furniſhed with ſmall teeth. Its eyes are ſmall, their pupil black, and the iris yellow. It has ſeven fins beſide the tail, which is long, and rounded at the end. This ſpecies is covered with ſomewhat large ſcales, and is of a ruſty iron colour, but ſomewhat paler on the belly than in any other parts.

The *amore tinga* is of the ſame ſhape with the former, but is much ſmaller, and is covered with whitiſh ſcales all over, but ſpotted with brown ſpots. Its tail is brown, and waved with different degrees of that colour. All the three ſpecies are eaten, but the firſt is eſteemed the beſt. They are caught about the American ſhores.

AMORPHA, *baſtard indigo*, in the Linnæan ſyſtem of *Botany*, a genus of plants, belonging to the *diadelphia decandria*, of which the characters are: the flowers are of the butterfly kind, having an oval concave ſtandard, but no wings, or keel; this is inſerted between the two upper ſegments of the empalement; the germen afterward becomes a reflexed, moon-ſhaped pod, having one cell, in which are lodged two kidney-ſhaped ſeeds. We know but one ſpecies of this genus.

This ſhrub grows naturally in Carolina, where formerly the inhabitants made a coarſe ſort of *indigo* from the young ſhoots, which occaſioned their giving it the title of *baſtard indigo*.

It riſes with many irregular ſtems to the height of twelve or fourten feet, with very long winged leaves, in ſhape like thoſe of the common ACACIA. At the extremity of the ſame year's ſhoots, the flowers are produced in long ſlender ſpikes, which are very ſmall, and of a deep purple colour. After the flowers are paſt, the germen turns to a ſhort pod, having two kidney-ſhaped ſeeds; but theſe do not ripen in England.

This ſhrub is become very common in all the gardens and nurſeries near London, where it is propagated as a flowering ſhrub, for the ornament of the ſhrubbery. It is generally propagated by laying down the young branches, which in one year will make good roots, and may then be taken off and planted, either in the nurſery, or the places where they are deſigned to remain.

AMORTIZATION, or AMORTISEMENT, in *Law*, the act of turning lands into mortmain, i. e. of alienating or transferring them to ſome corporation, guild, or fraternity, and their ſucceſſors.

The word is formed of the French *amortir*, *to extinguiſh*. See EXTINGUISHMENT.

The term is alſo uſed for the licence or privilege which the king or ſuperior lord grants, to enable ſuch a corporation, &c. thus to receive lands in MORTMAIN; which otherwiſe they cannot do.—There is always ſuppoſed to be ſome fine or acknowlegement paid the king, or the lord, in conſideration hereof; to make them ſatisfaction for ſeveral incidental dues and profits, which would have fallen to them in the common way; which are hereby cut off.

This practice was borrowed from the ancient *Lex Papiria*, whereby it was forbidden to conſecrate any land to religious uſes, without the conſent of the people.

AMOS, or the *Prophecy of Amos*, a canonical book of the Old Teſtament. This prophet boldly remonſtrates againſt the crying ſins that prevailed among the Iſraelites; and reproves the people of Judah for their ſenſuality and injuſtice. He terrifies them both with frequent threatnings, and pronounces that their ſins will at laſt end in the ruin of Judah and Iſrael. He begins with denunciations of judgment and deſtruction againſt the enemies of the Jews, and concludes with promiſes of reſtoring the tabernacle of David, and of erecting the kingdom of Chriſt.

AMOVING, the act of removing or expelling another from his place, office, or the like.—We have ſtatutes for *amoving* papiſts out of London and Weſtminſter, and ten miles round the ſame. 1 W. and M. cap. 9.

AMOVING *a guardian*, *amovendo cuſtode*. See CUSTODE.

AMPANA, in *Botany*, a name given, in the *Hortus Malabaricus*, to a genus of plants, ſince deſcribed by Linnæus, under the name of BORASSUS.

AMPELIS, in *Botany*, the *vine*. See VINE and VITIS.

AMPELIS, in the Linnæan ſyſtem of *Zoology*, the name of a genus of birds, of the order of the *paſſeres*; the diſtinguiſhing characters of which are, that the tongue is furniſhed with a rim, or margin, all round; the beak is of a convex form, and ſtraight.

AMPELIS is alſo the name of a bird, of the magpye-kind, called by ſome GARRULLUS *Bohemicus*. See ROLLER.

AMPELITES, canal coal, in *Natural Hiſtory*, a black *bituminous* ſubſtance, called alſo PHARMACITIS, and nearly reſembling pit-coal, inſomuch, that the difference between them is ſcarce ſenſible. Accordingly, Theophraſtus gives its deſcription under the claſs of theſe coals; and Dr. Woodward ſeems of the ſame opinion. The *ampelites* of the ſhops, according to him, is the ſame with our canal-coal found in Lancaſhire.

It differs from the common pit-coal, in that it is more friable and fat, and withal leſs compact and ſolid; which, it muſt be owned, does not agree with Woodward's deſcription of canal-coal, which he repreſents as very fine and hard, ſo as to take a pretty good poliſh.

The beſt, according to Dioſcorides, is that of a black colour, reſembling ſmall pieces of the *lapis piceus*, or pit-coal, equally gloſſy on all ſides, though, when kneaded up with a little oil, it readily melts.

It is found in many parts of England, in the ſame places with pit-coal. It is alſo to be met with in a quarry near Alençon, in France. It is uſed by huſbandmen, &c. to ſmear their vines with, againſt vermin, and is endued with a drying diſcuſſive power; on which account it is alſo uſed for the dying of hair.

It makes no efferveſcence with *aqua fortis*. Being applied to the belly, it is reputed good for killing worms. It is capable of a fine poliſh, and for that reaſon is turned into a vaſt number of toys, as ſnuff-boxes, and the like.

Ampelites is by ſome called vine-earth, becauſe it kills the worms that creep upon vines.

Libavius has treated at large of the *terra ampelites*.

AMPELOGRAPHIA, the natural hiſtory, or deſcription of the VINE.

The word is originally compounded of *αμπελις*, *a vine*, and *γραφη*, *deſcription*.

Phil. James Sachs has publiſhed an *Ampelographia, ſeu Vitis viniferæ ejuſque partium conſideratio Phyſica, &c.* Uratiſlav. 1661. 8vo.

AMPER, a local term uſed in Eſſex for a *tumor*, or *phlegmon*.

In this ſenſe, the word is alſo written *ampor*.

AMPHERES, in *Antiquity*, a kind of veſſels wherein each mariner wrought two oars at the ſame time, one with his right-hand, and the other with his left, anſwering to our *ſcullers*. This is alſo called AMPHERICUM.

AMPHIARTHROSIS, in *Anatomy*, a neutral or dubious kind of articulation; diſtinguiſhed from the *diarthroſis*, in that it has no conſpicuous motion; and from the *ſynarthroſis*, in its not being without ſenſible motion.

The word is derived from *αμφι*, *both*, and *αρθρωσις*, *articulation*, the *amphiarthroſis*—being compounded of both the other ſorts.—Whence ſome alſo call it *diarthroſis ſynarthroidalis*.

Of this kind is the articulation of the ribs with the *vertebræ*; and that of the *carpus* with the *metacarpus*.

AMPHIBALUM, among *Middle Age Writers*. See AMPHIMALLUM.

AMPHIBIA, in *Natural Hiſtory*, the third claſs of animals, whoſe eſſential characters are, according to Linnæus, that they have either a naked, or elſe a ſcaly body, with no grinders, or *dentes molares*, their teeth all ſharp and pointed, and without radiated fins; or, their heart has but one ventricle, and they reſpire through their lungs.

This claſs is divided into three orders, viz. *reptiles*, *ſerpents*, and the ſwimming *amphibia*, comprehending 24 genera, and 289 ſpecies.

AMPHIBIOUS, in *Natural Hiſtory*, a term applied to a ſort of animals which live both on land, and in the water; that is, which breathe the air, but paſs part of their time in the water, as affording them their chief food.

The word comes from *αμφι*, *utrimque*, *both ways*, and *βιος*, *vita*, *life*; as living in either place.

Such are the *frog*, *caſtor*, *otter*, *tortoiſe*, *ſea-calf*, *crocodile*, &c.—Moſt of the *amphibious* kind, the *caſtor* and *otter* excepted, have peculiar proviſions in their ſtructure, to fit them for ſo various a way of living; particularly in the heart, lungs, *foramen ovale*, &c.

In ſome of theſe animals, as the *frog*, *tortoiſe*, &c. the heart has but one cavity, with an artery to receive the blood coming out of it, and a vein to convey it thither. In others, the *foramen ovale* appears to be ſtill open for the paſſage of the blood from the *vena cava* to the *arteria venoſa*, without the help of breathing.

In the *caſtor* diſſected by the academiſts of Paris, though the *foramen* was not found actually open, yet the marks of it appeared; and the cauſe of its cloſure might well enough be accounted for, from the animal's having been detained a good while from the water, by which the part having been in diſuſe, it cloſed up. In the OTTER the caſe is different; there is no appearance of any thing like a *foramen*, and hence the neceſſity the creature is under of riſing, from time to time, above water, to take in air. Phil. Tranſ. N° 124.

The ſtructure of the feet of the CASTOR pronounces it *amphibious* at firſt ſight, the fore-feet being formed like thoſe of terreſtrial animals, who hold their food in their feet, e. gr. ſquirrels, while the hind-feet are faſhioned after the manner of river-fowl, with webs or membranes between the toes, as the gooſe, duck, &c.

A great part of the fly-kind may be ſaid, in one ſenſe, to be *amphibious*. Gnats drop their eggs in water, where hatching, the young live and breathe after the manner of fiſhes, till at length undergoing a metamorphoſis, they take wing, quit their native element, and become inhabitants of the air. May not ſwallows alſo be ranged under this claſs, which have been ſometimes found to paſs their winter aſleep under water, from which the warmth of the ſpring awakes, and calls them forth.

Elias Geiſsler has written expreſly concerning *amphibious* animals. M. Ottwald of Dantzick has left behind him anatomical obſervations on *amphibious* animals.

Dr. Hunter obſerves that, properly ſpeaking, there are no *amphibious* animals; for that fiſh cannot live long without air, though much longer than men. See two ingenious diſſertations on this ſubject by Dr. Parſons, in the Phil. Tranſ. vol. lvi. 1766.

The term *amphibious* is ſometimes alſo extended to men, who have the faculty of living a long time under water.

We have divers inſtances of ſuch *amphibious* men; the moſt remarkable is of a Sicilian, named the *Fiſh-Colas*. Kircher relates, that by a long habitude from his youth, he had ſo accuſtomed himſelf to live in water, that his nature ſeemed to be quite altered; ſo that he lived rather after the manner of a fiſh, than a man. See Brydone's Tour, vol. i. p. 77.—The PEARL-*fiſhers* alſo arrive at a ſurpriſing art of this kind.

AMPHIBIOUS *plants.* See PLANTS.

AMPHIBIOUS *bipes.* See BIPES.

AMPHIBLESTROIDES, in *Anatomy*, a tunic, or coat of the eye, more uſually called *retina.*

The word is compounded of αμφι, βληϛρον, *net*, and ειδος, *form*; on account of its net-like texture; whence the Latins alſo call it *retiformis.*

AMPHIBOLOGY, or AMPHIBOLIA, in *Grammar*, a fault in language, whereby it is rendered obſcure, and liable to be underſtood in a double ſenſe.

The word comes from αμφιϐολος, *ambiguous*, and λογος, *diſcourſe.*

Amphibology is chiefly uſed in reſpect of a phraſe; as equivocal is in reſpect of a word.

Of this kind was that anſwer which Pyrrhus received from the oracle: *Aio te, Æacida, Romanos vincere poſſe*; where the *amphibology* conſiſts in this, that the words *te* and *Romanos*, may either of them precede, or either of them follow, the words *poſſe vincere*, indifferently. See ORACLE.

The Engliſh language uſually ſpeaks in a more natural manner, and is not capable of any *amphibologies* of this kind: nor is it ſo liable to *amphibologies* in the articles, as the French, and moſt other modern tongues.

AMPHIBRACHYS, the name of a foot in the Latin and Greek poetry; conſiſting of three ſyllables, the firſt and laſt whereof are ſhort, and that in the middle long.

The word comes from αμφι, *circum*, and βραχυς, *brevis*, q. d. a foot ſhort at both ends, and long in the middle.—Among the ancients it is alſo called *janius*, and *ſcolius.* Diom. iii. p. 475.

Such are the words *ămārĕ. ăbīrĕ, pătērnŭs*, Ὅμη̄ρŏς, &c.

AMPHICOME, in *Natural Hiſtory*, a kind of figured ſtone, of a round ſhape, but rugged, and beſet with eminences, celebrated on account of its uſe in divination. The word is originally αμφικομη, q. d. *utrinque comata*, or *hairy on all ſides.*

AMPHICTYONS, AMPHICTYONES, in *Antiquity*, the deputies of the cities and people of Greece, who repreſented their reſpective nations in a general aſſembly; having a full power to concert, reſolve, and appoint, what they ſhould think fit, for the ſervice of the common cauſe.

Some ſuppoſe the word αμφικτιονες to be formed of αμφι, *about*, and κτιειν, or κτιζειν, becauſe the inhabitants of the country round about met here in council. Others, with more probability, from *Amphictyon*, ſon of Deucalion, whom they ſuppoſe to have been the founder of this aſſembly; though others will have Acriſius, king of the Argives, to have been the firſt who gave a form and laws to this body.

The *amphictyones* very much reſembled the ſtates general of the United Provinces; or rather, what in Germany they call the DIET of the empire.

Authors give different accounts of the number of the *amphictyons*, as well as of the ſtates who were entitled to have their repreſentatives in this council; according to Strabo, Harpocration, and Suidas, they were twelve from their firſt inſtitution, ſent by the following cities and ſtates; the Ionians, Dorians, Perrhæbians, Bœotians, Magneſians, Achæans, Phthians, Melians, Dolopians, Ænianians, Delphians, and Phocæans. Æſchines only reckons eleven, inſtead of the Achæans, Ænianians, Delphians, and Dolopians, he only gives theſe three, the Theſſalians, Œtans, and Locrians. Laſtly, Pauſanias's liſt only contains ten *amphictyons*; namely, the Ionians, Dolopians, Theſſalians, Ænianians, Magneſians, Melians, Phthians, Dorians, Phocians, and Locrians.

In the time of Philip of Macedon, the Phocæans were excluded the alliance, for having plundered the Delphian temple, and the Lacedæmonians were admitted in their place; but the Phocæans, ſixty years after, having behaved gallantly againſt Brennus and his Gauls, were reſtored to their ſeat in the *amphictyonic* council. Under Auguſtus, the city Nicopolis was admitted into the body; and to make room for it, the Magneſians, Melians, Phthians, and Ænianians, who till then had diſtinct voices, were ordered to be numbered with the Theſſalians, and to have only one common repreſentative. Strabo ſpeaks as if this council were extinct in the times of Auguſtus and Tiberius; but Pauſanias, who lived many years after, under Antoninus Pius, aſſures us it remained entire in his time, and that the number of *amphictyons* was then thirty.

The members were of two kinds; each city ſending two deputies, under different denominations, one called ιερομνημων, whoſe buſineſs ſeems to have been more immediately to inſpect what related to ſacrifices and ceremonies of religion; the other πυλαγορας, charged with hearing and deciding of cauſes and differences between private perſons.—Both had an equal right to deliberate and vote, in all that related to the common intereſts of Greece. The *hieromnemon* was elected by lot; the *pylagoras*, by plurality of voices.

Though the *amphictyons* were firſt inſtituted at Thermopylæ, M. de Valois maintains that their firſt place of reſidence was at Delphi, where, for ſome ages, the tranquillity of the times found them no other employment than that of being, if we may ſo call it, church-wardens of the temple of Apollo. In after-times the approach of armies frequently drove them to Thermopylæ, where they took their ſtation, to be nearer at hand to oppoſe the enemies progreſs, and order timely ſuccour to the cities in danger. Their ordinary reſidence, however, was at Delphi.

Here they decided all public differences and diſputes between any of the cities of Greece; but before they entered on buſineſs, they jointly ſacrificed an ox cut into ſmall pieces, as a ſymbol of their union. Their determinations were received with the greateſt veneration, and even held ſacred and inviolable.

The *amphictyons*, at their admiſſion, took a ſolemn oath never to diveſt any city of their right of deputation, never to avert its running waters; and if any attempt of this kind were made by others, to make mortal war againſt him: more particularly, in caſe of any attempt to rob the temple of any of its ornaments, that they would employ hands, feet, tongue, their whole power, to revenge it.—This oath was backed with terrible imprecations againſt ſuch as ſhould violate it; e. gr. May they meet all the vengeance of Apollo, Diana, Minerva, &c. their ſoil produce no fruit, their wives bring forth nothing but monſters, &c.

The ſtated terms of their meeting was in ſpring and autumn; the ſpring meeting was called Ἑαρινη Πυλαια, that in autumn Μετοπωρινὴ. On extraordinary occaſions, however, they met at any time of the year, or even continued ſitting all the year round.

Philip of Macedon uſurped the right of preſiding in the aſſembly of the *amphictyons*, and of firſt conſulting the oracle, which was called Προμαντεια.

The Romans never thought fit to ſuppreſs the meeting of the *amphictyons.*

AMPHIDROMIA, in *Antiquity*, a feaſt celebrated the fifth day after the birth of a child, called *dies luſtricus.*

AMPHIDRYON, in *Eccleſiaſtical Writers*, a veil or curtain uſually drawn before the door of the BEMA in ancient churches.

AMPHIMACER, a foot in the *Ancient Poetry*, conſiſting of three ſyllables; the firſt and laſt whereof are long, and that in the middle ſhort.

The word is derived from the Greek αμφι, *circum*, and μακρος, *longus*, by reaſon both extremes are long.

Such are the words *ōmnĭūm, cāſtĭtās*, γρᾱμμᾰτῶν, *&c.*

This foot is alſo called *creticus*, and ſometimes *feſcennius.*

AMPHIMALLUM, in *Eccleſiaſtical Writers*, is otherwiſe called *amphibalum*, and *amphibolum.*

Magri ſuggeſts the *amphimallum*, ſpoken of by eccleſiaſtical writers, to have been a garment peculiar to biſhops.

AMPHIPNEUMA, among *Ancient Phyſicians*, a great degree or ſpecies of difficult reſpiration.

AMPHIPOLES, in *Antiquity*, archons, or chief magiſtrates of the city of Syracuſe.

They were firſt eſtabliſhed by Timoleon, after his expulſion of Dionyſius the tyrant.—They governed Syracuſe for the ſpace of three hundred years; and Diodorus Siculus aſſures us, they ſubſiſted even in his time.

AMPHIPPII, in *Antiquity*, thoſe who practiſed riding on two horſes, by jumping from one to the other.

The word is Greek, αμφιπποι; they are ſometimes alſo called ιππαγωγοι, and ſometimes by corruption, αυιπποι. The appellation was given to a ſort of cavalry in the Grecian armies, who, for their conveniency, had two horſes a-piece, on which they rode by turns, leading the other.

AMPHIPRORÆ, in *Antiquity*, were ſhips which had prows at both ends, that no time might be loſt in turning them, and alſo on account of the rapidity of ſtreams, and narrowneſs of channels.

AMPHIPROSTYLE, in the *Ancient Architecture*, a kind of temple, which had four columns in front, and as many behind.

The word is derived from αμφι, *about*, προ, *before*, and ϛυλος, *column.*

AMPHISBÆNA, in *Zoology*, the name of a genus of ſerpents in the Linnæan ſyſtem. It goes with equal eaſe, as its name imports, either forward or backward.

Linnæus enumerates two ſpecies, viz. the fuliginous, and wihte. They are both ſound in America.

AMPHISBÆNA *aquatica*, a name given, by Bertrutius, Albertus, and ſeveral other authors, to that long and ſlender inſect, called by others the *ſeta aquatica*, and *vermis ſetarius*. It has the name *amphiſbæna*, from its going backwards or forwards with equal eaſe and celerity. The uſual ſize is four or five inches long, and the thickneſs of a large hair.

Dr. Liſter accidentally found out the origin of this worm, in his reſearches into the hiſtory of a very different ſort of inſect. Diſſecting one of the common black beetles dug up in a garden, he found in its belly two of theſe hair worms, or *amphiſbænæ*; and renewing the experiment on other beetles of the ſame ſpecies, he found that they uſually contained one, two, or three of theſe worms. As ſoon as the body of the beetle is opened, they always crawl out. When put into water, they will live a conſiderable time, and ſwim nimbly about; but often put up their heads above water, as if endeavouring to make their eſcape, and ſometimes faſtening themſelves by the mouth to the ſides of the veſſel, and drawing their whole bodies after them.

Theſe creatures are not only found in the waters, but buried in earth, and ſometimes on the leaves of trees, in our gardens and hedges. Phil. Tranſ. Nº 83.

AMPHISCII, in *Geography* and *Aſtronomy*, the people who inhabit the torrid zone.

The word comes from *αμφι*, *about*, and *σκια*, *ſhadow*.

They are thus denominated, as having their SHADOW turned ſometimes one way, and ſometimes another, i. e. at one time of the year to the north, and at another to the ſouth.

The *amphiſcii* are called alſo ASCII.

AMPHISMILA, or **AMPHISMELA**, an anatomical knife, edged on both ſides.

The word is formed from *αμφι*, *utrimque*, *on both ſides*, and *σμιλη*, *knife*.

AMPHITANE, in *Natural Hiſtory*, a name of a ſtone deſcribed by the ancients, and ſaid to have the power of the magnet, or loadſtone; but with this remarkable difference, that as that ſtone attracts only iron, ſo this is ſuppoſed to exert its influence only on gold. For this fabulous property, however, there does not appear to be the leaſt foundation.

AMPHITAPA, in *Antiquity*, a kind of carpets, or clothing, having a ſoft warm nap on each ſide.

AMPHITHEATRE, a ſpacious building of an oval figure, having its *area* or *arena* encompaſſed with ſeveral rows of ſeats, riſing gradually one over another; with porticos both within and withoutſide.

The word is derived from *αμφι*, *about*, and *ϑεατρον*, *theatre*, from *ϑεαομαι*, *contemplor*; ſo that an *amphitheatre*, ſtrictly ſpeaking, is a place whence a perſon may ſee all around him.

Among the ancients, the *amphitheatre* was appointed for the exhibiting of ſpectacles or ſhews to the people; as the combats of gladiators, thoſe of wild beaſts, and the *naumachia*, or *ſea-fight*.

Amphitheatres were at firſt only of wood; and it was not until the reign of Auguſtus, that Statilius Taurus built one for the firſt time of ſtone. The loweſt part was of an oval figure, and called *arena*, becauſe, for the conveniency of the combatants, it was uſually ſtrewed with ſand; and round the *arena* were vaults, ſtiled *caveæ*, in which were confined the wild beaſts appointed for the ſhews.

Above the *caveæ* was erected a large circular periſtyle *podium* adorned with columns. This was the place of the emperors, ſenators, and other perſons of diſtinction. The rows of benches were above the *podium*. Their figure was circular, and they were entered by avenues, at the end of which were gates called *vomitoriæ*.

Their theatre was built in form of a ſemicircle, only exceeding a juſt ſemicircle by one fourth part of the diameter; and the *amphitheatre* was nothing elſe but a double theatre, or two theatres joined together: ſo that the longeſt diameter of the *amphitheatre* was to the ſhorteſt, as $1\frac{1}{4}$ to 1.

There are *amphitheatres* ſtill ſtanding at Rome, at Pola, at Niſmes, &c. The *amphitheatre* of Veſpaſian, called the Coliſeum, and that at Verona in Italy, are the moſt celebrated now remaining of all antiquity.—Remains of *amphitheatres* are ſhewn alſo at Arles, Bourdeaux, &c.

The *amphitheatre* at Pola, an ancient republic of Iſtria, is very entire: it conſiſts of two orders of Tuſcan pillars, one over the other.—The lower have pedeſtals, which is extraordinary; this order having ſcarce ever more than *baſes* to ſupport them.

The *amphitheatre* of Titus is computed to have been capable of holding 85,000 ſpectators.—That of Verona is the beſt preſerved: for, though moſt of the great and beſt ſtones of the outſide are picked out, yet the great vault, on which the rows of the ſeats are laid, is entire; the rows alſo (which are 44 in number) are entire. Every row is a foot and a half high, and as much in breadth; ſo that a man ſits conveniently in them; and allowing for a ſeat a foot and a half, the whole will hold 23,000 perſons.

Pliny mentions an *amphitheatre* built by Curio, which turned on large iron pivots; ſo that of the ſame *amphitheatre* two ſeveral theatres were occaſionally made, whereon different entertainments were ſometimes preſented at the ſame time.

Mr. Brydone mentions an *amphitheatre* at Syracuſe, the theatre of which is ſo entire, that the *gradini* for ſeats ſtill remain; but it is a ſmall theatre, he ſays, in compariſon of that at Taurominum. Tour to Sicily, vol. i. p. 295.

AMPHITHEATRE, in *Gardening*, certain diſpoſitions of trees and ſhrubs on the ſides of hilly places, which, if the hill or riſing be naturally of a circular figure, always have the beſt effect. They are to be formed of ever-greens, ſuch as hollies, phillereys, lauruſtines, bays, and ſuch plants, obſerving to plant the ſhorteſt growing trees in the front, and thoſe which will be the talleſt behind, ſuch as pines, firs, cedars of Lebanon, &c.

Amphitheatres are alſo ſometimes formed of ſlopes on the ſides of hills, covered only with turf, and, when well kept, they are a great ornament to large gardens.

AMPHITHURA, in *Eccleſiaſtical Antiquity*, a name given to the veil, or curtain, which divided the chancel from the reſt of the church.

The word is *αμφιθυρα*, thus called, on account of its opening in the middle, after the manner of folding-doors.

AMPHITRITE, *αμφιτριτη*, from *circumferendo*, in the *Heathen Mythology*, the wife of Neptune, daughter of Nereus, and goddeſs of the ſea, ſometimes taken for the ſea.

AMPHITRITE, in *Zoology*, the name of a ſmall naked ſea inſect, of an oblong figure, with only one *tentaculum*, reſembling a piece of thread. There are ſeveral ſpecies of this animal, ſome of which are marginated, and variouſly furrowed, ſo as to bear ſome reſemblance to a quill.

AMPHODONTA, in *Zoology*, a deſignation given to animals which have teeth in both jaws, the upper as well as under.

The word is compounded of *αμφι* and *οδος*, *tooth*.

AMPHORA, in *Antiquity*, an earthen veſſel, which ſerved as a kind of liquid meaſure, among the ancient Greeks and Romans.

It is called in Homer *αμφιφορευς*, and by *ſyncope αμφορευς*, on account of its two *anſæ*, or *handles*, for carriage.—It is the ſame with the *quadrantale*.

But we meet with two kinds of *amphoræ* in ancient writers, the Italic and Attic.

AMPHORA, *Italic*, was that uſed by the Romans, and which is therefore ſometimes called the Roman *amphora*.

The Italian *amphora* was alſo called *quadrantale*, and ſometimes *cadus*. It contained 72 pounds of wine or water, 80 of oil, and 180 of honey.

The *amphora* was equal to 2 *urnæ*, or 3 *modii*, 6 *ſemodii*, 8 *congii*, 48 *ſextaries*, 96 *heminæ*, 192 *quartarii*, and 570 *cyathi*, amounting to about 7 gallons, one pint, Engliſh wine meaſure.

The ancient *amphoræ* were either *ſeſſile*, i. e. ſuch as would ſtand, or *non ſeſſile*, terminating in a ſharp bottom. Of both which kinds, we meet with figures on ancient medals.

The *amphora capitolina* was the ſtandard of this meaſure, which was kept in the Capitol to adjuſt others by.

Suetonius tells us of a man, who ſtood for the queſtorſhip, and who drank an *amphora* of wine at one meal, with the emperor Tiberius.

Suppoſing the *amphora* to have been a cube of four feet each ſide, as Politian aſſerts it to have been, we may venture to ſay, that ten of the greateſt drinkers on earth could not have emptied it. Buddæus's computation is much more reaſonable; he makes the *amphora* of wine amount to about $4\frac{1}{4}$ gallons Paris meaſure.

AMPHORA, *Attic*, was that uſed by the Greeks, and therefore ſometimes alſo called the Grecian *amphora*.

The Attic *amphora* was one third part bigger than the Italic; ſo that as the latter contained 2 *urnæ*, or 48 *ſextaries*, the former contained 3 *urnæ*, or 72 *ſextaries*, amounting to about 10 gallons $5\frac{1}{2}$ pints, Engliſh wine meaſure. This was called *αμφορευς*, ſometimes alſo *κεραμιον*, and, by way of diſtinction from the Roman kind, *μετρητης*.

AMPHORA was ſometimes alſo uſed as a dry meaſure, containing three buſhels; the ſtandard whereof was kept at Rome in the Capitol, to prevent falſe meaſures.

AMPHORA is alſo uſed to denote the largeſt liquid meaſure in uſe among the Venetians. The *amphora* contains four *bigots*, ſeventy-ſix *muſtachi*, or two boats, or *muids*.

AMPHORA, in *Aſtronomy*, a name given to the ſign more uſually called AQUARIUS.

AMPHORARIUM *vinum*, in *Antiquity*, denotes that which is drawn or poured into *amphoræ*, or *pitchers*, by way of diſtinction from *vinum doliare*, or *caſk-wine*.

The Romans had a method of keeping wine in *amphoræ* for many years, to ripen, by faſtening the lids tight down with pitch or GYPSUM, and placing them either in a place where the ſmoak came, or under-ground.

AMPHOTEROPLON, among *Civilians*, denotes a kind of naval inſurance, where the inſurers run the riſque both of the going out and return of a veſſel.

In this ſenſe, the word ſtands oppoſed to HETEROPLON, where only the voyage outwards is inſured.

AMPHOTIDES, in *Antiquity*, a kind of defence, or armour for the ears, worn by the ancient Pugiles, to prevent giving their adverſaries a handle by that part.

Authors have been in the dark as to the nature and office of the *amphotides* Some explain them as a ſort of helmet for covering the noſe and ears.

Fabretti firſt aſcertained their real uſe, from the figure of a *Pugil*, which had *amphotides* over its ears, joined by a piece coming over the forehead, and tied with ſtrings under the chin.

AMPLEXATIO, or *Baſiatio*, among *Alchemiſts*, denotes a kind of union betwixt their *philoſophical mercury*, which they call the white female, and by which they mean *regulus* of antimony, and the red huſband, by which they mean *gold*. This embracing, ſome of them expreſs in terms not very decent.

AMPLIATION is uſed, by ſome writers, for the act of enlarging the compaſs or extent of a thing.

On a medal of the emperor Antoninus Pius, we find the title *ampliator civium* given him, on account of his having extended the *jus civitatis*, or right of citizenſhip, to many ſtates and people before excluded from that privilege. In effect, this prince is generally ſuppoſed to have made the famous conſtitution, whereby all the ſubjects of the empire were made citizens of Rome. M. Spanheim refutes this notion, and makes the emperor Caracalla to have been the author of that conſtitution.

AMPLIATION, in the Roman *Law*, denotes the act of deferring a judicial ſentence, either as the cauſe is not clear, or in favour of him againſt whom it is to paſs.

Ampliation differed from *comperendination*, as the former was granted on the mere motion or pleaſure of the judge, the latter at the petition of one or both the parties. Beſides, the former was not limited to any certain time, whereas the latter could not be extended beyond the third day.—Beſides, *ampliation* might be repealed, which *comperendination* might not.

The firſt introduction of *ampliation* was in favour of the *rei*, or perſons accuſed. But it was afterwards uſed on other occaſions; e. gr. when certain witneſſes were wanting, or the crime or the fact had not been ſufficiently proved for a final deciſion, or the kind or meaſure of puniſhment was not agreed on, &c.

In theſe caſes, the prætor ſignified his intention, by pronouncing the word *amplius*, or the letters *N. L.* for *non liquet*, by which he denoted that the cauſe was not clear, but that a ſecond action muſt be brought.

The perſon whoſe ſentence, whether of condemnation or abſolution, was thus deferred, was ſaid to be *ampliatus*.

Hence the phraſes, *bis ampliatus*, *tertiò abſolutus eſt reus*.

AMPLIATION is alſo uſed, among *Schoolmen*, to denote the acceptation of a term for a different time from that ſignified by the verb in the propoſition, e. gr. *juſtus peccavit*, i. e. *before he ſinned he was juſt*.

AMPLIFICATION, in *Rhetoric*, part of a diſcourſe or ſpeech, wherein a crime is aggravated, a praiſe or commendation heightened, or a narration enlarged, by an enumeration of circumſtances; ſo as to excite the proper emotions in the ſouls of the auditors.

Such is the paſſage in Virgil, where inſtead of ſaying merely that Turnus died, he *amplifies* the circumſtances of his death.

> *—Aſt illi ſolvuntur frigore membra,*
> *Vitaque cum gemitu fugit indignata ſub umbras.*

The maſters of eloquence make *amplification* to be the ſoul of diſcourſe.—Longinus ſpeaks of it as one of the principal means which contribute to the ſublime; but he cenſures thoſe who define it a diſcourſe which magnifies things; this equally agreeing to the ſublime, the pathetic. &c.—The ſame author diſtinguiſhes *amplification* from the ſublime by this, that the latter conſiſts wholly in the elevation of words and ſentiments, whereas the former conſiſts alſo in their multitude: the ſublime is ſometimes found in a ſingle thought; but *amplification* cannot ſubſiſt, excepting in abundance.

There is likewiſe a difference between the *amplification*, and the proof; becauſe the one ſerves to clear the point, and the other to heighten and exaggerate it.

There are two general kinds of *amplification*; the one of *things*, the other of *words*.—The firſt is produced in divers manners; as, 1. By a multitude of definitions: thus it is Cicero *amplifies* on hiſtory: *Hiſtoria eſt teſtis temporum, lux veritatis, vita. memoriæ, magiſtra vitæ, nuntia vetuſtatis.*—2. By a multitude of adjuncts; of which we have a fine inſtance in Virgil's lamentation for Cæſar's death, by enumerating the many prodigies and monſters that either preceded or ſucceeded it.—*Vox quoque per lucos vulga exaudita ſilentes ingens, & ſimulacra modis palentia miris viſa ſub obſcurum noctis*; *pecudeſque locutæ, infandum! ſiſtunt amnes, terræque dehiſcunt*; *et meſtum illacrymat templis ebur, æraque ſudant.*—3. By a detail of cauſes and effects.—4. By an enumeration of conſequences.—5. By compariſons, ſimilitudes, and examples, &c.—6. By the contraſt of antithets, and by rational inference.

Amplification by words is effected ſix ways.—1. By uſing metaphors.—2. By hyperboles.—3. By *ſynonyma*.—4. By ſplendid and magnificent terms; as that of Horace, *Scandit æratas vitioſa naves cura, nec turmas equitum relinquit, ocyor cervis, & agente nimbos ocyor euro.*—5. By *periphraſes*, or circumlocutions.—6. By repetition.—To which may be added, by gradation.

AMPLITUDE *of the range of a* PROJECTILE, denotes the horizontal line ſubtending the path in which it moved.

AMPLITUDE, in *Aſtronomy*, an arch of the horizon, intercepted between the true eaſt or weſt point, and the centre of the ſun, or a ſtar, at its riſing or ſetting: ſo that the *amplitude* is of two kinds; *eaſtern*, or *ortive*; and *weſtern*, or *occiduous*.

The eaſtern and weſtern *amplitudes* are alſo called *northern* and *ſouthern*, as they fall in the northern and ſouthern quarters of the horizon.

The complement of the eaſtern or weſtern *amplitude* to a quadrant, is called the *azimuth*.

To find the ſun's or a ſtar's *amplitude*, either riſing or ſetting, by the globe, ſee GLOBE.

To find the ſun's *amplitude* trigonometrically; having the latitude and the ſun's declination, given—Say, as the coſine of the latitude is to the radius, ſo is the ſine of the preſent declination to the ſine of the *amplitude*.—Suppoſe, e. gr. the latitude 15° 30′, and the declination 11° 50′:

Sine comp.	15° 30′	ſubtr. from radius,	0,0160895
Sine of declin.	11° 50′	+	9,3118926
			9,3279821

Amplitude required 12° 15′.

AMPLITUDE, *magnetical*, is an arch of the horizon, contained between the ſun at its riſing, and the eaſt or weſt point of the compaſs; or it is the difference of the riſing or ſetting of the ſun, from the eaſt or weſt points of the compaſs.

It is found by obſerving the ſun, at its riſing or ſetting, by an azimuth compaſs. If the compaſs had no variation, the *magnetical amplitude* would be the ſame as the true one.

AMPOTIS, *αμπωτις*. It ſignifies properly the receſs or ebb of the tide. But Hippocrates, who was of Cos, one of the Grecian iſles, and muſt have had many opportunities of obſerving the tides, very elegantly applies this word to the receſs of humours, from the circumference of the body to the internal parts.

AMPTRUARE, in *Antiquity*, denoted a kind of dancing performed by the chief of the *ſalii*, and anſwered with a correſpondent motion by others in the *chorus*.

This is ſometimes alſo called *amburvare*; the anſwer of the *chorus* was particularly called *redamtruare*.

AMPULLA, in *Antiquity*, an oil-vial with a large belly, uſed for unctions at the baths.

The word *ampulla* was alſo uſed for a drinking veſſel uſed at table.

AMPULLA, among *Eccleſiaſtical Writers*, denotes one of the ſacred veſſels uſed at the altars.

The word is ſometimes alſo written in Engliſh *ampul*.

Ampullæ were alſo uſed for holding the oil uſed in chriſmation, conſecration, coronation, &c.

Among the ornaments of churches, we find frequent mention made of *ampuls*, or *vials*. In the inventory of the cathedral of Lincoln, we meet with *ampuls* of cryſtal, variouſly enriched with ſilver-feet and covers; one containing a tooth of St. Chriſtopher, another a tooth of St. Cecily, another a bone of the head of St. John Baptiſt.

AMPULLA, *Knights of St. Ampulla*, belong to an order inſtituted by Clovis I. king of France; at the coronation they bear up the canopy, under which the *ampulla* is carried in proceſſion

AMPULLA, a ſpecies of *bulla*, in the Linnæan arrangement of *worms*.

AMPULLACEÆ *conchæ*, in *Natural Hiſtory*, a name by which ſome authors have called a genus of ſhells, named by others *conchæ globoſæ*, and *dolia*, and by the French naturaliſts *tonnes*. See DOLIUM.

AMPUTATION, in *Chirurgery*, the operation of cutting off a limb, or other part of the body, with an inſtrument.

The uſual method of performing it, in the inſtance of a leg, is as follows.—The proper part for the operation being four or five inches below the knee, the ſkin and fleſh are firſt to be drawn very tight upwards, and ſecured from returning by a ligature two or three fingers broad: above this ligature another looſe one is paſſed, for the gripe; which, being twiſted by means of a ſtick, may be ſtraitened to any degree at pleaſure.

Then, the patient being conveniently ſituated, and the operator placed on the inſide of the limb, which is to be held by one aſſiſtant above, and another below the part deſigned for the operation; and the gripe being ſufficiently twiſted, to prevent too large an hæmorrhage, the fleſh is with a ſtroke or two to be ſeparated from the bone with the diſmembring knife. Then the *perioſteum* being alſo divided from the bone with an inſtrument called a *cataline*, ſaw the bone aſunder with as few ſtrokes as poſſible.—When two parallel bones are concerned, the fleſh that grows between them muſt likewiſe be ſeparated before the uſe of the ſaw.

This being done, the gripe may be ſlackened, to give an opportunity for ſearching for the large blood-veſſels, and ſecuring the hæmorrhage at their mouths, either by the actual cautery, the ligature, ſtitching them up, applying vitriol buttons, or the like. After this a dry pledget of lint, or one dipped in ſpirit of wine, and ſprinkled with *diapente*, may be applied to the ſtump: then looſen the firſt ligature, and pull both the ſkin and fleſh as far as conveniently may be, over the ſtump, to cover it; and ſecure them with the croſs-ſtitch, made at the depth of half or three quarters of an inch in the ſkin.

It remains to apply over the whole ſtump two large pledgets, dipped in oxycrate, dried, and afterwards charged with aſtringents; over theſe to apply a plaſter of the deminio, or ſimple diachylon; over all theſe, an ox-bladder, wetted in oxycrate; and finally, over all, a croſs-cloth pretty tight, ſecured with rollers.

After all this, the gripe may be ſlackened, ſo as to be made eaſy to the patient; or even entirely taken away, after he is put to bed; in which he muſt lie with the ſtump ſomewhat raiſed; an aſſiſtant for twelve or fourteen hours keeping faſt the dreſſing with his hand, to prevent any violent hæmorrhage.—In three or four days the dreſſing may be removed; and proper digeſtives mixed with aſtringents, applied; having an actual cautery, or ſome powerful ſtyptic, in readineſs, in caſe of a violent hæmorrhage at the firſt opening. M. Sabourin, ſurgeon of Geneva, is recorded in the hiſtory of the Royal Academy of Sciences, an. 1702, for an improvement in the method of *amputation*, propoſed to that academy; the whole ſecret conſiſts in ſaving a piece of fleſh and ſkin, a little lower than the place where the ſection is to be, wherewith the ſtump is to be afterwards covered. The advantages hereof are, that, in leſs than two days time, this fleſh unites with the extremes of the divided veſſels, and ſo ſaves the neceſſity either of binding the ends of thoſe veſſels with thread, or of applying cauſtics or aſtringents; which are methods very dangerous, or at leaſt very incommodious: and, that the bone thus covered up, does not exfoliate. This method of Meſſrs. Sabourin and Verduin, is called *l'operation de l'amputation à lambeau*.

Dr. Motherby, in his Medical Dictionary, ſays, that in the year 1674, Mr. Morell, a French ſurgeon, introduced the *tourniquet*, as it is now uſed; but the firſt mention of the inſtrument is in the Currus Triumphalis è Terebintho, Lond. an. 1679, from which book it alſo appears, that the operation *de l'amputation à lambeau*, was then the practice of the Engliſh ſurgeon, who publiſhed it.

In the year 1713, it is ſaid in the Collect. Acad. tom. iii. p. 517. that M. Sabourin, a ſurgeon of Geneva, had diſcovered the method of what is called *amputation à lambeaux*, and that he came that year to Paris, to propoſe it to the academy, with a view of introducing it into practice in the courſe of a war that was then beginning. It is added, that he diſcloſed it without reſerve or preſumption, and in a manner that did him great honour; but that the academy declined adopting the practice, ſuſpended its judgment, and waited for the additional recommendation of experience.

Many and important improvements on the methods of *amputation* have been made in this century, in the courſe of which the crooked needle, and moſt other parts of the *apparatus* in this branch of ſurgery, have either been introduced or improved. The double-edged knife, called the *cataline*, formerly uſed to clear away the *perioſteum*, is now laid aſide, as unneceſſary or hurtful; it having been diſcovered, that in conſequence of ſcraping off the *perioſteum*, an exfoliation ſometimes follows from the ſubjacent bone.

In moſt *amputations* the operation ſhould be performed the breadth of a finger, or more, above the ſphacelated or otherwiſe injured part. The *trochar* ſhould be ſo applied, as that it may preſs upon the chief artery of the limb to be taken off. The practice of making a ſhort ſtump is moſt general; but others prefer amputating between the calf of the leg and the ankle, in caſes that will admit of ſaving ſo much of the leg; and are confident, that the motion of the long ſtump is more eaſy than that of a ſhort one. Mr. White, and Mr. Bromfield, are entirely of this opinion.

The uſe of ſpunge as a part of the dreſſing, as ſoon after the *amputation* as the digeſtion is begun in the ſtump, is recommended by Mr. Kirkland, to prevent the evil, and ſometimes fatal conſequences, of an abſorption of the matter from the wound, after the inflammation is gone off, particularly when the digeſtion does not proceed kindly. See Lond. Med. Obſ. & Inq. vol. ii. art. 23. p. 278.

According to his method, ſo ſoon as the digeſtion is complete, the wound is firſt covered with thin layers of dry lint, over them pieces of fine ſpunge are applied, which imbibe the thinneſt part of the matter from the lint, and that which remains becomes too thick to be abſorbed. Vide Eſſays Phyſic. and Liter. Edinb. vol. iii. art. 22. See a general account of the caſes that are ordinarily ſuppoſed to indicate and require *amputation*, and the various methods of amputating particular parts, &c. Med. Dict. Sharp's Operations of Surgery, and Crit. Inq. Heiſter's Surgery; Bilguer's Diſſert. on Amputation; Le Dran's Operations, &c.

AMSDORFIANS, in *Church Hiſtory*, a ſect of proteſtants, in the ſixteenth century; ſo denominated from their leader *Amſdorf*.

Saunders repreſents them as maintaining, that good works were not only unprofitable, but even oppoſite and pernicious to ſalvation.

AMSEGETES, in *Antiquity*, thoſe whoſe grounds abutted on the highway. Vid. Feſt. de Verb. ſignif. in voc. The laws of the Twelve Tables decree, *amſegetes viam muniunto*.

AMTRUSTIO, in *Ancient Charters*, denotes a ſworn or liege tenant, or vaſſal, of the ancient French or German kings.

The word is alſo written *antruſtio*. Spelman derives it from the German *ampt*, *office*, *buſineſs*, and the Engliſh *truſtee*.

AMULET, AMULETUM, a kind of external medicament, to be worn about the neck, or other part of the body, to prevent, or remove, diſeaſes.

The word *amulet* is formed from *amoliri*, *to remove*.

Such are quills of quickſilver, or arſenic, which ſome hang on the neck, or wear under the ſhirt, againſt the plague, and other contagious diſeaſes; as alſo the blood-ſtones worn by others againſt hæmorrhages; and that worn by the women of the Eaſt Indies to bring the *menſes*.

Amulets are alſo frequently no other than a ſort of ſpells, or charms; conſiſting of quaint words and characters, ſuppoſed to have the virtue of warding off ill.—Pliny makes frequent mention of them.

The Greeks called this kind of remedies φυλακτηρια, *phylacteries*; περιαπτα, *periapta*; αποτελεσματα, περιαμματα, βρεϐια and εγκολπια. The Latins call them *amulata*, *appenſa*, *pentacula*, *&c.*

Some think this word derived from *amula*, a ſmall veſſel with luſtral water in it, anciently carried in the pocket by the Romans, for the ſake of purification and expiation. This laſt opinion appears the more probable, in that ſome *amulets* were made in the ſhape of little veſſels, as appears from the teſtimony of Pliny, who obſerves, that pieces of amber, cut in form of little veſſels, were hung about childrens necks for *amulets*.

Amulets are by ſome conſidered as a natural ſpecies of *taliſmans*. Others rather make *taliſmans* a ſpecies of *amulets*. The *bulla*, worn by the ancients; the *abraxas* of the Braſilidians, &c. were alſo *amulets*.

The ancients made great uſe of gems for *amulets*: the whole Eaſt, according to Chiflet, wore a kind of jaſper for this purpoſe.

That ſpecies of *amulets* compounded of poiſons, uſed as preſervatives from the plague, are more particularly denominated *zenechta*.

Under *amulets*, ſome alſo include medicinal or other ſubſtances fixed to brutes, or even plants, to preſerve them from certain diſeaſes and dangers.

Charms, words, ſcrolls, magic figures and numbers, make a large claſs of *amulets*, to which the Turks are ſtill greatly devoted. Their *amulets*, called *chaimaili*, are little bits of paper of two or three fingers breadth, rolled up in pieces of ſilk, containing ſhort prayers or ſentences out of the Alcoran, with circles and other figures, in which they inſcribe the name of Jeſus, the figure of the croſs, &c. They hang them about their necks, or place them under their arm-pits, or in their boſom near their hearts, and eſpecially when they go to war, as a preſervative againſt the dangers of it.

The pope is ſuppoſed to have the virtue of making *amulets*, which he exerciſes in the conſecrating of *Agnus Dei's*, &c.

Amulets are now much fallen from the repute they were anciently in; yet the great Mr. Boyle alledges them as an inſtance of the ingreſs of external effluvia into the habit; in order to ſhew the great poroſity of the human body. —He adds, that he is perſuaded ſome of theſe external medicines do anſwer: for that he himſelf, having once been ſubject to bleed at the noſe, and reduced to uſe ſeveral remedies to check it, found the moſs of a dead man's ſkull, though only applied ſo as to touch the ſkin till the moſs was warm thereby, the moſt effectual of any. The ſame Mr. Boyle ſhews how the effluvia, even of cold *amulets*, may, in tract of time, pervade the pores of a living animal; by ſuppoſing an agreement between the pores of the ſkin, and the figure of the corpuſcules. Bellini has demonſtrated the poſſibility of the thing in his laſt propoſitions, De Febribus; and the like is done by Dr. Wainwright, Dr. Keill, &c.

AMULET, in a more particular ſenſe, is reſtrained to ſuch medicines, as do not operate by any phyſical virtue, or to thoſe wherein there is no proportion between the cauſe and effect.

In this ſenſe medicines, which operate by effluvia, odors, and the like, do not belong to the claſs of *amulets*.

In this ſenſe alſo thoſe eſſence-veſſels worn by hyſterical women on their breaſts, called by the Greeks *καρδιοφυλακια*, and by the Latins *domus pectoris*, were not properly *amulets*.

AMULET is ſometimes alſo applied, in a more extenſive ſenſe, to all medicines, whether internal or external, whoſe virtue or manner of operation is *occult*.

AMULET, in *Cookery*. See OMELET.

AMULETICS, in *Medicine*, is uſed by ſome writers for what is more frequently called an *amulet*.

Amuletics amount to the ſame with what are otherwiſe called *ſympathetics*, and are chiefly uſed of late times to ſtop bleeding; ſuch are the *perſicaria*, *lapis hæmatites*, dried toads, &c. alſo againſt warts, *ſarcomas*, &c.

Sir Kenelm Digby's ſympathetic powder is one of the principal *amuletics* in caſes of hæmorrhages; and with many, the *ancora ſacra*.

AMUND, in *Ancient Writers*, denotes a perſon free or diſcharged from tuition or wardſhip.

The word is alſo written *aamund*, *amond*, and *amont*; and is compounded of the privative *a*, and the Saxon *munde*, *defence*, *tuition*.

AMURACORY, in ſome *Writers of the Middle Age*, denotes a kind of Turkiſh ſoldiery belonging to the corps or order of Janizaries.

They ſeem to be the ſame with thoſe otherwiſe called *Saraptarii* and *Pocillatores*.

AMURCA, in *Pharmacy*, a medicine made of the refuſe or recrement of expreſſed OLIVES.

Amurca being boiled in a copper-veſſel to the conſiſtence of honey becomes a drug of ſome uſe in medicine, being reputed an aſtringent and drier; and as ſuch ſometimes preſcribed in ulcers, as well as againſt diſeaſes of the teeth, eyes, &c.

Hippocrates applies the term *amurca*, to a crude, immature, putrid ſtate of the liver.

Some authors have alſo given the name *amurca* to the juice or fluid found in the RENES *ſuccenturiati*.

AMY, in *Law*, the perſon next of kin to an orphan, or infant, who is to be intruſted for him; properly called PROCHEIN *amy*.

The word in French literally ſignifies *friend*.

AMY, *alien*, is a foreigner here, ſubject to ſome prince, in friendſhip with us.

AMYGDALA, in *Natural Hiſtory*, the name of a ſpecies of ECHINUS *marinus*, of the genus of the BRISSOIDES.

AMYGDALÆ, in *Surgery*, denotes ſuperfluous fleſh growing at the root of the tongue.

AMYGDALÆ, in *Anatomy*. See ALMONDS.

AMYGDALE. See ALMOND.

AMYGDALATE, an artificial milk, or emulſion, made of blanched almonds, &c.

AMYGDALOIDES *lapis*, in *Natural Hiſtory*, the name given by authors to a ſtone which reſembles the kernel of an almond in figure. It is no natural foſſil, but the petrified ſpine of an ECHINUS *marinus*, or ſea-urchin, of the nature of the LAPIS *Judaicus*, but wanting the pedicle or ſtalk of that ſpine.

AMYGDALUS, in *Botany*, the ALMOND-*tree*.

AMYLON, in *Ancient Writers*, a kind of aliment anſwering, as ſome apprehend, to our furmity.

The word is Greek, *αμυλον*, thus called, becauſe made *ſine mola*.

AMYLUM. See STARCH.

AMYNTA, in *Literary Hiſtory*, a beautiful paſtoral comedy, compoſed by Taſſo; the model of all dramatic pieces wherein ſhepherds are actors. The *Paſtor Fido*, and *Filli di Sciro*, are only copies of this excellent piece.

AMYNTICA *emplaſtra*, in *Pharmacy*, defenſative, or ſtrengthening plaſters.

AMYNTOR properly denotes a perſon who defends or vindicates a cauſe. The word is *αμυντωρ*, formed of the verb *αμυνω*, *I defend*, or *avenge*.

In this ſenſe, Mr. Toland entitles his defence of Milton's life, *Amyntor*, as being a vindication of that work againſt Mr. Blackall, and others, who had charged him with queſtioning the authority of ſome of the books of the New Teſtament, and declaring his doubt that ſeveral pieces under the name of Chriſt and his Apoſtles, received now by the whole Chriſtian church, were ſuppoſititious.

AMYRALDISM, a name given by ſome writers to the doctrine of univerſal grace, as explained and aſſerted by Amyraldus, or Moſes Amyraut, and others his followers, among the reformed in France, towards the middle of the ſeventeenth century.

This doctrine principally conſiſted of the following particulars, viz. that God *deſires* the happineſs of all men, and none are excluded by a divine decree; that none can obtain ſalvation without faith in Chriſt; that God refuſes to none the *power* of *believing*, though he does not grant to *all* his aſſiſtance, that they may improve this power to ſaving purpoſes; and that many periſh through their own fault. Thoſe who embraced this doctrine were called UNIVERSALISTS, though, it is evident, they rendered grace *univerſal* in words, but *partial* in reality, and are chargeable with greater inconſiſtencies than the SUPRALAPSARIANS.

Amyraldiſm is ſaid to have been a ſyſtem worked up, to bring on a reconciliation with the Lutherans.

AMYRBERIS, in *Botany*, a name uſed by ſome authors to expreſs the BARBERRY-*tree*.

AMYRIS, in *Botany*, a genus of the *octandria monogynia* claſs, with a four-toothed calyx, four oblong petals, a four-cornered ſtigma, and a pulpy berry.

AMZELL, in *Zoology*, the name of a bird of the *merula*, or black-bird kind, of which there are two ſpecies. The ring-*amzell*, or *merula torquata*, and the *merula montana*, called ſimply the *amzell*.

The ring-*amzell* is a little larger than the common black-bird. Its back is of a duſky blackiſh brown, and its throat and breaſt are beautifully variegated with ſpots and ſtreaks of white, and the lower part of the throat is adorned with a fine broad white ring, whence the bird has its name: this ring is of a lunated ſhape, the points ending at the ſides of the neck. The wings and tail are blackiſh, but are ſomewhat variegated with white in the female; the white looks greyiſh. The female is ſaid alſo by ſome not to have the ring round its neck, and has by that means been miſtaken for the *merula montana*, or common *amzell*. This feeds on inſects and on berries. It is common about the Peak in Derbyſhire, and is there called the rock-*owzell*.

The common *amzell*, or *merula montana*, differs from this, in that it has no ring round the throat, which is variegated with a browniſh-red, and with ſpots of black, and the belly with grey and black ſpots. It ſeems however not determined certainly, whether this is any other than the female of the ring-*amzell*.

ANA, āā, in *Medicine*, denotes an equal quantity of any things, whether in liquid, or in dry meaſure.

Hence *anatica proportio* is uſed by ſome writers to ſignify the *ratio*, or *proportion of equality*.

ANA, in *Matters of Literature*, a Latin termination, adopted into the titles of ſeveral books in other languages.—*Anas*, or *books in ana*, are collections of the memorable ſayings of perſons of learning and wit; much the ſame with what we otherwiſe call TABLE-*talk*.

Wolfius has given the hiſtory of books in *ana*, in the preface to the Caſauboniana. He there obſerves, that though ſuch titles be new, the thing itſelf is very old; that Xenophon's books of the deeds and ſayings of Socrates, as well as the dialogues of Plato, are *Socratiana*; that the apophthegms of the philoſophers, collected by Diogenes Laertius; the ſentences of Pythagoras, and thoſe of Epictetus; the works of Athenæus, Stobeus, and divers others, are ſo many *anas*. Even the *Gemara* of the Jews, with ſeveral other oriental writings, according to Wolfius, properly belong to the ſame claſs. To this head of *ana* may likewiſe be referred the *Orphica*, the *Pythagoræa*, *Æſopica*, *Pyrrhonea*, *&c.*

Scaligerana was the firſt piece that appeared with a title in *ana*. It was compoſed by Iſan de Vaſſan, a young Champanois, recommended to Joſ. Scaliger, by Caſaubon.—Being much with Scaliger, who was daily viſited by the men of learning at Leyden, De Vaſſan wrote down whatever things of any moment he heard Scaliger ſay.—And thus aroſe the *Scaligerana*, which was not printed till many years after, at Geneva, in 1666. Patin. Let. 431.—Soon after came the *Perroniana*, *Thuana*, *Naudæana*, *Patineana*, *Sorberiana*, *Menagiana*, *Anti-Menagiana*, *Furetiana*, *Chevræana*, *Leibnitziania*, *Arlequiniana*, *Poggiana*, *&c.*

ANA is uſed among ſome occult philoſophers to denote the human mind. Hence, according to ſome, is derived the word *anaſapta*, a dæmon invoked to the aſſiſtance of a ſick perſon.

ANABAPTISM, ſee ANABAPTISTS, *infra.*

ANABAPTISTON. See ABAPTISTON.

ANABAPTISTS, a name given to Chriſtians, who maintain that *baptiſm* ought always to be performed by immerſion; that it ought not to be adminiſtered to children before the age of diſcretion, or that at this age it ought to be re-adminiſtered to thoſe who have been baptiſed in their infancy, becauſe, they ſay, the adminiſtration of this ſacrament is neither valid nor uſeful, if it be done by ſprinkling only, and not by immerſion; or if the perſons who receive it, be not in a condition to give the reaſons of their belief.

The word *Anabaptiſt* is compounded of *ανα*, *new*, and *βαπτιςης*, a *baptiſt*; and this general denomination has been indiſcriminately applied to people of very different principles and practices; though many of them object to the name, and hold nothing in common, excepting ſome or other of the abovementioned opinions concerning BAPTISM.

The NOVATIANS, the CATAPHRYGIANS, and the DONATISTS, may be conſidered as a kind of *Anabaptiſts* in the earlier ages, though not then denoted by this name; for they contended, that thoſe Chriſtians of the catholic church, who joined themſelves to their reſpective parties, ſhould be rebaptiſed. But we muſt not claſs under the ſame denomination thoſe biſhops of Aſia and Africa, who, in the third century, maintained, that *baptiſm*, adminiſtered by thoſe whom they called heretics, was not valid, and therefore that ſuch of them as returned into their churches ought to be rebaptiſed. Nor does it appear, that there is ſufficient authority to affirm, that the *Vaudois* and the *Albigenſes* were predeceſſors of the modern *Anabaptiſts*.

It was not till a little after the time when the Lutherans ſeparated from communion with the Romiſh church, that the *Anabaptiſts* began to make a noiſe in Germany. Storck, Stubner, and Munzer, were the firſt diſciples of Luther, who, about the year 1521, were ſtiled *Anabaptiſts*. But well knowing that their opinions were very different from Luther's doctrine, they availed themſelves of his abſence to diſſeminate them in Wittemburgh, and had the addreſs to over-reach the piety of Melancthon. Their principal purpoſe was to gain over the populace, and to form a conſiderable party. To effect this, ſays Bayle, they were induſtrious and active, each in his own way. Storck wanting knowledge, boaſted of inſpiration; and Stubner, who had both genius and erudition, laboured at commodious explications of Scripture. Not contented with diſcrediting the court of Rome, and decrying the authority of conſiſtories, they taught, that men being intitled under the Goſpel to equal liberty, could not be juſtly ſubjected to any civil power, nor erect ſuperiorities over each other; that, as all magiſtracy was an uſurpation on Chriſtian freedom, no true Chriſtian could be either magiſtrate, or ſubject, nor conſequently pay any impoſt, give any oath, or bear arms; that violence and arms ought never to be made uſe of, excepting againſt princes, and people in power, from whom they were permitted to revolt, as from ſo many uſurpers, who were to be pulled down, in order to erect the kingdom of God. They pretended that Chriſtians being all free, equal, and independent, there ought to be no tribunal among them, nor laws, nor any diſtinction of property, but that every thing ſhould be in common, nor any reſtraints with regard to the number of wives which they might marry. In other reſpects they affected ſingular auſterity, recommending macerations, faſtings, and the utmoſt ſimplicity of apparel. Their ſermons were for the moſt part declamations againſt the communion of the reformed; and they were inceſſantly exhorting every body to join with them, who, as they ſaid, were ſent of God, to re-eſtabliſh the kingdom of his ſon. They made high promiſes to all who would unite with them to exterminate the impious; if this maſſacre proved the epocha for the commencement of Chriſt's reign upon earth, when the juſt, meaning themſelves, were to reign alſo, inſtead of the unrighteous uſurpers of authority. They moreover affected to ſpeak with a kind of contempt concerning external worſhip, the ſacraments, the miniſtry, and even the word of God, with a view to enhance the merit of the extacies, viſions, and inſpiration, to which they pretended, and on which they valued themſelves. They dealt much in predictions, eſpecially concerning the nearneſs of the laſt judgment; and finally, to give greater *eclat* to their party, they rebaptiſed all thoſe who joined them; and to make their practice ſucceed, they taught that baptiſm adminiſtered to infants was void.

Munzer took the lead of this party; and, in 1525, aſſembled a numerous army of aſſociates; but this inſurrection was ſoon ſuppreſſed, and Munzer put to an ignominious death. Many of his followers, however, ſurvived, and propagated their opinions through Germany, Switzerland, and Holland. In the year 1533, they formed a new community at Munſter, under the direction of two *Anabaptiſt* prophets, John Matthias, a baker of Haerlem, and John Blockholdt, a journeyman taylor of Leyden. Having made themſelves maſters of the city, they depoſed the magiſtrates, confiſcated the eſtates of ſuch as had eſcaped, and depoſited the wealth they amaſſed together in a public treaſury, for common uſe. They made preparations of every kind for the defence of the city, and ſent out emiſſaries to the *Anabaptiſts* in the Low Countries, inviting them to aſſemble at Munſter, which was now dignified with the name of Mount Sion, that from hence they might be deputed to reduce all the nations of the earth under their dominion. Matthias, who was the firſt in command, was ſoon cut off in an act of phrenſy by the biſhop of Munſter's army; and was ſucceeded by Blockholdt, who was proclaimed, by a ſpecial deſignation of heaven, as he pretended, king of Sion, and inveſted with legiſlative powers, like thoſe of Moſes. The extravagancies of Blockholdt were too numerous to be recited; it will be ſufficient to add, that the city of Munſter was taken after a long ſiege, and an obſtinate reſiſtance; and Blockholdt, the mock monarch, was puniſhed with a moſt painful and ignominious death. The *Baptiſts* in England and in Holland, or, as they are there called, the *Mennonites*, are very different from thoſe who firſt gave riſe and name to the ſect.

It muſt be acknowledged, that the firſt inſurgents in Germany had been grievouſly oppreſſed; and that they took up arms principally in defence of their civil liberties: nor ſhould ſubſequent extravagancies of violence be attributed to their religious principles, much leſs charged on their ſucceſſors.

The ſequel of their hiſtory, and diſtinguiſhing tenets, may be ſeen under the articles ANTI-PÆDO-BAPTISTS, MENNONITES, WATERLANDIANS, &c.

ANABASII, in *Antiquity*, the COURIERS who travelled on horſe-back, or in chariots, for the greater expedition.

The word comes from the Greek *αναϐασις*, *mounting*.

ANABASIS, *αναϐασις*, *aſcenſion*, derived from *αναϐαινω*, *to aſcend*.

ANABASIS, in *Medicine*, the ſtate of a diſeaſe in its growth.

ANABASIUS, a name given by Pliny to a plant, which he calls alſo *ephedra*, and deſcribes as hanging down from the branches of large trees, in form of tufts of hair. The plant deſcribed by Pliny, and others of the ancients, under this name, is the USNEA, or long hairy tree-moſs.

ANABATA, in *Ancient Cuſtoms*, a cope, or ſacerdotal veſt, to cover the back and ſhoulders of the prieſt.

It is otherwiſe called *anaboladium*, formed of *αναϐαλλεσθαι*, *to caſt over or cover*.

The word *anabala* ſeems to be uſed in the ſame ſenſe.

ANABATHRA, in *Ancient Writers*, denote a kind of ſteps or ladder, whereby to aſcend to ſome eminence. In this ſenſe we read of the *anabathra* of theatres, pulpits, &c. *Anabathra* appears to have been ſometimes alſo applied to ranges of ſeats riſing gradually over each other.

ANABATHRA is more particularly applied to a kind of ſtone-blocks raiſed by the highway ſides, to aſſiſt travellers in mounting or alighting, before the uſe of ſtirrups was invented.

The firſt author of this contrivance, among the Romans, was C. Gracchus, brother of Tiberius.

ANABIBAZON, in *Aſtronomy*, the DRAGON'S *tail*.

ANABLATUM, in *Botany*, a name uſed by ſome authors for the *ſquammaria*, or tooth-wort, called *dentaria* by others.

ANABLEPS, in the *Artedian Syſtem of Ichthyology*, the name of a new genus of fiſh, of the *malacopterigious* kind, the characters of which are theſe: the *branchioſtege* membrane contains ſix bones, and there is only one ſmall fin at the extremity of the back. There is a ſpecimen of this fiſh in the great collection of Albertus

Seba in Holland. The *anableps* is a ſpecies of the *cobitis*, in the Linnæan ſyſtem.

ANABOLÆUM, in *Antiquity*, denotes any kind of upper garment worn over the coat or tunic.

This is otherwiſe called *anabole*.

ANABOLEUS, among the *Ancients*, a ſervant whoſe office was to aſſiſt in mounting on horſeback.—Theſe were in uſe before the invention of ſtirrups, or of thoſe ſtones called *anabathra*.

ANABOLEUS is alſo uſed by Euſtathius, to denote a ſmall piece of iron, whereon the foot was ſet, in order to mount; from which Buddæus infers, that the ancients had ſtirrups or foot-boards; to which Lipſius objects, that it does not appear this *anaboleus* was any pendent part fixed to the ſaddle, after the manner of our ſtirrups, but rather a portable engine brought by a ſervant, and placed by the horſe's ſide.

ANABROCHISMUS, in the *Ancient Phyſic*, the operation of taking away offenſive hairs in the eye-lids.

The manner of performing the *anabrochiſmus* is deſcribed by Gorræus.

ANABROSIS, in *Medicine*, otherwiſe called *diabroſis*, the iſſuing of blood at a hole worn in a vein by corroſion.

The word is αναϐρωσις, q. d. *eroſio*.

ANACA, in *Zoology*, the name of a Braſilian ſpecies of PAROQUETTE. It is of the ſize of a lark; its beak is brown and crooked; the crown of its head is covered with feathers of a liver-colour, and there are circles of brown ones near its eyes. Its throat is grey; the upper part of its neck and its ſides are green; its belly is of a reddiſh brown; its back green, with a pale brown ſpot, and its tail a pale brown. There is a deep blood-red mark at the top of each wing, the reſt of the wings is green, except their extremities, which are bluiſh. Its thighs are covered with green feathers, and its legs and feet are grey.

ANACALYPTERIA, in *Antiquity*, feaſts celebrated among the heathens on the day that the bride was permitted to lay aſide her veil, and to be ſeen in public.

They were thus called from ανακαλυπτειν, *to uncover*.

According to Suidas, it alſo means the preſents which were made to the bride by her huſband's relations and friends on that day.

ANACAMPSEROS. See PURSLANE.

ANACAMPTERIA, in *Eccleſiaſtical Antiquity*, denote little hoſpitals, or inns, for the entertainment of the poor and ſtrangers, built adjoining to the ancient churches.

ANACAMPTIC ſignifies as much as *reflecting*; and is frequently uſed in reference to echoes, which are ſaid to be ſounds produced *anacamptically*, or by reflection.

Hence, alſo, *anacamptics*, is by ſome uſed for the ſcience of reflected rays; otherwiſe called CATOPTRICS.

ANACANDAIA, in *Zoology*, the name of a ſpecies of ſerpent found in the iſland of Ceylon, and very miſchievous among the cattle, whence it is called BUBALINUS.

ANACARDIUM, in *Botany*, the caſhew-nut, or *acajou*, a genus of the *enneandria monogynia* claſs. For the characters, ſee ACAJOU.

We have but one ſpecies of this genus, viz.

ANACARDIUM, *Hort. Cliff.* 161. This tree grows to a conſiderable height in its native country, which is the Weſt Indies. But in England the plants are with great difficulty preſerved; though by their firſt ſhoot from the ſeeds, they appear ſo ſtrong and vigorous, as to promiſe a much greater progreſs, than they are ever ſeen to make here.

The milky juice of this tree will ſtain linen of a deep black, which cannot be waſhed out again; but whether this has the ſame property with that of the eaſtern *anacardium*, has not yet been fully experimented; for the inſpiſſated juice of that tree is the beſt ſort of lack which is uſed for ſtaining of black in China or Japan. Phil. Tranſ. vol. xlix. part ii. p. 872; and Dr. Lewis's Commercium, Phil. Techn. p. 329, &c.

ANACARDIUM, in *Medicine*, the fruit of the above mentioned tree, brought from the Eaſt Indies, anciently in great eſteem as a cephalic.

The word is formed of ανα and καρδια, *heart*, on account of the figure of this fruit, which bears ſome reſemblance to a heart.

The pith or medullary part of the *anacardium* is extremely pungent and acrimonious; whence the ancients made great uſe of it in cold diſeaſes of the head, particularly to ſtrengthen the memory; but the abuſe of it ſometimes making them ſtupid, delirious, or even mad, the moderns rarely venture on the uſe of it, at leaſt not without great correctives.

ANACARDIUM *antarticum* is alſo uſed by ſome for the CAJOU-*fruit*. This is alſo called by others *anacardium occidentale*, and is ordinarily uſed for the true, or eaſtern kind.

ANACATHARSIS, in *Medicine*, properly denotes a purgation by ſpitting; in which ſenſe, it ſtands contradiſtinguiſhed from *catharſis*, or evacuation downward.

In this ſenſe is the word uſed by Hippocrates and Galen; agreeably alſo to this Blaſius reſtrains *anacatharſis* to expectoration. Only Blancard, on what authority does not appear, extends *anacathartic* medicines to all thoſe which work upwards, by the glands of the head, whether vomitories, ſternutatories, or maſticatories.

ANACATHARSIS is alſo a name given by civil lawyers to the *Baſilicon repetitæ prælectionis* made by order of the emperor Conſtantine Porphyrogenitus.

It was thus called as being a review or correction of the Baſilicon.

ANACATHARSIS, among *Divines*, denotes the clearing up ſome obſcure paſſage, by a ſpiritual, or anagogical interpretation.

ANACATHARTIC, is uſually underſtood of a vomit, or a purging medicine that works upwards.

The word comes from ανα, *upwards*, and καθαιρω, *I purge*.

ANACEIA, an Athenian feſtival in honour of the Dioſcuri.

It took its name from thoſe deities, who were alſo called Ανακες, and honoured with a temple called Ανακειον, *Anacæum*.

The ſacrifices offered at that time were named Ξενισμοι, becauſe thoſe deities were ξενοι, or *ſtrangers*; and conſiſted of three offerings, which were called Τριτιαι. Athenæus mentions plays acted in honour of theſe deities.

ANACEPHALÆOSIS, in *Rhetoric*, a recapitulation, or a ſhort and ſummary repetition of the heads of a diſcourſe.

The word comes from ανα, which in compoſition ſignifies *again*; and κεφαλη, *head*.

ANACHORESIS, denotes a withdrawing from ſociety, or retiring into ſolitude.

The *anachoreſis* was not allowed to perſons, before they had ſpent thirty years in the community.

ANACHORET, a hermit or devout perſon, living alone in ſome deſart, to be farther out of the reach of the temptations of the world, and more at leiſure for meditation.

The word comes from αναχωρεω, *I retire into a ſolitary place*.

Such were St. Anthony, St. Hilarion, &c. Paul the Hermit was the firſt of the tribe of *anachorets*.

When many of the habitations of *anachorets* were placed together in the ſame wilderneſs, at ſome diſtance from one another, they were all called by one common name, *laura*, which, as Evagrius informs us, differed from a *cænobium*, or *convent*, in that a *laura* conſiſted of many cells divided from each other, where every monk provided for himſelf; but a *cænobium* was one habitation, where the monks lived in ſociety, and had all things in common.

Anachorets, popularly *anchorets*, were very numerous among the Greeks, conſiſting principally of monks; who not caring for the fatigues and offices of the monaſtery, purchaſe a little ſpot of ground, with a cell, whither they retreat, and never appear in the monaſtery again, excepting on ſolemn days. Theſe are ſometimes alſo called *aſcetæ* and *ſolitaries*.

They have their chapel, and after prayers apply themſelves to the culture of their vineyards, olives, fig-trees, and the like, which afford them proviſion for the year.

Theſe *anachorets* only differ from the conventual monks, in that they have leſs intercourſe with the world, and live but in ſmall bodies.

The *anachorets* of Syria and Paleſtine retire into the moſt obſcure and unfrequented places; hiding themſelves under rocks and mountains, and living on the ſpontaneous productions of the earth.

There have alſo been *anachorets* in the weſt. Peter Damian, who was of the order of hermits, frequently ſpeaks of them with great praiſe. He repreſents them as by far the moſt perfect ſort of monks; holding them in much higher opinion and veneration than the *cænobites*, or monks reſiding in monaſteries.

Many of theſe retire, with the leave of their abbots, and have an allowance from the monaſtery.—The people, on account of their piety, preſent them with good ſums of money, which they carefully hoard up, and at their death bequeath to the monaſtery they had belonged to.

ANACHORITA, in *Eccleſiaſtical Writers*, a name ſometimes given to the cells of recluſes.

By the ancient canons, no *anachorita* could be erected without conſent of the biſhop.

ANACHRONISM, in *Chronology*, an error in computation of time; whereby an event is placed earlier than it really happened.

The word is compounded of ανα, *higher*, and χρονος, *time*.

Such is that of Virgil, who placed Dido in Africa at the time of Æneas; though, in reality, ſhe did not come there till 300 years after the taking of Troy.—An error on the other ſide, whereby a fact is placed later and lower than it ſhould be, is called a *parachroniſm.*

ANACLASTIC *glaſſes, vitra anaclaſtica,* a kind of ſonorous phials, or glaſſes, chiefly made in Germany, which have the property of being flexible, and emitting a vehement noiſe by the human breath.—They are alſo called vexing glaſſes, by the Germans, *vexier glaſer,* on account of the fright and diſturbance they occaſion by their reſilition.

The *anaclaſtic* glaſſes are a low kind of phials with flat bellies, reſembling inverted funnels, whoſe bottoms are very thin, ſcarce ſurpaſſing the thickneſs of an onion peel: this bottom is not quite flat, but a little convex. But upon applying the mouth to the orifice, and gently inſpiring, or as it were ſucking out the air, the bottom gives way with a horrible crack, and from being convex, becomes concave. On the contrary, upon expiring or breathing gently into the orifice of the ſame glaſs, the bottom with no leſs noiſe bounds back to its former place, and becomes gibbous as before.

The *anaclaſtic* glaſſes firſt taken notice of were in the caſtle of Goldbach; where one of the academiſts *Naturæ Curioſorum,* having ſeen and made experiments on them, publiſhed a piece expreſly on their hiſtory and *phænomena.* Roſini Lentilii Oribaſii Sched. de Vitris Anaclaſticis. Vid. Ephem. Acad. N. C. Dec. 2. Ann. 3, p. 489, ſeq. Their figure may be ſeen in the book above cited.

They are all made of a fine white glaſs. It is to be obſerved in theſe, 1. That if the bottom be concave at the time of inſpiration, it will burſt, and the like will happen if it be convex at the time of expiration. 2. A ſtrong breath will have the ſame effect even under the contrary circumſtances.

ANACLATICS, that part of OPTICS which conſiders refracted light.

Anaclatics is the ſame with what we more uſually call *dioptrics.*

ANACLETERIA, in *Antiquity,* ſolemn feaſts celebrated in honour of kings and princes when they came of age, and took upon them the adminiſtration of the ſtate, and made a ſolemn declaration thereof to the people.

The word is formed of *ανα* and *καλεω, voco, I call.*

ANACLETICUM, in the *Ancient Art of War,* a particular blaſt of the trumpet, whereby the fearful, and flying ſoldiers were rallied, and recalled to the combat.

ANACLINOPALE, in *Antiquity,* a kind of wreſtling, wherein the champions threw themſelves voluntarily on the ground, and continued the combat by pinching, biting, ſcratching, and other methods of offence.

The *anaclinopale* ſtood contradiſtinguiſhed from the *orthopale,* wherein the champions were erect. In the *anaclinopale,* the weaker combatant ſometimes gained the victory.

ANACLINTERIA, in *Antiquity,* a kind of pillows on the dining-bed, whereon the gueſts uſed to lean.

The ancient tricliniary beds had four *ενηλατα,* one at the head, another at the feet, a third at the back, and a fourth at the breaſt. That on which the head lay, was properly called by the Greeks, *ανακλιντηριον,* or *ανακλιντρον*; by the Romans *fulcrum,* ſometimes *pluteus.*

According to other writers, *anaclinteria* is more properly underſtood of the backs of chairs whereon we lean.

ANACOINOSIS, *communicatio,* a figure in *Rhetoric,* when we conſult the adverſary, or appeal to the judges what ought, or could have been done on ſuch an occaſion.

Such is that of Cicero, *Quæro, ſi te hodie domum tuam redeuntem, coacti homines et armati, non modo limine tectoque ædium tuarum, ſed primo aditu veſtibuloque prohibuerint, quid acturus ſis?* Cicero pro Cecin.

ANACOLLEMA, in *Phyſic,* denotes a liniment or other medicine applied to the forehead, to ſtop or prevent defluxions of the eyes.

The word is formed of *ανακολλαω, conglutino.*

Anacollemata make a ſpecies of medicines called *frontalia.* The qualities required are, to be drying, cooling, thickening, aſtringent, conglutinant, &c.

To the claſs of *anacollemata* belong bran, manna, myrrh, *terra ſamia, acacia,* &c.

Jungken deſcribes an *anacollema frontale* for ſtopping hæmorrhages at the noſe.

ANACOLUTHON, among *Ancient Grammarians,* denotes an incoherence, or a conſtruction which does not hang together. This is uſually ſignified by the appellation of a figure, which ought rather to be denominated an inaccuracy.

ANACONDO, in *Zoology,* is a name given in the iſle of Ceylon, to a very large and terrible RATTLE-SNAKE, which often devours the unfortunate traveller alive, and is itſelf accounted excellent and delicious fare.

ANACREONTIC, in the Greek and Latin *Poetry,* ſomething invented by Anacreon; or in the manner and taſte of Anacreon, a poet of Teios, who lived upwards of 400 years before Chriſt, famous for the delicacy of his wit, and the exquiſite, yet eaſy and natural, turn of his poeſy. —We have ſeveral of his odes ſtill extant; and there are few of the modern poets who have not written *Anacreontics* in imitation of them. They are moſtly compoſed in verſes of ſeven ſyllables; or rather of three feet and a half; ſpondees and iambics, though ſometimes anapæſts. Hence, verſes in that meaſure are uſually called *Anacreontics,* or *Anacreontic verſes.*

ANACRISIS, among the *Ancient Greeks,* is uſed for a kind of trial, or examination, which the *archons,* or chief magiſtrates of Athens, were to undergo, before their admiſſion into that office.

The *anacriſis* ſtands diſtinguiſhed from the *docimaſia,* which was a ſecond examination, in the *forum.*

The *anacriſis* was performed in the ſenate houſe. The queſtions here propoſed to them were concerning their family, kindred, behaviour, eſtate, &c.

Some maintain that all magiſtrates underwent the *anacraſis.*

ANACRASIS, in the *Civil Law,* denotes a ſearch or inquiry into the truth by examination of witneſſes.

ANACROSIS, in *Antiquity,* denotes a part of the Pythian ſong, wherein the combat of Apollo and Python are deſcribed.

The *anacroſis* was the firſt part, and contained the preparation to the fight.

ANACTON *pædon,* in *Antiquity,* a feſtival held at Amphyſſa, the capital of Locris, in honour either of the Dioſcuri, or of the Curetes, or Cabiri, about which authors are not agreed.

ANACYCLUS, in *Botany,* a genus of plants of the *ſyngeneſia polygamia ſuperflua* of Linnæus, being the ſame with the *ſantolinoides* of other authors. It is a ſort of camomile, of little beauty, and of no known uſe.

ANADAVADÆA, in *Zoology,* the name of a ſmall bird of the Eaſt-Indies, which has the beak of the chaffinch, and the feet of the lark. It is ſometimes brought over to England alive in cages, and will live here very comfortably.

ANADEMA, among the *Ancients,* denotes an ornament of the head, wherewith victors at the ſacred games had their temples bound.

The word is formed of *αναδεσμαι, to be bound round.*

Some confound the *anadema* with the *diadema,* worn by the ancient Perſian kings.

Anademata are alſo mentioned by ancient writers among the ornaments of the heads of women.

According to ſome, *αναδεμα* anſwers to what the Latins call *redimiculum.*

ANADIPLOSIS, *αναδιπλωσις,* denotes a repetition of the laſt word of the former verſe or member in the beginning of the next; e. gr.

> *Addit ſe ſociam timidiſque ſupervenit Ægle,*
> *Ægle Naïadum pulcherrima*——
> ————*ſequitur pulcherrimus Aſtur,*
> *Aſtur equo fidens*————————

If children, then heirs, heirs of God, and joint heirs with Chriſt.

ANADIPLOSIS, in *Medicine,* denotes the redoubling or return of the paroxyſm of a fever, chiefly of a ſemitertian.

This is otherwiſe called *epanalepſis,* and *epanadiploſis.*

ANADOSIS, in the *Ancient Medicine,* denotes the diſtribution of the aliment, by the veſſels of the body.

In this ſenſe, *anadoſis* makes a part of nutrition or DIGESTION.

ANADROMOUS, in *Ichthyography,* a term of diſtinction among fiſhes, denoting ſuch as have their times of going from the freſh water to the ſalt, and afterwards returning back to the freſh water again.

The word is derived from *ανα, back again,* and *δρομος, a courſe.* The *truttaceous* fiſhes are many of them of this kind, and the method nature has appointed for their courſe of changes ſeems to be this; they are firſt produced from the ſpawn in freſh water rivers; they live there till they acquire ſome ſtrength and ſize, and then ſeek the ſalt water to feed more at large in, and grow to their full extent: at which period they return into the freſhes again to lay their ſpawn, that their young brood may have the ſame advantages which they had before, of being placed firſt in freſh water. Some uſe the word *catanadromi* in the ſame ſenſe.

ANADUOMENE *Venus,* in the Grecian *Mythology,* anſwered to the *Sea-Venus* in the Roman, and was the appellation given to one of the chief deities of the ſea. The moſt celebrated picture in all antiquity was that of this goddeſs by Apelles; and the famous Venus of Medici is a *Sea-Venus.*

ANADYSIS, among *Ancient Divines*, denotes the ceremony of the emerſion in BAPTISM.

In which ſenſe, αναδυσις ſtands contradiſtinguiſhed from καταδυσις, or *immerſion.*

ANÆDEIA, in *Antiquity*, a denomination given to a ſilver ſtool placed in the *aræopagus*, on which the defendant, or perſon accuſed, was ſeated for examination.

The word is αναιδεια, which imports *impudence*; but according to Junius's correction it ſhould rather be αναιτια, q. d. *innocence.*

The plaintiff, or accuſer, was placed on an oppoſite ſtool called *hybris*, or *injury*; here he propoſed three queſtions to the party accuſed; to which poſitive anſwers were to be given. The firſt, are you guilty of this fact? The ſecond, how did you commit the fact? The third, who were your accomplices?

ANAERETA, in *Aſtrology*, a place in the heavens, at which the *apheta* arriving, an infant born at that time, is pronounced by aſtrologers, in danger of death.

The word is Greek, and literally imports a *cutter off.* In this ſenſe, *anaereta* ſtands oppoſed to *apheta.*

Anaereta, among the Greek *Aſtrologers*, amounts to the ſame with what the Arabs call *ahazin.*

ANAESTHESIA, αναισθησια, in *Medicine*, a privation of ſenſe, or of the faculty of perceiving external objects. The ſpecies or degrees of this are, *ſtupor*, *hebetudo*, *depravatio*, &c.

ANAGALLIDASTRUM. See CENTUNCULUS.

ANAGALLIS, in *Botany.* See PIMPERNEL.

ANAGALLIS *Aquatica* is called by *Botaniſts*, *veronica aquatica*, or *becca bunga*; in Engliſh, BROOK-LIME.

ANAGLYPHA, in *Ancient Writers*, denote veſſels, or other things, adorned with ſculpture in *baſſo relievo*; and hence the *anaglyphic* art is the art of carving, chaſing, engraving, or imboſſing plate.

ANAGLYPHICE, or ANAGLYPTICE, denotes that ſpecies of ſculpture wherein the ſtrokes or figures are prominent, or imboſſed; and is contradiſtinguiſhed from *diaglyphice*, where the ſtrokes are indented.

The word comes from the Greek αναγλυφω, *exſculpo.*

ANAGNOSES, or ANAGNOSMATA, in the Greek *Church*, denotes an eccleſiaſtical book, containing the leſſons read at divine ſervice, in the ſeveral feaſts, &c. of the year.

ANAGNOSTA, or ANAGNOSTES, among the *Ancients*, denotes a kind of ſervant retained in the families of perſons of rank, to read to them at meals.

Theſe were called by the Greeks αναγνωϛαι, and by the Romans *lectores*; ſometimes alſo *a ſtudiis.*

Even private families, who lived any thing politely, were not without this kind of literary ſervants. Servius makes mention of a female *anagnoſta*, under the denomination of *lectrix.* Sometimes the maſter himſelf performed the office of reader. The emperor Severus read himſelf at table. Martial mentions one Ligurinus, who read his own poems at dinner, to the great diſguſt of the gueſts.

Among the Greeks there were alſo *anagnoſtæ* in their theatres for public reading of the poets.

Some ſpeak of the *anagnoſtæ*, as a ſpecies of *acroamata*, from which, however, in propriety, they differed.

Cornelius Nepos relates of Atticus, that no *acroama* was ever heard at his meals, but an *anagnoſtes.* He never ſupped without reading, ſo that the minds of his gueſts were no leſs agreeably entertained than their appetites. The ſame cuſtom Eginhard obſerves was kept up by Charlemain, who at table had the hiſtories and acts of ancient kings read to him. This cuſtom ſeems to have been a relique of that of the ancient Greeks, who had the praiſes of great men and heroes ſung to them, while at table.

The ancient monks and clergy kept up the like uſage, as we are informed by St. Auguſtin. Sidonius praiſes a man of quality in his time, who, in this reſpect, lived a clerical life, though he was no prieſt.

Bilbergius, and Th. Raynaud, have diſſertations expreſs on *anagnoſtæ.*

ANAGNOSTIC, in *Middle Age Writers*, is ſometimes uſed for an epiſtle, or other writing.

ANAGOGIA, in *Antiquity*, ſolemn ſacrifices to Venus at Eryx, in Sicily, where ſhe was honoured with a magnificent temple.

The name of this ſolemnity was derived, απο τȣ αναγεσθαι, i. e. *from returning*; becauſe the goddeſs was ſaid to leave Sicily, and return to Afric, at that time.

ANAGOGICAL, *tranſporting*, ſomething that raiſes the mind to things eternal and divine; the great objects of the next life.

The word is derived from αναγωγη, *carrying away*, which is formed of the prepoſition ανα, *upwards*; and αγωγη, *leading.*

The term is principally uſed in ſpeaking of the divers ſenſes of Scripture.—The *literal* ſenſe is the firſt, and natural ſenſe; the *myſtical* ſenſe is founded on the natural ſenſe, from whence it is taken by analogy or compariſon, by ſimilitude or reſemblance of one thing to another; and is divided into ſeveral kinds.

Where it regards the church, and matters of religion, it is called the *allegorical* ſenſe.

Where it regards our morals, it is called the *tropological* ſenſe.

And where it regards eternity, or the life to come, it is called the *anagogical* ſenſe.

ANAGOGY, ANAGOGE, a rapture or elevation of the ſoul, to things celeſtial and eternal.

Anagogy, in a more particular ſenſe, denotes the application of the types and allegories of the Old Teſtament to ſubjects of the New; thus called, becauſe the veil being here drawn, what before was hidden is expoſed to open ſight.

Some of the fathers place αναγωγη, in oppoſition to ιϛορια, *hiſtory.*

ANAGOGY, in *Medicine*, denotes the return of humours, or the rejection of a matter upwards, or by the mouth.

Anagogy amounts to the ſame with what is otherwiſe called *anabole.*

ANAGOGY, αναγωγια, in *Ancient Hiſtory*, denotes a looſe education or diſcipline.

ANAGRAM, ANAGRAMMA, a tranſpoſal of the letters of a name; with a combination thereof in ſome new manner, ſo as to exhibit one or more words, either to the advantage or diſadvantage of the perſon to whom it belongs.

The word is formed from ανα, *backwards*, and γραμμα, *letter.*

Thus, the *anagram* of Galenus is *angelus*; that of Logica, *caligo*; that of Alſtedius, *ſedulitas*; that of Sir Edmundbury Godfrey, *I find murdered by rogues*; or, *by Rome's rude finger die*; that of Loraine, is *alerion*; on which account it was, that the family of Loraine took *alerions* for their armoury.—Calvin, in the title of his Inſtitutions, printed at Straſburg in 1539, calls himſelf *Alcuinus*, which is the *anagram* of Calvinus, and the name of an eminently learned perſon in the time of Charlemaign, who contributed greatly to the reſtoration of learning in that age. Barclay, in his Argenis, *anagrammatizes* Calvinus by a leſs creditable name, *Uſinulca*; and Rabelais, to be revenged of the ſame Calvin, who had made an *anagram* of his name, found in that of Calvin, *Jan. Cul.*

Such as keep cloſe to the definition of *anagram*, take the liberty to omit or retain the letter H, and that letter only; but ſuch as ſtand up for the poetical licence, make bold ſometimes to uſe E for Æ, V for W, S for Z, and C for K; and *vice verſa.*

This way of writing was ſcarce known among the ancients: Daurat, a French poet in the reign of Charles IX. is uſually ſaid to be the firſt that broached it; yet Lycophron, who wrote under Ptolemy Philadelphus, about 280 years before Chriſt, appears to have been no ſtranger to the art of making *anagrams.* Canterus, in his *Prolegomena* to Lycophron, gives us two of his pieces in this kind; the firſt on the name of king Ptolemy, Πτολεμαιος, in which he found απο μελιτος, *of honey*; to inſinuate the ſweetneſs and mildneſs of that prince; the ſecond was on queen Arſinoe, Αρσινοη, of whom he made Ιον Ἡρας, *Juno's violet.*

There are two ways of making *anagrams*: for, 1. Some only conſiſt in dividing a ſingle word into ſeveral: thus the ænigma of the god Terminus, mentioned by Aulus Gellius, lib. xii. cap. 6. is founded on the *anagram* TER MINUS; and thus *ſuſtineamus* yields *ſus tinea mus.* This kind alone ſeems to have been uſed among the Romans.

The ſecond is, where the order and ſituation of the letters is changed: ſuch are thoſe abovementioned; and alſo theſe, *Roma*, *Maro*, *Amor*; *Julius*, *Livius*; *Corpus*, *Porcus*, *Procus*, *Spurco.*

To find all the *anagrams* any name will admit of, *algebraically*, ſee COMBINATION.

The fineſt and happieſt of all the *anagrams* extant, is that on the queſtion put by Pilate to Jeſus Chriſt; *Quid eſt veritas?* which *anagrammatically* makes, *Eſt vir qui adeſt:* the *anagram*, here, is the beſt and juſteſt anſwer that could poſſibly be given.

Beſides the ancient kind of *anagram*, there have been new ones invented: as, the mathematical *anagram*, invented in 1680, by which the abbot Catelan found, that the letters of the name of Lewis XIV. made *vrai herôs*, i. e. *true hero.*

We are now likewiſe furniſhed with the numerical *anagram*, more properly called *chronogram*; where the numerical letters (i. e. ſuch as in the Roman cyphering ſtood for numbers) taken together, according to their numerical values, expreſs ſome epocha: of which kind is that diſtich of Godart on the birth of Lewis XIV. in the year 1638, on a day wherein there was a conjunction of the eagle with the lion's heart:

eXorIens DeLphIn aqVILæ CorDIſqVe LeonIs
CongreſſV gaLLos ſpe LætItIaqVe refeCIt.

ANAGRAMMATIST, a maker or compoſer of *anagrams*.

Thomas Billon, a Provençal, was a celebrated *anagrammatiſt*, and retained by Lewis XIII. with a penſion of 1200 livres, in quality of *anagrammatiſt* to the king.

Lipenius gives a long liſt of *anagrammatiſts*.

Thomas Billon has given a ſet of prophecies in *anagrams*; Gul. Blancus, the art of compoſing *anagrams*.

ANAGROS, a meaſure for corn, uſed in ſome cities in Spain, containing ſomewhat more than the Paris *mine*.

This is otherwiſe called *anegros*.

Four *anagros* make a *cahi*, four *cahis* a *tanega*.

ANAGYRIS, in *Botany*, ſtinking bean TREFOIL, a genus of the *decandria monogynia*. The characters are: the flower is of the butterfly kind, the ſtandard is heart-ſhaped, and much longer than the empalement; the wings are oblong, plain, and longer than the ſtandard, as is alſo the keel. The germen afterward becomes a large oblong pod, in which are lodged ſeveral kidney-ſhaped ſeeds. We have but one ſpecies in England, viz.

Anagyris foliis ovatis floribus lateralibus. Stinking bean *trefoil*, with oval leaves, and flowers proceeding from the wings of the ſtalks. This ſort grows wild in the ſouth of France, as alſo in Spain and Italy. It is a ſhrub which uſually riſes to the height of eight or ten feet, and produces its flowers in April and May, which are of a bright yellow colour growing in ſpikes, ſomewhat like thoſe of the LABURNUM.

Tournefort, however, enumerates two ſpecies. Tourn. Inſt. p. 647.

The leaves of the *anagyris* are reſolutive, and its ſeed emetic.

ANALECTA, the fragments, or offalls of meat, which dropped from the table on the ground.

Analecta was alſo uſed for a ſervant appointed to gather up the offalls of the tables.

In this ſenſe, the word is ſometimes alſo written *analectes*. Satellius Quadratus, in the way of deriſion, adviſed Calviſius Sabinus, a man of great wealth, and much affectation of learning, but with little memory, and leſs genius, to keep *analectæ, ut grammaticos haberet analectas*; a phraſe which has occaſioned much diſpute among critics and antiquaries.

ANALECTA, is likewiſe, in a literary ſenſe, uſed for a collection of ſmall pieces or compoſitions.

The word is formed of αναλεγω, *I gather*.

ANALEMMA, a planiſphere, or projection of the SPHERE, on the plane of the meridian, orthographically made, by ſtrait lines and ellipſes; the eye being ſuppoſed to be at an infinite diſtance, and in the eaſt or weſt points of the horizon.

The word is derived from αναλημμα, of αναλαμϐανω, *reſumo, I take backwards*.

The *analemma* was invented by John de Royas, a Spaniard. The advantages of this above the *aſtrolabes* of Ptolemy and Gemma Friſius, are, that all the lines proceeding from the eye are parallel to each other, and perpendicular to the plane of projection; conſequently not only the equator is a right line, as in the *aſtrolabe* of Gemma Friſius, but all the parallels to the equator are ſo too; ſince, in virtue of the infinite diſtance of the eye, they are all in the ſame caſe, as if their plane paſſed through the eye: for the like reaſon, the horizon, and its parallels, are alſo right lines. On the other hand, whereas in the two former *aſtrolabes* the degrees of circles converted into right lines become very ſmall towards the center, and large towards the circumference, they become here ſmall towards the circumference, and large towards the center: ſo that their figures will be no leſs altered in this than in the others. Add, that moſt of the circles here degenerate into ellipſes, which are often difficult to deſcribe.

ANALEMMA is alſo uſed for a *gnomon*, or *aſtrolabe*, conſiſting of the furniture of the ſame projection, drawn on a plate of braſs, or wood; with an horizon, or *curſor*, fitted to it.

Its uſe is for finding the time of the ſun's riſing and ſetting, the length of the longeſt day in any latitude, and the hour of the day.

The *analemma* is alſo of conſiderable uſe among *Dialliſts*, for laying down the ſigns of the zodiac, with the length of days, and other matters of furniture, upon dials.

ANALEPSIS, the reſtauration of a body waſted by diſeaſe, by the uſe of a nutritious diet.

ANALEPSIS is alſo uſed for the method of hanging a broken or diſlocated member, eſpecially the hand, in a ſling. This operation to the arm is called *analepſis*, to the foot *theſis*.

ANALEPTICS, in *Medicine*, reſtoratives; or remedies proper to reſtore the body, when waſted or emaciated, either by the continuance of a diſeaſe, or by the want of food.

The word is derived of αναλαμϐανω, *I re-eſtabliſh*.

ANALOGICAL *ſyllogiſm*. See SYLLOGISM.

ANALOGISM, in *Medicine*. See ANALOGY.

ANALOGISM, among *Logicians*, the arguing from the cauſe to the effect.

ANALOGISTA, among *Civil Law Writers*, a tutor who is not obliged to give an account of his conduct.

Perſons dying ſometimes appointed friends to be tutors to their children, with this clauſe, that they ſhould be *analogiſtæ*.

Some lawyers hold, that this did not exempt a tutor guilty of glaring miſmanagement, from being called to account, and puniſhed accordingly.

ANALOGIUM, in *Eccleſiaſtical Writers*, denotes an *ambo*, or reading-deſk.

ANALOGIUM is ſometimes alſo uſed for a *martyrology*, or *obituary* of a monaſtery.

ANALOGY, in *Philoſophy*, a term denoting a certain relation, proportion, or agreement, which ſeveral things bear to each other in ſome reſpects, though different in others.

The word is Greek, which the Latins uſually render by *comparatio*, and *proportionalitas*.

The ſchoolmen define *analogy* to be a reſemblance, joined with ſome diverſity: its foundation, according to them, is laid in the proportion of ſeveral things, conſidered as that proportion proceeds upon different conſiderations.

Thus, a ſound animal, a ſound food, and a ſound propoſition, agreeing in this, that they have a common denomination, but the reaſon or quality whereon the denomination is founded, different, are ſaid to have an *analogy*, or to be *analogous*. Accordingly, *analogous* things are defined to be ſuch as have a common name, but the thing immediately ſignified by that common name, different; yet with ſome correſpondence or relation diſcernible therein.

Philoſophers uſually diſtinguiſh three kinds of *analogy*, viz. of *inequality*, where the reaſon of the common denomination is the ſame in nature, but not in degree or order: in which ſenſe, animal is *analogous* to man and brute.—Of *attribution*; where, though the reaſon of the common name be the ſame, there is a difference in its habitude or reſpect thereto: in which ſenſe, healthy is *analogous* both to a man, and an exerciſe.—Of *proportionality*; where, though the reaſons of the common name do really differ, yet they bear ſome proportion to each other. In this ſenſe, the gills of fiſhes are ſaid to be *analogous* to the lungs in terreſtrial animals; and thus, the eye and the underſtanding are ſaid to bear an *analogy* to each other.

Reaſonings by *analogy* may ſerve to explain and illuſtrate, but not to prove any thing; yet is a great deal of our philoſophizing no better founded.

From a few *data*, a few points known and allowed, we reaſon by *analogy*, and deduce a number of others. It is thus that moſt branches of knowledge are extended to their preſent dimenſions. There are but few things actually obſerved, few experiments made; and all the obſervations and experiments we have are only ſingular. Such an effect was found from ſuch an individual body, under ſuch and ſuch circumſtances. We infer, that what has been obſerved of one body under ſuch circumſtances, will, from the *analogy* and uniformity in the works of the Creator, equally hold in all other bodies of the ſame ſpecies under the like circumſtances. Thus, without having recourſe to experiment, we never heſitate to conclude, that the fruit of trees of the ſame ſpecies will have the ſame taſte and properties. This has many times drawn us into great errors; it continues every day to lead us into new ones, and may be ſaid to be the ſource of moſt of the miſtakes committed in purſuit of ſcience. But nevertheleſs, while mankind extend their thoughts toward unknown and inacceſſible objects, they have no other guide to direct their reſearches but the ſuppoſed correſpondence between the objects they are acquainted with, and thoſe which are the ſubjects of their inveſtigation.

The *analogy* between the three kingdoms of plants, animals, and minerals, has been the ſource of a variety of diſcoveries, either real or imaginary: hence it is we have learnt, that ſtones vegetate; that plants breathe; that the ſap circulates in them; that generation is performed by eggs in the human kind; that the planets have their atmoſpheres, their inhabitants, their trees, their ſeas, &c. Indeed, if we will follow whither *analogy*, real or imaginary, will lead us, there is no end of ſcience.

As to divine and ſupernatural matters, it is aſſerted we know nothing of them, but by *analogy*; that is, by the mediation and ſubſtitution of thoſe ideas we have of ourſelves and other natural beings. Our ideas of God himſelf ariſe from this ſpring; we have no direct and immediate perception of him. The knowledge we have of the Supreme Being, is only an obſervation of his works, and a reflection of the mind, which ſhews what power, wiſdom, &c. appear neceſſary to enable him to produce them. Having no proper ideas of his perfections, we give them the names of thoſe faculties of men, which we judge neceſſary. See an excellent Treatiſe on the *Analogy* of Religion, natural and revealed, to the Conſtitution and Courſe of Nature, by biſhop Butler: in which, by evincing the *analogy* or likeneſs that ſubſiſts between the ſyſtem of things and diſpenſation of providence, with revelation informs us of, and that ſyſtem of things and diſpenſation of providence, which experience and reaſon informs us of, i. e. the known courſe of nature, he is led to aſcribe both to the ſame author and cauſe.

ANALOGY, in *Grammar*, denotes the ſuitableneſs, or agreeableneſs of a word or phraſe to the common rules, or forms of language.

In this ſenſe, *analogy* ſtands oppoſed to ANOMALY.

ANALOGY, in reſpect to language, denotes a conformity with other points already eſtabliſhed, ſerving as a rule, or model, for the making of new words and phraſes ſimilar to thoſe already in uſe.

Or, *analogy* may be conſidered as a general or eſtabliſhed uſage, applied in ſimilar caſes, to certain words, phraſes, or conſtructions, not yet eſtabliſhed. Or, *analogy* is only a particular uſage which, in certain caſes, is inferred from a general uſage already eſtabliſhed.

Grammarians are divided into two parties. Some, with Sanctius, contend, that the *analogy*, or reaſon, reigns through all the parts, all the phraſes and dictions of the Latin tongue. On the contrary, others, with Perizonius, aſſert, that there are many phraſes, contrary to *analogy* and reaſon, derived all originally from the populace. Such, e. gr. are, *Nemo homo*, *deorſum verſum*, &c.

Varro and Cæſar wrote expreſly on the *analogy* of Latin words, but their works are now loſt. Jac. Operarius has endeavoured to ſupply that loſs, by tracing the *analogy* of 20,000 Latin words. Fab. Bib. Lat. lib. i. cap. 10.

ANALOGY *of conjugation*, *analogia conjugationis*, is not only when a verb is conjugated like another, but agrees with it in the quantity of the ſyllables.

Thus *clamo* is conjugated like *amo*, and *clamabam* pronounced like *amabam*.

ANALOGY *of declenſion*, *analogia declinationis*, is not only when a noun, pronoun, or participle, is declined like another, but agrees with it in reſpect of the quantities of the ſyllables.

Thus, e. gr. *mater* is declined like *pater*, *ſaltans* as *amans*, *ſuus* as *tuus*. So *pennarum* is pronounced as *menſarum*, and *funeris* as *muneris*.

ANALOGY *of doctrine*, among *Critics*, is one of the great rules to which regard is to be had in the interpretation of authors.

We are firſt to learn from the author himſelf, the general ſyſtem which he follows; and as no writer is to be eaſily ſuppoſed to contradict himſelf, our interpretation is to be ſo conducted, as that nothing be admitted which is contrary to, or tends to overthrow this ſyſtem.

Thus, in interpreting an author who follows the Platonic ſcheme, we are to prefer a ſenſe which is conſiſtent with the Platonic doctrine, to another which is contrary to it, unleſs there be ſome evident proof, that the author contradicts himſelf, or aſſerts things which are inconſiſtent.

ANALOGY, in *Rhetoric*. See COMPARISON.

ANALOGY, in *Geometry*, denotes a ſimilitude of ratios, or proportions.

ANALOGY *of faith*, among *Divines*, denotes that relation which the ſeveral articles of faith bear to each other.

Analogy of faith ſtands oppoſed to tradition and authority, which is the great rule of interpretation among catholics. By this it is required, that whether we interpret Scripture, or explain the doctrines of Chriſtianity, all our poſitions and explanations be conſiſtent with the *analogy* of our faith, and thoſe evident propoſitions deduced from Scripture.

Tortſchius, Antonius, Franckius, &c. have written expreſly on the *analogy of faith*.

ANALOGY, in *Medicine*, is a certain relation or reſemblance between diſeaſes, in virtue whereof, we may reaſon and conclude from one to another, and treat them all much in the ſame manner; e. gr. a pleuriſy, being a ſpecies of inflammation, produced like inflammations of other parts, is to be treated like them, relaxing the ſolids, which are too much ſtretched, and giving free paſſage for the humours.

This method of deduction was called, by the ancients, *medicina rationalis*, or *dogmatica*, in oppoſition to the *empirica*, called alſo *epilogiſm*, which was conducted by appearances only, without theory.

ANALYSIS, in a general ſenſe, is the reſolution of ſomething compounded into its conſtituent parts.

ANALYSIS, in *Logic*, is a method of applying the rules of reaſoning, to reſolve a diſcourſe into its principles, in order to a diſcovery of its truth, or falſhood.—Or it is an examination of ſome diſcourſe, propoſition, or other matter, by ſearching into its principles, and ſeparating and opening its parts; in order to conſider them more diſtinctly, and arrive at a more preciſe knowledge of the whole.

The word is αναλυσις, which literally ſignifies *reſolution*; formed of ανα and λυω, *ſolvo*, *I ſolve*.

Analyſis makes one great branch or ſpecies of method; called alſo RESOLUTION.

It is particularly uſed for the reduction of an imperfect ſyllogiſm to a perfect one. This is otherwiſe called REDUCTION.

The order of the *ſyntheſis* is contrary to that of the *analyſis*, one beginning where the other ends. The two methods cannot always be uſed indifferently; the *analyſis* is moſt proper for the diſcovery of truth, and SYNTHESIS for teaching and explaining it in a ſyſtematical way. Hence ſome call *analyſis* the method of invention.

ANALYSIS, in *Mathematics*, may be divided into *ancient* and *modern*.

The modern *analyſis* is what is often called *algebra*; but they ought to be diſtinguiſhed, algebra being only a part of the *analytic* art.

The moderns are at ſome loſs concerning the *ancient analyſis*, i. e. concerning the art or method whereby the ancients reſolved problems, and invented theorems. Some traces of their method are extant in Pappus, Apollonius, and Euclid; and Dr. Hook ſuſpects, that their *analyſis* went backwards through almoſt all the ſame ſteps, by which their demonſtrations went forwards.

That this might often be the caſe, ſeems evident to any one who has ſtudied Euclid with care. They have indeed left us no precepts of their art. This, like almoſt all others, muſt be acquired by imitation of the excellent examples left us by the Greeks. Men of genius among the moderns, who had ſtudied the works of the ancient geometers, have been thereby enabled to imitate them, and penetrate into their methods: the works of Huygens and Newton, and of late, the treatiſe of Conic Sections by Mr. Simpſon, profeſſor of Mathematics in the univerſity of Glaſgow; as alſo ſeveral parts of Mr. Maclaurin's Treatiſe on Fluxions, are evident proofs of this.

Weigelius has endeavoured to retrieve the ancient *analyſis* of Ariſtotle, from Euclid, and other ancient geometricians.

ANALYSIS is divided by ſome authors into *ſimple* and *compound*.

ANALYSIS, *ſimple*, is that employed in ſolving problems reducible to ſimple EQUATIONS.

ANALYSIS, *compound*, or *complex*, that which gives the expreſſions or ſolutions of problems in compounded EQUATIONS.

ANALYSIS is farther divided, with regard to its object, into that of *finites*, and that of *infinites*.

ANALYSIS *of finite quantities*, is what we otherwiſe call *ſpecious arithmetic*, or ALGEBRA.

ANALYSIS *of infinites*, called alſo the new ANALYSIS, is particularly uſed for the *method of* FLUXIONS, or the *differential calculus*.

ANALYSIS *of powers*, denotes the reſolving them into their ROOTS.

In this ſenſe *analyſis* amounts to the ſame with what we otherwiſe call EVOLUTION.

We find divers other kinds of *analyſis* treated of by mathematical writers, as the *analyſis* of *indiviſibles*, &c. M. Leibnitz ſpoke of an *analyſis ſitus*, different from the *analyſis* of magnitudes.

The *analyſis* of geometrical curves ſhews their properties and internal conſtitution, their curvature, points of inflexion, ſtation, retrogradation, variation, &c.—In this *analyſis*, curves are uſually conſidered as polygons compoſed of an infinite number of infinitely little ſides; but this ſuppoſition is neither accurate nor neceſſary, though it ſometimes affords convenient hints for invention.

F. Reynau of the *Oratory* has given a large ſyſtem of algebra under the title of *analyſis*. F. Caſtel cenſures it as not ſufficiently methodical or ſyſtematical. The great diviſions and members are loſt in the multitude of particular rules and methods.

ANALYSIS *of ideas*, that whereby an idea is reſolved into the ideas of its ingredients, and the ideas of theſe again into ſimple ones, till at length we arrive at the moſt ſimple.

ANALYSIS, *grammatical*, is that employed about words, their etymons, homonymas, or various acceptations, ſynonymas, conſtructions, uſes, and the like.

Paſor has given a grammatical *analyſis* of the difficult words in Heſiod, &c. Sturmius has publiſhed a method of making the *analyſis* of Latin words.

ANALYSIS, *rhetorical*, is that which examines the connections, tropes, figures, and the like, inquiring into the propoſition, diviſion, paſſions, arguments, and other apparatus of rhetoric.

Several authors, as Freigius and others, have given *analyſes* of Cicero's orations, wherein they reduce them to their grammatical and logical principles; ſtrip them of all the ornaments, and additions of rhetoric, which otherwiſe diſguiſe their true form, and conceal the connection between one part and another. The deſign of theſe authors is to have thoſe admired harangues, juſt ſuch as the judgment diſpoſed them, without the help of imagination; ſo that here we may coolly view the force of each proof; and admire the uſe Cicero made of rhetorical figures, to conceal the weak part of a cauſe.

A collection has been made of the *analyſes* formed by the moſt celebrated authors of the ſixteenth century, in three volumes folio.

Analysis is alſo uſed, in *Chemiſtry*, for the decompounding of a mixed body; or the ſeparation of the principles and conſtituent parts of the compounded ſubſtance.

To *analyſe* bodies, or reſolve them into their component parts, is indeed the chief object of the art of chemiſtry. Chemiſtry furniſhes ſeveral means for the decompoſition of bodies, which are all founded on the differences of the properties belonging to the different principles of which the body to be analyſed is compoſed. If, for example, a body be compoſed of ſeveral principles, ſome of which have a great, and others a moderate degree of volatility, and, laſtly, others are fixed, its moſt volatile parts may be firſt ſeparated by a gradual heat, in diſtilling veſſels, and then the parts, which are next in volatility, will paſs over in diſtillation, and laſtly, thoſe parts which are fixed, and capable of reſiſting the action of fire, will remain at the bottom of the veſſel.

There are two methods of *analyſis* which chemiſts make uſe of; *analyſis* by *fire*, and *analyſis* by *menſtrua*. The laſt is at leaſt of as extenſive utility as the firſt, ſince it takes place in almoſt all the operations of chemiſtry. The operation called by chemiſts PARTING, ought to be conſidered as the true *analyſis* by *menſtrua*. It is true, that in many caſes, the *analyſis* by *menſtrua*, as well as the *analyſis* by *fire*, is incomplete. Frequently it is neceſſary, in order to make a perfect *analyſis* of bodies, to unite theſe two methods, by *fire* and by *menſtrua*, ſo that the one may be made to aſſiſt the other; and from theſe combined means a decompoſition reſults much more perfect and more accurate, than could have been obtained by either of them ſeparately. Nothing more need be ſaid here on *analyſis* in general; the ſubject is ſo extenſive, that to make particular applications of it, we ſhould be obliged to conſider all the objects in chemiſtry. Thoſe who know the uſe of general principles, will apply theſe to particular operations, and longer details would be ſatiguing and uſeleſs to others. It is, nevertheleſs, proper to mention the general articles which relate to this. See therefore EXTRACTION, DECOMPOSITION, DISTILLATION, SUBLIMATION, PRECIPITATION, and SOLUTION.

All bodies by a chemical *analyſis* reſolve into water, earth, ſalt, ſulphur, and mercury, though every body does not afford all theſe parts; but ſome more, ſome fewer, of them, according to the kingdom they belong to. The *analyſis* of vegetables is eaſy; that of foſſils, particularly of metals, and ſemi-metals, difficult.

The many *analyſes* that have been made of plants by Bourdelin, and others, have generally proved uſeleſs with regard to any diſcoveries of the properties and virtues of the plants analyſed. The moſt ſalutary plants, in this way of treatment, yield much the ſame principles as the moſt poiſonous. The reaſon apparently is, that the too great action of the fire, in diſtillation, changes the plants, and their principles: on this account, inſtead of diſtillation, M. Boulduc has made his *analyſes* by decoction only. Vid. Mem. Acad. R. Scienc. an. 1734. p. 139. Hiſt. 63.

Some bodies of the foſſil tribe conſiſt of particles ſo very minute, and ſo firmly united, that the corpuſcles thereof need leſs heat to carry them off, than to ſeparate them into their principles: ſo that the *analyſis* is impracticable in ſuch bodies.--Hence ariſes the difficulty of *analyſing* ſulphur.

Analyſis of metals, and metallic minerals, conſiſts in what they call the MERCURIFICATION of them: the *analyſis* of other bodies is performed by *diſtillation*, *lixiviation*, &c.

The order of matters which ariſe in analyſing vegetable and animal bodies is different, according as thoſe bodies have been fermented or not; if they have, the ſpirits and volatile ſalts ariſe firſt, then aqueous liquors, then fœtid oil, after which a *caput mortuum*, which by *calcination* and *lixiviation*, is reduced to a fixed ſalt, and inſipid earth. In bodies unfermented, the aqueous parts riſe firſt, afterwards the reſt ſucceed in the ſame order as above.

The anatomical diſſection of an animal, is alſo a kind of *analyſis*.

Analysis is alſo uſed for a kind of ſyllabus, or table of the principal heads or articles of a continued diſcourſe; diſpoſed in their natural order and dependency.

Analyſes are more ſcientifical than alphabetical indexes; but they are leſs uſed, as being more intricate.

Analyſis is likewiſe uſed for a brief, but methodical illuſtration of the principles of a *ſcience*; in which ſenſe it is nearly ſynonymous with what we otherwiſe call a *ſynopſis*.

ANALYST, a perſon who analyſes a thing, or makes uſe of the *analytical* method.

Some reſtrain the word more peculiarly to denote a mathematician, who makes a great uſe of the algebraic method or *calculus* in geometry, in excluſion of the *ſynthetic*, or ſtrict geometrical method.

In which ſenſe *analyſt* amounts to much the ſame with *computiſt* or *calculator*.

In a ſenſe not unlike this, Dr. Berkeley, an ingenious writer, gives the title *analyſt* to a book againſt the modern *geometry*, or doctrine of FLUXIONS.

ANALYTIC, **Analytical**, ſomething that belongs to, or partakes of, the nature of analyſis.

Thus we ſay, an *analytical* demonſtration; *analytical* inquiry; *analytical* table, or ſcheme; *analytical* method, &c. The *analytic* method ſtands oppoſite to the *ſynthetic*.

ANALYTICS, **Analytica**, the ſcience, or doctrine, and uſe of *analyſis*.

The great advantage of the modern mathematicians above the ancient, is in point of *analytics*.

The authors on the ancient *analytics* are enumerated by Pappus, in the preface to his ſeventh book of mathematical collections; being, Euclid, in his *Data*, and *Poriſmata*; Apollonius, *De Sectione Rationis*; Apollonius, in his *Conics*, *Inclinations*, and *Tactions*; Ariſtæus, *De Locis Solidis*; and Eratoſthenes, *De Mediis Proportionalibus*. But the ancient *analytics* were very different from the modern.

To the modern *analytics* principally belongs *algebra*; the hiſtory of which, with the ſeveral authors thereof, ſee under ALGEBRA.

The chief writers upon the analyſis of infinites are, its inventor, Sir Iſaac Newton, in his *Analyſis per Quantitatem Series, Fluxiones, & Differentias, cum Enumeratione Linearum tertii ordinis*; and *De Quadrata Curvarum*; and M. Leibnitz, in *Act. Eruditor.* an. 1684. The Marquis De l'Hôpital, in his *Analyſe des Infiniment petites*, 1696. Carre, in his *Methode pour la Meſure des Surfaces, la Dimenſion des Solides, &c. par l' Application du calcul integral*, 1700. G. Manfredi, in a poſthumous piece, *De Conſtructione Æquatiorum differentialum primi gradus*, 1707. Nic. Mercator, in *Logarithmotechnica*, 1668. Cheyne, in *Methodus Fluxionum inverſa*, 1703. Craig, in *Methodus figurarum lineis rectis & curvis comprehenſarum Quadraturas determinandi*, 1685; and *De Quadraturis figurarum curvilinearium & locis*, &c. 1693. Dav. Gregory, in *Exercitatio Geometrica de Dimenſione figurarum*, 1684; and Nieuwentiit, in *Conſiderationes circa Analyſeos ad Quantitates infinitè parvas applicatæ principia*, 1695.—The ſum of what is found in l'Hôpital, Carre, Cheyne, Gregory, and Craig, is collected into one volume, and very well explained, by C. Hayes, under the title of a Treatiſe of Fluxions, &c. 1704. And the ſubſtance of moſt of the reſt in Pere Reyneau's *Analyſe demontrée*, 2 vols. 4to. 1728. De Moivre alſo, Maclaurin, and Mr. T. Simpſon, may be added to the number.

Analytics, in *Literary Hiſtory*, is particularly uſed to denote certain writing of Ariſtotle under this title.

Ariſtotle's *Analytics* conſiſt of four books, two under the denomination of *former*, Αναλυτικων προτερων, and as many under that of *latter*, υϛερων.—They belong to the claſs of his *acroamatic* works Fabr. Bibl. Græc. lib. iii. cap. 6.

Analytics is alſo uſed by ſome for a part of LOGIC, which teaches to decline and conſtrue reaſon, as grammar does words.

ANAMNESEIS, from ανα and μναομαι, *I remember*, in *Ancient writers*, denote encomiums of perſons who had behaved well in war, or on other occaſions, rehearſed before the emperors of Conſtantinople, to put them in mind of beſtowing ſuitable rewards.

ANAMNESTICS, in *Medicine*, are uſed by ſome writers, to denote thoſe ſigns which help to diſcover the paſt ſtate of a patient's body: in which ſenſe it ſtands oppoſed to PROGNOSTICS.

Theſe are otherwiſe called *rememoratives*.

Anamnestic is alſo applied by Blancard to remedies proper for reſtoring or ſtrengthening the memory.

Such according to this author are all ſpirituous things.

ANAMORPHOSIS, in *Perſpective* and *Painting*, a monſtrous projection; or a repreſentation of ſome image, either on a plane or curve ſurface, deformed and diſtorted; which at a certain diſtance ſhall appear regular, and in proportion.

The word is compounded of ανα and μορφη, *form*.

To make an *anamorphoſis*, or monſtrous projection on a plane.—Draw the ſquare ABCD (*Tab. Perſpective, fig.* 19. N° 1.) of a bigneſs at pleaſure, and ſubdivide it into a number of areolas, or leſſer ſquares.—In this ſquare, or reticle, called the *craticular prototype*, let the image to be diſtorted be drawn. Then draw the line *a b* (*fig.* 19. Nº 2.) equal to AB; and divide it into the ſame number of equal parts, as the ſide of the prototype AB; and in E, the middle thereof, erect the perpendicular EV, ſo much the longer; draw VS perpendicular to EV, ſo much the ſhorter, as the image is deſired to be more diſtorted. From each point of diviſion draw right lines to V, and join the points *a* and S, by the right line *a* S. Through the points *d e f g* draw lines parallel to *a b*; then will *a b c d* be the ſpace which the monſtrous projection is to be delineated in; called the *craticular ectype*.

Laſtly, in every *areola*, or ſmall *trapezium* of the ſpace *a b c d*, draw what appears delineated in the correſpondent *areola* of the ſquare ABCD: by this means you will obtain a deformed image, which yet will appear in juſt proportion to an eye diſtant from it the length EV, and raiſed above the height VS.

It will be diverting to manage it ſo, that the deformed image may not repreſent a mere chaos, but ſome other image: thus, we have ſeen a river with ſoldiers, waggons, &c. marching along the ſide of it, ſo drawn, that when viewed by an eye in the point S, it appears to be the ſatirical face of a man.

An image alſo may be diſtorted mechanically, by perforating it here and there with a needle, and placing it againſt a candle or lamp; and obſerving where the rays, which paſs through theſe little holes, fall on a plane, or curve ſuperficies; for they will give the correſpondent points of the image deformed; by means whereof, the deformation may be completed.

ANAMORPHOSIS, *to draw the, or deformation of an image, upon the convex ſurface of a cone.*—It is manifeſt from the former caſe, that all here required is, to make a *craticular ectype* on the ſuperficies of the cone, which ſhall appear to an eye duly placed over its vertex, equal to the craticular prototype.

Let the baſe, or periphery, ABCD, therefore, of the cone (*fig.* 20.) be divided by diameters into any number of equal parts; and let ſome one radious be likewiſe divided into equal parts; and through each point of diviſion draw concentric circles: thus will the craticular prototype be made.—With double the diameter AB, as a radius, deſcribed the quadrant EFG (*fig.* 21.) ſo as the arch EG be equal to the whole periphery: then this quadrant, folded duly up, will form the ſuperficies of a cone, whoſe baſe is the circle ABCD.—Divide the arch EG into the ſame number of equal parts as the craticular prototype is divided into; and draw radii from each of the points of diviſion. Produce GF to I, ſo that FI = FG; and from the centre I, with the radius IF, draw the quadrant FKH; and from I to E draw the right line IE. Divide the arch KF into the ſame number of equal parts as the radius of the craticular prototype is divided into; and draw radii through each of the points of diviſion, from the centre I, meeting EF, in 1, 2, 3, &c. Laſtly, from the centre F, with the radii, F 1, F 2, F 3, &c. deſcribe the concentric arches.—Thus will the craticular ectype be formed, the *areolæ* whereof will appear equal to each other.

Hence what is delineated in every *areola* of the craticular prototype, being transferred into the *areolæ* of the craticular ectype, the images will be diſtorted or deformed; yet an eye being duly raiſed over the vertex of the cone, will perceive it in juſt proportion.

If the chords of the quadrants be drawn in the craticular prototype, and chords of the fourth part in the craticular ectype, all things elſe remaining the ſame, you will have the craticular ectype in a quadrangular pyramid.

And hence it will be eaſy to deform any image, in any other pyramid, whoſe baſe is any regular polygon.

Becauſe the eye will be more deceived, if from contiguous objects it cannot judge of the diſtance of the parts of the deformed image; therefore, theſe kinds of deformed images are to be viewed through a ſmall hole; and when they are made to appear like the objects which they are intended to repreſent, by means of a mirrour of any particular conſtruction, theſe *anamorphoſes* are ſaid to be *reformed*. See MIRROUR.

ANANAS, in *Natural Hiſtory*, by ſome called *nanas*, by others *jayama*, and by us popularly the *pine-apple*, on account of the reſemblance it bears to the cones of pines and firs, is a fine Indian fruit, which grows on an herbaceous plant, with leaves likes thoſe of the aloe. See PINE-APPLE.

ANAPÆST, ANAPÆSTUS, a FOOT in the Greek and Latin poetry, conſiſting of two ſhort, and one long ſyllable, being the reverſe of the dactyl.

The word is derived from αναπαιω, *contra ferio*, becauſe, in dancing this meaſure, the ground was ſtruck in a contrary order from what it was in the dactyl. Whence the Greeks called it αντιδακτυλος. Diom. iii. p. 474.

Such are the words *lĕgĕrēnt*, *ſăpĭēns*, κῠρῐȣ̄ς.

ANAPÆSTIC, or ANAPÆST, is ſometimes uſed in a ſubſtantive ſenſe.

Such is the *anapæſtus Ariſtophanæus*, in Cicero, which is a verſe conſiſting of eight feet, as

Axena ponti per freta colchos denique delatus adhæſi.

Vid. Cic. in Orat. cap. 56. Fabr. Theſ. in voc. *Anapæſtus*.

This is otherwiſe called *anapæſtus octonarius*.

ANAPÆSTIC, in an adjective ſenſe, ſomething relating to, or compoſed of *anapæſts*.

ANAPÆSTIC *kind, genus anapæſticum*, is a ſort of verſe compoſed of pure Ariſtophanic or Parthenaic *anapæſts*.

Anapæſtic verſes are either Ariſtophanic or Pindaric. *Anapæſticus Ariſtophanæus*, called alſo *Parthenaicus*, conſiſts of three *anapæſts*, and one long ſyllable, but ſo as that inſtead of the firſt two *anapæſts* as many ſpondees may be uſed.

Its type ſtands thus:

⏑⏑–	⏑⏑–	⏑⏑–	⏑
––	––		–

Venient cito ſæcula quum jam
Socius calor oſſa reviſet
Animataque ſanguine vivo
Habitacula priſtina geſtet
Lacrymas ſuſpendite cuncti
Mors hæc reparatio vitæ eſt. Bona.

Pindaric anapæſt admits, in the firſt place, either of an *anapæſt* or a ſpondee; in the ſecond, only of an *anapæſt*; in the third, of an *anapæſt* or a ſpondee; in the fourth, either of a ſpondee or a trochee.

As in the following type:

⏑⏑–	⏑⏑–	⏑⏑–	––
––		––	–⏑

In ſumma pericula venturi
Multos timor ipſe mali mittit.

ANAPHORA, in *Rhetoric*, a figure whereby one or more words are repeated in the beginning of ſeveral ſentences or verſes.

The word is αναφορα, ſignifying *repetition*.

Such, e. gr. is this of the Pſalmiſt: *The voice of the Lord is powerful: the voice of the Lord is full of majeſty: the voice of the Lord ſhaketh the wilderneſs.*

ANAPHORA is uſed, in the *Ancient Medicine*, for the rejection of matter by the mouth.

Hence alſo we meet with the term *anaphorici*, αναφορικοι, uſed for thoſe labouring under an *hæmoptoe*, who bring up blood from the lower part by the mouth.

ANAPHORA, among *Eccleſiaſtical Writers*, denotes the hoſt or ſpecies offered in the *euchariſt*.

ANAPHORA is alſo uſed to denote the rehearſing a perſon's name from the DIPTYCHS in the liturgy.

ANAPHORA is alſo a title given to thoſe little Syriac liturgies, wherein are contained the prayers after the *oſculum pacis*. Ignatius, patriarch of the Marionites, enumerates forty of theſe *anaphoræ*.

ANAPHORA, in *Aſtrology*, denotes the ſecond houſe, or that part of heaven which is thirty degrees diſtant from the HOROSCOPE.

The term *anaphora* is alſo ſometimes promiſcuouſly applied to ſome of the ſucceeding houſes; as the ſecond, fifth, eighth, and eleventh. In this ſenſe *anaphora* amounts to the ſame with *epanaphora*, and ſtands oppoſed to CATAPHORA.

ANAPHORA is alſo applied by ſome to the oblique aſcenſions of the ſtars.

ANAPHRODISIA, from ανα and Αφροδιτη, *Venus*, denotes impotency in reſpect of venery. Some alſo uſe it for a want of deſire or inclination to the ſex.

In this ſenſe, the academiſts *Naturæ Curioſæ* give an extraordinary inſtance of this kind, in a perſon otherwiſe healthy and robuſt. Eph. Acad. N. C. Dec. 1. ann. 8. Obſ. 94.

ANAPHYSEMATA, from ανα and φυω, *I ſend forth*, in ſome *Ancient Writers*, denotes winds iſſuing from under ground, at the clefts or apertures thereof.

Theſe are ſometimes called by latter writers *apogæi*.

ANAPLASIS, from ανα and πλασσω, *I form*, in *Medicine*, the complete reſtitution of a broken bone, ſo as the two ends meet and cloſe exactly together. This is the ſame with what is otherwiſe called *diaplaſis*.

ANALAPSIS alſo ſignifies a renutrition of the extenuated fleſh.

ANAPLEROSIS, in the general ſenſe, denotes REPLETION.

Anaplerosis is more particularly uſed to denote that part of ſurgery, whereby things wanting are ſupplied.

In which ſenſe, *anaplerosis* amounts to the ſame with what we otherwiſe call appoſition, or PROSTHESIS.

ANAPLEROSIS, in the *Civil Law*, is a name which ſome give to the four laſt books of Juſtinian's code.

ANAPLEROTICS, in *Medicine*, ſuch remedies as incarnate, and fill up ulcers and wounds with new fleſh.

The word comes from αναπληροω, *I fill up*.

Anaplerotics are the ſame with what we otherwiſe call INCARNATIVES.

ANAPODOPHYLLON, in *Botany*. See DUCK's-*foot*.

ANARCHI, in *Antiquity*, a name given by the Athenians to four ſupernumerary days in their year, during which they had no magiſtrates.

The Attic year was divided into ten parts, according to the number of tribes, to whom the precedency in the ſenate fell by turns.

Each diviſion conſiſted of thirty-five days; what remained after the expiration of theſe, to make the lunar year complete, which, according to their computation, conſiſted of three hundred and fifty-four days, were employed in the creation of magiſtrates, and called αναρχοι ἡμεραι, and αρχαιρεσιοι.

ANARCHY, the want of government in a nation, where no ſupreme authority is lodged, either in the prince, or other rulers; but the people live at large, and all things are in confuſion.

The word is derived from the Greek privative α, and αρχη, *principality*.

All kinds of ſtates are ſubject to *anarchies*. We read of civil *anarchies*, eccleſiaſtical or ſpiritual *anarchies*, and even *anarchies* in the republic of letters.

Anarchy is ſuppoſed to have reigned after the deluge, before the foundation of monarchies. We ſtill find it obtain in divers parts, eſpecially of Africa and America; e. gr. among the Itinois, who are obſerved by travellers to live in a perfect independency of any ſuperior; among the Californians, where every family makes its own laws, as well as religion; in Chili, where every maſter of a family is a king; in the Marian iſlands, where neither prince nor law is known, but every perſon governs himſelf according to his own will; and to mention no more, among the Hottentots, where the only reſemblance of government is, that in each neighbourhood, the eldeſt is the firſt in honour, and his advice chiefly followed, not from any civil authority he is veſted with, but on account of his ſuperior experience.

Some extend the idea of *anarchy* farther, ſo as to make it comprehend all the more popular governments.

In this ſenſe, *anarchy* amounts to much the ſame with DEMOCRACY.

Hobbs, in this ſenſe, calls the Roman commonwealth an *anarchy*.

It has been ſometimes controverted which of the two is beſt, a ſtate of *anarchy*, or of tyranny and arbitrary power. This controverſy, however, does not appear to be of any great uſe; it is of little purpoſe to determine which is beſt, ſince a ſtate of *anarchy* naturally, nay neceſſarily, paves the way for deſpotiſm; and confuſion is always the parent of oppreſſion.

ANARCHY is alſo applied to certain troubleſome and diſorderly periods, even in governments otherwiſe regular. —In Germany, the ſpace from the election of Richard duke of Cornwall, to that of duke Rud. of Hapſburg, is commonly called the *anarchy*, or *interregnum*.

In England, the period between the death of Cromwell and king Charles's reſtoration, is commonly repreſented as an *anarchy*. Every month produced a new ſcheme or form of government. Enthuſiaſts talked of nothing but annulling all the laws, aboliſhing all writings, records, and regiſters, and bringing all men to the primitive level. No modern nation is more ſubject to *anarchies* than Poland; where every interval between the death of one king, and the election of another, is a perfect picture of confuſion, inſomuch that it is a proverb among that people, Poland is governed by confuſion.

The Jewiſh hiſtory preſents numerous inſtances of *anarchies* in that ſtate, uſually denoted by this phraſe, *that in thoſe days there was no king in Iſrael, but every man did that which was right in his own eyes*; which is a juſt picture of an *anarchy*. The firſt *anarchy* we read of in that commonwealth, is that which enſued on the death of Joſhua, who leaving no ſucceſſor, the government devolved to the elders of the tribes, who ruled each according to his own will. After the death of theſe elders, the *anarchy* became complete.

ANARGYRUS, from α and αργυριον, *money*, in *Ancient Writers*, denotes a perſon without money, though otherwiſe ſufficiently accommodated with land, and other effects.

In a like ſenſe, we ſometimes alſo meet with the word *anargyria*, uſed by lawyers for the condition of a perſon without ready money.

Mart. Phil. Fabricius has a diſſertation expreſs *De Exceptione Anargyriæ*.

ANARGYRI, in *Eccleſiaſtical Hiſtory*, is an appellation given to certain ſaints in the Greek church, who having been phyſicians, gave not only their advice, but their remedies, *gratis*.—They are alſo called *argentinopes*.

ANARRHAPHE, from ανα and ραφη, *ſuture*, in *Surgery*, denotes a kind of ſuture or retraction of the upper eye-lid, when relaxed and hanging over the eye.

This is by ſome alſo called *ſutura blepharica*, by others *abbreviatio*, *contractio*, *collectio*, or *ſuſpenſio ſuperioris palpebræ*.—It is uſed in the *phalangoſis*, *ptoſis*, or *chaloſis*; where the ſight is obſtructed, by a *prolapſus* of the part, or the eye-lid itſelf is too thick beſet with briſtly hairs both within and without.

ANARRHICAS, in *Ichthyology*, the name given by Artedi, to the fiſh called by others the LUPUS *marinus*. It is a genus of the order of *apodes*, in the Linnæan ſyſtem.

ANARRHINON, in *Botany*, a name given by ſome of the ancients to the plant called by others LYCHNIS *agria*, and by others *antirrhinum*. Pliny tells us, that this plant reſembled flax; that it had ſcarce any root; that its flower was of the colour of the hyacinth, and its fruit reſembled the noſe of a calf. It is from this reſemblance that we at this time call the plant *calve's ſnout*. Dioſcorides ſays, that it was like the *anagallis*.

ANARTHRA, from α and αρθρον, *joint*, a claſs of naked inſects, diſtinguiſhed from all others, by having neither wings nor limbs. To this claſs belong all kinds of worms and leeches.

ANAS, *duck*, in the Linnæan ſyſtem of *Zoology*, the name of a large genus of birds, of the general order of ANSERES. The diſtinguiſhing characters of this genus are, that the beak is convex, and ends in an obtuſe point. The birds of this genus are the ſwan, gooſe, widgeon, &c. See DUCK.

ANAS *campeſtris*, in *Zoology*, the name of a bird common in France, and uſually called TETRAX, and *canne petriere*. It is of the ſize of a pheaſant, and of the nature of the *buſtard*, having no hinder toe; it runs very ſwiftly, and ſits on the ground as the duck does in the water, whence it has its name.

ANASARCA, from ανα and σαρξ, *fleſh*, in *Medicine*, a ſort of univerſal dropſy, wherein the whole ſubſtance of the body is ſtuffed or bloated with pituitous humours.

This diſtemper is ſometimes alſo called *cataſarca*, ſometimes *hypoſarcidium*, ſometimes *epiſarcidium*, ſometimes *aqua inter cutem*, or *intercus*, becauſe this pituitous humour ſpreads itſelf through the fleſh. Serenus Samonicus elegantly calls it *lymphaticus error*; Albucaſis calls it a dropſy by infiltration.

Anaſarca is a peculiar ſpecies of univerſal dropſy, differing from both the *aſcites* and *tympanites*. It differs from the *aſcites* in that, though it uſually ariſes from the ſame cauſes, the waters in an *aſcites* do not poſſeſs the upper parts of the body, at leaſt while the patient keeps in an erect poſture, which they do in the *anaſarca*.

Some diſtinguiſh between the *anaſarca* and the *leucophlegmatia*, in that the latter comes from the *pituita*, the former from an ichorous ſeroſity diſcharged in the very habit of body; apparently through the fault of the lymphatic veſſels.

The *anaſarca* ſometimes ſtops at half its growth; in which caſe it is called by the ancients *phlegmatia*, where the bloating is conſpicuous, yet ſoft and looſe.

In an *anaſarca*, the legs ſwell at firſt, eſpecially towards night, and then pit remarkably; the urine is pale, the appetite decays; at length the ſwelling riſes higher, and appears in the thighs, belly, breaſt, and arms. The face becomes pale and cadaverous; the fleſh ſoft and lax; and a difficulty in reſpiration comes on, attended with a ſlow fever.

The uſual method of cure among us is much the ſame as that of the *aſcites*. The ancients had a peculiar method adapted to it.

Ætius relates, from Aſclepiades, the manner of curing an *anaſarca*. This is by making inciſions on the inſide of the leg, about four fingers breadth above the ankle, as deep as generally thoſe in bleeding are made. At firſt a little blood iſſues out, afterwards there is a continual diſcharge of water, without any inflammation, ſo that the aperture cannot be cloſed, till the humour is ſpent, and the ſwelling gone down; and this drain cures the diſtemper, without any internal medicine.

Leonides ſays farther, that if the inciſions in the legs do not make a diſcharge quick enough, ſome ought to be made in other parts of the body; in the thighs, in the arms, or in the *ſcrotum*, if ſwelled, by which means a great quantity of watry matter may be evacuated.

The operation itſelf is mentioned by Hippocrates, and had been practiſed from his time down to our days, with ſucceſs; though ſometimes mortifications have been known to enſue.

In ſome caſes the *anaſarca* appears to have been advantageous, inſomuch that a cure of it has killed the patient.

Dr. Dovar's cure for an *anaſarca* is an electary compoſed of ſteel prepared with ſulphur and crude antimony, each an ounce, *diagridium* four ounces; make a fine powder of theſe; then add as much of any ſyrup as will make a ſoft electary.

ANASSAS, in *Natural Hiſtory*, the name of a fruit very common in Guinea, and in ſome other parts of Africa. It is very beautiful to the eye, and not leſs agreeable both to the taſte and ſmell, and is by ſome accounted the fineſt fruit in the world. The deſcriptions we meet with of it are very imperfect; but as there is nothing in them that contradicts its being the PINE-APPLE, it may be that fruit, and if ſo it deſerves all the praiſe that is given it.

ANASTASIS, a Greek word adopted into the Engliſh language, which denotes a reſurrection.

Chiflet has given us a diſſertation on Childeric's tomb, under the title of *Anaſtaſis Childerici*. Treuer has publiſhed the figure of a man and woman in the ancient German habit, as found in an ancient urn, under the title of *Anaſtaſis veteris Germani Germanæque Fœminæ*.

ANASTASIS, among *Ancient Phyſicians*, denotes a riſing up to go to ſtool. It likewiſe ſignifies a migration of humours, when expelled from one place, and obliged to remove to another.

ANASTATICA, in *Botany*, a genus of the *tetradynamia ſiliculoſa* claſs; ROSE *of Jericho*. The characters are: the flower hath four roundiſh petals, placed in form of a croſs; the ſeed-veſſel in this is blunt-pointed, bordered, and crowned, and the valves open oblique to the ſtyle.

Anaſtatica, Hort. Cliff. 328. This plant grows naturally on the ſands, near the borders of the Red Sea, and in many parts of Syria.

It hath had the epithet of ROSA *Mariæ* given to it by the monks, who have ſuperſtitiouſly ſuppoſed that the flowers open on the night that our Saviour was born. But the truth is, the dry woody plant being ſet for ſome time in water, will dilate and open, ſo as to diſcloſe the ſeed-veſſels and ſeed. This has been done when the plants have been many years gathered; ſo that ſome curious perſons preſerve them in their repoſitories of curioſities, for the ſingularity of this property.

This plant is propagated by ſeeds, which ſhould be ſown the beginning of April, on a border of light ſandy earth, where it is deſigned to remain; for it will not bear tranſplanting. If the ſeaſon proves favourable the plants will flower in Auguſt; but unleſs the autumn proves warm and dry, they will not ripen their ſeeds in England.

ANASTOMASIS, or ANASTOMOSIS, in *Anatomy*, is ſometimes uſed to expreſs ſuch aperture of the mouths of the veſſels as lets out their contents.

The word is formed of ανα, *through*, and ϛομα, *mouth*.

ANASTOMASIS is more frequently uſed to denote the opening of two veſſels into one another; or the union and juncture of the mouths of two veſſels, whereby they come to communicate with one another.

There are various *anaſtomaſes* of this kind, e. gr. of an artery with an artery, a vein with a VEIN, and of a vein with an ARTERY.

The circulation of the blood in the *fœtus* is effected by means of the *anaſtomaſes*, or inoſculations of the *vena cava* with the pulmonary vein; and of the pulmonary artery with the *aorta*.

The circulation is alſo performed in adults by the *anaſtomaſes*, or continuation of the capillary arteries with the veins.

After the circulation of the blood through the heart, lungs, and large blood-veſſels, was demonſtrated by Harvey, it was only gueſſed how the extremities of the arteries tranſmitted the blood to the veins; till Leewenhoeck's microſcopes had diſcovered the continuations of the extremeties of thoſe veſſels, in fiſh, frogs, &c.—However, there were not wanting thoſe who doubted of the like continuations of the extremities of the arteries and veins in human bodies, and quadrupeds; ſince thoſe animals it had hitherto been chiefly ſeen in ſatisfactorily, were either ſuch fiſh, or amphibious kinds, as have but one ventricle in their hearts, and whoſe blood is actually cold; beſide that in them it does not circulate with ſuch rapidity, as in animals whoſe hearts have two ventricles. This difference in the principal organs of circulation moved Mr. Cowper to make experiments on animals whoſe organs differ only from the human in their groſs figure, and not in their intimate ſtructure.—The reſult was a plain diſcovery of the like inoſculations of the arteries and veins, in the *omentum* of a cat.

George Frederic Francus, of Frankenau, a phyſician of Copenhagen, publiſhed, in the year 1705, a learned and copious work, intituled, *Anaſtamaſis Retecta*.

It is a queſtion among *anatomiſts*, whether the uterine arteries and veins *anaſtomoſe* with the veins and arteries of the ſecundines. Mr. Alex. Monro holds the negative, and he thinks that ſeveral inconveniencies are avoided by the want of this *anaſtomaſis*. Med. Eſſ. Edinb. vol. ii. p. 133, &c.

ANASTOMATICS, or ANASTOMATIC *medicines*, are ſuch as have a faculty of opening and dilating the cavities of the veſſels; and by that means of making the blood circulate the more freely.

The word comes from αναϛομοω, *I unſtop*.

ANASTROUS *ſigns*, in *Aſtronomy*, an appellation given to the *duodecatimoria*, or the twelve portions of the ecliptic which the ſigns poſſeſſed anciently, but have deſerted by the preceſſion of the *æquinox*.

ANASTROPHE, from ανα and ϛρεφω, *I turn*, in the *Ancient Military Art*, denotes the return of a battalion to its former ſtation, after a turn or evolution either to the right or left.

The *anaſtrophe* ſtands oppoſed to the *epiſtrophe*.

ANASTROPHE alſo denotes a grammatical figure, whereby a prepoſition, which regularly ought to precede, is placed after its caſe, e. gr. *Saxa per et ſcopulos*.

ANASTROPHE, in *Rhetoric*, denotes a quaint inverſion of the order of the words in a ſentence, e. gr. *ut ſcire poſſis ad quo te expediat loqui*, for *quoad expediat te loqui*.

ANATHEMA, from ανα and τιθημι, *I lay up*, in *Antiquity*, denotes a preſent offered to ſome god, and hung up in his temple.

Making preſents to the gods was a cuſtom even from the earlieſt times, either to pacify them when angry, or to obtain ſome future benefit, or as a grateful acknowledgment of ſome paſt favour. They conſiſted of crowns and garlands, garments, cups of gold, or other valuable metals, and any other things which conduced to the ornament, or the enriching of the temples.

Theſe were commonly termed αναθηματα, and ſometimes ανακειμενα; from their being depoſited in the temple where they ſometimes were laid on the floor, ſometimes hung upon the walls, doors, pillars, or the roof, or any other conſpicuous place. Sometimes the occaſion of the dedication was inſcribed either upon the thing itſelf, or when the matter of that could not bear an inſcription, upon a tablet hung up with it.

When any perſon left his employment, or way of life, it was cuſtomary to dedicate the inſtruments belonging to it, as a grateful commemoration of the divine favour and protection. Thus in an ancient Greek epigram we find a fiſherman makes a preſent of his nets to the nymphs of the ſea. Shepherds hung up their pipe to Pan, or ſome of the country deities, as we find done by one in Tibullus. So Lais, decayed with age, dedicates her mirror to Venus. Pauſanias has left us a particular deſcription of the *anathemata* in the Delphian temple, which was the richeſt of any in Greece.

The term *anathema* alſo occurs in a like ſenſe applied to Chriſtian offerings.

The *anathemata*, or ornaments of the ancient churches, are otherwiſe called in eccleſiaſtical writers *donaria*.

Such in particular were thoſe called εκτυπωματα, anſwering to the votive tablets of the heathens. Alſo pictures, moſaics, inſcriptions, and at length images, ſtatues, crucifixes, &c.

Cebes's beautiful Tablature of Human Life, is ſaid, in the introduction to it, to have been among the αναθηματα, in the temple of Saturn.

ANATHEMA, in an eccleſiaſtical ſenſe, denotes an EXCOMMUNICATION, attended with execrations and curſes.

In this ſenſe, the word is uſually written in Greek αναθεμα, to diſtinguiſh it from an offering to the gods, called αναθημα; though it is certain ſeveral of the Greek fathers do not obſerve this diſtinction; but uſe αναθημα indifferently for either.

There are two kinds of *anathemas*; the one *judiciary*, the other *abjuratory*.

The former can only be pronounced by a council, a pope, biſhop, or other qualified perſon; and differs from a ſimple excommunication in this, that an excommunication only prohibits the criminal from entering within the church, or from holding communion with the faithful; whereas an *anathema* cuts him off from the body, the ſociety, and even the commerce of the faithful, and delivers him over to the *Devil*.

The latter kind of *anathema* uſually makes a part of the ceremony of ABJURATION; the convert being obliged to *anathematize* the *hereſy* he abjures.

The critics and commentators are divided about the manner wherein St. Paul wiſhes to be *anathema* for his brethren. Romans, ch. ix. 3. See ACCURSED.

In ancient cenſures we meet with an extraordinary *formula*, called *maranatha*; and authors are divided concerning its import and uſe.

St. Chryſoſtom ſays it is a Hebrew word, ſignifying *the Lord is come*; and he particularly applies it to the confuſion of thoſe who ſtill abuſe the privilege of the Goſpel, notwithſtanding that the Lord was come among them.

St. Jerom ſays it was more a Syriac than a Hebrew word, though it had ſomething in it of both languages, ſignifying *our Lord is come.* But he applies it againſt the perverſeneſs of the Jews and others who denied the coming of Chriſt, making this the ſenſe of the apoſtle; *if any man love not the Lord Jeſus Chriſt, let him be anathema, the Lord is come.*

According to this ſenſe, *maranatha* could not be any part of the form of *excommunication*, but only a reaſon for pronouncing the *anathema* againſt thoſe who expreſſed their hatred againſt Chriſt, by denying his coming, either in words, as the Jews did who blaſphemed him, and called Jeſus *anathema* or accurſed, or elſe by wicked works, as thoſe who lived profanely under the name of Chriſtians. Others of the ancients interpret the word of the future coming of Chriſt, particularly St. Auſtin, who ſays, *maranatha* is a Syriac word ſignifying *the Lord will come.* And he particularly applies it againſt the Arians, who could not be ſaid, as he uncharitably thought, to love the Lord, becauſe they denied his divine nature. Dr. Hammond and others will have *anathema maranatha* to have anſwered to the third and higheſt degree of excommunication among the Jews, called *ſhammatha.*

Balduinus, Deutrohmannus, Durrius, Stevartius, and others, have written expreſly concerning *anathemas.* Hen. Labertus, a German writer, has given an *Anathematologia*, or a diſcourſe on the church curſes. See a form of the *anathema* denounced againſt robbers in the middle ages, in Bouquet's Recueil des Hiſt. tom. x. p. 517. The Engliſh reader may ſee it in the An. Regiſt. vol. xii. an. 1769. p. 147.

ANATHEMATIZING, the act of pronouncing an *anathema.* In which ſenſe it amounts to the ſame with *excommunicating.* The term is not only applied in ſpeaking of perſons, but of doctrines and opinions.

ANATHEMATISM denotes the ſame with *anathema*, or imprecation.

ANATHREPSIS, in *Medicine*, amounts to much the ſame with ANALEPSIS.

ANATICULA, a diminutive of *anas*, and uſed by the old Roman *Authors*, as a term of fondneſs, to expreſs the paſſion of love. There is another of the ſame kind from a different bird *palumbula.*

My little duck, my little dove, were the moſt endearing terms the lovers of thoſe times could uſe; nor was this the cuſtom of the Romans only, but the Greeks, as far back as Ariſtophanes, have it.

ANATIFERA *concha*, in *Natural Hiſtory*, the name of a genus of ſhells, the characters of which are theſe: it is a ſhell-fiſh of the multivalve kind, being of a triangular figure, flat, and compoſed of five ſhells faſtened to a long pedicle, and furniſhed with fourteen hairs. Of this genus of ſhell-fiſh, the cabinets of the curious afford us four ſpecies.

This genus of ſhells obtained this ſtrange name from an erroneous opinion, that they produced ducks, or a ſpecies of wild-fowl of that kind, the name ſignifying a ſhell producing *ducks.*

ANATOCISM, ANATOCISMUS, an uſurious contract, wherein the intereſts ariſing from the principal ſum are added to the principal itſelf, and intereſt exacted upon the whole.

The word is originally Greek, but uſed by Cicero in Latin; whence it is deſcended into moſt other languages. It comes from the prepoſition *ανα*, which in compoſition ſignifies *repetition* or *duplication*, and *τοκος*, *uſury.*

Anatociſm is what we properly call *intereſt upon intereſt*, or *compound intereſt.*

This is the worſt kind of uſury, and has been ſeverely condemned by the Roman law, as well as by the common laws of moſt other countries.

ANATOMY, the art of diſſecting, or artificially taking to pieces the ſolid parts of animal bodies; in order to an exact diſcovery of their ſtructure and œconomy.

The word is *ανατομη*, q. d. *ſection* or *cutting*; formed of *ανατεμνω*, *I cut aſunder.*

Anatomy makes a great branch of that diviſion of medicine called *phyſiology.*

It is ſometimes divided, with regard to its end, into *ſpeculative* and *practical*; a diviſion of very little moment.— It is alſo divided, with regard to its ſubject, into *human* and *comparative.*

ANATOMY, *comparative*, is that which conſiders brutes, and other animals, and even vegetables; chiefly with a view to illuſtrate the human ſtructure.

There is ſome diſpute among phyſicians and naturaliſts concerning the uſefulneſs of comparative *anatomy.* On the one hand it is urged, that the parts leſs apparent in one animal, are found more diſtinct and conſpicuous in another; ſo that the knowledge of the ſtructure of the former, may be improved by analogy, from that of the latter. On the other hand it is objected, that the diverſity is ſo great between one animal and another, according to the different manners of life they are intended for, that it is never ſafe concluding by mere analogy, from the ſtructure of one to that of the other. Malpighi has been very large in the refutation of this objection.

ANATOMY, *human*, which is abſolutely and properly denominated ANATOMY, is that employed on the human body; by ſome called alſo *anthropology.*

The ſubject of *anatomy*, viz. the body, is variouſly divided into parts, *organical*, and *inorganical*; *ſimilar*, and *diſſimilar*; *ſpermatic*, &c.

Its more obvious diviſion is into *ſolids* and *fluids*, or into the containing and contained parts.

Under the ſolids come the bones, muſcles, nerves, arteries, veins, cartilages, ligaments, membranes, &c.— Under the fluids come chyle, blood, milk, fat, lymph, &c. See each under its proper article.

But ſome divide *anatomy*, with regard to its objects, into OSTEOLOGY and SARCOLOGY.

The firſt treats of the bones and cartilages; the ſecond is ſubdivided into *ſplanchnology*, which comprehends the hiſtory of the internal parts, and more particularly of the viſcera; *myology*, or the doctrine of the muſcles; and *angeiology*, which treats of the veſſels, viz. the nerves, arteries, veins, and lymphatic veſſels.

Others divide *anatomy* with regard to its objects, into that of living bodies, and that of dead carcaſſes.

Herophilus and Eraſiſtratus, we are told by Celſus, diſſected living perſons: condemned criminals were ſent to the former by princes, on purpoſe that they might have an opportunity of ſeeing the parts in their natural ſtate, before any alterations induced in them by diſeaſes or death.

The bodies of perſons who have ſuffered a violent death, among which thoſe who have been hanged, or loſt their lives by ſtrangulation with a cord, are the moſt proper, and to be preferred before the reſt. It is for that reaſon that Riolan rejects thoſe dead carcaſſes which have been ſuffocated in the water, as improper for *anatomy*; though Galen uſed moſt frequently to drown ſuch of his living creatures, as he had choſen for his anatomical operations.

Anatomy is by others divided into *medicinal* and *phyſical.*

ANATOMY, *phyſical*, *anatomia phyſica*, is that employed in enumerating and deſcribing the ſeveral ſolid parts of the body, as bones, cartilages, membranes, muſcles, tendons, nerves, ligaments, arteries, veins, lympheducts, &c. deſcribing their figure, ſituation, connection, &c.

ANATOMY, *medicinal*, *anatomia medica*, is that which, to the former inquiries, adds that of the office and uſe of the ſeveral parts, and their concern in health or diſeaſes. Some give a particular ſpecies of this under the denomination of chirurgical *anatomy.*

Some conſiderable phyſicians have endeavoured to check a minute ſtudy of *anatomy*, as of no uſe in phyſic. It is in reality but a ſmall part of the ſcience, as it now ſtands, that falls under immediate conſideration in the medicinal practice. It ſeems enough for a phyſician to know the number, ſituation, communication, and uſe of the parts, without loſing time in a minute inveſtigation of their intimate ſtructure, not excepting the ſmalleſt fibres, of which they are compoſed.

Others again recommended an exact and curious knowlege of *anatomy*, which does not barely include the ſituation of one, or other of the viſcera, or the magnitude, colour, figure, and order of the internal parts, but is of very wide extent. For, ſay they, it is neceſſary to inſpect, with all our curioſity, the peculiar ſtructure of each part, which we ſee to be formed with the higheſt art and ſkill; to find out its uſe, what function it performs in the body, what connection it has with the other members, and to comprehend what influence it has, after a wonderful manner, on different and remote parts.

Such a knowlege of *anatomy* they eſteem as a moſt firm foundation, on which the whole body of medicine may ſecurely reſt. If this be removed, all rational explications in medicinal matters muſt fail, practice is in danger, and even *medicine* itſelf falls to ruin. The uſe of *anatomy*, in *ſurgery*, they add, is ſo undoubted, that none but ſuch as are little verſed in the *medicinal* art, will have the raſhneſs to deny it.

Anatomy is not only of uſe in *medicine*, but alſo in *painting*, *deſigning*, *ſtatuary*, &c. Leonardo da Vinci, and all the great maſters, ſtudied it with particular application. Titian took ſo much delight in it, that he deſigned the figures for Veſalius's *Anatomy.* M. de Piles, under the fictitious name of Tortebat, and de Roſſi at Rome, have publiſhed books of *anatomy* particularly accommodated to this uſe. A tranſlation of this has been given in England, under the title of *Anatomy* improved and illuſtrated, with regard to the Uſe thereof in Deſigning.

ANATOMY, *its hiſtory.*—With reſpect to the antiquity of *anatomy*, it ſeems ſcarcely poſſible, but that the ſlaughter of beaſts for the uſe of man, caſualties, murders, and the accidents of war, muſt have furniſhed mankind with a general knowledge of the ſtructure of the parts, in very early ages of the world. But it is not very certain at what period it began to be cultivated as a *ſcience.* This however muſt have been very early, eſpecially if we pay any regard to Manetho, the famous Egyptian writer, who, according to the report of Euſebius, relates that Athotis, an Egyptian king, wrote ſome treatiſes of *anatomy.* This king, if the Egyptian chronology was to be depended on, lived many ages before Adam. This, however falſe with reſpect to time, amounts to a ſort of proof of the antiquity of this *ſcience.* It is inferred that Solomon was no ſtranger to the ſtructure of the human body, from ſome paſſages in the twelfth chapter of the book of Eccleſiaſtes.

It is very certain however that before, or at leaſt in the days of Homer, *anatomy* was much cultivated; ſince this author appears to have had a competent knowlege of the parts, and to have been very well verſed in the enunciation of wounds, as the moderns call it, ſo as to give an accurate account of their effects in almoſt all the parts of the body.

But Hippocrates is the firſt author, at leaſt extant, who treated of *anatomy* ſcientifically. This writer, conſcious of his noble and exalted genius, publiſhed many *anatomical* obſervations, which, though disjoined and ſcattered here and there in his works, yet make up an entire body of *anatomy,* when taken together; but that he made it his principal buſineſs to underſtand and explain the bones of the human body, is plain from thoſe valuable books upon Fractures, and the Joints, which evidently diſcover his perfect knowlege of, and intimate acquaintance with, the bones; and that his diligence, his induſtry, and ſkill in this way, might the more effectually be tranſmitted to future ages, he conſecrated, if we may believe Pauſanias, a brazen ſkeleton to the Delphian Apollo.

The writings of this great man are interſperſed with many things relating to the blood, which ſeem to ſhew ſome knowlege of the circulation, and alſo of the ſecretion of the various humours. Dr. Douglas has pointed out ſuch of them as ſeem to be the moſt glaring and unexceptionable proofs of this.

Galen, by general conſent of writers, is the prince of *anatomiſts.* By his early application, his unwearied aſſiduity, great ſagacity, and penetration of mind, as well as dexterity of hand, he not only carried the art infinitely beyond what had been done by thoſe before him, but even to that perfection wherein we find it at this day, abating only ſome few diſcoveries made by modern anatomiſts. In reality, many of the diſcoveries with which late writers plume themſelves, are due to him. Dr. Douglas enumerates ſeveral of the diſcoveries made by Galen in the ſtructure and uſe of the parts of the human body.

Anatomy ſuffered with the other *ſciences* by the invaſions of the Goths and Vandals, and at length ſunk into total barbariſm; from which it was reſtored in the fourteenth century by Mundinus, a Milaneſe, who compoſed rudiments of that art in the year 1315, which, notwithſtanding the barbarous ſtyle wherein they are written, remain ſtill in eſteem, and are the only ſyſtem now taught in ſome of the principal ſchools in Italy. The ſtatutes of the univerſity of Padua expreſly enjoin the profeſſors to follow the text of Mundinus in their lectures and expoſitions.

Some with Fallopius rather aſcribe the honour of the reſtoration of *anatomy* to Jac. Berengarius, called alſo Carpus or Carpenſis, who lived two hundred years after Mundinus. He ſet out with commenting on that author, but afterwards wrote a much better book on the ſubject, of his own; in order to which he diſſected above one hundred bodies. Some have even charged him with the crime of Herophilus. It is alleged that he bore an implacable hatred to the Spaniards; and that, having got ſome of them into his cuſtody, he intended to have proceeded to diſſection, but his deſign being diſcovered, he was baniſhed. Others deny the charge, and give other reaſons for his exile.

The honour of reforming *anatomy,* and bringing it to its preſent perfection, is commonly aſcribed to Veſalius, whoſe inclination to this ſcience was ſo great, that, when a boy, he could not forbear diſſecting moles, dormice, cats, and the like. As he grew up, his paſſion increaſed; when bodies were wanting for ſkeletons, he would ſteal them from the gibbets; for which he was expelled Louvain, as he himſelf informs us. Bodies which he dug out of their graves, he would keep ſeveral weeks in his bed-chamber. He publiſhed his famous work on the ſtructure of the human body at twenty-eight years of age. He was chief phyſician to the emperor Charles V. and Philip II. of Spain; but growing weary of a court-life, he undertook a pilgrimage to Jeruſalem, and died in his return. The motive of this expedition is attributed to his opening the body of a young Spaniard of quality, ſuppoſing him dead; whereas, when he came to the heart, he found it ſtill beating. Others give a different account of his misfortunes.

The writers of *anatomy* may be divided into ſuch as either treat on the ſubject *profeſſedly* or *occaſionally.*

Under the latter are comprehended *phyſicians, natural hiſtorians,* thoſe who treat of human nature, and of brutes. Among the *profeſſed* writers on *anatomy,* ſome treat of the whole ſubject, others only of a part.

The ancient writers in *anatomy,* Hippocrates, Democritus, Ariſtotle, Galen, and others, looked upon this as the moſt important part of phyſic, and that, without which the uſes of the parts of an human fabric, and conſequently the cauſes of diſeaſes incident to it, could no way be diſcovered. And yet this art, uſeful as it is, was entirely diſcontinued for ſeveral ages; till in the ſixteenth century it began to flouriſh afreſh.—The diſſection of a human body was looked upon as ſacrilege before that time; and we have ſeen a conſultation which the emperor Charles V. appointed to be held by the divines of Salamanca, in order to be ſatisfied, whether or no it were lawful, in point of conſcience, to diſſect a dead carcaſe?—We may add, that to this day the uſe of anatomy and ſkeletons is forbid in Muſcovy: the firſt as inhuman, the latter as ſubſervient to witchcraft: and Olearius aſſures us, that one Quirin, a German ſurgeon, being found there with a ſkeleton, hardly eſcaped with life; and the ſkeleton after being ſolemnly dragged about the ſtreets, was burnt in form. Boyle's Uſefulneſs of Philoſophy.

After Veſalius, a Flemiſh phyſician, who died in 1564, ſucceeded Carpus, Sylvius, Fernelius, Fallopius, Euſtathius, Fabricius, Pareus, Bauhinus, Hoffman, Riolanus, &c.

Theſe were followed by others, to whom ſome of the fineſt diſcoveries in *anatomy* are owing.—Aſellius, in the year 1622, diſcovered the lacteal veins, though he modeſtly declines the honour of this diſcovery, and ſays they were known to Hippocrates, Eraſiſtratus, and Galen; and in 1628, the immortal Harvey publiſhed his admirable diſcovery of the circulation of the blood.—Pecquet diſcovered the reſervoir of the chyle, and the thoracic duct, in 1651.—Rudbecks, a Swede, and Bartholine, a Dane, found out the lymphatic veſſels, in 1650, and 1651. Wharton, in 1655, diſcovered the lower ſalival ducts; and Steno the upper ſalival ducts, thoſe of the palate, the noſtrils, and eyes, in 1661. Wirtſungus, in 1642, diſcovered the pancreatic duct.—Willis, who came after him, publiſhed an anatomy of the brain, and nerves, in a manner much more exact than had been done before him; yet he had omitted ſome conſiderable things, which were afterwards obſerved by Vieuſſens.—In ſhort, Gliſſon treated particularly of the liver; Wharton of the glands; Havers, of the bones; Graaf, of the pancreatic juice, and the parts of generation; Lower, of the motion of the heart; Thurſton, of the reſpiration; Peyer, of the glands of the inteſtines; Brown, Cowper, and Douglas of the muſcles; and Drelincourt, of the conception of the ova in women, the placenta, and the membranes of the *fœtus*; Dryander, of the head; Hoffman and Rudius, of the uſe of the parts; Rufus, Epheſius, and Camerarius, of the names of the parts; Galen, Cappivaccius, Hippolitus, Boſcus, and Lacuna, of the art of diſſecting; Horſtius, on the art of preſerving carcaſes; and Monro of *oſteology,* and *comparative anatomy.* Malpighi, who died in 1694, is one of thoſe to whom *anatomy* owes the moſt: he made a great number of diſcoveries in the lungs, brain, liver, ſpleen, glands, and lymphatics, by help of the microſcope, &c. Nor muſt it be omitted, that Ruyſch, who died in 1727, has let great light into many of the finer and more intricate parts of the human frame, particularly the glands, by means of his injections.

An account of the later diſcoveries controverted between Monro, Hunter, and Hewſon, who all claim the merit of firſt making them, ſhall be given under the articles LYMPHATICS and LACTEALS. The reader may find a particular information about them, and the pretenſions of the different claimants, in Monro's Inaugural Diſſertation.

Among thoſe who treat of the whole ſubject of *anatomy,* Winſlow is moſt deſervedly eſteemed This author's works has been tranſlated into Engliſh by Dr. George Douglas. We have alſo an excellent compendium of *anatomy* by Heiſter. The merit of Albinus's Tables, and of his writings, is well known; as is that of Mr. Cheſelden; ſo that, after reading Heiſter, Winſlow, Monro, and Cheſelden, conſulting the Tables of Veſalius and Albinus, a ſtudent may, we believe, conſider other books rather curious than neceſſary.

Manget and Le Clerc, two phyſicians of Geneva, have given us a *Bibliotheca Anatomica,* containing all the new diſcoveries that have been made in this art, but with many miſtakes, the detecting of which has been undertaken by Morgagni, who has publiſhed ſeveral volumes with that view, under the title of *Adverſaria Anatomica*.

Anatomy is alſo uſed for an artificial repreſentation of the ſtructure and parts of the human body in metal, plaſter, wax, or the like.—In this ſenſe we ſay, the wax-work *anatomy*. R. Dickenſon, ſtatuary, finiſhed an human *anatomy* in plaſter of Paris, repreſenting a man ſtanding upright, with his ſkin flayed off.

There is likewiſe a wax-work *anatomy*, ſaid to have been invented by Gaetano Giulio Zumba, a Sicilian of Syracuſe. Yet M. des Noues, who learnt it of him, and probably made ſome improvements in it, bringing it to Paris, arrogated the chief honour of it to himſelf. Some prefer before all the reſt, for public lectures and courſes, the uſe of real parts of dead bodies prepared by injection. *Anatomical* injections, are either of mercury, or mixtures of equal parts of biſmuth, lead, and tin. Neumann.

The inconveniencies that attend the diſſecting of dead carcaſſes, have occaſioned the invention of another cleanlier and more durable kind of ſubjects. Reiſelius contrived a human ſtatue, wherein the circulation of the blood was repreſented to the ſight, and ſomething of the like kind was ſhewn by M. Chovet; and more lately ſtill by Madam. Bicheron, who has brought this art to great perfection. See her obſervations on the artificial *anatomy*, in the Memoirs of the Acad. des Scienc. an. 1759. Hiſt. 94.

Anatomy is ſometimes uſed to denote the ſubject to be anatomized. Thus (by 39 H. VIII. cap. 22.) the company of barbers and ſurgeons may have and take yearly four perſons condemned, adjudged, and put to death for felony, for *anatomies*; and to make inciſion of the ſame dead bodies.

And by 25 Geo. II. cap. 37. the bodies of felons convicted of murder, in the county of Middleſex, or city of London, are, after execution, to be delivered to the hall of the ſurgeon's company, to be diſſected and anatomized; and in caſe ſuch conviction and execution ſhall happen to be in any other county, or place, in Great Britain, then the body of ſuch murderer ſhall be delivered by the ſheriff, &c. to ſuch ſurgeon as the judge ſhall direct.

Anatomy is alſo uſed, in an improper ſenſe, for the ANALYSIS of mixt bodies.

In this ſenſe the chemiſts ſometimes call their art *ſpagyrical anatomy*, *anatomia ſpagyrica*.

In which ſenſe we ſometimes ſay the *anatomy* of vitriol, the *anatomy* of ſulphur, the *anatomy* of Rheniſh wine, &c.

Anatomy is alſo uſed, in a leſs proper ſenſe, to denote the art of reſolving compound bodies into ſimple ones.

In this ſenſe any kind of compound body may be conſidered as the object of *anatomy*; that is, any body wherein there are divers parts joined together; even the taking aſunder an artificial, political, or moral being, may, in this ſenſe, come under *anatomy*.

Anatomy is alſo uſed *figuratively*, for an exact ſearch or examination of the parts of a diſcourſe, buſineſs, or the like: in which ſenſe we ſay the *anatomy* of a book, a doctrine, or the like.

Anatomy *of plants* may be conſidered as a branch of comparative *anatomy*, otherwiſe called *dendronatomy*.

The parts of PLANTS which come under anatomical conſideration are, the root, wood, bark, pith, fruit, leaves, flowers, &c.

The *anatomy* of vegetables is chiefly owing to the induſtry of Malpighi, and Dr. Grew, though conſiderably promoted alſo by Ruyſch, who by a peculiar method of injection has produced divers ſkeletons or ſyſtems of veſſels of fruits, leaves, and the like. Something of the ſame kind has alſo been done by Thummigius.

Some pretend to make F. Fabri the father of this *ſcience*; and alledge that Malpighi took many of his diſcoveries from him. Dr. Highmore in his book of Generation, Dr. Sharrock on the Propagation of Plants, and Dr. Hook in his *Micrographia*, have alſo given ſome obſervations tending this way, though only collaterally.

ANATRIPSIS, from ανα and τριϐω, *I wear*, in the *Ancient Medicine*, denotes friction.

The word is ſometimes alſo writen ſimply TRIPSIS.

ANATRON, or NATRON, a kind of native ſalt-petre, or nitre, found in Egypt. It is of a cineritious colour, and bitter taſte, approaching to ſal ammoniac.

It is the produce of a huge lake, on the ſurface of which it is gathered, in form of a ſcum.

Anatron is alſo uſed for the ſalt and ſcum of the compoſition of glaſs, when in fuſion.

When pounded, it yields a kind of powder; which being diſſolved in the air, or in a proper liquor, becomes common ſalt, after coagulation.

The *anatron* ſkimmed from glaſs fuſion is the ſame with what others call *ſel vitri*, or *gall* of *glaſs*.

Anatron is likewiſe the name of a nitrous juice, which condenſes in vaults, arches, and other ſubterraneous places.

Anatron is alſo uſed by ſome writers, for a compound ſalt, made of quicklime, alum, vitriol, common ſalt, and nitre; uſed as a flux to promote the fuſion and purification of metals.

Anatron, laſtly, is uſed for the TERRA *Saracenica*; of which there are ſeveral kinds, black, red, and blue.

ANATROPE, ανατροπη, from ανατρεπω, *to ſubvert*; a ſubverſion literally, or relaxation of the ſtomach, attended with a loſs of appetite, vomiting, and nauſea.

ANAUDIA, among *Naturaliſts*, denotes dumbneſs, or a want of the uſe of ſpeech.

Anaudia is, by ſome, made to differ from *aphonia*, as the former is owing to a defect of the nerves of the tongue, the latter to that of the nerves of the *larynx*.

Infants and mutes are *anaudi*, αναυδοι, not *aphoni*, αφωνοι.

ANAVINGA, in *Botany*, a tree of middle ſize, that grows in Malabar in the Eaſt Indies, eſpecially about Cochin. It is an evergreen, and its fruit or berries are ripe in Auguſt.

The juice of the berries drank, excites ſweat, cures malignant diſtempers, and keeps the body ſoluble. A decoction of the leaves in water makes a fit bath for ſuch as are afflicted with pains in the joints.

ANAUMACHION, from α, ναυς, *ſhip*, and μαχομαι, *I fight*, in *Antiquity*, the crime of refuſing to ſerve in the fleet.—The puniſhment aſſigned for this offence was infamy.

ANAX, in *Ancient Writers*, denotes a hero or a god.

The word ſeems formed of the Hebrew *anacim*, or *enacim*, which ſignifies the ſame.

Some will have it originally to import giants, called alſo γηγενεις, *earth-born*. Cicero aſſures us, that the three eldeſt ſons of Jupiter, called Διοσκυροι, were alſo denominated *anaces*.

ANAXAGORIA, in *Antiquity*, a feſtival obſerved in honour of Anaxagoras.

The occaſion of its being inſtituted was this; Anaxagoras dying at Lampſacus, the magiſtrates of that city aſked him, whether he deſired any thing to be done for him? He replied, that on the anniverſary of his death the boys ſhould have leave to play.

ANAXIMANDRIANS, a name given by ſome writers to the followers of Anaximander. Theſe are otherwiſe denominated *hylopathii*; and ſtand oppoſed to the *atomiſts*. The *Anaximandrians* make the moſt ancient ſect of *philoſophical atheiſts*; they allow of nothing in nature but bodies. Theſe bodies, they aſſert, admit of qualities which produce and deſtroy each other, in a circle without beginning or end.

ANBERTKEND, in the *Eaſtern Language*, a celebrated book of the Brachmans, wherein the Indian *philoſophy* and *religion* are contained.

The word in its literal ſenſe denotes the ciſtern, wherein is the water of life.

The *anbertkend* is divided into fifty *beths*, or diſcourſes, each of which conſiſts of ten chapters.

It has been tranſlated from the original Indian into Arabic, under the title of *Morat al Maani*, q. d. *the marrow of intelligence*.

ANBLATUM, in *Botany*. See APHYLLON.

It is alſo named by Linnæus LATHRÆA, &c.

ANBURY, in *Farriery*. See AMBURY.

ANCA, in *Middle Age Writers*, denotes the thigh or hind-leg.

In which ſenſe, the word is alſo written ANCUS.

ANCESTORS, *progenitors*; or thoſe from whom a perſon is deſcended; excluſive of his immediate parents.

The word is derived from the Latin *anceſſor*, written, by contraction, for *anteceſſor*, q. d. *goer before*.

Moſt nations have paid honours to their *anceſtors*.

It was properly the departed ſouls of their fore-fathers that the Romans worſhipped under the denominations of *lares*, *lemures*, and houſhold gods.

Hence the ancient tombs were a kind of temples, or rather altars, wherein oblations were made by the kindred of the deceaſed.

The Ruſſians have ſtill their anniverſary feaſts in memory of their *anceſtors*, which they call *roditoli ſabot*, q. d. *kinsfolk's ſabbath*, wherein they make formal viſits to the dead in their graves, and carry them proviſions, eatables, and preſents of divers other kinds. They interrogate them, with loud lamentable cries, What they are doing? How they ſpend their time? What it is they want, and the like.

The Quojas, a people of Africa, offer ſacrifices of rice and wine to their *anceſtors*, before ever they undertake any conſiderable action. The anniverſaries of their deaths are always kept by their families with great ſolemnity. The king invokes the ſoul of his father and mother to make trade flouriſh, and the chace ſucceed.

The Chineſe ſeem to have diſtinguiſhed themſelves above all other nations in the veneration they bear their *anceſtors*. By the laws of Confucius, part of the duty which children owe their parents, conſiſts in worſhipping them when dead. This ſervice, which makes a conſiderable part of the natural religion of the Chineſe, is ſaid to have been inſtituted by the emperor Kun, the fifth in order from the foundation of that ancient empire. Bibl. Un. tom. vii.

The Chineſe have both a ſolemn and ordinary worſhip which they pay their *anceſtors*. The former is held regularly twice a year, viz. in ſpring and autumn, with much pomp. A perſon who was preſent at it gives the following account of the ceremonies on that occaſion:

The ſacrifices were made in a chapel well adorned, where there were ſix altars furniſhed with cenſers, tapers, and flowers. There were three miniſters, and behind them two young acolites; he that officiated was an aged man, and a new Chriſtian. The three former went with a profound ſilence, and frequent genuflexions towards the five altars, pouring out wine: afterwards they drew near to the fixth, and when they came to the foot of the altar, half bowed down, they ſaid their prayers with a low voice. That being finiſhed, the three miniſters went to the altar, the prieſt took up a veſſel full of wine, and drank; then he lifted up the head of a deer or goat: after which taking fire from the altar, they lighted a bit of paper; and the miniſter of the ceremonies turning towards the people, ſaid with a high voice, that he gave them thanks in the name of their *anceſtors* for having ſo well honoured them; and in recompence he promiſed them, on their part, a plentiful harveſt, a fruitful iſſue, good health and long life, and all thoſe advantages that are moſt pleaſing to men.

All the Chineſe, pagans as well as Chriſtians, give their *anceſtors* another ſimpler and more private worſhip. To this end they have in their houſes a niche or hollow place, where they put the names of their deceaſed fathers, and make prayers, and offerings of perfumes and ſpices to them at certain times, with bowing, &c. They do the like at their tombs.

It has been a queſtion warmly agitated of late years, whether the worſhip which the Chineſe pay their *anceſtors* be religious, or only of a civil nature. The Jeſuits, who not only allow their neophytes, or new converts, to join in it, but even aſſiſt in it themſelves, are neceſſitated to maintain the latter, to ſkreen themſelves from the charge of idolatry; the Dominicans, and other miſſionaries, maintain the former, and prohibit the ſervice as abſolutely unlawful.

The Jeſuits argue, that with relation to the firſt inſtitution, thoſe honours might be given to our *anceſtors*, ſince at firſt they appear to have been only civil; even though they ſhould ſince, through the ſuperſtitious diſpoſition of the people, have degenerated into idolatry. But it is anſwered, that by this argument the moſt groſs worſhip of idols might be authoriſed, becauſe all idolatry appears at firſt only to have been civil worſhip, as is maintained in the book of Wiſdom, chap. xiv. ver. 15.

The Jews ſettled in China are ſaid to worſhip their *anceſtors* like the heathens, and with the ſame ceremonies, except that they offer not ſwine's fleſh. Near their ſynagogue they have a hall, or court of *anceſtors*, wherein are niches for Abraham, Iſaac, &c.—The Jeſuits alſo conformed, and were permitted by their general to conform to this, and many other ſuperſtitious cuſtoms of the Chineſe. See the proof of this in Paſchal's Provincial Letters, *paſſim*.

There is one peculiarity of another kind, wherein the Chineſe ſhew their regard for their *anceſtors*; in proportion as any of their deſcendants are preferred to a higher degree or dignity, their dead *anceſtors* are at the ſame time preferred and ennobled with them. The kings Ven, Van, Veu, Van, and Cheu, Cum, who were deſcended from vaſſal kings, when they mounted the imperial throne, raiſed their *anceſtors* from the vaſſal or depending ſtate wherein theſe had lived, to the dignity of emperors; ſo that the ſame honours were for the future rendered them, as if they had been emperors of China. The ſame example was followed by the ſubſequent kings, and now obtains among the grandees and literati; all now worſhip their *anceſtors*, according to the rank which they themſelves hold in the world. If the ſon be a mandarin, and the father only a doctor, the latter is buried as a doctor, but ſacrificed to as a mandarin. The like holds in degradations, where the condition of the fathers is that of their ſons. Bibl. Un. tom. vii.

The law diſtinguiſhes between *anceſtor*, and *predeceſſor*; the former being applied to a natural perſon, as ſuch an one, and his *anceſtor*; and the latter to a body politic or corporate, as a biſhop, and his *predeceſſors*.

Ancestor, *diſability by the act of*; ſee **Disability**.

ANCESTREL, in *Law*, ſomething relating to a man's anceſtors.—Thus,

Ancestrel, *homage*, ſignifies homage that hath been done or performed by one's anceſtors.

Ancestrel, *action*; ſee **Action**.

ANCHILOPS, from αγκυλη, *contraction*, and ωψ, *eye*; in *Medicine*, denotes an abſceſs, or collection of matter between the great angle of the eye, and the noſe.

The ſame abſceſs when broken is no longer denominated *anchilops*, but **Ægilops**.

Strictly ſpeaking, the *anchilops* is only a tumour not yet exulcerated; nor is the tumour always within the *ſaccus lacrymalis*, but ſometimes only near it.

If the *anchilops* be ſuffered to remain too long, or be unſkilfully managed, it degenerates, the ſtagnating humours corrupt, and an ulcer is produced.

It makes a ſpecies, or rather a degree, of the **Fistula** *lacrymalis*.

Care muſt be had to examine ſtrictly, whether the abſceſs opens into the lacrymal bag, or whether it be only ſuperficial, between the ſkin and the orbicular muſcle. In the latter caſe, there is no occaſion to fear its changing to a *fiſtula*, if the matter be not lodged between the bag and the muſcle.

When the tumour is broke, and the tears flow involuntarily, whilſt the *os lacrymale* is not carious, it is an *ægylops*; but when the ulcer is of a long ſtanding, deep, fetid, and the *os lacrymale* becomes carious, it is a **Fistula**.

The *anchilops* is ſometimes attended with an inflammation, and then reſembles a **Phlegmon**; but when not inflamed, it approaches nearer to thoſe tumours called *atheromata*, *ſteatomata*, and *melicerides*.

Its cure is by reſtriction and exciſion; tying it at the root on the *glandula lacrymalis*; and when ready, cutting it off.

ANCHIROMACUS, in *Middle Age Writers*, denotes a kind of veſſel, which, on account of its nimble ſailing, was uſed for the conveyance of anchors, and other neceſſary utenſils of ſhips.

In this ſenſe, the word is alſo written *ancyromagus*, *anchiromachus*, *ancyromacus*, *angromagus*, *anquiromagus*, and *anguiromagus*.

ANCHOR, **Anchora**, an inſtrument uſed at ſea, and in rivers, to retain and faſten a veſſel by.

The word comes from the Latin *ancora*, or *anchora*, of the Greek αγκυϱα, which comes from αγκυλος, *incurvus*, *crooked*.

An *anchor* is a large, ſtrong piece of iron, crooked at one end, and formed into two barbs, reſembling a double hook; and faſtened at the other end by a cable.

The goodneſs of the *anchor* is a point of great importance; the ſafety and conſervation of the veſſel depending principally upon it.—Great care is to be taken, that the metal it is made of be neither too ſoft, nor too brittle; the latter rendering it liable to break, and the former to ſtraiten.

Anchors, *method of making*. The ſhank, arms, and flukes, are firſt forged ſeparately; then the hole is made at one end of the ſhank for the ring, which being alſo previouſly forged, is put into the hole of the ſhank, and the two ends ſhut together. After which the arms are ſhut to the ſhank, one after the other, and the *anchor* is finiſhed.

Proof is made of *anchors*, by raiſing them to a great height, and then letting them fall again on a kind of iron block placed acroſs for the purpoſe.—To try whether the flukes will turn to the bottom, and take hold of the ground, they place the *anchor* on an even ſurface, with the end of one of the flukes, and one of the ends of the ſtock reſting on the ſurface; in caſe the *anchor* turns, and the point of the fluke riſes upwards, the *anchor* is good.

Travellers tell us of people in the Indies who make uſe of wooden *anchors* in their navigation.—The inhabitants of the iſland of Ceylon, in lieu of *anchors*, uſe huge round ſtones; and, in other places, their *anchors* are a kind of machines of wood, loaden with ſtones. Sometimes bags of ſand have been made uſe of, but theſe chiefly obtained in rocky places, where *anchors* would not take hold.

In England, France, and Holland, *anchors* are made of forged iron; but in Spain they are ſometimes made of copper, and likewiſe in ſeveral parts of the South ſea.

The parts of an *anchor* are, 1. The *ring*, into which the cable is faſtened. 2. The *beam*, or *ſhank*, which is the longeſt part of the *anchor*. 3. The *arm*, which is that which runs down into the ground: at the end of which is, 4. The *flouke*, or *fluke*, by ſome called the *palm*; being that broad and piked part, with its barbs, like an arrow-head, which faſtens into the ground. 5. The *ſtock*, a piece of wood faſtened to the beam, near the ring, ſerving to guide the fluke, ſo that it may fall right, and fix in the ground.

The firſt *anchors* of iron had only a fluke on one ſide.

The contrivance was completed by Eupalamius, who made them fluked both ways; though ſome aſcribe the honour of this to Anacharſis the Scythian.

All *anchors* have now two arms; not but they might ſtill be uſed with only one arm, which ſtructure would have this advantage, that they would be lighter, and yet in fine weather would hold equally firm with the double kind. The reaſon of having two arms is, that the *anchor* may always take, in order to which it is neceſſary that it be very heavy; beſides, that *anchors* with a ſingle arm would require more preparation for ſervice.

For the proportions of *anchors*, according to Manwaring, the ſhank is to be thrice the length of one of the flukes, and half the length of the beam. According to Aubin, the length of the *anchor* is to be four tenths of the greateſt breadth of the ſhip; ſo that the ſhank, e. gr. of an *anchor* in a veſſel thirty feet wide, is to be twelve feet long. When the ſhank is, for inſtance, eight feet long, the two arms are to be ſeven feet long, meaſuring them according to their curvity. As to the degree of curvity given the arms, there is no rule for it; the workmen are here left to their own diſcretion.

Aubin, in his Marine Dictionary, gives a table from a Flemiſh writer, wherein the lengths of the ſhanks of *anchors*, for veſſels of all widths, is computed, as well as the weights of the *anchors*, from a veſſel eight feet wide within, which requires an *anchor* $3\frac{1}{5}$ feet long, weighing thirty-three pounds; to a veſſel forty-five feet wide, which demands an *anchor* eighteen feet long, and weighing 5832 pounds.

He likewiſe obſerves, that the *anchor* of a large heavy veſſel is ſmaller, in proportion, than that of a leſſer and lighter one. The reaſon he gives, is, that though the ſea employs an equal force againſt a ſmall veſſel as againſt a great one, ſuppoſing the extent of wood upon which the water acts to be equal in both, yet the little veſſel, by reaſon of its ſuperior lightneſs, does not make ſo much reſiſtance as the greater; the defect whereof muſt be ſupplied by the weight of the *anchor*.

From theſe, and other hydroſtatic principles, the following table has been formed; wherein is ſhewn, by means of the ſhip's breadth within, how many feet the beam or ſhank ought to be long, giving it $\frac{4}{10}$ or $\frac{2}{5}$ of the ſhip's breadth within: by which proportion may be regulated the length of the other parts of the *anchor*. In this table is repreſented likewiſe the weight an *anchor* ought to be for a ſhip from 8 feet broad to 45, increaſing by 1 foot's breadth; ſuppoſing that all *anchors* are ſimilar, or that their weights are as the cubes of the lengths of the ſhanks.

Breadth of the Veſſel.	Length of the Anchor.	Weight.
Feet.	Feet.	Pounds.
8	$3\frac{1}{5}$	33
9	$3\frac{3}{5}$	47
10	4	64
11	$4\frac{2}{5}$	84
12	$4\frac{4}{5}$	110
13	$5\frac{1}{5}$	140
14	$5\frac{3}{5}$	175
15	6	216
16	$6\frac{2}{5}$	262
17	$6\frac{4}{5}$	314
18	$7\frac{2}{5}$	373
19	$7\frac{3}{5}$	439
20	8	512
21	$8\frac{2}{5}$	592
22	$8\frac{4}{5}$	681
23	$9\frac{1}{5}$	778
24	$9\frac{3}{5}$	884
25	10	1000
26	$10\frac{2}{5}$	1124
27	$10\frac{4}{5}$	1259
28	$11\frac{1}{5}$	1405
29	$11\frac{3}{5}$	1562
30	12	1728
31	$12\frac{2}{5}$	1906
32	$12\frac{4}{5}$	2097
33	$13\frac{1}{5}$	2300
34	$13\frac{3}{5}$	2515
35	14	2742
36	$14\frac{2}{5}$	2986
37	$14\frac{4}{5}$	3242
38	$15\frac{1}{5}$	3512
39	$15\frac{3}{5}$	3796
40	16	4096
41	$16\frac{2}{5}$	4426
42	$16\frac{4}{5}$	4742
43	$17\frac{1}{5}$	5088
44	$17\frac{3}{5}$	5451
45	18	5832

M. Bouguer directs to take the length of the ſhank in inches, and to divide the cube of it by 1160 for the weight. The reaſon is obvious; becauſe the quotient of the cube of 201 inches, which is the length of an *anchor* weighing 7000lb. divided by the weight is 1160, and therefore by the rule of three, this will be a common diviſor for the cube of any length, and a ſingle operation will ſuffice.

M. Bouguer, in his *Traité de Navire*, gives the following dimenſions of the ſeveral parts of an *anchor*. The two arms generally form the arch of a circle, whoſe centre is three eighths of the ſhank from the vertex, or point where it is fixed, to the ſhank; and each arm is equal to the ſame length, or the radius; ſo that the two arms together make an arch of 120 degrees: the flukes are half the length of the arms, and their breadth two fifths of the ſaid length. With reſpect to the thickneſs, the circumference at the throat, or vertex of the ſhank, is generally made about the fifth part of its length, and the ſmall end two thirds of the throat; the ſmall end of the arms of the flukes, three fourths of the circumference of the ſhank at the throat. Theſe dimenſions ſhould be bigger, when the iron is of a bad quality, eſpecially if caſt iron is uſed inſtead of forged iron.

Veſſels that ſail on rivers have at leaſt one *anchor*; thoſe which ſail in the canals of Zealand, have two *anchors*; but thoſe which go to ſea have always three, four, or more.

There are three kinds of *anchors* commonly uſed: the *kedger*, the *grapnel*, and the *ſtream-anchor*.

The diſtinctions of *anchors* are taken from their uſe, and the proportion they bear in the ſhip, where they are employed; for that which in one ſhip would be called but a *kedger*, or *kedge*-ANCHOR, in a leſſer would be a *ſheet*-ANCHOR.

ANCHOR, *kedge*, is the ſmalleſt, which, by reaſon of its lightneſs, is firſt to ſtop the ſhip in *kedging* a river.

This is what the Dutch ſailors call *werp*-ANCHOR, the French *ancre a touer*. It ought to weigh 450 pounds.

The *grapnel* is an *anchor* for a ſmall ſhip or boat.

ANCHOR, *ſtream*, is a ſmall *anchor* faſtened to a ſtream-cable, wherewith to ride in rivers, and gentle ſtreams, and to ſtop a tide withal in fair weather.

ANCHOR, *ſheat*, or *ſheet*, is the biggeſt and ſtrongeſt, being that which the ſeamen call their laſt hope; never to be uſed but in great extremity.

This is what the Romans called *anchora ſacra*; the Dutch *plegt-anker*, and *ſtop-anker*; the French *maitreſſe-ancre*, or *grande-ancre*.

The other *anchors* are called by the name of the firſt, ſecond, and third *anchor*; by any of which the ſhip may ride in any ſeaſonable weather, ſea-gate, or tide.—Theſe are ſomething bigger one than another, and uſually when they ſail in any ſtreights, or are near a port, they carry two of theſe at the bow; in which reſpect they are alſo called by the name of firſt and ſecond bowers.

ANCHOR, *ſecond*, called by the Dutch *boeg-anker*, or *daagelyks-anker*, is that ordinarily made uſe of.

ANCHOR, *croſs*, called by the Dutch *tuy-anker*, or *vertuyanker*, and by the French *ancre d'affourche*, is a middling *anchor* thrown acroſs or oppoſite to another.—This ought to weigh 1500 pounds, or near as much as the ſecond *anchor*.

ANCHOR, *riding at*, in the *Sea Language*, the ſtate of a veſſel moored and fixed by her *anchors* at ſome proper ſtation.

Where a great number of veſſels are moored in the ſame port, care is to be taken by the pilots, or thoſe who have the command, that each ſhip be at a due diſtance from the reſt, to prevent their running foul of each other; alſo that they be neither too near, nor too far from land. The proper ſpace betwixt veſſels is, from two to three cables length.

ANCHOR, *dropping or let fall the*, otherwiſe called caſting *anchor*, imports the letting it down into the ſea.

In ſome caſes it is neceſſary to drop two *anchors* oppoſite to each other, one of them to keep the ſhip firm againſt the tide, or flow, the other againſt the ebb.

ANCHOR, *weighing*, imports the act of withdrawing, or recovering the *anchor* into the veſſel, in order for ſailing.

The *anchor* is ordinarily weighed, or recovered, by means of a CAPSTAN, or WINDLASS.

ANCHOR, *dragging*, is when the *anchor* gives way, or loſes its hold in the ground by the force of the wind, or ſea, and the veſſel drives from the place.

ANCHOR, *clearing the*, ſignifies the getting the cable off the fluke.

Generally alſo, when they let fall the *anchor*, they uſe this term, to ſee that the buoy-rope, nor any other ropes, hang about it.

ANCHOR, *fetching, or bringing home the*, denotes the weighing it in the boat, and bringing it aboard the ſhip.

The *anchor* is ſaid to come home, when the ſhip drives away with the tide or ſea.—This may happen, either becauſe the *anchor* is too ſmall for the burden of the ſhip, or becauſe the ground is ſoft, and oozy; in ſuch places ſhoeing is uſed.

ANCHOR, *ſhoeing the*, denotes putting boards on the flukes, in the form of flukes themſelves, to make it broader than before, uſed when they are obliged to *anchor* in bad ground, to prevent the ſhip from driving.

This is what the French mariners call *breder l' ancre*, and the Dutch *t' anker bekleeden*.

In ſome caſes they have been known to tallow the *anchors*, where the ground being ſoft, the ordinary would not hinder them from coming home. Manwaring ſaw an inſtance of tallowing the *anchor* in Porto Tareen by Tunis. The reaſon of the advantage is hard to aſſign; he ſuppoſes it to be, that the tallow ſinks deeper into the ooze, and finds ſome harder ground at the bottom, than the other.

Other terms and words of command relating to the *anchors* are, *the anchor is a peeke*, that is, when heaving up the *anchor*, the cable is right perpendicular betwixt the hawſe and the *anchor*: *the anchor is cock-ball*, when the *anchor* hangs right down by the ſhip's ſide: this word is given by the maſters, when they are ready to bring the ſhip to an *anchor*: *the anchor is foul*, that is when the cable, by the turning of the ſhip, is hitched, or got about the fluke; which will not only cut the cable aſunder, but hinder the *anchor* from holding.

On this account, when they come to an *anchor* where there is a tide, they lay out two *anchors*, by which means on the turning of the tide the ſhip winds up clear of either.

Anchor, in *Architecture* and *Sculpture*, denotes an ornament in form of an *anchor*, or arrow's-head; frequently carved on the ovolo of the capital, in the Tuſcan and Ionic orders, as well as in the bed-moulding of Ionic and Corinthian corniches.—See *Tab. Archit. fig.* 10.

The *anchors* are uſually intermixed with repreſentations of eggs; whence the *echinus*, or ovolo itſelf, is popularly called *eggs* and *anchors*.

Anchor, *anchora*, in *Literary Matters*, the figure of an *anchor*, repreſented in ancient books; which is of two kinds, *ſuperior* and *inferior*. The *ſuperior*, &c. is where the crooked part is uppermoſt, uſed to denote a thing or paſſage ſtrongly expreſſed.

The *inferior* is where the crooked part is at the bottom, to denote a thing poorly or meanly ſet forth.

Anchor is alſo uſed, in a leſs proper ſenſe, for any thing that holds another thing faſt, or prevents its driving.

In this ſenſe, ſea-muſcles are ſaid *to ride at anchor*, by a ſort of threads the thickneſs of a large hair, which they emit out of the body, to the number ſometimes of a hundred and fifty, which faſtening to the ſtones and other adjacent bodies, keep them firm in their place.—The ſame is done by the PINNA *marina*.

Anchor, in *Heraldry*, is the emblem of Hope; and is taken for ſuch in a *ſpiritual*, as well as in a *temporal* ſenſe.

Anchor, a meaſure. See Anker.

ANCHORAGE, ground fit to hold a ſhip's *anchor*, ſo that ſhe may ride ſafely.

The beſt ground for a ſhip to anchor in is ſtiff clay, or hard ſand; and the beſt riding at anchor is when a ſhip is land-locked, and out of the tide.

Anchorage, in *Law*, denotes a duty taken of ſhips for the pool of the haven, where they caſt anchor.

The ground in all ports and havens being the king's, no man can let an anchor fall in any port, without paying for it to the king's officer appointed by patent.

ANCHORED, or Ankered, in *Heraldry*.—A croſs *anchored*, or *ancree*, is a form of croſs, ſo called, becauſe the four extremities reſemble the fluke of an anchor.

This croſs is ſo like the CROSS *molin*, that the reſemblance has occaſioned many miſtakes in heraldry.

ANCHOVY, in *Matters of Commerce*, &c. a little ſea-fiſh, much uſed by way of ſauce, or ſeaſoning.

The word is derived from the Spaniſh *anchova*, or rather from the Italian *anchioe*, which ſignifies the ſame.

Scaliger deſcribes the *anchovy* as of the herring kind, about the length of a finger, having a pointed ſnout, a wide mouth, and no teeth, but gums as rough as a ſaw.—Others make it a ſort of ſardine, or pilchard: but others, with better reaſon, hold it a peculiar ſpecies, very different from either.

The *anchovy* is caught in the months of May, June, and July, on the coaſts of Catalonia, Provence, &c. at which ſeaſon, it conſtantly repairs up the ſtraits of Gibraltar, into the Mediterranean. Collins ſays, they are alſo found in plenty on the weſtern coaſts of England and Wales.

The fiſhing for them is chiefly in the night-time; when a light being put on the ſtern of their little fiſhing-veſſels, the *anchovies* flock round, and are caught in the nets. But then it is aſſerted to have been found by experience, that *anchovies* taken thus by fire, are neither ſo good, ſo firm, nor ſo proper for keeping, as thoſe which are taken without fire.

When the fiſhery is over, they cut off the heads, take out their gall and guts, and then lay them in barrels, and ſalt them.—The common way of eating *anchovies* is with oil, vinegar, &c. in order to which they are firſt boned, and the tails, fins, &c. ſlipped off.—Being put on the fire, they diſſolve almoſt in any liquor. Or they are made into ſauce by mincing them with pepper, &c.

Some alſo pickle *anchovies* in ſmall delft, or earthen pots, made on purpoſe, of two or three pounds weight, more or leſs, which they cover with plaſter, to keep them the better. *Anchovies* ſhould be choſen ſmall, freſh pickled, white on the outſide, and red within. They muſt have a round back; for thoſe which are flat or large, are often nothing but ſardines. Beſide theſe qualities, the pickle, on opening the pots or barrels, muſt be of a good taſte, and not have loſt its flavour.

ANCHUSA, in *Botany*, called alſo *bugloſs* and *alkanet*, a plant of the *pentandria monogynia* claſs, of which the characters are: the flower is of one leaf, having a cylindrical tube; at the brim it is cut into five obtuſe ſegments, which ſpread open. The germen afterwards becomes four oblong, blunt ſeeds, ſhut up in the empalement.

It grows with us only in gardens, and flowers in June. The roots only are uſed. Parkinſon highly commends the infuſion of the bark in *petroleum*, as excellent in freſh cuts and green wounds. At preſent it is very little uſed.

The common *alkanet*, *anchuſa offic.* is brought from Languedoc and Provence; being the root of the *bugloſſum radice rubra, ſive anchuſa vulgatior*. The root is aſtringent, and proper in hæmorrhages of all kinds; it is employed to colour ointments, &c. It muſt be boiled in oil; for it does not readily communicate its tincture to water. The ancients uſed it as a coſmetic. See its hiſtory, as a colouring drug, in Neumann's Works, p. 337.

ANCHYLOBLEPHARON, from αγκυλη, *hardneſs*, and βλεφαρον, *eye-lid*; in *Phyſic*, a diſtemperature of the eye-lids, wherein they ſometimes cohere to each other, and ſometimes to the globe of the eye itſelf. This is eaſily diſtinguiſhable from the ſlight glewing up of the eye-lids occaſioned by the ſmall-pox, or other the like cauſes.

This diſorder is ſometimes brought with an infant into the world, ſometimes it comes upon adults by a fleſhy excreſcence from the angles of the eyes, and ſometimes it happens from accidents, as blowing up of gun-powder, and the like. This is always dangerous, and difficult of cure, but moſt ſo when the eye-lids grow to the *cornea*. They are to be divided by a blunt-pointed pair of ſciſſars, and when ſeparated from each other, it muſt be tried whether they adhere to the eye; if they do, they muſt be ſeparated with great caution with a blunt-pointed ſcalpel; but there is, in this caſe, great danger of injuring the ſight: when ſeparated, they muſt be kept from touching one another, to prevent their cohering again, by lint, or a plate of lead.

ANCHYLOPS, in *Medicine*; ſee Anchilops.

ANCHYLOSIS, Ancyle, or Ancylosis, in *Phyſic*, is when a juncture or articulation becomes immoveable.

The word is derived from αγκυλη, *a hardneſs* or *contraction of a joint*.

Anchyloſis bears an affinity to contractures, ſhrinkings, or witherings of the parts.

This ſymptom ſometimes happens in fractures near the joints, where the nutritious juice oozes into the cavities thereof.

This diſeaſe, when once formed, is incurable, but while yet freſh, is ſometimes removed by motion, friction, and the uſe of diſcutient medicines.

ANCI, in Greek γαλιαγκωνες, *weaſel-elbowed*, from γαλη, *a weaſel*, and αγκων, *an elbow*. So Hippocrates calls thoſe, who from ſlipping the head of the *os humeri* into the *ala*, have an arm ſhorter and ſmaller than it ought to be, and the cubit or elbow of a weaſel; whence they are called by ſome *muſtelani*, which fully expreſſes the Greek word, or barely *anci*. The diſorder that gives occaſion for the name, happens either in the womb, where the *os humeri* ſuffers a luxation, from too much moiſture; or in tender years, by means of an abſceſs deeply ſeated about the head of the *os humeri*.

ANCIENT, or Antient, in its uſual ſenſe, denotes a thing, which exiſted in times long ago.

The word comes from the French *ancien*, of the Italian *anciano*, and that of the Latin *antiquus*, which denotes the ſame.

In which ſenſe *ancient* ſtands oppoſed to *modern*.

Ancient differs from *antique* as the *genus* from its *ſpecies*.

We ſay *ancient* nations, *ancient* architecture, ſculpture, philoſophy, &c. *ancient* manner, ceremonies, poets, phyſicians, and the like.

Ancients, in *Church Diſcipline*; ſee Elders.

Ancients, in *Inns of Court*, imports a diſtinction of a certain degree.—Thus, the ſociety of Gray's Inn conſiſts of *benchers*, *ancients*, *barriſters*, and *ſtudents* under the bar: here the *ancients* are the elder barriſters.

In the inns of Chancery there are only *ancients*, and ſtudents, or clerks; and among the *ancients*, one is yearly the principal, or treaſurer.—In the Middle Temple, *ancients* are ſuch as have gone through, or are paſt their reading.

Ancient is ſometimes alſo uſed in a military ſenſe, for the colours, or an ENSIGN.

Ancient, in the *Naval Armament*, is the FLAG, or ſtreamer, borne in the ſtern of a ſhip.

Ancient *demeſne*, or *demain*, in *Law*, is a TENURE, whereby all manors belonging to the crown in William the Conqueror's, and St. Edward's time, were held.

The numbers, names, &c. hereof were entered by the Conqueror, in a book called *Domeſday Book*, yet remaining in the Exchequer; ſo that ſuch lands as by that book appeared to have belonged to the crown at that time, are called *ancient demeſne*.

The tenants in *ancient demeſne* are of two ſorts; one who hold their lands frankly by charter: the other by copy of court-roll, or by the verge, at the will of the lord, according to the cuſtom of the manor.

The advantages of this tenure are, 1. That tenants holding by charter cannot be rightfully impleaded out of their manor; and, when they are, they may abate the writ, by pleading the tenure. 2. They are free from toll for all things relating to their livelihood, and huſbandry; nor can be impanelled on any inqueſt.

Theſe tenants held originally by plowing the king's land, plaſhing his hedges, and the like ſervice, for the maintenance of his houſehold; and it was on this account that ſuch liberties were given them, for which they may have writs of *monſtraverunt* to ſuch as take the duties of toll, &c.

No lands are to be accounted *ancient demeſne*, but ſuch as are held in ſocage. Whether land be *ancient demeſne* or not, ſhall be tried by the Book of DOMESDAY.

Ancient *differences*, in *Heraldry*; ſee BORDURES.

ANCIENTY, in ſome *Ancient Statutes*, is uſed for elderſhip or ſeniority.

The elder ſiſter can demand no more than her other ſiſters, beſide the chief meſne, by reaſon of her *ancienty*. This word is uſed in the ſtatute of Ireland, 14 Hen. III.

ANCLABRIS, in the *Religion of the Ancient Romans*, denoted a table in temples, whereon the prieſts eat their portion of the ſacrifices and oblations.

ANCLE, *luxated*, in *Surgery*.—The *ancle* is ſubject to be luxated, either in running, in jumping, or even in walking; and that in all four directions, either inward or outward, backward or forward. When the *ancle* is luxated inward, the bottom of the foot is turned outward; and on the contrary, when it is luxated outward, the bottom of the foot is turned inward, which latter caſe is indeed much more frequent than the others. If it is diſlocated forward, the heel becomes ſhorter, and the foot longer than it ſhould be; and if backward, the contrary ſigns to theſe will appear. The *ancle* however can ſcarce poſſibly be luxated outwards, unleſs the *fibula* be ſeparated from the *tibia*, or elſe quite broken, which may happen to the external *ancle*; nor is it uncommon for a luxation of the *ancle* to be attended with very grievous ſymptoms, eſpecially when occaſioned by ſome great external violence. Nor can it indeed well happen otherwiſe in this caſe, ſince the diſtortion of the foot muſt neceſſarily overſtrain the adjacent tendons, ligaments, and nerves, and thence excite very violent pains, and other bad ſymptoms; or the veins and arteries may alſo be very eaſily lacerated, which will occaſion a large extravaſation of blood about the whole foot, and too often give riſe to a gangrene.

It is however neceſſary to obſerve, that the *ancle* is not always luxated, after it has been violently ſtrained by leaping, or turning the foot on one ſide; for it ſometimes happens that the *ancle* is not diſlocated on theſe occaſions, but only the parts violently contuſed and ſtrained. The *ancle*, when truly luxated, is more or leſs difficult to be reduced, according to the violence of the force by which the accident was occaſioned. The moſt ready way, however, of reducing a luxation of the *ancle*, is to place the patient upon a bed, ſeat, or table, letting the leg and foot be extended in oppoſite directions by two aſſiſtants, while the ſurgeon replaces the bones with his hands and fingers in their proper ſituation. When the foot is by this means reſtored to its proper poſition, it is to be well bathed with oxycrate and ſalt, and then carefully bound up with a proper bandage. The patient muſt be enjoined to keep his bed for a conſiderable time, till the bad ſymptoms are gone, and the *ancle* has recovered its ſtrength ſo far, as to bear the weight of the body, without any uneaſineſs or danger.

We have an account of the *menſes* regularly evacuated at an ulcer of the *ancle*, in the Medic. Eſſ. Edinb. vol. iii. art. 9.

ANCON, in *Anatomy*, denotes the curvation or flexure of the arm, whereon we reſt in leaning.

This is otherwiſe called OLECRANUM.

Ancon, in *Architecture*, is uſed to denote the corners or quoins of walls, croſs beams, or rafters.

Ancon alſo is uſed in the *Ancient Architecture*, to denote the two parts or branches of a ſquare, which meet in an angle reſembling the letter L.

Ancon is alſo uſed by Vitruvius, to denote a kind of *menſulæ*, or tables before doors, bent ſomewhat after the manner of *volutes*, ſo as to reſemble the letter S.

In this ſenſe, *ancones* amount to the ſame with what the Greeks call ϖροθυρίδες, *prothyrides*.

Ancon is particularly applied in the *Ancient Architecture*, to the brackets, or ſhouldering-pieces, called CONSOLES and CORBELLS by the moderns.

Ancon was alſo uſed by the Carthaginians, to denote a dark priſon or dungeon. Suidas mentions one of this kind, in which Gelimer uſed to put all who diſpleaſed him; from which Beliſarius delivered many merchants of the Eaſt, whom the tyrant intended to put to death.

Ancon is alſo applied to the angles or flexures of rivers; ſometimes alſo to the tops of mountains.

ANCONÆUS *Muſculus*, in *Anatomy*, the ſixth muſcle of the elbow ſo called, as being ſituate behind the folds of the *ancon*, or elbow.—See *Tab. Anat.* (*Myol.*) *fig.* 7. *n.* 46.

It ariſes from the back part or the extremities of the *humerus*, paſſes over the elbow, and is inſerted into the lateral and internal part of the *cubitus* about three or four fingers breadth above the *olecranum*.—Its uſe is to aſſiſt in extending the arm.

Some anatomiſts make the following diſtinctions, according to Winſlow.

Anconæus *externus*, a long muſcle, lying on the outer part of the back-ſide of the os *humeri*, from its neck to the external condyle.

Anconæus *internus*, a muſcle ſhorter, and more fleſhy than the *anconæus externus*, and lying towards the inner part of the lower half of the os *humeri*.

Anconæus *major*, a long fleſhy muſcle lying on the back-ſide of the os *humeri*.

Anconæus *minor*, a ſmall muſcle obliquely triangular, lying in the oblong *foſſula* on the outſide of the *olecranum*.

ANCONY, in the *Iron Mines*, a bloom wrought into the figure of a flat IRON bar, about three feet long, with two ſquare rough knobs, one at each end.

The proceſs for bringing the iron to this ſtate is this: they firſt melt off a piece from a ſow of caſt iron, of the proper ſize; this they firſt hammer at the forge into a maſs of two feet long, and of a ſquare ſhape, which they call a *bloom*; when this is done, they ſend it to the finery, where, after two or three heats and workings, they bring it to this figure, and call it an *ancony*. The middle part beat out at the finery is about three feet long, and of the ſhape and thickneſs the whole is to be; this is then ſent to the chafery, and there the ends are wrought to the ſhape of the middle, and the whole made into a BAR.

ANCREE, in *Heraldry*, the ſame with ANCHORED.

ANCTERES, in the *Ancient Medicine*, ſeem to have been the ſame, at leaſt to have anſwered the ſame uſes, as our SUTURES.

Some alſo ſpeak of a ſtrong kind of ſticking plaſter under this denomination.

ANCTERIASMUS, in *Medicine*, the operation of applying a *fibula* to cloſe the too patent lips of wounds.

This is alſo called by Latin writers, *infibulatio*.

Ancteriasmus is more particularly uſed to denote the paſſing a *fibula* through the prepuce of the ancient ſtage-players and buffoons.

ANCUBITUS, among *Ancient Phyſicians*, denotes a diſeaſe of the eyes, wherein there is an appearance of ſand, or little ſtones ſprinkled on them.

This is otherwiſe called PETRIFICATION.

ANCUS, a name for ſuch as have an arm bent crooked, ſo that they cannot extend it.

ANCYLE, in *Antiquity*, denotes a ſmall kind of brazen ſhield, ſaid to have fallen from heaven into the hands of Numa Pompilius, at the ſame time that a voice was heard, that Rome ſhould be miſtreſs of the world, while ſhe preſerved that ſhield.

Though there was but one *ancyle* that fell from heaven, yet were there twelve preſerved; Numa, by the advice, as it is ſaid, of the nymph Egeria, having ordered eleven others, perfectly like the firſt, to be made by Veturius Mamurius, that if any ſhould attempt to ſteal it, as Ulyſſes did the Palladium, they might not be able to diſtinguiſh the true *ancyle* from the falſe ones.

Theſe *ancylia* were preſerved in the temple of Mars; and were committed to the care of twelve prieſts, or *ſalii*, inſtituted for that purpoſe.

They were carried every year, in the month of March, in proceſſion all around Rome; and the thirtieth day of that month they were again depoſited in their place.

Ancyle; ſee ANCHYLOSIS.

ANCYLOBLEPHARON, *inviſcatio*, or *adglutinatio palpebrarum*, a diſeaſe wherein the eye-lids are ſtuck faſt, or glued together.—The cure is by manual operation.

ANCYLOGLOSSUS, ανκυλογλωσσος, one that is tongue-tied, or has an impediment in his ſpeech, ariſing from a contraction of the *frænum* of the tongue.

This diſeaſe is alſo called *ancyloglоſſum*, which is either *natural*, i. e. born with the infant, or *accidental*, occaſioned uſually by ſome ulcer under the tongue, which leaves behind it a hardneſs, or *eſchar*. It is the common opinion of midwives, that none are born without this infirmity; and hence one of the firſt things after a birth, is to cut the ſtring of the infant's tongue.

The effect of the *ancyloglоſſum* is not only to hinder the uſe of ſpeech, but in children it alſo diſables them from ſucking. The cure is performed by a careful ſection of the *frænum*, ſo as not to hurt the nerves, or other veſſels. This operation is never to be performed, where the infant is able to thruſt its tongue ſtraight out of the mouth. Fabricius ab Aquapendente complains ſeverely on the officiouſneſs of midwives, who, without ever examining the condition of the *frænum*, practiſe the operation promiſcuouſly on all infants, from an opinion, that without it the child would never be able to ſpeak. But, according to this author, there is ſcarce one child in 100,000 in whom this ligament needs any cutting at all. In ſome parts of Italy the midwives nouriſh a long nail on their right thumb, which is faſhioned after the manner of a knife's point, wherewith, as ſoon as the child is born, they cut the ligament. In other places, from a vain opinion that there is ſomething malignant in the nail, the operation is performed with the edge of a piece of money.

The operation is painful to the infant, and is ſometimes followed by inflammations, and even death itſelf.

ANCYLOME, αγκυλομηλη, from αγκυλος, *crooked*, and μηλη, a *probe*. A ſurgeon's crooked probe, or a probe with a hook.

ANCYLOSIS, ſee ANCHYLOSIS.

ANCYROIDES, αγκυροειδης, is uſed by ſome writers in *Anatomy* for the proceſs or ſhooting forth of the ſhoulder-bone, in form of a beak; otherwiſe called *caracoides*.

ANDA, *G. Piſon*; is a tree of Braſil, the wood of which is ſpungy and light; the leaf longiſh, fibrous, and pointed; the flower large and yellow; and the fruit a grey nut, which encloſes, under a double rind, two kernels of the taſte of cheſnuts. The fruit is ſaid to be purgative, and a little emetic: two or three of the kernels are a doſe. They extract oil by expreſſion from theſe kernels, with which the natives anoint their limbs. The rinds of the fruit are eſteemed proper to ſtop a looſeneſs; thrown into ponds, they kill the fiſh.

ANDABATÆ, in *Antiquity*, a kind of GLADIATORS, who fought hoodwinked; having on a ſort of helmet that covered the eyes, and even the face.

They were called *andabatæ*, *quaſi* αναϐαται, *aſcenſores*, becauſe they fought mounted on horſeback, or out of chariots.

Some ſay, the *andabatæ* fought in the dark, or late at night, after the *circenſia* were over. There were two men in the chariot, viz. the driver, or *auriga*, and the παραϐατης, who was alſo called αναϐατης, q. d. *adſcenſor*, or *mounter*; whence, by corruption, the Latins formed their *andabata*.

It has been diſputed among critics, whether the *andabatæ* were a people who actually fought blindfold, in their wars, or a ſet of combatants who only practiſed this method of fighting for exerciſe ſake.

ANDELANGA, in *Middle Age Writers*, occurs as part of the *formula* of divers donations.

In this ſenſe, we meet with *donare per andelangam & feſtucam*, *vendere & tradere per andelangam*, &c. Some will have the term properly to denote what we call an *andiron*; others a long ſtaff, or rod, which it is known was much uſed in the act of putting into poſſeſſion.

The word is ſometimes alſo written *andelangus*, *andelago*, *andilago*, or *andalagus*, &c.

ANDENA, in *Ancient Writers*, denotes a ſwath in mowing.

The word is likewiſe uſed to ſignify as much ground as a man can ſtride over at once.

ANDERENÆ, *ſal*, in *Natural Hiſtory*, a name given, by many of the old writers, to the nitre of the ancients, or NATRON. Some have, ſince their time, applied it to our common nitre; and it has been wondered at, that the accounts do not agree with the ſubſtance. But it is to be obſerved, that the nitre, or *natron*, of the ancients, is a fixed ſalt, approaching to the nature of *pot-aſh*, and not at all inflammable with ſulphur, as our nitre is. It is therefore no wonder if the things related of the one ſhould not be found to agree with the other.

ANDIRA, or ANGELYN, in *Botany*, *G. Piſon*; a tree in Brazil, the wood of which is hard, and proper for building. Its bark is of an aſh-colour; its fruit is of the ſhape and ſize of an egg, green at firſt, but growing blacker by degrees. It is covered with a hard rind, incloſing a grain, or yellowiſh kernel, of a bitteriſh, aſtringent taſte.

They pulverize this nut, and give it for worms; but not more than one ſcruple; for more than this is ſaid to be poiſonous.

ANDIRA, in *Zoology*, is an animal called alſo *andira-guacu*, a kind of bat in Braſil; the largeſt of which are as big as our pigeons: they call them horned bats, from a ſort of excreſcence, or pliant body, above their beak. Some of theſe are very dangerous; for they get into chambers in the night, and ſo ſubtilly open the veins in the feet of thoſe who are in bed, that they are not perceived but by the flowing of the blood, which is difficult to be ſtopped. The inhabitants reckon the tongue and heart of that animal among poiſons.

ANDIRIAR, in *Botany*, the name by which Rhaſes, and ſome others, expreſs the FABAGO.

ANDORINHA, in *Zoology*, a name by which the Portugueſe in the Braſils call the Braſilian ſwallow, more uſually known by its Braſilian name *tapera*.

ANDRACHNE, in *Botany*, ſee *Baſtard* ORPINE.

ANDRACHNE is alſo a name given, by the ancients, ſometimes to a tree of the ARBUTUS, or ſtrawberry-tree kind, and ſometimes to the herb PURSLAIN. Some of the later Latin writers have alſo called it *porcala*, and ſome of the later Greeks have called it *cairobotanon*.

ANDRAPODISMUS, in *Ancient Writers*, the ſelling of perſons for ſlaves.

Hence alſo *andrapodiſtes*, ανδραποδιστης, a *dealer in ſlaves*, more particularly a *kidnapper*, who ſteals men or children, to ſell them; a crime the Theſſalians were noted for.

ANDRAPODOCAPELI, in *Antiquity*, a kind of dealers in ſlaves. The *andrapodocapeli* had a particular proceſs of taking off moles, and the like disfigurements on the faces of the ſlaves they kept for ſale, by rubbing them with bran.

At Athens ſeveral places in the forum were appointed for the ſale of ſlaves. Upon the firſt day of every month, the merchants brought them into the market, and expoſed them to ſale, whilſt the crier ſtanding upon a ſtone erected for that purpoſe, called the people together.

ANDREW, *Knights of St. Andrew*, or the thiſtle. See THISTLE.

Knights of St. Andrew, is alſo an order inſtituted by Peter the Great of Muſcovy, in 1698; the badge of which is a golden medal, on one ſide of which is repreſented St. Andrew's croſs, and on the other, are theſe words, *Czar Pierre, monarque de tout la Ruſſia*. This medal being faſtened to a blue ribbon, is ſuſpended from the right ſhoulder.

ANDREW'S *Croſs*, is a badge worn in the hat, by the people of Scotland, on the day of the feaſt of that ſaint.

It conſiſts of blue and white ribbands, diſpoſed into a croſs, or *ſaltier*; and is intended as a commemoration of the crucifixion of St. Andrew, the tutelary ſaint of Scotland.

ANDRIA, in *Antiquity*, a name given by the Cretans to the public entertainments, at which whole cities, tribes, or other bodies of men, were preſent.

The hall, or place of eating, where theſe entertainments were held, was denominated *andrion*, in the uppermoſt part of which was a conſtant table ſet apart for ſtrangers.

ANDRIA is alſo uſed by ſome naturaliſts, to denote a *ſpecies* of hermaphrodite, wherein the female ſex has the predominancy.

ANDRODAS, in *Ancient Writers*, denotes the ſixty-third year of man's life.

This is otherwiſe called *annus Ægyptius*, and *climacter magnus*.

ANDROGYNA, in *Botany*, plants bearing male and female flowers on the ſame root.

ANDROGYNUM, in *Eccleſiaſtical Writers*, is uſed to denote *matrimony*, or even one of the parties married.

ANDROGYNUM, *balneum*, denotes a bath common to both ſexes.

ANDROGYNUS, or ANDROGYNOUS, an HERMAPHRODITE, or one born with two ſexes, being male and female in the ſame perſon.

The word comes from ανδρογυνος, a compound of ανηρ, *man*, and γυνη, *woman*, q. d. *man-woman*.

The aſtrologers alſo give the appellation *androgynous* to ſuch of the planets as are ſometimes hot, and ſometimes cold; as mercury, which is reputed hot and dry when near the ſun, and cold and moiſt when near the moon.

ANDROIDES, an AUTOMATON, in the figure of a man; which, by virtue of certain ſprings, &c. duly contrived, walks, and performs other external functions of a man.

The word is compounded of ανηρ, ανδρος, *man*, and ειδος, *form*.

Albertus Magnus is recorded as having made a famous *androides.*

ANDROLEPSY, Androlepsia, in *Antiquity.*—If an Athenian were killed by a citizen of ſome other place, and ſuch city refuſed to deliver up the criminal to puniſhment, it was held lawful to take three inhabitants of that city, and puniſh the homicide in them.—This the Greeks called *androlepſia*, and the Romans CLARIGATIO. The word is formed of *ανηρ, man*, and *λαμϐανω, capio, I take.*

Some authors alſo uſe *androlepſia* for REPRISALS.

ANDROMACHI *theriaca*, or *treacle of* ANDROMACHUS, in *Pharmacy*, is a capital alexipharmic compoſition; called alſo *Venice Treacle.*

ANDROMEDA, in *Aſtronomy*, a conſtellation of the northern hemiſphere, repreſenting the figure of a woman chained.

It is ſuppoſed to have been formed in memory of *Andromeda*, daughter of Cepheus and Caſſiopeia, and wife of Perſeus, by whom ſhe had been delivered from a ſea-monſter, to which ſhe had been expoſed to be devoured for her mother's pride. Minerva tranſlated her into the heavens.

Dr. Hook thinks he has diſcovered the hidden meaning of the ſtory of *Andromeda.* Vid. Poſt. Works, p. 401.

The ſtars in the conſtellation *Andromeda*, in Ptolemy's catalogue are twenty-three, in Tycho's twenty-three, in Hevelius's forty-ſeven, in Mr. Flamſtead's no leſs than ſixty-ſix.—They are as follow.

Situation of ſtars.	Bayer's Char.	Signs	Longitude			Latitude			Magnitude
			°	′	″	°	′	″	
Preceding thoſe in the right hand.		♈	3	39	27	43	45	38 N	3·4
			3	57	22	44	3	8	6
			10	21	16	49	53	26	6
			7	53	15	46	35	5	6
			10	21	9	48	56	23	6
5.									
			6	15	11	43	57	5	6·7
			11	26	45	48	34	11	5·6
			12	8	29	47	45	17	6
			6	36	29	41	39	54	6
			7	8	12	41	46	32	6·7
10.									
			12	9	27	47	15	55	6
			4	44	16	38	20	45	6
			9	15	12	41	46	59	6
			7	38	10	38	14	42	6
			9	1	14	38	46	4	6
15.									
In the right hand	λ		14	0	43	43	48	34	4
	ι		11	47	25	41	1	26	4
			17	32	35	46	55	32	6
			13	0	16	41	43	6	4
	ψ		15	39	13	42	56	29	5·6
20.									
Inhead, and navel of Pegaſus	α		9	58	53	25	41	1	2
			20	9	52	40	24	33	5
			17	34	35	35	46	13	6
In the right arm	θ		16	51	54	33	22	53	4·5
	σ		16	3	52	31	35	56	5
25.									
			14	33	36	28	54	15	6
	S		17	16	50	32	23	11	5
			14	59	3	24	11	42	6
In the right ſhoulder	π		18	19	47	27	8	28	4·5
In the left ſhoulder	ε		16	37	2	23	0	57	4
30.									
Between the 2 ſhoulders	δ		17	28	14	24	20	35	3
			22	13	13	31	51	36	6
			23	31	40	33	20	44	*Neb.*
In the left arm	ζ		16	16	29	17	35	51	4
Under the girdle	ν		24	48	52	32	33	13	4
35.									
			17	40	58	16	19	35	6
			24	48	45	29	39	20	4·3
In the elbow of the left arm	η		18	6	8	15	55	19	4·5
			27	35	23	31	40	9	6
			22	54	41	23	3	47	6
40.									
	d		29	58	16	33	33	13	5
In the right knee	φ	♉	2	8	1	36	20	21	5
Under the girdle	β	♈	26	2	44	25	56	19	2
			29	26	27	31	41	40	6
			27	24	8	27	42	18	5·6
45.									
		♉	3	33	44	33	47	50	4·5
		♈	29	54	29	26	39	3	6
		♉	4	28	45	33	17	31	5
In the train	ξ		5	49	27	34	30	55 N	5
In the left ham, northerly	υ		4	16	27	28	58	21	6.5
50.									
In the right foot S. of Perſeus	υ		8	8	36	35	23	45	5
In the train	λ		6	11	26	31	27	43	6
In the left ham, ſoutherly	τ		4	36	1	27	54	6	5
In the right N. foot of Perſeus	φ		10	18	13	36	49	13	4
			7	9	40	27	4	8	*Neb.*
55.									
			6	13	5	23	39	13	6
Above the left foot	γ		9	55	44	27	46	7	2.3
			8	56	41	23	18	11	6
			9	54	32	24	13	24	6
	b		12	32	20	28	52	35	6
60.									
			15	27	48	32	48	36	6
	c		15	4	19	31	22	28	6
			16	38	31	33	49	31	6
			17	11	58	33	28	27	6
			17	52	19	33	38	50	5
65.									
		♉	18	4	41	33	47	35	6.7

Andromeda, in *Botany*, of the *decandria monogynia.* We have no Engliſh name for this plant. The characters are, that the empalement of the flower is cut into five ſmall acute ſegments. The flower is of one leaf, oval, and bell-ſhaped, and is divided into five parts at the brim, which are reflexed. It hath ten ſtamina; the germen afterwards turns to a round, pentagonal veſſel, having five cells, which are filled with ſmall round ſeeds. Mr. Miller enumerates five ſpecies, moſt of which are natives of America.

Andromeda, in *Middle Age Writers*, denotes a kind of garment made of rams-ſkins.

ANDRON, or Andrum, in *Antiquity*, an apartment in houſes aſſigned for the uſe of the men. This was otherwiſe denominated *androna*, and *andronitis.*

The *andron* ſtood oppoſed to the GYNECÆUM, or apartment of the women.

The Greeks alſo gave their dining-rooms the title *andron*, becauſe the women had no admittance to feaſts with the men.

ANDRONA, in *Ancient Writers*, denotes a ſtreet, or public place, where people met and converſed together.

In ſome writers *androna* is more expreſly uſed for the ſpace between two houſes. In which ſenſe, the Greeks alſo uſe the term *ανδρωνας*, for the way or paſſage between two apartments.

The word is ſometimes alſo written *andra, andrion*, and *andronium.*

Androna is alſo uſed, in *Eccleſiaſtical Writers*, for that part in churches deſtined for the men. Anciently it was the cuſtom for the men and women to have ſeparate apartments in places of worſhip, where they performed their devotions aſunder; which method is ſtill religiouſly obſerved in the Greek church.

The *ανδρων*, or *androna*, was in the ſouthern ſide of the church, and the womens apartment on the northern.

ANDRONION, in *Phyſic*, the name of a paſtil, invented by an ancient phyſician named Andro, ſaid to have been of great efficacy againſt the carbuncle and HERPES.

Its ingredients, according to Ægineta's preſcription, are the *ſquamæ* of copper, *æs uſtum, ſal armoniac, alumen rotundum*, ſhavings of verdigris, and frankincenſe, all wrought up with wine. Celſus gives another recipe, and Aetius a third.

ANDROPHAGI, among *Ancient Geographers*, denotes man-eaters.

Theſe are more uſually called *anthropophagi.*

Herodotus, and Pomp. Mela, ſpeak of a nation of *androphagi* in Scythia.

ANDROPOGON, in *Botany*, a genus of the *polygamia monoecia.*

ANDROSACE, in *Botany.* We have no Engliſh name for this plant. The characters are, that the flowers grow in an umbel ſet in an involucrum, and is divided into five parts. It hath five ſmall ſtamina within the tube, the empalement afterward becomes a round capſule of one cell, which is full of round ſeeds. It is of the *pentandria monogynia* claſs.

Mr. Miller enumerates three ſpecies.

The *androſaces* approach much to the nature of the auricula, but differs from the ſtructure of the flower.

Androſace is ſo called, from its bringing relief to men, q. d. *ανδρι ακος φερυσα.* It is aperitive, and good for the dropſy, for retention of urine, and for the gout.

ANDROSÆMUM, in *Botany*. See *St.* JOHN'*s Wort.*

ANDROTOMY, or ANDRATOMY, the *anatomy* or DISSECTION of human bodies.

It is thus called in oppoſition to *zootomy*, which is uſed to denote that of brutes.

Anatomy is the *genus*, and comprehends all diſſections in general, whether of men, beaſts, or plants; and *androtomy* and *zootomy* are the *ſpecies.*

ANDRUM, in *Phyſiology*, a local diſeaſe, epidemical among the people of Malabar, being a peculiar ſpecies of *hydrocele*, or watery tumour of the *ſcrotum.*

The *andrum*, in the language of the country, is alſo called *perical*; ſometimes paraphraſtically, *andu wajaku*, q. d. *a popular water rupture.*

Its origin is derived from the vicious quality of the country waters, impregnate with corroſive muriatic ſalts, the ſource of moſt other diſeaſes that effect the Malabarians.

Its ſigns, or ſymptoms, are an eryſipela of the *ſcrotum*, returning every new moon, by which the lymphatics being eroded, pour a ſerous ſaline humour into the cavity of the *ſcrotum.*

The *andrum* is incurable; thoſe once ſeized with it, have it for life; but it is not dangerous, nor very troubleſome, to thoſe uſed to it; though ſometimes it degenerates into a hydroſarcocele.

The means of prevention is by a heap of ſand fetched from a river of the province Mangatti, and ſtrewed in the wells. This is practiſed by the rich. As to the cure, they have only a palliative one, which is by inciſion, or tapping and drawing off the water from the *ſcrotum*, once in a month or two.

ANDRYALA, in *Botany*, of the *ſyngeneſia polyg. æqual.* 820. Downy SOW-THISTLE. The characters are, that it hath a ſhort round hairy empalement; the flowers are compoſed of many hermaphrodite flowers, which are uniform and of one leaf, ſtretched out like a tongue on one ſide. The germen is ſituated at the bottom of each floret; and becomes afterward, a ſingle oval ſeed, crowned with a down.

Mr. Miller enumerates two ſpecies, which are natives of the ſouthern parts of Europe.

ANECDOTES, ANECDOTA, a term uſed by ſome authors, for the titles of *Secret Hiſtories*; but it more properly denotes a relation of detached and intereſting particulars.

The word is Greek, *ανεκδοτα*, q. d. *things not yet known*, or *hitherto kept ſecret.*

Procopius gives this title to a book which he publiſhed againſt Juſtinian, and his wife Theodora; and he ſeems to be the only perſon among the ancients, who has repreſented princes ſuch as they are in their domeſtic relation.—Varillas has publiſhed *anecdotes* of the houſe of Medicis.

ANECDOTES is alſo an appellation given to ſuch works of the ancients as have not yet been publiſhed.

In which ſenſe, M. Muratori gives the name *Anecdota Græca* to ſeveral writings of the Greek fathers, found in the libraries, and firſt publiſhed by him.—F. Martene has given a *Theſaurus Anecdotarum Novus*, in folio, 5 vols.

ANEE, in *Commerce*, denotes a corn-meaſure, uſed in ſome provinces of France, particularly in Languedoc and Maconnois.

It is otherwiſe called *aſnee.*

The *anee* is not ſo properly a meaſure, as a denomination, or aſſemblage of a certain number of other meaſures.

The *anee* at Lyons conſiſts of ſix *bichets*, equal to one *ſeptier* and three buſhels, Paris meaſure. At Macon, the *anee* is ſomewhat more.

ANEE is alſo uſed for a quantity of wine, ſuppoſed to be an aſs's load; and is fixed to eighty pots.

ANELE, or ANIL, the ſame with *indigo.* 23 El. cap. 9.

ANEMIUS *furnus*, among *Chemiſts*, a wind-furnace; uſed to make fierce fires for melting, &c.

The word is formed of *ανεμος*, *wind.*

ANEMOMACHIA, in ſome *Ancient Writers*, denotes a whirlwind, or hurricane.

In which ſenſe, we ſometimes alſo meet with *anomozale*, *anemotaraxis*, &c.

ANEMOMETER, a machine wherewith to meaſure the ſtrength of the wind.

The word is compounded of *ανεμος*, *wind*, and *μετρον*, *meaſure.*

The *anemometer* is variouſly contrived. In the Philoſophical Tranſactions we have one deſcribed, wherein the wind being ſuppoſed to blow directly againſt a flat ſide, or board, which moves along the graduated limb of a quadrant, the number of degrees it advances ſhews the comparative force of the wind.

Wolfius gives the ſtructure of another, which is moved by means of ſails, A B C K (*Tab. Pneumatics, fig.* 17), like thoſe of a wind-mill; which raiſe a weight, L, that, ſtill the higher it goes, receding farther from the centre of motion, by ſliding along an hollow arm K M, fitted on to the axis of the ſails, becomes heavier and heavier, and preſſes more and more on the arm, till being a counterpoiſe to the force of the wind on the ſails, it ſtops the motion thereof. An index, then, MN, fitted upon the ſame axis at right angles with the arm, by its riſing or falling, points out the ſtrength of the wind, on a plane divided like a dial-plate into degrees.

It is objected to this machine, however, that it requires a conſiderable wind to make it work. Leutmannus has contrived another, wherein the ſails are horizontal, and are more eaſily driven about, and will turn what way ſoever the wind blows.

M. d'Ons en Bray invented a new *anemometer*, which of itſelf expreſſes on paper, not only the ſeveral winds that have blown during the ſpace of twenty-four hours, and at what hour each began, and ended, but alſo the different ſtrength, and velocities, of each. V. Mem. Acad. Scienc. an. 1734. p. 169.

ANEMONE, in *Botany*, wind-flower, a genus of the *polyandria polygynia* claſs. Its characters are, that the flower is naked, having no empalement, and conſiſts of two or three orders of leaves, or petals, which are oblong, and diſpoſed in three ſeries over each other. It hath many germens collected into a head, which afterward become ſo many ſeeds incloſed with a down, which adhere to the foot-ſtalk, and form an obtuſe cone.

Mr. Tournefort enumerates 168 ſpecies; Mr. Miller, however, mentions no more than 6.

The proper ſoil and culture of the many varieties of this beautiful flower are theſe: for the ſoil, take a quantity of freſh light ſandy loam, or hazel-earth from a common, or dry paſture, not dug above eight or ten inches deep; mix this with a third part its quantity of rotten cow-dung, and lay it up in a heap; turn this over at leaſt once a month, and every time pick out the ſtones and break the clods. After this mixture has been twelve months made, it will be fit for uſe.

The beds of this earth muſt be prepared in September, and ſhould be made eight inches deep, if it be in a wet ſoil; but if in a dry one, three or four inches will be ſufficient; three weeks after this has been laid in, ſtir it for ſix inches deep with a ſpade, and then with a ſtick draw lines each way of the bed, at four inches diſtance, ſo that the whole may be in ſquares; then make a hole three inches deep in the center of each ſquare, and plant a root in each; and when all are planted, rake the earth of the whole bed ſmooth, ſo as to cover the roots two inches thick. The ſeaſon of planting theſe roots for forward flowers, is the middle of September, and for the later in October: this is beſt done at a time when there are gentle rains. Some roots ſhould alſo be ſaved to be planted after Chriſtmas, for fear of accidents to the former from very hard weather.

Theſe uſually flower three weeks after thoſe planted in autumn. In the beginning of April the early planted roots will begin to flower, and they will keep in flower near a month, if the weather prove favourable, and they are properly ſhaded with mats, laid over hoops in the greateſt heat of the day: the ſecond, and laſt planted ones, will follow theſe; and, in the whole, there will be at leaſt two months fine flowering.

Toward the latter end of May the firſt planted roots will loſe all their leaves, and they muſt be then taken up and waſhed clean, and laid to dry on mats in the ſhade; after which they are to be put up in paper bags, and hung up till the time of planting them comes on again. The later planted ones are to be taken up alſo as ſoon as their leaves are decayed, and not ſuffered to remain to make new ſhoots; for then it is too late to remove them.

They are propagated two ways, either by dividing the roots, or by ſowing. The roots are to be divided as ſoon as they are taken up out of the ground: they will ſucceed if broken into as many parts as there are eyes or buds in them; but they flower moſt ſtrongly, if not parted too ſmall.

The way, by ſowing is this: chooſe firſt ſome good kinds of *anemones*, plant theſe early, and they will produce ripe ſeed three weeks after the flower firſt blows. This muſt be carefully gathered, and in Auguſt it ſhould be ſowed in pots or tubs, or a very well prepared bed of light earth, rubbing it between the hands with a little dry ſand, to prevent ſeveral of the ſeeds from clinging together, and ſpreading them as even as poſſible all over the bed; after this a light hair-bruſh ſhould be drawn many times over the ſurface of the bed, to pull aſunder any lumps of ſeed that may yet have fallen together; obſerving not to bruſh off the ſeed, and as much as poſſible not to bruſh it into heaps. When this is done, ſome light earth, about a quarter of an inch deep, ſhould be ſifted over the bed. If the weather be hot, the bed muſt be at times covered with mats laid hollow, and gently watered.

In about two months after ſowing, the plants will appear, if the ſeaſon has been favourable, and they are to be carefully defended from the hard froſts by proper covering, and from the heat of the ſun afterwards by a moveable reed-fence. As the ſpring advances, if the weather be dry, they muſt be gently watered, and when their green leaves decay, there muſt be a quarter of an inch more earth ſifted over them, and the like again at Michaelmas; and the bed muſt be kept clear from weeds, and the following ſpring they will flower.

The *anemones* are good for pains of the head, and for inflammations; help diſeaſes of the uterus, and procure milk into the breaſts. Taken in ptiſan, or applied to the part in wool, they provoke the menſes. The root, chewed in the mouth, draws out phlegm, and makes the teeth ſound; and the decoction thereof cures inflammations in the eyes.

All the *anemones* are acrimonious and deterſive, drawers, and endued with the faculty of opening the mouths of the veins.

Anemonies, *ſea*, a ſpecies of the ACTINIA, the hiſtory of which has been lately elucidated by the abbé Dicquemarre. He has already diſcovered four or five different ſpecies of them. They vary in their ſize, ſhape, and colour; but are generally found to reſemble a truncated cone, and many of them are of an uniform colour, whilſt others are ſpotted either in regular ſtripes, or in a more irregular manner. They are found adhering to rocks or ſtones in the ſand, or in oyſter-beds; and they are obſerved to ſtretch out their limbs and mouth, in order to lay hold of any thing that touches the ſurface of the ſand, &c. where they lie. This accurate obſerver could eaſily diſtinguiſh theſe animals from plants by their progreſſive motion, by the means they make uſe of to ſeize their prey, and to defend themſelves, by their deglutition, digeſtion, and evacuations, and alſo by the propagation of their ſpecies. He accordingly claſſes them among ſpontaneous animals.

The *anemonies* have a wonderful faculty of reproduction; for, by many experiments, M. Dicquemarre aſcertained this property, and he conjectures that it is owing to their gelatinous texture. Their limbs budded out ſucceſſively after ſeveral amputations. Nay, ſome of them were diſſected through the body; and the baſis, together with that part of the ſtump which was left ſurvived, projected new limbs, and the animal moved and eat bits of muſcles, which are its uſual nouriſhment. They appeared to bear a conſiderable degree of heat, and to live in a vacuum, at leaſt in a very rare air; and they require, for a very conſiderable time, no other food than what they find diſſeminated in ſea-water.

Anemonies are irritable to ſuch a degree, that light very much affects them, though to appearance they have no eyes; and by means of this property, the Abbé has made uſe of them for indicating the different changes of temperature in the atmoſphere; and he gives the following account of this new kind of *barometers.*—The ſea-water, in which the *anemonies* are placed, muſt be renewed every day, and this muſt be their only nouriſhment; and the obſervation ſhould be made at intervals equally diſtant from the renewals of the water. If the *anemonies* be ſhut and contracted, there is reaſon to apprehend an approaching ſtorm; that is, high winds, and a rough, agitated ſea. When they are all ſhut, but not remarkably contracted, they forebode a weather ſomewhat leſs boiſterous, but ſtill attended with gales, and a rough ſea. If they appear in the leaſt open, or alternately and frequently opening and cloſing, they indicate a mean ſtate both of winds and waves. When they are quite open, tolerably fine weather, and a ſmooth ſea, may be expected. And laſtly, when their bodies are conſiderably extended, and their limbs divergent, they ſurely prognoſticate fixed, fair weather, and a very calm ſea. The glaſs in which they are depoſited may be ſwung at ſea, in the ſame manner as the compaſs, ſo that the rolling of the ſhip may agitate the water as little as poſſible. Theſe animals are viviparous; for ſeveral of them brought forth eight, ten, and twelve young ones, in the hand. They feed upon wandering nettles, or ſea-jellies; and they are all fit for food. Upon being removed into freſh water, they acquire a pale colour, their coat becomes flabby, and they ſoon die. Phil. Tranſ. vol. lxiii. part 2. vol. lxv. part 2. and vol. lxvii. part 1. See ACTINIA, ANIMAL *flower*, URTICA *Marina*, &c.

ANEMONOSPERMOS, in *Botany*. See ARCTOTIS.

ANEMOSCOPE is ſometimes uſed for a machine invented to fortel the changes of the wind.

The word is derived from *ανεμος*, *wind*, and *σκεπτομαι*, *I conſider*.

It has been obſerved, that HYGROSCOPES made of cat's-gut, &c. prove very good *anemoſcopes*; ſeldom failing, by the turning of the *index* about, to foretel the ſhifting of the wind. See an account of two different *anemoſcopes*; one by Mr. Pickering. Phil. Tranſ. vol. xliii. part 2. p. 9. the other by Mr. Martin, in his Philoſ. Brit. vol. ii. p. 211.

The *anemoſcope* uſed by the ancients ſeems, by Vitruvius's deſcription of it, to have been intended rather to ſhew which way the wind actually blew, than to fortel into which quarter it would change.

Otto de Gueric alſo gave the title *anemoſcope* to a machine invented by him, to foretel the change of the weather, as to fair and rain.

It conſiſted of a wooden little man, who roſe and fell in a glaſs tube, as the atmoſphere was more or leſs heavy.—Accordingly, M. Comiers has ſhewn, that this *anemoſcope* was only an application of the common BAROMETER. See WIND.

The *anemoſcope* of Vœroe is famous. It is made of the bird *lunde*, whoſe feathers are picked, the ſkin ſtripped off, *viſcera* taken out, and the ſkin in this ſtate drawn anew over the bones, this being hung up in the chimney, is ſaid always to direct its bill to the point from whence the wind is like to blow. Ephem. Acad. N. C. Dec. 3. An. 9. App. p. 245.

ANETHUM, in *Botany*. See DILL.

ANETHUM, *aſhes of*, *cinis anethi*, are procured by mere conflagration. They are commended by Galen in humid ulcers, eſpecially about the *pudenda*.

ANETHUM, *water of*, *aqua anethi*, is procured from the leaves, while in flower, by diſtillation in *balneo mariæ*. It is accounted ſtomachic, carminative, and anodyne.

ANETHUM, *oil of*, is either procured by infuſion, or diſtillation. The former kind is preſcribed by Dioſcorides, as a proper emollient for diſorders of the privities; alſo a warm diſcutient, digeſtive, &c. The latter is held to be aromatic, ſtomachic, &c.

ANEURYSM, ANEURYSMA, in *Medicine*, a ſoft, throbbing, ruddy tumour, occaſioned by a dilatation, or by a wound of an artery.

The word comes from *ανευρυνω*, *dilato*, *I dilate*.

Surgeons diſtinguiſh two kinds of *aneuriſm*, which they call the true and the ſpurious. The true *aneuriſm* is formed by a dilatation only of the artery, either all round, or only on one ſide, much in the manner of the *varices* or tumours of the veins; this has always a pulſation.

This kind of *aneuriſm* is ſeldom fatal; though reckoned, when large, incurable; the chief inconveniencies are, the magnitude of the tumour, and the pulſation.

Mr. Littre gives us the hiſtory of an *aneuryſma* of this kind, in the *aorta*; the cauſe whereof he attributes to an extraordinary diminution of the cavity of the axillary and ſubclavian arteries. Hiſt. de l'Acad. Roy. an. 1712.

Another hiſtory of an *aneuryſma* of the ſame part we have, by Mr. Laſage, in the Philoſophical Tranſactions. It was occaſioned by ſome violent ſhocks the patient received on the breaſt, which threw him into ſpitting of blood, and ſoon after formed the tumour, whereof he died. Upon diſſection, the *aneuryſma* was found ſo big, that it filled the whole cavity of the thorax on the right ſide.

There is another remarkable hiſtory of an *aneuriſm*, in the London Medical Obſervations. There is alſo a remarkable caſe of the ſame kind, with an account of the uncertainty of diſcovering the ſymptoms of the diſeaſe, by Joſ. Warner, F. R. S. Phil. Tranſ. vol. l. part 1. N° 44. an. 1757.

The ſpurious *aneuriſm* is, when the artery having been opened by puncture or inciſion, or other accident, the blood is extravaſated between the muſcles and integuments, and the limb appears ſwelled and livid, and there is little or no pulſation. The moſt common ſeat of an *aneuriſm* is in the brachial artery, and its moſt common occaſion a puncture of that artery in bleeding; but the ſame accident may happen to any artery, and from various cauſes, and is often the caſe in the internal arteries, from falls, blows, and violent ſtrains; in the arm it often happens from the outer coat only of the artery having been cut in bleeding, and the inner one giving way by degrees, as not of ſtrength to bear the impulſe of the blood. Theſe are at firſt very ſmall, and diſregarded by the patient, but they grow at length to the ſize of an egg, and ſometimes even to that of a man's head.

The *aneuriſms* of the great internal arteries are the moſt fatal of all; thoſe of their external branches are often remedied, but thoſe in the arm frequently after the operation are attended with a waſting of the arm, and an amputation becomes neceſſary. The natural burſting of an *aneuriſm* is very dangerous, as the patient may be loſt in a minute's time, if the artery be not compreſſed above; ſometimes ſurgeons have alſo opened the larger *aneuriſms*, miſtaking them for abſceſſes.

The method of curing a ſlight *aneuriſm* in the arm, or elſewhere, is either by deligation and compreſſion, or by inciſion; the firſt ought always to be firſt tried, and is done either by ſtrait bandages with compreſſes, or by an engine invented for that purpoſe. Small *aneuriſms* are often thus cured; but when large and dangerous the operation by the knife muſt be uſed. In this the firſt care is to ſtop the courſe of the blood by the tournequet, the ſecond to denudate the artery, and free it from the adjacent integuments, and the laſt to contract or conſtringe it either by medicine or ligature.

The ſpurious *aneuriſm* is often produced by the burſting of the true kind, under the integuments, and in this caſe is to be treated as the true, and cured by the operation with the knife, and by ligature, or cauſtics; but in all theſe caſes, the ligature ſeems the beſt method.

When any part of an artery has loſt its ſpring, it is leſs capable than before to reſiſt the impulſe of the blood. This part of a canal, which is continually puſhed by the blood, muſt therefore become gradually more and more dilated; and by degrees there becomes formed in the part that ſort of tumour which ſurgeons and anatomiſts call an *aneuriſm* by dilatation, or the true *aneuriſm*; and this dilated part of the veſſel is, properly ſpeaking, a kind of bag through which the blood that firſt formed it is continually paſſing.

When an artery has been by any means wounded, the blood which eſcapes through the orifice cauſes another ſort of tumour; and this is called an *aneuriſm by wounding*, or a ſpurious *aneuriſm*. Heiſter.

The moſt common *aneuriſms* by wound happen from bleeding in the arm; in theſe, if the artery be but ſlightly wounded, and the bandage and compreſs properly applied, the cure is often performed, ſo that no farther miſchief enſues; but if the wound is larger, or the compreſſion leſs regular, bad ſymptoms come on ſooner or later, and there often is a neceſſity at laſt of ſubmitting to the operation of opening the ſkin, diſperſing the blood, and cloſing the veſſel. Mem. Acad. Scienc. Par. 1736.

Dr. Hunter, who has treated largely on this ſubject, divides *aneuriſms* into four kinds, the *true*, the *falſe*, the *mixed*, and the *varicoſe*. The *true aneuriſm* is formed by a dilatation of the artery, and may happen in any part of the body. The *falſe aneuriſm* is formed by a rupture, or wound, in the coats of the artery, and may be either *diffuſed* or *circumſcribed*. The *mixed aneuriſm* is formed partly by wound, or rupture, in the artery, and partly by dilatation.

The *varicoſe aneuriſm* is owing to the wound of an artery through a vein, ſo that the blood paſſes from the trunk of the artery into the trunk of the vein, and ſo back to the heart. See Lond. Med. Obſ. and Inq. vol. i. art. 26. vol. ii. art. 30 and 36. vol. iii. art. 37. 12.

If an artery happens to be cut, the blood guſhes out impetuouſly, by ſtarts, and is not eaſily ſtopped; and an inflammation and diſcoloration of the part ſucceeds, with a tumour, and inability to move the part. The ſymptoms are nearly the ſame in caſe of a corroſion of the coats of the artery; only in this caſe they are leſs violent.

If the blood ceaſe to flow from the wounded artery, and pour itſelf between the interſtices of the muſcles, recourſe is had to manual operation; which being neglected, the extirpation of the limb frequently becomes unavoidable. See caſes of *aneuriſms*, with remarks, by Dr. Donald Monro, in the third volume of Eſſ. Phyſ. and Liter. Edinb. 1771. art. 12. p. 178.

ANFELDTYHDE, or Anfealthile, in *Law*, a ſimple accuſation; for the Saxons had two ſorts of accuſation, viz. *ſimplex* and *triplex*. That was called ſingle, when the oath of the criminal, and of two more, were ſufficient to diſcharge him: but his own oath, and the oaths of five more, were required to free him *a triplice accuſatione*.

ANGARI, or Angarii, in *Antiquity*, denote public couriers, appointed for the carrying of meſſages.

The ancient Perſians, Budæus obſerves, had their αγγαρειον δρομημα, which was a ſet of couriers on horſeback, poſted at certain ſtages or diſtances, always in readineſs to receive the diſpatches from one, and forward them to another, with wonderful celerity, anſwering to what the moderns call poſts, q. d. *poſiti*, as being poſted at certain places or ſtages.

The *angari* were alſo called by the Perſians *aſtandæ*; by the Greeks ἡμεροδρομοι, on account of the long journies they made in one day, which according to Suidas amounted not to leſs than 1500 ſtadia.

Angari is alſo applied figuratively to porters, and others employed in laborious offices, as bearing burdens.

ANGARIA is uſed, in a general ſenſe, for any burden, or incumbrance, forcibly impoſed on perſons.

Some define *angariæ*, by perſonal ſervices, which a party is compelled to diſcharge in his own perſon, or to ſerve at his own expence.—Or, ſuch ſervices impoſed on lands, whereby a perſon is obliged to work for another, either with his horſe, his aſs, or the like.

Angaria, in the *Civil Law*, denotes a duty required of the ſubjects to furniſh out horſes and carriages for conveying of corn for the ſoldiers, and ſuch things as belonged to the *fiſcus*.

This duty goes by the name of *curſus publicus*, *angariæ*, *parangariæ*, *tranſlatio*, and *evectio*. The horſes uſed in this ſervice are particularly called *paraveredi*, and *equi curſuales*.

Angariæ are generally underſtood as excluſive of ſhip though on ſome occaſions theſe were preſſed into the ſervice for tranſporting proviſions and the like.

Angariæ differs from *parangariæ*, in that the former are confined to public or main roads, the latter to oblique or croſs-roads.

In the book of feuds, the performance of *angariæ* and *parangariæ* is ranked in the number of royal ſervices. Lib. ii. tit. 56.

Angaria is alſo uſed, in *Ancient Military Writers*, for a guard of ſoldiers poſted in any place for the ſecurity of it.

ANGEIOGRAPHIA, the knowlege, or deſcription, of all kinds of ancient inſtruments, veſſels, and utenſils, both domeſtic, military, and nautical.

The word is compounded of αγγειον, *vas*, *veſſel*, and γραφω, *ſcribo*, *I deſcribe*.

Angeiography alſo includes the conſideration of the weights, measures, &c. uſed by the ſeveral nations.

ANGEIOLOGY, Angeiologia, in *Anatomy*, the hiſtory, or deſcription, of the veſſels in a human body; e. gr. the nerves, veins, and lymphatics.—See *Tab. Anat.* part II.

The word is derived from αγγειον, a *veſſel*, and λογος, *diſcourſe*.

Angeiology is a branch of sarcology.

ANGEIOTOMY, in *Surgery*, is uſed by ſome to denote an artificial ſection of the veſſels, as in bleeding.

The word is formed of αγγειον, *veſſel*, and τεμνω, *ſeco*, *I cut*.

In this ſenſe *angeiotomy* may be divided into phlebotomy and arteriotomy.

ANGEL, a ſpiritual, intelligent ſubſtance; the firſt in rank and dignity among created beings.

The word *angel* is not properly a denomination of nature, but of office; denoting as much as *nuntius*, *meſſenger*, a perſon employed to carry one's orders, or declare his will.—Thus it is St. Paul repreſents *angels*, Heb. i. 14. where he calls them *miniſtring ſpirits*; and yet cuſtom has prevailed inſomuch, that *angel* is now commonly taken for the denomination of a particular nature.

The exiſtence of *angels* is ſuppoſed in all regions, though it is incapable of being proved *a priori*.—Indeed, the ancient Sadducees are repreſented as denying all ſpirits; and yet the Samaritans and Caraïtes, who are reputed Sadducees, openly allow them: witneſs Abuſaid, the author of an Arabic verſion of the Pentateuch; and Aaron, a Caraïte Jew, in his comment on the Pentateuch; both extant in manuſcript in the king of France's library.

In the Alcoran, we find frequent mention of *angels*.—The Muſſulmen believe them of different orders or degrees, and to be deſtined for different employments both in heaven, and on earth. They attribute exceeding great power to the angel Gabriel; as, to be able to deſcend in the ſpace of an hour from heaven to earth; to overturn a mountain with a ſingle feather of his wing, &c. The *angel* Aſrael, they ſuppoſe, appointed to take the ſouls of ſuch as die; and another angel, named Eſraphil, they ſay, ſtands with a trumpet ready in his mouth to proclaim the day of judgment.

The heathen philoſophers and poets were alſo agreed as to the exiſtence of intelligent beings, ſuperior to man; as is ſhewn by St. Cyprian, in his treatiſe of the vanity of idols, from the teſtimonies of Plato, Socrates, Triſmegiſtus, &c.

Authors are not ſo unanimous about the nature as about the exiſtence of *angels*.—Clemens Alexandrinus believed they had bodies; which was alſo the opinion of Origen, Cæſarius, Tertullian, and ſeveral others. Athanaſius, St. Baſil, St. Gregory Nicene, St. Cyril, St. Chryſoſtom, &c. hold them to be mere ſpirits.

Eccleſiaſtical writers make an hierarchy of nine orders of *angels*.

By the ancient councils, men are forbid to frame or give particular names to *angels*; the only names owned by the church are Michael, Gabriel, and Raphael, to which is ſometimes added Uriel.

Before the Babyloniſh captivity the Jews did not know the name of any *angel*; at leaſt we find none mentioned in the books written before this event.

Authors are divided as to the time of the creation of *angels*; ſome will have it to have been before the creation of our world, or even before all ages, that is, from eternity; this was Origen's opinion, who, according to Leontius, held that all ſpirits, *angels*, devils, and even human ſouls, were from eternity.

Others hold *angels* to have been created before the world, yet not from eternity; of which opinion are Nazianzen, and others. Others again maintain that they were created at the ſame time with our world, but on what day is diſputed. Theodoret and Epiphanius fix their date from the firſt day.

Good *angels* are called *angels of light*, and *guardian angels*; and thoſe on the contrary, who are the *devil's* miniſters, *angels of darkneſs*, and *fallen angels*.

Angel is more particularly underſtood of a ſpirit of the ninth and loweſt claſs, or order of the HIERARCHY, or heavenly choir.

There was an officer of the Synagogue, among the Jews, who had the name of *angel*; and he was called חזן, or *epiſcopus*, becauſe he overlooked the reader of the law.

In the Apocalypſe, the denomination *angel* is alſo given to the paſtors of ſeveral churches; who are called, the *angel* of the church of Epheſus; the *angel* of the church of Smyrna, &c. Du Cange adds, that the ſame name was anciently given to certain popes, and biſhops; by reaſon of their ſingular ſanctity, &c.

Angel is alſo uſed, in *Commerce*, for an ancient gold coin ſtruck in England; ſo called from the figure of an *angel* impreſſed upon it.

Its value in 1 Hen. VI. was 6*s.* 8*d.* in 1 Hen. VIII. 7*s.* 6*d.* in 34 Hen. VIII. 8*s.* in 6 Edw. VI. it was 10*s.* in 2 Eliz. it was 10*s.* and in 23 Eliz. the ſame.—And the *half angel*, or, as it was ſometimes called, the *angelet*, was the moiety of this; and the *quarter angelet*, proportionable.

The *angel* now ſubſiſts no otherwiſe than as a money of account; denoting 10*s.*

The French have alſo had their *angels*, *demi-angels*, and *angelets*; but they are now diſuſed.

Angel-*fiſh*, in *Ichthyology*, the Engliſh name of the fiſh called by the generality of authors the SQUATINA, and by ſome the SQUATUS and RHINE. It is alſo called the MONK-*fiſh*, and is, according to the Artedian ſyſtem, a ſpecies of the *ſqualus*, diſtinguiſhed from the others of that genus by the name of the *ſqualus* with no *pinna ani*, and with the mouth placed in the top of the head.

ANGELIC, or Angelical, ſomething belonging to, or that partakes of the nature of *angels*.

We ſay an *angelical* life, &c.—St. Thomas is ſtyled the *angelical doctor*.—The *angelical* ſalutation is called by the Romaniſts *Ave Maria*; ſometimes ſimply *angelus*.

Angelic *garment*, Angelica *veſtis*, among our *Anceſtors*, was a monkiſh garment, which laymen put on a little before their death, that they might have the benefit of the prayers of the monks.

It was from them called *angelical*, becauſe they were called *angeli*, who by theſe prayers *animæ ſaluti ſuccurrebant*.—Hence, where we read the phraſe *monachus ad ſuccurrendum* in our old books, it muſt be underſtood of one who had put on the habit when he was at the point of death.

ANGELICA, in *Botany*, of the *pentandria digynia*, a medicinal plant, of which the characters are, that it is umbelliferous, the greater umbel being compoſed of many ſmall ones; the empalement of the flowers is indented into five parts; the flowers of the whole umbel are uniform. The germen is ſituated below the flower, which afterward becomes a roundiſh fruit, ſplitting into two, and compoſed of two ſeeds, which are plain on one ſide, and convex on the other, and are bordered.

Mr. Miller enumerates five ſpecies.

It grows in gardens, and flowers and ſeeds in June and July; the root periſhing after the ripening of the ſeed, which is in the ſecond year of its growth. It is of a ſweet ſmell, of an aromatic taſte, and is loaded with a highly exalted oil, and volatile ſalt.

The roots of the garden *angelica* are of conſiderable uſe in medicine; the leaves alſo are ſometimes uſed, and the ſeeds. It is a ſtomachic, a cordial, and ſudorific; it is good in flatulencies, and is by many ranked among the vulnerary herbs. It is preſcribed in malignant diſeaſes of all kinds, againſt the effects of poiſon, and in the plague.

It has been a cuſtom with ſome phyſicians, in the times of contagion of this kind, to make a paſte of the freſh roots beaten with vinegar, and to carry this in a box about them readily to be applied to the noſe occaſionally; others prefer the holding a piece of the dry root in the mouth, and others the drinking a glaſs of ſtrong vinegar, in which it has been infuſed, faſting.

It has alſo been a cuſtom to ſprinkle the powder of the root over the cloaths of perſons who go among the infected, through an opinion that it preſerves them from imbibing the effluvia, which otherwiſe they might carry elſewhere.

A dram of the powder of the root alone, or half that quantity with a dram of venice treacle, are recommended to be given as a remedy in the plague, to be repeated every ſix hours, and a gentle ſweat to be kept up all the time.

The root is uſed in many of our ſhop compoſitions, as in the plague-water, &c. and the dried leaves are a principal ingredient in the ladies red-powder, famous in England for the cure of fevers.

The Laplanders are extremely fond of *angelica*, and uſe it in great abundance both in meat and medicine. They uſe only the ſtalks, never meddling with the roots or ſeed, in which we find the higheſt flavour, and greateſt virtue. They gather the large ſtalks before the plant is run to ſeed, and roaſt them or bake them till they are thoroughly tender, and then eat them as a delicate diſh.

When they are ſick, they boil either theſe ſtalks or the roots of the moſs, which they call *jerth*, in water, and in worſe caſes in whey made of rein-deer milk, and give large draughts of this decoction to keep up a breathing ſweat.

Angelica, *berry bearing*. See Aralia.

Angelica, *wild*. See Ægopodium.

Angelica-*water* is one of the compound waters of the ſhops; thus called from the *angelica* root, which is the chief ingredient in the compoſition, and the moſt active part of that plant. Neumann.

Angelica *grana*, a technical name given to Anderſon's Scots pills.

Angelica was alſo a celebrated dance among the ancient Greeks, performed at their feaſts.

It was thus called, from αγγελος, *nuntius*, *meſſenger*; becauſe, as Pollux aſſures us, the dancers were dreſſed in the habit of meſſengers.

ANGELICI, an ancient order of knights, inſtituted in 1191, by Iſacius Angelus Flavius Comnenus, emperor of Conſtantinople.

They were divided into three claſſes; but all under direction of one grand maſter.—The firſt were called *torquati*, from a collar which they wore, and theſe were fifty in number.—The ſecond were called the *knights of juſtice*, and were eccleſiaſtics.—And the third were called *knights ſervitors*.

Juſtiniani will have this order to have been inſtituted in the year 313, by Conſtantine; and ſuppoſes the occaſion thereof to have been the appearance of an angel to that emperor, with the ſign of a croſs, and theſe words, *In hoc ſigno vinces*; but, that there was ſuch a thing as any military order in thoſe days, is a mere fable.

Angelici were alſo a ſect of ancient Chriſtians.—St. Auguſtine ſuppoſes them thus called from their yielding an extravagant worſhip to angels, and ſuch as tended to IDOLATRY; though Epiphanius derives the name from their holding, that the world was created by angels.

ANGELINA *zanoni acoſtæ*, in *Botany*. This is a tree of vaſt ſize, ſometimes above ſixteen feet thick, growing on rocky and ſandy places in Malabar, in the Eaſt Indies. It bears ripe fruit in December, and continues bearing for a whole century.

The dried leaves heated, alleviate pains and ſtiffneſs in the joints, and diſcuſs an intumeſcence of the *teſtes* occaſioned by a contuſion, or any external violence; as alſo an *hydrocele*, or *pneumatocele*. It is efficacious likewiſe in ſome venereal complaints, and hæmorrhoidal fluxes.

ANGELITÆ, *Angelites*, in *Eccleſiaſtical Hiſtory*, certain Chriſtians, thus denominated from *Angelium*, the name of a place in Alexandria, where their firſt aſſemblies were held.

The *Angelites* appear to have been the ſame with what are otherwiſe called *Severites*, ſometimes *Theodoſiani* and *Damianiſti*, from the names of their leaders. Sometimes alſo *Tabellioniſtæ*.

They made their firſt appearance in the time of the emperor Anaſtaſius, and pope Symmachus, about the year of Chriſt 494.

The diſtinguiſhing tenets of the *Angelitæ* were, that the ſeveral perſons of the Trinity had no diſtinct eſſence, ſubſtance, or deity; but only a ſubſiſtence or deity in common, or indiviſible among them.

ANGELOLATRIA, the ſuperſtitious worſhip, or adoration of angels.

ANGELOLOGIA, the doctrine or ſcience of angels, their natures, office, &c.

Gerhard has publiſhed a ſacred *Angelologia*, Muſæus an apoſtolical *Angelologia*.

Some uſe the term *angeloſophia* in a ſenſe much the ſame. A. Varenius has given an *Angeloſophia*.

ANGELOGRAPHIA, a deſcription of angels, their orders, names, diſcipline, &c.

This amounts to much the ſame with what others call *angelologia.*

Caſmannus and Manitius have publiſhed *Angelographies.*

ANGELOT, an ancient Engliſh gold coin, ſtruck at Paris, while under ſubjection to the Engliſh.

It was thus called from the figure of an angel ſupporting the ſcutcheon of the arms of England and France.

There was another coin of the ſame denomination ſtruck under Philip de Valois.

ANGELOT is alſo uſed in commerce to denote a ſmall, fat, rich ſort of cheeſe, brought from Normandy.

Skinner ſuppoſes it to have been thus called from the name of the perſon who firſt made it up in that form, and perhaps ſtamped it with his own name. Menage takes it to have been denominated from the reſemblance it bears to the Engliſh coin called *angelot.*

It is made chiefly in the Pays de Bray, whence it is alſo denominated *angelot de Bray.*

It is commonly made in vats, either ſquare or ſhaped like a heart.

ANGELUS, in the *Church Hiſtory* of France, denotes a prayer to the Holy Virgin, to be rehearſed three times a day, at the ſound of a bell rung for that purpoſe.

The *angelus* is the ſame with what is otherwiſe called *Ave Maria*, or the angelic ſalutation.

ANGER.—Hutcheſon defines *anger*, a propenſity to occaſion evil to another, ariſing upon an apprehenſion of an injury done by him.

Anger is either deliberative or inſtinctive; and the latter kind is raſh and ungovernable, becauſe it operates blindly, without affording time for deliberation or foreſight. Biſhop Butler very juſtly obſerves, that *anger* is far from being a ſelfiſh paſſion, ſince it is naturally excited by injuries offered to others, as well as to ourſelves; and was deſigned by the Author of nature not only to excite us to act vigorouſly in defending ourſelves from evil, but to intereſt us in the defence or reſcue of the injured and helpleſs, and to raiſe us above the fear of the proud and mighty oppreſſor. Butler's Sermons, Serm. viii.

Anger is of ſuch a nature, that it quickly throws the whole nervous ſyſtem into preternatural commotions; by a violent ſtricture of the nervous and muſcular parts; and ſurpriſingly augments not only the *ſyſtole* of the heart, and of its contiguous veſſels, but alſo the tone of the fibrous parts in the whole body. It is alſo certain, that this paſſion, by the ſpaſmodic ſtricture it produces in the parts, exerts its power principally on the ſtomach and inteſtines, which are highly nervous and membranous parts; whence the ſymptoms are more dangerous, in proportion to the greater conſent of the ſtomach and inteſtines, with the other nervous parts, and almoſt with the whole body.

The unhappy influence of *anger* likewiſe, on the biliary and hepatic ducts, is very ſurpriſing; ſince by an intenſe conſtriction of theſe, the liver is not only rendered ſchirrhous, but ſtones alſo are often generated in the gall-bladder, and biliary ducts: theſe accidents have ſcarcely any other origin, than an obſtruction of the free motion and efflux of the bile, by means of this violent ſtricture. From ſuch a ſtricture of theſe ducts likewiſe proceeds the jaundice, which in proceſs of time lays a foundation for calculous concretions in the gall-bladder. Laſtly, by increaſing the motion of the fluid, or the ſpaſms of the fibrous parts, by means of *anger*, a larger quantity of blood is propelled with an *impetus*, to certain parts; whence it happens, that they are too much diſtended, and the orifices of the veins diſtributed there, opened. It is evident from experience that *anger* has a great tendency to excite enormous hæmorrhages, either from the noſe, the aperture of the pulmonary artery, the veins of the anus; or in women, from the uterus; eſpecially in thoſe previouſly accuſtomed and diſpoſed to ſuch evacuations.

For the influence of this paſſion on the perſpiration and urine of human bodies, ſee PERSPIRATION, &c.

ANGERONALIA, in *Antiquity*, ſolemn feaſts, held by the Romans, the 21ſt of December, in honour of Angerona, or Angeronia, the goddeſs of patience and ſilence.

Feſtus and Julius Modeſtus, quoted by Macrobius, Saturn. lib. i. cap. 10. derive the name from *angina*, *ſquinancy*; and ſuppoſe the goddeſs to have been thus denominated, becauſe ſhe preſided over that diſeaſe.—Others ſuppoſe it formed from *anger*, *grief*, *pain*; to intimate that ſhe gave relief to thoſe afflicted therewith. Others deduce it from *angeo*, *I preſs*, *I cloſe*; as being reputed the goddeſs of ſilence, &c.

ANGETENAR, in the *Arabian Aſtronomy*, denotes a fixed ſtar of the fourth magnitude, in the body of CETUS, or the WHALE.

ANGIGLOSSII denotes thoſe who ſpeak with difficulty, heſitation, or even ſtammering.

ANGILDUM, in our *Old Writers*, denotes a ſimple gild, that is, the ſimple value of the man, or other thing.

The word is compounded of the Saxon *an*, *one*, and *gild*, *payment*, *price*, or *compenſation.*

In this ſenſe, *angildum* ſtands contradiſtinguiſhed from *twigildum*, a *double compenſation*; *trigildum*, a *triple compenſation.*

ANGINA, in *Medicine*, an inflammation about the muſcles of the *larynx*, or *pharynx*, attended with an acute fever, difficulty of ſwallowing, and danger of ſuffocation.

The word is derived immediately from the Latin *ango*, *I vex*, formed of *αγχω*, *ſuffoco*, *ſtrangulo.*

The *angina* is the ſame with what we popularly call QUINZY, or *ſquinancy.* It is an inflammation in the parts of the throat ſubſervient to reſpiration, ſpeech, and deglutition. When the diſorder is epidemic, it is uſually between ſpring and ſummer, after a long continuance of cold and rainy weather. The true *quinzy* is an acute inflammatory diſorder; the baſtard *quinzy* is a lymphatic, catarrhal diſorder; and the fever that accompanies it is not acute, but rather chronical.

ANGINA *gangrena*, or *aquoſa*, the ulcerated, malignant, putrid, *ſore* THROAT; on which there are various treatiſes by Fothergill, Huxham, Northcote, &c.

ANGINA *lini*, in *Botany*, a name uſed by ſome of the later Greek writers, to expreſs what the more ancient writers of this nation called *linozoſtis*, and the Latins *epilinum*; this was the *cuſcuta* or *dodder* growing on the flax, as that on the thyme was called *epithymum.* It was called *angina lini*, the quinzy of flax, from its choaking that plant.

ANGINA *pectoris*, in *Medicine*, a name given to a diſeaſe, dangerous, and not extremely rare, firſt deſcribed by Dr. W. Heberden, and ſo called from the ſeat of the diſorder, and the ſenſe of ſtrangling and anxiety with which it is attended. The doctor's account of it is in the ſecond volume of the London Medic. Tranſ. p. 59, &c. See alſo Medic. and Phil. Comment. vol. ii. p. 95. The patient while walking, eſpecially if ſoon after eating, is affected with a painful ſenſation in his breaſt; at firſt, it is removed by his ſtanding ſtill, but afterwards it does not go off ſo ſuddenly; it comes on in bed, obliges the patient to get up, and continues for an hour or more; ſometimes, though rarely, it attacks the patient ſtanding or ſitting ſtill. It is brought on by trivial accidents, coughing, &c. or any ſlight diſturbance. In ſome it is worſt in winter, in others in ſummer. The pulſe, ſometimes at leaſt, is not diſturbed, conſequently the heart is not affected by the pain. People affected with it often die ſuddenly, but ſome continue ſubject to it for twenty and odd years. The ſeat of it ſeems to be in or about the *os ſternum*, towards the left ſide, and a pain in the middle of the left arm ſometimes accompanies it. The cauſe is probably a ſpaſm or cramp, or an ulcer, or both. Wine, or other cordials, taken at bed-time, prevent or weaken night fits, but opium is the moſt effectual relief; ten, fifteen, or twenty drops of the thebaic tincture, taken at bed-time, may be ſafely continued as long as requiſite.

This diſeaſe has been ſince accurately deſcribed, and ſuitable preventives or remedies propoſed, by Dr. Fothergill. Med. Obſ. and Inq. vol. v. p. 233. 252.

ANGIOSPERMIA, in *Botany*, a term uſed by Linnæus, to expreſs a certain ſeries of the DIDYNAMIÆ or plants of the verticillate kind, which have their ſeeds not lodged naked within the cup. They are by this diſtinguiſhed from the *gymnoſpermia*, which have them ſo; whereas the *angioſpermia* have them incloſed in a capſule, and adhering to a *placenta* placed in the middle of that capſule. The claſs of DIDYNAMIA contains the labiated and perſonated plants. The *angioſpermia* are the perſonated, the others the labiated kinds. This order, or ſeries, contains ſixty-three genera, comprehending thoſe that have a ſimple ſtigma, and perſonate corollæ; thoſe with a ſimple ſtigma, and ſpreading corollæ; thoſe with a double ſtigma, and ſuch as have many petals.

ANGLE, ANGULUS, in *Geometry*, the aperture or mutual inclination of two lines, which meet, and form an *angle* in their point of interſection.

Such is the *angle* BAC (*Tab. Geometry*, *fig.* 91.) formed by the lines AB and AC, meeting in the point A.—The lines AB, and AC, are called the *legs* of the *angle*; and the point of interſection, the VERTEX.

Angles are ſometimes denoted by a ſingle letter affixed to the *vertex*, or angular point, as A; and ſometimes by three letters, that of the vertex being in the middle, as BAC.

The meaſure of an *angle*, whereby its quantity is expreſſed, is an ARCH, DE, deſcribed from its vertex A, with any radius at pleaſure, between its legs, AC and AB. See MEASURE.

Hence *angles* are diſtinguiſhed by the ratio of the arches which they thus ſubtend, to the CIRCUMFERENCE of the whole CIRCLE.—And thus, an *angle* is ſaid to be of ſo many degrees, as are the degrees of the arch DE.

Hence alſo, ſince ſimilar arches, AB and DE, *fig.* 87. have the ſame ratio to their reſpective circumferences; and the circumferences contain each the ſame number of degrees; the arches AB and DE, which are the meaſures of the two *angles* ACB, and DCE, are equal; and therefore the *angles* themſelves muſt be ſo too.—Hence, again, as the quantity of an *angle* is eſtimated by the ratio of the arch, ſubtended by it to the periphery, it does not matter what radius that arch is deſcribed withal: but the meaſures of equal *angles* are always either equal arches, or ſimilar ones; and contrarily.

It follows, therefore, that the quantity of the *angle* remains ſtill the ſame, though the legs be either produced or diminiſhed.—And thus in ſimilar *angles*, and in ſimilar figures, the homologous or correſponding *angles* are alſo equal.

The *taking of angles* is an operation of great uſe and extent in ſurveying, navigation, geography, aſtronomy, &c. The inſtruments chiefly uſed for this purpoſe are quadrants, theodolites, circumferentors, &c.

Mr. Hadley has invented a new and excellent inſtrument for taking *angles*, uſeful where the motion of the object, or any circumſtance cauſing an unſteadineſs in the common inſtruments, renders the making obſervations difficult or uncertain. Phil. Tranſ. N° 420, and N° 425.

Mr. Dollond has likewiſe contrived an inſtrument for meaſuring ſmall *angles*. Phil. Tranſ. vol. xlviii. N° 74. See MICROMETER.

In the practice of ſurveying, no *angles* of leſs than thirty degrees ſhould be taken: nor ſhould any be aſſumed but ſuch as are actually meaſured. See Hiſt. Acad. Scienc. 1740.

ANGLE, *to meaſure the quantity of an.*—1. On paper. Apply the centre of a protractor on the vertex of the *angle* O (*Tab. Surveying*, *fig.* 29.) ſo that the radius OB lie on one of the legs: the degree ſhewn in the arch, by the other leg of the *angle*, will give the *angle* required.—To do the ſame with a line of chords, ſee SECTOR.

2. On the ground.—Place a ſurveying inſtrument, e. gr. a ſemicircle (*fig.* 16.) in ſuch a manner as that a radius thereof CG may lie over one leg of the *angle*, and the centre C over the vertex.—The firſt is obtained by looking through the ſights F and G, towards a mark fixed at the end of the leg; and the latter, by letting fall a plumbet from the centre of the inſtrument.—Then, the moveable index HI being turned this way and that, till through its ſights you diſcover a mark placed at the extreme of the other leg of the *angle*; the degree it cuts in the limb of the inſtrument ſhews the quantity of the *angle*.

To take the angle with a QUADRANT, THEODOLITE, PLAIN TABLE, CIRCUMFERENTOR, COMPASS, &c. ſee the ſeveral articles.

To plot or lay down any given *angle*, i. e. the quantity of the *angle* being given, to deſcribe it on paper. See PLOTTING, and PROTRACTOR.

To biſect a given angle, as HIK (*Tab. Geometry*, *fig.* 92.) from the centre I, with any radius at pleaſure, deſcribe an arch LM. From L and M, with an aperture greater than half LM, ſtrike two arches, mutually interſecting each other in N. Then, drawing the right line IN, we have HIN=NIK.

To triſect an *angle*, ſee TRISECTION.

ANGLES are of various kinds and denominations.

With regard to the form of their legs, they are divided into *rectilinear*, *curvilinear*, and *mixed*.

ANGLE, *rectilinear*, or *right lined*, is that whoſe legs are both right lines: as BAC (*Tab. Geometry*, *fig.* 91.)

ANGLE, *curvilinear*, is that whoſe legs are both of them curves.

ANGLE, *mixt*, or *mixtilinear*, is that, one of whoſe ſides is a right line, and the other a curve.

With regard to their quantity, *angles* are again divided into *right*, *acute*, *obtuſe*, and *oblique*.

ANGLE, *right*, is that formed by a line falling perpendicularly on another; or that which ſubtends an arch of 90 degrees.—Such is the *angle* KLM (*fig.* 93.)

The meaſure of a right *angle*, therefore, is a quadrant of a circle; and conſequently all right *angles* are equal to each other.

ANGLE, *acute*, is that which is leſs than a right *angle*, or than 90°—as AEC (*fig.* 86.)

ANGLE, *obtuſe*, is that greater than a right *angle*, or whoſe meaſure exceeds 90°—as AED.

ANGLE, *oblique*, is a common name both for acute and obtuſe *angles*.

With regard to their ſituation in reſpect of each other, *angles* are divided into *contiguous*, *adjacent*, *vertical*, *alternate*, and *oppoſite*.

ANGLES, *contiguous*, are ſuch as have the ſame vertex, and one leg common to both.—Such are FGH and HGI (*fig.* 94.)

ANGLE, *adjacent*, is that made by producing one of the legs of another *angle*.—Such is the *angle* AEC (*fig.* 86.) made by producing a leg ED, of the *angle* AED, to C.

Two *adjacent angles*, *x* and *y*, or any other number of *angles* made on the ſame point E, over the ſame right line CD, are together equal to two right ones; and conſequently to 180°.—And hence, one of two adjacent *angles* being given, the other is likewiſe given; as being the complement of the former to 180°.

Hence alſo, to meaſure an inacceſſible *angle* in a field, taking an adjacent acceſſible *angle*, and ſubtracting the quantity thereof from 180°, the remainder is the *angle* required.

Again, all the *angles* *x*, *y*, *o*, E, &c. made around a given point E, are equal to four right ones; and therefore all make 360°.

ANGLES, *vertical*, or *oppoſite*, are thoſe whoſe legs are continuations of each other.—Such are the *angles* *o* and *x* (*fig.* 86.)

If a right line AB, cut another, CD, in E, the vertical *angles* *x* and *o*, as alſo *y* and E, are equal.—And hence, if it be required to meaſure, in a field, or any other place, an inacceſſible *angle*, *x*; and the other vertical *angle*, *o*, be acceſſible; this latter may be taken in lieu of the former.

ANGLE, *alternate.*—See ALTERNATE.—Such are the *angles* *x* and *y* (*fig.* 36.)

The alternate *angles* *y* and *x* are equal.

ANGLES, *external*, are the *angles* of any right-lined figure made without it, by producing all the ſides ſeverally.

All the external *angles* of any figure, taken together, are equal to four right *angles*; and the external *angle* of a triangle is equal to both the internal and oppoſite ones, as is demonſtrated by Euclid, lib. i. prop. 32.

ANGLES, *internal*, are the *angles* made by the ſides of any right-lined figure within.

The ſum of all the internal *angles* of any right-lined figure is equal to twice as many right *angles* as the figure hath ſides, excepting four. This is eaſily demonſtrated from Euclid, prop. 32. lib. i.

The external *angle* is demonſtrated to be equal to the internal oppoſite one; and the two internal oppoſite ones are equal to two right ones.

ANGLES, *homologous*, are ſuch *angles* in two figures, as retain the ſame order from the firſt, in both figures.

ANGLE *at the periphery* is an *angle* whoſe vertex and legs do all terminate in the periphery of a circle.—Such is the *angle* EFG (*fig.* 95.)

ANGLE *in the* SEGMENT, is the ſame with that at the periphery.

It is demonſtrated by Euclid, that all the *angles* in the ſame ſegment are equal to one another; that is, any *angle* EHG, is equal to any *angle* EFG in the ſame ſegment EFG.

The *angle* at the periphery, or in the ſegment, is comprehended between two chords EF and FD, and ſtands on the arch ED. See CHORD, &c.

The meaſure of an *angle* without the periphery X (*fig.* 96.) is the difference between half the concave arch LM, whereon it ſtands, and half the convex arch NO intercepted between its legs.

ANGLE *in a ſemicircle*, is an *angle* in a ſegment of a circle, whoſe baſe is a diameter thereof.

It is demonſtrated by Euclid, that the *angle* in a ſemicircle is a right one; in a ſegment greater than a ſemicircle, it is leſs than a right one; and in a ſegment leſs than a ſemicircle, is greater than a right one.

Since an *angle* in a ſemicircle ſtands on a ſemicircle, its meaſure is a quadrant of a circle; and therefore is a right *angle*.

ANGLE *of a ſemicircle*, in *Geometry*, the *angle* which the diameter of a circle makes with the circumference. The chief property of this *angle* is, that it is leſs than a right *angle*, and greater than any acute right-lined *angle*.

ANGLE *at the centre* is an *angle* whoſe vertex is in the centre of a circle, and its legs terminated in the periphery thereof.—Such is the *angle* CAB (*fig.* 95.)

The *angle* at the centre is comprehended between two radii, and its meaſure is the arch BC.

Euclid demonſtrates, that the *angle* at the centre BAC is double of the *angle* BDC, ſtanding on the ſame arch BC.—And hence, half of the arch BC is the meaſure of the *angle* at the periphery.

Hence, alſo, two or more *angles* HLI, and HMI (*fig.* 97.) ſtanding on the ſame or equal arches, are always equal.

ANGLE *without the centre*, HKL, is that whoſe vertex K is not in the centre, but its legs HK and IK are terminated in the periphery.

The meaſure of an *angle* without the centre is half of the arches HI and LM, whereon it and its vertical K do ſtand.

ANGLE *of contact* is that made by the arch of a circle and a tangent in the point of CONTACT.—Such is the *angle* HLM, (*fig.* 43.)

The *angle* of contact, in a circle, is proved by Euclid to be leſs than any right-lined *angle*; but from hence it does not follow, that the *angle* of contact is of no quantity, as Peletarius, Wallis, and ſome others, have imagined. V. Wall, Algeb. p. 71, &c. Sir Iſaac Newton ſhews, that if the curve HAE (*fig.* 97.) be a cubic parabola, where the ordinate DF is in the ſubtriple ratio of the abſciſſe AD, the *angle* BAF, contained under the tangent AB in its vertex, and the curve, is infinitely greater than the circular *angle* of contact BAC; and that, if other parabolas of higher kinds be deſcribed to the ſame axis and vertex, whoſe abſciſſes AD are as the ordinates DF^4, DF^5, DF^6, &c. you will have a ſeries of *angles* of contact going on infinitely, of which any one is infinitely greater than that next before it.

ANGLE *of a ſegment* is that made by a chord with a tangent, in the point of contact.—Such is the *angle* MLH (*fig.* 43.)

It is demonſtrated by Euclid, that the *angle* MLH is equal to any angle M *a* L in the alternate ſegment M*a*L.

ANGLES, *for the effects, properties, relations, &c. of, when combined into triangles, quadrangles, and polygonous figures,* ſee TRIANGLE, QUADRANGLE, SQUARE, PARALLELOGRAM, POLYGON, FIGURE, &c.

ANGLES are again divided into PLANE, SPHERICAL, and SOLID.

ANGLES, *plane*, are thoſe we have hitherto been ſpeaking of; which are defined by the inclination of two lines in a plane, meeting in a point.

ANGLE, *ſpherical*, is the inclination of the planes of two great circles of the ſphere.

For the properties of ſpherical *angles*, ſee SPHERICAL *Angle*.

ANGLE, *ſolid*, is the mutual inclination of more than two planes, or plane *angles*, meeting in a point, and not contained in the ſame plane.—For the meaſure, properties, &c. of ſolid *angles*, ſee SOLID *Angle*.

We alſo meet with other leſs uſual ſorts of *angles* among ſome geometricians; as,

ANGLE, *horned*, *angulus cornutus*, that made by a right line, whether a tangent or ſecant, with the periphery of a circle.

ANGLE, *lunular*, *angulus lunularis*, is that formed by the interſection of two curve lines; the one concave, and the other convex.

ANGLE, *ciſſoid*, *angulus ciſſoides*, is the inner *angle* made by two ſpherical convex lines interſecting each other. See CISSOID.

ANGLE, *ſiſtroid*, *angulus ſiſtroides*, is that in figure of a SISTRUM.

ANGLE, *pelecoid*, *angulus* PELECOIDES, is that in figure of a hatchet.

ANGLE, in *Trigonometry*. See TRIANGLE, and TRIGONOMETRY.

For the ſines, tangents, and ſecants of *angles*, ſee SINE, TANGENT, and SECANT.

ANGLE, in *Mechanics*.—*Angle of* DIRECTION, is that comprehended between the lines of direction of two conſpiring forces.

ANGLE *of* ELEVATION is that comprehended between the line of direction of a projectile, and a horizontal line.—Such is the *angle* RAB (*Tab. Mechanics*, *fig.* 47.) which is comprehended between the line of direction of the projectile AR, and the horizontal line AB.

ANGLE *of incidence* is that made by the line of direction of an impinging body, in the point of contact.—Such is the angle DCA (*fig.* 66).

ANGLE *of reflexion* is that made by the line of direction of the reflected body, in the point of contact from which it rebounds.—Such is the *angle* ECF.

ANGLE, in *Optics*.—*Viſual*, or *optic angle*, is the *angle* included between the two rays drawn from the two extreme points of an object to the centre of the pupil.—Such is the *angle* ABC (*Tab. Optics*, *fig.* 69.) comprehended between the rays AB, and BC.

Objects ſeen under the ſame, or an equal *angle*, muſt always appear equal.

The leaſt *viſible angle*, according to Dr. Hook, is one minute; though Dr. Jurin ſhews, that at the time of his debate with Hevelius on this ſubject, the latter could probably diſcover a ſingle ſtar under ſo ſmall an *angle* as 20″. Dr. Jurin ſtates the grounds of this controverſy, and diſcuſſes the queſtion at large in his Eſſay upon diſtinct and indiſtinct Viſion, publiſhed in Smith's Optics, p. 148, &c.

ANGLE *of the interval*, of two places, is the *angle* ſubtended by two lines directed from the eye to thoſe places.

ANGLE *of incidence*, in *Catoptrics*, is the leſſer *angle*, made by an incident ray of light, with the plane of a ſpeculum; or, if the ſpeculum be concave or convex, with a tangent in the point of incidence.—Such is the *angle* ABD (*fig.* 26). Or, as ſome define it, it is the *angle* which a ray of light makes with a perpendicular to that point of the ſurface of any *medium* on which it falls.

Every incident ray, AB, makes two *angles*, the one acute, ABD, the other obtuſe, ABE; though ſometimes both right.—The leſſer of ſuch *angles* is the *angle* of incidence. See INCIDENCE.

ANGLE *of incidence*, in *Dioptrics*, is the *angle* ABI (*fig.* 56.) made by an incident ray, AB, with a lens, or other refracting ſurface, HI.

ANGLE *of inclination* is the *angle* ABD, contained between an incident ray, AB, and the axis of incidence, DB. See AXIS, &c.

ANGLE *of reflexion*,
ANGLE, *reflected*, } in *Catoptrics*. See REFLECTION.

ANGLE *of refraction*,
ANGLE, *refracted*, } in *Dioptrics*. See REFRACTION.

ANGLE, in *Aſtronomy*.—ANGLE *of commutation*. See COMMUTATION.

ANGLE *of elongation*, or, ANGLE *at the earth*. See ELONGATION.

ANGLE, *parallactic*. See PARALLACTIC *angle*.

ANGLE *at the Sun*, is the *angle* RSP (*Tab. Aſtronomy*, *fig.* 25.) under which the diſtance of a planet P, from the ecliptic PC, is ſeen from the ſun.

ANGLE *of the Eaſt*. See NONAGESIMAL.

ANGLE *of obliquity*, of the ecliptic, or the *angle* of inclination of the *axis* of the earth, to the *axis* of the ecliptic, is 23° 30′; and remains the ſame in all points of the earth's annual orbit. By means of this inclination, ſuch inhabitants of the earth as live beyond 45° of latitude have more of the ſun's heat, taking all the year round; and thoſe who live within 45° have leſs of his heat, than if the earth always moved in the equinoctial. See OBLIQUITY, and ECLIPTIC.

ANGLE *of longitude* is the *angle* which the circle of a ſtar's longitude, makes with the meridian, at the pole of the ecliptic.

ANGLE *of right aſcenſion* is the *angle* which the circle of a ſtar's right aſcenſion makes with the meridian at the pole of the world. See *Right* ASCENSION.

ANGLE, in *Navigation*.—ANGLE *of the rhumb*, or *loxodromic* ANGLE. See RHUMB, and LOXODROMY.

ANGLES, in *Fortification*, are underſtood of thoſe formed by the ſeveral lines uſed in fortifying, or making a place defenſible.

Theſe are of two ſorts; *real*, and *imaginary*.—*Real angles* are thoſe which actually ſubſiſt and appear in the works.—Such are the *flanked angle*, the *angle of the epaule*, *angle of the flank*, and the *re-entering angle of the counterſcarp*.—*Imaginary*, or *occult angles*, are thoſe which are only ſubſervient to the conſtruction, and which ſubſiſt no more after the fortification is drawn.—Such are the *angle of the centre*, *angle of the polygon*, *flanking angle*, *ſaliant angle of the counterſcarp*, &c.

ANGLE *of*, or *at*, *the centre*, is the *angle* formed at the centre of the polygon, by two ſemidiameters drawn thither from the two neareſt extremities of the polygon.—Such is the *angle* CKF (*Tab. Fortificat. fig.* 1).

ANGLE *of the circumference* is the mixt *angle* made by the arch drawn from one gorge to the other.

ANGLE *of the counterſcarp* is that made by the two ſides of the counterſcarp, meeting before the middle of the CURTIN.

ANGLE *of the curtin*, or *of the flank*, is that made by, or contained between, the curtin and the flank; ſuch is the *angle* BAE.

ANGLE *of the complement of the line of defence*, is the *angle* ariſing from the interſection of the two complements one with another.

ANGLE, *diminiſhed*, is the *angle* which is made by the meeting of the exterior ſide of the polygon with the face of the BASTION.—Such is the *angle* BCF.

ANGLE *of the polygon* is the *angle* GHM, intercepted either between the two internal ſides GH, and HM, or the two external ſides.

ANGLE *of the epaule*, or *ſhoulder*, is that formed by the flank and the face of the baſtion.—Such is the *angle* ABC.

ANGLE *of the interior figure* is the *angle* GHM, made in H, the centre of the baſtion, by the meeting in the innermoſt ſides of the figure GH and HM.

ANGLE *of the tenaille*, or *flanking* ANGLE *outward*, is that made by the two raſant lines of defence, i. e. the two faces of the baſtion when prolonged.

ANGLE *flanking inward*, is the *angle* CIH, made by the flanking line with the curtin.

ANGLE, *flanked*, by ſome called the **ANGLE** *of the baſtion*, is the *angle* BCS, made by the two faces of the baſtion, BC, CS; being the outermoſt part of the baſtion, and that moſt expoſed to the enemy's batteries, and therefore by ſome called the *point of the baſtion*.

ANGLE *of the flank* is that formed by the *flank* and the *curtin*.

ANGLE *forming the flank* is that conſiſting of one flank, and one DEMI-*gorge*.

ANGLE *forming the face*, is that compoſed of one flank and one face.

ANGLE *of the triangle*, in *Fortification*, is half the *angle* of the *polygon*.

ANGLE *of the moat* is that made before the *curtin*, where it is interſected.

ANGLE, *re-entering*, or *re-entrant*, is that whoſe vertex is turned inwards, towards the place.

ANGLE, *ſaillant*, is that which advances its point toward the field.

ANGLE *of the tenaille*, or *the outward flanking angle*, called alſo *the angle of the moat*, or *the dead angle*, is made by the two lines *fichant* in the faces of the two baſtions, extended till they meet in an *angle* towards the *curtin*.—This always turns its point in towards the work.

ANGLE *of a wall*, in *Architecture*, is the point or corner where the two ſides or faces of a wall meet.

ANGLES *of a battalion*, in the *Military Art*, are thoſe ſoldiers placed where the ranks and files terminate. See BATTALION.

The *angles* of a battalion are ſaid to be *blunted*, when the ſoldiers at the four corners are removed, ſo that the ſquare battalion becomes octagonal: this was an evolution very common among the ancients, though now diſuſed.

ANGLES, in *Anatomy*, are underſtood of the *canthi*, or corners of the eye, where the upper eye-lid meets with the under.

That next the noſe is called the *great* or *internal*, and that towards the temples, the *leſs*, or *external angle*, or CANTHUS.

ANGLES, in *Aſtrology*, denote certain houſes of a figure, or ſcheme of the heavens.—Thus the *horoſcope* of the firſt houſe is termed *the angle of the eaſt*.

ANGLER, a fiſherman, or other perſon, who practiſes ANGLING.

Anglers are to be diſtinguiſhed from poachers. Some make the ſame difference between them, that is between the fair trader and ſmuggler. Accordingly the legiſlature has made the latter penal, but laid no reſtraint on the former. *Angling* can do no prejudice to the fiſh of a river. Anglers fiſh for their recreation, not for lucre; whereas poachers make it their livelihood.

The tackle neceſſary for an *angler* is various, according to the branch of the art he applies himſelf to. He muſt be equipt with variety of hooks, and a competent quantity of every ſort; he muſt not be without wax, ſilk, a pair of ſciſſars or pen-knife, a baſket, or bag and landing-net, plummets, ſhot, and floats of every kind, needles and thread, lines, hair, Indian-graſs, variety of feathers, more particularly thoſe taken from the neck of a mallard, the wing of a partridge, a capon's neck, the top of a plover, or the hackle of a red cock. He muſt likewiſe be furniſhed with twiſt, and bedding for dubbing his artificial flies; he muſt have a landing-hook, reels for his ſilk lines, a pouch or book for his hair-lines, a convenient place wherein to repoſit his ſmall craft, viz. flies, hooks, wax, ſhot, ſilk, &c. a bag for his worms, a tin-box for his gentles.

When he takes his ſtand, he is to ſhelter himſelf under ſome buſh, or tree, or ſtand ſo far from the brink of the river that he can only diſcern his float; becauſe fiſh are timorous, and eaſily frighted. The beſt way of *angling* with the fly is down the river, and not up; neither need the *angler* ever make above half a dozen of trials in one place, either with fly or ground bait, when he angles for trout: by that time the fiſh will either offer to take, or refuſe the bait and not ſtir at all.

ANGLICANÆ *guttæ*. See GUTTÆ.

ANGLICANUS *ſudor*. See SUDOR.

ANGLICISM, a word, or phraſe, in the Engliſh IDIOM; or a manner of ſpeech peculiar to the Engliſh tongue.

ANGLING, the art of catching fiſh, by means of a rod, with a line, hook, and bait, fitted thereto.

There are ſeveral prudential rules obſerved by thorough anglers; ſuch as, not to wear any white or ſhining apparel, but be cloathed in a dark ſky colour: to invite the fiſh to the place intended for *angling*, by caſting in, from time to time, proper foods, as boiled corn, worms, and garbage: to keep them together in the time of *angling*, by throwing in grains of ground malt; or ſinking a box of worms, with ſmall holes for them to creep ſlowly out at, &c. To draw ſalmon or trout together, *anglers* uſe a compoſition of fine clay incorporated with blood, and ground malt.

To learn what bait is beſt for any fiſh at any time; after having caught one, they ſlit his gills, and take out the ſtomach; and thus find what he laſt fed on.

The ſeveral methods of *angling* for ſalmon, trout, carp, tench, perch, pike, dace, gudgeons, roach, flounder, &c. ſee under *Salmon*-FISHING, *Trout*-FISHING, &c.

The angler's firſt buſineſs is to prepare for catching the fiſh by inviting them about him; the method of doing this in ſtanding waters, by throwing in grains, chopped worms and the like, is well known: but the chief difficulty is in running rivers and brooks. The method in this caſe, is to prepare a tin box capable of holding ſome hundred of worms, bored on all ſides, and full of holes of ſuch a ſize as they may be juſt able to crawl out at; there muſt be a plummet faſtened to this box to ſink it, and a line to draw it back at pleaſure; in this caſe it is to be thrown into the water at a proper place, above which the angler may ſtand under cover. The worms will ſlowly and gradually crawl out of this box, and the fiſh will be gathered about to feed on them; the baited hook is to be thrown in higher up and carried down by the ſtream. If this method does not bring the fiſh about the place in a little time, there is reaſon to ſuſpect that ſome pike lies lurking thereabout, and deters them; in this caſe, it is proper to throw out a baited hook, and he will generally be taken: after this the attempt will ſucceed.

The *angling* rod muſt be kept in a moderate ſtate neither too dry nor too moiſt, in the firſt caſe it will be brittle, in the other rotten. When paſtes are uſed, it is proper to mix a little tow with them, and rub them over with honey; finally a ſmall anointing them with butter is of great uſe to keep them from being waſhed off the hook. The eyes of any fiſh that is taken are an excellent bait, for almoſt any other kind of fiſh.

In a pond, the beſt place for the *angler* to take his ſtand is uſually that where the cattle go into the water; in rivers, if breams are fiſhed for, it ſhould be in the deepeſt and moſt quiet places; if eels, under the banks of rivers that hang over; pearch are to be expected in clean places, where the ſtream is ſwift; and chub in deep ſhaded holes: roach are moſtly found where the pearch are, and trout only in ſwift and clear ſtreams. Places where there are many weeds, or old ſtumps of trees, harbour fiſh in great numbers, and they uſually bite freely there, but there is danger of entangling the line, or faſtening the hook to the weeds.

In caſe of this accident, recourſe is to be had to a ring of lead, of about ſix inches round, faſtened to a ſmall pack-thread, this ring is to be thruſt over the rod, and let to fall into the water. It will deſcend to the place where the hook is intangled, and then by pulling the pack-thread gently, the hook will be ſoon diſengaged, or at the worſt it can only be broke off near the end of the line; whereas when this is not employed, the rod itſelf is ſometimes broken, or the line nearer its upper end.

Deep waters are beſt for *angling* in, for the fiſh do not love to be diſturbed by wind and weather.

The beſt ſeaſon is from April to October, for in very cold ſtormy weather the fiſh will not bite; the beſt times of the day are from three till nine in the morning, and from three in the afternoon till ſun-ſet.

In an eaſterly wind there is never much ſport for the angler; the ſoutherly winds are the beſt for his purpoſe, and a warm but lowering day is moſt of all to be choſen; a gentle wind after a ſudden ſhower to diſturb the water makes a very good opportunity for the *angler*; the cooler the weather in the hotteſt months, the better, but in winter on the contrary the warmer the day the better. A cloudy day after a bright moon-light night is always a good day for ſport, for the fiſh do not care to go after prey in the bright moon-ſhine, and are therefore hungry the next morning.

The openings of ſluices and mill-dams always bring fiſh up the current, to ſeek for the food which is brought with the ſtream, and *angling* in theſe places is uſually ſucceſsful.

Thoſe who are fond of *angling* might ſave themſelves ſome fruitleſs trouble, by obſerving when ſmall fiſh in a jar take or refuſe food.

It is very good *angling* a little before the fiſh ſpawn, for then their bellies being full, they frequent ſandy fords, to rub and looſen their bellies; at which time they will bite freely. In waters which ebb and flow, it is beſt *angling* at the ebb; but if the tide be not ſtrong, the flood is to be preferred.

ANGLING, *ground*, the art of catching fiſh under water without a float, only with a plumb of lead, or a bullet.

This method is moſt expedient in cold weather, when the fiſh ſwim low. The bullet is to be placed nine inches from the baited hook; the top of the rod is to be very gentle, that the fiſh may more eaſily run away with the bait, and not be ſcared with the ſtiffneſs of it. The angler in this way is not to ſtrike as ſoon as he feels the fiſh bite, but ſlacken his line a little, to give the fiſh an opportunity to ſwallow the hook.

The tackle here is to be fine and ſlender, ſtrong and big lines being apt to fright the fiſh. Morning and evening are the chief ſeaſons for the *ground*-line for trout, but in a cloudy day, or a muddy water, you may fiſh at *ground* from morn to night.

ANGLING, *night*, a method of catching large and ſhy fiſh in the night. Trout, and many other of the better ſorts of fiſh, are naturally ſhy, and fearful; they therefore prey in the night, as the ſecureſt time.

The method of taking them on this plan is thus: the tackle muſt be ſtrong, and need not be ſo fine as for day-fiſhing, when every thing is ſeen; the hook muſt be baited with a large earthworm, or a black ſnail, and thrown out into the river; there muſt be no lead to the line, ſo that the bait may not ſink, but be kept drawling along, upon, or near, the ſurface.

Whatever trout is near the place will be brought thither by the noiſe, and motion of the water, and will ſeize the worm, or ſnail. The angler will be alarmed by the noiſe which the fiſh makes in riſing, and is to give him line, and time to ſwallow the hook; then a ſlight twitch ſecures him. The beſt and largeſt trouts are found to bite thus in the night, and they riſe moſtly in the ſtill and clear deeps, not in the ſhallow ſwift currents. Sometimes though there are fiſh about the place, they will not riſe at the bait; in this caſe, the angler muſt put on ſome lead to his line, and ſink it to the bottom.

ANGLING *fly*. See FISHING *fly*.

ANGLING *hook*. See FISHING *hook*.

ANGLING *line* is either made of hair, twiſted, or of ſilk, or of the Indian weed.—The beſt colours are the ſorrel, white and grey; the two laſt for clear waters, the firſt for muddy ones. Nor is the pale watry green deſpiſable: this colour is given artificially, by ſteeping the hair in a liquor made of alum, ſoot, and the juice of walnut-leaves boiled together.

ANGLING *rod*. See FISHING *rod*.

In *angling*, they obſerve, after having ſtruck a large fiſh, to keep the rod bent; which will hinder him from running to the utmoſt length of the rod-line, by which he would be enabled to break his hold, or the hook.

ANGLO-CALVINISTS, a name given by ſome *Eccleſiaſtical Hiſtorians* to the members of the church of England, becauſe their doctrinal articles are built on the ſyſtem of Calvin; though ſome modern writers, without ſufficient reaſon, pretend that the doctrinal ſyſtem of the Engliſh church is Arminian.

The *Anglo-Calviniſts* make one of the four branches or diviſions of Calviniſm; and as ſuch ſtand diſtinguiſhed from the pure CALVINISTS, the PISCATORIANS, and the ARMINIANS.

ANGLO-SAXON *language*, that ſpoke by the ancient Angli or Saxons, who ſettled in England.

It was thus called from the people, who were partly Angli, partly Saxon.

It is otherwiſe denominated ſimply *Saxon*.

The *Anglo-Saxon*, or Engliſh-Saxon, is properly the original Engliſh; being the language which our Saxon anceſtors firſt eſtabliſhed in this iſland.—It is now called *Anglo-Saxon*, to diſtinguiſh it from the modern or preſent Engliſh.

ANGON, in the *Ancient Writers on Mechanics*, denotes a military engine of the bow-kind. Others again ſpeak of it as a kind of javelin uſed by the French, the iron head of which reſembled a *fleur de lys*. It is the opinion of ſome writers, that the arms of France are not *fleurs de lys*, but the iron points of the *angon*, or *javelin* of the ancient French.

ANGONÆUS, in *Anatomy*, a name given by Riolanus, and others, to a muſcle called by the generality of other writers *anconæus*, and *cubitalis minor*.

ANGOR is uſed by ſome phyſicians to denote a ſhrinking inwards of the native heat of the body, or its retiring to the center; upon which enſues a pain, and palpitation of the heart, attended with ſadneſs and melancholy.

In this ſenſe, *angor* amounts to much the ſame with what the Greeks call *agonia*.

The *angor* is reputed a bad ſymptom, when it happens in the beginning of an acute fever.

ANGSANA, or ANGSAVA, in *Botany*, names by which ſome authors have deſcribed the DRACO *arbor*, or *dragon-tree*; one of the trees ſaid to afford the *ſanguis draconis*, or *dragon's blood* of the ſhops.

It is eſteemed an aſtringent, and an excellent remedy in the *aphthæ*.

ANGUELLA, in *Zoology*, a name given by ſome authors to the fiſh more uſually called HEPSETUS, and ATHERINA, a ſmall fiſh caught about the ſhores of the Mediterranean, and ſome other places, and eſteemed a delicate taſted one.

ANGUILLA, in *Zoology*. See EEL.

ANGUILLIFORM, *anguilliformis*, in *Zoology*, the term for a very large claſs of fiſhes, which are ſoft and lubricous like the eel, and have no ſcales.

The word is derived from *anguilla*, an *eel*, and *forma*, *ſhape*, or *appearance*. Moſt of the fiſh compriſed in this claſs are long bodied alſo like the eel. Some of them have neither fins at their gills nor belly, as the *murus* and *lampetra*; others have fins at their gills, but none on their bellies, as the *ſea-ſerpent*, *eel*, *conger*, *ophidion*, and *ammodytes*. And others have both, as the *tæniæ*, *muſtelæ*, *alaudæ*, and the like.

ANGUILLIFORM is ſometimes alſo applied to land animals, which bear a reſemblance to eels, but do not properly belong to that claſs.

In this ſenſe, we read of *anguilliform* worms. G. Elſerus maintains that eels are viviparous; having found in ſome of them certain membranes full of *anguilliform* worms.

ANGUINA, in *Botany*, the name of a genus of plants deſcribed by Micheli, and mentioned by Plumier, and in the Malabar garden. It is the ſame genus with the TRICHOSANTHES of Linnæus, deſcribed in his *Genera Plantarum*, p. 466.

ANGUINEAL *hyperbola*. See HYPERBOLA, and CURVE.

ANGUINEI *verſus*, in *Poetry*, thoſe which may be read backwards.

Theſe are otherwiſe called recurrent verſes. Such, e. g. are

Optimum jus, lex amica, vox diſerta.
Diſerta vox, amica lex, jus optimum.

ANGUINUM *ovum*, among *Ancient Writers*, denotes an extraordinary ſort of an egg, ſaid to be produced by the joint *ſaliva* of a cluſter of ſnakes; being toſſed up on high by the hiſs, and thus caught in the air by the druids. It was endued, they ſaid, with many marvellous virtues.

ANGUIS, the SNAKE, in the Linnæan ſyſtem of *Zoology*, makes a diſtinct and large genus of the order of ſerpents, and claſs of amphibious animals; the character of which is, their having no feet, and a ſcaly body of a cylindric figure. See SNAKE.

ANGUIS *Æſculapii*, ſee COLUBER.

ANGUIUM *lapis*, a name given to a ſuppoſed ſtone in Germany, which is of a cylindric figure, and has a cavity capable of admitting a finger, and of a yellow colour, with a great many variegations. The vulgar call it *duchaneck*, and have an idle opinion of its having its origin in ſome manner from a ſerpent ant. De Boot, who had ſeen many of them, declares them to be fictitious, and made of glaſs tinged with two or three colours.

ANGULAR, ſomething that relates to, or hath, *angles*.

Angular objects at a diſtance appear round; the little inequalities diſappearing at a much leſs diſtance than the bulk of the body.

ANGULAR *motion* is a compound kind of motion, wherein the moveable both ſlides and revolves at the ſame time. Such is the motion of the wheel of a coach, or other vehicle.

The *phænomena*, &c. of ſuch motion, ſee accounted for under the article ROTA *Ariſtotellica*.

ANGULAR, *acute*, *ſection*, ſee ACUTE.

ANGULAR *capital*, ſee CAPITAL.

ANGULAR *column*, ſee COLUMN.

ANGULAR *niche*, ſee NICHE.

ANGULAR *motion*, in *Aſtronomy*, is the increaſe of the diſtance between any two planets, revolving round any body as the common centre of their motion.

The quantity of this motion is expreſſed by two right lines, drawn from the ſaid centre to the revolving bodies; which will open wider, and conſequently the angle will grow greater, as the revolving bodies part farther and farther from one another.

ANGULARIS *ſcapulæ*, in *Anatomy*, a name given by Winſlow, and ſome others, to the muſcle of the ſhoulder generally called the LEVATOR *ſcapulæ*.

ANGURIA, in *Botany*, ſee *Water*-MELON.

ANGUSTICLAVIA, or ANGUSTUS CLAVUS, in *Antiquity*, a *tunica*, embroidered with little purple ſtuds, worn by the knights.

The word is compounded of *anguſtus*, *ſmall*; and *clavus*, *ſtud*; becauſe thoſe ornaments were ſmaller in this garment than in the *laticlavia*, which was worn by the ſenators.

ANHALDIN, *anhaldinum*, an epithet given to various medicines, formerly kept as ſecrets in the family of Anhalt. Three of the moſt celebrated medicines under this denomination are a corroſive, a water, and a ſpirit.

The corroſive, as deſcribed by Burggrave, is compounded of calcined antimony, ſublimate mercury, ſal ammoniac, and calcined tartar, diſtilled and rectified.

The deſcription of the *Anhaltin* water is given in the common diſpenſatories, and that of the ſpirit may be found in De Spina.

ANHELITUS ſignifies a ſhortneſs and thickneſs of breath; as in an ASTHMA. See RESPIRATION.

The word is Latin, formed of the verb *anhelo*, *I breathe with difficulty.*

ANHIMA, in *Zoology*, the name of a Braſilian bird, ſomewhat reſembling the crane-family, but not regularly of it. It is diſtinguiſhed in a very ſingular manner from all other birds, having a long ſingle horn on its head, inſerted a little above the origin of the beak, and ſtanding forwards, and a little bent downwards. This is of two or three fingers breadth long, and is ſlender and round, as if nicely turned, and is of a bony ſubſtance, and ſine white colour; and on the front of each wing it has two other ſuch horns growing from the ſubſtance of the bone. It is found about waters, and is a very voracious bird, but feeds only on vegetables. It is longer than a ſwan; and is of a mixed colour of black, grey, and white, with a very little yellow in ſome places. It is always ſeen male and female together; and the male is twice as large as the female, which is here deſcribed, and is larger than our ſwan. It makes a very loud noiſe, often repeating the notes, *vyhu*, *vyhu*. Marcgrave's Hiſt. Braſil.

ANHINGA, in *Zoology*, the name of a very elegant Braſilian water fowl. It is about the ſize of our common duck; its beak is ſtraight, very ſharp, not thick, and about three fingers breadth long, and has all along the middle, as well above as below, a long ſeries of hooked prickles all bending backwards. Its head is ſmall, and its neck ſlender and long, not leſs than a foot in length; its legs are ſhort, and its toes connected by a membrane, as in the cormorant and duck-kind. Its tail is ten fingers breadth long; its wings, when folded, reach not more than half the length of the tail; its head and neck are yellowiſh, and covered with extremely ſoft velvet-like feathers; its breaſt, belly, and thighs, are of a ſilvery white. The upper part of its back is brown ſpotted with yellow, and the reſt all black. It is common on the Braſilian ſhores, and feeds on fiſh. Marcgrave's Hiſt. Braſil.

ANHLOTE, in *Law*, a ſingle tribute or tax. The words *anhlote*, and *anſcot*, are mentioned in the laws of William the Conqueror; and their ſenſe is, that every one ſhould pay, according to the cuſtom of the country, his part and ſhare, as ſcot and lot, &c. Leg. W. I. cap. 64.

ANHUIBA, in *Botany*, a name by which ſome authors call the SASSAFRAS tree, the wood of which is ſo much uſed in medicine.

ANHYDROS, in *Botany*, a name given by the ancient Greeks, and from them copied by the Romans in the time of Pliny, to expreſs one of thoſe kinds of the STRYCHNA, or night-ſhades, which when taken internally cauſed madneſs.

ANI, in *Zoology*, the name of a Braſilian bird, ſomewhat allied to the PAROQUETTE kind. It is about the ſize of a thruſh, and is all over black. It is very common in the woods, but is not eaten. Marcgrave's Hiſt. Braſil.

ANIL, in *Natural Hiſtory*, the ſhrub from whoſe leaves and ſtalks INDIGO is prepared. It is alſo called NIL. For the method of preparing *indigo* from it, ſee INDIGO.

ANIMA, a SOUL; whether rational, ſenſitive, or vegetative.

The word is pure Latin, formed of *ανεμος*, *breath.*

ANIMA is ſometimes uſed by phyſicians to denote the principle of life in the body.

In which ſenſe Willis calls the blood *anima brutalis.*

ANIMA is alſo figuratively uſed by chemiſts for the volatile principles in bodies, whereby they are capable of being raiſed by the fire.

In which ſenſe, we meet with *anima jaſpidis*, the ſoul of JASPER, &c. Phil. Tranſ. N° 74. p. 2233.

ANIMA is more peculiarly applied to ſimple medicines, artfully exalted by ſolution and extraction to a high degree of power.

In which ſenſe, we meet with *anima aloes*, *anima rhabarbari*, *anima veneris*, &c.

Sometimes alſo it denotes *medicines* which are peculiarly ſalutary to particular parts of the body. Thus we meet with

ANIMA *articulorum*, which is a denomination ſometimes given to HERMODACTYLS; on account of their efficacy in diſorders of the joints.

ANIMA *hepatis*, ſoul of the liver; a term applied by the chemiſts to the *ſal martis*, ſalt of iron or ſteel; on account of its uſe in diſtempers of that part.

It is more uſually preſcribed under the name of *vitriolum martis.*

ANIMA *pulmonum*, uſed for *crocus*, or ſaffron; by reaſon of its ſuppoſed great uſe in diſeaſes of the lungs.

ANIMA *mundi*, q. d. *ſoul of the world*, or *of the univerſe*, denotes a certain pure ethereal ſubſtance or ſpirit, diffuſed, according to many of the ancient philoſophers, through the maſs of the world, informing, actuating, and uniting the divers parts thereof into one great, perfect, organical, and vital body or animal.

Plato treats at large of the *ψυχη τȣ κοσμȣ*, in his *Timæus*; and is even ſuppoſed to be the author of the *dogma*; yet are interpreters much at a loſs about his meaning. Ariſtotle, however, taking it in the common and obvious ſenſe, ſtrenuouſly oppoſes it.

The modern Platoniſts explain their maſter's *anima mundi* by a certain univerſal ethereal ſpirit, which in the heavens exiſts perfectly pure, as retaining its proper nature; but on earth, pervading elementary bodies, and intimately mixing with all the minute atoms thereof, it aſſumes ſomewhat of their nature, and becomes of a peculiar kind.—So the poet:

Spiritus intus alit, totoſque infuſa per artus
Mens agitat molem, & magno ſe corpore miſcet.

They add, that this *anima mundi*, which more immediately reſides in the celeſtial regions as its proper ſeat, moves and governs the heavens in ſuch manner, as that the heavens themſelves firſt received their exiſtence from the fecundity of the ſame ſpirit: for that this *anima*, being the primary ſource of life, every where breathed a ſpirit like itſelf, by virtue whereof various kinds of things were framed conformable to the divine ideas.

The notion of an *anima mundi* is rejected by moſt of the modern philoſophers; though M. du Hamel thinks, without any great reaſon, ſince the generality of them admit ſomething very much like it. Thus the Peripatetics have recourſe to celeſtial influxes, in order to account for the origin of forms, and the ſecret powers of bodies.

The Carteſians have their ſubtile matter, which anſwers to moſt of the uſes and intentions of Plato's *anima mundi*; being ſuppoſed to flow from the ſun, and the other heavenly bodies, and to be diffuſed through all the parts of the world, to be the ſource or principle of all motion, &c.

Some later philoſophers in the place of theſe ſubſtitute fire; and others a ſubtle elaſtic ſpirit, or *medium*, diffuſed through all parts of ſpace.

The principal thing objected, on the Chriſtian ſcheme, againſt Plato's doctrine of the *anima mundi*, is, that it mingles the Deity too much with the creatures; confounds, in ſome meaſure, the workman with his work, making this, as it were, a part of that, and the ſeveral portions of the univerſe ſo many parts of the godhead.— Yet is the ſame principle aſſerted by Seneca, Epiſt. 92. *Totum hoc quo continemur, & unum eſt, & Deus. Et ſocii ejus ſumus, & membra*——

ANIMA *gemmarum*, a term uſed by Becher, and ſome others, to expreſs that principle, to which the gems, and other beautiful ſtones, owe their colours.

This *anima lapidum* is no more than the metalline ſulphur to which theſe ſtones and gems, naturally colourleſs, owe their tinges; and, like other metalline ſulphurs, it may be raiſed and evaporated by fire. Becher, Phyſ. Subt.

ANIMA *ſaturni*, *the ſoul of lead*, a preparation of lead, ſerving to many purpoſes in the enamel work. The method of making it is this: put litharge, powdered fine, into a glazed earthen veſſel, and pour diſtilled vinegar upon it to the height of four fingers; let it ſtand till the vinegar is of a white or milky hue: pour off this coloured vinegar, and put on freſh, and ſo do till the vinegar will no longer be coloured by the litharge; then ſet theſe liquors together in open glazed earthen veſſels, that the white powder may ſubſide, and the vinegar be poured off clear. This white ſubſtance is the *anima ſaturni*. Sometimes this white matter will not precipitate without the addition of water; and ſometimes it is neceſſary to evaporate the liquors; but, by that means, it is always prepared. Neri's Art of Glaſs, p. 184.

ANIMADVERSION ſometimes ſignifies *correction*; and ſometimes remarks or obſervations made on a book, &c. and ſometimes, a ſerious conſideration and reflection on any ſubject, by the rules of criticiſm.

The word is formed of *animus*, the *mind*; and *adverto*, *I turn to.*

ANIMAL, a being, which, beſides the power of growing, increaſing, and producing its like, which vegetables likewiſe have, is further endowed with ſenſation, and ſpontaneous loco-motion.

The word is derived from *anima*, *ſoul*; and literally denotes ſomething endued with a ſoul.

An *animal*, reſpect being only had to the body not the ſoul, may be defined with Boerhaave to be an organical body, conſiſting of veſſels and juices, and taking in the matter of its nutriment by a part called a *mouth*; whence it is conveyed into another called the *inteſtines*, into which it has roots implanted, whereby it draws in its nouriſhment, after the manner of plants.

Some have defined *animals* from their loco-motion, as being capable of ſhifting from place to place; and plants, from their ſticking faſt to the ſame ſubject: but on this principle, oyſters, muſſels, cockles, &c. would be almoſt excluded from the claſs of *animals*, inaſmuch as they uſually adhere, or grow to rocks, &c. yet it is certain, that thoſe creatures are real *animals*, as they have mouths and ſtomachs to take in their food, and lacteals and meſenteric veins to receive it, and ſometimes can even move from place to place on occaſion.—Indeed, muſſels ſeem an exception from the former definition: if, as is ſaid, that anomalous creature breathes, and receives its nouriſhment, not at the mouth, but by the *anus*; the part which we account its head, though without either eyes, ears, or tongue, or any other *apparatus*, ſave a hole, which we may call its mouth, is an immoveable part; being faſtened to one of the ſhells, ſo that it cannot ſeek for food, but the food muſt come to ſeek it. This food is water, which, as the ſhell opens, enters in at the *anus* of the muſſel, which opens at the ſame time; and paſſing thence into certain canals, between the inner ſurface of the ſhell, and the outer ſurface of the *animal*, is ſaid to be conveyed thence into its mouth, by a certain motion, which the *animal* can produce at pleaſure.

We may, therefore, with Dr. Tyſon, fix the *criterion* of an *animal* in a *ductus alimentalis*, i. e. a *gula*, ſtomach, and inteſtines: all which make but one continued canal.

All *animals*, according to the moſt probable and received opinion, come from eggs, and are there incloſed, as it were, in *epitome*, till the ſeed of the male penetrate their covering, and ſtretch them ſo that they become ready for hatching.

There then enters into their veſſels a chylous juice; which, being puſhed forwards by the ſpirits, circulates through the whole habit of the little body, nouriſhes and dilates it by little and little, and thus produces what we call *growth*.

This circulation, repeated ſeveral times, refines and attenuates the juices, till at length they become of a red colour, and are converted into what we call *blood*.—This natural operation bears a great reſemblance to ſeveral chemical proceſſes, by which, in attenuating and diſſolving oily or ſulphureous ſubſtances, they aſſume a red colour.

The philoſophers comprehended man under the ſpecies of *animals*; and define him, a reaſonable *animal*; though among naturaliſts, &c. the term *animal* is uſually reſtrained to irrationals.

Man, ſays Liſter, is as very an *animal* as any quadruped of them all; and moſt of his actions are reſolvable into inſtinct, notwithſtanding the principles which cuſtom and education have ſuperinduced.

Animals are ordinarily divided into *terreſtrial*, *aquatic*, *volatile*, *amphibious*, *inſects*, &c.

Terreſtrial animals, are either *quadrupeds*, or *reptiles*.—Quadrupeds have either the feet cloven, as the bullock; or entire, as the horſe; or divided into ſeveral toes or claws, as the dog, lion, &c. The other diviſions will be found under the words Fish, Bird, &c.

For a general account of the various kinds of *animals*, we ſhall here ſubjoin Mr. Ray's ſcheme.

Animals are either,

- *Sanguineous*, that is, ſuch as have blood, which breathe either by
  - Lungs, have either
    - Two ventricles in their heart, and thoſe either
      - Viviparous.
        - Aquatic, as the whale-kind. See Whale.
        - Terreſtrial, as quadrupeds.
      - Oviparous, as birds.
    - But one ventricle in the heart, as frogs, tortoiſes, and ſerpents.
  - Gills, as all ſanguineous fiſhes, except the whale-kind.
- *Exanguineous*, or without blood, which may be divided into
  - Greater; and thoſe either
    - Naked,
      - Terreſtrial, as naked ſnails.
      - Aquatic, as the poulp, cuttle-fiſh, &c.
    - Covered with a tegument, either
      - Cruſtaceous, as lobſters and cray-fiſh.
      - Teſtaceous, either
        - Univalve, as limpets.
        - Bivalve, as oyſters, muſſels, cockles, &c.
        - Turbinate, as periwinkles, ſnails, &c.
  - Leſſer, as inſects of all ſorts.

Viviparous hairy *animals*, or quadrupeds, are either

- Hoofed, which are either
  - Whole-footed, or hoofed, as the horſe and aſs:
  - Cloven-footed, having the hoof divided into
    - Two principal parts, called *biſulca*, either
      - Such as chew not the cud, as ſwine.
      - Ruminant, or ſuch as chew the cud, divided into
        - Such as have perpetual and hollow horns:
          - Beef-kind,
          - Sheep-kind,
          - Goat-kind,
        - Such as have ſolid, branched, and deciduous horns, as the deer-kind.
    - Four parts, or *quadriſulca*, as the rhinoceros and hippopotamus.
- Clawed or digitate, having the foot divided into
  - Two parts or toes, having no nails, as the camel-kind,
  - Many toes or claws, either
    - Undivided, as the elephant.
    - Divided, which have either
      - Broad nails, and an human ſhape, as apes.
      - Narrower and more pointed nails, which, in reſpect of their teeth, are divided into ſuch as have
        - Many fore-teeth or cutters in each jaw:
          - The greater, which have
            - A ſhorter ſnout, and rounder head, as the cat-kind.
            - A longer ſnout and head, as the dog-kind.
          - The leſſer, the vermin or weazel-kind.
        - Only two large and remarkable fore-teeth, all which are phytivorous, and are called the hair-kind.

Some have objected to Ray's diviſion of *animals*, that all *animals* are ſanguineous, ſince all have a vital fluid circulating through veins and arteries, though it be not of a red colour in all, the eſſential character of the blood lying not in its crimſon colour, but in its office: in which view every fluid, by whoſe motion through veſſels the life of an *animal* is ſuſtained, may be denominated Blood.

But this is rather a diſpute about words than things.

The celebrated Linnæus has diſtributed *animals* into ſix claſſes, viz. *mammalia*, *aves*, *amphibia*, *piſces*, *inſecta*, *vermes*. Each claſs is divided into a certain number of orders, and each order is again ſubdivided into *genera* or kinds, each of which contains a variety of ſpecies. The ſyſtem of this ingenious naturaliſt includes 354 kinds, and near 6000 known ſpecies. *Syſtema Naturæ*.

For particulars relating to animals, their numbers, analogous ſtructure, ſagacity, inſtinct, &c. ſee Creation, Ark, Head, Neck, Tail, Foot, Horn, Hoof, Storge, Instinct, &c.

Animals conſiſt of *ſolids*, or firm parts, as fleſh, bones, membranes, &c. and *fluids*, as blood, &c.—Of an intermediate kind may perhaps be reckoned fat, &c.

The ſolids are mere earth, bound together by ſome oily humour; and accordingly they are reducible by fire into ſuch earth again.

Thus a bone, being perfectly purged of all its moiſture by calcination, is found a mere earth, which the leaſt force will crumble into duſt, for want of the natural gluten: yet the ſame bone, by immerging it in water or oil, becomes firm and ſtrong again; and more ſo in oil than in water. And thus cupels are made of animal earth, which will ſuſtain the utmoſt effect of fire.

The fluid parts of *animals* are the cruder as they are leſs diſtant from the lacteals, and abſorbent veſſels.—Thus chyle is little elſe but a vegetable juice; but in its farther progreſs, it gradually lays aſide its vegetable characters, till after a number of circulations it becomes a perfect animal juice under the denomination of blood, from whence the other humours are all derived.

Animal ſubſtances have been diſtinguiſhed from thoſe of vegetables by two circumſtances: the firſt, that when burnt they are found perfectly inſipid; all animal ſalts being volatile, and flying off with heat: the contrary of which is found in vegetables, which conſtantly retain ſome fixed ſalt in all their aſhes.

The ſecond, that no pure acid is contained in any animal juice; nor can any acid ſalt be extracted from the ſame: the contrary of which is found in all vegetables. See Acid.

Yet are *animals* reconverted into their vegetable nature, by putrefaction.

Animals, *oviparous*, ſee Oviparous.

Animals, *rapacious*, ſee Rapacious.

Animals, *generation of*, ſee Generation.

Animals make the ſubject of that branch of natural hiſtory called *Zoology*.

The ſtructure of *animals*, with their diſorders, remedies, &c. make the ſubject of anatomy, medicine, &c.

Animals make the principal figures in heraldry; both as bearings, and as ſupporters, &c.

ANIMAL is alſo uſed adjectively, to denote ſomething that belongs to, or partakes of, the nature of an *animal* body. Thus we ſay *animal* food, *animal* œconomy, &c.

Moraliſts frequently oppoſe the *animal* part, which is the ſenſible, fleſhy part of man, to the rational part, which is the underſtanding.

ANIMAL *actions* are thoſe peculiar to *animals*; or which belong to *animals*, as ſuch.

Such are SENSATION, and *muſcular* MOTION.

ANIMAL *flower*, in *Zoology*, a name given by Mr. Griffith Hughes to an *animal*, or *zoophyton*, ſomewhat reſembling the flower of the marygold, but of a paler yellow.

This name ſeems well adapted to the *animal*; for its *claws*, or *tentacles*, being diſpoſed in regular circles, and tinged with a variety of bright lively colours, very nearly repreſent the beautiful petals of ſome of our moſt elegantly fringed and radiated flowers: ſuch as the carnation, marygold, and anemone. Phil. Tranſ. abr. vol. ix. p. 110.

ANIMAL *functions*, among *Phyſicians*. See FUNCTION.

ANIMAL *glue*, ſee GLUE.

ANIMAL *gods*, *dii animales*, in *Mythology*, thoſe into which human ſouls were converted by means of certain religious ceremonies.

Labeo has written expreſly on the *animal gods*.

ANIMAL *heat*, ſee HEAT.

ANIMAL *hunger*, ſee HUNGER.

ANIMAL *liquors*.—The common opinion is, that all the *animal liquors*, excepting chyle and milk, are of an alcaleſcent nature; but M. Queſnay, in his book *Sur l'Oeconomie Animale*, affirms, that our gelatinous liquors contain a very aceſcent ſalt, capable of reſiſting a heat of two hundred degrees. The proof of which, ſays he, offers itſelf daily to every one. Who is it that has not remarked, that broth made with fleſh well freed from fat, when corrupted, becomes as ſour as verjuice? The foundation on which M. Queſnay builds his doctrine concerning *animal liquors*, is the ſeparation of milk into its oily, cheeſy, and watery ſubſtances. Med. Eſſ. Edinb.

ANIMAL *motion* is the ſame with what we call *muſcular motion*.

It is divided into two branches; natural or involuntary, and ſpontaneous.

ANIMAL *oeconomy*, ſee OECONOMY.

ANIMAL *oil*, ſee OIL.

ANIMAL *ſecretion* is the act whereby the divers juices of the body are ſecreted or ſeparated from the common maſs of blood, by means of the glands. See SECRETION.

ANIMAL *ſpirits* are a fine ſubtile juice or humour in animal bodies; ſuppoſed by many to be the great inſtrument of muſcular motion, ſenſation, &c.

The ancients diſtinguiſhed ſpirits into three kinds, viz. *animal*, *vital*, and *vegetative*: but the moderns have reduced them to one ſort, viz. *animal*; about the nature of which, and the matter whence they are formed, great diſputes have ariſen among anatomiſts, though their very exiſtence has never been fairly proved.

In the Hiſtory of the Royal Academy of Sciences at Paris, an. 1759, there is an ingenious memoir on this ſubject by M. Bertin. He undertakes to prove that the nervous fluid, or *animal ſpirits*, circulate; that if they depart from the brain they return to it by the nerves. In ſhort, he propoſes to form the courſe of this fluid into a ſyſtem of circulation, leſs demonſtrable, indeed, to the ſenſes, than that of the circulation of the blood, but, in other reſpects, grounded on equally ſolid reaſons.

As it is hard to define what could never yet be brought under the judgment of our ſenſes, all that we ſhall here offer concerning them, is, that they muſt needs be extremely ſubtile bodies, which eſcape all manner of examination by the ſenſes, though ever ſo well aſſiſted; and pervade the tracts of the nerves, which yet have no diſcoverable cavity or perforation; nor could ever by any experiment be collected; yet are conſtantly moving in vaſt quantities, as they muſt of neceſſity be, to perform all thoſe mighty operations which are aſcribed to them.—However, the antiquity of the opinion claims ſome reverence.

By the help of theſe ſpirits we are furniſhed with a vaſt number of precarious ſolutions of great *phænomena*; and without them we muſt leave a great chaſm in the philoſophical hiſtory of *animal* bodies; but after all, the *phænomena* that would in this caſe be unexplained, are, it may be, to us inexplicable.

They are ſuppoſed to be ſeparated in the brain, from the ſubtileſt parts of the blood; and thence carried, by the nerves, to all the parts of the body, for the performance of all *animal* and vital functions.

ANIMAL *ſubſtances* comprehend all the component parts of *animals*, of what uſe or intention ſoever they may be.

ANIMAL *foſſile ſubſtances*, thoſe found buried in the earth, at various depths, and embodied among various *ſtrata*. Theſe are principally of four kinds: 1. Sea-ſhells. 2. The teeth, bony palate, and bones of fiſhes. 3. The bones of land *animals*. And, 4. Complete fiſh. See *Foſſile* BONES, *Foſſile* SHELLS, MARINE *remains*, and *Foſſile* IVORY.

ANIMAL *ſubſtances, fermentative quality of*. See FERMENT, and FERMENTATION.

ANIMAL *ſyſtem* imports the whole claſs of beings endowed with *animal life*.

In which ſenſe *animal ſyſtem* amounts to the ſame with what chemiſts, and others, call the *animal kingdom*.

ANIMAL is alſo ſometimes applied, in a figurative ſenſe, to artificial or moral things.

Hobbes conſiders government as a huge complex *animal*, under the denomination of *Leviathan*.

The reaſon of the appellation is founded on the analogy between an *animal*, and a political body. The ſovereign or legiſlative power anſwers to the ſoul; the magiſtrates to the limbs or members; rewards and puniſhments are the nerves; riches, the ſtrength; counſellors, the faculty of memory; equity, reaſon; ſedition, ſickneſs; civil war, death.

ANIMALCULE, **ANIMALCULUM**, a diminutive of animal; expreſſing ſuch a minute creature as is either ſcarce, or not at all, diſcernible by the naked eye.

Such are thoſe numerous inſects which croud the water in the ſummer months; changing it ſometimes of a deep or pale-red colour, ſometimes of a yellow, &c. Theſe often ſeem to be of the ſhrimp-kind, and the moſt common one is called by Swammerdam, *pulex aquaticus arboreſcens*. The cauſe of their concourſe, at this time, Mr. Derham obſerves, is to perform their *coit*. He adds, that they afford a comfortable food to many water animals.—The green ſcum, on the top of ſtagnant waters, is often nothing elſe but prodigious numbers of another ſmaller order of *animalcules*; which, in all probability, ſerve for food to the *pulices aquatici*.

The MICROSCOPE diſcovers legions of *animalcules* in moſt liquors, as water, wine, vinegar, beer, dew, &c. In the Philoſophical Tranſactions, we have obſervations of the *animalcules* in rain water, in ſeveral chalybeat waters, infuſions of pepper, bay-berries, oats, barley, wheat, &c. The human ſeed has been obſerved by divers authors to contain great numbers of *animalcules*.

Thoſe who have made the moſt minute reſearches, and the moſt accurate inquiries, into the natures of the ſeveral objects ſubjected to their ſenſes, have found that the ſubſtances upon which they employed their curioſity, were often quite different from what at firſt view they appeared to be. Thus, for inſtance, the whole earth has been found repleniſhed with an inexhauſtible ſtore of what we ſhould leaſt of all ſuſpect; that is, an infinite number of *animalcules* floating in the air we breathe, ſporting in the fluids we drink, or adhering to the ſeveral objects we ſee and handle. The conjectures and hypotheſes relating to the production, generation, ſtructure, and uſes of theſe *animalcules*, have been as various as were ever contrived by caprice, or embraced by credulity. Not to bewilder ourſelves, however, in theſe labyrinths, but to confine our aſſertions to actual diſcoveries; by the aſſiſtance of the MICROSCOPE we not only perceive that ſuch *animalcules* exiſt, but are alſo enabled, in ſome degree, to determine their ſhapes, and the various peculiarities of their motion.

This contemplation of *animalcules* has made the ideas of infinitely ſmall bodies extremely familiar to us. A mite was anciently thought the limit of littleneſs; but we are not now ſurpriſed to be told of animals twenty-ſeven millions of times ſmaller than a mite.

Minute animals are found proportionably much ſtronger, more active and vivacious than large ones. The ſpring of a flea in its leap, how vaſtly does it out-ſtrip any thing greater animals are capable of? A mite, how vaſtly faſter does it run than a race-horſe? M. de l'Iſle has given the computation of the velocity of a little creature ſcarce viſible by its ſmallneſs, which he found to run three inches in half a ſecond; ſuppoſing now its feet to be the fifteenth part of a line, it muſt make 500 ſteps in the ſpace of three inches; that is, it muſt ſhift its legs 500 times in a ſecond, or in the ordinary pulſation of an artery. Hiſt. Acad. Scienc. 1711. p. 23.

Dr. Hill, in his Hiſtory of Animals, has arranged *animalcules* under three claſſes: 1. Such as have no tails, nor any viſible limbs. 2. Thoſe which have tails, but no viſible limbs. And, 3. Thoſe which have viſible limbs; and each claſs is ſubdivided into ſeveral diſtinct *genera*. Hiſt. Anim. p. 1, &c.

ANIMALCULES, *viſible*, thoſe which may be diſcerned by the naked eye.

Such, e. gr. are mites, divers ſpecies of inſects, reptiles, and other vermin.

Animalcules, *inviſible.*—Naturaliſts ſuppoſe another ſpecies or order of inviſible *animalcules*, viz. ſuch as eſcape the cognizance even of the beſt microſcopes, and give many probable conjectures in relation to them. Reaſon and analogy give ſome ſupport to the exiſtence of infinite imperceptible *animalcules.*

The naked eye, ſay ſome, takes in from the elephant to the mite; but there commences a new order reſerved only for the microſcope, which comprehends all theſe from the mite, to thoſe twenty-ſeven millions of times ſmaller; and this order cannot be yet ſaid to be exhauſted, if the microſcope be not arrived at its laſt perfection.

Animalcules, *microſcopical*, thoſe only diſcoverable by the help of a large magnifier. Theſe, according to ſome, come under the denomination of *inviſible animalcules.*

The exceſſive minuteneſs of theſe *animalcules* conceals them from the human eye unarmed. One of the wonders of the modern philoſophy is, to have invented means for bringing creatures, to us ſo imperceptible, under our cogniſance and inſpection. An object a thouſand times too little to be able to affect our ſenſe, ſhould ſeem to have been very ſafe. Yet we have extended our views over animals, to whom theſe would be mountains. In reality, moſt of our microſcopical *animalcules* are of ſo ſmall a magnitude, that through a lens, whoſe focal diſtance is the tenth part of an inch, they only appear as ſo many points; that is, their parts cannot be diſtinguiſhed, ſo that they appear from the vertex of that lens under an angle not exceeding a minute. If we inveſtigate the magnitude of ſuch an object, it will be ſound nearly equal to $\frac{3}{100000}$ of an inch long. Suppoſing therefore theſe *animalcules* of a cubic figure, that is, of the ſame length, breadth, and thickneſs, their magnitude would be expreſſed by the cube of the fraction $\frac{1}{100000}$, that is, by the number of $\frac{27}{1000,000,000,000,000}$, that is, ſo many parts of a ſquare inch is each *animalcule* equal to. It is ſtrictly true of theſe *animalcules*, that many thouſands of them may dance on the point of a ſmall needle.

There are in ſome liquors *animalcules* ſo ſmall, as upon calculation the whole magnitude of the earth is not found large enough to be a third proportional to theſe minute floating animals, and the whales in the ocean.

With regard to their ſtructure and œconomy, *animalcules* are found of divers ſorts; ſome formed like fiſh, others reptile, others hexapedal, ſome horned, &c. In ſeveral kinds, however ſmall, it is eaſy to diſcover the form of their mouths, their proboſcides, horns, &c. the motions of their hearts, lungs, and other parts.

Every *animalcule* being an organized body, how delicate and ſubtile muſt the parts be, that are neceſſary to conſtitute it, and to preſerve its vital actions! It is hard to conceive, how in ſo narrow a compaſs, there ſhould be contained a heart to be the fountain of life, muſcles neceſſary to its motions, glands for the ſecretion of its fluids, ſtomach and bowels to digeſt its food, and other innumerable members, without which an *animalcule* cannot ſubſiſt. But ſince every one of theſe members is alſo an organical body, they muſt have likewiſe parts neceſſary to their actions. For they conſiſt of fibres, membranes, coats, veins, arteries, nerves, and an almoſt infinite number of fine tubes like thoſe, whoſe ſmallneſs ſeems to exceed all efforts of imagination. But there are ſome parts that ought almoſt to be infinitely leſs than theſe, as the fluids that flow along theſe fine tubes, the blood, lymph, and animal ſpirits, whoſe ſubtilty, even in large animals, is incredible.

Leewenhoeck calculates that a thouſand million of *animalcula*, which are diſcovered in common water, are not altogether ſo large as a common grain of ſand. This author, upon examining the male ſperm of various animals, diſcovered in many, infinite numbers of *animalcule*, not larger than thoſe abovementioned. In the milt of a ſingle cod-fiſh, there are more animals than there are men upon the whole earth; and yet a grain of ſand is bigger than four millions of them. The white matter alſo, which ſticks to the teeth, abounds with *animalcules* of various figures, to which vinegar is fatal; and it is known that vinegar contains *animalcules* in the ſhape of eels. In ſhort, according to this author, there is ſcarce any thing which corrupts, without producing *animalcules.*

Animalcula are ſaid to be the cauſe of various diſorders. The itch, from ſeveral experiments, is affirmed to be a diſorder ariſing from the irritations of a ſpecies of *animalcula* found in the puſtules of that ailment; whence the communication of it by contact from one to another is eaſily conceived, as alſo the reaſon of the cure being effected by cutaneous applications. On this foundation ſome have attributed the ſmall-pox and meaſles, and infectious diſeaſes; others the epilepſy, &c. to *animalcules.* Langius goes farther, and pretends to reduce all diſeaſes in general to the ſame principle. A late writer at Paris, who aſſumed the title of an Engliſh phyſician, has done more. He not only accounts for all diſeaſes, but for the operations of all medicines, from the hypotheſis of *animalcules.* He has peculiar animals for every diſeaſe: ſcorbutic *animalcules*, podagrical *animalcules*, variolous *animalcules*, &c. all at his ſervice.

But as moſt diſcoveries in natural philoſophy have laid a foundation for the warm imaginations of ſome men to form viſionary theories, to the great prejudice of real knowlege; ſo thoſe relating to *animalcula* have been drawn in, however improperly, to ſupport the moſt whimſical and chimerical ſyſtems.

See a variety of microſcopical objects, *animal*, *vegetable*, and *mineral*, delineated in table, Microscopical Objects *and* Discoveries.

ANIMATE, **Animated**, ſomething endued with life, or a living ſoul.

In mechanics, *animate power* is uſed to denote a man, or brute; in contradiſtinction to *inanimate power*, as ſprings, weights, &c.

Naturaliſts and philoſophers vary extremely in aſſigning the characters, ſubjects, and ſpecies of *animate* bodies.—Some include ſtocks and ſtones in this rank; others exclude brutes themſelves.

Some of the philoſophers have held all nature to be *animated*; that the ſun, the earth, the planets, rivers, trees, ſtones, &c. are ſo many animals; others, that the whole ſyſtem is only one huge animal, informed with a ſoul, or *anima mundi.*

Animated *horſe hairs.* See Horse *hairs.*

Animated is alſo uſed to denote a thing impregnated with vermin or Animalcules.

In this ſenſe the whole earth may be ſaid to be *animated*; ſince in every part of it we meet with an infinite number of animals, either viſible or inviſible; they are found in air, water, earth, plants, and even in the hardeſt ſtones; and there is perhaps no animal known, which does not breed numbers of others in the different parts of its body.

Animated *mercury*, among *Chemiſts*, ſignifies quickſilver, impregnated with ſome ſubtile and ſpirituous particles, ſo as to render it capable of growing hot when mingled with gold.

Animated *needle*, a needle touched with a load-ſtone, or Magnet.

ANIMATION ſignifies the informing of an animal body with a ſoul.

Thus the *fœtus* of the womb is ſaid to come to its *animation*, when it begins to act as a true animal: or after the female that bears it is *quick*, as the common way of expreſſion is.

The learned are not agreed about the time when the female becomes quick; ſome compute it at forty days after conception; others fix it about the middle of the term of Gestation.

T. Fienus Gardinius, Verde, Fort. Licetus, F. de Bononia, have written expreſly on the *animation* of the Foetus; Fr. Zanellis on the *animation* of the Seed.

Animation is alſo uſed by ſome *mechanical philoſophers*, for the act of ſoliciting the deſcent of a body, ſo as to give it continually new degrees of Acceleration.

Animation is alſo uſed by *Alchemiſts* for the operation of fermenting a white foliated earth, with a kind of philoſophical or celeſtial water or ſulphur.

Animation is alſo uſed in a moral or figurative ſenſe, for the act of giving life and force to a diſcourſe, or the like.

Animation is alſo uſed by *hermetic philoſophers*, to denote a certain ſtate of perfection to which a body is brought by ſome appropriate proceſs, in virtue whereof it becomes capable of producing ſome extraordinary *phænomena.*

ANIME, **Amine** & *cancamum* in *Pharmacy*, a kind of reſin, whereof there are two kinds, the *weſtern*, and *eaſtern.* This reſin is the produce of an American tree, of which we have no certain account.

The *weſtern* flows from an inciſion of a tree in New Spain, called *courbaril*; it is tranſparent, and of a colour like that of frankincenſe; its ſmell is very agreeable, and it eaſily conſumes in the fire.

The *eaſtern* gum *anime* is diſtinguiſhed into three kinds: the firſt is white; the ſecond blackiſh, in ſmell like myrrh; the third pale, reſinous, and dry.

Anime, according to Neumann, is a reſin totally ſoluble in ſpirit of wine. It is called improperly *gum animæ.* Other authors mention two ſubſtances, to which this name is given, one of which is brought from India, and is reſinous; the other is brought from Braſil, and is ſimilar in appearance and inſolubility in ſpirit of wine, or in water, to the ſubſtance called *gum copal.* All the *anime* which is to be found in ſhops of druggiſts is of this latter kind; and if it does not proceed from the ſame tree as *gum copal*, is ſcarcely diſtinguiſhable from it.

The ſmall tears are the pureſt; it has little taſte, but an agreeable ſmell; it eaſily breaks between the teeth; but if chewed for ſome time it ſoftens and becomes adheſive. Laid on red-hot iron, it melts immediately, catches flame, and burns quickly away, leaving a little white aſhes. In our ſhops, we have only the American ſorts of this reſin.

The beſt *gum anime* ought to be white, dry, friable, clean, of a good ſmell, that ſoon conſumes when thrown into the fire; and that contains a great deal of oil and eſſential ſalt.

It is proper to diſcuſs, to ſoften and diſſipate cold humours, and is therefore good for the head-ach; to ſtrengthen the brain they apply it to the top of the head, and perfume night-caps with it: it is alſo uſed for cleanſing and cicatriſing wounds.

Its principal uſe in medicine is external; in cold, painful, rheumatic, flatulent affections of the head, nerves, and joints; palſies, contractions, relaxations, contuſions, &c. It is an ingredient in plaſters, and cerates, for theſe purpoſes.

ANIME, in *Heraldry*, is where the eyes, &c. of a rapacious creature are born of a different colour from the reſt of the creature.

The French ſay *anime*, the Engliſh *incenſed*, the Latins *inſenſus*, of ſuch or ſuch a colour.

ANIMELLÆ, the glands under the ears, &c. called alſo *lacticinea*.

ANIMETTA, in *Eccleſiaſtical Writers*, denotes the pall or cloth wherewith the cup is covered in the euchariſt.

ANIMI *deliquium*, ſee LIPOTHYMIA and SWOONING.

ANINGA, in *Commerce*, a root growing in the Caribbee iſlands, of uſe in the refinement of ſugar,

The decoction of this root is found a more certain, as well as more innocent means of clarifying ſugar, than the ſublimate and arſenic uſed for this purpoſe, before the diſcovery of the *aninga*.

ANISATUM, a name given to ANISE-SEED water.

ANJOU *cabbage*, in *Botany*, ſee CABBAGE.

ANISCALPTOR, in *Anatomy*, a muſcle, otherwiſe called LATISSIMUS *Dorſi*.

ANISE-SEED, a medicinal ſeed, produced by an umbelliferous plant of the ſame name, common in ſome gardens, of the *pentandria digynia* claſs.

The outer thin ſkin of the ſeeds of this plant contains an eſſential oil; and the kernel itſelf contains an inodorous expreſſible oil. It can only operate as a mere reſinous ſubſtance, and may therefore be, not improperly, ſupplied by cheaper reſins. Neumann, p. 397.

The plant which produces it, is a ſpecies of APIUM or PARSLY, called by Tournefort *apium aniſum dictum, ſemine ſuaviolenti majori*, parſly with large ſweet-ſcented ſeeds, commonly called aniſe. It is a ſmall tender plant, producing one ſtalk, ſeldom ariſing above two feet high. It flowers and ſeeds in July, the root dying every year after it has yielded ſeed. It is cultivated in Germany; but the beſt ſeed, which is a ſmaller ſort, comes from Spain. The ſeed only is uſed, being one of the four greater hot ſeeds.

Aniſeed is carminative, expelling wind out of the ſtomach and bowels, both given at the mouth, and in clyſters. It is frequently put into children's victuals for the gripes and wind. It is very uſeful againſt cold affections of the lungs, difficulty of breathing, and aſthma. Some commend it much to be taken frequently by nurſes to increaſe their milk. It is often uſed as a corrector of the ſtronger purgative medicines. The oil diſtilled from the ſeed is uſed for the ſame purpoſes; and is often applied outwardly in carminative and anodyne liniments; particularly for the pleuriſy, and other pains in the ſide.

ANISE-SEED, *ſtarry*, *aniſum ſtellatum*, is a ſeed brought chiefly from Tartary; thus called from the affinity it bears in ſmell to the common *aniſe-ſeed*, and the ſtar-like figure of its *capſula ſeminalis*.

It was firſt brought into Europe from the Philippine iſlands by an Engliſh mariner, named Thomas Candy, in his return from a voyage round the world in the year 1601.—The natives call it *damor* and *zingi*; the Europeans ſometimes FOENICULUM *Sinenſe*, or Chineſe FENNEL; botaniſts, ANISUM *Indicum*, ANISUM *peregrinum*, ANISUM *exoticum Philippinarum inſularum*, CARDAMOMUM *Siberienſe*, BADIANUM, &c.

Its virtues are of the ſame kind with thoſe of the common *aniſe-ſeed*, only that it is ſweeter, more grateful, penetrating, and aromatic. It is reputed a general cordial and ſtrengthener.

The Chineſe uſe it in the preparation of their tea; and after their example the Dutch alſo uſe it in this liquor, pretending it makes it more pleaſant.

The wood is alſo imported into Europe, where it is employed in works of marquetry and moſaic.—It is alſo called ANIL.

In diſtilling the *aniſe-ſeed* for the oil, there is procured a limpid water called *aniſe-ſeed* water, which has much the ſame virtues with the oil.

See Neumann's chemical hiſtory of theſe plants, and his account of their chemical differences from each other, and of the peculiarities of the eſſential oil of *aniſe-ſeeds*, in his works, p. 393, & ſeq.

ANKER, ANCHOR, a liquid meaſure chiefly uſed at Amſterdam, &c.

The *anker* is the fourth part of the *awn*, and contains two *ſtekans*; each *ſtekan* conſiſts of ſixteen *mengles*; the *mengle* being equal to two Paris pints.

ANNALE, in ſome *Middle Age Writers*, denotes a day held every year in commemoration of the dead.

In which ſenſe *annale* amounts to the ſame with what is otherwiſe called *anniverſarium*.

ANNALE is more particularly applied to the maſſes celebrated during the ſpace of a year for the dead.

ANNALIS *actio*, in the *Civil Law*, denotes an action which may be put in practice any time within the year.

In the like ſenſe we meet with *annale decretum*, or *negatum*, *annalis reſciſio*, &c.

ANNALIS *clavus*, in Roman *Antiquity*, the nail which the prætor, conſul, or dictator, fixed every year in the wall of Jupiter's temple, on the ides of September, to ſhew the æra or number of years from the building of Rome. This cuſtom was afterwards changed, and the years were reckoned by the CONSULS.

ANNALIS *exceptio*, a kind of privilege anciently granted the people of Italy, that whoever had made a contract, could not be compelled to the performance, or payment of what had been agreed on within the year. Some extend this privilege ſo as to render it ſtill more grievous, by computing the year excluſive of all holydays.

ANNALES *libri*, in the *Civil Law*, denote books wherein the acts, and proceedings of a whole year, were contained.

In which ſenſe *annales* ſtand oppoſed to *ſemeſtres libri*, wherein the acts and conſtitutions of ſix months were contained.

ANNALES *baculi*, denote a kind of wooden almanacs uſed among our anceſtors, called alſo *runſtocks* or *clogs*.

ANNALES, in *Middle Age Writers*, denote yearlings, or young cattle of a year old, or under two.

ANNALES alſo denote a kind of rent, or annual revenue.

ANNALS, an hiſtorical account of the affairs of a ſtate, digeſted in the order of years.

The difference between *annals* and *hiſtory* is variouſly aſſigned by various authors.—Some ſay that *hiſtory* is properly a recital of things which the author has ſeen, or been a by-ſtander to. What they build upon is, the etymology of the word; *hiſtory*, in the Greek, ſignifying the knowlege of things preſent, and, in effect, ἱϛορεῖν properly ſignifies *to ſee*. On the contrary, *annals*, ſay they, relate to the tranſactions of others, and ſuch as the writer never ſaw.

Of this opinion the great *annaliſt*, Tacitus himſelf, ſeems to have been; becauſe the firſt part of his work, which treats of former times, he calls *annals*; but when he comes down to his own times, he changes his title, and calls it *hiſtory*.

According to Sempronius Aſellio, *annals* are a bare relation of what paſſes each year; whereas *hiſtory* relates not only to the tranſactions themſelves, but alſo the cauſes, motives, and ſprings of them. The *annaliſt* merely ſtates his facts, but the *hiſtorian* reaſons and deſcants on them.

Of this laſt opinion ſeems Cicero to be, when, ſpeaking of *annaliſts*, he ſays, *Unam dicendi laudem putant eſſe brevitatem, non exornatores rerum, ſed tantum narratores.* He adds, that *hiſtory*, in its original, was the compoſition of *annals*.

Cicero relates the origin of *annals*: to preſerve the memory of tranſactions, the *pontifex maximus*, ſays he, wrote what paſſed each year; and expoſed it on a table, in his own houſe, where every one was at liberty to read it.—This they called *annales maximi*; and this cuſtom was kept up till the year of Rome 620.

Annales maximi conſiſted of eighty books. They were moſt of them deſtroyed in the burning of the city by the Gauls.

The like *annals* were kept from the earlieſt ages by the Egyptians, Babylonians, Perſians, Chaldeans, &c.

Several other writers, in imitation of theſe, adopted this ſimple and naked way of relating facts; and were hence denominated *annaliſts*.—Such were Cato, Pictor, Piſo, Antipater, &c.

The *Annals* of Grotius is a book finely written, and contains excellent materials. He is not ſo particular as Strada, but more profound, and comes much nearer to Tacitus.

ANNATES, ANNATA, in *Eccleſiaſtical Writers*, denotes a year's income, due anciently to the pope upon the death of any biſhop, abbot, or pariſh-prieſt; and to be paid by his ſucceſſor.

Annates are alſo called from the Latin *annus*, *year*, becauſe their rate is after the value of one year's purchaſe.

Annates are the ſame with what of later days are called *primitiæ*, or *firſt-fruits*: with this only difference, that firſt-fruits with us are paid to the king.

The invention of *annates* is aſcribed, by a late writer, to Anthonin, biſhop of Epheſus, who exacted from all biſhops conſecrated by him, a ſum proportionate to the annual revenues of their ſees. The council of Epheſus held in 400, condemned this exaction, but not till Anthonin was dead. It was long after that *annates* got footing in the weſtern church. The time when they were firſt introduced is very obſcure; ſome refer it to the pontificate of Alexander IV. others to that of John XXII. who, in the firſt year of his papacy, obtained a year's revenue of all the cathedral benefices. Clement V. is ſaid to have been the firſt pope who impoſed *annates* on England. In 1399, during the ſchiſm of the antipopes, Benedict IX. exacted a year's revenue of all the archbiſhopricks, biſhopricks, and abbies. But in the time of theſe popes, the *annates* were not fixed; and the clergy often refuſed to pay them. There were even popes who condemned *annates*; and the ſecular princes frequently objected to the payment of them, forbidding any money to be carried out of their dominions on this account.

Nic. de Clemangis, A. Maſſa, Galleſius, Campegius, and Fernandus Cordubenſis, have written expreſly concerning *annates*.

Matthew Paris, in his Hiſtory of England, for the year 746, relates, that the archbiſhop of Canterbury, in virtue of a grant or conceſſion of the pope, received *annates* of all the benefices that became vacant in England. Before this time, among the laws of king Ina, who began his reign in the year 712, there is an order for the payment of them. But, in after times, the holy ſee thought fit to take theſe away from the biſhops and archbiſhops, and appropriate them to themſelves. And from the popes the parliament under Henry VIII. took them, and gave them to the crown, 25 H. VIII. cap. 20. Finally queen Anne reſtored them to the church, by appropriating them to the augmentation of poor livings.

ANNEALING, as it is popularly called, *nealing*, ſee NEALING.

ANNEXATION, in a legal ſenſe, the act of joining or uniting ſome leſs conſiderable thing to a greater.

ANNEXED, ſomething joined to, or dependent on another.—Thus we ſay, ſuch a farm, ſuch an advowſon, is *annexed* to ſuch a fee, ſuch a manor, &c. Charles VIII. in the year 1486, *annexed* Provence to the crown of France.

ANNIENTED, or rather ANIENTED, a term ſometimes uſed in law-books, in the ſenſe of fruſtrated, or annulled.

It is formed of the verb *aneantir*, *to bring to nothing*, or *to annihilate*.

ANNIHILATION, the act of reducing a ſubſtance into nothing; or of totally deſtroying and taking away its exiſtence.

The word is compounded of *ad*, *to*, and *nihil*, *nothing*.

Annihilation ſtands oppoſed to creation: the one ſuppoſes ſomething made out of nothing, the other nothing made out of ſomething.

All *annihilation* muſt be metaphyſical or ſupernatural: bodies naturally admit of changes and alterations in their form; but not of *annihilation*.

The ancient philoſophers in effect denied all *annihilation* as well as creation, reſolving all the changes in the world into new modifications, without ſuppoſing the production of any thing new, or deſtruction of the old.

By daily experience they ſaw compounds diſſolved, and in their diſſolution nothing periſhed, but their union, or connection of parts; when in death the body and ſoul were ſeparated, the man they held was gone, but the ſpirit remained in its original, the great ſoul of the world, and the body in its earth from whence it came; theſe were again wrought by nature into new compoſitions; and entered new ſtates of being, which had no relation to the former.

According to ſome, nothing is ſo difficult as *annihilation*; it requires the infinite power of the Creator to effect it; ſome go further, and ſeem to put it out of the power of God himſelf. According to others, nothing ſo eaſy; exiſtence is a ſtate of violence; all things are continually endeavouring to return to their primitive nothing; it requires no power at all; nay, what is more, it requires an infinite power to prevent it.

The Talapoins hold it the ſupreme degree of happineſs to have the ſoul totally *annihilated*, and freed from the burden and ſlavery of tranſmigrations.

ANNIHILATION is alſo uſed, in *Political Arithmetic*: thus, when the capital ſtock of any public fund is reduced, ſo much as is reduced is ſaid to be *annihilated*.

ANNI *nubiles*, among *Law Writers*, the legal age, at which a maid becomes fit for marriage; which is at twelve years.

ANNIS *communibus*. See COMMUNIBUS.

ANNISEED. See ANISE-SEED.

ANNIVERSARY, is properly the yearly return of any remarkable day: anciently alſo called a *year-day*, or *mind-day*, that is, a memorial-day.

The word is formed from *annus* and *verto*, on account of its returning every year.

ANNIVERSARY *days*, *dies anniverſarii*, among our anceſtors more particularly denote thoſe days wherein the martyrdoms of the ſaints were yearly celebrated in the church; as alſo days whereon, at every year's end, men were wont to pray for the ſouls of their deceaſed friends.—*Anniverſaria dies ideo repetitur defunctis, quoniam neſcimus qualiter eorum cauſa habeatur in alia vita.*—This was the reaſon given by Alcuinus in his Divine Offices.

ANNIVERSARY *winds* are thoſe, which blow conſtantly at certain ſeaſons of the year.

Theſe are otherwiſe called Eteſian winds: ſuch are the TRADE *winds*, and MONSOONS.

ANNIVERSARY is more particularly uſed for the *annale*, or maſs, rehearſed daily for the ſpace of a year after a perſon's death.

ANNO *Domini*, q. d. in the *year of our Lord*; the computation of time from the EPOCHA of the incarnation of Jeſus Chriſt.

ANNOISANCE, in *Law*. See NUSANCE.

ANNOMINATION, *annominatio*, in *Rhetoric*, the ſame with what is otherwiſe called PARONOMASIA.

ANNONA, in *Botany*. See *Cuſtard* APPLE.

ANNONA, in *Ancient Writers*, denotes victuals or proviſion of corn for a year.

ANNONA *civilis*, the corn with which the granaries of cities were filled every year, for the ſubſiſtence of the citizens.

ANNONA *militaris*, the corn and other proviſion laid up in the magazines, for the ſubſiſtence of an army during the campaign.

In ancient writers we alſo meet with the phraſes *ſingulæ annonæ*, *binæ annonæ*, *ternæ annonæ*; with regard to which Salmaſius lays down this rule, that when *annona* occurs in the ſingular number, it includes not only corn, but fleſh, wine, oil, and other neceſſaries; whereas, when it is uſed in the plural number, it imports bread alone. Aquinus is not contented with this rule, but inſtead of it advances another, viz. that *annona* in the ſingular number includes all kinds of proviſion; and, in the plural, imports ſo many rations or pittances of bread, fleſh, and the like, diſtributed to ſo many men.

In this ſenſe, ſoldiers are ſometimes ſaid to have riſen to the benefit of five or more *annonæ*, that is, were entitled to ſo many rations. The emperors Arcadius and Honorius took great pains to reduce this profuſion.

ANNONAGE, *annonagium*, a tax on corn.

ANNONAGE is much the ſame with *frumentage*.

ANNOTATION, a ſuccinct commentary, or remark on a book, or writing; in order to clear up ſome paſſages, or to draw ſome induction, or conſequence from it.

The word is formed of *ad*, and *nota*, *note*.

ANNOTATION, in *Medicine*, denotes the very beginning of a febrile paroxyſm, when the patient grows chill, ſhudders, yawns, is drowſy, and the like.

It is alſo uſed for a ſymptom peculiar to hectic fevers, when the patient, an hour or two after eating, finds himſelf hot, his pulſe quickened, &c. without any ſhuddering.

ANNOTATION, in the *Civil Law*, denotes a kind of reſcript or grant of the emperor, ſigned with his own hand. But this *annotation* differed from a mere reſcript, and a pragmatic ſanction.

It took its name from the note or ſubſcription at the bottom, which was in red letters.

ANNOTTO, in *Commerce*, a kind of red dye, brought from the Weſt Indies. This is otherwiſe denominated *anate* and *attole*.

It is procured from a red flower, produced by a ſhrub, which grows ſeven or eight feet high. This flower being thrown into tubs or ciſterns, for the purpoſe, is treated much after the manner of INDIGO; and the red maſs is extracted by this infuſion and fermentation from the pellicles of the tree.

The *annotto* is now only prepared by the Spaniards. The Engliſh had formerly a manufacture at St. Angelo now ruined. The drug is preferred by the dyers to indigo, and ſold one fourth dearer. The double Glouceſter cheeſe is coloured with this dye, not with marygolds. To water it gives only a pale browniſh-yellow colour, and is very little ſoluble in that liquid. It readily diſſolves in ſpirit of wine, and gives a bright orange colour; hence it is uſeful as an ingredient in varniſhes and lacquers. Wool and ſilk boiled in a ſolution of it, by alkaline ſalts in water, acquires a deep, but not a durable orange dye; for though it is not changed by alum or acids, it is diſcharged by ſoaps, and deſtroyed by expoſure to the air. It is ſaid to be an antidote to the poiſonous juice of *manihot*, or *caſſada*.

See more of this artificial preparation, and the manner of making it, in Dr. Lewis's Commercium Phil. Techn. p. 224, &c. or Neumann's Works, p. 433, &c.

ANNUAL, ſomething which returns every year, or cloſes at the end of the year.

Thus we ſay, an *annual*, or yearly feaſt, office, commiſſion, rent, revenue, income, &c.

The *annual* motion of the earth, ſee proved under EARTH.

ANNUAL is ſometimes uſed for the yearly rent, or income of a prebendary, &c.

In which ſenſe *annuale* amounts to the ſame with what we otherwiſe call *annat*.

ANNUAL is alſo uſed, in *Eccleſiaſtical Writers*, to denote a yearly office, ſaid for the ſoul of a perſon deceaſed on the day of his obit, or anniverſary.

ANNUAL, in the Scottiſh *Law*, denotes any yearly revenue, or due, paid at certain terms, either legal, as Martinmaſs and Whitſuntide, or conventional, as the parties agree.

In the acts of parliament, made by queen Mary, mention is made of *ground-annuel*, *fue-annuel*, and *top-annuel*; the meaning whereof is ſomewhat uncertain.

ANNUEL, *ground*, according to Skene, is, when the property of any land, whether built or unbuilt, is let or ſold for a yearly rent, to be paid either to the proprietor, or to ſome chaplain, or prieſt.

ANNUEL, *fue*, is either when the mail or due is diſpoſed of, as a yearly revenue; or, when the land or tenement is let in fee-farm hereditary, for a certain yearly ſum to be paid under the denomination of *feuda firma*.

ANNUEL, *top*, is a due given or aſſigned out of houſes or buildings, where the property remains with the former owner, only with the condition of his paying the ſaid *annuel*.

ANNUEL *of Norway*, of which mention is made in the acts of parliament of king James the third, was an *annuel* payment of an hundred marks ſterling, which the kings of Scotland were obliged to pay to the kings of Norway, in ſatisfaction for ſome pretenſions which the latter had to the Scottiſh kingdom, by virtue of a conveyance made thereof by Malcolm Kanmoir, who uſurped the crown after his brother's deceaſe.

This *annuel* was firſt eſtabliſhed in 1266; in conſideration whereof the Norwegians renounced all title to the ſucceſſion of the iſles of Scotland. It was paid till the year 1468, when the *annuel*, with all its arrears, was renounced in the contract of marriage between king James the third, and Margaret daughter of Chriſtian the firſt, king of Norway, Denmark, and Sweden. See Skene de Verb. Signif.

ANNUAL *argument of longitude*. See ARGUMENT.

ANNUAL *epacts*. See EPACT.

ANNUAL *equation* of the mean motion of the ſun and moon, and of the moon's apogee and nodes. See EQUATION.

ANNUAL *leaves*, are ſuch *leaves* of plants, as come up afreſh in the ſpring, and periſh in winter.—Theſe ſtand oppoſed to *ever-greens*.

ANNUAL *plants*, called alſo ſimply *annuals*, are ſuch as only live their year, i. e. come up in the ſpring, and die again in autumn; and accordingly are to be recruited every year.

ANNUAL *meadow graſs*, called in ſome parts of England Suffolk graſs, is a ſpecies of graſs, which makes the fineſt turfs, and ſeems well adapted to dairy-farms.

ANNUALIA, yearly oblations anciently made by the relations of deceaſed perſons, on the day of their death.

This day they called *year-day*, &c. and on it maſs was celebrated with great ſolemnity.

ANNUENTES *muſculi*, in *Anatomy*, a pair of tranſverſe muſcles, at the root of the *vertebræ* of the back, called alſo by Mr. Cowper, RECTI *interni minores*, becauſe they lie under the RECTI *majores*.

They are called *annuentes*, from *annuere*, *to nod towards*, becauſe they help to nod the head, or draw it directly downwards and forwards.

ANNUITIES ſignify any intereſts of money, rents, or penſions, payable from time to time, at particular periods.

The moſt general diviſion of *annuities* is into *annuities certain*; and *annuities*, the payment of which depends on a *contingency*; ſuch, in particular, as the continuance of a life.

Annuities have been alſo divided into *annuities* in *poſſeſſion*, and *annuities* in *reverſion*; the former meaning ſuch as either *have* commenced, or are to commence *immediately*; and the latter ſuch as will not commence till ſome particular future event has happened, or till ſome given period of time has expired.

Annuities may be farther conſidered, as *payable yearly*, *half yearly*, or *quarterly*.

The preſent value of an *annuity* is that ſum which, being improved at intereſt, will be ſufficient to pay the *annuity*.

The preſent value of an *annuity certain*, payable yearly, and the firſt payment of which is to be made at the end of a year, is calculated in the following manner.

Let the *annuity* be ſuppoſed to be 100*l.* the preſent value of the firſt payment of it, or of a hundred pounds to be received a year hence, is that ſum in hand, which being put out to intereſt, will increaſe to 100*l.* in a year. In like manner, the preſent value of the ſecond payment, or of 100*l.* to be received two years hence, is that ſum in hand, which being put out to intereſt, will increaſe to 100*l.* in two years. The like is true of the value of the 3d, 4th, 5th, &c. payments; and the ſum of the values of all the payments is the value of the *annuity*.

Let the intereſt be ſuppoſed to be 4 *per cent.* The ſum which improved at 4 *per cent.* intereſt for a year will produce 100*l.* at the end of the year, is the ſum which bears the ſame proportion to 100*l.* that 100*l.* bears to 100*l.* with 4 added to it, that is, to 104*l.* Say then as 104*l.* is to 100*l.* ſo is 100*l.* to a fourth proportional, which will be 96.15, or 96*l.* 3*s.* which is the value of the firſt payment.

Again, the ſum which improved at 4 *per cent.* for two years will produce 100*l.* at the end of *two* years, is the ſum which being now put out to intereſt, will produce in a year that ſum which in one year more will produce 100*l.* that is, it is the ſum that will produce in a year 96*l.* 3*s.*; for it has been juſt ſhewn, that 96*l.* 3*s.* will in a year produce 100*l.* Say then as 104*l.* is to 100*l.* ſo is 96*l.* 3*s.* or 96.15 to a fourth proportional, which will be 92.45, or 92*l.* 9*s.* The value therefore of the ſecond payment is 92*l.* 9*s.*

By proceeding in this method it will be found, that the values of the 3d, 4th, 5th, &c. payments, are £88.89, £85.48, £82.19, &c. The ſum of 10, 20, or 100 of theſe values, is £811, £1359, £2450, reſpectively, or the preſent value of an *annuity* of 100*l.* payable for 10, 20, or 100 years. The ſum of an infinite number of theſe values is 2500*l.* or the value of a perpetual *annuity* of 100*l.* at 4 *per cent.*

In general: ſuppoſe r to denote 1*l.* increaſed by its intereſt for a year, or the amount of 1*l.* in a year. Then $\frac{1}{r}$ will be the preſent value of 1*l.* to be received a year hence; for r is to 1 as 1 is to $\frac{1}{r}$. Alſo $\frac{1}{r^2}$ will be the value of 1*l.* to be received at the end of two years; for r is to 1, as $\frac{1}{r}$ is to $\frac{1}{r^2}$. In like manner, $\frac{1}{r^3}$, $\frac{1}{r^4}$, $\frac{1}{r^5}$, &c. will be the value of 1*l.* to be received at the end of 3, 4, 5, &c. years reſpectively; and $\frac{1}{r^n}$ will be the value of 1*l.* to be received at the end of n years. The value, therefore, of an *annuity* of 1*l.* for n years is $\frac{1}{r}+\frac{1}{r^2}+\frac{1}{r^3}+\frac{1}{r^4}$, &c. continued to n terms.

And the value of the perpetuity is this ſeries continued *in infinitum*.

In order to find the ſum of n terms of this ſeries, put S equal to it, or $S=\frac{1}{r}+\frac{1}{r^2}+\frac{1}{r^3}$, &c. $+\frac{1}{r^n}$.

Then,

$Sr=1+\frac{1}{r}+\frac{1}{r^2}$, &c. $+\frac{1}{r^{n-1}}$. And

$Sr-1=\frac{1}{r}+\frac{1}{r^2}$, &c. $+\frac{1}{r^{n-1}}=S-\frac{1}{r^n}$. Therefore

$Sr-1=S-\frac{1}{r^n}$. And conſequently

$Sr-S=1-\frac{1}{r^n}$, and $S=\frac{1}{r-1}-\frac{1}{r-1}\times\frac{1}{r^n}$.

This is the general theorem for finding the ſum of any given number of the firſt terms of the ſeries $\frac{1}{r}+\frac{1}{r^2}+\frac{1}{r^3}$, &c. that is, for finding from the rate of intereſt given, the value of an *annuity certain*, payable yearly for any number of years. If the *annuity* is a perpetuity, it is plain, that $\frac{1}{r^n}$, or the laſt term vaniſhing, $\frac{1}{r-1} \times \frac{1}{r^n}$, alſo vaniſhes; and, conſequently, that the expreſſion becomes $S = \frac{1}{r-1}$: from whence it reſults that the value of a perpetuity is always unity divided by the intereſt of 1*l.* for a year, or 100*l.* divided by the rate of intereſt.

The value of the *reverſion* of a perpetual *annuity*, to be entered upon after a particular term, is "the value of the *annuity* for the given term ſubtracted from the perpetuity." For example: the value of an *annuity* to be entered upon ten years hence is (reckoning intereſt at 4 *per cent.*) 8.11, i. e. the value of an *annuity* certain for ten years, ſubtracted from 25 the perpetuity, or 16.89; that is, 16 $\frac{9}{10}$ years purchaſe nearly. If the *annuity* is to be entered upon at the end of 18 years, the value will be 12.34.

If the reverſion is not a perpetuity, but an *annuity* certain for a given term, to be entered upon after another given term, the value will be the value of the perpetuity after both terms ſubtracted from the value of the perpetuity after the firſt term; that is, ſuppoſing the reverſion an *annuity* for 8 years, to be entered upon after 10 years, the value is (reckoning intereſt at 4 *per cent.*) the difference between 16.89, and 12.34, or 4.55; that is, 4½ years purchaſe nearly.

Annuities certain differ in value, as they are made payable *yearly*, *half-yearly*, or *quarterly*. The following theorems, founded on the general theorem juſt given, will ſufficiently explain this ſubject. Let r denote, as before, 1*l.* increaſed by its intereſt for a year, and n the term or number of years during which any *annuity* is to be paid. Let P denote the perpetuity, or $\frac{1}{r-1}$: let y denote the value of an *annuity* for n years, ſuppoſing it paid *yearly*, or $\frac{1}{r-1} - \frac{1}{r-1} \times \frac{1}{r^n}$; h its value payable *half yearly*; and q its value payable *quarterly*.

THEOREM I.

$$y = P - P \times \frac{1}{r^n}$$

THEOREM II.

$$h = P - P \times \frac{1}{\overline{1+\frac{r-1}{2}}\Big|^{2n}}$$

THEOREM III.

$$q = P - P \times \frac{1}{\overline{1+\frac{r-1}{4}}\Big|^{4n}}$$

Example I.

Let the rate of intereſt be 4 *per cent.* and the term five years; and conſequently $r = 1.04$, $n = 5$, $P = 25$, and $\frac{1}{r^n}$, or the value of 1*l.* payable at the end of five years, .8219.

Then
$y = 25 - 25 \times .8219 = 4.4518$
$h = 25 - 25 \times .82034 = 4.4913$
$q = 25 - 25 \times .8196 = 4.5120$

Example II.

Let the rate of intereſt be the ſame, and the term for which the *annuity* is payable 25 years.

Then,
$y = 15.6220$
$h = 15.7118$
$q = 15.7694$

Example III.

Intereſt being the ſame, let the term be 50 years.

Then,
$q = 21.4822$
$h = 21.5491$
$q = 21.5820$

Example IV.

Intereſt being the ſame, let the term be 100 years.

Then,
$y = 24.505$
$h = 24.523$
$q = 24.532$

TABLES for finding the values and amounts of ſums and *annuities* for any number of years not exceeding a hundred, at any rates of compound intereſt from 3 to 6 *per cent.*

TABLE I.

Shewing the amount of 1*l.* principal.

Years	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
1	1.030000	1.035000	1.040000	1.045000	1.050000	1.060000
2	1.060900	1.071225	1.081600	1.092025	1.102500	1.123600
3	1.092727	1.108718	1.124864	1.141166	1.157625	1.191016
4	1.125509	1.147523	1.169859	1.192519	1.215506	1.262477
5	1.159274	1.187686	1.216653	1.246182	1.276282	1.338226
6	1.194052	1.229255	1.265319	1.302260	1.340096	1.418519
7	1.229874	1.272279	1.315932	1.360862	1.407100	1.503630
8	1.266770	1.316809	1.368569	1.422101	1.477456	1.593848
9	1.304773	1.362897	1.423312	1.486095	1.551328	1.689479
10	1.343916	1.410599	1.480244	1.552969	1.628895	1.790848
11	1.384234	1.459970	1.539454	1.622853	1.710339	1.898299
12	1.425761	1.511069	1.601032	1.695881	1.795856	2.012196
13	1.468534	1.563956	1.665074	1.772196	1.885649	2.132928
14	1.512590	1.618695	1.731676	1.851945	1.979932	2.260904
15	1.557967	1.675349	1.800944	1.935282	2.078928	2.396559
16	1.604706	1.733986	1.872981	2.022370	2.182875	2.540352
17	1.652848	1.794676	1.947900	2.113377	2.292018	2.692773
18	1.702433	1.857489	2.025817	2.208479	2.406619	2.854339
19	1.753506	1.922501	2.106849	2.307860	2.526950	3.025600
20	1.806111	1.989789	2.191123	2.411714	2.653298	3.207135
21	1.860295	2.059431	2.278768	2.520241	2.785963	3.399564
22	1.916103	2.131511	2.369919	2.633652	2.925261	3.603537
23	1.973587	2.206114	2.464716	2.752166	3.071524	3.819750
24	2.032794	2.283328	2.563304	2.876014	3.225100	4.048935
25	2.093778	2.363245	2.665836	3.005434	3.386355	4.291871
26	2.156591	2.445959	2.772470	3.140679	3.555673	4.549383
27	2.221289	2.531567	2.883369	3.282096	3.733456	4.822346
28	2.287928	2.620172	2.998703	3.429700	3.920129	5.111687
29	2.356566	2.711878	3.118651	3.584036	4.116136	5.418388
30	2.427262	2.806794	3.243398	3.745318	4.321942	5.743491
31	2.500080	2.905031	3.373133	3.913857	4.538039	6.088101
32	2.575083	3.006708	3.508059	4.089981	4.764941	6.453387
33	2.652339	3.111942	3.648381	4.274030	5.003189	6.840590
34	2.731905	3.220860	3.794316	4.466362	5.253348	7.251025
35	2.813862	3.333590	3.946089	4.667348	5.516015	7.686087
36	2.898278	3.450266	4.103933	4.877378	5.791816	8.147252
37	2.985227	3.571025	4.268090	5.096860	6.081407	8.936087
38	3.074783	3.696011	4.438813	5.326260	6.385478	9.154252
39	3.167027	3.825372	4.616366	5.565899	6.704751	9.703507
40	3.262038	3.959260	4.801021	5.816365	7.039989	10.285718
41	3.359899	4.097834	4.993061	6.078101	7.391988	10.902861
42	3.460696	4.241258	5.192784	6.351615	7.761588	11.557033
43	3.564517	4.389702	5.400495	6.637438	8.149667	12.250455
44	3.671452	4.543342	5.616515	6.936123	8.557150	12.985482
45	3.781596	4.702359	5.841176	7.248248	8.985008	13.764611
46	3.895044	4.856941	6.074823	7.574420	9.434258	14.590487
47	4.011896	5.037284	6.317816	7.915268	9.905971	15.465917
48	4.132252	5.213589	6.570528	8.271456	10.401270	16.393872
49	4.256219	5.396065	6.833349	8.643671	10.921333	17.377504
50	4.383906	5.584927	7.106683	9.032636	11.467400	18.420154
51	4.515423	5.780399	7.390951	9.439105	12.040770	19.525364
52	4.650886	5.982713	7.686589	9.863865	12.642808	20.696885
53	4.790412	6.192108	7.994052	10.307739	13.274949	21.938698
54	4.934125	6.408832	8.313814	10.771587	13.938696	23.255020
55	5.082149	6.633141	8.646367	11.256308	14.635631	24.650322
56	5.234613	6.865301	8.992222	11.762842	15.367412	26.129341
57	5.391651	7.105587	9.351910	12.292170	16.135783	27.697101
58	5.553401	7.354282	9.725987	12.845318	16.942572	29.358927
59	5.720003	7.611682	10.115026	13.423357	17.789701	31.120463
60	5.891603	7.878091	10.519627	14.027408	18.679186	32.987691
61	6.068351	8.153824	10.940412	14.658641	19.613145	34.966952
62	6.250402	8.439208	11.378029	15.318280	20.593802	37.064969
63	6.437914	8.734580	11.833150	16.007603	21.623493	39.288868
64	6.631051	9.040291	12.306476	16.727945	22.704667	41.646200
65	6.829983	9.356701	12.798735	17.480702	23.839900	44.144972
66	7.034882	9.684185	13.310684	18.267334	25.031896	46.793670
67	7.245929	10.023132	13.843112	19.089364	26.283490	49.601290
68	7.463307	10.373941	14.396836	19.948385	27.597665	52.577368
69	7.687206	10.737029	14.972710	20.846063	28.977548	55.732010
70	7.917822	11.112825	15.571618	21.784136	30.426426	59.075930
71	8.155357	11.501774	16.194483	22.764421	31.947747	62.620486
72	8.400017	11.904336	16.842262	23.788821	33.545134	66.377715
73	8.652018	12.320988	17.515953	24.859318	35.222391	70.360378
74	8.911578	12.752223	18.216591	25.977987	36.983510	74.582001
75	9.178926	13.198550	18.945255	27.146996	38.832686	79.056921
76	9.454293	13.660500	19.703065	28.368611	40.774320	83.800336
77	9.737922	14.138617	20.491187	29.645199	42.813036	88.828356
78	10.030060	14.633469	21.310835	30.979233	44.953688	94.158058
79	10.330962	15.145640	22.163268	32.373298	47.201372	99.807541
80	10.640891	15.675738	23.049799	33.830096	49.561441	105.795993
81	10.960117	16.224388	23.971791	35.352451	52.039513	112.143753
82	11.288920	16.792242	24.930663	36.943311	54.641489	118.872378
83	11.627588	17.379970	25.927889	38.605760	57.373563	126.004721
84	11.976418	17.988269	26.965005	40.343019	60.242241	133.565004
85	12.335709	18.617859	28.043605	42.158455	63.254353	141.578904
86	12.705780	19.269484	29.165349	44.055586	66.417071	150.073639
87	13.086953	19.943916	30.331963	46.038087	69.737925	159.078057
88	13.479562	20.641953	31.545242	48.109801	73.224822	168.622741
89	13.883949	21.364421	32.807051	50.274741	76.886061	178.740104
90	14.300467	22.112176	34.119333	52.537105	80.730365	189.464511
91	14.729481	22.886102	35.484107	54.901275	84.766883	200.832382
92	15.171366	23.687116	36.903471	57.371832	89.005227	212.882325
93	15.626507	24.516165	38.379610	59.953565	93.455489	225.655264
94	16.095302	25.374230	39.914794	62.651475	98.128263	239.194580
95	16.578161	26.262329	41.511386	65.470792	103.034676	253.546255
96	17.075506	27.181510	43.171841	68.416977	108.186410	268.759030
97	17.587771	28.132863	44.898715	71.495741	113.595731	284.884572
98	18.115404	29.117513	46.694664	74.713050	119.275517	301.977646
99	18.658866	30.136626	48.562450	78.075137	125.239293	320.096305
100	19.218632	31.191408	50.504948	81.588518	131.501258	339.302084

Conſtruction of Table I.

The numbers in this table are the powers of 1*l.* increaſed by its intereſt for a year: that is, they are the powers of the *amount* of 1*l.* in a year, at the ſeveral rates of intereſt: ſuppoſing r to be that amount, they are r, r^2, r^3, r^4, &c.

Uſe. *To find the amount of any ſum in any number of years, not exceeding* 100. Anſ. Oppoſite to the given number of years, and under the rate of intereſt, is the amount of 1*l.* in that time, which, multiplied by the given ſum, produces the required amount.

Examples.

1. What will 10*l.* amount to in 100 years at 4 *per cent. per ann.* compound intereſt? *Anſ.* 50.504948, multiplied by 10, is 505*l.* 1*s.*
2. What will 250*l.* amount to in 50 years, at 5 *per cent. per ann.* compound intereſt? *Anſ.* 11.467400, multiplied by 250, is 2886*l.* 17*s.*

TABLE II.

Shewing the principal that will amount to 1*l.* in any number of years not exceeding 100; or the preſent value of 1*l.* to be received at the end of any number of years not exceeding 100; diſcounting at any rate of compound intereſt from 3 to 6 *per cent.*

Years	At 3per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
1	,970874	,966184	,961538	,956938	,952381	,943396
2	,942596	9,33511	,924556	,915730	9,07029	,889996
3	,915141	,901943	,888996	,876297	,863838	,839619
4	,888487	,871442	,854804	,838561	,822702	,792094
5	,862609	,841973	,821927	,802451	,783526	,747258
6	,837484	,813501	,790315	,767896	,746215	,704961
7	,813092	,785991	,759918	,734828	,710681	,665057
8	,789409	,759411	,730690	,703185	,676839	,627412
9	,766417	,733731	,702587	,672904	,644609	,591898
10	,744094	,708919	,675564	,643928	,613913	,558395
11	,722421	,684946	,649581	,616199	,584679	,526788
12	,701380	,661783	,624597	,589664	,556837	,496969
13	,680951	,639404	,600574	,564272	,530321	,468839
14	,661118	,617782	,577475	,539973	,505068	,442301
15	,641862	,596891	,555264	,516720	,481017	,417265
16	,623167	,576706	,533908	,494469	,458112	,393646
17	,605016	,557204	,513373	,473176	,436297	,371364
18	,587395	,538361	,493628	,452800	,415521	,350344
19	,570286	,520156	,474642	,433302	,395734	,330513
20	,553676	,502566	,456387	,414643	,376889	,311805
21	,537549	,485571	,438834	,396787	,358942	,294155
22	,521892	,469151	,421955	,379701	,341850	,277505
23	,506692	,453286	,405726	,363350	,325571	,261797
24	,491934	,437957	,390121	,347703	,310068	,246979
25	,477606	,423147	,375117	,332731	.295303	,232999
26	,463695	,408838	,360689	,318402	,281241	,219810
27	,450189	,395012	,346817	,304691	,267848	,207368
28	,437077	,381654	,333477	,291571	,255094	,195630
29	,424346	,368748	,320651	,279015	,242946	,184557
30	,411987	,356278	,308319	,267000	,231377	,174110
31	,399987	,344230	,296460	,255502	,220359	,164255
32	,388337	,332590	,285058	,244600	,209866	,154957
33	,377026	,321343	,274094	,233971	,199873	,146186
34	,366045	,310476	,263552	,223896	,190355	,137912
35	,355383	,299977	,253415	,214254	,181290	,130105
36	,345032	,289833	,243669	,205028	,172657	,122741
37	,334983	,280031	,234297	,196199	,164436	,115793
38	,325226	,270562	,225285	,187750	,156605	,109239
39	,315754	,261412	,216621	,179665	,149148	,103056
40	,306557	,252572	,208289	,171929	,142046	,097222
41	,297628	,244031	,200278	,164525	,135282	,091719
42	,288959	,235779	,192575	,157440	,128840	,086527
43	,280543	,227806	,185168	,150661	,122704	,081629
44	,272372	,220102	,178046	,144173	,116861	,077009
45	,264439	,212659	,171198	,137964	,111297	,072650
46	,256731	,205468	,164614	,132023	,105997	,068538
47	,249259	,198520	,158283	,126338	,100949	,064658
48	,241999	,191806	,152195	,120898	,096142	,060998
49	,234950	,185320	,146341	,115692	,091564	,057546
50	,228107	,179053	,140713	,110710	,087204	,054288
51	,221463	,172998	,135301	,105942	,083051	,051215
52	,215013	,167148	,130097	,101380	,079096	,048316
53	,208750	,161496	,125093	,097014	,075380	,045582
54	,202670	,156035	,120282	,092837	,071743	,043001
55	,196767	,150758	,115656	,088839	,068326	,040567
56	,191036	,145660	,111207	,085013	,065073	,038271
57	,185472	,140734	,106930	,081353	,061974	,036105
58	,180070	,135975	,102817	,077849	,059023	,034061
59	,174825	,131377	,098863	,074497	,056212	,032133
60	,169733	,126934	,095060	,071289	,053536	,030314
61	,164789	,122642	,091404	,068219	,050986	,028598
62	,159990	,118495	,087889	,065281	,048558	,026980
63	,155330	,114487	,084508	,062470	,046246	,025452
64	,150806	,110616	,081258	,059780	,044044	,024012
65	,146413	,106875	,078133	,057206	,041946	,022653
66	,142149	,103261	,075128	,054743	,039949	,021370
67	,138009	,099769	,072238	,052385	,038047	,020161
68	,133989	,096395	,069460	,050129	,036235	,019020
69	,130086	,093136	,066788	,047971	,034509	,017943
70	,126297	,089986	0,64219	,045905	,032866	,016927
71	,122619	,086943	,061749	,043928	,031310	,015969
72	,119047	,084003	,059374	,042037	,029811	,015065
73	,115580	,081162	,057091	,040226	,028391	,014213
74	,112214	,078418	,054895	,038494	,027039	,013408
75	,108945	,075766	,052784	,036836	,025751	,012649
76	,105772	,073204	,050754	,035250	,024525	,011933
77	,102691	,070728	,048801	,033732	,023357	,011258
78	,099700	,068336	,046924	,032280	,022245	,010620
79	,096796	,066026	,045120	,030890	,021186	,010019
80	,093977	,063793	,043384	,029559	,020177	,009452
81	,091240	,061636	,041716	,028287	,019216	,008917
82	,088582	,059551	,040111	,027068	,018301	,008412
83	,086002	,057537	0,38569	,025903	,017430	,007936
84	,083497	,055592	,037085	,024787	,016600	,007487
85	,081065	,053712	,035659	,023720	,015809	,007063
86	,078704	,051896	,034287	,022699	,015056	,006663
87	,076412	,050141	,032969	,021721	,014339	,006286
88	,074186	,048445	,031700	,020786	,013657	,005930
89	,072026	,046807	,030481	,019891	,013006	,005595
90	,069928	,045224	.029309	,019034	,012387	,005278
91	,067891	,043695	,028182	,018215	,011797	,004979
92	,065914	,042217	,027098	,017430	,011235	,004067
93	,063994	,040789	,026055	,016680	,010700	,004432
94	,062130	,039410	,025053	,015961	,010191	,004181
95	,060320	,038077	0,24090	,015274	.009705	,003944
96	,058563	,036790	,023163	,014016	,009243	,003721
97	,056858	,035546	,022272	,013987	,008803	,003510
98	,055202	,034344	,021416	,013385	,008384	,003311
99	,053594	,033182	,020592	,012808	,007985	,003124
100	,052033	,032060	,019800	,012257	,007604	,002947

Conſtruction of Table II.

The numbers in this table are the reciprocals of the correſponding numbers in the laſt, or the quotients of unity divided by thoſe numbers; that is, $\frac{1}{r}$, $\frac{1}{r^2}$, $\frac{1}{r^3}$, × $\frac{1}{r^4}$, &c. Suppoſing r to denote 1*l.* with its intereſt for a year.

Uſe. *To find what the preſent value is of any ſum payable in any future time; and alſo what principal will amount to a given ſum in any number of years.* Anſ. Oppoſite to the given number of years, and under the rate of intereſt, is the preſent value of 1*l.* to be received at the end of the given time, or the ſum that will amount to 1*l.* in that time, which, multiplied by the given ſum, produces the required value or principal.

1. What is the preſent value of 1000*l.* to be received 10 years hence, reckoning compound intereſt at 5 *per cent?* *Anſ.* .613913, multiplied by 1000, is 613*l.* 18*s.* 3*d.* nearly.
2. What principal will amount to 1000*l.* in 10 years at 5 *per cent. per ann.* compound intereſt? *Anſ.* .613913, multiplied by 1000*l.* is 613*l.* 18*s.* 3*d.*
3. What ſum put out for 25 years, at 4½ *per cent.* intereſt, will clear a debt of 4000*l.*? *Anſ.* .332731, multiplied by 4000, is 1320*l.* 18*s.* 6*d.*

TABLE III.

The preſent value of an *annuity* of 1*l.* for any number of years not exceeding 100, at any rate of compound intereſt from 3 to 6 *per cent.*

Years	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
1	,970874	,966184	,961538	,956938	,952381	,943396
2	1,913470	1,899694	1,886095	1,872668	1,859410	1,833393
3	2,828611	2,801637	2,775091	2,748964	2,723248	2,673012
4	3,717098	3,673079	3,629895	3,587526	3,545950	3,465106
5	4,579707	4,515052	4,451823	4,389977	4.329477	4,212364
6	5,417191	5,328553	5,242137	5,157872	5,075692	4,917324
7	6,230283	6,114544	6,002055	5,892701	5,786373	5,582381
8	7,019692	6,873956	6,732745	6,595886	6,463213	6,209794
9	7,786109	7,607687	7,435332	7,268790	7,107822	6,801692
10	8,530203	8,316605	8,110896	7.912718	7,721735	7,360087
11	9,252624	9,001551	8,760477	8,528917	8,306414	7,886875
12	9,954004	9,663334	9,385074	9,118581	8,863252	8,383844
13	10,634955	10,302738	9,985648	9,682852	9,393573	8,852683
14	11,296073	10,920520	10,563123	10,222825	9,898641	9,294984
15	11,937935	11.517411	11,118387	10,739546	10,379658	9,712249
16	12,561102	12,094117	11,652296	11,234015	10,837770	10,105895
17	13,166118	12,651321	12,165669	11,707191	11,274066	10,477260
18	13,753513	13,189682	12,659297	12,159992	11,689587	10,827603
19	14,323799	13.709837	13,133939	12,593294	12,085321	11,158116
20	14,877475	14,212403	13.590326	13,007936	12,462210	11.469921
21	15,415024	14,697974	14,029160	13,404724	12,821153	11,764077
22	15,936917	15,167125	14,451115	13,784425	13,163003	12,041582
23	16,443608	15,620410	14,856842	14,147775	13.488574	12,303379
24	16,935542	16,058368	15,246963	14.495478	13,798642	12,550358
25	17,413148	16,481515	15,622080	14,828209	14,093945	12,783356
26	17,876842	16,890352	15,982769	15,146611	14,375185	13,003166
27	18,327031	17,285364	16,329586	15,451303	14,643034	13,210534
28	18,764108	17,667019	16,663063	15,742874	14,898127	13,406164
29	19,188455	18,035767	16,983715	16,021889	15,141074	13,590721
30	19,600441	18,392045	17,292033	16,288889	15,372451	13,764831
31	20,000428	18,736276	17,588494	16,544391	15,592810	13,929086
32	20,388765	19,068865	17,873551	16,788891	15,802677	14,084043
33	20,765792	19,390208	18,147646	17,022862	16,002549	14,230230
34	21,131837	19,700684	18,411198	17,246758	16,192904	14,368141
35	21,487220	20,000661	18,664613	17,461012	16,374194	14,498246
36	21,832252	20,290494	18,908282	17,666041	16,546852	14,620987
37	22,167235	20,570525	19,142579	17,862240	16,711287	14,736780
38	22,492462	20,841087	19,367864	18,049990	16,867893	14,846019
39	22,808215	21,102500	19,584485	18,229656	17,017041	14,949075
40	23.114772	21,355072	19.792774	18,401584	17,159086	15,046297
41	23,412400	21,599104	19,993052	18,566109	17,294368	15,138016
42	23,701359	21,834883	20,185627	18,723550	17,423208	15,224543
43	23,981902	22,062689	20,370795	18,874210	17,545912	15.306173
44	24,254274	22,282791	20,548841	19,018383	17,662773	15,383182
45	24,518713	22.495450	20,720040	19.156347	17,774070	15,455832
46	24,775449	22,700918	20,884654	19,288371	17,880066	15,524370
47	25,024708	22,899438	21,042936	19,414709	17,981016	15,589028
48	25,266707	23,091244	21,195131	19,535607	18,077158	15,650027
49	25,501657	23,276564	21,341472	19,651298	18,168722	15,707572
50	25,729764	23,455618	21,482185	19,762008	18,255925	15.761861
51	25,951227	23,628616	21,617485	19,867950	18,338977	15,813076
52	26,166240	13,795765	21,747582	19,969330	18,418073	15,861393
53	26,374990	23,957260	21,872675	20,066345	18,493403	15,906974
54	26,577660	24,113295	21,992957	20,159181	18,565146	15,949976
55	26,774428	24,264053	22,108612	20,248021	18,633472	15,990543

Years	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
56	26,965464	24,409713	22,219819	20,333034	18,698545	16,028814
57	27,150936	24,550448	22,326749	20,414387	18,760519	16,064919
58	27,331005	24,686423	22,429567	20,492236	18,819542	16,098980
59	27,505831	24,817800	22,528430	20,566733	18,875754	16,131113
60	27,675564	24,944734	22,623490	20,638022	18,929290	16,161428
61	27,340353	25,067376	22,714894	20,706241	18,980276	16,190026
62	28,000343	25,185870	22,802783	20,771523	19,028834	16,217006
63	28,155673	25,300358	22,887291	20,833993	19,075080	16,242458
64	28,306478	25,410974	22,968549	20,893773	19,119124	16,266470
65	28,452891	25,517849	23,046682	20,950979	19,161070	16,289123
66	28,595040	25,621110	23,121810	21,005722	19,201019	16,310493
67	28,733049	25,720879	23,194048	21,058107	19,239066	16,330654
68	28,867038	25,817275	23,263507	21,108236	19,275301	16,349673
69	28,997124	25,910411	23,330296	21,156207	19,309810	16,367616
70	29,123421	26,000397	23,394515	21,202112	19,342677	16,384544
71	29,246040	26,087340	23,456264	21,246040	19,373978	16,400513
72	29,365087	26,171343	23,515639	21,288077	19.403788	16,415578
73	29,480667	26,252505	23,572730	21,328303	19,432179	16,429791
74	29,592881	26,330923	23,627625	21,366797	16.459218	16,443199
75	29,701826	26,406689	23,680408	21,403634	19,484970	16,455848
76	29,807598	26,479892	23,731162	21,438884	19,509495	16,467781
77	29,910290	26,550621	23,779963	21,472616	19,532853	16,479039
78	30,009990	26,618957	23,826888	21,504896	19,555098	16,489659
79	30,106786	26,684983	23,872007	21,535785	19,576284	16,499679
80	30.200763	26,748776	23,915392	21,565345	19,596460	16,509131
81	30,292003	26,810411	23,957108	21,593632	19,615677	16,518048
82	30,380586	26,869963	23,997219	21,620700	19,633978	16,526460
83	30,466588	26,927500	24,035787	21,646603	19,651407	16,534396
84	30,550086	26,983092	24,072872	21,671390	19,668007	16,541883
85	30,631151	27,036804	24,108531	21,695110	19,683816	16,548947
86	30,709855	27,088699	24,142818	21,717809	19,698873	16,555610
87	30,786267	27,138840	24,175787	21,739530	19,713212	16,561896
88	30.860454	27,187285	24,207487	21,760316	19,726869	16,567827
89	40,932479	27,234092	24,237969	21,780207	19,739875	16,573421
90	31,002407	27,279316	24.267278	21,799241	19.752262	16,578699
91	31,070298	27,323010	24,295459	21,817455	19,764059	16,583679
92	31,136212	27,365227	24,322557	21,834885	19,775294	16,588376
93	31,200206	27,406017	24,348612	21,851565	19,785994	16,592808
94	31,262336	27,445427	24,373666	21,867526	19,796185	16,596988
95	31,322656	27,483504	24,397756	21,882800	19,805891	16,600932
96	31,381219	27,520294	24,420919	21,897417	19,815134	16,604653
97	31,438077	27,555839	24,443191	21,911403	19,823937	16,608163
98	31,493279	27,590183	24,464607	21,924788	19,832321	16.611475
99	31,546872	27,623365	24,485199	21,937596	19,840306	16,614599
100	31,598905	27,655425	24,504999	21,949853	19.847910	16,617546
Fee Simple	33,333333	28,571429	25,000000	22,222222	20,000000	16,666666

Conſtruction of Table III.

The 2d, 3d, 4th, &c. numbers in this table are the ſums of the firſt 2, 3, 4, &c. numbers in the ſecond; that is, the ſums of $\frac{1}{r}+\frac{1}{r^2}$, of $\frac{1}{r}+\frac{1}{r^2}+\frac{1}{r^3}$, of $\frac{1}{r}+\frac{1}{r^2}+\frac{1}{r^3}+\frac{1}{r^4}$, &c.

Uſe. *To find the preſent worth of any annuity.* Multiply the preſent value oppoſite to the given number of years, and under the rate of intereſt, by the given *annuity*, and the product will be the anſwer. If the *annuity* is in reverſion, multiply the number oppoſite to the time of reverſion in the 2d table, the number oppoſite to the time of continuance in this table, and the *annuity* together: or, when the ſum of both theſe times does not exceed 100, from the number in this table oppoſite to that ſum take the number oppoſite to the reverſionary time, and multiply the remainder by the *annuity*.

Examples.

1. What is the preſent value of an *annuity* of 40*l.* to continue 20 years at 4 *per cent.?* *Anſ.* 13.590326, multiplied by 40, is 543*l.* 12*s.* nearly.
2. What is the preſent value of an *annuity* of 40*l.* to continue 20 years, but not to commence till the end of 5 years, at 4 *per cent.?* *Anſ.* .821927, multiplied by 13.590326, multiplied by 40, is 446*l.* 16*s.* Or, 4.451822, ſubtracted from 15.62208, and the remainder multiplied by 40, is 446*l.* 16*s.* as before.

TABLE IV.

The amount of an *annuity* of 1*l.* at compound intereſt.

Years	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
1	1,000000	1,000000	1,000000	1,000000	1,000000	1,000000
2	2,030000	2,035000	2,040000	2,045000	2,050000	2,060000
3	3,090900	3,106225	3,121600	3,137025	3,152500	3,183600
4	4,183627	4,214943	4,246464	4,278191	4,310125	4,374616
5	5,309136	5,362466	5,416323	5.470710	5,525631	5,637093
6	6,468410	6,550152	6,632975	6.716892	6,801913	6,975319
7	7,662462	7,779408	7,898294	8,019152	8,142008	8,393838
8	8,892336	9,051687	9,214226	9,380014	9,549109	9,897468
9	10,159106	10,368496	10,582795	10,802114	11,026564	11,491316
10	11,463879	11,731393	12,006107	12,288209	12,577893	13,180795
11	12,807796	13,141992	13,486351	13,841179	14,206787	14,971643
12	14,192030	14,601962	15,025805	15,464032	15,917127	16,869941
13	15,617790	16,113030	16,626838	17,159913	17,712983	18,882138
14	17,086324	17,676986	18,291911	18,932109	19,598632	21,015066
15	18,598914	19,295681	20,023588	20,784054	21,578564	23,275970
16	20,156881	20,971030	21,824531	22,719337	23,657492	25,672528
17	21,761588	22,705016	23,697512	24.741707	25,840366	28,212880
18	23,414435	24,499691	25,645413	26,855084	28,132385	30,905653
19	25,116868	26,357180	27,671229	29,063562	30,539004	33,759992
20	26,870374	28,279682	29 778079	31,371423	33,065954	36,785591
21	28,676486	30,269471	31,969202	33.783137	35,719252	39,992727
22	30,536780	32,328902	34,247970	36,303378	38.505214	43,392290
23	32,452884	34.460414	36,617889	38,937030	41,430475	46,995828
24	34,426470	36,666528	39,082604	41,689196	44,501999	50,815577
25	36,459264	38,949857	41,645908	44,565210	47,727099	54,864512
26	38,553042	41,313102	44,311745	47,570645	51,113454	59,156383
27	40,709634	43,759060	47,084214	50,711324	54,669126	63,705766
28	42,930923	46,290627	49,967583	53,993333	58,402583	68,528112
29	45,218850	48,910799	52,966286	57,423033	62,322712	73,639798
30	47,575416	51,622677	56,084938	61,007070	66,438847	79,058186
31	50,002678	54,429471	59,328335	64,752388	70,760790	84,801677
32	52,502759	57,334502	62,701469	68,666245	75.298829	90,889778
33	55 077841	60,341210	66,209527	72,756226	80,063771	97,343165
34	57,730177	63,453152	69,857909	77,030256	85,066959	104,183755
35	60,462082	66,674013	73,652225	81,496618	90,320307	111,434780
36	63,275944	70,007603	77,598314	86,163966	95,836323	119,120867
37	66,174223	73,457869	81,702246	91,041344	101,628139	127,268119
38	69,159449	77,028895	85,970336	96,138405	107,709546	135,904206
39	72,234233	80,724906	90,409150	101,464424	114,095023	145,058458
40	75,401260	84,550278	95,025516	107,030323	120,799774	154,761966
41	78,663298	88,509537	99,826536	112,846688	127,839763	165,047684
42	82,023196	92,607371	104,819598	118,924789	135,231751	175,950545
43	85,483892	96,848629	110,012382	125,276404	142,993339	187,507577
44	89,048409	101,238331	115,412877	131,913842	151,143006	199,758032
45	92,719861	105,781673	121.029392	138,849965	159,700156	212,743514
46	96,501457	110,484031	126,870568	146,098214	168,685164	226,508125
47	100,396501	115,350973	132,945390	153.672633	178,119422	241,098612
48	104,408396	120,388257	139,263206	161,587902	188,025393	256,564529
49	108,540648	125,601846	145,833734	169 859357	198,426663	272,958401
50	112,796867	130,997910	152,667084	178,503028	209,347996	290,335905
51	117,180773	136,582837	159 773767	187,535665	220,815395	308,756059
52	121,696197	142,363236	167,164718	196,974769	232,856165	328,281422
53	126,347082	148,345950	174,851306	206,838634	245,498974	348,978308
54	131,137495	154,538058	182,845359	217,146373	258,773922	370,917006
55	136,071620	160,946890	191,159173	227,917959	272,712618	394,172027
56	141.153768	167,580031	199,805540	239,174268	287,348249	418,822348
57	146,388381	174,445332	208,797762	250,937110	302,715662	444,951689
58	151,780033	181,550919	218,149672	263,229280	318,851445	472,648790
59	157,333434	188,905201	227,875659	276.074597	335,794017	502,007718
60	163,053437	196,516883	237,990685	289,497954	353,583718	533,128181
61	168,945040	204,394974	248 510313	303,525362	372,262904	566,115872
62	175.013391	212,548798	259,450725	318,184003	391,876049	601,082824
63	181,263793	220,988006	270,828754	333,502283	412,469851	638,147793
64	187,701707	229,722586	282,661904	349,509886	434,093344	677,436661
65	194,332758	238,762876	294.968380	366,237831	456.798011	719,082861
66	201,162741	248,119577	307,767116	383,718533	480,637912	763,227832
67	208,197623	257,803762	321,077800	401,985867	505,669807	810,021502
68	215,443551	267,826894	334,920912	421,075232	531,953298	859,622792
69	222,906858	278,200835	349,317749	441,023617	559,550963	912,200160
70	230,594064	288,937865	364,290459	461,869680	588,528511	967,932170
71	238,511886	300.050690	379,862077	483,653815	618,954936	1027,008100
72	246,667242	311,552464	396,056560	506,418237	650,902683	1089,628586
73	255,067259	323,456800	412,898823	530,207057	684,447817	1156,006301
74	263,719277	335,777788	430,414776	555,066375	719,670208	1226,366679
75	272,630856	348,530011	448,631367	581,044362	756,653718	1300.948680
76	281,809781	361,728561	467,516621	608,191358	795.486404	1380,065601
77	291,264075	375,389061	487,279686	636,559969	836,260725	1463,805937
78	301,001997	389,527678	507,770874	666,205168	870,073761	1552,634293
79	311,032057	404,161147	529,081708	697,184401	924,027449	1646,792350
80	321,363019	419.306787	551,244977	729,557699	971,228821	1746,599891
81	332,003909	434,982524	574,294776	763,387795	1020,790262	1852,395885
82	342,964026	451,206913	598,266567	798,740246	1072,829775	1964,539638
83	354,252947	467,999155	623,197230	835,683557	1127,471264	2083,412016
84	365,880536	485,379125	649,125119	874,289317	1184,844827	2209,416737
85	377,856952	503,367394	676,090124	914,632336	1245,087069	2342,981741
86	390,192669	521,985253	704,133728	956,790791	1308,341422	2484,560646
87	402,898440	541,254737	733,299078	1000,846377	1374,758493	2634,634285
88	415,985393	561,198653	763,631041	1046,884464	1444,496418	2793,712342
89	429,464955	581,840606	795,176282	1094,994265	1517,721239	2962,335082
90	443,368904	603,205027	827,983334	1145,269007	1594,607301	3141,075187
91	457,649371	625,317203	862,102667	1197,806112	1675,337666	3330,539698
92	472,378852	648,203305	897,586774	1252,707387	1760,104549	3531,372080
93	487,550217	671,890421	934,490245	1310,079219	1849,109777	3744,254405
94	503,176724	696,306586	972,869854	1370,032784	1942,565265	3969,909669
95	519,272026	721,780816	1012,784649	1432,684259	2040,693529	4209,104250
96	535,850186	748,043145	1054,296035	1498,155051	2143,728205	4462,650505
97	552,925692	775,224655	1097,467876	1566,572028	2251,914615	4731,409535
98	570,513463	803,357517	1142,366591	1638,067770	2365,510346	5016,294107
99	588,628867	832,475031	1189,061255	1712,780819	2484,785864	5318,271753
100	607.287733	862,611657	1237.623705	1790,855956	2610,025157	5638.368059

Conſtruction of Table IV.

The firſt number of each column in this table, is unity. The ſecond is the firſt number in this table added to the firſt number in the firſt table. The third number is the ſecond in this table added to the ſecond in the firſt table, and ſo on: that is, the numbers in this table are 1, $1+r$, $1+r+r^2$, $1+r+r^2+r^3$, &c.

Uſe. *To find the amount of an annuity forborn any number of years not exceeding* 100. Multiply the amount in the table oppoſite to the given number of years, and under the rate of intereſt, by the given *annuity*. The product is the anſwer.

Examples.

1. What will an *annuity* of 50*l.* amount to in 15 years, at 3½ *per cent.* compound intereſt? *Anſ.* 19.295681, multiplied by 50*l.* is 964*l.* 15*s.* 8*d.*
2. What is the amount of an *annuity* of 20*l.* in 28 years at 4 *per cent?* *Anſ.* 49.9675, multiplied by 20, is 1000*l.* nearly.

3. A perſon is poſſeſſed of a 1000*l.* principal, bearing 4 *per cent.* intereſt, and in order to increaſe his income, reſolves to take out of his principal 20*l.* the firſt year, and afterwards as much more as will be neceſſary to make a conſtant income of 60*l. per ann.* in what time will he reduce his principal to nothing? *Anſ.* In the ſame time that an *annuity* of 20*l.* would increaſe at 4 *per cent.* compound intereſt to 1000*l.* that is, in 28 years, by the preceding queſtion.

The preceding obſervations, rules, and tables, contain all that is moſt important in the doctrine of *annuities certain.* He that would gain farther information ſhould conſult Malcolm's Arithmetick, from page 595 to the end; Simpſon's Algebra, ſect. 16; Mr. Dodſon's Mathematical Repoſitory, p. 298, &c. Jones's Synopſis, ch. 10. Phil. Tranſ. vol. lxvi. p. 109, &c.

For an explanation of the doctrine of *annuities on lives,* ſee ASSURANCE, COMPLEMENT, EXPECTATION, LIFE *Annuities,* REVERSIONS.

ANNULAR, ANNULARIS, ſomething that relates to, or reſembles a ring, by the Latins called *annulus.*

ANNULAR *cartilage,* or ANNULARIS, is the ſecond cartilage of the *larynx,* being round, and inveſting the whole *larynx;* called alſo *cricoides.*

ANNULAR *ligament, ligamentum* ANNULARE, is a ſtrong ligament, encompaſſing the CARPUS or wriſt; after the manner of a bracelet.

Its uſe is to connect or bind the two bones of the arm together; and alſo to reſtrain the tendons of the ſeveral muſcles of the hand and fingers, and prevent their flying out of their places, when in action.

The ligament of the TARSUS is alſo denominated *annular* ligament.

Add, that the ſphincter muſcle of the *anus* is alſo called *annularis,* or *annular* muſcle, from its figure.

ANNULAR *proceſs,* or *protuberance,* is a proceſs of the MEDULLA *oblongata;* thus called by Dr. Willis, becauſe it ſurrounds the ſame, much like a ring.

ANNULAR is alſo an epithet given the fourth finger; popularly called the *ring* FINGER.

ANNULATA, in *Zoology,* ſee COLUBER.

ANNULET, *little ring,* in *Heraldry,* is a DIFFERENCE or mark of diſtinction, which the fifth brother of any family ought to bear in his coat of arms.

Annulets are alſo part of the coat armour of ſeveral families. They were anciently reputed a mark of nobility and juriſdiction; it being the cuſtom of prelates to receive their inveſtiture *per baculum & annulum.*

ANNULETS, in *Architecture,* are ſmall ſquare members, in the Doric capital, placed under the quarter round.—See *Tab. Architect. fig.* 25. *lit. q.* and *fig.* 24. *lit. n.* and *fig.* 1. They are alſo called *fillets, liſtels,* &c.

ANNULET is alſo uſed for a narrow flat moulding, common to other parts of a column; viz. the baſes, &c. as well as the capital; ſo called, becauſe it encompaſſes the column around.—In which ſenſe *annulet* is frequently uſed for *baguette,* or little *aſtragal.*

ANNULUS, a ſpecies of the VOLUTA.

ANNULLING, the aboliſhing of an act, procedure, ſentence, or the like.

The word is compounded of *ad* and *nullus, none;* q. d. *undoing.*

ANNUNCIATE, ANNUNTIADA, or ANNUNTIATA, a denomination common to ſeveral orders, both religious and military; inſtituted with a view to the Annunciation. The firſt religious order of this kind was inſtituted in 1232, by ſeven Florentine merchants.—Theſe are alſo called *Servites,* q. d. *Servants.*

The ſecond was a nunnery at Bourges, founded by Joan, queen of France, after her divorce from Lewis XII.

The third was alſo a nunnery, founded by a Genoeſe lady in 1600.—The fourth was a friary, founded by cardinal Torrecremata, at Rome; which laſt are grown ſo very rich, that they give fortunes of ſixty Roman crowns to above 400 girls, on the anniverſary of the Annunciation.

ANNUNCIATA, *or knights of the* ANNUNTIADA, was a military order, inſtituted in 1362, by Amadeus VI. duke of Savoy; in memory of Amadeus I. who defended the iſle of Rhodes againſt the Turks.

It was at firſt called the order of the true lovers knots; in memory of a bracelet of hair preſented to the founder by a lady; but, upon the election of Amadeus VIII. to the pontificate, it changed its name for that of the *Annunciate,* in 1434. The great collar of the order, which the knights wear on public occaſions, weighs 250 crowns of gold, and the following letters are engraven on it: *F. E. R. T.* ſignifying *Fortitudo ejus Rhodum tenuit.*

ANNUNCIATION, the tidings which the angel Gabriel brought to the Holy Virgin, of the myſtery of the incarnation.

The word is compounded of *ad* and *nuncio, I declare.* The Greeks call it ευαγγελισμος, *good tidings;* and χαιρετισμος, *ſalutation.*

ANNUNCIATION is alſo the name of a feaſt, celebrated annually on the 25th of March, popularly called *Lady-day,* in commemoration of that wonderful event.

Some authors are of opinion, that the feaſt was originally ſolemnized in honour of our Saviour; and that the holding it in the name and honour of the Virgin is of a much later ſtanding.

Several of the eaſtern churches celebrate the *Annunciation* at a different ſeaſon from thoſe of the weſt.—The Syrians call it *baſcarach,* q. d. *ſearch, inquiry;* and mark it in their calendar for the firſt day of December. The Armenians hold it on the fifth of January; thus anticipating the time, to prevent its falling in Lent; but the Greeks make no ſcruple of celebrating the feſtival even in Lent.

The Jews alſo give the title *Annunciation* to part of the ceremony of their paſſover; viz. that, wherein they explain the origin and occaſion of that ſolemnity.—This explanation they call הגדה, *Haggada,* q. d. the *Annunciation.*

ANNUNTIATOR, in the Greek *Church,* an officer whoſe buſineſs is to give notice of the feaſts, and holy days to be obſerved.

ANOCHUS, an imaginary name of a *medicine,* concerning which many fruitleſs conjectures have been made. The word occurs only in Gaza's tranſlation of the account which Theophraſtus has left us of the EUONYMUS of thoſe times. The author ſays, that the goats which eat the leaves and fruit of the *eunonymus* were killed by it, and that they died of a ſtoppage of the bowels, which he has expreſſed by the words ανοχω, derived from the verb ανεσχειν, which ſignifies a retention of the ſtools.

It is to be obſerved by the way, that the *eunonymus* of the Greeks could not be the ſame plant known at this time by that name, ſince the cattle eat our *euonymus* or FUSANUS whenever they can get it, and that without any danger; but the deſcriptions of theſe plants in the ancient and modern authors ſhew alſo that they were very different.

ANOCTORON, in *Eccleſiaſtical Antiquity,* a name uſed by ſome writers for a church.

Anoctora properly import Roman halls, divers of which were converted into churches.

In which ſenſe *anoctora* amount to much the ſame with BASILICÆ.

ANOCYSTI, in *Natural Hiſtory,* the name of a claſs of the ECHINI *marini,* which have an aperture for the *anus* at the top of the ſhell.

Some of theſe approach to a hemiſpheric or ſpheroidal figure, others flatter, and in ſhape ſomewhat reſembling a ſhield.

ANODUS is uſed by ſome *Chemical Writers* to denote a putritious matter ſeparated by the kidneys.

In this ſenſe *anodus* ſtands contradiſtinguiſhed from the ſuperfluous part, that is the urine.

ANODYNE, in *Phyſic,* is underſtood of ſuch remedies, as calm and aſſuage pain.

The word is derived from the privative α, and ωδυνω, *doleo, to be in pain.*

Anodynes are of two kinds; the firſt proper, called alſo *paregorics.*

The ſecond *ſpurious,* or improper, which rather ſtupefy than alleviate; acting only by inducing a ſtupor, drowſineſs, or ſleep.

Theſe are more properly called *narcotics, hypnotics,* or *opiates.*

The true *anodynes* are applied externally to the part affected.—Such, among the claſs of ſimples, are, the onion, lily, root of mallows, leaves of violets, elder, &c. Camphor is the beſt *anodyne* in nervous caſes, and at the decline of fevers.

Anodynes ſhould not be given without great caution, nor on a full ſtomach, nor in dropſies. Hemlock procures eaſe and ſleep, without cauſing that head-ach next morning, uſually complained of after taking opium. If the pulſe be ſtrong a larger doſe is ſafe; if weak, a leſs doſe muſt be given.

We have alſo certain compound medicines in the ſhops, prepared with this intention, and called by this name.—Such is the *anodyne balſam,* made of Caſtile ſoap, camphor, ſaffron, and ſpirit of wine, digeſted in a ſand-heat. It is recommended not only for procuring eaſe in the moſt racking extremities of pain, but alſo for aſſiſting in diſcharging the peccant matters that occaſioned it. This balſam is much the ſame with the modern *opodeldoc.*

A ready way of preparing a uſeful, ſafe, and efficacious *anodyne,* is as follows: take half an ounce of opium, diſſolve it in a gentle heat in three ounces of water, ſtrain the ſolution, and evaporate it to a dry ſubſtance. Grind this to powder in a glaſs mortar with twice the quantity of loaf-ſugar, and you have an excellent preparation of opium, to be given three or four grains for a doſe. Shaw's Lect. p. 233.

By diſſolving the opium thus in water, we gid rid not only of its groſs and foul parts, but alſo of its reſinous, which are found much more pernicious than the reſt; and by dividing its parts afterwards with ſugar, the medicine is rendered more uniform, reſoluble, and miſcible with animal fluids.

But however opium is prepared, it ſtill muſt be acknowledged that it retains qualities that make it little leſs than a poiſon in a very large doſe; whence it were much to be wiſhed ſomething could be found that would be more innocent, and yet anſwer the ſame purpoſe. And this camphor and nitre will do on many, though not on all occaſions.

ANOINTED. See CHRIST and MESSIAH.

ANOINTERS, a religious ſect in ſome parts of England, ſo called from the ceremony they uſed of anointing all perſons before they admitted them into their church. They founded their opinion of anointing upon the fifth of James, verſes 14 and 15. See Plot's Oxfordſh. 208.

ANOLE, in *Zoology*, the name of a ſpecies of lizard common in the Weſt Indies, about houſes and plantations. It is of the ſize of the common lizard of Europe, but its head is longer, its ſkin of a yellowiſh colour, and its back variegated with green, blue, and grey lines running from the neck to the tail. They creep into holes for the night, and there make a continual and very diſagreeable noiſe; in the day time they are always in motion.

ANOLYMPIADES, in *Antiquity*, a name given by the Eleans to thoſe Olympic games, which had been celebrated under the direction of the Piſæans and Arcadians. The Eleans claimed the ſole right of managing the Olympic games, in which they ſometimes met with competitors. The hundred and fourth Olympiad was celebrated by order of the Arcadians, by whom the Eleans were at that time reduced very low; this, as well as thoſe managed by the inhabitants of Piſa, they called unlawful Olympiads, and left them out of their annals, wherein the names of the victors, and other occurrences, were regiſtered.

ANOMALISTICAL *year*, in *Aſtronomy*, called alſo *periodical year*, is the ſpace of time wherein the earth paſſes through her orbit.

The *anomaliſtical*, or common year, is ſomewhat greater than the tropical year; by reaſon of the PRECESSION of the equinox.

ANOMALOUS, *irregular*, ſomething that deviates from the ordinary rule and method of other things of the ſame kind.

The word is not compounded of the privative *α*, and *νομος*, *law*, as is uſually imagined: for whence, on ſuch ſuppoſition, ſhould the laſt ſyllable *al*, ariſe? But it comes from the Greek *ανωμαλος*, *uneven*, *rough*, *irregular*; formed of the privative *α* and *ομαλος*, *plain*, *even*.

ANOMALOUS *verbs*, in *Grammar*, are ſuch as are irregular in their conjugations; deviating from the rules or formulas obſerved by others.

There are *anomalous* verbs, or irregular inflexions of verbs, in all languages.—In the Engliſh, all the irregularity in our *anomalous* verbs lies in the formation of the preter tenſe, and paſſive participle; though this only holds of the native Teutonic or Saxon words, and not of the foreign words, borrowed from the Latin, French, &c.

The principal irregularity ariſes from the quickneſs of our pronunciation, whereby we change the conſonant *d* into *t*, cutting off the regular ending *ed*.

Thus for *mixed*, we write *mixt* or *mix'd*; for *dwelled*, *dwelt* or *dwell'd*; for *ſnatched*, *ſnacht*, &c.—But this properly is rather of the nature of a contraction than an irregularity; and is complained of by ſome of our politer writers as an abuſe, to the diſadvantage of our language, tending to disfigure it, and turn a tenth part of our ſmootheſt words into cluſters of conſonants; which is the more inexcuſable, becauſe our want of vowels has been the general complaint of the beſt writers.

Another irregularity relates to the preter tenſe, and paſſive participle.—Thus *give*, if it were regular, or formed according to the rule, would make *gived* in the preter tenſe, and the paſſive participle; whereas it makes *gave* in the preter tenſe, and *given* in the paſſive participle.

ANOMALY, in *Grammar*, denotes an irregularity in the accidents of a word, whereby it deviates from the common rules or paradigms whereby other words of the like kind are governed.

ANOMALY, in *Aſtronomy*, is the diſtance of a planet from the APHELION or APOGEE; or it is an irregularity in the motion of a planet, whereby it deviates from the *aphelion* or *apogee*.

Kepler diſtinguiſhes three kinds of theſe *anomalies*; *mean*, *eccentric*, and *true*.

ANOMALY, *mean* or *ſimple*, in the *Ancient Aſtronomy*, is the diſtance of a planet's mean place from the apogee.

In the modern aſtronomy, it is the time wherein the planet moves from its aphelion A, to the mean place or point of its orbit I (*Tab. Aſtronomy, fig.* 1.)

Hence, as the arch, or the angle, or the elliptic area ASI, is proportional to the time wherein the planet deſcribes the arch AI; that area may repreſent the mean *anomaly*. Or thus, the area SKA, found by drawing a line LK, through the planet's place, perpendicular to the line of the apſides PA, till it cuts the circle DA, and drawing the line SK, may repreſent the mean *anomaly*; for this area is every where proportional to the former area SIA, as is demonſtrated by Dr. Gregory, Phil. Tranſ. Nº 447.

ANOMALY *of the excentric*, or *of the center*, in the *New Aſtronomy*, is an arch of the excentric circle AK (*fig.* 1.) included between the aphelium A, and a right line KL, drawn through the centre of the planet I, perpendicularly to the line of the apſides AP. See EXCENTRIC.

In the ancient aſtronomy, it is an arch of the zodiac, terminated by the line of the apſides, and the line of the mean motion of the center.—See the methods of finding the *anomaly of the excentric*, in Phil. Tranſ. Nº 447.

ANOMALY, *true* or *equated*, is the angle at the ſun ASI, which a planet's diſtance from the aphelium AI, appears under; or it is the angle or area, taken proportional to the time in which the planet moves from the mean place I, to its aphelion A.

And hence, in the ſun's motion, it will be the diſtance of his true place from the apogee.

The true *anomaly* being given, the mean one is eaſily found; but it is difficult to find the true *anomaly* from the mean one given.

The geometrical methods of Wallis and Newton, by the protracted cycloid, are not fit for calculation; nor yet the method of ſeries, as being too laborious. Hence aſtronomers are forced to have recourſe to approximation. Ward, in his *Aſtronomia Geometrica*, takes the angle ASI, at the focus where the ſun is not, for the mean *anomaly*; which will nearly repreſent it, if the orbit of the planet be not very excentric; and thus eaſily ſolves the problem. But this method does not hold of the orbit of Mars, as being more excentric than thoſe of the other planets.

Sir Iſaac Newton ſhews how to effect even this; and when his correction is made, and the problem ſolved according to Ward's hypotheſis, Sir Iſaac affirms, that, even in the orbit of Mars, there will ſcarce ever be an error of above a ſecond.

ANOMOEANS, ANOMOEI, in *Church Hiſtory*, a ſect of Chriſtians, who denied any ſimilitude between the eſſence of the Father and that of the Son. See TRINITY.

The word is compoſed of the privative *α*, and *ὁμοιος*, *ſimilar*, *reſembling*; q. d. *different*, *diſſimilar*.

Anomœans was the name whereby the pure Arians were diſtinguiſhed in the fourth century, becauſe they not only denied the conſubſtantiality of the Word, but even aſſerted, that he was of a nature different from that of the Father; in contradiſtinction to the Semi-Arians, who indeed denied the conſubſtantiality of the Word; but who owned, at the ſame time, that he was like the Father.

ANOMIA, a genus of worms, ranged by Linnæus under the order of *teſtacea*.

ANOMORHOMBOIDIA, in *Natural Hiſtory*, the name of a genus of ſpars.

The word is derived from *ανωμαλος*, *irregular*, and *ῥομϐοιδης*, a *rhomboidal figure*.

The bodies of this genus are pellucid cryſtalline ſpars of no determinate regular external form, but always breaking into regularly rhomboidal maſſes; eaſily fiſſile, and compoſed of plates running both horizontally and perpendicularly through the maſſes, but cleaving more readily and evenly in an horizontal than in a perpendicular direction; the plates being ever compoſed of irregular arrangements of rhomboidal concretions.

Of this genus there are five known ſpecies, which have all, in ſome degree, the double refraction of the Iceland cryſtal.

ANONIS, in *Botany*, ſee REST-*Harrow*.

ANONYMOS, ſee CHELONE.

ANONYMOUS, ſomething that is nameleſs; or to which no name is affixed.

It is formed of the privative *α*, and *ονομα*, *name*.

The term is chiefly applied to books which do not expreſs their author's name, and to authors whoſe names are unknown. Decker, advocate of the imperial chamber of Spires, and Placcius of Hamburgh, have given treatiſes of *anonymous* books.—Burc. Gotth. Struvius treats of learned men who have endeavoured to inveſtigate the authors of *anonymous* books.

ANONYMOUS, in *Anatomy*, a name ſometimes given to parts newly diſcovered, or firſt taken notice of.

ANONYMOUS is alſo an appellation anciently given to the ſecond cartilage of the throat, by later writers called *cricoides*, or *annuliformis*.

ANONYMOUS, in *Commerce.*—Partnerſhips in trade in France are ſtyled *anonymous*, when they are not carried on under any particular name, but wherein each of the partners trades viſibly on his own account, and in his own name; after which all the partners give one another an account of their profit or loſs in trade. Theſe ſorts of partnerſhips are concealed, and known only to the parties themſelves.

ANONYMOUS *partnerſhips in Trade*, are alſo in France ſuch, wherein perſons of fortune and quality depoſit ſums of money, in order to ſhare of the profits and loſs. To this end thoſe who furniſh the capital have no trouble in carrying on the trade, nor do their names appear to be any way intereſted therein.

ANONYMOUS, in *Law*, the ſending *anonymous* letters demanding money, &c. is felony by the Black Act, 9 Geo. I. cap. 22.

ANOREXY, ANOREXIA, in *Medicine*, an inappetency, or loſs of appetite.

The word is compounded of the privative α, and ορεξω, *appeto*, *I deſire*.

Anorexia is properly a longer continuance than is natural without a deſire to eat.

If the thought, or the ſight, of proper food create a ſickneſs in the ſtomach, or a tendency to vomit, the caſe is more properly called a *nauſea*.

Anorexia is chiefly conſidered as a ſymptom of ſome other diſorder, from which the curative indications are to be taken, and afterwards ſtomachics uſed.

ANOTTA, in *Botany*. See BIXA.

ANPITS, in the *Military Art*, in ſome *Middle Age Writers*, denotes a breaſt-work, anſwering to what is otherwiſe called *barbacan*.

ANSÆ, ANSES, in *Aſtronomy*, thoſe apparently prominent parts of the planet Saturn's ring, diſcovered in its opening, and appearing like handles to the body of that planet. The Latin word literally ſignifies *handles*, or *ears*, of divers utenſils.

ANSARIUM, in the *Civil Law*, a duty impoſed on all proviſions carried in veſſels with *anſæ*.

This was otherwiſe called *anſurium*, and the collectors of it *anſurii*.

ANSATUM *telum*, according to ſome, denotes a dart, or javelin, with an *amentum* faſtened to it.

Others rather take the *anſæ* of a javelin to be thoſe two eminences about the middle of the *cuſpis*, or point, which hinders the weapon from piercing through the whole body.

ANSCOTE, in our *Ancient Law-Books*, the ſame with *anhlote*. See SCOT.

ANSEL *Weight*. See AUNSEL *Weight*.

ANSELM'S *Art*. See ART.

ANSER, in *Aſtronomy*, a ſmall ſtar, of the fifth or ſixth magnitude, in the milky way, between the ſwan and eagle, firſt brought into order by Hevelius.

ANSER *Americanus*. See TOUCAN.

ANSERES comprehends one of the ſix orders of birds in the Linnæan ſyſtem, diſtinguiſhed by a ſmooth beak, covered with a ſkin, and enlarged towards the apex; the feet are formed for ſwimming, having thin toes connected by a membrane; the legs are thick and ſhort; the body is bulky, and covered with a thin ſkin and feathers. This order of birds is analogous to the *belluæ*, in the claſs of *mammalia*. See GOOSE.

ANSES. See ANSÆ.

ANSPESSADES, or LANSPESSADES, a kind of inferior officers in the foot, below the corporals, and yet above the common centinels.

The word is formed of the Italian *lancia ſpezzata*, q. d. *broken lance*; which was occaſioned hence, that they were originally diſbanded *gendarmes*, who, for want of other ſubſiſtence, ſued for a place of ſome diſtinction in the infantry.

There are uſually four or five in each company.

ANSWER, in a law-ſenſe, &c. See REJOYNDER.

ANT, *formica*, a genus of inſects belonging to the order of *hymenoptera*, famous in *Natural Hiſtory*. It is diſtinguiſhed from the other *genera* of this order, by having an erect *ſquama*, or ſcaly body, placed between the thorax and abdomen. The male and female *ants* have wings, but the neutral have none. The ſting of the female and neutral is concealed. There are five ſpecies common in England. 1. The hill *ant*, called alſo the great *hippomyrmex*, or horſe-*ant*. 2. The jet *ant*. 3. The red *ant*. 4. The common yellow *ant*. 5. The ſmall black *ant*. Theſe ſeveral ſpecies poſſeſs, in common, a double ſaw, a mouth, a pair of articulated *antennæ*, or horns, two eyes, and a neck, which connects the head with the breaſt. They are viſibly diſtinguiſhed with reſpect both to their colour and ſize. The hill *ants* take their name from their uſual habitations, which are the ſunny banks of hills, for the advantage of bringing their young to maturity. They are alſo fond of the decayed roots of trees, where they may with greater eaſe form their apartments. Theſe are conſiderably larger than any of the reſt; their head and body are a fine brown, and their breaſt a faint red. The jet and red *ants* are of equal ſize, and they derive their name from their reſpective colours. The former uſually neſt at the bottom of old trees, and the latter under broad ſtones, or other rubbiſh. The common yellow and ſmall black *ants* are about half as big as the jet or red *ants*; and moſt frequently chuſe their habitation in thoſe eminences caſt up by moles, which, on account of the uſe they make of them, are called *ant-hills*. Nevertheleſs, *ants* of different ſpecies may take up their reſidence in any of the ſituations abovementioned, but they never aſſociate with each other. *Ants* of a particular ſpecies never go into any neſt but their own; the conſequence of an attempt of this kind would be inſtant death; even when purſued, they will never fly into another hole for ſhelter, except in the laſt extremity, and will ſometimes rather ſuffer themſelves to be taken. They do not ſeem to know what hoſpitality is. Sir Edmund King aſſures us, that if a red *ant* be put into a black *ant's* bank, war immediately ariſes; the black ſeize their gueſt, and never leave pinching him on the head with their forceps, or claws, till they have deſtroyed him; after which they drag the dead body out of the verge of the bank. If a black *ant* be put into a red *ant's* bank, he immediately ſeeks his ſafety by flight. Phil. Tranſ. Nº 23, or Abr. vol. ii. p. 789.

Ants of each ſpecies form ſeparate colonies; and they adapt the ſituation and ſtructure of their cells to the ſeaſons of the year. In winter they dig deep, and in ſummer riſe nearer to the ſurface of the ground. Their ſubterraneous habitation is divided into a number of different cells of an oval figure, all communicating with one another by circular and ſmooth paſſages, for the convenience of draining off the water, and furniſhing entries into their different apartments. The hill and jet *ants*, being protected by the trees under which they lodge, are not at the trouble of digging theſe channels for carrying off the water. They take great care in keeping their apartments clean, and remove any of their colony that dies out of their ſettlement. Pliny relates, that the *ants* of his country buried their dead; but that circumſtance has not been obſerved among us.

Each colony is uſually compoſed of a large female, which Mr. Gould, for diſtinction ſake, calls the queen, and various companies of workers. Beſide theſe, they are joined by a number of winged *ants*, which are commonly known by the name of *ant-flies*. The common *ants* are of neither ſex, but ſeem entirely deſtined to take care of the young which are committed by the queen to their protection. The queen is the mother of the whole brood, and is diſtinguiſhed from them by her ſuperior ſize and particular colour, as well as by the reſpect that is ſhewn her by her ſubjects. The colour of the queen is different in the ſeveral colonies. Her head is furniſhed like thoſe of the common *ants*. She has likewiſe three lucid ſpecks on her front, placed in a triangular form, which ſeem to be eyes of the ſame ſtructure with thoſe of the ſpider. The queen of the red colony is provided with a ſting, in which ſhe differs from thoſe of the other ſpecies. The queen, as ſoon as ſhe has depoſited a parcel of her eggs, leaves them to the affection and care of the workers, and withdraws to a ſeparate apartment. Two or three yellow queens have been ſometimes found in the ſame colony; and in the red colony there are ſeldom fewer than two; and in this reſpect they differ from the hill and ſmall black *ants*, which have only one.

Mr. Gould made a great number of experiments and obſervations, in order to evince this fact, that the queen alone ſupplies every particular colony with its inhabitants; and he adds, that ſhe lays three different ſorts of eggs, the male, female, and neutral. The two firſt are depoſited in the ſpring, and the laſt in July and Auguſt. When the queen has furniſhed an apartment with eggs, the common *ants* diſcover the greateſt tenderneſs and care in brooding over them, and preſerving them from moiſture. After the eggs have continued for ſome time in this ſtate, cheriſhed and protected by the workers, they begin to loſe their tranſparency; they are covered over with a number of ſmall hairs; they are extended with ſeveral rings, and appear in the ſhape of vermicles, or little worms. In proceſs of time a black ſpeck is obſervable in them, which Mr. Lewenhoeck, and Mr. Gould, take to be their digeſted food. Theſe *ant-vermicles* grow very ſlowly in the firſt ſummer; and in the ſucceeding winter they ſeem not to increaſe at all: but from April to June in the ſecond year they grow very faſt, and are prepared for another change into the nymph, or aurelia ſtate. They are previouſly transferred by the workers to a proper ſituation near the ſurface of the colony, where they weave in the manner of ſilk-worms, and infold themſelves in a kind of ſilken tiſſue; and in this ſtate they are vulgarly denominated *ant eggs*. The proceſs from this ſtate to that of *ants* is gradual and ſlow, and not uſually completed in leſs than a month. But the manner of their transformation cannot be accurately obſerved, becauſe they will not arrive, like moſt other aureliæ, to maturity under glaſſes. The female aureliæ are generally the firſt which transform, and are thoſe that make their appearance in the ſhape of large flies. Theſe give birth to new colonies, and intitle themſelves to the dignity of queens. The male, or ſmall *ant-flies*, appear next, and early enough to be contemporary with the others. Laſt of all, the neutral aureliæ change into common *ants*, or workers, without wings, but not till moſt or all the flies have forſook the ſettlement. The male *ants* are furniſhed with two or more ſmall hooks near their extremities, like thoſe of other inſects of the fly-kind, which are the external parts of generation, whereby they faſten to the females; they have likewiſe a triangle of eyes in the ſame poſition with thoſe of the large flies. Theſe *ant-flies*, both large and ſmall, are of very ſhort duration; they ſeldom continue above three weeks. Thoſe of the female kind, which are not neceſſary to the propagation of new colonies, together with the male, are deſtroyed either by a worm, which is generated in their bodies, or by furniſhing a repaſt for other creatures.

The labouring *ants* are inceſſantly employed by night as well as by day, in preparing and carrying materials for their reſpective cells. The horſe *ants* make their neſts of large quantities of ſticks, ſtraws, and fragments of leaves, which they place together in heaps, for the convenience of ſuddenly ſecreting themſelves on the approach of an enemy, as well as for promoting the maturity of the young nymphs. The common *ants* build only with ſmall pieces of dry earth, which, after it is cut by their double ſaw, they incruſt with blades of graſs, and form into conical mounts about half a foot high, for the purpoſe of favouring the growth of the vermicles, and the transformation of the nymphs. Another part of the employment of the labouring *ants* reſpects the young: in every ſtage of their progreſſion from eggs to perfect *ants*, the workers remove them every day into different parts of the colony; in the morning they transfer them to cells nearer the ſurface, for the benefit of the ſun's influence, and in the evening to ſuch as are more remote and guarded. They are likewiſe employed in collecting the juices of various fruits and inſects for the nutriment of the vermicles; which they convey firſt into their own alvus, and then into the bodies of the vermicles, or maggots. Another part of their employment is that of diſmantling the nymphs at the time of their transformation.

It has been maintained by many naturaliſts, ancient and modern, from the time of Solomon to our own, that *ants* provide for winter; that accordingly they lay up magazines or granaries of corn, and other proviſions; and that, to prevent the ſprouting of the corn, they cut off all the buds before they lay it up; and, in order to preſerve it from rotting, it has been ſaid, that they bring it out of their hoards in the middle of the day, and ſpread it on dry earth at the entrance of their neſts, for the benefit of the air and ſun. But this theory has been contradicted by later experiments and obſervations. Lewenhoeck is of opinion, that they do not eat at all in the winter, but ſpend that ſeaſon, like dormice, and many other ſorts of animals, in a ſtate of ſleep; and that the proviſion they collect together ſeems intended for preſent uſe; and not ſo much for themſelves as for their young. Mr. Gould confirms this opinion by a great variety of obſervations. He never could diſcover any reſervoirs of corn, or of other aliment; and for farther ſatisfaction, he placed in ſeveral flower-pots, and other convenient receptacles, different colonies of yellow, ſmall black, red, and hill *ants*, with their reſpective queens, attendants, and vermicles. They continued in this ſituation through the whole ſummer, autumn, and winter; they carried on their operations as in other ſettlements; formed their apartments, nouriſhed their young, and brought them to perfection. Had it been their uſual cuſtom, he preſumes that they ſhould have laid up their proviſions; but upon gradually removing the earth, and ſearching the lodgments, there was no appearance of magazines, corn, or any ſort of collected food; and he concludes from a number of trials, that Engliſh *ants* have no ſtorehouſe for their corn, nor require any other food in the winter than water. In exceſs of cold, he ſays, they are half benumbed; and at other times they are contented to regale themſelves with the common moiſture of the earth. However he intimates, that the cuſtoms of foreign *ants* may, in this and various inſtances, deviate from ours; though the contrary opinion has never been clearly and demonſtratively aſcertained.

In 1749, M. Carre publiſhed a Diſſertation on the Policy of *Ants*, the reſult of above thirty years obſervation; in which he concurs with Mr. Gould in rejecting the whole theory of their forecaſt and ſtorehouſes as fabulous; and M. Soriniere likewiſe, after having paid particular attention to the oeconomy of *ants* for twenty years, adopts the ſame opinion.

It has been a vulgar notion, that *ants* bite; but they have not ſtrength enough in their jaws and teeth to penetrate the cuticula. However the red *ants* have a ſting in the poſterior part of their bodies, which they thruſt out, and plunge into any thing that offends them, by a kind of vibratory motion, which injects an acrid, corroſive ſort of liquor, that occaſions a ſmart but momentary pain, and raiſes an inflammation. The other *ants* have no ſting.

Ants furniſh ſuſtenance for many ſpecies of animals; and particularly for young pheaſants and partridges; if the latter be bred under a hen, and ſupplied with *ant*-hills and freſh water, and at proper intervals a mixture of millepedes and ear-wigs, they will not fail to come to maturity. *Ants* alſo ſupply a reſin, an oil and an acid, which have been deemed of conſiderable ſervice in the art of phyſick.

Theſe ſmall animals are very injurious to gardens and paſture lands; as well by ſeeding on the fruit as by making hills for their habitation. In the hotter countries, as Italy, Spain, and the Weſt-Indies, *ants* are the great peſt of the fields and plantations: and no method has yet been diſcovered for effectually deſtroying them. Trees may be preſerved from them by incompaſſing the ſtem for four fingers breadth, with a roll of wool newly pulled from the ſheeps belly; or by laying ſaw duſt all around the ſtump of it. Some anoint the tree with tar, which has the ſame effect, but then tar is prejudicial to the tree. In Dr. Hawkeſworth's Account of the Voyages for making Diſcoveries in the Southern Hemiſphere, mention is frequently made of black, white, and green *ants*; their ſtings were ſharper than thoſe of the common biting *ant*. The white *ants* reſembled thoſe of the Eaſt Indies, which are the moſt pernicious of all animals; and their neſts were of a pyramidal form, from a few inches, to ſix feet high. Profeſſor Kalm in his North-American Travels ſpeaks of a ſmall *ant* in Penſylvania, whoſe length is one geometrical line, and colour either black or dark-red. Theſe live in ſwarms under ground and in walls; and, as Mr. Franklin apprehends, have a peculiar method of communicating their thoughts and deſires to one another. Neumann obſerves, that *ants* may be made uſe of for obtaining ſkeletons of ſmall animals, ſuch as mice, frogs, &c. exquiſitely beautiful and perfect; far ſurpaſſing any thing that can be executed by artificial anatomy. The ſubject is for this purpoſe to be incloſed in a wooden box, and properly diſtended, to prevent the parts from collapſing, or being cruſhed together by the earth. The box is to be penetrated with a number of holes, through which the *ants* will preſently find their way.

See more on this ſubject in Swammerdam's Bib. Nat. vol. i. Ray's Hiſt. of Inſects, p. 70. Bibl. Univ. t. xi. Melange's D'Hiſt. Nat. t. 1. Gould's Account of Engliſh *Ants*, 12mo. 1747, *paſſim*.

ANT-*bear*. See **ANT**-*eaters*.

ANT-*eater*, the name given by Linnæus to the creature called by others, the *tamandua-guacu*, or ant-bear; and *myrmecophago*.

The name is derived from the Greek μυρμὴς, an *ant*, and φαγω, *to eat*. The creature is ſo called becauſe his food is *ants*, which he eats by thruſting his long tongue into neſts, and drawing it back into his mouth when covered with them.

This, in the Linnæan ſyſtem of *Zoology*, is a diſtinct genus of animals, the characters of which are, that they have no teeth; have feet formed not for climbing, but walking, and have eight abdominal paps, ſix on the belly, and two on the breaſt.

There are two ſpecies, one of them covered with hair, the other with ſcales. The firſt is called by Linnæus *Myrmecophaga*, and the other *Manis*, of this latter ſpecies there are two ſorts; the firſt having five toes on both hind and fore feet, is called *Manis pentadactyla*; the other with four toes, is called *Manis tetradactyla*.

ANT-*eggs* is a name popularly given to a kind of little white balls found in the banks or neſts of *ants*, ordinarily ſuppoſed to be the ova of this inſect.

Sir Ed. King opened ſeveral of theſe vulgarly reputed eggs, in ſome of which he found only a maggot in the circumſtances as above deſcribed; while in another the maggot had begun to put on the ſhape of an *ant* about the head, having two little yellow ſpecks, where the eyes were to be. And in others, a further progreſs was obſerved, the included maggot being furniſhed with every thing to complete the ſhape of an *ant*, but wholly tranſparent, the eyes only excepted, which were as black as bugles. Laſtly, in others, he took out every way perfect and complete *ants*, which immediately crept about among the reſt.

The true *ants-eggs* are the white ſubſtance which upon opening their banks, appears to the eye like the ſcatterings of fine white ſugar, or ſalt, but very ſoft, and tender. Examined by a microſcope, it is found to conſiſt of ſeveral, pure, white appearances in diſtinct membranes, all figured like the leſſer ſort of bird eggs, and as clear as a fiſh's bladder.

The ſame ſubſtance is found in the bodies of the *ants* themſelves.—This ſpawn, when emitted, they lye in multitudes on, to brood; till in ſome time it is turned into little vermicles, as ſmall as mites, commonly called *ants-eggs*.

Ant-*hills* are little hillocks of earth, which the *ants* throw up for their habitation and the breeding of their young. They are a very great miſchief to dry paſtures, not only by waſting ſo much land as they cover, but by hindering the ſcythe in mowing the graſs, and yielding a poor hungry food, pernicious to cattle.

The manner of deſtroying them is to cut them into four parts from the top, and then dig into them ſo deep as to take out the core below, ſo deep that when the turf is laid down again it may lye ſomewhat lower than the level of the reſt of the land; by this means it will be wetter than the reſt of the land, and this will prevent the *ants* from returning to the ſame place, which otherwiſe they would certainly do. The earth that is taken out muſt be ſcattered to as great a diſtance every way as may be, otherwiſe they will collect it together, and make another hill juſt by. Some collect the hills together in heaps, and burn them for manure.

The proper time for doing this is winter; and if the places be left open, the froſt and rains of that time of the year will deſtroy the reſt; but in this caſe care muſt be taken, that they are covered up early enough in the ſpring, otherwiſe they will be leſs fertile in graſs than the other places.

Ants are likewiſe deſtroyed by ſcattering a good quantity of unſlaked lime about their hills. Some make uſe of quickſilver, as a general poiſon to inſects.

Ant-*lion*. See Formica-*Leo*.

Ant, *muſk*, the name given, by Liſter and Ray, to a peculiar ſpecies of *ant*, which is of the number of the perfumed inſects. It is found on dry banks, and is ſo much ſmaller than the common *ant*, that it needs no other diſtinction. Thoſe of this ſpecies which are without wings are of a yellowiſh colour, and when bruiſed or cruſhed emit a ſharp and acid ſmell, as the common *ant* does; but thoſe which have wings are coal-black, and theſe, inſtead of the four ſmell of the others, emit a perfume not to be endured for its ſtrength. The ſmell of all the perfumed inſects goes off in keeping; and theſe little creatures, after they have been dead and dry ſome time, are found to ſmell leſs ſtrongly, but much more agreeably. Phil. Tranſ. N° 77. or Abr. vol. ii. p. 792.

Ant, *viſiting*. At Paramaribo, a Dutch colony in the province of Surinam, there are *ants*, which the Portugueſe call *viſiting-ants*; they march in troops; and as ſoon as they appear, all the coffers and cheſts of drawers are laid open, which they clear of rats, mice, and a peculiar ſort of inſect in that country called *cackerlacs*, and of other noxious animals. If any one chance to moleſt them, they fall upon him, and tear in pieces his ſtockings and ſhoes. Their viſits are rare; and they do not ſometimes appear for three years. Templeman's Obſ. vol. i. p. 36.

ANTA, in the *Ancient Architecture*, a ſquare column, or pilaſter, placed at the corners of the walls of temples, and other edifices.

Theſe took their name, according to M. Perault, from the prepoſition *ante, before*; becauſe placed before the walls and coins of buildings, to ſecure or ſtrengthen them.

The *antæ* ſtood out of the wall, with a projecture equal to one eighth of their face, provided there were no ornament that had a greater projecture; but it was a rule, that the projecture of the *antæ* ſhould always equal that of the ornaments.

There were alſo *antæ* at doors and gates. Feſtus confines their uſe to this laſt place.

Vitruvius calls thoſe that have but two faces out of the wall angular *antæ*, to diſtinguiſh them from others which have three faces diſengaged, and which are placed at the ends of the walls of porticos.

ANTÆ. See Anticum.

ANTACÆUS, in *Ichthyology*, a name firſt given by the Greek writers Ælian and Strabo to the *ichthyocolla* PISCIS, the iſinglaſs-fiſh, or HUSO; and afterwards, by Johnſton and others, not only to this fiſh, but to the common STURGEON.

ANTACHATES is uſed, by ſome naturaliſts, for a kind of bituminous ſtone, of the nature of amber, though of a different colour, which in burning yields a ſmell like myrrh.

ANTACIDS, is uſed by ſome writers to denote medicines proper to qualify and reſiſt acid humours.

Antacids are chiefly of the alcalious kind.

Under the claſs of *antacids* come, 1. *Abſorbents*, as chalk, coral, ſea-ſhells, hæmatites, and ſteel-filings. 2. *Obtundents*, as oils, and fats. 3. *Immutants*, as lixivious ſalts and ſoaps.

ANTAGONIST, Antagonista, among the *Ancients*, denotes an adverſary in battle.

The word is formed from *αντι, contra, againſt*; and *αγωνιζω, I contend.*

In this ſenſe the word is rather uſed in ſpeaking of ſportive combats, or games, than of ſerious fighting.

Antagonist alſo denotes one of the parties in literary diſputes.

Antagonist *muſcles*, in *Anatomy*, are thoſe which have oppoſite functions.

Such are the *flexor* and *extenſor* of any limb, the one of which contracts it, and the other ſtretches it out.

Solitary muſcles are thoſe without any *antagoniſts*; as the heart, &c.

ANTALGIC, an epithet given by ſome writers to medicines proper to abate pain.

In this ſenſe *antalgics, antalgica*, amount to the ſame with ANODYNES.

ANTALIUM, in *Natural Hiſtory*, a ſmall ſea-ſhell of a tubular form, whence it is alſo denominated TUBULUS *marinus*.

The *antalium*, otherwiſe written *antale*, and *antalus*, is about an inch and half long; the thickneſs of a large quill at one end, and of a ſmall one at the other; fluted from end to end, of a white or greeniſh-white colour, and is found on rocks, and at the bottom of the ſea.

It is an *alcali*, and ſaid to be of ſome medicinal uſe as a reſolvent and dryer; at leaſt by the ancients.

The *antalium* bears a near affinity both in origin, ſtructure, and uſe, with the DENTALIUM.

ANTANACLASIS, a figure in *Rhetoric*; whereby the ſame word is repeated, but in a different, and ſometimes doubtful ſignification.—As, *Let the dead bury the dead.*

The word comes from *αντι*, and *ανακλαω, repercutio, I ſtrike again.*

ANTANAGOGE, a figure in *Rhetoric*; when, not being able to anſwer the accuſation of the adverſary, we return the charge, by loading him with the ſame or other crimes; which is uſually called RECRIMINATION.

ANTANISOPHYLLUM, in *Botany*. See Hog-weed.

ANTAPHRODISIAC, an epithet given to medicines, which diminiſh the ſeed, and extinguiſh the ſtimula or incitements to venery.

ANTAPOCHA, in the *Civil Law*, denotes one's acknowledgement in writing of money paid, in the way of rent, penſion, intereſt, or the like incumbrance. Such inſtrument, or *antapocha*, the debtor gives upon making payment to the creditor, to ſerve as a proof of the charge or incumbrance for futurity, and exclude any claim of preſcription againſt the payment of it. The *antapocha* differs from the *apocha*, in that this latter is given by the creditor to the debtor, the former *vice verſa*.

ANTARCTIC *pole*, denotes the ſouthern POLE, or end of the earth's axis.

The word is compoſed of *αντι, contra*; and *αρκτος, urſa, bear*; as being oppoſite to the Arctic pole.

The ſtars near the *antarctic* pole never appear above our horizon.

Antarctic *circle* is one of the leſſer circles of the ſphere, parallel to the equator, at the diſtance of 23 deg. 30 min. from the ſouth pole.

It takes its name from its being oppoſite to another circle, parallel likewiſe to the equator, and at the ſame diſtance from the north pole, called the ARCTIC *circle*.

ANTARES, in *Aſtronomy*, the ſcorpion's heart; a fixed ſtar of the firſt magnitude, in the conſtellation Scorpio.

ANTASTROPHE, in *Rhetoric*, a ſpecies of ANTEPOSITION.

ANTEAMBULONES, in *Antiquity*, a kind of ſtate-ſervants, who walked before their maſters to clear the way, and keep off the crowd.

The *formula* uſed by theſe was *Date locum domino meo.*

ANTECANIS is uſed, by ſome *Aſtronomers*, to denote the conſtellation otherwiſe called CANIS *minor*, or the ſtar PROCYON. It is thus denominated as preceding, or being

ing the forerunner of the CANIS *major*, and riſing a little before it.

ANTECEDENT, in the ſchools, ſomething that precedes, or goes before, another, in reſpect of time.

The word is compounded of *ante*, *before*, and *cedere*, *to go.*—In which ſenſe it ſtands oppoſed to *ſubſequent*.

Antecedent, in *Grammar*, the word which a relative refers to.

Antecedent, in *Logic*, denotes the firſt propoſition of an *enthymeme*, or of an argument which only conſiſts of two members.

In oppoſition to this, the latter is called the *conſequent*.

Thus, in the argument, *cogito, ergo ſum, I think, and therefore I exiſt*; *cogito* is the *antecedent*: being thus called, becauſe it precedes the *ergo*, or the *copula* of the argument.

Antecedent *of a* RATIO, in *Mathematics*, denotes the firſt TERM, or that which is compared with the other.

Thus, if the *ratio* be *a* : *b*, or of *a* to *b*; *a* is ſaid to be the *antecedent*.

Antecedent *ſigns*, in *Medicine*, are ſuch ſymptoms of diſorder as appear before a diſtemper is ſo formed as to be reducible to any particular claſs, or proper denomination.

Antecedents, in *Rhetoric*, are ſuch things as being once allowed, others neceſſarily or very probably follow. This is one of the ſixteen topics or common places enumerated by Cicero and Quintilian.

Antecedent *decree*, in *Theology*, is a decree preceding ſome other decree, or ſome action of the Creator, or the previſion of action.—It is a point much controverted, whether predeſtination be a decree *antecedent* to faith, or ſubſequent to it.

Antecedent *will*, or *deſire*, is that which precedes ſome other will or deſire, or ſome knowledge or previſion.—Thus we ſay, God by a ſincere, but *antecedent* deſire, wills all men to be ſaved: that is, this ſincere deſire of God precedes, and does not ſuppoſe, the knowlege of their faith and repentance.

Antecedent *neceſſity*. See Necessity.

ANTECEDENCY, Antecedence. See Antecedent, and Antecedentia.

ANTECEDENTIA, among *Aſtronomers*.—When a planet appears to move weſtward, contrary to the order or courſe of the ſigns; as from Taurus towards Aries; it is ſaid to move *in antecedentia*.

On the contrary, when it goes eaſtward, or forward, from Aries towards Taurus; it is ſaid to move *in conſequentia*.

ANTECESSOR, one that goes before, or that leads another. See Precursor, Predecessor, &c.

The term is particularly uſed in ſome univerſities for a public profeſſor, who teaches or lectures the civil law.

Antecessors, in the ancient art of *War*, is an appellation given to a party of horſe, diſpatched before the *agmen* or body of an army, partly by way of intelligence, and partly to chooſe out a proper place for encamping on, as well as the moſt convenient roads for the ſoldiery to travel in.

Theſe are alſo denominated *antecurſores*.

They amount to the ſame with what the Greeks call *prodromi*.

ANTECHAMBER, or Antichamber, an outer chamber, before the principal chamber of an apartment; where the ſervants wait, and where ſtrangers ſtay, till the perſon to be ſpoken with is at leiſure, &c.

The word is formed of *ante*, *before*, and *camera*, a CHAMBER.

ANTECHRIST. See Antichrist.

ANTECURSORES, ſee Antecessors.

ANTEDATE, a ſpurious date, prior to the true date of a writing, inſtrument, act, deed, or the like.

Antedates in *Commerce*, are of very dangerous conſequence in matters of trade. To *antedate* is to ſet down a falſe date; to date from a day prior to that on which the buſineſs is tranſacted, the note or bill drawn, or letters written, &c.

In France it was formerly the ill cuſtom to have blank orders on the backs of bills of exchange, that is, to indorſe them merely with a name, ſo that they could eaſily be antedated; which in caſe of failures was liable to cauſe very great abuſes. But by the regulations for commerce of 1683, it is ordered that the ſignatures on the backs of bills of exchange ſhall not ſerve for orders, unleſs dated: and *antedates* are puniſhed as forgery.

ANTEDILUVIAN, or Antidiluvian, ſomething that exiſted or happened before the DELUGE.

In this ſenſe, thoſe generations from Adam, till Noah's flood, are called *Antediluvians*; and thoſe ſince deſcended from Noah, to the preſent time, are called *Poſtdiluvians*.

Dr. Burnet, and Dr. Woodward, differ very widely about the *Antediluvian* world; the former imagines its face and appearance to have been ſmooth, equable, and in all reſpects different from what we now find it to be.

The latter, on the contrary, endeavours to prove, that the face of the terraqueous globe before the deluge was the ſame as it is now, viz. unequal, diſtinguiſhed into mountains, and dales, and having likewiſe a ſea, lakes, and rivers; that this ſea was ſalt, as ours is; was ſubject to tides; and poſſeſſed nearly the ſame ſpace and extent that it now does; and that the *Antediluvian* world was ſtocked with animals, vegetables, minerals, &c. that it had the ſame poſition, in reſpect of the ſun, which ours now hath, its axis not being perpendicular, but inclined, as at preſent, to the plane of the ecliptic; conſequently, that there were then the ſame ſucceſſion of weather, and the ſame viciſſitudes of ſeaſons, as now.

ANTEJURAMENTUM, or Præjuramentum, by our anceſtors alſo called *juramentum calumniæ*; an oath which both the accuſer and accuſed were anciently obliged to make before any trial or purgation.

The accuſer was to ſwear, that he would proſecute the criminal; and the accuſed was to make oath, on the very day that he was to undergo the ordeal, &c. that he was innocent of the fact with which he was charged.

If the accuſer failed, the criminal was diſcharged; if the accuſed, he was underſtood to be guilty, and was not to be admitted to purge himſelf by the ordeal.

ANTEJUSTINIANEAN, an appellation ſometimes given to the ancient Roman law, as it ſtood before the time of the emperor Juſtinian.

Tribonian has been often condemned for ſuppreſſing the writings of the *Antejuſtinianean* lawyers. Schulting, a celebrated profeſſor at Leyden, has a diſſertation on the equity of this cenſure. Fabricius gives a catalogue of the antient *Antejuſtinianean* lawyers. Schulting has publiſhed a collection of the *Antejuſtinianean* writers.

ANTELIUS, or Anthelius, in *Ancient Writers*, denotes an idol placed over the doors of houſes, ſuppoſed to have the guardianſhip, or protection of them.

The word is originally αντηλιος, q. d. againſt the ſun, as being expoſed thereto.

ANTELOPE, *Gazella* in *Zoology*, the name of an animal of the goat kind, of which there are three known ſpecies.

1. The *Gazella Africana Strepſicheros Plinii*. This is the ſpecies we uſually ſee under the name of the *antelope*; it is called the *addace* in Africa, and is the *dorcas Lybica* of Ælian. Its horns are ſlender and erect, they are black, tranſverſely radiated, and twiſted into the appearance of ſpiral lines; though theſe are in reality ſo many annular circles, they are toward the middle bent a little outwards, and thence they turn in again, ſo that they in ſome meaſure repreſent the antient lyre.

2. The *Gazella Indica*, or *Indian antelope*, with very long ſtrait horns, which are annulated only in that part near the head. The horns of this creature are ſometimes three feet long, and are perfectly ſmooth and gloſſy, except near the head, and black. The creature is of the ſize of our common deer, and is of a greyiſh colour; its tail is a foot long, and has longer hairs on it than thoſe on the reſt of the body. The horns of this ſpecies are very common in the muſæums of the curious. This creature ſeems to be the animal which produces the bezoar ſtone ſo much valued in medicine.

3. The African kind, which has flat horns annulated to the very top, and crooked near the middle; this has been ſeen alive ſometimes in England. It was much ſmaller than our deer, and of a ſandy colour; its belly is white, and its ſides where the white and ſand colour met, of a duſky appearance. Its tail is blacker and longer than that of the deer, is covered with a ſmaller number of hairs than thoſe of our deer, and is white on that part next the body. Its horns grow out of the middle of the forehead near the eyes, and are very long, ſharpening at the ends, and all the way marked with tranſverſe *ſtriæ* or furrows, and a little bent upwards. Its ears are large, and its legs very ſlender.

The hoofs and horns are uſed in medicine, being eſteemed good againſt the epilepſy and hyſterics.

ANTELUCAN, in *Eccleſiaſtical Writers*, is applied to things done in the night or before day.

We find frequent mention of the *antelucan* aſſemblies, *cœtus antelucani*, of the ancient Chriſtians in times of perſecution, for religious worſhip.

ANTELUDIA, in *Antiquity*, a day of ſhow or parade preceding the circenſes, wherein the preparations made for thoſe ſolemnities were expoſed in great form and pomp.

ANTEMURALE, in *Middle-age Writers*, denotes a kind of outer wall environing the other walls and works of a place, and preventing the too near acceſs of the enemy to them.

This is alſo called by Iſidore, *promurale*, as being *pro munitione muri*, *for the defence of the wall.*

In ſome writers we find it denominated *antepectoralis muris*, in others *anpits*.

ANTEMURALE is alſo uſed to denote any work without ſide the rampart or wall of the place.

In this ſenſe, *antemurale* amounts to the ſame with what we otherwiſe call OUTWORK.

ANTEMURALE is alſo uſed in *Eccleſiaſtical Writers* for the veſtibule or entrance of the *preſbyterium*, or BEMA.

ANTENATUS is uſed in ſome *Law Writers* for the firſt-born, or eldeſt ſon, anſwering to what we call *aiſnè*.

ANTENATUS is alſo ſometimes uſed for a ſon, the iſſue of a former marriage.

In which ſenſe, *antenatus* amounts to the ſame with *privignus*.

ANTENATI, in the modern *Engliſh Hiſtory*, is chiefly underſtood of the ſubjects of Scotland, born before king James the Firſt's acceſſion to the Engliſh crown, and alive after it.

In relation to theſe, thoſe who were born after the acceſſion were denominated POSTNATI.

The *antenati* were conſidered as aliens in England, whereas the *poſtnati* claimed the privilege of natural ſubjects.

ANTENCLEMA, αντεγκλημα, in *Oratory*, is where the whole defence of the perſon accuſed turns on criminating the accuſer.

Such is the defence of Oreſtes, or the oration for Milo, *Occiſus eſt ſed latro. Exſectus ſed raptor.*

See RECRIMINATION.

ANTENICENE, in *Eccleſiaſtical Writers*, denotes a thing or perſon prior to the firſt council of Nice.

We ſay the *Antenicene* faith, *Antenicene* creeds, *Antenicene* fathers.

ANTENNÆ, in *Natural Hiſtory*. See FEELERS.

ANTENUPTIAL, ſomething that precedes marriage.

In this ſenſe, we ſay *antenuptial* promiſes, *antenuptial* preſents, *antenuptial* covenants, *antenuptial* fornication, &c.

Neoſtadius has a treatiſe *De Pactis Antenuptialibus*.

ANTEPAGMENTA, or ANTIPAGMENTA, in the *Ancient Architecture*, the jambs of a door, or lintels of a window.

The word is alſo uſed for the intire *chambranle*, i. e. the door-caſe, or window-frame.

ANTEPENULTIMA, or ANTEPENULTIMATE, in *Grammar*, the third ſyllable of a word, reckoning from the latter end; or the laſt ſyllable except two.

The word is compounded of the prepoſition *ante*, *before*, and *penultimate*, *laſt but one*.

It was upon this ſyllable, that the Greeks placed their acute accents.—The *antepenultimate* of a dactyle is always long.

ANTEPILANI, among the ancient Romans, denote the *haſtati* or *principes* of a legion.

They are ſuppoſed to have been thus called becauſe ranged before the *triarii*, who were alſo called *pilani*.

Some will have the word to be a corruption for *anteſignani*.

ANTEPILEPTIC, in *Medicine*, denotes a quality in bodies, whereby they reſiſt or oppoſe the epilepſy and convulſive motions.

The chief *antepileptics* from the vegetable kingdom are, the roots of pæony, valerian, the flowers of the lime tree, miſletoe of the oak, hazel, and lime.

The animal kingdom affords a great number of *antepileptics* either real or imaginary. Such are elks claws, *caſtoreum*, divers parts of the deer, ſwallows-hearts, the human *cranium*, blood, ſecundines, &c. the *hippomanes*, lizards, frogs and moles liver and ſpine, lions and peacocks dung, earth worms, &c.

The mineral kingdom affords hyacinths and ſmaragds prepared, alſo tincture of luna.

ANTEPOSITION, a grammatical figure, whereby a word which by the ordinary rules of ſyntax ought to follow another, comes before it. As when in the Latin the adjective is put before the ſubſtantive, the verb before the nominative caſe, &c.

Antepoſition ſtands oppoſed to *poſtpoſition*. One caſe or ſpecies of this figure is called by a particular name, *antaſtrophe*.

ANTEPREDICAMENTS, ANTEPRÆDICAMENTA, in *Logic*, certain previous matters, requiſite to a more eaſy and clear apprehenſion of the doctrine of PREDICAMENTS or CATEGORIES.

Such are definitions of common terms; as equivocals, univocals, &c. See DEFINITION, DIVISION, &c.

They are thus called, becauſe treated by Ariſtotle, before the predicaments; that the thread of the diſcourſe might not afterwards be interrupted.

ANTERIDES, in the *Ancient Architecture*, denote buttreſſes erected to ſupport a wall.

Theſe are ſometimes called *antes*, ſometimes *criſmæ*, and by the Greeks ἐρεισματα.

Anterides anſwer to what the modern builders call *counterforts*, *arcbutants*; the Italians, *barbicane*, and *ſperoni*, or ſpurs.

ANTERIOR, or ANTERIOUR, ſomething before another, chiefly in reſpect of place.

The word is formed of the prepoſition *ante*, *before*.

In which ſenſe the term amounts to the ſame with *prior*, and ſtands oppoſed to *poſterior*.

ANTERIOR *Ramus*. See the article RAMUS.

ANTEROS, in *Mythology*, one of the two Cupids who were the chief of the number. They are placed at the foot of the Venus of Medici; this is repreſented with a heavy and ſullen look, agreeably to the poetical deſcription of him, as the cauſe of love's ceaſing. The other was called *Eros*. *Ovid. Rem. Amor.* V. verſe 549 to 576.

ANTEROTES, a name given by ſome of the ancient writers on gems to a ſpecies of the amethyſt. Some have imagined they meant by it a ſort of opal; but Pliny expreſly contradicts this, making the *anterotes* the fifth kind of AMETHYST in value.

ANTES, in *Architecture*, ſee ANTA.

ANTESIGNANI, in the Roman armies, a kind of ſoldiery poſted before the eagles, and other enſigns of the legions, whence their appellation.

The *anteſignani* ſtand contradiſtinguiſhed from the *ſubſignani*, who were ranged in the ſame line with the enſign; and from the *poſtſignani*, who were placed behind them.

ANTESTATURE, in *Fortification*, a ſmall retrenchment, made of palliſadoes, or ſacks of earth, ſet up in haſte, to diſpute with the enemy the remainder of a piece of ground, part whereof hath been already gained.

ANTHALIUM, among the *Ancients*, a root growing in dry places, and about the bigneſs of the fruit of the medlar; it was dug up for food, and eſteemed very pleaſant and wholeſome.

ANTHELION, in *Phyſics*, ſignifies a mock or ſpurious ſun, and denotes a meteor, not very common, of a luminous appearance, ſomewhat reſembling the ſun, ſeen through clouds, bigger, ſometimes four or five times, than the ſolar diſk. In its moſt refulgent ſtate, it is as yellow as the ſun; but the lucid tract ſurrounding it is of a paler yellow, or whitiſh caſt, interſperſed ſometimes with a few reddiſh or ſubfuſcous ſpots. The moſt received opinion relative to the formation of this kind of meteor, attributes the *phænomenon* to a multitude of minute icy or ſnowy particles ſuſpended in the air, and either refracting or reflecting the ſolar rays in ſuch a manner, as to multiply the image of the ſun. But the theory of *anthelia*, for want of a proper number of obſervations, ſeems not yet to be brought to ſuch a degree of ſatisfaction, as by every lover of phyſiology could be deſired. The inſtances of them are but rare. See Phil. Tranſ. vol. LII. Part I. Nº 16. An. 1761. See HALO and PARHELION.

ANTHELIX, in *Anatomy*, the inner circuit of the auricle; thus called from its oppoſition to the outer circuit, called the HELIX.

ANTHELMIA, Indian PINK.

ANTHELMINTICS, medicines good to deſtroy worms.

The word is compounded of αντι, *contra*, *againſt*, and ἑλμινς, *worm*.

Purgatives ſeem to be the only proper *anthelmintics*.

ANTHEM, a church-ſong, performed in cathedral and other ſervice, by the choiriſters, divided for that purpoſe into choruſes, who ſing alternately.

The word was originally uſed both for pſalms and hymns, when thus performed.

Socrates repreſents St. Ignatius as the author of this way of ſinging among the Greeks; and St. Ambroſe among the Latins.—Theodoret attributes it to Diodorus and Flavian.

Amalarius Fortunatus has written expreſly of the order of *Anthems*, "*De antiphonarum ordine.*"

At preſent the term is uſed in a ſomewhat narrower ſenſe; being applied to certain paſſages taken out of the pſalms, &c. and often accommodated to the particular ſolemnity in hand.

Anthems were firſt introduced into the reformed ſervice of the Engliſh church in the beginning of the reign of queen Elizabeth.

ANTHEMIS, ſee CHAMOMILE.

ANTHERÆ, in *Botany*, a term uſed by ſome authors for the yellow, or ruddy globules in the middle of certain flowers, as of lilies, ſaffron, &c.

Some confine the *antheræ* to the yellowiſh globules in the middle of roſes.—Theſe are held more aſtringent than the reſt of the plant.

Others apply the name ANTHERÆ to thoſe little tufts or knobs which grow on the tops of the *ſtamina* of all other flowers; more uſually called APICES.

The *anthera* or apex of the ſtamen, in the Linnæan ſyſtem, is a principal part of the male organ of generation in plants, and contains within it a fine powder called *pollen* or *farina fæcundans*, deſtined for the impregnation of the *germen*, and which, when come to maturity, it diſcharges.

ANTHERICUM, in *Botany*. See SPIDERWORT.

ANTHESPHORIA, in *Antiquity*, a feaſt celebrated in Sicily, in honour of Proſerpine.

The word is derived from ανθος, *flower*, and φερω, *I carry*; in relation to Pluto's having forced away that goddeſs, when ſhe was gathering flowers in the fields. Yet Feſtus does not aſcribe the feaſt to Proſerpine; but ſays it was thus called, becauſe ears of corn were carried on this day to the temples.

Antheſphoria ſeems to be the ſame thing with the *floriſertum* of the Latins; and anſwers to the *harveſt-home* among us.

ANTHESTERIA, in *Antiquity*, was a feaſt celebrated by the Athenians, in honour of Bacchus.

The moſt natural derivation of the word is from ανθος, *flos, a flower*; it being the cuſtom at this feaſt to offer garlands of flowers to Bacchus.

Some are of opinion it took its name from the month *Antheſterion*, in which it was celebrated.—Others pretend, that this was not the name of any particular feaſt, but that all the feaſts of Bacchus were called *antheſteria*.

The *antheſteria* laſted three days, the eleventh, twelfth, and thirteenth day of the month; each of which days had a name ſuited to the proper office of the day.—The firſt day of the feaſt was called ϖιθοιγια, i. e. opening the veſſels, becauſe on this day they tapped the veſſels, and taſted the wine.—The ſecond they called χοος, *congii*, the name of a meaſure, containing the weight of about ten pounds: on this day they drank the wine prepared the day before.—The third day they called χυτροι, *kettles*: on this day they boiled all ſorts of pulſe in kettles; which, however, they were not allowed to taſte, as being all to be offered to Mercury.

ANTHESTERION, in *Ancient Chronology*, the ſixth month of the Athenian year. It contained twenty-nine days, and anſwered to the latter part of our November and beginning of December. The Macedonians called it *Dæſion* or *Deſion*.

It had its name from the feſtival ANTHESTERIA kept in it.

ANTHIA, in *Zoology*, a name by which ſome improperly call the *falx Venetorum*, or ſickle fiſh, a long anguilliform fiſh of the TÆNIA kind.

ANTHIAS, in *Zoology*, the name of a fiſh ſeeming to approach to the TURDUS or wraſſe kind, of which Rondeletius and ſome other authors have deſcribed four ſpecies. Linnæus makes it a ſpecies of the LABRUS.

ANTHINE, among *Ancient Naturaliſts*, is an appellation given to certain ſpecies of wine and oil.

In this ſenſe the word is alſo written *anthinos*.

Vinum anthines, οινος Ανθινης, was that prepared with certain fragrant flowers to give it the more agreeable odour.

Oleum anthinum is alſo denominated *liliaceum*, ſometimes *ſuſinum*.

Some alſo give the appellation *anthine* to the compoſition otherwiſe called CYCEON.

ANTHOCEROS, in *Botany*, the name of a genus of moſſes, of the *cryptogamia algæ*, in the Linnæan ſyſtem.

The name was given by Micheli; and Linnæus characteriſes it, as having male and female flowers: the calyx of the male is ſeſſile, cylindric, and entire: the anthera is ſubulated, very long, and furniſhed with two valves: the calyx of the female is divided into ſix ſegments, and contains three ſeeds. He reckons three ſpecies.

ANTHOLOGION, a church-book in uſe among the Greeks.

It was called ανθολογιον, q. d. *florilegium*, or a collection of flowers.

The *anthologion* is a ſort of breviary or maſs-book, containing the daily offices addreſſed to our Saviour, the Virgin, and the principal ſaints; with other common offices of prophets, apoſtles, martyrs, pontiffs, and confeſſors, according to the Greek rite. See BREVIARY, MASS, and OFFICE.

ANTHOLOGY, ANTHOLOGIA, a diſcourſe or treatiſe of flowers; or of beautiful paſſages from any authors.

Thus called from ανθος, *flos, a flower*, and λογος, *ſermo, diſcourſe*.—Though others chooſe rather to derive it from ανθος, *flos, a flower*, and λεγω, *I gather*; and uſe it to ſignify a collection of flowers.

ANTHOLOGY is frequently uſed for a collection of epigrams of divers Greek poets.

ANTHOLYZA, in *Botany*, of the *triandria monogynia*; we have no Engliſh name for this plant.

The characters are, that it hath an imbricated ſheath, which is permanent; the flower is of one leaf, and opens above with compreſſed jaws. The under lip is trifid and ſhort; the middle ſegment turns downward. Under the flower is ſituated the *germen*, which afterward becomes a roundiſh three-cornered veſſel having three cells, in which are lodged many triangular ſeeds. Mr. Miller enumerates two ſpecies.

They are a great ornament to the green-houſe when they are in flower; and as they require but little culture, they deſerve a place in every good garden.

ANTHONY—Knights of St. *Anthony*, an order of knighthood, eſtabliſhed in 1382, by Albert of Bavaria, &c. who had then taken a reſolution to make war againſt the Turks.

The knights of this order wore a collar of gold, with a hermit's girdle, to which hung a crutch, and a little bell. Some authors mention another order of St. *Anthony* in Ethiopia, inſtituted in 370, by Preſter John.

St. *Anthony* alſo gives the denomination to an order of religious founded in France about the year 1095, under the pontificate of Urban II. to take care of thoſe afflicted with *St. Anthony's fire*.

The *Anthonins*, or monks of St. *Anthony*, are by ſome ſaid to be of the begging kind. Their founder was Gaſton Frank, who erected a monaſtery for them at La Motte, near Vienne, where the general ſtill lives; they follow the rule of St. Auguſtine. Others give a different account of their origin, and ſuppoſe them thus called, not on account of *St. Anthony's fire*, but becauſe inſtituted by a St. *Anthony*, prior of a monaſtery in that neighbourhood. The friers of this order came into England in the reign of king Henry III. and had one houſe at London, and another at Hereford.

It is ſaid in ſome places, theſe monks aſſume to themſelves a power of giving, as well as removing the *ignis ſacer*, or ERYSIPELA, a power which is uſefully employed for keeping the poor people in ſubjection and extorting alms.

ST. ANTHONY'S *Fire*, ſee ERYSIPELA.

ANTHOPHYLLI, a denomination given to the larger ſpecies of cloves.

The word is otherwiſe written *antophali*.

ANTHORA, a medicinal plant, of the ACONITE kind, having yellow flowers, reſembling helmets; growing chiefly on the mountains in Switzerland and Savoy.

This is otherwiſe called *antithora*, as being reputed an antidote againſt the *thora*; ſometimes ACONITUM *ſalutiferum*, in Engliſh the HELMET-*flower*.

The root, *anthoræ radix*, has been chiefly in uſe. It holds a place in the catalogues of the *Materia Medica*, but is not kept at this time in the ſhops. It is of a duſky brown without and whitiſh within, of a warm bitteriſh taſte, and is reputed a cardiac and alexipharmic, much of the ſame qualities with CONTRAYERVA root; on which account ſome alſo denominate it the *German contrayerva*, though it now only obtains in a few officinal compoſitions.

ANTHORISMUS, in *Rhetoric*, denotes a counter definition or deſcription of a thing.

Thus, if the plantiff urge, that to take any thing away from another, without his knowledge or conſent, is a theft; this is called ορος, or definition. If the defendant reply, that to take a thing away from another, without his knowledge or conſent, provided it be done with deſign to return it to him again, is not theft; this is an ανθοϱισμος.

ANTHOS, in its original Greek, ſignifies flower; but by way of excellency is appropriated to roſemary, ſo as to expreſs only that plant.

ANTHOS, in *Chemiſtry*, is uſed to denote the quinteſſence or elixir of gold; and ſometimes for a medicine extracted from pearls.

ANTHOS *philoſophorum* is more particularly uſed, to denote a method of tranſmuting metals by means of vitriol.

ANTHOSMIAS, in ſome *Ancient Naturaliſts*, denotes a rich odoriferous kind of wine.

In this ſenſe *anthoſmias* differs from *anthinos*, as the latter imports a medicated wine ſcented with odoriferous herbs, whereas the former derived its fragrancy from the native grapes.

ANTHOSPERMUM, in *Botany*. See AMBER *tree*.

ANTHOXANTHUM, in the Linnæan ſyſtem of *Botany*, the name of a ſort of graſs which makes a diſtinct genus of plants, of the *diandria digynia* claſs. The characters of this are, that the *calix*, or flower-cup, is compoſed of two glumes, the exterior containing one flower compoſed of two valves of an oval figure, pointed, hollow, and the one larger than the other; the interior glume is compoſed of two valves of the ſame length with the exterior large valve, and each ſending out a fine beard or acorn from its hinder part: this alſo contains one flower, which is compoſed of two unequal-ſized valves, and is extremely thin in its whole ſtructure, and quickly falls off. The *ſtamina* are three capillary filaments; the *antheræ* are long, and ſplit at their ends; the *germen* of the *piſtillum* is oblong; the ſtyles are capillary, two in number, and hoary; the *ſtigmata* are ſimple; the interior glume grows firmly to the ſeed, which is ſingle, oblong and pointed at each end.

ANTHRACIS, in *Natural Hiſtory*, a word uſed for a gem by the ancients, but in ſeveral different ſenſes. All which ſeem evidently to refer to the cat's eye, or *aſteriu* kind.

Many of the ancients alſo have called the HÆMATITES, or blood-ſtone, by this name, *anthracitis*, becauſe of its being of the colour of a burning coal.

ANTHRACOSIS, a diſeaſe of the eyes, occaſioned by a corroſive ulcer, either in the bulb of the eye, or the eyelids, covered with ſkin, and attended with a general ſwelling of the parts adjoining.

The word denotes an inflammation reſembling a coal; ανθραξ ſignifying a coal.

ANTHRAX, in the *Natural Hiſtory* of the *Ancients*, was a word uſed by the moſt early writers for the ſubſtance we now call pit-coal and *lithanthrax*. Theophraſtus plainly tells us, that the ſubſtance ſtrictly and properly called *anthrax* (for they alſo knew a gem by the ſame name, uſed in a metaphorical ſenſe) was an earthy foſſile ſubſtance, which was broken in pieces to be uſed, and kindled well, and burnt almoſt like wood-coals, and was uſed by the ſmiths.

ANTHRAX, Ανϑραξ, in *Medicine*, means figuratively, a ſcab or blotch, made by a corroſive humour, which, as it were, burns the ſkin, and occaſions ſharp pricking pains.

The *anthrax* is the ſame with what is otherwiſe denominated *carbo* and *carbunculus*.

Some pretend to make a diſtinction between the *anthrax* and CARBUNCLE, limiting this latter to the glandular parts, and the former to all the others. But the diſtinction is ſcarce worth the making.

Rivettus, Toſius, Gemma, and Meurerus, have diſcourſes expreſsly on the *anthrax*.

ANTHROMETRICA *machina*. See ANTHROPOMETRICA.

ANTHROPODÆMON, in *Ancient Writers*, a demon concealed under the figure or appearance of a man.

ANTHROPOGLOTTUS, in *Natural Hiſtory*, ſomething that has a tongue, or ſpeech reſembling that of man.

The parrot kind are denominated *anthropoglotti*, on account of their broad, thick and muſcular tongues, by which they are enabled to ſpeak, and to roll their meat from ſide to ſide under the edges of their bills.

ANTHROPOGRAPHIA, a deſcription of man; more particularly, of the ſtructure of his body and the parts thereof.

ANTHROPOLATRÆ, a title given to the Neſtorians, on account of their believing Chriſt to be a mere man, yet paying him the honour of a God.

ANTHROPOLATRIA, the paying divine worſhip or honours to a man. *Anthropolatria* is ſuppoſed by ſome to have been the moſt ancient ſpecies of IDOLATRY.

ANTHROPOLOGY, a diſcourſe, or treatiſe, upon man, or human nature; conſidered as in a ſound, or healthy ſtate.

It is compounded of ανϑρωπος, *man*, and λογος, *diſcourſe*.

Anthropology includes the conſideration both of the human body and ſoul, with the laws and effects of their union; as ſenſation, motion, &c.

It is particularly uſed, in *Theology*, for a way of ſpeaking of God, after the manner of men; by attributing human parts and paſſions to him; as eyes, hands, ears, anger, joy, &c.

We have frequent inſtances of *anthropology* in holy ſcripture; by which we are only to underſtand the effect, or the thing which God does, as if he had hands, &c.

ANTHROPOMANCY, a method of divination, performed by inſpecting the *viſcera* of a perſon deceaſed.

The word is compounded of ανθρωπος, *man*, and μαντεια, *divination*.

ANTHROPOMETRIA, a deſcription of the human body, with its ſeveral parts and members according to the three dimenſions, length, breadth, and thickneſs, both conſidered in themſelves, and comparatively to each other.

ANTHROPOMETRICA *machina*, a name which Sanctorius gave to his weighing chair, contrived for meaſuring the quantity of *inſenſible* PERSPIRATION.

ANTHROPOMORPHA, in the Linnæan ſyſtem of nature, a claſs of animals in ſome degree reſembling the human form.

The word is derived from ανθωπος, *a man*, and μορφη, *form*.

This author makes it comprehend the monkey, the *ignavus* or ſloath, and the *tamandua guacu*, or ant-bear, as it is uſually called.

ANTHROPOMORPHITE, in a general ſenſe, one who attributes to God the figure of a man.

The word comes from the Greek ανθρωπος, *man*, and μορφη, *ſhape*.

ANTHROPOMORPHITES were a ſect of ancient heretics, who, taking every thing ſpoken of God in the ſcriptures in a literal ſenſe, imagined he had real hands, feet, &c. The paſſage they chiefly inſiſted on was that in Geneſis, where it is ſaid, that God made man after his own image.

Even philoſophers, for want of a better acquaintance with metaphyſics, ſeem to have fallen into *anthropomorphiſm*, repreſenting God much after the manner of a human ſoul, without conſidering the difference between a finite and an infinite being, limited and abſolute perfections. Wolfius has laboured hard to avoid this rock, by having the difference ſtill preſent to his mind, and proceeding according to the ancient rule, *Quæ de Deo dicuntur* ανθρωποπαθως, *ea intellige* Θεοπρεπως.

The whole ſect of Stoics held God to be corporeal; and, not to mention Tertullian and others among the fathers, Hobbes and his followers aſſert the ſame among ourſelves. Leibnitz charges Sir Iſaac Newton and his followers with repreſenting God under the conditions of a man. But with what juſtice it would be hard to ſay.

Thoſe who held the contrary, viz. that God is incorporeal, and without any bodily form, the *Anthropomorphites* branded by the name of *Origeniſts*, becauſe *Origen* taught how to allegorize thoſe expreſſions.

Epiphanius calls the *Anthropomorphites*, *Audiani*, or *Odiani*, from *Audius*, the ſuppoſed founder of the ſect; who lived, about the time of Arius, in Meſopotamia. St. Auguſtine calls them *Vadiani*.

This ſyſtem was revived in the year 939.

ANTHROPOMORPHOUS, ſomething that bears the figure or reſemblance of a man. Naturaliſts give inſtances of *anthropomorphous* plants, *anthropomorphous* minerals, &c. Theſe generally come under the claſs of what they call *luſus naturæ*, or monſters.

Anthropomorphous ſtones make a ſpecies of thoſe called figured ſtones.

ANTHROPOMORPHOUS is an appellation more peculiarly given to MANDRAGORA, or *mandrake*.

ANTHROPOPATHY, a figure, expreſſion, or diſcourſe, whereby ſome paſſion is attributed to God, which properly belongs only to man.

It is compounded of ανθρωπος, *man*, and παθος, *paſſion*.

Anthropopathy is frequently uſed promiſcuouſly with *anthropology*; yet, in ſtrictneſs, they ought to be diſtinguiſhed, as the genus from the ſpecies.—*Anthropology* may be underſtood of any thing human attributed to God; but *anthropopathy*, only of human affections, paſſions, ſenſations, &c.

ANTHROPOPHAGI, people who feed on human fleſh.

Compounded of the Greek ανθρωπος, *man*, and φαγειν, *edere*, *to eat*.

The Cyclops, the Leſtrygons, and Scylla, are all repreſented in Homer as *anthropophagi*, or man-eaters; and the female phantoms, Circe, and the Syrens, firſt bewitched with a ſhew of pleaſure, and then deſtroyed.—This, like the other parts of Homer's poetry, had a foundation in the manners of the times preceding his own. It was ſtill in many places the age ſpoken of by Orpheus,

> When men devour'd each other like the beaſts,
> Gorging on human fleſh. ——

Some remains of the uſage ſubſiſted much longer, even among the moſt civilized nations, in the practice of offering human ſacrifices.

Hiſtory gives us divers inſtances of perſons driven by exceſs of hunger to eat their own relations. Others commence *anthropophagi* out of revenge and hatred; there are many inſtances of ſoldiers who in the heat of battle have been carried to ſuch exceſs of rage, as to tear their enemies with their teeth.

The violence of love has ſometimes produced the ſame effect as the exceſs of hatred. The *Tapuii* eat the bodies of their friends and neareſt relations to preſerve them from worms and putrefaction, thinking they do not only hereby afford them an honourable grave, but even a new life, a kind of revivification in themſelves. Artemiſia did ſomething like this, when ſhe ſwallowed the aſhes of her dead huſband, Mauſolus. Among the Eſſedonian Scythians, when a man's father died, his neighbours brought him ſeveral beaſts, which they killed, minced, and mixed up with the fleſh of the deceaſed, and made a feaſt.

Among the *Maſſageti*, when any perſon grew old, they killed him and eat his fleſh; but if the party died of ſickneſs, they buried him, eſteeming him unhappy.

Idolatry and ſuperſtition have occaſioned the eating more men, than both love and hatred put together. There are few nations but have offered human victims to their deities; and it was an eſtabliſhed cuſtom to eat part of the ſacrifices they offered.

The Jagos and the ſubjects of the great Macoco, are ſaid to be *anthropophagi*. This prince is very powerful, having ten kings for his vaſſals; his court is ſo numerous, that there are 200 men butchered every day to ſupply the table; part of this number are criminals, the reſt ſlaves furniſhed in the nature of tribute.

It appears pretty certain from Dr. Hawkeſworth's Account of the Voyages to the South Seas, that the inhabitants of the iſland of New Zeland, a country unfurniſhed with the neceſſaries of life, eat the bodies of their enemies. It appears alſo to be very probable, that both the wars and *anthropophagy* of theſe ſavages take their riſe, and owe their continuance to irreſiſtible neceſſity, and the dreadful alternative of deſtroying each other by violence, or of periſhing by hunger. See Vol. III. p. 447 & ſeq. and Vol. II. p. 389 &c.

M. Petit has a learned diſſertation on the nature and manners of the *anthropophagi*. Among other things, he diſputes whether or no the *anthropophagi* act contrary to nature? The philoſophers, Diogenes, Chryſippus, and Zeno, followed by the whole body of Stoics, held it a very reaſonable thing for men to eat each other.

According to Sextus Empiricus, the firſt laws were thoſe made to prevent men from eating each other, as had been done till that time. The Greek writers repreſent *anthropophagy* as univerſal before Orpheus. To ſhew further, that *anthropophagy* is not contrary to nature, a modern author urges, that cats, dogs, rabbits, and other animals, feed on each other. Pliny, after Ariſtotle, affirms, that ſwans eat each other; and the bees alſo eat their *nymphæ*, which are their young. The Dutch in Nova Zembla ſaw bears devour each other, and the like has been obſerved in the fiſh kind: the *tiburones*, according to Ovid, are caught with a hook baited with their own fleſh. Leonardus Floroventius having fed a hog with hog's fleſh, and a dog with dog's fleſh, found a repugnancy in nature to ſuch food; the former loſt all its briſtles; the latter its hair; and the whole body broke out in blotches. The origin of the venereal diſeaſe is by ſome attributed to the eating of human fleſh.

It may be ſaid, that whether the dead body of an enemy be eaten or buried, is a matter perfectly indifferent; but whatever the practice of eating human fleſh may be in itſelf, it certainly is, relatively and in its conſequences, moſt pernicious. It manifeſtly tends to eradicate a principle, which is the chief ſecurity of human life, and more frequently reſtrains the hand of the murderer, than the ſenſe of duty, or the dread of puniſhment. If even this horrid practice originates from hunger, ſtill it muſt be perpetuated from revenge. Death muſt loſe much of its horror among thoſe who are accuſtomed to eat the dead; and where there is little horror at the ſight of death, there muſt be leſs repugnance to murder. See ſome further obſervations on this ſubject, equally juſt and ingenious, by Dr. Hawkeſworth, *ut ſupra*.

It may be aſked, whether the uſe which is made of certain parts of the human body in phyſic, come under the denomination of *anthropophagy*? How often have tombs been violated on this occaſion? To ſay nothing of mummies and the like. Pliny aſſures us, that in his time the phyſicians ordered their epileptic patients to apply their lips to the wounds of gladiators, and ſwallow the blood as it ſtreamed from them.

Some carry their reſpect for dead bodies a great length. M. Petit does not think it lawful for anatomiſts to diſſect human bodies, in order to learn their ſtructure, except thoſe of condemned criminals, and ſuch as are denied the rites of burial. The Arabs went farther; notwithſtanding all their curioſity and deſire to be acquainted with the human ſtructure, they could never be induced to make one diſſection; but were contented to borrow all their knowledge of this kind from the Greek phyſicians.

Some maintain it impoſſible, whatever precaution is uſed, to prevent the ingreſs of the parts of dead bodies with our food and drink. Add, that if we do not feed on our own ſpecies, we feed on plants and animals, which derive a great part of their nutriment from us. Whence the impoſſibility of the RESURRECTION of the ſame body has been inferred.

ANTHROPOPHAGIA, the act or habit of eating human fleſh.

This is pretended by ſome to be the effect of a diſeaſe, which leads people affected with it to eat every thing alike. Some chooſe only to conſider it as a ſpecies of PICA.

The annals of Milan furniſh an extraordinary inſtance of *anthropophagy*. A Milaneſe woman, named Elizabeth, from a depraved appetite, like what women with child, and thoſe whoſe *menſes* are obſtructed, frequently experience, had an invincible inclination to human fleſh, of which ſhe made proviſion by enticing children into her houſe, where ſhe killed and ſalted them; a diſcovery of which having been made, ſhe was broken on the wheel and burnt in 1519.

Some phyſicians vainly think they have diſcovered the principle of *anthropophagy*; and that it conſiſts in an acrid atrabiliary humour, which being lodged in the coats of the ventricle, produces this voracity. And they give ſeveral inſtances of this inhuman hunger, even among their own patients.

ANTHROPOSCOPIA, the art of judging or diſcovering a man's character, diſpoſition, paſſions, and inclinations, from the lineaments of his body.

In which ſenſe, *anthropoſcopia* ſeems of ſomewhat greater extent than PHYSIOGNOMY, or METOPOSCOPY.

Otto has publiſhed an ANTHROPOSCOPIA, *ſive judicium hominis de homine ex lineamentis externis.*

ANTHROPOSOPHIA, the ſcience of the nature of man, and his ſtructure and compoſition, both internal and external.

In this ſenſe, *anthropoſophia* amounts to much the ſame with the medical *phyſiology* or *anatomy*.

The word is uſed by Charleton, but with no great propriety; ſince *ſophia* or wiſdom imports the ſcience of uſing means to obtain an end, which is foreign to Charleton's intention.

ANTHROPOTHYSIA, in *Ancient Writers*, denotes the offering of human victims.

The *anthropothyſia* was a frequent practice among the ancients. Some have imagined that the ſacrifice of Abraham was the firſt inſtance. Many reaſonings and diſquiſitions have been founded on this ſuppoſition; by which the ſeverity of Abraham's trial is thought by ſome to have been ſomewhat exaggerated. Human ſacrifices were in uſe among the Gentiles before that time; practiſed by kings as well as by private perſons; nay by entire nations, as the Egyptians, Phœnicians, Canaanites, &c.

ANTHUMON, in the *Materia Medica* of the *Ancients*, a name given to the EPITHYMUM, or *dodder*, growing upon THYME.

ANTHUS, in *Zoology*, a name by which Aldrovand and ſome other authors have called that ſpecies of the OENANTHE known in England by the name of the WHIN-CHATT.

ANTHYLLIS, in *Botany*. See LADY's *finger*.

ANTHYPOMOSIA, in *Ancient Writers*, an oath taken by a proſecutor or accuſer, declaring that the abſence of the party accuſed is not for any juſt cauſe, and therefore demanding that judgment may no longer be delayed on that account.

ANTHYPOPHORA, in *Rhetoric*, a figure whereby we covertly obviate a reaſon or objection.

In this ſenſe *anthypophora* ſtands oppoſed to *hypophora*, e. gr. If the HYPOPHORA be, grammar is very difficult to obtain; the *anthypophora* may be, grammar is indeed a little difficult to attain, but then its uſe is infinite.

ANTI, Αντι, is a prepoſition uſed in compoſition with ſeveral words, both in Greek, Latin, Engliſh, &c. in different ſenſes. In Engliſh, it ſometimes happens before; as in *antichamber*, a place before the chamber.—In which caſe it has the ſame meaning with the Latin, *ante*, *before*.

Sometimes, again, it ſignifies *contrary*, or *oppoſite*; and is then derived from αντι, *contra*, *againſt*.

In this latter ſenſe, the word makes part of the name of various medicines, to denote ſome peculiar or ſpecific virtue in them againſt certain diſeaſes: ſuch, e. gr. are antivenereals, antiſcorbutics, antinephritics, &c.

The prepoſition is frequently, however, omitted on theſe occaſions, without any alteration of the ſenſe; as in nephritics, arthritics, aſthmatics, &c.

ANTI, in matters of *Literature*, is a title given to divers pieces written by way of anſwer to others, whoſe names are uſually annexed to the *anti*.

See the *Anti* of M. Baillet; and the *Anti-Baillet* of M. Menage: there are alſo *Anti-Menagiani*, &c. Cæſar the dictator wrote two books by way of anſwer to what had been objected to him by Cato, which he called *Anti-Catones*; theſe are mentioned by Juvenal, Cicero, &c.—Vives aſſures us, he had ſeen Cæſar's *Anti-Catones* in an ancient library.

ANTIADES, a term uſed by ſome writers for the glandules, and kernels, more commonly called TONSILS, and ALMONDS *of the ears*.

ANTIADIAPHORISTS, ANTIADIAPHORISTÆ, oppoſite to the ADIAPHORISTS.

The word is compounded of *αντι*, *contra*, *againſt*, and *αδιαφορος*, *indifferent*.

This name was given, in the fourteenth century, to the rigid Lutherans, who diſavowed the epiſcopal juriſdiction, and many of the church-ceremonies, retained by the moderate LUTHERANS.

ANTIBACCHIUS, in the *Ancient Poetry*, a foot, conſiſting of three ſyllables; the two firſt whereof are long, and the third ſhort.

Such are the words *cāntārĕ*, *vīrtūtĕ*, Ε̄λλη̄νε̆ς.

It is ſo called as being contrary to the BACCHIUS, the firſt ſyllable whereof is ſhort, and the two laſt long.

Among the ancients, this foot is alſo denominated *Palimbacchius*, and *Saturnius*; and, by ſome, *Propontícus*, and *Theſſalius*. Diom. III. p. 475.

ANTIBARBAROUS, a title given to ſeveral works levelled againſt the uſe of barbarous terms and phraſes, chiefly in the Latin tongue.

Eraſmus, Nizolius, and Cellarius, have publiſhed *Antibarbara*. Noltenius has given us a Lexicon *Anti-barbarum*, conſiſting of obſervations made by the grammarians of late ages in relation to the purity and corruption of Latin words.

Sixt. Amama has given an *Antibarbarus Biblicus*, wherein he pretends to have diſcovered ſeven ſources of the barbariſms which have got footing of late ages in the BIBLE.

Peter du Moulin uſed the title *Antibarbarus* for a book againſt the uſe of an unknown tongue in divine ſervice.

ANTIBIBLOS, in the *Civil Law*, an inſtrument or ſignature whereby the defendant owns he has received the libel, or a copy of it, and notes the day whereon he received it. This is uſually done on the back of the LIBEL.

ANTICADMIA denotes a ſpecies of mineral CADMIA, ſometimes alſo called *pſeudo*-CADMIA.

It takes the denomination *anticadmia*, not as being oppoſite in quality to the *cadmia*, but becauſe it is uſed as a ſubſtitute for it.

ANTICARDIUM, in *Anatomy*, &c. that hollow part under the breaſt, juſt againſt the heart, commonly called the *pit of the ſtomach*: called alſo *ſcrobiculus cordis*.

The word is compounded of *αντι*, *contra*, *againſt*; and *καρδια*, *cor*, *heart*.

ANTICATARRHAL, an epithet given to medicines preſcribed for catarrhs.

ANTICATEGORIA, in *Oratory*, denotes a recrimination or mutual accuſation; where the two parties charge each other with the ſame crime.

Apollodorus conſiders the *anticategoria* as two ſeveral cauſes or actions.

ANTICAUSOTICS, among *Phyſicians*, denote medicines againſt burning fevers.

In this ſenſe Juncker has given the deſcription of *anticauſotic* ſyrup.

ANTICHAMBER, ſee ANTECHAMBER.

ANTICHORUS, in *Botany*, a genus of the *octandria monogynia*, which has a four-leaved calyx, four petals, an awl-ſhaped, four-celled capſule, with four valves, and many ſeeds.

ANTICHRESIS, in the *Civil Law*, a covenant, or convention, whereby a perſon borrowing money of another engages, or makes over his lands or goods to the creditor, with the uſe and occupation thereof, for the intereſt of the money lent. This covenant was allowed of by the Romans; among whom uſury was prohibited: it was afterwards called MORT-GAGE, to diſtinguiſh it from a ſimple engagement, where the fruits of the ground were not alienated, which was called VIF-*gage*.

ANTICHRIST, in a general ſenſe, denotes an adverſary of Chriſt, or one who denies that the Meſſiah is come.

The word is compounded of *αντι*, *contra*, *againſt*; and *Χρισος*, *Chriſt*.

In this ſenſe, Jews, infidels, &c. may be ſaid to be *Antichriſts*.

ANTICHRIST is more particularly uſed for a tyrant who is to reign on earth, toward the end of the world; to make the ultimate proof of the elect; and to give a ſhining inſtance of the Divine vengeance, before the laſt judgment.

The Bible and the fathers all ſpeak of *Antichriſt* as a ſingle man; though they aſſure, withal, that he is to have divers precurſors, or fore-runners.—Yet many Proteſtant writers apply to the Romiſh church, and the pope, who is at the head of it, the ſeveral marks and ſignatures of *Antichriſt* enumerated in the Apocalypſe; which would rather imply *Antichriſt* to be a corrupt ſociety, or a long ſeries of perſecuting pontiffs, than a ſingle perſon. Or rather, a certain power or government, that may be held for many generations, by a number of individuals ſucceeding one another. The *Antichriſt* mentioned by the apoſtle John, 1 Ep. ii. 18. and more particularly deſcribed in the book of Revelation, ſeems evidently to be the ſame with the *Man of Sin*, &c. characteriſed by St. Paul in his ſecond Epiſtle to the Theſſalonians, ch. ii. And the whole deſcription literally applies to the exceſſes of papal power. Had the right of private judgment, ſays an excellent writer, been always adopted and maintained, *Antichriſt* could never have been; and when that ſacred right comes to be univerſally aſſerted, and men follow the voice of their own reaſon and conſciences, *Antichriſt* can be no more.

However, the point having been maturely debated at the council of Gap, held in 1603, a reſolution was taken thereupon, to inſert an article in the confeſſion of faith, whereby the pope is formally declared to be *Antichriſt*.—Pope Clement VIII. was ſtung to the life with this deciſion; and even king Henry IV. of France was not a little mortified, to be thus declared, as he ſaid, an imp of *Antichriſt*.

The learned Grotius maintains, that Caligula was *Antichriſt*; others have affirmed the ſame of Nero; but theſe do not agree with his appearance at the end of the world.

F. Malvenda, a Spaniſh Jeſuit, has publiſhed a large and learned work, *De Antichriſto*, in thirteen books.—In the firſt, he relates all the opinions of the fathers with regard to *Antichriſt*. In the ſecond, he ſpeaks of the time when he ſhall appear; and ſhews, that all the fathers, who ſuppoſed *Antichriſt* to be near at hand, judged the world, alſo, was near its period. In the third he diſcourſes of his origin and nation; and ſhews, that he is to be a Jew, of the tribe of Dan: this he founds on the authority of the fathers; on that paſſage in Geneſis xlix. *Dan ſhall be a ſerpent by the way*, &c. on that of Jeremy viii. 16. where it is ſaid, *The armies of Dan ſhall devour the earth*; and on the Apocalypſe, chap. vii. where St. John, enumerating all the tribes of Iſrael, makes no mention of that of Dan. In the fourth and fifth books, he treats of the ſigns of *Antichriſt*. In the ſixth, of his reign and wars. In the ſeventh, of his vices. In the eighth, of his doctrine and miracles. In the ninth, of his perſecutions; and, in the reſt, of the coming of Enoch and Elias, the converſion of the Jews, the reign of Jeſus Chriſt, and the death of *Antichriſt*, after his having reigned three years and a half.

Hippolitus, and others, held that the devil himſelf was the true *Antichriſt*, that he was to be incarnate, and make his appearance in human ſhape before the conſummation of things.

How endleſs are conjectures? Some of the Jews we are told actually took Cromwell for Chriſt, while ſome others have laboured to prove him *Antichriſt* himſelf. Pfaffius aſſures us he ſaw a folio book in the Bodleian library, written on purpoſe to demonſtrate this latter poſition.

ANTICHRISTIANISM, a ſtate or quality in perſons or principles, which denominates them antichriſtian, or oppoſite to the kingdom of Chriſt, and the genius and ſpirit of his religion.

ANTICHRISTIANS properly denote the followers or worſhippers of *Antichriſt*.

ANTICHRISTIANS are more particularly underſtood of thoſe who ſet up, or believe in a falſe Chriſt, or Meſſiah.

ANTICHTHON, in its primitive aſtronomic ſenſe, denotes a kind of globe or earth reſembling ours, and like it ſuppoſed to be moving round the ſun, but inviſible to us, becauſe on the oppoſite ſide of the ſun, that luminary being ſtill exactly interpoſed between this other earth and ours.

In this ſenſe it is, that Pythagoras and his diſciples aſſerted an *antichthon*; for which we have the teſtimonies of Ariſtotle, Plutarch, &c.

By reaſon of the perfection of the number ten, they concluded there muſt be juſt ſo many ſpheres; and as our ſenſes only diſcover nine, viz. the ſeven planets, the ſphere of the fixed ſtars, and our earth, they imagined a tenth oppoſite to ours.

Some of the fathers, who endeavoured to accommodate the doctrine of the heathen philoſophers to thoſe of Chriſtianity, aſſert that this Pythagorean earth is no other than the heavens of the righteous.

Thomaſius has a diſſertation on the Pythagorean *antichthon*.

ANTICHTHONES, in *Geography*, are thoſe people who inhabit countries diametrically oppoſite to each other.

The word is compounded of *αντι*, *contra*; and *χθων*, *terra*, *earth*. They are ſometimes alſo called, by Latin writers, *antigenæ*.

In which ſenſe *antichthones* amounts to much the ſame with what we more uſually call *antipodes*.

Antichthones is alſo uſed, in *Ancient Writers*, to denote the inhabitants of contrary hemiſpheres.

In which ſenſe *antichthones* differs from *antoeci*, and *antipodes*.

The ancients conſidered the earth as divided by the equator into two hemiſpheres, the northern and ſouthern; and all thoſe who inhabited one of theſe hemiſpheres, were reputed *antichthones* to thoſe of the other.

ANTICIPATION, the act of preventing, or being beforehand with a perſon, or thing; or of doing a thing before the time.

Anticipating a payment denotes the diſcharging it before it falls due.—Such a debt was not yet become due; he *anticipated* the time of payment.

Anticipation is alſo uſed, in a *logical* ſenſe, for a preſumption, prejudice, or preconceived opinion.

This is alſo denominated preconception, preſenſation, or inſtinct.

Anticipation, in a medicinal ſenſe, is applied to diſeaſes, wherein part of the ſymptoms which regularly belong to ſome future period, appear in the beginning; or, the word may be underſtood of thoſe diſeaſes, which having their acceſſes and remiſſions at ſtated hours, gain in point of time, and finiſh their period ſooner than ordinary.

In this ſenſe, *anticipation*, or *anticipated* diſeaſes, by the Greeks called προληπτικοι, ſtands oppoſed to hyſteretic, ὑϛερητικοι, which come after the time.

Anticipation, in the Epicurean *Philoſophy*, denotes the firſt idea, or definition of a thing, without which we can neither name, think, doubt, or even inquire, concerning it.

This is otherwiſe denominated PRENOTION.

Anticipation, in this ſenſe, makes the ſecond of Epicurus's criterions of truth.

Anticipation is alſo uſed by Shafteſbury, in ſpeaking of painting, to denote the expreſſion of ſome future action, reſolution, or the like.

Anticipation, in *Rhetoric*, a figure otherwiſe called PROLEPSIS.

ANTICK, in *Sculpture* and *Painting*, denotes a fantaſtical compoſure of figures of different natures, ſexes, &c. As men, beaſts, birds, flowers, fiſhes, and even things merely imaginary, or which have no exiſtence in the nature of things.

Antick amounts to much the ſame thing with what the Italians call *groteſca*, and the French *groteſque*.

ANTICLIMAX, in *Rhetoric*, is a figure, whereby the progreſs of a diſcourſe deſcends from great to little; and this is ſometimes rendered peculiarly agreeable by ſuch a concord between the ſenſe and ſound as may contribute to make diminutions appear ſtill more diminutive. Horace affords a ſtriking example:

> *Parturiunt montes, naſcetur ridiculus mus.*

ANTICNEMION, in *Anatomy*, denotes the ſhin; or the fore prominent part of the *tibia*.

This is otherwiſe called ακανθα, by the Latins *prima tibia*, or *anterior tibia*, and ſtands oppoſed to the *ſura*, or calf of the leg, ſometimes called *ocrea*.

ANTICOR, **Anticoeur**, or *avant cœur*, among *Farriers*, is uſually deſcribed as a preternatural ſwelling, of the ſize and figure of an apple, occaſioned by a ſanguine and bilious humour, and appearing in a horſe's breaſt, oppoſite to his heart. A late writer affirms, that the generality of authors on that ſubject have been miſtaken as to this diſeaſe, attributing it to the heart; whence it is by Solleyſel called the *ſwelling of the pericardium*; whereas it is really an inflammation in the gullet and throat; and is the ſame that, in human bodies is called the *angina*, or *ſquinancy*.

The cure of this diſeaſe ſhould be attempted by copious bleedings, in order to reduce the inflammation. Emollient clyſters ſhould alſo be injected twice or thrice a day, with an ounce of ſal prunella in each. The ſwelling ſhould be bathed with marſhmallow ointment; and an opening poultice, with onions boiled in it, ſhould be daily applied to it. If the inflammation be hereby removed, the ſwelling ſhould be brought, if poſſible, to maturation; for this purpoſe the poultice muſt be continued, and two ounces of Venice treacle, diſſolved in a pint of beer, muſt be given to the horſe every night. When the ſwelling is ſoftened, it muſt be opened with a knife, and dreſſed with turpentine digeſtive. But if the ſwelling cannot be brought to matter, and ſhould endanger ſuffocation, Solleyſel, and others, adviſe opening the ſkin, in order to introduce a piece of black hellebore root ſteeped in vinegar, and to confine it there for twenty-four hours. In order to ſtimulate and promote a diſcharge, the adjacent parts ſhould be fomented, and bathed with ointment of marſhmallows.

ANTICUM, in *Architecture*, a porch before a door; alſo that part of a temple, which is called the outer temple, and lies between the body of the temple and the portico: It is ſometimes called *antæ*.

ANTICUS, *ſerratus minor*. See SERRATUS.

Anticus, *peronæus*. See PERONÆUS.

Anticus, *tibialis*. See TIBIALIS.

ANTIDACTYLUS, a name given by ſome to a kind of poetical foot, which is the reverſe of a dactyl, as conſiſting of three ſyllables, whereof the firſt two are ſhort, and the laſt long.

ANTIDÆMONICI, in *Eccleſiaſtical Hiſtory*, a ſect who denied the exiſtence of devils, or evil ſpirits; alſo all ſpectres, incantations, witchcrafts, &c.

ANTIDICOMARIANITES, a ſect of ancient Chriſtians, who thought that the Holy Virgin did not preſerve a perpetual virginity, but that ſhe had ſeveral children by Joſeph after our Saviour's birth.

Theſe are otherwiſe called *antidicomaritæ*; and *antidicomarites*, and *antidicomarianiſts*; ſometimes alſo *antimariani*.

The opinion was grounded on ſome expreſſions of our Saviour, wherein he mentions his brothers, and his ſiſters; and on that text of St. Matthew, wherein he ſays, that Joſeph knew not Mary till ſhe had brought forth her firſt-born ſon.

The *antidicomarianites* were the diſciples of Helvidius and Jovinian, who appeared in Rome toward the cloſe of the fourth century.

ANTIDISMA, in *Botany*, a genus of the *dioecia pentandria*, without an Engliſh name.

ANTIDORON, in *Eccleſiaſtical Writers*, a name given by the Greeks to the conſecrated bread, out of which the middle part marked with the croſs, wherein the conſecration reſides, being taken away by the prieſt, the remainder is diſtributed, after maſs, to the poor.

On the ſides of the *antidoron* are impreſſed the words *Jeſus Chriſtus vicit*.

The word is formed from δωρον, *donum*, a *giſt*, as being given away *loco muneris*, or *in charity*.

The *antidoron* is alſo called *panis præſanctificatus*.

Some ſuppoſe the *antidoron* to be diſtributed in lieu of the ſacrament, to ſuch as were prevented from attending in perſon at the celebration; and thence derive the origin of the word, the Euchariſt being denominated *doron*, *giſt*, by way of eminence.

ANTIDOSIS, in *Antiquity*, denotes an exchange of eſtates, practiſed by the Greeks on certain occaſions with peculiar ceremonies, and firſt inſtituted by Solon.

When a perſon was nominated to an office, the expence of which he was not able to ſupport, he had recourſe to the *antidoſis*, that is, he was to ſeek ſome other citizen of better ſubſtance than himſelf, who was free from this, and other offices; in which caſe, the former was excuſed. In caſe the perſon thus ſubſtituted denied himſelf to be the richeſt, they were to exchange eſtates, after this manner; the doors of their houſes were cloſe ſhut up and ſealed, that nothing might be conveyed away; then both took an oath to make a faithful diſcovery of all their effects, except what lay in the ſilver mines; which by the laws was excuſed from all impoſts; accordingly, within three days, a full diſcovery and exchange of eſtates was made.

ANTIDOTARY is uſed by ſome writers for what we more uſually call a DISPENSATORY.

We have *antidotaries* extant of ſeveral authors, as thoſe of Nicolaus, Meuſe, Myrepſus, Rhaſis, &c.

ANTIDOTE, a remedy taken either to prevent, or cure, ſome contagious, malignant, or other dangerous diſeaſe. The word is borrowed from αντι, *againſt*, and διδωμι, *I give*; as being ſomething given againſt poiſon, either by way of cure, or preſervative.

Antidote is alſo uſed to ſignify a medicine taken to prevent the ill effects of ſome other; for inſtance, poiſon.

In which ſenſe the word has the ſame ſignification with alexipharmic, alexiterial, and counterpoiſon.

The Indian phyſic conſiſts much in the uſe of *antidotes*; viz. the root *mungo*, and the viper-ſtone; both held ſovereign againſt the bite of the *cobras do cabelo*, and other venomous creatures.

Antidote is alſo uſed, in a more general ſenſe, for any compound medicine.

In which ſenſe, Peter Damian ſpeaks of a perſon who in his whole life never took any antidote.

Antidote is alſo uſed in a leſs proper ſenſe for any remedy againſt any diſeaſe, chiefly if it be inveterate, and ariſe from ſome ulcer or abſceſs.

Antidote is alſo uſed for a particular form of medicines, otherwiſe called *opiates*, or more properly CONFECTIONS.

Antidote is alſo *myſtically* applied to the philoſopher's ſtone.

ANTIENT, ſee ANCIENT.

ANTIGRAPHE, in *Antiquity*, denotes a law-ſuit about kindred, whereby a perſon claimed relation to ſuch or ſuch a family.

The *antigraphe* appears to have been the ſame with the παρακαταβολη.

ANTIGRAPHUS, in *Antiquity*, an officer of Athens, who kept a counterpart of the *apodecti*, or chief treaſurer's accounts, to prevent miſtakes, and keep them from being falſified.

ANTIGRAPHUS is alſo uſed, in *Middle Age Writers*, for a ſecretary or chancellor. He is thus called, according to the old gloſſariſts, on account of his writing anſwers to the letters ſent to his maſter. The *antigraphus* is ſometimes alſo called *archigraphus*; and his dignity *antigraphia*, or *archigraphia*.

ANTIGRAPHUS is alſo uſed in Iſidorus for one of the notes of ſentences, which is placed with a dot to denote a diverſity of ſenſe in tranſlations.

ANTIGRAPHUS is alſo applied in *Eccleſiaſtical Writers* to an ABBREVIATOR of the papal letters.

In which ſenſe the word is uſed by pope Gregory the great in his regiſter.

Of late days the office of *antigraphus* conſiſts in making minutes of bulls from the petitions agreed to by his holineſs, and renewing the BULLS after engroſſing.

ANTIGUGLER, is a crooked tube of metal, ſo bent, as eaſily to be introduced into the necks of bottles, and uſed in decanting liquors, without diſturbing them. For this purpoſe the bottle ſhould be a little inclined, and about half a ſpoonful of the liquor poured out, ſo as to admit an equal quantity of air; let one end of the bent tube be ſtopped with the finger, whilſt the other is thruſt into the body of the liquor near to the bubble of air already admitted. When the finger is taken off, the bottle will have vent, and the liquor will run out ſteadily and undiſturbed. See SIPHON.

ANTIHECTICS, remedies againſt hectical diſorders.

ANTIHECTICUM *Poterii*, in *Pharmacy*, a celebrated chymical preparation, made of equal quantities of tin and chalybeated regulus of antimony, by melting them in a large crucible, and putting to them, by little and little, three times the quantity of nitre: the DETONATION being over, the whole is to be waſhed with warm water till no ſaltneſs remains.

This has been formerly eſteemed as a very penetrating medicine, making way into the minuteſt paſſages, and ſearching even the nervous cells; whence its uſe in hectic diſorders, from which it derives its name. It has been accordingly recommended in heavineſſes of the head, giddineſs, and dimneſs of ſight, from whence proceed apoplexies and epilepſies; and in all affections and foulneſſes of the viſcera of the lower belly; and alſo in the jaundice, dropſies, and all kind of cachexies.—Quincy adds, that there is ſcarce a preparation in the chemical pharmacy of greater efficacy in moſt obſtinate chronic diſtempers. But Neumann obſerves, that it has no claim to antihectic virtues, nor indeed to any ſalutary operation; and it is now generally diſregarded. See Neumann's Chem. Works, p. 89, and 138.

ANTIHECTICUM *Poterii* is alſo called *antimonium diaphoreticum joviale*.

There are divers methods of preparing it, given by Wedelius, Etmuller, &c.

A learned author ſpeaks of it as fatal to conſumptive perſons.

ANTILEXIS, in *Antiquity*, denotes a new trial granted in the Athenian judicatories, where judgment had before paſſed againſt a party for non-appearance.

ANTILOGARITHM, the COMPLEMENT of the LOGARITHM of a ſine, tangent, or ſecant.

ANTILOGY, a contradiction between two expreſſions, or paſſages, in an author.

The word is αντιλογια, q. d. *contrary ſaying*.

Tirinus has publiſhed a large index of the ſeeming *antilogies* in the BIBLE, i. e. of texts which apparently contradict each other, but which are all explained and reconciled by him, in his comments on the Bible.—Dom. Magri, a Malteſe of the *Oratory* in Italy, has attempted the like; but he has done little more than rehearſe what occurs of that kind in the principal commentators.

ANTILUTHERANS, a ſect or party among the ancient reformers, who maintained opinions, chiefly in relation to the Euchariſt, different from thoſe of Luther.

Such were Caroloſtadius and his followers, called alſo *Sacramentarians*, and thoſe of Zuinglius denominated *Zuinglians*.

The ſect of *Antilutherans*, at firſt confined within narrow bounds, in a few years time ſubdivided into ſix or ſeven inferior ſects, and ere long into an infinite number more variouſly denominated.

ANTILYSSUS *pulvis*, in *Medicine*, is compoſed of equal parts of the LICHEN *cinereus terreſtris* & *piper niger*. It is reckoned uſeful in preventing the RABIES *canina*. Phil. Tranſ. N° 448.

ANTIMENSIUM, a kind of conſecrated table-cloth, occaſionally uſed in the Greek church, in places where there is no proper altar.

F. Goar obſerves, that in regard the Greeks had but few conſecrated churches, and that conſecrated altars are not things eaſy to be removed; that church has, for many ages, made uſe of certain conſecrated ſtuffs, or linens, called *antimenſia*, to ſerve the purpoſes thereof.

ANTIMENSIUM, in the Greek *Church*, anſwers to the *altare portabile*, or portable altar, in the Latin church. They are both only of late invention, though Habertus would have them as old as St. Baſil. But Durant and Bona do not pretend to find them in any author before the time of Bede and Charlemaign.

ANTIMENSIA is alſo applied to other tables, uſed in offices of religion, beſides thoſe whereon the Euchariſt is adminiſtred: ſuch, e. gr. are thoſe whereon the hoſt is expoſed, &c.

The origin of the *antimenſia* is deſcribed by Meurſius; when the biſhop had conſecrated a church, the cloth which had been ſpread on the ground, and over the communion table, was torn in pieces, and diſtributed among the prieſts, who carried each a fragment away, to ſerve to cover the tables in their churches and chapels. Not that it was neceſſary that ſuch cloths ſhould be laid on all tables: but only on thoſe which either were not conſecrated, or at leaſt whoſe conſecration was doubted of.

ANTIMENSIUS, an ancient officer in the Greek church, whoſe buſineſs was to introduce and place the communicants at the Euchariſt.

Some have imagined that he had the care of the *antimenſia*. But this rather belonged to the office of great *ſcevophylax*.

He is otherwiſe called chief of the *antimenſii*.

ANTIMERIA, in *Grammar*, a figure whereby one part of ſpeech is uſed for another; e. gr. *velle ſuum cuique eſt*, for *voluntas ſua cuique eſt*; alſo, *populus late rex*, for *populus late regnans*.

ANTIMERIA, in a more reſtrained ſenſe, is a figure whereby the noun is repeated inſtead of the pronoun.

The *antimeria* is frequent in the Hebrew, and is ſometimes retained in our verſion of the Old Teſtament accordingly: e. gr. *Hear my voice, ye wives of Lamech*, for *my wives*. Gen. ch. iv. ver. 23.

ANTIMETABOLE, in *Rhetoric*, a figure which ſets two things in oppoſition to each other.

The word is compounded of αντι, *againſt*, and μεταβολη, from μεταβαλλω, *I ſhift* or *transfer*; i. e. a ſhifting, or ſetting two things over-againſt each other.

This figure is twice exemplified in an apophthegm of Muſonius; which, on account of its excellence, is called *aureum monitum*, the golden maxim or precept.

Ἂν τὶ πράξῃς καλὸν μετὰ πόνȣ, ὁ μὲν πόνος ὄιχεται, τὸ δὲ καλὸν μένει.
Ἂν τὶ ποιήσῃς αισχρὸν μετα ἡδονῆς, τὸ μὲν ἡδὺ ὄιχεται, τὸ δὲ αισχρὸν μένει.

In Engliſh thus:

Allowing the performance of an honourable action to be attended with labour; the labour is ſoon over, but the honour immortal: whereas, ſhould even pleaſure wait on the commiſſion of what is diſhonourable, the pleaſure is ſoon gone, but the diſhonour eternal.

ANTIMETATHESIS, in *Rhetoric*, is the inverſion of the parts or members of an ANTITHESIS. Such is that of Cicero, in Verrem, lib. iv. cap. 52. 'Compare this 'peace with that war; the arrival of this governor with 'the victory of that general; his profligate troops with 'the invincible army of the other; the luxury of the 'former with the temperance of the latter: you will 'ſay, that Syracuſe was founded by him who took it; 'and taken by him, who held it when founded.'

ANTIMISIUM, in *Antiquity*, a table placed before the Roman tribunal, or judgment ſeat.

What relation this has to the *antimenſia* in the Greek church does not appear. Some writers confound them together as the ſame thing.

ANTIMONARCHICAL, ſomething that oppoſes, or ſtands againſt, monarchy, or kingly government.

Antimonarchical is frequently uſed in the ſenſe of *republican*.

ANTIMONARCHIST, a perſon who maintains *antimonarchical* principles.

Buchanan, Milton, Hottoman, Languet, Ludlow, Sydney, and others, are celebrated *antimonarchiſts*.

ANTIMONARCHOMACHI, *antimonarchomachiſts*, is uſed by ſome political writers to denote maintainers of monarchical or abſolute power veſted by divine right in the perſons of princes.

In which ſenſe, *antimonarchomachi* ſtand oppoſed to *monarchomachi*.

King James the firſt, Salmaſius, Peter du Moulin, biſhop Bramhall, Albericus Gentilis, Ziegler, William and George Barclays, Bochart, &c. have diſtinguiſhed themſelves in the claſs of *antimonarchomachiſts*. Acker has treated profeſſedly of the *monarchomachiſts* and *antimonarchomachiſts*.

ANTIMONIALS, in *Medicine*, denote preparations of antimony; or remedies whereof antimony is the baſis, or principal ingredient.

Antimonials are chiefly of an emetic tendency; though they may be ſo qualified, as to become either cathartic, or diaphoretic, or even only alterative. See WARD's *Pill*.

Quincy aſſures us, that there are no medicines in pharmacy to be compared with theſe in *maniacal* affections; for that there are no emetics, or cathartics, of any other tribe, that are ſtrong enough for ſuch patients, unleſs in an over-doſe; which might be dangerous.

An *antimonial* cup, made either of glaſs of *antimony*, or of *antimony* prepared with ſalt-petre, though a ſubſtance indiſſoluble by the ſtomach, will give a ſtrong cathartic, or emetic quality to any liquor poured into it, without any diminution of its own weight.

Beſides thoſe numerous preparations which take their denominations from *antimony*, the chief of which are enumerated under that article, there are ſeveral other *antimonial* medicines. Such are the *crocus metallorum*, Poterius's cordial, the TINCTURA *metallorum*, *mercurius vitæ*, or powder of ALGAROT, *bezoardicum minerale*, *ſulphur metallorum*, the Carthuſian powder, or KERMES mineral, &c.

Lemery deſcribes ſeveral other preparations of this mineral.

ANTIMONIATED, ſomething tinged with the qualities, or reſembling the appearances, of *antimony*.

Dr. Woodward ſpeaks of a kind of ſtriated, or *antimoniated*, lead-ore.

ANTIMONY, in *Natural Hiſtory*, a mineral ſubſtance, of a metalline nature; having all the ſeeming characters of a real metal, excepting only *malleability*. It is of a ſhining leaden colour, its maſſes have no determinate figure, but are compoſed of long brittle parallel needles. It is made up of a ſemi-metallic ſubſtance, called its *regulus*, united with ſulphur, as moſt metallic ſubſtances are in their mineral ſtate.

There are two kinds of antimony; 1. *Antimony native* or *mineral*, which is in the ſame ſtate as when dug out of the earth. 2. *Antimony fuſed*, ſo called, becauſe it has been actually *fuſed*, to ſeparate it from adhering ſtones and earth. This operation, which ought rather to be called *liquation* than *fuſion*, conſidering theſe words in their metallurgic ſenſe, is made in great perfection upon the grounds whence *antimony* is dug. The proceſs is very ſimple and eaſy. It conſiſts in placing the minerals in earthen pots, pierced in their bottoms with ſmall holes, and put into a furnace, where they receive the neceſſary heat for the *fuſion* of the *antimony*. As it is very *fuſible*, for it melts before it is red, this heat is much leſs than is neceſſary for the fuſion of the earthy and ſtony matters mixed with it; when it is thus melted, it runs through the holes above-mentioned, into other pots below, defended from the heat as much as poſſible. In theſe receivers the *antimony* is allowed to cool and fix, and from them it takes the form of cakes, in which it is ſold.

Hungary and Auvergne furniſh moſt *antimony*, though it is alſo found in other countries and in different forms.

Antimony is the *ſtibium* of the ancients; by the Greeks called ϛιμμι.—The reaſon of its modern denomination, *antimony*, is uſually referred to Baſil Valentine, a German monk, who, as the tradition relates, having thrown ſome of it to the hogs, obſerved, that, after purging them violently, they immediately grew fat upon it. This made him think, that, by giving his fellow-monks a like doſe, they would be the better for it. The experiment, however, ſucceeded ſo ill, that they all died of it; and the medicine, thenceforward, was called *antimony*, q. d. *anti-monk*.

Its ſingular properties and effects have occaſioned it various other denominations; as *proteus*, by reaſon of its various forms and appearances, *lupus*, *devorator*, SATURN *of the philoſophers*, *balneum ſolis*, *lavacrum leproſorum*, *radix metallorum*, *magneſia Saturni*, &c. all chiefly reſpecting its faculty of deſtroying and diſſipating whatever metals are fuſed along with it, except gold; whence its great uſe in refining and purifying.

Antimony is found in mines of all metals; but chiefly in thoſe of ſilver and lead: that in gold mines is uſually held the beſt.—It has alſo its own peculiar mines.

Antimony is found in clods of ſeveral ſizes, bearing a near reſemblance to black lead; only that it is lighter and harder; whence alſo it is called *marcaſite of lead*; and its metalline part has been by ſome ſuppoſed to be of that ſpecies.

Its texture is ſomewhat particular, being full of little ſhining veins or threads, like needles, brittle as glaſs.—Sometimes there are veins of a red, or golden colour intermixed, from which it is called *male antimony*; that without them being denominated *female*.

Antimony ores are found in fiſſures and veins at different depths, and often very near the ſurface, and is variouſly accompanied with ſpars, cryſtals, ſulphurs, and other ſubſtances. Sometimes the veins of it are every way ſurrounded by a tolerably pure yellow native ſulphur; ſometimes with a more debaſed matter, made of a mixture of ſulphur, earth and ſpar, differing according to the different diſpoſition and admixture of theſe bodies.

Antimony is found in great abundance in England and Germany; we have ſeveral mines of it in Cornwall; and many other parts of the world afford it in very great abundance.

ANTIMONY, *ore of*. The way of running down *antimony* out of its ore by the *aſſayers*, is as follows. Take a crucible that will hold ſome pounds of *antimony* ore, broken into pieces of the ſize of a hazel-nut, and bore at the bottom of it a few ſmall holes with a common gimblet; place this bottom in the mouth of another ſmaller crucible, put in the ore, and cover the orifice with a tile; then lute all the junctures, and place this on the pavement of the hearth, making a circle of ſtones all round it, at ſix inches diſtance; fill this intermediate ſpace with aſhes, ſo high, that the lower pot may be covered up to its rim, then put freſh burning coals upon the whole, and blow the fire ſtrongly with a pair of hand-bellows, to make the upper veſſel red-hot: when it has been ſo a quarter of an hour, take away the fire, and when the veſſels are cold, open them, and the *antimony* will be found in form of a *regulus* in the under veſſel. Cramer's Art of Aſſaying, p. 356.

The moſt ready method of fuſing *antimony*, yet known, is by means of that mineral ſubſtance called CAWK. A lump of this, of the bigneſs of a wallnut, thrown red-hot into a pound of *antimony* in fuſion, converts almoſt the whole ſubſtance of it into glaſs, fifteen ounces of clean and fine glaſs being thus produced; and what is very remarkable, the *cawk* itſelf never melts in the metal.

ANTIMONY, *texture of*. M. de Reaumur gives the following account of the contexture of *antimony*, or *ſtibium*.

Nothing is more common, than to obſerve on the ſurface of broken *antimony* long and ſhining needles, as it were; and that *antimony*, on which theſe are moſt diſtinct and viſible, is eſteemed the beſt. Sometimes theſe ſtreaks are ranged with ſo much order, and branch out ſo regularly in certain directions, that thoſe who are ever ſo converſant with it, cannot but admire its beauty. The figures of the conſtituent molecules of this mineral may poſſibly contribute ſomething to the formation of theſe needles, but the texture, and configuration of the conſtituent parts, will not alone account for the diſpoſition of theſe ſtreaks, and their arrangements, in regard to one another; ſince upon breaking different lumps of the ſame *antimony*, and thoſe of the ſame ſhape, we frequently obſerve quite different configurations of the needles. Let us take, for inſtance, equal maſſes of *antimony* of a regular conic figure, theſe being moſt frequent, from the ſhape of the veſſel they cool in, which reſembles a funnel, or inverted cone; let ſeveral of theſe conical maſſes be broken into different parts, and we ſhall ſee the needles in very different directions in theſe ſeveral parts. Notwithſtanding, however, all theſe varieties in form, the cauſe of all the appearances is wholly the ſame, and is no other than that refrigeration, by which the maſs is changed from a fluid into a ſolid ſtate; and to the progreſs of this the needles plainly owe their different directions.

All melted metals cool firſt at the tops and ſides, and thence by degrees through the whole body of the maſs: the particles at the ſides and top, which firſt cool, becoming fixt to thoſe which are neareſt them, affix thoſe, and they are the next that cool, and ſo on, in ſucceſſive order; now *moleculæ*, of whatever ſhape, thus affixed ſucceſſively to each other, form a kind of threads or needles, the ſeveral directions of which ſhew the order in which the refrigeration has been carried on.

If the crucible, or other veſſel, in which the melted *antimony* is ſuffered to cool, were in the ſhape of a hollow bowl; if its ſides were every where equally thick, and equally warm, and acted equally upon by an air equally cold; and if the melted ſubſtance were of the ſame uniform nature, alſo, in all its parts, all the needles or fibres would be then ſo many rays, terminating in the center of the bowl; and if the ſubſtance were ſuch, that its fixed particles were naturally all of a length, we ſhould find ſo many concentrical beds of needles, formed by parcels of each ray, and lying at equal diſtances from the center.

But ſo many regular circumſtances do not concur in the cooling of melted *antimony*; and hence the before-mentioned irregularities muſt neceſſarily ariſe. In melting *antimony* in conical crucibles, and ſuffering it to cool in them, the needles may be determined ſeveral ways, to any directions one may chooſe.

Lead, when heated to a certain degree, ceaſes to be ductile, and is brittle, and broken at this juncture is found to be granulated, appearing like broken ſteel; there is no reaſon to doubt, but that this is alſo the caſe, when that metal is perfectly cold, but that the force required to ſeparate, or break it, deſtroys its proper ſtructure.

M. Reaumur melted lead in a conical crucible, and ſuffering it to cool to a certain degree only, he broke the maſs into ſeveral large lumps by a ſmart blow of a hammer, and in theſe found the ſame needles as in *antimony*, the granules having cohered in long trains, juſt as the *moleculæ* of the *antimony*; and the diſpoſitions of the ſeveral groupes of needles in the lead, in regard to the ſides and bottom of the crucible, were the very ſame with thoſe of *antimony*. But there is this manifeſt difference between the needles of lead, and thoſe of *antimony*, that whereas the latter are flat and extremely gloſſy, the former are viſibly round, and much leſs bright. Mem. Acad. Scienc. Par. 1724.

Antimony is ſuppoſed, by many of the *Chemiſts*, to contain the ſeminal principles of all kind of metals; and accordingly the character whereby it is denoted in their writings, is the ſame with the character of the earth; to denote that *antimony* is a kind of microcoſm.

There have not been wanting perſons, who have pretended to extract a mere running *mercury* from *antimony*, and Mr. Boyle believed it might be done: but this is one of the many great things pretended to by chemiſtry, of which we have yet no ſufficient proof.

The uſes of *antimony* are very numerous, and important. It is a common ingredient in *ſpecula*, or *burning* CONCAVES, ſerving to give the compoſition a finer texture. It makes a part in BELL *metal*; and renders the ſound more clear. It is mingled with TIN to make it more hard, white, and ſounding; and with LEAD, in the caſting of printers letters, to render them more ſmooth and firm. It is alſo a general help in the melting of metals, and eſpecially in the caſting of cannon balls.

The purification of gold, by means of *antimony*, is performed in this manner. Before you enter on the proceſs, it is neceſſary to gueſs, as nearly as may be, at the alloy of the gold, by the TOUCH *needles*, or otherwiſe. If the quantity of gold in the maſs is not leſs than three quarters, that is, eighteen carats, the maſs muſt be melted in a wind-furnace, and the crucible muſt be covered, to prevent coals falling in; this done, put into it, at ſeveral times, double the quantity of crude *antimony* in fine powder, as ſoon as one portion of the *antimony* is melted, putting in another: let the whole continue in fuſion a few minutes, then pour it into a melting cone, warmed, and rubbed with tallow, and ſtrike with a hammer on the floor, near where the cone ſtands, that the heavier part may ſink to the bottom. When all is cold, invert the cone, and ſtrike it, and a maſs will fall out, having at bottom a *regulus*, more or leſs yellow, according to the quantity of the gold in the mixture; this may with a few blows be ſeparated from the ſulphureous cruſt, which is at top. Melt in a ſmaller fire this *regulus*, and when in fuſion add to it a double quantity of crude *antimony* in powder, and pour it out into the cone again a little after; ſeparate the *regulus* from the *antimony* at top, and then repeat this operation once more. When this is done, put the ſeparated *regulus* into a thick good teſt, place this in the furnace immediately before the bellows, put coals round it, and one or two pieces of wood upon them, and make a middling fire, ſuch as is ſufficient to melt the *regulus*, the reguline part of the *antimony* will vaniſh in a thick ſmoak; then encreaſe the fire, and keep it ſo, till the fumes are over, and the ſurface of the gold is of a fine green; and afterwards give the gold another fuſion with borax and nitre, and it will be perfectly pure. But gold cannot be ſeparated from *platina* in this way; and ſometimes a little ſilver will remain, which has been defended by the gold from the action of the *antimony*.

When the gold to be purified by this proceſs is impure to an alloy of eight carats, it is not proper to perform the precipitation by *antimony* alone, but there ſhould be added as many times two carats of common ſulphur, as the alloy of the gold is ſo many carats leſs than eighteen. Cramer's Art of Aſſaying, p. 276.

Mr. Homberg being well aſſured, that water was a *menſtruum* capable of diſſolving all the metals, if properly applied, uſed it, in ſeveral different manners, in his *analyſis* of *antimony*. He made an *infuſion of antimony* in water, putting into ſeveral glaſs veſſels crude *antimony*, coarſely powdered, five pounds into each veſſel, and to each of theſe quantities he added two pints of rain-water; after the *antimony* had ſtood thus for ſix months, the ſeveral parcels were uſed on different occaſions, one only excepted, which had been forgotten, and had at length ſtood two winters and a ſummer: having at length found this veſſel, he obſerved, that its inſide was every where coated over with configurations of leaves; he at firſt ſuppoſed this to be owing to ſome ſalts of the *antimony*, which had been diſſolved in the water, and had afterwards cryſtallized themſelves in this manner, as the *butter of antimony* is ſometimes known to do in ſublimation; but on rubbing the ſides of the veſſel with a finger, and afterwards ſcraping them with a knife, he found that they were covered with a yellowiſh pellicle, without the leaſt appearance of ſalt, and that the configurations of the leaves were not raiſed upon this pellicle, but ſunk, as if graved by a tool. The water taſted ſomewhat acid, and being tried on *turnſol*, and on different metallic ſolutions, it turned the *turnſol* to a light red, and turned a ſolution of ſilver white; whence it appeared to be an acid, and of the nature of that of ſea-ſalt. The ſunſhine had turned this water ſour, had made it act upon the *antimony*, and take up a part of its ſalt. This ſalt, in the winter, was probably afterwards concreted into the figures of leaves, formed upon the mud depoſited by the water on the ſides of the veſſel; and theſe ſalts being afterwards diſſolved again in ſome hotter weather, had eaten their way into this ſediment of mud, in the form of the leaves, &c. in which they had concreted. Mem. Acad. Par. 1693.

Antimony, at firſt, was of ſervice only in the compoſition of paint. Scripture deſcribes it to us as a ſort of paint, with which the women blackened their eye-brows. Jezebel underſtanding that Jehu was to enter Samaria, painted her eyes with *antimony*, or, according to the Hebrew, "put her eyes in *antimony*."

As large black eyes were thought the fineſt, they of both ſexes, who were careful of their beauty, rubbed their eyes, eye-lids, and round the eyes, with a needle dipped in a box of paint made of *antimony*, with a deſign of blackening them.

At this day the women of Syria, Arabia, and Babylonia, anoint and blacken themſelves about the eyes; and both men and women put black upon their eyes in the deſert, to preſerve them from the heat of the ſun, and the piercing of its rays. M. Darvieux tells us, that the Arabian women border their eyes with a black colour made of *tutty*, which the Arabians call *rebel*. They draw a line of this kind of blacking without the corner of their eyes, to make them appear larger. Iſaiah, in his enumeration of the ſeveral ornaments belonging to the daughters of Sion, has not forgot the needles which they made uſe of in painting their eyes and eye-lids; nor has this practice eſcaped the laſh of Juvenal.

Ille ſupercilium madida fuligine tinctum
Obliqua producit acu, pingitque trementes
Attollens oculos.

Ezekiel, diſcovering the irregularities of the Jewiſh nation under the idea of a debauched woman, ſays, that ſhe bathed, and perfumed herſelf, and that ſhe anointed her eyes with *antimony*. Job ſhews ſufficiently how much *antimony* was in eſteem, by calling one of his daughters a veſſel of *antimony*, or a box to put paint in, *cornu ſtibii*. Tertullian and St. Cyprian have declaimed very warmly againſt this cuſtom of painting their eyes and eye-brows.

ANTIMONY, *medicinal hiſtory of*. Before the fourteenth century, *antimony* had no place in *Medicine*. But, about that time, Baſil Valentine, having found a method of preparing and correcting the dangerous qualities of its ſulphur, publiſhed a book, intituled *Currus triumphalis antimonii*, wherein he maintained it a ſure remedy for all diſeaſes.—But, in ſpite of all he could ſay in its behalf, though confirmed by experience, *antimony* remained in a general neglect upwards of an hundred years; till about the beginning of the ſixteenth century, when it was brought into vogue by Paracelſus.—The parliament of Paris, immediately upon this reſtoration, condemned the uſe of it in form; and a phyſician, named Beſnier, having been found delinquent herein, was expelled the faculty. It ſeems, a great deal of miſchief had been done by it, for want of knowing the proper ways of giving it; ſo that the *arret* of parliament repreſents it as a mere poiſon, incapable of being corrected by any method of preparation, and not to be taken inwardly, without the utmoſt damage.

Several learned men complained of ſo ſevere and unjuſt a prohibition; and, by a courſe of happy experiments, at length brought it into eſteem again: whence, in ſpite of all the invectives made againſt *antimony* by divers authors, it was at length replaced, in the year 1637, by public authority, among the number of purgative drugs; and was inſerted, accordingly, in the *Pharmacopoeia*, publiſhed by the faculty that ſame year.

Patin did all he could to decry *antimony*: in his letters we find an unuſual vehemence expreſſed againſt it.—He had even compiled a large regiſter of perſons whom the phyſicians had killed by it; which he called *the Martyrology of antimony.*

Antimony, in *Medicine*, &c. is not only given in ſubſtance, but many preparations of it are uſed; which are either emetic, cathartic, diaphoretic, or ſudorific. *Crude antimony* in powder is found good for diſſolving viſcidities, in cutaneous diſeaſes, and, as ſome very confidently aſſert, in convulſions and epilepſies.

Crude antimony is recommended in palſies, pains and numbneſs, which come on after a ſalivation, and is ſaid to have cured ſeveral who were paralytic from other cauſes. The method of giving it, is to begin with three grains, increaſing the doſe with three grains every day, to half a drachm; after which the doſe is diminiſhed three grains every day, till it comes down to the quantity of the firſt doſe. Externally, in ointments, it is commended for drying up ulcers, curing the itch, and in plaſters for reſolving of tumors.

There appears no reaſon for people's being afraid of giving crude *antimony* internally; experience ſhews it to be a ſafe medicine, unleſs by accident the acid of the ſtomach ſhould be ſufficient to act as a *menſtruum* to it.

The preparations of *antimony* are, 1. *Sulphur præcipitatum antimonii.* 2. *Crocus antimonii*, called alſo *crocus metallorum.* 3. *Crocus antimonii lotus.* 4. *Calx antimonii*, called *antimonium diaphoreticum.* 5. *Tartarum emeticum.* 6 *Cauſticum antimoniale.* 7. *Cinnabaris antimonii.* 8. *Regulus antimonii martialis.* 9. *Tinctura antimonii.* 10. The *Kermes* mineral, or *Carthuſian* powder. See theſe articles ſeparately.

The virtues of *antimony*, in the diſeaſes of animals, are very great, and very evident on any trial. Pigs that have the meaſles are at all times recovered by it, which proves it a great purifier of the blood. Horſes who have running heels, that cannot be cured by the common methods uſed by the farriers, will generally be cured by this medicine in a little time. The manner of uſing it is this: mix one drachm with every feeding of oats which the horſe has in a morning; it is beſt put together in one place, buried under a few oats, and the horſe's head being with-held a little, and then let go juſt againſt that place, he will take it all in at a mouthful. Some horſes do not diſlike it, others obſtinately refuſe it, but to theſe it may eaſily be given in balls. The virtues of this drug, in fattening of cattle, has by many been thought imaginary, but experiment proves it to be a real truth. A horſe that is lean and ſcabby, and not to be fatted by any other means, will become fat on taking a doſe of *antimony* every morning, for two months together. A boar fed for brawn, and having an ounce of *antimony* given him every morning, will become fat a fortnight ſooner than others put into the ſtye at the ſame time, and fed in the ſame manner, but without the *antimony*. Phil. Tranſ. N° 39.

It is generally ſuppoſed, that the vapours of *antimony* are poiſonous when raiſed by fire, but it appears otherwiſe from the operations Mr. Geoffroy made on it; he having once gone through ſixty calcinations of twelve ounces of *antimony*, without receiving any harm from it: whence it is very evident, that the common opinion of the fumes of *antimony* containing an arſenical ſulphur, is an erroneous one; and it may be added, that one great mark of *antimony*'s being good, is, that it loſes a great deal of its weight in calcination. It has more ſulphur in this caſe, which the fire raiſes in a vapour, and leſs of the terreſtrial matter or ſpar, which are uſually very abundant in it. Mr. Geoffroy, by theſe nice obſervations and experiments, diſcovered that *antimony* contained much leſs common ſulphur than had been generally ſuppoſed, ſince it can be made to loſe, at the utmoſt, only three ounces and five drachms in the pound in calcination. The emetic quality of the *regulus* proves, however, that it yet contains a very large ſhare of ſulphur, though of another kind: this Mr. Geoffroy diſtinguiſhes from the common ſulphur, by the name of the *metallic* SULPHUR. Mem. Acad. Scienc. Par. 1736.

It is evident, that whatever acid *antimony* contains, muſt be of the nature of ſpirit of ſulphur, ſince ſulphur ſo greatly abounds in the compoſition of that mineral, and its ſulphur is wholly the ſame with the common brimſtone. Whatever acid, therefore, of this kind could be produced, would be wholly the produce of the common ſulphur in that mineral, and not of the *reguline* part, which alone is properly *antimony*. Experiment proves the truth of this opinion, the *acid of antimony*, truly ſeparated from it, being no way different, in any particular, from that of crude ſulphur.

There are ſeveral ways by which it may be made, but it is but little that can be obtained, and then it is aſſuredly the pure acid of the ſulphur of *antimony*. The operation, however perfect, is of little value. Mem. Acad. Par. 1700.

ANTIMONY, *butter of*, is a white and thick liquor; otherwiſe called *icy oil of antimony*; compoſed of marine acid united to the reguline part of *antimony*, whence its property of attracting moiſture from the air, and its cauſticity. It is uſually prepared of *crude* (though ſometimes of *regulus* of) *antimony*, and corroſive ſublimate, by pulverizing, mixing, and diſtilling them by a gentle heat: upon which the butter riſes into the neck of the retort; from which, when full, it is to be melted down into a receiver, by the application of live coals.

It is a very fiery, corroſive metallic ſalt, and a poiſon when uſed internally. Externally it is applied as a cauſtic to ſtop gangrenes, and cure carieſes, cancers, &c.

This *butter* may be converted into an oil, called alſo *rectified butter of antimony*; by gently diſtilling it a ſecond time; which renders it more fluid, ſubtile, volatile, and efficacious.

This, digeſted with thrice its weight of *alcohol*, makes the purple tincture of *antimony*; a ſecret highly valued by Mr. Boyle, as an excellent vomit.

Of *butter of antimony* are alſo prepared the BEZOAR *mineral*, and *powder* of ALGAROT.

The operation of making *butter of antimony* furniſhes an inſtance of the power of the Newtonian principle of attraction. When *mercury ſublimate* is ſublimed from *antimony*, or from *regulus* of *antimony*, the ſpirit of ſalt lets go the *mercury*, and unites with the *antimonial* metal, which attracts it more ſtrongly, and ſtays with it till the heat be great enough to make them both aſcend together, and then carries the metal with it in the form of a *butter of antimony*; though the ſpirit of ſalt alone be almoſt as volatile as water, and the *antimony* alone as fixed as lead.

ANTIMONY, *calx of*, is obtained by expoſing *crude antimony*, groſsly powdered, in a flat and ſhallow earthen veſſel, to the action of a moderate fire, taking care to ſtir it conſtantly. During this *calcination* the ſulphur, being leſs fixed than the metalline part, is gradually evaporated, and the *calcination* is continued, till no more ſulphureous vapour ariſe. What remains is the metallic part, ſeparated from the mineral ſulphur, and even deprived of part of its own inflammable principle. This ſubſtance is more fixed and leſs fuſible than *antimony*, as in general all metallic earths are, becauſe deprived of more of their inflammable principle. It is called CALX *of antimony*, and is of a grey aſh colour. This is violently emetic, and purgative.

ANTIMONY, *ceruſe of*, is the *regulus* diſtilled with ſpirit of nitre, in a ſand-furnace; what remains after the fumes are all ſpent, is a white powder; which, being waſhed ſweet, is the *ceruſe* required.—It is diaphoretic; and, by many, is ſet on a footing with the *mineral bezoar*.

ANTIMONY, *cinnabar of*, is prepared of mercury, ſulphur, and *antimony*, mixed and ſublimed in a luted bolt-head, and a naked fire.—It is a good diaphoretic and alterative.

There is alſo a *cinnabar of antimony* procured after the *butter of antimony* has done riſing, by increaſing the degree of fire.—This, ſublimed a ſecond time, makes yet a better *cinnabar*.

ANTIMONY, *clyſſus of*. See CLYSSUS.

ANTIMONY, *crocus of*, is the ſame with what we otherwiſe call *crocus metallorum*; excepting that this latter is more mild, and leſs emetic; being made by repeated lotions of the former, in warm water, and then drying it again to a powder. See CROCUS *metallorum*.

It is alſo called *opaline magneſia*, *terra ſancta Rulandi*, *terra aurea*, *terra rubra*, &c.

ANTIMONY, *crude*, or *antimony in ſubſtance*, is the native mineral *antimony*, melted down and caſt in cones as above mentioned.—It is much uſed in diet-drinks, and decoctions of the woods, and in compoſitions againſt the ſcurvy, as a diaphoretic, and deobſtruent.

ANTIMONY, *diaphoretic*, is prepared of *antimony*, powdered, and mixed with three times the quantity of nitre;

and the mixture thrown, at ſeveral times, into an ignited crucible: upon which, a detonation enſues. What remains, being kept in fuſion a quarter of an hour, turns into a white maſs, called *antimonium diaphoreticum nitratum*, or *diaphoretic antimony with nitre*; the *antimony* being hereby bereaved of its emetic and purgative virtue, and rendered only diaphoretic.

If the air have acceſs to it, it will again become emetic.

There is alſo a kind of ſweet diaphoretic *antimony*, made of the former, by pulverizing, boiling it in water, and filtrating the decoction: upon which a white powder will be left in the filtre; which being waſhed by repeated affuſions of warm water, and dried, is the *dulcified diaphoretic antimony*.—This is given as an alexipharmic in malignant fevers, ſmall-pox, &c. particularly in caſe of deliriums. It is alſo applied in ſcorbutic and venereal diſorders: but the learned Boerhaave abſolutely decries it, as a mere metalline calx, deſtitute of all medicinal virtue, and only fit to load and choak up the body, by its inactivity and weight.

ANTIMONY, *diaphoretic nitre of*, is made by exhaling the ſolution of the preceding preparation over a gentle fire to a dryneſs; upon which, there remains a ſalt compoſed of nitre, and the *ſulphur* of the *antimony*, called *nitrum antimoniatum*.—It is no other than a ſort of SAL *prunellæ*, or SAL *polychreſtum*; and accordingly is found aperitive, cooling, diuretic; and good in inflammatory fevers, &c.

ANTIMONY, *eſſence of*. An emetic wine made with *glaſs of antimony*; to which is ſometimes added a ſpicy ſtomachic.

Dr. Huxham ſays, he never found any antimonial preparation better, ſafer, and more efficacious than this ſimple infuſion of the *glaſs of antimony* in a generous white wine, with a little ſpice to render it more grateful to the ſtomach. This medicine given to twenty or thirty drops, operates by gentle ſweats, and purges in larger doſes very mildly. The judicious phyſician, here mentioned, recommends it in obſtinate rheumatiſms.

ANTIMONY, *flower of*, is *antimony* pulverized, and ſublimed in an aludel; the volatile parts whereof then ſtick to the ſubliming pot.

This is alſo a powerful vomitive; and is of ſingular efficacy in maniac caſes; being the Herculean remedy, by which ſome have gained ſo much reputation.

Another ſort of flowers are made of the *regulus of antimony*, with SAL *armoniac*, ſublimed as before; which make a remedy ſomewhat gentler than the former.—Helmont alſo gives us a preparation of purging *flowers of antimony*.

ANTIMONY, *glaſs of*, *vitrum antimonii*, is crude *antimony*, ground and calcined by a vehement fire, in an earthen crucible, till it ceaſe to fume; which is a proof, that its ſulphur is evaporated. The calx is then vitrified in a wind-furnace; upon which it becomes tranſparent, ruddy, and ſhining, and of a more or leſs deep hyacinthine colour.

This is the ſtrongeſt emetic of any preparation of *antimony*. Yet, if diſſolved in ſpirit of urine, it ceaſes to be either *emetic* or *cathartic*; even though the *menſtruum* be afterwards drawn from it. See VITRUM *antimonii ceratum*.

ANTIMONY, *liver of*. The *calx*, when fuſed and cooled, ſometimes becomes an opake brown maſs, which is called by this name. This is ſtrongly emetic.

ANTIMONY, *magiſtery of*, is crude *antimony* digeſted with *aqua regia* eight or ten days; to which water is then put, but poured off again ere it ſettle: this to be repeated till there remain nothing behind but a yellowiſh powder; which, being ſuffered to ſettle, and the water decanted off, becomes, by repeated ablutions, an inſipid magiſtery.

Its operation is rather cathartic than emetic, though ſometimes only ſudorific.

ANTIMONY, *Ward's pill of*. See WARD's *pill*.

ANTIMONY, *powder of*, is a mixture of two grains of emetic tartar, finely pulverized, with half a dram of any of the teſtaceous powders.

This is a ſubſtitute for Dr. James's febrifuge powder; and has the ſame virtues with the antimonial wine above deſcribed, and EMETIC *tartar*.

ANTIMONY, *regulus of*. See REGULUS.

Antimony, purified by ſimple fuſion, is called *regulus of antimony*; or *regulus antimonii philoſophorum*—But the more common way of reducing it into a *regulus*, is with the addition of FLUX *powders*, as tartar and nitre.

The curious may ſee in the *Arts & Metiers*, an account of the fabrication of the *regulus* and of the *glaſs* of *antimony*, under the *Art du Diſtillateur des Eaux fortes*, p. 141 and ſeq. See *ibid.* a further account of *antimony*, and of the utenſils proper for its fabrication, p. 136.

The *ſcoria* found at the top of this *regulus* is violently emetic, as well as the *regulus* itſelf, whereof if cups or drinking-veſſels be caſt, the wine put into them will become ſtrongly vomitive.

Of this *regulus* caſt in moulds are made thoſe commonly called the *antimonial pills*, weighing about eight or ten grains each, one of which being ſwallowed, will operate conſiderably both by vomit and ſtool.

Theſe pills having thus performed their office, and having been diſcharged from the body, will ſerve the ſame purpoſe again and again; whence they have obtained the name of *perpetual pills*—The virtue of this *regulus* is not however inexhauſtible, as has been imagined; for by repeated infuſions in wine, though the liquor be made violently emetic at firſt, yet by degrees it loſes its force, and at length ceaſes to be vomitive.

ANTIMONY, *martial regulus of*, is made by a mixture of little bits of iron, as the nails of horſes ſhoes melted with the *regulus*.

In this operation, the iron diſſolving and abſorbing the ſulphureous parts of the *antimony*, more ſtrongly than the fluxes in the former caſe, and turning it into a CROCUS, the *antimony* is hereby brought to a greater degree of purity, and rendered more efficacious than in the common *regulus*.

This *regulus* is ſometimes farther purified by repeated fuſions and detonations, with the addition of freſh *antimony*, and more nitre, alternately: in which caſe it becomes *regulus antimonii ſtellatus*, or the *ſtarry regulus of antimony*.

Mr. Geoffroy has been the inventor of a new method of treating this mineral, by which it yields much more *regulus* than according to thoſe preſcribed by Kunkel and Stahl, and is purified without the addition of ſalts, and with very little loſs.

ANTIMONY, *golden ſulphur of*, is made of the *ſcoria* which ariſe in preparing the REGULUS; by boiling it, filtrating the hot decoction, and adding diſtilled vinegar: upon which the whole coagulates, changes into a brown colour, emits a ſtercoraceous odour, and precipitates a red powder. The whole maſs being waſhed by repeated affuſions of water, till the liquor come away ſcentleſs and inſipid, and then dried, it becomes a red powder, called the *golden ſulphur*, or *precipitate of antimony*, either on account of its own colour, or the yellow one it gives to glaſs, metals, &c.

This is alſo called the *panacea of antimony*, and is ſaid to be the baſis of Lockyer's pills.—It either proves emetic, cathartic, diuretic, or ſudorific, as its force happens to be determined.

ANTIMONY, *prepared*, is either crude *antimony* levigated, or that which has undergone ſome chemical proceſs, whereby its nature and powers are altered or abated; and this differently, according to the circumſtances of the preparation.

Antimony, ſays Mr. Boyle, alone, or aſſociated with one or two other ingredients, by a variety of operations and compoſitions, might be brought to furniſh a whole apothecary's ſhop: it will anſwer the phyſician's intention, whether he wants to employ a cathartic, or an emetic, a diuretic, diaphoretic, deobſtruent, bezoardic, or cordial.

ANTIMONY, *revivified*, *antimonium reſuſcitatum*, is prepared of flowers of *antimony* and SAL *ammoniac*, digeſted in diſtilled vinegar; then exhaled, and the remainder ſweetened by abluſion.—It is emetic, and ſometimes alſo ſudorific, and is good in maniacal caſes, &c.

ANTIMONY, *tincture of*; ſee TINCTURE.

All theſe preparations of *antimony*, how ſevere ſoever alone, may yet be ſo managed, as to operate little or nothing at all in the *primæ viæ*, nor be perceived till they are got into the ſmalleſt veſſels.—And then it is they are qualified to combat the gout, pox, evil, &c. See Neumann's Chemical Works, p. 128, &c. and Macquer's Chemical Dictionary, under *Antimony*.

ANTINOEIA, in *Antiquity*, annual ſacrifices, and quinquennial games, in memory of Antinous the Bithynian. They were inſtituted at the command of Adrian the Roman emperor, at Mantinea, in Arcadia, where Antinous was honoured with a temple and divine worſhip.

ANTINOMIANS, in *Church Hiſtory*, denote thoſe who maintain the law of no uſe or obligation under the goſpel diſpenſation, or who hold doctrines that clearly ſuperſede the neceſſity of good works and a virtuous life. The *antinomians* took their origin from John Agricola about the year 1538, who taught that the law is no ways neceſſary under the goſpel; that good works do not promote our ſalvation, nor ill ones hinder it; that repentance is not to be preached from the decalogue, but only from the goſpel.

This ſect ſprung up in England during the protectorate of Oliver Cromwell; and extended their ſyſtem of libertiniſm much farther than Agricola, the diſciple of Luther. Some of their teachers expreſsly maintained, that as the elect cannot fall from grace, nor forfeit the divine favour, the wicked actions they commit are not really ſinful, nor are to be conſidered as inſtances of their violation of the divine law; and that conſequently they have no occaſion either to confeſs their ſins, or to break them off by repentance. According to them, it is one of the eſſential and diſtinctive characters of the elect, that they cannot do any thing which is either diſpleaſing to God, or prohibited by the law.

Luther, Rutherford, Schluſſelburg, Sedgwick, Gataker, Witſius, Bull, Williams, &c. have written refutations; Criſp, Richardſon, Saltmarſh, &c. defences of the *antinomians*; Wigandus, a compariſon between ancient and modern *antinomians*.

The doctrine of Agricola was in itſelf obſcure, and perhaps repreſented worſe than it really was, by Luther, who wrote with acrimony againſt him, and firſt ſtiled him and his followers *antinomians*. Agricola ſtood on his own defence, and complained, that opinions were imputed to him, which he did not hold. Nicolas Amſdorf fell under the ſame odious name and imputation, and ſeems to have been treated more unfairly than even Agricola himſelf. It is rather hard to charge upon a man all the opinions that may be inferred from things that have haſtily dropped from him, when he himſelf diſavows ſuch inferences.

ANTINOMY, ANTINOMIA, a contradiction between two laws, or between two articles of the ſame LAW.

The word is derived from *αντι*, *contra*, and *νομος*, *lex*.

ANTINOMY, ſometimes alſo ſignifies an oppoſition to all law. Whence a ſect of enthuſiaſts, who are for carrying goſpel liberty above all moral regards, and who ſlight the motives of virtue as inſufficient to ſalvation, are called *antinomians*; and ſometimes *anomians*.

ANTINOUS, in *Aſtronomy*, a part of the conſtellation AQUILA, or the eagle.

ANTIOCHIAN *ſect*, or *academy*, a name given to the fifth academy, or branch of academies.

It took the denomination from its being founded by Antiochus, a philoſopher contemporary with Cicero.

The *Antiochian* academy ſucceeded the Philonian.—As to point of doctrine, the philoſophers of this ſect appear to have reſtored that of the ancient academy, except that in the article of the *criterion* of truth, Antiochus was really a Stoic, and only nominally an academic.

ANTIOCHIAN *epocha*, a method of computing time from the proclamation of liberty granted the city of Antioch, about the time of the battle of Pharſalia.

ANTI-PÆDO-BAPTISTS, derived from *αντι*, *againſt*, *παις*, *παιδος*, *child*, and *βαπτιζω*, *baptize*, whence *βαπτιςης*, is a diſtinguiſhing denomination given to thoſe who object to the baptiſm of infants; becauſe, they ſay, infants are incapable of being inſtructed, and of making that profeſſion of faith, which intitles them to this ordinance, and an admiſſion into church communion. See ANABAPTISTS and BAPTISTS.

ANTIPAGMENTS, *Antipagmenta*. See ANTEPAGMENTA.

ANTIPAPINIANUS, *αντιπαπινιανος*, a title given by the Greek lawyers to the fourth part of the Digeſt, including four books, beginning with the title *De pignoribus*.

This is otherwiſe called *antipapianus*.

The *Antipapinian* was thus denominated, not as being intended in oppoſition to Papinian, but becauſe it was to ſerve in the ſchools of the civil law in lieu of the books of that lawyer, purſuant to an edict of the emperor Juſtinian; ſo that the *Antipapinian* was ſo far from being a refutation of Papinian, that it was only a ſubſtitute for his writings, which were not ſo proper for the uſe of the younger ſort of ſtudents.

ANTIPARALLELS, in *Geometry*, are thoſe lines joining the two legs of an angle, which make the ſame angles like parallel lines, but in oppoſite directions. M. Leibnitz, however, calls thoſe lines *antiparallels*, which cut two parallels ſo, that the outward angle being added to the inward one, the ſum may be equal to a right angle.

ANTIPARASTASIS, in *Rhetoric*, a reply made to an opponent, by allowing part of his argument, and denying the reſt, e. gr. you may paint whatever you pleaſe, provided the public ſuffer no prejudice from it; but you muſt not, if it does.

ANTIPASCHA, in *Eccleſiaſtical Writers*, denotes the firſt Sunday after Eaſter.

This is otherwiſe called DOMINICA *in albis*.

ANTIPATHES, among the *Ancient Naturaliſts*, was uſed to expreſs any ſtone or gem, which, according to their ſuperſtitious ideas of the virtues of gems at that time, was ſuppoſed to have a power of reſiſting the force of inchantments. Pliny mentions a very valuable gem, called by the ancients *antipathes* for this very reaſon; and the black coral had the ſame name, on the ſame account.

ANTIPATHES, a ſpecies of the *gorgonia*, in the order of *zoophytes*.

ANTIPATHY, a natural enmity or averſion of one body to another.—In which ſenſe the word ſtands oppoſed to SYMPATHY.

The word is compounded of *αντι*, *contra*, *againſt*, and *παθος*, *paſſion*.

Such an averſion is commonly ſaid to be between the ſalamander and the tortoiſe, the vine and the elm, the toad and the weaſel, the ſheep and the wolf, the olive and the oak, &c. Phil. Tranſ. N° 339.

The Peripatetics account for *antipathies*, from certain occult qualities inherent in the bodies.

Some think that the term *antipathy* can only be applied to any certain purpoſe, when uſed with the reſtriction of modern philoſophers; among whom it ſignifies no more than a *vis centrifuga*, or repelling power.

A large part of the inſtances of *antipathies* are, perhaps, no better than fables, and a ſevere examination would leave them on no other footing than vulgar errors.

ANTIPATHY is ſometimes alſo uſed in a *moral* ſenſe, to denote a conteſt between the mind and the body, or between reaſon and inclination.

ANTIPATHY is uſed in *Painting*, for an oppoſition between the qualities of colours.

This *antipathy* is chiefly obſerved between colours, which endeavour, as it were, to predominate over each other, and which by their mixture deſtroy each other, e. gr. *ultramarine* and *vermillion*. This does not obtain in the *claro obſcuro*; for, though there be nothing more oppoſite to each other than black and white, as the one repreſents light, and the other darkneſs; yet they each preſerve themſelves in the mixture, and form together a grey which partakes of both.

ANTIPELARGIA, among the *Ancients*, a law, whereby children are obliged to furniſh neceſſaries to their aged parents.

The *ciconia*, or ſtork, is a bird famous for the care it takes of its parents when grown old.

Hence, in ſome Latin writers, this is rendered LEX *ciconiaria*, or the ſtorks law. Paſſavant has publiſhed a diſſertation *de antipelargia*. Baſil, 1672, 4°.

ANTIPERISTALTIC, in *Anatomy*, a motion of the inteſtines contrary to the PERISTALTIC motion.

The word is derived from *αντι*, *againſt*, *περι*, *about*, and *ςαλτικος*, *that which hath the power of compreſſing*.

As the *periſtaltic* motion is a contraction of the fibres of two inteſtines from above, downwards; the *antiperiſtaltic* motion is their contraction from below, upwards.

Phyſicians, ancient as well as modern, have uſually had recourſe to the notion of an *antiperiſtaltic* motion, to account for the action of vomiting, and the *phænomena* of the *miſereri mei*, or *iliac paſſion*. In behalf of the former, M. Littre alledges, that as the *œſophagus*, the ſtomach, and inteſtines, are but one and the ſame continued canal, every where lined with the ſame fleſhy fibres, and as it is allowed, that the inteſtines, beſides their natural or PERISTALTIC motion (whereby, being ſucceſſively contracted from above downwards, they expel their contents in this direction) have alſo an *antiperiſtaltic* or preternatural motion, whereby they contract from below upwards, and thus reject their contents; it is highly probable, that the other members of the ſame canal, viz. the ſtomach, and *œſophagus*, are alſo ſometimes ſubject to the like *antiperiſtaltic* motion; and return their contents to the mouth. Hiſt. Acad. Scienc. ann 1700.

The cauſe of the *antiperiſtaltic* motion is uſually aſſigned to be a ſtoppage of ſome of the inteſtines, but chiefly of the *ilium*.

Some late ingenious authors ſeem to have over-turned the whole *antiperiſtaltic* ſyſtem, and ſhewn this motion imaginary, as well as unneceſſary for accounting for theſe diſorders. Meſſ. Chirac and Du Verney have endeavoured to prove this in reſpect of vomiting; and M. Haguenot, and after him M. St. Andre, in the iliac paſſion. Mem. Acad. Scienc. an. 1713. Phil. Tranſ. N° 351.

ANTIPERISTASIS, in *Philoſophy*, the action of two contrary qualities; one whereof is ſuppoſed, by its oppoſition, to excite and heighten the force of the other.

The word is formed of *αντι*, *contra*, *againſt*, and *περιςαμαι*, *to ſtand round*, or *to reſtrain*; q. d. *circumobſiſtentia*, or the renitency againſt any thing that ſurrounds or beſets another.

Antiperiſtaſis is uſually defined, "the oppoſition of a

“ contrary quality, whereby the quality it oppoſes becomes heightened, or intended: or the action whereby a body, attacked by another, collects itſelf, and becomes ſtronger by ſuch oppoſition: or it is an intention of the activity of one quality, cauſed by the oppoſition of another.”

Thus cold, ſay the ſchool-philoſophers, on many occaſions, exalts the degree of heat, and dryneſs that of moiſture.

Thus it is, that quick-lime is ſet on fire by the affuſion of cold water: and ſo water becomes warmer in winter than in ſummer, by *antiperiſtaſis:* and to the ſame cauſe it is owing, that thunder and lightning are excited in the middle region of the air, which is continually cold.

This *antiperiſtaſis* was a principle of great uſe and extent in the Peripatetic philoſophy.

Mr. Boyle has canvaſſed this doctrine thoroughly, in his Hiſtory of Cold.—It is certain, that *a priori*, or conſidering the reaſon of the thing abſtracted from the experiments alledged to prove an *antiperiſtaſis*, it appears highly abſurd; ſince, according to the courſe of nature, one contrary ought to deſtroy, not to ſtrengthen another.

It is commonly, indeed, alledged, as a proof of a power nature has given bodies of flying their contraries, that drops of water, falling on a table, collect into little globules, to avoid the contrary quality in the table, and keep themſelves from being ſwallowed up by the dry wood; but this we can account for on more intelligible principles, viz. the power of ATTRACTION, and REPULSION.

In effect, not only reaſon, but experiment alſo, concludes againſt the notion of an *antiperiſtaſis:* the leading argument urged in behalf of it is, the heating of quick-lime in cold water: now, how aſtoniſhing the lazineſs and credulity of mankind, who have ſo long and generally acquieſced in what they might ſo eaſily have found to be falſe! for if, inſtead of cold water, the lime be quenched with hot water, the ebullition will always be far greater than if the liquor were cold.

Again; in freezing a baſon to a joint-ſtool, with a mixture of ſnow and ſalt, by the fire-ſide, it is pretended, that the fire ſo intends the cold, as to enable it to congeal the water that ſtagnated upon the ſurface of the ſtool, betwixt that and the bottom of the veſſel. But how little need there is of an *antiperiſtaſis* in this experiment, appears hence, that Mr. Boyle has purpoſely made it with good ſucceſs, in a place where there neither was, nor ever, probably, had been, a fire.

As to the refreſhing coldneſs which ſubterraneous places afford in ſummer, it may be denied, that they are then really colder than in winter; though, if the contrary were allowed, it would not neceſſarily infer an *antiperiſtaſis*. The ſmoking of waters, drawn from deep places in froſty weather, does not neceſſarily infer ſuch water to be warmer than at other times when it does not ſmoke; ſince that effect may proceed, not from the greater warmth of the water, but from the greater coldneſs of the air. For a man's breath in a cold ſummer, or in mild winter weather, becomes very viſible; the cold ambient air ſuddenly condenſing the fuliginous ſteams diſcharged by the lungs; which in warm weather are readily diffuſed in imperceptible particles through the air. See COLD and EFFLUVIA.

ANTIPHERNA, among the ancient Greeks, denoted a kind of ſettlement made on a wife in caſe of ſurviving her huſband, as an equivalent for her dowry.

This word ſeems to anſwer what in our law is called a JOINTURE.

ANTIPHONALLY, in reſpect of church muſic, imports as much as alternately, or anthem-wiſe.

The Greeks have a method of ſinging *antiphonally*, *antiphonatim*, called by them παρακοντακιον, wherein two perſons ſing together, and then are ſilent, and ſucceeded by two others, who ſing a while and then are ſilent, and ſo on.

ANTIPHONARY, *antiphonarium*, a ſervice book which contained all the invitatories, reſponſories, collects, and whatever elſe was ſung or ſaid in the choir, except the leſſons.

This is otherwiſe called *reſponſarium*, from the reſponſes therein contained.

The author of the Roman *antiphonary* was pope Gregory the Great.

We alſo find mention of nocturnal and diurnal *antiphonaries*, for the uſe of the daily and nightly offices; ſummer and winter *antiphonaries*; alſo *antiphonaries* for country churches, &c. By the provincial conſtitutions of archbiſhop Winchelſey, made at Merton, A. D. 1305, it is required that one of theſe ſhould be found in every church within the province of Canterbury.

The uſe of theſe, and many other popiſh books, were forbid by the 3d and 4th of Edward VI. c. 10.

ANTIPHONY, ANTIPHONA, the anſwer made by one choir to another, when the pſalm or anthem is ſung between two.

ANTIPHONY, ſometimes denotes a ſpecies of pſalmody, wherein the congregation, being divided into two parts, repeat the pſalms, verſe for verſe, alternately.

In this ſenſe, *antiphony* ſtands contradiſtinguiſhed from SYMPHONY, where the whole congregation ſings together.

Antiphony differs from *reſponſorium*, becauſe in this latter the verſe is only ſpoke by one perſon, whereas in the former, the verſes are ſung by the two choirs alternately. The original of *antiphonal* ſinging in the weſtern churches is referred to the time of St. Ambroſe, about the year 374. That father is ſaid to have firſt introduced it into the church of Milan, in imitation of the cuſtom of the eaſtern church, where it appears to be of greater antiquity, though as to the time of its inſtituion, authors are not agreed. It was moſt probably introduced at Antioch, between the years of Chriſt 347 and 356.

ANTIPHONY is alſo uſed to denote the words given out at the beginning of the pſalm, to which both the choirs are to accommodate their ſinging.

ANTIPHONY, in a more modern ſenſe, denotes a kind of compoſition made of ſeveral verſes extracted out of different pſalms, adapted to expreſs the myſtery ſolemnized on the occaſion.

ANTIPHONA *ad introitum*, that anciently ſung in the introit of the maſs.

ANTIPHONA *invitatiora*, that repeated at the pſalm *Venite exultemus*.

ANTIPHONÆ *majores*, thoſe ſeven uſed to be ſung in the time of Advent, at the Magnificat, and during the ſeven days before Chriſtmas.

ANTIPHONÆ *proceſſionales*, thoſe ſung at proceſſions.

ANTIPHONÆ *rogationes*, thoſe rehearſed at rogations.

ANTIPHRASIS, a ſort of figurative expreſſion, which has a contrary meaning to what it carries in appearance. Or, a kind of irony, wherein we ſay one thing, and mean the contrary.

The word is derived from αντι, and φρασις, of φραζω, *I ſpeak*.

Sanctius defines *antiphraſis* to be a form of irony, whereby we ſay a thing, by denying what we ought rather to affirm it to be: as when we ſay, *it did not diſpleaſe me*; or, *he is no fool*; meaning, *I was pleaſed with it*; or, *he is a man of ſenſe*.—On this principle, the *antiphraſes* ought to be ranked among the figures of ſentences, and not among thoſe of words.

It is a common error, to make *antiphraſes* conſiſt in ſingle words; as when we ſay, that the Parcæ are thus called by *antiphraſes*, becauſe they ſpare nobody, PARCÆ, *quia nemini parcunt*.—S. Jerom, in his epiſtle to Riparius againſt Vigilantius, ſays, he ought rather to be called *Dormitantius per antiphraſin*, than Vigilantius, becauſe he oppoſed the Chriſtians holding wakes at the tombs of the martyrs.

Sanctius holds it improper to call theſe *antiphraſes*; becauſe *phraſis* is not applicable to a ſingle word, but ſignifies *orationem, aut loquendi modum*.

ANTIPODES, in *Geography*, a relative term, denoting ſuch inhabitants of the earth as live diametrically oppoſite to one another.

The word comes from αντι, *againſt*, and πους, ποδος, *a foot*.

The *Antipodes* are thoſe who live in parallels of latitude equally diſtant from the equator, the one toward the north, the other to the ſouth; and under the ſame meridian, though 180°, or juſt half of that meridian, diſtant from one another.

The *Antipodes* have nearly the ſame degree of heat and cold; and the ſame length of night and day; but at contrary times: it being midnight with one, when it is noon with the other; and the longeſt day with one, when it is the ſhorteſt with the other.

Again, as the horizon of any place is 90° diſtant from its zenith, the *Antipodes* have the ſame HORIZON. And hence, when the ſun riſes to one, he ſets to the other.

Plato is ſaid to have firſt ſtarted the notion of *Antipodes*; and likewiſe to have given them the name: as he conceived the earth to be of a ſpherical figure, it was eaſy for him to infer, that there muſt be *Antipodes*.

Many, and particularly Lactantius and Auguſtine, laughed at the notion.—The latter of thoſe fathers is ſtrangely perplexed to think how men and trees ſhould hang pendulous in the air, their feet uppermoſt, as he thought they muſt do in the other hemiſphere.

And if we may believe Aventine, Boniface, archbiſhop of Mentz, and legate of pope Zachary, in the eighth century, declared a biſhop of that time, called Virgilius, heretic, for maintaining that there was ſuch a thing as *Antipodes*.

But this piece of hiſtory is controverted by the authors of the *Mem. de Trevoux*; as having been made uſe of, it ſeems, by ſome perſons, to ſhew, that the church has been miſtaken in its deciſions.

As to the ſentiments of the primitive Chriſtians with regard to *Antipodes*; ſome, rather than admit the concluſions of the philoſophers, abſolutely denied the whole, even the demonſtrations of the geometricians relating to the ſphericity of the earth: which is Lactantius's way, *Inſtit. lib.* iii. *c.* 24. Others only called in queſtion the conjectures of the philoſophers; which is St. Auguſtine's method, *De Civit. Dei. lib.* xvi. *c.* 9.—After putting the queſtion, whether there ever were nations of cyclopes, or pygmies, or of people whoſe feet ſtood outward, &c. he comes to the point of *Antipodes*, and aſks, "whether "the lower part of our earth be inhabited by *Antipodes?*" He made no doubt of the earth's being round, nor of there being a part diametrically oppoſite to ours; but only diſputes its being really inhabited. And the conſiderations he ſuggeſts for that purpoſe are juſt enough; as, that they who aſſerted *Antipodes*, had no hiſtory for it; that the lower part of the earth may be covered with water; and that to place *Antipodes* there, of a different origin from us (as muſt have been the opinion of the ancients, ſince they thought it impoſſible to go from our world to theirs), is to contradict ſcripture, which teaches, that the whole race deſcended from one man. Such are the ſentiments of that father. It may be added, that the chriſtian fathers were not the only perſons who diſputed the truth of the *Antipodes*. Lucretius had done it before them, at the end of his firſt book, v. 1063, &c. See alſo Plutarch, *lib. De facie in orbe lunæ*; and Pliny, who refutes the opinion, *lib.* ii. *c.* 5.

ANTIPOPE, a falſe or pretended pope; or, one that is, or is pretended to be, irregularly elected in oppoſition to another.

Geddes gives the hiſtory of no leſs than twenty-four ſchiſms in the Romiſh church, cauſed by *antipopes*; ſome took their riſe from a diverſity of doctrine and belief, which led different parties to elect each their ſeveral pope; but the greater part from dubious controverted rights of election, the fruits of chicane and ambition.

ANTI-PORTICO is uſed by ſome for a veſtible, or porch, at the entrance of an edifice.

ANTIPRAXIA, in the *Ancient Phyſic*, denotes a contrariety of functions, temperaments, &c. in different parts of the body; invented to account for that contrariety of ſymptoms which frequently concur in hypochondriac caſes, when, e. gr. the liver is charged with being immoderately hot, and the ſtomach exceſſively cold.

The moderns, particularly Etmuller, refute the notion of an *antipraxia*, on this principle, that the blood circulating duly through the whole body, warms all the parts, as well the ſtomach as liver proportionably. To which ſome advocates for the ancient ſyſtem object, that this is confounding the preternatural ſtate with the natural.

ANTIPREDICAMENTS, in *Logic*. See ANTEPREDICAMENT.

ANTIPROBABILISM, the doctrine or ſyſtem of thoſe who hold it unlawful to follow the leſs probable opinion, in oppoſition to the more probable one.

There have been vigorous advocates for *antiprobabiliſm*; for even among its greateſt enemies, the Jeſuits, F. Giſbert has a treatiſe expreſly in favour of *antiprobabiliſm*, viz. ANTIPROBABILISMUS, *ſeu tractatus theologicus fidelem totius probabiliſmi ſtateram continens*, &c. Par. 1703. 4°.

ANTIPROBOLE, in *Rhetoric*, a figure whereby the defendant adopts or admits the charge brought againſt him by the proſecutor.

E. gr. Suppoſing the proſecutor's ϖροϐολη to be, *Titus has killed Caius*; the defendant's *antiprobole* may be, *I have killed him, but undeſignedly*.

ANTIPROPEMPTICON, in *Poetry*, a poem wherein a perſon going a journey addreſſes himſelf to his friends. Such is that of Ovid, lib. i. Triſt.

Cum ſubit illius triſtiſſima noctis imago, &c.

It is oppoſed to PROPEMPTICON.

ANTIPROTASIS, in *Rhetoric*, a ſolution of the PROTASIS.

ANTIPSORA, in *Pharmacy*, remedies proper againſt the itch.

ANTIPTOSIS, a figure in *Grammar*, whereby one caſe is put for another.

The word comes from αντι, *pro*, and ϖτωσις, *caſus*.

ANTIPYRETON, among *Phyſicians*, an appellation given to the medicines againſt fevers.

ANTIQUARE, among Roman lawyers, properly denotes the rejecting of a new law, or refuſing to paſs it. In which ſenſe, *antiquating* differs from *abrogating*; as the latter imports the annulling an old law, the former the rejecting a new one. See A.

ANTIQUARE is alſo uſed for a law's growing obſolete, or into diſuſe, either by age or non-obſervance.

ANTIQUARIUM, among the *Ancients*, denoted a place or apartment, wherein their *antique* monuments were preſerved.

ANTIQUARTIUM is uſed by ſome modern practitioners, for a ſpecific againſt the quartan ague.

Hence ſome call the Jeſuits bark *antiquartium Peruvianum*.

Wedelius alſo ſpeaks of an *eſſentia antiquartia*.

The *antiquartan* of Riverius is a preparation of *mercurius dulcis*, *aurum fulminans*, ſulphur of antimony, and ſcammony.

ANTIQUARY, ANTIQUARIUS, a perſon who ſtudies and ſearches after monuments and remains of the ancients; as, old medals, books, ſtatues, ſculptures, and inſcriptions: and, in general, all curious pieces that may afford any light into *antiquity*.

Formerly there were ſeveral other kinds of *antiquaries*. The LIBRARII, or copiſts, i. e. thoſe who tranſcribed in fair legible characters, what had been before written in notes, were called by this name. They were alſo denominated *calligraphi*. They were alſo employed in repairing books injured by age.

In the chief cities of Greece and Italy, there were other perſons of diſtinction, called *antiquaries*, whoſe buſineſs it was to ſhew ſtrangers the antiquities of the place, to explain the ancient inſcriptions, and to give them all the aſſiſtance they could in this way of learning.

This was, doubtleſs, a very curious and uſeful inſtitution; and might well deſerve to be re-eſtabliſhed.—Pauſanias calls theſe *antiquaries*, Εξηγηται. The Sicilians call them *myſtogogi*.

There was an ancient college of *antiquaries* erected in Ireland by Ollamh Fodhla, 700 years before Chriſt, for compoſing a hiſtory of that country. And to this, ſay the Iriſh hiſtorians, it is owing, that the hiſtory and antiquities of that kingdom may be traced back beyond thoſe of moſt other nations.

The office of the ancient Iriſh *antiquaries* was to preſerve the genealogies of the kings of Ireland, to correct the regal tables of ſucceſſion, and deliver down the pedigree of every collateral branch of the royal family.

The kings of Sweden have been at great expences in order to illuſtrate the *antiquity* of their country, having eſtabliſhed an academy of *antiquaries* with this ſingle view.

Foundations of this kind have often been wiſhed for, and ſometimes alſo attempted in England.

Sir H. Spelman ſpeaks of a ſociety of *antiquaries* in his time, to whom his treatiſe of the terms, written in the year 1614, was communicated, he himſelf being one of the number.

The ſociety was formed by archbiſhop Parker, Camden, Sir Robert Cotton, Stow, and others, in 1572. In 1589, application was made to queen Elizabeth for a charter and houſe, wherein they might hold their meetings, erect a library, and the like. But by the death of that princeſs, their application proved abortive. Her ſucceſſor, king James I. was far from favouring their deſign.

In the year 1717, this ſociety was revived again, ſince which time no interruptions having happened, it is at preſent in a very flouriſhing condition; and the buſineſs of its members is to diſcover the antiquities of their own, as well as thoſe of other nations.

This ſociety was incorporated by the king's charter in the year 1751; and began to publiſh its diſcoveries, &c. in 1770, under the title of *Archæologia*.

ANTIQUARY is alſo uſed, by *Ancient Writers*, for the keeper of the *antiquarium*, or cabinet of antiquities.

This officer is otherwiſe called *archæota*, or *antiquary* of a king, a prince, a ſtate, or the like.

Henry VIII. gave John Leland the title of his *antiquary*, a title which, ſays the author of his life, no body ever enjoyed beſides himſelf. But the reſtriction, we ſuppoſe, was only intended to be underſtood in reſpect of the kings of England; M. Schott, we find, had the title of *antiquary* to the king of Pruſſia; P. Pedruzzi, that of *antiquary* of the duke of Parma; M. Galland reſided ſome time in Turky, under the title of *antiquary* of the king of France.

The Univerſity of Oxford have ſtill their *antiquary*, under the denomination of *cuſtos archivorum*.

P. Labbe and Petavius have publiſhed pieces expreſly concerning the apparatus of *antiquaries*.

ANTIQUATED, ANTIQUATUS, ſomething obſolete, or grown out of date, or uſe.

ANTIQUE, Antiquus, in a general ſenſe, ſomething that is ancient.

Antique is chiefly uſed among architects, ſculptors, and painters; who apply it to ſuch pieces of buildings, ſculpture, painting, &c. as were made at the time when the arts were in their greateſt perfection, among the ancient Greeks and Romans; viz. from the age of Alexander, to the time of the emperor Phocas, about the year of Chriſt 600, when Italy became over-run by the Goths and Vandals.

In this ſenſe the word ſtands oppoſed to *modern.*—Thus we ſay, an *antique* building, or a building after the *antique*; an *antique* buſt, or bas-relievo; the *antique* manner, taſte, &c.

The ſcience of *antiques* is alſo called by Spon ARCHÆOGRAPHIA.

Under this is included the knowledge of ancient coins, medals, inſcriptions, buildings, ſtatues, ſculptures, MSS. veſſels, weights, meaſures, &c.

Antique is ſometimes alſo contradiſtinguiſhed from *ancient*, which denotes the leſſer degree of antiquity, when the art was not in its utmoſt purity.

Thus, *antique architecture* is frequently diſtinguiſhed from *ancient architecture.*

Some writers alſo uſe the compound, *antiquo-modern*, in reſpect of the old Gothic churches, and other buildings: to diſtinguiſh them from thoſe of the Greeks and Romans.

ANTIQUITY, Antiquitas, is uſed to denote the times or ages paſt long ago.

Thus we ſay, the heroes of *antiquity*, the marks, or footſteps of *antiquity*, monuments of *antiquity*, &c.

Antiquity is alſo uſed to denote the works or remains of ancient times. See Monument, Remains, Ruins, &c.

Thus we ſay, a fine, a curious piece of *antiquity*; Italy, France, and England, abound in *antiquities.*

Antiquity is alſo uſed to denote the great age of a thing, or its duration from times of old.

In this ſenſe we ſay, the *antiquity* of a kingdom, a cuſtom, or the like: moſt nations lay claim to an *antiquity* much greater than they can truly warrant.

There are great diſputes concerning the *antiquity*, or age of the world.

Ariſtotle carried it even to eternity; and Parmenides, Pythagoras, and the Chaldeans, were of the ſame opinion; but the generality of philoſophers, as well as divines and hiſtorians, have always held an origin of it.

Though where to fix that origin, is the difficulty. The different ſyſtems of the CHRONOLOGY of the Greeks, the Egyptians, the Jews, the Hebrew text, and the Septuagint verſion of Scaliger, of Pezron, of Sir Iſaac Newton, &c. to ſay nothing of the Chineſe annals, leave the point very much embarraſſed.

Dom. Pezron thinks he has merited well of the public by adding 2000 years to the age of the world, which had been taken from it by Scaliger and others; but this did not hinder F. Martianay from entering a proſecution againſt him in the archbiſhop's court of Paris, for hereſy.—His crime was following the heathen, rather than the Hebrew chronology, in which however he was preceded by the generality of the ſathers and primitive writers of the church; among whom it appears to have been a common practice, to make 5500 years between the creation, and the incarnation. In reality, the Jews are charged with having corrupted their chronology; by which the moderns have been miſled.

Some have propoſed to trace out the *antiquity* of the earth, by an obſervation of the ſaltneſs of the ſea; others by obſerving the elevation of the bottom of the ſea, or the growth of its ſtrata.—One mark or proof of *antiquity* has been ſtarted by Rudbeck, which he pretends to have carried to a demonſtration; it is taken from the thickneſs of a certain black cruſt, called in the Swediſh tongue, *mat-iorden*, and *ſwart-myllan*, which covers the ſurface of the earth, being formed of a mixture of rotten graſs, and other herbs, with duſt and a kind of mud, which the melted ſnow leaves behind it. According to this antiquary, there are at leaſt 500 years requiſite to form an inch thick of this cruſt, which in many places of Sweden is found to be upwards of ſeven inches thick, where urns have been dug up full of bones and aſhes. From whence it follows, according to this author, that it is upwards of 3500 years ſince burning the dead was practiſed in Scandinavia.

Recupero, the hiſtoriographer of Ætna, ſuggeſts an argument in favour of the *antiquity* of the earth from the ſeveral ſtrata of lava, that have iſſued at different times from this mountain. A ſtream of lava, which Diodorus Siculus relates to have burſt out in the time of the ſecond Punic war, is covered at this day only with a very ſcanty ſoil; and in digging pits and wells, ſeveral ſtrata of lava have been diſcovered with earth to a conſiderable thickneſs over the ſurface of each ſtratum; in one inſtance ſeven diſtinct ſurfaces of this kind were pierced; and allowing 2000 years for the interval between two eruptions, the lava that compoſed the firſt or loweſt ſtratum, muſt have flowed from the mountain above 14000 years ago. Brydone's Tour, &c. vol. i. p. 131.

But this argument is very fallacious, becauſe we learn from Sir William Hamilton's remarks on the ſoil of Naples, that, ſince the firſt eruption of Veſuvius, which deſtroyed the ancient town of Herculaneum in the year 79, there have been ſix eruptions of *lava*, forming as many different ſtrata, with veins of good ſoil between them. Phil. Tranſ. vol. lxi. N° 1.

There is ſcarce a nation under heaven, but lays claim to a greater degree of *antiquity* than the reſt of its neighbours; the Scythians, the Phrygians, the Chaldeans, Egyptians, Greeks, Chineſe, &c. pretend each to the honour of being the firſt inhabitants of the earth; ſeveral of theſe nations, leſt they ſhould be outſtripped in their pretenſions by any of the reſt, have traced up their origin to ages long before the received account of the creation. Hence the appellation *aborigines*, *indigenæ*, *terrigina*, *antelunares*, &c. The Athenians were not aſhamed to pretend to be *autochthones*; and what is moſt remarkable, Socrates himſelf gives them this ridiculous appellation, which, as ſome others of the philoſophers have wiſely obſerved, only put them on a level with ants and graſhoppers.

The Chaldeans pretend to aſtronomical obſervations of 470,000 years; they mention the preciſe king who reigned over them at the time of the deluge, whoſe name was Xiſuthrus, and attribute to him ſeveral things which we aſcribe to Noah.

The Chaldaic *antiquities* of Beroſus are loſt, except a few fragments which have been collected by Joſ. Scaliger, and ſince more fully by Fabricius. Annius of Viterbo, a Dominican monk, towards the cloſe of the fifteenth century, would not ſuffer us to want ſuch a treaſure, but officiouſly went to work, and forged a Beroſus out of his own brain, which he publiſhed at Rome in 1498. The monk went further; and from the ſame mint ſoon after produced Manetho's ſupplement to Beroſus, from the time of Ægyptus king of Egypt, to the origin of the Roman ſtate. The miſchief is, Manetho lived before Beroſus; this anachroniſm alone had ſufficed to betray the cheat.

St. Auguſtin laughs at the folly of the Egyptians, who pretend to obſervations of the ſtars above 100,000 years old; in effect, no people appear to have been warmer in the conteſt for *antiquity* than thoſe of Egypt. They pretend two periods of time; one ſhorter, during which the throne of Egypt had been filled by men, the other almoſt infinite, wherein gods, and demi-gods, had wore the crown. From Iſis and Oſiris to Alexander they reckoned a ſpace of 23000 years, the time before that, while the gods reigned, made 42984 years more; the whole duration from the beginning of their monarchy amounting to 65984.

The computation of their dynaſties as given by Manetho, a writer of their own, (of whom we have extracts in Syncellus, taken from Julius Africanus and Euſebius) extends to 5550 years before Alexander's time; and the Egyptian chronicle, cited by the ſame Syncellus, goes further, reckoning 36525 years. Diogenes Laertius makes no leſs than 48863 years from the reign of Vulcan. Yet the Scythians, the Phrygians, the Ethiopians, and ſome others, ſtill inſiſted on their priority to the Egyptians; and in the judgment of many ſeem to have carried their point. Juſtin, after Trogus, gives the precedency to the Scythians; and affirms, that they were always allowed to have been before the Egyptians.

No wonder their catalogues ſhould be ridiculouſly incredible, when the Egyptians make their firſt kings reign 1200 years a-piece; and the Aſſyrians theirs about 4000, as in the article Saros.

But the Chineſe is eſteemed the moſt ancient monarchy in the univerſe; having cultivated the ſciences from the earlieſt ages, and ſubſiſted at leaſt theſe 4000 years with the ſame laws, manners, and uſages.

Some indeed have called in queſtion the truth and authenticity of the Chineſe annals; yet we find them confirmed, at leaſt as high as 660 years before Chriſt, by the annals of Japan. At worſt the Chineſe *antiquities* ſtand on as good a footing as thoſe either of Greece or Rome. Their annaliſts both for order and chronology are not inferior to any of thoſe ancients ſo much admired among us; but far ſurpaſs them in point of *antiquity*, and have a better title to be credited, as having written by public authority, which can be ſaid of few Greek or Roman pieces, except perhaps the Capitoline Marbles, which are not properly a hiſtory.

We have no inconſiderable confirmation of the truth of the Chineſe account, from an ancient obſervation of a grand conjunction of the planets under Chuen-Hio, emperor of China, related by Martinius. That prince lived 2513 years before Chriſt. M. Kirchius has defended the obſervation againſt Caſſini, and ſhewn a conjunction muſt really have happened at the time mentioned by the Chineſe annals.

But the authenticity of this obſervation, and the whole of the Chineſe chronology, has been lately attacked by an ingenious author, Mr. Coſtar. See *Chineſe* Chronology.

Dionyſius Halicarnaſſeus has traced the Roman *antiquities*, Joſephus the Jewiſh *antiquities*, Beroſus the Chaldaic *antiquities*, Sanconiathon the Phœnician *antiquities*, Manetho aud Marſham the Egyptian *antiquities*.

The Phœnician *antiquities* of Sanconiathon are preſerved in part by Euſebius. We have an Engliſh tranſlation of Sanconiathon, with notes by biſhop Cumberland, and a continuation from the canon of Eratoſthenes. Lond. 1720. 8vo.

Dionyſius gave his book the title of Roman *antiquities*, on account of the curious inquiries he had made concerning the origin of the Romans, by tracing them back to the remoteſt ages. For fidelity as well as inſtruction he is generally preferred to Livy; his accounts are more ample, and his facts deſcribed with more particulars; he gives a full idea of the Roman ceremonies, the worſhip of their gods, ſacrifices, manners, cuſtoms, diſcipline, policy, courts, laws, &c.

To the claſs of ſuppoſititious *antiquities* belong the Hetrurian *antiquities*, pretended to have been found by Scornelli near Volaterra, and publiſhed in 1636 by Curtius Inghiramus, who is generally ſuppoſed to have been the forger of them. A great number of fictitious names of ancient authors are cited in this book to give the better face to the cheat; but the ſtyle betrayed it. Allatius and Ernſtius early detected the impoſture.

The Britiſh *antiquities* before Cæſar's invaſion are very dubious, not to ſay fabulous. Old chronicles ſpeak of Samothes, the ſon of Japhet, as the founder of the Britiſh monarchy; Albion, a deſcendant of Cham, invaded it three hundred years after; and about 600 years after this, Brute, grandſon of Æneas, came and took poſſeſſion of the iſland in the year of the world 2880, giving it the name which it ſtill retained when Cæſar made his attempt. This is Jeffrey of Monmouth's ſyſtem of the *antiquities* of the Britiſh nation, which the generality of our hiſtorians admit for want of a better. It has been defended by A. Thomſon of Queen's College, in the preface to his Engliſh tranſlation of that writer.

It muſt not be forgot that the Iriſh alſo pretend to be the moſt ancient of all nations; they trace their origin without interruption up to Japhet. But the Scots ſtill diſpute the priority with them, holding themſelves to be an elder branch of the Scythians, the firſt of men.

The *antiquity* of religion has been often urged as a proof of the truth of it. Jews, Gentiles, Chriſtians, Proteſtants, Papiſts, have all in their turns made uſe of the argument from *antiquity*. It is indeed of the inartificial kind; and comes rather under the denomination of a preſumption than a proof; on the whole it ſeems to have ſerved the cauſe of error as much, if not more, than that of truth.

Antiquity is more peculiarly uſed to denote the ceremonies, cuſtoms, and uſages, which obtained in ancient times, either with regard to perſons, places, or things.

Antiquities, in this ſenſe, are uſually divided into ſacred, political, military, literary, and domeſtic; ſometimes only into civil and eccleſiaſtical.

Antiquities, *ſacred*, thoſe relating to the religious worſhip, diſcipline, and belief of ancient times and people.

Theſe may be ſubdivided into heathen, Chriſtian, and Mahometan, &c.

Reland has a treatiſe expreſly on the ſacred *antiquities* of the Jews; Struvius on thoſe of the Romans; Lakemacher on thoſe of the Greeks; and Stillingfleet on thoſe of the Britiſh churches.

Fabricius has given two plans of a theſaurus, or body of *antiquities*; the one of Hebrew *antiquities*, after the manner of Grævius and Gronovius; the other of eccleſiaſtical *antiquities*, divided into twelve books. He gives the names and titles of 156 authors to be included in the firſt, and 101 authors for the ſecond.

Antiquities, *Chriſtian*, thoſe which relate to the ancient ſtate of the Chriſtian church.

Theſe are the ſame with what we otherwiſe call *eccleſiaſtical antiquities*.

The Magdeburg centuries are looked upon by proteſtants as a library of Chriſtian *antiquities*.

Mr. Bingham has publiſhed a learned ſyſtem of Chriſtian *antiquities*.

A principal branch of Chriſtian *antiquities* are,

Antiquities, *Biblical*, the notices of ancient laws, ceremonies, events, &c. occurring in the Scriptures.

Theſe make a branch of *eccleſiaſtical antiquities*, and bear a near relation to the Jewiſh, &c. *antiquities*.

Some pretend to deduce moſt of the heathen *antiquities* from the Bible; others, as Spencer, &c. take the contrary courſe, and deduce the *antiquities* of the Bible from thoſe of *heatheniſm*.

To interpret Scripture it is abſolutely neceſſary that regard ſhould be had to the heathen *antiquities* alluded to in them, and theſe not only ſuch as are directly aimed at, or approved, but alſo ſuch as are purpoſely oppoſed.

Dr. Cave has publiſhed a treatiſe of apoſtolical *antiquities*, *Antiquitates Apoſtolicæ*; or the Lives, Acts, &c. of the Apoſtles, Evangeliſts, &c. Lond. 1674. fol. 1684, and 1686.

Antiquities, *civil*, all that belong not to the head of *eccleſiaſtical*.

Antiquities, *political*, thoſe relating to the origins of ſtates, governments, magiſtrates, and laws.

Antiquities, *national*, thoſe employed in tracing the origin, ancient actions, uſages, monuments, remains, &c. of ſome nation or people.

Gronovius has given a collection of the chief writers on the Greek *antiquities*; Rouſe, Pfeiffer, Bos, and biſhop Potter, have given ſhorter ſyſtems; the laſt is the beſt eſteemed, though found too ſhort by ſome in what relates to the religion, the gods, vows, and temples of Greece.

The beſt ſyſtem of Roman *antiquities* yet extant is that of Roſinus, with Dempſter's notes.

We have compendiums and introductions to the Roman *antiquities* by Hoepfner, Nieuport, Godwin, Cantelius, Baſil Kennet, &c.

Heineccius has given a collection of Roman *antiquities*, for illuſtration of the civil law; and Briſſonius another, drawn from the books of the civil law. Gravina's *Origines Juris Civilis* is excellent on this ſubject.

A body of the writers on the Roman *antiquities* have been publiſhed by Grævius, and another of thoſe on the Greek *antiquities* by Gronovius, both under the titles of Theſauri.

A ſupplement to the former has been publiſhed by Sallengre, and Polenus. Danet and Pitiſcus have alſo publiſhed lexicons of the Roman *antiquities*. Varro's books of Roman *antiquities* are intirely loſt, excepting ſome fragments, preſerved by St. Auguſtin.

Antiquities, *parochial*, thoſe confined to the limits of one or more pariſhes, and converſant chiefly in what relates to the tithes, revenues, &c. of the churches.

Dr. Kennet has publiſhed a learned and curious work under the title of *Parochial Antiquities*, attempted in the hiſtory of Ambroſden and Burcheſter, and other adjacent parts in the counties of Oxford and Bucks. Oxf. 1695. 4to. See Phil. Tranſ. N° 220.

Antiquities, *literary*, thoſe relating to matters of learning and ſtudy; a principal branch of theſe, are

Antiquities, *academical*, the origins, uſages, &c. of the ancient academies, ſchools, colleges, and other literary ſocieties. Theſe bear a near relation to ſcholaſtic *antiquities*, and make a branch or diviſion of literary *antiquities*. Herm. Conringius has given a body of *academical antiquities*, Urſinus a treatiſe of the *ſcholaſtical antiquities* of the Hebrews.

ANTI-RATIONALISTS, a name ſometimes given to divines, who in matters of religion are for humbling reaſon, and making it bend to faith; aſſerting that the abſurdity of a thing is no reaſon for rejecting it.

In this ſenſe, the rigid Calviniſts and adherers to the ſynod of Dort are denominated *anti-rationaliſts*, on account of the doctrine of abſolute predeſtination, &c. The Roman catholics are alſo entitled to the ſame appellation, on account of the doctrine of tranſubſtantiation. —M. Bayle took ſhelter in the ſyſtem of the *anti-rationaliſts*, the better to combat the Chriſtian doctrines of the origin of evil, Providence, &c.

ANTIRRHETICUM, in *Literary Hiſtory*, denotes a refutation of ſome book, author, or opinion.

In this ſenſe, we alſo meet with the word *antirrheſis*.

ANTIRRHINUM, in *Botany*. See Snap-Dragon.

ANTI-SABBATARIANS, a modern religious ſect, who oppoſe the obſervance of the Chriſtian Sabbath.

The great principle of the *anti-ſabbatarians* is, that the Jewiſh ſabbath was only of ceremonial not moral obligation; and conſequently is aboliſhed by the coming of Chriſt.

ANTISAGOGE, in *Rhetoric*, a figure differing little from that called Conceſſion. The following paſſage from Cicero is an inſtance of it: *Difficilis ratio belli gerendi; at plena fidei, plena pietatis; et ſi dicas, magnus labor, multa pericula proponuntur; at gloria ex his immortalis eſt conſecutura.*

ANTI-SCEPTIC, ſomething oppoſed to the reaſonings and ſyſtem of Pyrrhoniſts, or ſceptics.

ANTISCII, in *Geography*, denominates people who dwell in the oppoſite hemiſpheres of the earth, and whoſe ſhadows at noon fall in contrary directions.

The word is compounded of *αντι*, *againſt*, and *σκια*, a *ſhadow*.

Thus the people of the north are *antiſcii* to thoſe of the ſouth. The one project their ſhadows at mid-day towards the arctic pole; and the others towards the antarctic pole.

The *antiſcii* are very often confounded with the ANTŒCI, though the former term is more general than the latter. The *antiſcii* ſtand contradiſtinguiſhed from *periſcii*, &c.

ANTISCII is ſometimes alſo uſed, among *Aſtrologers*, for two points of the heavens equally diſtant from the tropics.—Thus the ſigns Leo and Taurus are held *antiſcii* to each other.

ANTISCORBUTICS, medicines proper for the cure of the ſcurvy.

ANTISEPTIC, an appellation given to ſuch ſubſtances as reſiſt PUTREFACTION; and more lately extended to ſuch as have a power of reſtoring ſweetneſs to ſubſtances actually putrid.

We have ſome curious experiments in relation to *antiſeptic* ſubſtances by Dr. Pringle, who has aſcertained their ſeveral virtues. Thus, in order to ſettle the *antiſeptic* virtue of ſalts, he compared it with that of common ſea-ſalt; which being one of the weakeſt, he ſuppoſes equal to unity, and expreſſes the proportional ſtrength of the reſt by higher numbers, as in the following table.

Salts, their antiſeptic virtue.		Salts, their antiſeptic virtue.	
Sea-ſalt - -	1	Saline mixture -	3
Sal gemmæ -	1+	Nitre - -	4+
Tartar vitriolated	2	Salt of hartſhorn -	4+
Spiritus Mindereri	2	Salt of wormwood	4+
Tartarus ſolubilis	2	*Borax* - -	12+
Sal diureticus -	2+	Salt of amber -	20+
Crude *ſal ammoniac*	3	Alum - -	30+

In this table the proportions are marked in integral numbers; only to ſome there is added the ſign +, to ſhew, that thoſe ſalts are poſſeſſed of a ſtronger *antiſeptic* virtue than the number in the table expreſſes, by ſome fraction; unleſs in the three laſt, where the ſame ſign imports, that the ſalt may be ſtronger by ſome units.

Some reſinous and other ſubſtances even exceed the *antiſeptic* virtues of the neutral ſalts; thus myrrh, *aſſa-fœtida*, *terra japonica*, and aloes, are at leaſt twelve times more *antiſeptic* than ſea-ſalt. Camphor prevents putrefaction with a power three hundred times greater than is that of ſalt. An infuſion of a few grains of Virginian ſnake-root, in powder, exceeds twelve times its weight of ſea-ſalt. Chamomile flowers have nearly the ſame extraordinary quality. The Jeſuits bark has it alſo. Beſides theſe, pepper, ginger, ſaffron, contrayerva-root, are twelve times more *antiſeptic* than ſea-ſalt. Dried ſage, rhubarb, the root of the wild valerian, mint, angelica, ground-ivy, ſena, green-tea, red-roſes, wormwood, muſtard, and horſe-raddiſh, were likewiſe found more *antiſeptic* than the ſtandard: and a ſimilar power likewiſe belongs to many other of the common eſculent vegetables, as carrots, turnipt, garlic, onions, celery, cabbage, and colewort.

To the claſs of *antiſeptic* medicines may likewiſe be added fermented liquors, acids, ſpirits, and even thoſe plants called anti-acids, and erroneouſly ſuppoſed haſteners of putrefaction, particularly horſe-raddiſh. Now vegetables, poſſeſſing this virtue, are the more valuable, in that, being uſually free of acrimony, they may be taken in much greater quantities, than either ſpirits, acids, reſins, or even the neutral ſalts.

Antiſeptics are preſcribed in all putrid, malignant, and peſtilential caſes. It is to be remarked, however, that different kinds of them are to be given in different diſeaſes, and even in different ſtages of the ſame diſeaſe. Thus, the bark is a ſpecific in a gangrene, when the veſſels are relaxed, and the blood reſolved or diſpoſed to putrefaction; but will fail, if the veſſels are too full, or the blood be too thick. With the ſame caution is the bark to be uſed in wounds, viz. chiefly in caſes of abſorbed matter, when it infects the humours, and brings on a hectic-fever.

By the great *antiſeptic* virtue of alum, the bark, and other aſtringents, it ſhould ſeem, that aſtriction had no ſmall ſhare in the cure of putrid diſorders; and, indeed, the very nature of putrefaction conſiſts in a ſeparation or diſunion of the parts. Beſides, the bark ferments in the body, and diſcharges an *antiſeptic* vapour, or *fixed* AIR, which mingles with the blood, and contributes to reſtore its conſiſtence, and correct its acrimony. But as aſtringents are improper to be adminiſtered in many caſes, contrayerva-root, ſnake-root, camphor, &c. may ſupply their place; which, though highly *antiſeptic*, have very little, or any, of an aſtringent quality. Pringle's Obſ. on the Diſeaſes of the Army. Dr. Macbride's Eſſay on the reſpective Powers, &c. of *Antiſeptics*.

ANTISIGMA, among the *Ancient Grammarians*, ſignifies one of the notes of ſentences affixed to thoſe verſes whoſe order was to be changed.

ANTISPASMODICS, are medicines proper for the cure of ſpaſms and convulſions. Opium, balſam of Peru, and the eſſential oils of many vegetables, are the principal in this claſs of medicines. Opium excells for it immediate effects. Peruvian balſam, in many inſtances, produces more laſting benefit than opium, and ſometimes ſucceeds where opium fails. As *antiſpaſmodics*, the eſſential oils differ in this from opium, that they act more on a particular part than on the ſyſtem in general, and have no ſoporific effect. Some medicines remove ſpaſms by immediate contact, as aſſes milk, cream, oil of almonds; others by repelling heat, as gas, ſulphur, nitre, ſal ammoniac, &c. And where the ſtrictures are produced by inanition, and a defect of vital heat, ſpaſms are removed by thoſe medicines that reſtore the *vis vitæ*, ſuch as valerian, caſtor, muſk, &c.

ANTISPASTUS, a poetical foot, conſiſting of four ſyllables, whereof the firſt is ſhort, the ſecond and third long, and the fourth ſhort.

ANTISPODIUM. See the article SPODIUM.

ANTI-STANCARIANS, a ſect of German proteſtants, who oppoſe the doctrine of Stancarius, who aſſerted that juſtification was the ſole effect of Chriſt's human nature, excluſive of his divinity.

ANTISTASIS, in *Oratory*, a defence of an action from the conſideration, that had it been omitted worſe would have enſued.

This is called by Latin writers *comparativum argumentum*, ſuch, e. gr. would be the general's defence, who had made an inglorious capitulation, that without it, the whole army muſt have periſhed.

ANTISTASIS, in *Antiquity*, denotes the gibbous part of the liver in the Grecian victims.

ANTISTES, in *Eccleſiaſtical Writers*, a title uſually given to biſhops, though ſometimes alſo to prieſts or preſbyters.

Among the ancient Romans, *antiſtes* was an appellation given to the chief or firſt orders of the prieſts in the provinces.

In which ſenſe, *antiſtes* ſtands diſtinguiſhed from *patres* and *magiſtri*.—In the more uſual ſenſe notwithſtanding, *antiſtes* denotes the ſame with *ſacerdos*.

There were alſo females of this quality under the title of *antiſtæ*.

ANTISTITIUM is a term uſed in ancient chronicles for an abbey or monaſtery.

ANTISTŒCHON, a grammatical figure whereby one letter is uſed inſtead of another.

This is otherwiſe called *antiſtichon*, by ſome writers.

ANTISTROPHE, a kind of dance in uſe among the ancients; wherein they ſtepped ſometimes to the right, and ſometimes to the left, ſtill doubling their turns or converſions.

The motion towards the left they called *antiſtrophe*; from *αντι*, *againſt*; *ςροφη*, of *ςρεφω*, *I turn*.

It was cuſtomary among the Greeks, on ſome occaſions, to dance round the altars, whilſt they ſung the ſacred hymns, which conſiſted of three ſtanzas, or parts; the firſt of which, called *ſtrophe*, was ſung in turning from eaſt to weſt; the other, named *antiſtrophe*, in returning from weſt to eaſt. Then they ſtood before the altar, and ſung the epode, which was the laſt part of the ſong.—Hence,

ANTISTROPHE is alſo uſed in *Lyric Poetry*, in ſpeaking of the ODE, which is uſually divided into the *ſtrophe*, *antiſtrophe*, and *epode*.

The *antiſtrophe* is a kind of echo, or replication to the *ſtrophe*; and the *epode* is a launching out from them both.

ANTISTROPHE is alſo a figure in grammar, whereby two terms or things, mutually dependent one on another, are reciprocally converted.

As if one ſhould ſay, the maſter of the ſervant, and the ſervant of the maſter.

ANTISTROPHE, in *Rhetoric*, the ſame with what is more commonly called *epiſtrophe*.

ANTISYLLOGISM, in *Logic*, a ſyllogiſm, which infers a contrary concluſion to that of another SYLLOGISM.

ANTITACTÆ, or **ANTITACTICI**, in *Antiquity*, a kind of Gnoſtics, who owned that God, the Creator of the univerſe, was good and juſt; but aſſerted, withal, that one of his creatures had created evil, and had engaged us to follow it, in order to ſet us in oppoſition to God the Creator; and that it becomes our duty to oppoſe this author of evil, in order to avenge God of his enemy. Hence the name; which is derived from *αντιταττω*, *I oppoſe*.

ANTITHENAR, in *Anatomy*, a name given to divers muſcles, otherwiſe called ADDUCTORS, or *adducent muſcles*. The word is compounded of *αντι*, *againſt*; and *ϑεναρ*; becauſe theſe muſcles act as antagoniſts to the *thenars*, or *abductors*.

ANTITHENAR is likewiſe a muſcle called alſo the *ſemi-interoſſeus pollicis*. It is ſmall, flat, and fleſhy, and is ſituated obliquely between the firſt phalanx of the thumb, and firſt bone of the *metacarpus*; it is fixed by one end toward the baſis of the firſt metacarpal bone, near the firſt bone of the ſecond row of the *carpus*; from thence it runs obliquely toward the head of the firſt phalanx of the thumb, and is inſerted in the lateral external part of that bone, or on that ſide which is turned to the firſt metacarpal bone. It croſſes over the *ſemi-interoſſeus indicis*; this muſcle lying toward the back of the hand, the *antithenar* here deſcribed toward the palm.

ANTITHENAR *pedis*, a ſmall compound muſcle lying obliquely under the metatarſal bones, fixed poſteriorly in the lower parts of the ſecond, third, and fourth of theſe bones, near their baſes; in the ligaments of theſe bones, and thoſe of the *tarſus*, and in a lateral *aponeuroſis* of the *hypothenar*, all theſe portions contracting into a ſmall compaſs, are inſerted in the outſide of the external ſeſamoide bone of the firſt phalanx of the great toe.

ANTITHESIS, in *Rhetoric*, a ſetting two things together by way of oppoſition to each other, that the different qualities of each may appear the more ſtrongly.

Such is that of Cicero, in the ſecond Catilinarian: 'On 'the one ſide ſtands modeſty, on the other impudence; 'on the one fidelity, on the other deceit; here piety, 'there ſacrilege; here continency, there luſt,' &c.—Such alſo is that of Auguſtus to ſome ſeditious young men; *audite, juvenes, ſenem, quem juvenem ſenes audivere.* —Such again is that of Seneca: *Curæ læves loquuntur, ingentes ſtupent*. And that of Virgil:

Flectere ſi nequeo ſuperos, Acheronta movebo.

St. Auguſtine, Seneca, Salvian, and many other ancient writers, ſeem greatly to affect *antitheſes*; but among the moderns they are generally decried. Deſmaretes repreſents them as the favourites of young writers.

ANTITHESIS is ſometimes uſed for controverſy.

In this ſenſe we meet with *antithetic* method, *antithetic* diſcourſes, &c.

ANTITHESIS is alſo a figure in grammar, whereby one letter is ſubſtituted in the room of another; as *olli* for *illi*.

ANTITHETARIUS, a term occurring in the title of a chapter in the laws of Canutus, but not in the chapter itſelf.

The meaning of the word is, a man who endeavours to diſcharge himſelf of the fact of which he is accuſed, by recriminating, i. e. by charging the accuſer with the ſame fact.

ANTITHETON, in *Rhetoric*, a figure wherein contraries are ſet in oppoſition to each other.

Some diſtinguiſh between the *antitheſis* and *antitheton*. Voſſius thinks that in the *antitheton* nouns and verbs are oppoſed; but in the *antitheſis* epithets only. Others comprehend the *antitheſis* under *antitheton*.

ANTITHORA. See ANTHORA.

ANTITRAGICUS, in *Anatomy*, a name given by Albinus to one of the muſcles of the eye, called by Santorini and others *muſculus antitragi*.

ANTITRAGUS, in *Anatomy*, is the thicker part of the *anthelix*, or that ridge juſt above the TRAGUS.

A ramification of the hard portion of the auditory nerve, running on the back of the *antitragus*, is ſometimes ſucceſsfully cauterized in the tooth-ach. Phil. Tranſ. Nº 299. p. 1981.

ANTITRINITARIANS, thoſe who deny the Trinity, and teach, that there are not three perſons in the Godhead.

Thus the Samoſatenians, who do not believe the diſtinction of perſons in God; the Arians, who deny the divinity of the Word; and the Macedonians, who deny that of the Holy Spirit, are all properly *Antitrinitarians*. Among the moderns, *Antitrinitarians* are particularly underſtood of Socinians, called alſo Unitarians.

The *Bibliotheca Antitrinitariorum*, or *Antitrinitarian* Library, is a poſthumous work of Chriſtopher Sandius, an eminent *Antitrinitarian*; wherein he gives a liſt, digeſted in order of time, of all the Socinian or modern *Antitrinitarian* authors, with a brief account of their lives, and a catalogue of their works. See UNITARIAN.

ANTITYPE, a Greek word, properly ſignifying a type or figure correſpondent to ſome other type.

The word *antitype* occurs twice in the New Teſtament; viz. in the Epiſtle to the Hebrews, ix. 24. and in St. Peter, 1 Ep. iii. 21. where its genuine import has been much controverted.—The former ſays, that 'Chriſt is 'not entered into the holy places made with hands, 'which are *αντιτυπα*, the figures or *antitypes* of the 'true—now to appear in the preſence of God for us.'—Now *τυπος*, as is elſewhere obſerved, ſignifies the pattern by which another thing is made; and as Moſes was obliged to make the tabernacle, and all things in it, according to the pattern ſhewed him in the Mount; the tabernacle ſo formed was the *antitype* of what was ſhewn to Moſes: any thing, therefore, formed according to a model, or pattern, is an *antitype*.

In the latter paſſage, the Apoſtle, ſpeaking of Noah's flood, and the deliverance only of eight perſons in the ark from it, ſays, Ω και ἡμας αντιτυπον νυν σωζει βαπτισμα, *baptiſm, being an antitype to that, now ſaves us*; *not putting away the filth of the fleſh, but the anſwer of a good conſcience towards God*, &c. The meaning is, that righteouſneſs, or the anſwer of a good conſcience towards God, now ſaves us by means of the reſurrection of Chriſt, as formerly righteouſneſs ſaved thoſe eight perſons by means of the ark, during the flood.—The word *antitype*, therefore, here ſignifies a general ſimilitude of circumſtances; and the particle ῷ, *whereunto*, refers, not to the immediate antecedent, ὑδατος, *water*, but to all that precedes.

ANTITYPE, among the *Ancient* Greek *Fathers*, and in the Greek *Liturgy*, is alſo applied to the ſymbols of bread and wine in the Sacrament.

Hence it hath been argued, by many proteſtants, that the Greeks do not really believe the doctrine of tranſubſtantiation; becauſe they call the bread and wine *antitypes*, *αντιτυπα*, q. d. figures, ſimilitudes; and this even after the conſecration.

ANTLER, among *Hunters*, the firſt of the pearls that grow about the bur of a deer's horn.

There are alſo ſur-*antlers*, brow-*antlers*, &c.

ANTLIA, an ancient machine, ſuppoſed to be the ſame with our pump.

Hence the phraſe, in *antliam condemnari*, according to the critics, denotes a kind of puniſhment, whereby criminals were condemned to drain ponds, ditches, or the like.

ANTŒCI, in *Geography*, thoſe inhabitants of the earth who live under the ſame meridian, and at the ſame diſtance from the equator; the one toward the north, and the other towards the ſouth.

The word is formed of *αντι*, *contra*, and *οικεω*, *I inhabit*.—The *Antœci* are contradiſtinguiſhed from the *Periœci*.

Hence the *Antœci* have the ſame longitude, and equal latitudes, only of a different denomination.

The inhabitants of Peloponneſus are nearly *Antœci* to the Hottentots of the Cape of Good Hope.—*Antœci* are frequently confounded with ANTISCII.

The *Antœci* have preciſely the ſame hours of the day and night, but oppoſite ſeaſons: when it is 12 o'clock in the longeſt ſummer's day with one, it is 12 o'clock of the ſhorteſt winter's day with the other; and hence the night of the one is always equal to the day of the other.

ANTOMOSIA, in *Ancient Writers*, an oath taken by both the parties in a criminal accuſation; whereby the accuſer charges the other with the fact, and the accuſed in his turn denies the ſame.

In which ſenſe *antomoſia* amounts to the ſame with *diomoſia*, though ſome diſtinguiſh between the two, reſtraining *antomoſia* to the oath of the perſon accuſed, whereby he engages to make no other than a fair defence; and *diomoſia* to the proſecutor's oath, whereby he ſwears that his accuſation is juſtly founded.

Others will have *antomoſia* properly to denote a law-ſuit about things to which there are no witneſſes, and which can only be decided by the oaths of the parties.—Others again will have it to be, where the accuſed party alledging ſickneſs for his non-appearance, the proſecutor takes an oath, that the ſickneſs is only feigned, upon which the judges proceed to ſentence.

ANTONIAN *waters*, in the *Materia Medica*, the name of a medicinal water of Germany, remarkably pleaſant to the taſte, and of ſervice in many caſes as a medicine.

This water, if mixed with any acid liquor, raiſes a conſiderable efferveſcence, and, when mixed with Rheniſh wine and ſugar, which is a common way of drinking it, makes a great hiſſing and bubbling, and becomes turbid and milky. If powder of galls be added to it, it ſuffers no change, but remains limpid and colourleſs; whence it is plain that it contains no iron, nor vitriol. Syrup of vitriol mixed with it, turns the whole green, whence it is plain that it contains an alkali; and if oil of tartar be added to it, it becomes turbid and milky, and precipitates a white ſediment, whence it appears that there is either common ſalt or a calcareous earth in it. If it be expoſed ſome time to the air in an open veſſel, it, like all the other mineral waters, loſes its pungent taſte and pellucidity, becoming turbid and vapid. A quart of it evaporated with a very gentle heat, leaves two ſcruples of a very dry ſediment, which being ſeparated by another ſolution, is found to be one half of an alkaline ſalt, and the other a calcareous earth. Oil of vitriol mixed with the ſalt, produces a great efferveſcence, and a penetrating ſcent ariſes like that produced by the mixing oil of vitriol and common ſalt. Hence it appears, that theſe waters contain a ſmall portion of an alkaline ſalt, a larger portion of ſea-ſalt, and a yet larger of a calcareous earth, and with theſe a very conſiderable quantity of a ſubtile and penetrating mineral ſpirit.

It is a very temperate water, not too ſtrongly operating either by ſtool or urine; and hence it is a very proper drink for perſons in chronic and in many acute caſes, either alone, or mixed with wine, to ſupply the place of malt liquor, which is proper but in very few illneſſes. A long uſe of it alone may alſo prove of conſiderable ſervice in hypochondriac caſes.

ANTONINE *column*. See COLUMN.

ANTONOMASIA, a figure in rhetoric, whereby a noun appellative is uſed inſtead of a proper name, or *vice verſa*.

The word is compounded of *αντι*, *for*, and *ονομα*, *name*. Thus we ſay, the philoſopher, inſtead of Ariſtotle; the orator, for Cicero; the apoſtle, for St. Paul; the prophet for Moſes, &c.—Thus alſo we call a voluptuous perſon, a Sardanapalus, &c. And thus the French ſay, Henry the Great, meaning Henry IV. of France.

ANTOPHYLLUS, in *Botany*, ſignifies the fruit of the CLOVE-*tree*.

ANTOSIANDRIANS, a ſect of rigid Lutherans, who oppoſe the doctrine of Oſiander relating to juſtification. Theſe are otherwiſe denominated *Oſiandro-maſtiges*.

The *Antoſiandrians* deny that man is made juſt, with that juſtice wherewith God himſelf is juſt; that is, they aſſert, that he is not made eſſentially, but only imputatively juſt; or, that he is not really made juſt, but only pronounced ſo.

ANTRUM *buccinoſum* is uſed by ſome anatomiſts for the COCHLEA of the ear.

ANTRUM *genæ*, a large cavity in the fourth bone of the upper jaw, communicating with the *foramina narium*.

It was thus called by Caſſerius, but by Dr. Highmore *antrum maxillæ ſuperioris*.

The *antrum genæ* is near two inches long, and above an inch in depth, ſeated between the lower margin of the orbit of the eye, and the *dentes molares* of the ſame ſide. Backwards the thin bony parts of this cavity, with the *os ſphenoides*, make the *foramen lacerum externum*; its lower ſurface makes a thin covering to all the roots of the *dentes molares*, as well as *dens caninus* of the ſame ſide. It is very thin, and, on drawing any teeth to which it ſticks, is frequently taken along with it, whereby this cavity is opened into the *alveolus*, and conſequently into the mouth, to the great terror and ſurpriſe of the patient.

The *antrum genæ* appears to be the chief ſeat of the *ozena*. Dr. Drake mentions an operation which he put in practice for the cure of that diſeaſe; taking out the foremoſt *dens molaris*, and not finding any aperture from its *alveolus*, as is frequently obſerved, he bored a hole through the *alveolus* into the *antrum genæ*, whereby the *pus*, which before lay in the *antrum*, run out, and the medicines daily injected by this aperture paſſed into the noſtrils, whereby the patient was cured.

ANTRUM *Highmorianum* is a cavity diſcovered within the ſinus of each maxillary bone.

Surgeons ſometimes miſtake this for a *caries* of the bone; finding they can penetrate ſo deep into it with a probe.

ANTRUM *pylori*, a large cavity, at the bottom of the PYLORUS.

Antrum pylori was thus denominated by Willis, who aſſigned it the office of keeping the firſt digeſted chyle, till that which was later taken into the ſtomach be digeſted; though, if what Dr. Wharton ſuggeſts, that there are lacteals at the bottom of the ſtomach, be true, ſuch a proviſion ſeems unneceſſary.

ANTYLION, in the *Ancient Pharmacy*, a kind of aſtringent *malagma*, deſcribed by Ægineta.

ANTYX, in *Antiquity*, the outermoſt round, or circumference of a ſhield.

ANVIL, a ſmith's utenſil, ſerving to place the work on, to be hammered or forged.

The face, or uppermoſt ſurface of the *anvil*, muſt be very flat and ſmooth, without flaws; and ſo hard, that a file will not touch it.—At one end there is ſometimes a pike, bickern, or beak-iron, for the rounding of hollow-work.—The whole is uſually mounted on a firm wooden block.

Forged *anvils* are better than thoſe of caſt work; and the beſt have the upper part made of ſteel. Lockſmiths have a ſmaller kind of *anvil*, called the STAKE, which is moveable, and placed ordinarily on their work-bench. Its uſe is for ſetting ſmall cold work ſtraight, or to cut or punch on with the cold chiſſel, or cold punch.

ANUBIS, one of the deities of the Egyptians, painted with a dog's head, holding in one hand a branch of palm, and a *caducæum*, or Mercury's wand, in the other.

ANUS, in *Anatomy*, the lower extremity of the *inteſtinum rectum*; or the orifice of the fundament.—See *Tab. Anat.* (*Splanch.*) *fig.* 9. *lit. u.*

The Philiſtines ſent golden *emerods* back with the ark, to be cured of a diſeaſe which afflicted them in the *anus*. 1 Sam. ch. vi.

ANUS, *muſcles of the*, are the *ſphincter*, *levator*, and *ſcalptor*, or *latiſſimus dorſi*.

In ſome creatures the *anus* is found to have other uſes. In the pond muſcle the ſame aperture ſerves indifferently for *mouth* and *anus*. In fowl the *anus* has apparently ſome concern in the action of reſpiration; there are found many veſicles extended from the *bronchiæ* through the abdomen to the *anus* of fowls; which may be the cauſe of its conſtant motion, the air having both ingreſs and egreſs there. Whence it is that they are alſo found to have an attractive power, and as ſuch are uſed by ſome to draw out the poiſon and malignity in certain diſeaſes. It may be added, that a kind of alternate *ſyſtole* and *diaſtole* is perceived, at leaſt on many occaſions, in the *anus* of divers quadrupeds, as cows, mares, &c. Hiſt. Acad. Scienc. 1710.

The *ani* of fowls, applied in malignant diſtempers to draw the infection out of the body, act like cupping-glaſſes; inſomuch that the fowl has often ſtuck by its *anus* to the part till it died. Mr. Temple affirms he has ſeen ſeven chickens thus applied to the groin of one perſon ſeized with the plague, which all ſtuck till they died. The eighth went quickly off and lived. Phil. Tranſ. N° 86. p. 5031. and Ephem. Acad. N. C. Dec. 2. An. 9. Obſ. 138.

The *anus* of birds and quadrupeds is generally conſtant and regular as to the place it occupies in the body; in fiſh it conſiderably differs in the various kinds, and makes one of their marks of diſtinction.

Some authors ſpeak of attempts made not without ſucceſs, for conveying nouriſhment to the human body by nutritive clyſters conveyed up the *anus*, where the common canal by the *gula* has been rendered impracticable. Mem. Acad. Scienc. 1716. p. 237.

It may be added, that we have inſtances of births or deliveries by the *anus*; dead *fœtuſes* long detained *in utero*, finding no other out-let, have been frequently voided piece-meal at the *anus*. Dr. Wallis's and Halley's caſe is much more extraordinary, who ſpeaks of a male greyhound delivered of an intire whelp the ſame way. For *calculi* or ſtones, inſtances of their being voided by the *anus* are frequent. Phil. Tranſ. N° 385 and 38c. Mem. Acad. Scienc. an. 1702.

ANUS, *diſeaſes of the*, are a fiſtula, and the *procidentia*, or *prolapſus ani*; to which may be added the hæmorrhoids, or piles.

ANUS, *imperforate*.—When children are born without an *anus*, it is very difficult to hit on the right part for making a perforation into the *rectum*, becauſe the extremity of the gut is generally formed into a knot. For performing ſuch a perforation, Mr. Petit recommends a trocar, the *canula* and circular plate of which are ſo ſlit open, as to ſerve as a groove for a biſtoury to be run in, to enlarge the aperture after the trocar has been puſhed into the gut. See Mem. de l'Acad. de Chirurg. tom. i.

Affections about the *anus* are difficult to be cured for many reaſons. The part is endued with a very tender ſenſe, and therefore is eaſily irritated by acrimonious and auſtere medicines. Beſide, the ſuperfluities of the aliment in their paſſage, are not only acrid in themſelves, but much more ſo on account of the bilious, and ſometimes ſerous humours, which paſs along with them. Moreover, the phyſician can fix no certain times for attending his patients, who ſometimes eaſe nature this way at very inconvenient ſeaſons. The humidity and heat of the place alſo, which require drying as well as cooling remedies, are no ſmall obſtacles to the cure of ulcers in thoſe parts; for aſtringents are acrid, which the place, by reaſon of its exquiſite ſenſe, is not able to bear. Wherefore ſuch medicines agree with them as are aſtringent without aſperity; of which quality are principally metals, which are neither acrimonious nor extremely rough; theſe waſhed, anſwer the intention effectually, without mordacity. Vegetables, and draſtic purges, ſuch as the oil of caſtor, &c. are beſt; and aloes exceedingly hurtful to thoſe who are ſubject to the piles, and the *procedentia ani*.

ANI *ſpeculum*. See SPECULUM.

ANUS is alſo uſed for a ſmall hole in the third ventricle of the brain, which leads into the fourth ventricle of the *cerebellum*.

It is properly the poſterior orifice of the canal called *aquæductus ſylvii*.

Anus, in *Botany*, denotes the poſterior opening of a monopetalous flower.

Anus, a ſpecies of *murex* in the claſs of *worms.*

AONIDES, in *Mythology.* See **Muse.**

AORISTIA, in the *Sceptic Philoſophy*, denotes that ſtate of the mind, where we neither aſſert nor deny any thing poſitively, but only ſpeak of things as ſeeming or appearing to us in ſuch a manner.

The *aoriſtia* is one of the great points or terms of *ſcepticiſm*, to which the philoſophers of that denomination had continual recourſe by way of explication, or ſubterfuge. Their adverſaries, the *dogmatiſts*, charged them with dogmatizing, and aſſerting the principles and poſitions of their ſect to be true and certain.

AORISTUS, in the Greek *Grammar*, an indefinite or indeterminate kind of tenſe, which ſometimes expreſſes the preſent, ſometimes the future, but moſt frequently the paſt time.

The word is compounded of *α* privative; and ὁριζω, *to limit.*

The Greeks have two *aoriſti*; the Latins have none.

AORTA, in *Anatomy*, the great ARTERY proceeding from the left ventricle of the heart; from which all the other arteries either mediately or immediately proceed, and by which the whole maſs of blood is conveyed to all parts of the body. V. *Tab. Anat.* (Angeiol.) *fig.* 1. *n.* 1. and *fig.* 3. (Splanch.) *fig.* 12. *lit. r.* and *o.* and *fig.* 1. *lit. n.* and Angeiol. *fig.* 1. *n.* 28.

The word is formed of αορτη, which ſignifies a *bag, cheſt*, &c.

Anatomiſts treat of the ſtructure of the *aorta*, compreſſion of the *aorta*, valves, coats, ramifications, &c. of the *aorta.* Vieuſſens alſo ſpeaks of a kind of veſicular glands in the *parietes* of the *aorta.* Dr. Keil gives a computation of the velocity of the blood in the *aorta.*

The *aorta* iſſuing from the heart by only one trunk, is furniſhed with three ſemi-lunar valves to prevent the blood's regurgitating: immediately above theſe it ſends out to the heart two arteries called *coronariæ*; and afterwards bending down in form of a bow, divides itſelf into what they call its aſcending and deſcending parts. Phil. Tranſ. N° 280.

Aorta, *aſcending*, or rather trunks of the *aorta*, are thoſe which take their courſe towards the upper and lateral parts of the body. Such are the two carotids, the ſubclavian, cervical, ſcapular, upper intercoſtal, mediaſtinal, upper diaphragmatic, mammary, axillary, and brachial arteries.

Aorta, *deſcending*, or trunk of the *aorta*, ſometimes alſo called ſimply *aorta*, is that which takes its courſe downwards through the *thorax* and *abdomen* to the *os ſacrum.* From this ariſe Ruyſch's bronchial artery, the lower intercoſtals, œſophageous, lower diaphragmatic, cæliac, epiploic, emulgent, ſpermatic, meſenteric, and hypogaſtric arteries.

The diviſion of the *aorta* into aſcending and deſcending trunks, though generally received by anatomiſts, is excepted to by Heiſter as leſs natural; and ſuited rather to the ſtructure of quadrupeds, as dogs, calves, and the like, from which it ſeems to have been originally taken, than to that of the human body. In reality the aſcending *aorta* is not one ſingle trunk, as the name ſhould import, but conſiſts of three large branches or trunks: in ſome inſtances there have even been four obſerved, ſcarce ever only two, and never one; which, however, is uſually the caſe in quadrupeds.

The flexure of the *aorta*, after its quitting the heart, and before its diviſion into aſcending branches, is noted by Dr. Lower as an inſtance of the wiſdom of the Creator, to effect a more equable and gentle diſtribution of the blood to the ſeveral parts of the body. For whereas the orifice of the heart opens right upwards, if the *aorta*, which receives the firſt impulſe, were continued in a ſtraight line up to the region of the head, the blood would be poured too ſwiftly and plentifully on the brain, and the inferior parts be defrauded of their vital liquor. To obviate this, the *aorta* is ſo diſpoſed, that the blood does not run directly into the aſcending branches, the axillaries and carotids, but fetches as it were a compaſs by means of the flexure, which ſuſtains the firſt effort of the ejected blood, and directs the greateſt torrent towards the deſcending trunk.

The diſpoſition of the *aorta* is varied according to the kinds of animals, their different poſtures, and other occaſions: in man, by reaſon of his erect ſituation, the blood tends to flow faſter and more plentifully by the deſcending, than by the aſcending trunks; in brutes, which bend downwards, the contrary; in both, proper proviſions are made for an equable diſtribution. In the male ſex of our ſpecies, Dr. Pitcairn aſſures us, the deſcending *aorta* has fewer ramifications, and conſequently the blood will flow ſlower proportionably, than in that of the female ſex, where there are more ramifications, and conſequently the blood finding leſs reſiſtance will flow more largely to the lower parts of women than men, from which cauſe ariſe the menſes.

The *deſcending aorta* is liable to compreſſions from the ſtomach and inteſtinal tube, and that either ordinarily or extraordinarily. The firſt happens, whenever the ſtomach, &c. is full; the ſecond, when it is dilated beyond meaſure, by the *plethora* and ebullition excited in fevers. The effect in either caſe will be an interruption or diminution of the flux of blood to the lower parts of the body; and an increaſe of that to the head, and higher parts. The ordinary, according to Dr. Woodward, is neceſſary to ſupply the buſineſs of cogitation, furniſh matter for animal ſpirits, &c. The extraordinary ſerves M. Silva to account for the violent head-achs, deliriums, and other ſymptoms of fevers.

The *aorta* is found in divers ſtates, natural, morbid, oſſified, cartilaginous, aneuriſmatical, polypoſe, calculoſe, &c.

Oſſifications or petrefactions of the coats of the *aorta*, as it riſes from the heart, are ſo frequent, that ſome think it a conſtant caſe.—Mr. Cowper, however, has an expreſs diſcourſe to ſhew, that whenever ſuch oſſifications happen in man, it is a diſeaſe, and incommodes the part in the due execution of its office.

Of this he gives us ſeveral inſtances: one, in which an intermiſſion of pulſe was produced; in another, a coldneſs of the extremes, with a gangrene, &c. Phil. Tranſ. N° 299.

Some will have oſſifications of the *aorta* one of the great cauſes of ſudden deaths. Hiſt. Acad. Scienc. an. 1701.

In an old man who died at the age of 130, Dr. Keil found the *aorta* in the abdomen and iliacs to be for the greateſt part cartilaginous, which apparently was one cauſe of his death. Phil. Tranſ. N° 306.

The academiſts *Naturæ Curioſi* give an inſtance of ſix nail-like ſtones, or *calculi*, found in a prominence of the *aorta*, under the kidneys of a perſon who had died of a moſt acute pain in the region of the loins. At each pulſation of the artery, theſe would be driven againſt the membranous *fibrillæ* of the coat of the veſſel, and hence thoſe ſhooting pains; the cauſe of concretion is attributed to the too frequent uſe of the viperine powder, taken for an ulcerated breaſt. Ephem. Acad. N. C. Cent. 9.

For diſorders of the *aorta*, ſee **Aneurism** and **Sinus.**

AOUTA, the name of the paper mulberry-tree at Otaheite, in the South Sea, from which a cloth is manufactured, that is worn by the principal inhabiants. The bark of the trees is ſtripped off, and depoſited to ſoak in running water; when it is ſufficiently ſoftened, the fibres of the inner coat are carefully ſeparated from the reſt of the bark; they are then placed in lengths of about eleven or twelve yards, one by the ſide of another, till they are about a foot broad; and two or three layers are laid one upon the other. This is done in the evening; and by the next morning the water is drained off, and the ſeveral fibres adhere together in one piece. It is afterwards beaten on a ſmooth piece of wood with inſtruments marked lengthways, with ſmall grooves of different degrees of fineneſs; and by means of this operation, becomes as thin as muſlin; and after bleaching it in the air, in order to whiten it, it is fit for uſe. If the cloth breaks in the beating, it is eaſily repaired by paſting on a patch with a gluten that is prepared from the root of the *pea*, which is done ſo nicely that it cannot be diſcovered. This cloth is cool and ſoft, but as liable to be rent as paper. The colours with which it is dyed are principally red and yellow. The red is a beautiful ſcarlet, and produced by mixing the juices of two vegetables, viz. the fruit of the fig called *matle*, and the leaves of the *cordia ſebeſtina*, or *etou.* The yellow is made of the bark of the root of the *marinda citrifolia*, called *nono*, by ſcraping and infuſing it in water. The inhabitants of the iſland alſo dye yellow with the fruit of the *tamanu.* Hawkeſworth's Voyages, &c. vol. ii. p. 210, &c.

APÆDUSIA, denotes ignorance or unſkilfulneſs in what relates to learning and the ſciences.

Hence alſo perſons uninſtructed and illiterate are called *apædeutæ.*

The term *apædeutæ* was particularly uſed among the French in the time of Huet; when the men of wit at Paris were divided in two factions, one called by way of reproach, *apædeutæ*, and the other *eruditi.*

The *apædeutæ* are repreſented by Huet, as perſons who, finding themſelves either incapable or unwilling to undergo a ſevere courſe of ſtudy, in order to become truly learned, conſpired to decry learning, and turn the knowledge of antiquity into ridicule, thus making a merit of their own incapacity.

The *apædeutæ*, in effect, were the men of pleaſure; the *eruditi* the men of ſtudy.

APAGMA, a term uſed, by ſome writers in *Chirurgery*, for the thruſting of a bone, or other part, out of its proper place. But it is more properly uſed for a fracture of a bone, at or near the part whereby it is articulated with another.

APAGOGE, in the *Athenian Law*, the carrying a criminal taken in the fact, to the magiſtrate. If the accuſer was not able to bring him to the magiſtrate, it was uſual to take the magiſtrate along with him to the houſe where the criminal lay concealed, or defended himſelf.

Apagoge, in *Logic*; ſee Abduction.

Apagoge, in *Mathematics*, is ſometimes uſed to denote a progreſs or paſſage from one propoſition to another; when the firſt having been once demonſtrated, is afterwards employed in the proving of others.

APAGOGICAL *demonſtration*, is ſuch as does not prove the thing directly, but ſhews the impoſſibility and abſurdity which ariſes from denying it.

Hence it is alſo called *reductio ad impoſſibile*, or *ad abſurdum*.

APALACHINE, in *Botany*, a name given by ſome authors to the ſhrub *caſſine vera floridanorum* of other writers. This plant is uſed as tea, and celebrated for many virtues.

APANAGE, Appenage, Appanage, Apannage, or Apennage, in the *French Laws*, the fortune of a king's younger ſon; or a ſettled portion of lands, &c. aſſigned for the ſubſiſtence of the cadets, or younger ſons of a ſovereign prince.

Nicod and Menage derive the word from *panis*, *bread*; which frequently includes all other ſorts of proviſion neceſſary for ſubſiſtence.

Some will have the *apanages*, at their firſt inſtitution, to have been only penſions, or annual payments, of a certain ſum of money.—The younger ſons of England have no certain *apanages*, as in France; but only what the good pleaſure of the king beſtows upon them.

Even in France, during the firſt and ſecond races of kings, the right of primogeniture and *apanages* were unknown; but the domains were divided pretty equally among all the children.

Great inconveniences ariſing hence, it was at length found proper to put off the younger-born with counties, duchies, or other diſtricts; on condition of their paying homage and fealty for the ſame, and of their reverting, in defect of heirs male, to the crown.

This has happened, accordingly, to the firſt and ſecond branch of the dukes of Burgundy.—The duchy of Orleans is the *apanage* of the ſecond ſon of France.

The *apanage* is unalienable; collateral branches do not inherit it. The eldeſt ſon alone is heir to the whole *apanage*; but is to allow the younger an honourable maintenance.

In France, *apanages* are of two kinds, *royal* and *cuſtomary*; the firſt only granted to males the king's brothers, excluſive of the females. Theſe are not ſo properly alienations of the king's demeſnes, as diſmembering of them.

Cuſtomary apanages are thoſe granted to women, the king's ſiſters.

Joach. Meierus has publiſhed a body of all the writers on *apanage* and *parage*, in one volume in folio.

APARINE, in *Botany*; ſee Cleavers.

APARITHMESIS, or *enumeration*, in *Rhetoric*, is a figure, whereby that which might be expreſſed in few words is branched out into ſeveral particulars, to enlarge the idea, and render it the more affecting: and ſometimes it denotes the anſwer to the *protaſis* or propoſition itſelf. Thus if the *protaſis* be *appellandi tempus non erat*, the *aparithmeſis* is *at tecum anno plus vixi*.

APARTISMENUS, in the *Ancient Poetry*, an appellation given to a verſe, which comprehended an entire ſenſe or ſentence in itſelf.

This is ſometimes alſo written, *apartemenus*, i. e. ſuſpended, as not needing any following verſe.

APARTMENT, a portion of a large houſe, wherein a perſon may lodge ſeparately; having all the conveniences requiſite to make a complete habitation.

The word comes from *apartimentum*, of the verb *partiri*, *to divide*; or, as ſome imagine, *a parte manſionis*, *making part of the dwelling*.

A complete *apartment* muſt conſiſt of a hall, a chamber, an antechamber, a cloſet, and a cabinet or wardrobe.

APATHY, in a moral ſenſe, denotes an inſenſibility; or a privation of all paſſion, all emotion, or perturbation of mind.

The word is formed of the privative α, and παθος, *paſſion*.

The Stoics affected an intire *apathy*: their wiſdom was to enjoy a perfect calmneſs or tranquillity of mind, incapable of being ruffled, and above the reach of any ſenſe either of pleaſure or pain.

In the firſt ages of the church, the chriſtians adopted the term *apathy* to expreſs a contempt of all earthly concerns; a ſtate of mortification, ſuch as the goſpel preſcribes. Clemens Alexandrinus, in particular, brought it exceedingly in vogue; thinking, hereby, to draw the philoſophers to chriſtianity, who aſpired after ſuch a ſublime pitch of virtue.

Quietiſm is only *apathy* diſguiſed under the appearance of devotion.

APATURIA, in *Antiquity*, a ſolemn feaſt celebrated by the Athenians in honour of Bacchus.

The word is uſually derived from απατη, *fraud*.

It is ſaid to have been inſtituted in memory of a fraudulent victory obtained by Melanthus, king of Athens, over Xanthus, king of Bœotia, in a ſingle combat, which they agreed upon, to put an end to a debate between them relating to the frontiers of their countries.—Hence Budæus calls it *feſtum deceptionis*, *the feaſt of deceit*.

Other authors give a different etymology of this feaſt, from what we have now related: they tell us, that the young Athenians were not admitted into the tribes on the third day of the *apaturia*, till their fathers had firſt ſworn, that they were their own children; and that, till that time, they were ſuppoſed, in ſome meaſure, to be without fathers, απατορες; whence the feaſt, ſay they, took its name.

Xenophon, on the other hand, informs us, that the relations and friends met on this occaſion, and joined with the fathers of the young people who were to be received into the tribes; and that from this aſſembly the feaſt took its name: that in απατυρια, the α far from being a privative, being here a conjunctive, ſignifies the ſame thing with ομου, *together*.

This feaſt laſted four days: the firſt day, thoſe of the ſame tribe made merry together; and this they called δορπια. The ſecond day, which they called αναρρυσις, they ſacrificed to Jupiter and Minerva. The third day, which they called κουρεωτις, ſuch of their young men and maids as were of age were admitted into their tribes. The fourth day they called επιβδης.

APAULIA, in *Antiquity*, the third day of a marriage ſolemnity.

It was thus called, becauſe the bride, returning to her father's houſe, did απαυλιζεσθαι τω νυμφιω, lodge apart from the bridegroom. Some will have the *apaulia* to have been the ſecond day of the marriage, viz. that whereon the chief ceremony was performed; thus called by way of contradiſtinction from the firſt day, which was called προαυλια. On the day called απαυλια, (whenever that was) the bride preſented her bridegroom with a garment called απαυλιστηρια.

APE; ſee Simia.

APECHEMA, Απηχημα, in *Medicine*, the ſame with contrafissure.

APEDIA, a ſpecies of ape.

APEIBA of the Braſilians. See Sloanea.

APELLA, among *Phyſicians*, a name given to thoſe, whoſe prepuce is either wanting, or ſhrunk, ſo that it can no longer cover the glans.

Apella, a ſpecies of ape found in America.

APELLITÆ, in the *Primitive Church*, denotes thoſe who taught, in the ſecond century, that Chriſt left his body diſſolved in the air; and ſo aſcended into heaven without it.

APENE, in *Antiquity*, a kind of chariot wherein the images of the gods were carried in proceſſion on certain days, attended with a ſolemn pomp, ſongs, hymns, dancings, &c.

The *apene*, or ſacred chariot of the Greeks, is called *tenſa*.

It was very rich, made ſometimes of ivory, or of ſilver itſelf, and variouſly decorated.

APENNAGE, ſee Apanage.

APENNIS, in *Ancient Laws*, a deed or inſtrument made in favour of a perſon, who has loſt the title-deeds to his houſe or land by fire.

In ſuch caſe, an aſſembly of the people of the neighbourhood being called, and an exact inquiry made before the judge, another inſtrument was framed to confirm and ſecure the unhappy perſon's right.

APEPSY, in *Medicine*, denotes crudity, or a want of digeſtion.

The word is formed from the privative particle α, and πεπτω, *I concoct*.

Apepſia may be defined a defect in the ſtomach, which prevents the aliment taken in from affording a proper chyle for ſupplying the blood, and nouriſhing the body. Abſtemiouſneſs and exceſs are alike cauſes of indigeſtion. The method of treatment in the *apepſy*, is the ſame as in the *anorexy*. The columbo root is particularly uſeful, when the ſtomach is languid, and digeſtion difficult, &c. It may be given in ſubſtance with any grateful aromatic, or in Madeira wine, now and then interpoſing gentle doſes of rhubarb in tincture. A mixture of muſtard ſeed with the *columbo* root, is of great utility in caſes of this nature, where acidity and flatulence prevail much in the *primæ viæ*. See Percival's Eſſays, &c.

APER, *boar*, in *Zoology*. See Boar and Hog.

Aper is alſo uſed for the name of a ſea-fiſh, called by ſome *ſtrivale* and *riondo*. It approaches very much in ſhape to the *faber* or DOREE, but is much ſmaller. See *Tab. of Fiſh*, N° 19.

Aper *moſchiferus*, a name by which many authors have called the TAJACU of America.

Aper *piſcis*, a name by which ſome authors have called the ſea-fiſh more uſually called the CAPRISCUS.

APEREA, in *Zoology*, the name of a ſmall American animal, of the rabbit kind, and ſeeming to be of a mixt nature between the rabbit and the mouſe, having exactly the ſhort roundiſh ears of the mouſe-kind, and all the other particulars of the rabbit. It grows, at its full ſize, to ten or twelve inches long, and its hair is juſt of the colour of our hares on the back and ſides, and whitiſh on the belly.

APERIENS *Os*, in *Anatomy*, a name given by ſome writers to a muſcle of the mouth, called by Albinus *biventer maxillæ inferioris*, and by others DIGASTRICUS.

Aperiens *palpebram rectus*, in *Anatomy*, is a muſcle, which, riſing in the orbit of the eye, near the entrance of the optic nerve, paſſes over the attollent muſcle of the eye, and is at laſt inſerted into the whole ſuperior part of the upper eye-lid, which it ſerves to open.

APERIENTS, or Aperitive *medicines*, from *aperio, I open*, are ſuch as open the obſtructed paſſages of the ſmall veſſels, glands, and pores; and, by that means, promote a due circulation of the contained juices.

Aperients, then, coincide with what we otherwiſe call openers, ANASTOMATICS, and DEOBSTRUENTS.

The five leſſer *aperient*, or opening roots, are graſs, madder, eryngo, capers, and chammoc.

The greater *aperient*, or opening roots, are ſmallage, fennel, aſparagus, parſly, and butchers-broom.

Aperiens, *crocus martis*, opening ſaffron of iron, is a preparation of iron-plates or filings, made by expoſing them to the rain or dew, till they contract a ruſt; which is the medicine required. It is a good *aperient*. See Crocus.

APERISTATON, from α, *without*, and περιστασις, *unfavourable circumſtance*, in the *Ancient Phyſic*, denotes an ulcer of a mild, or benign kind, and not attended with any ſevere ſymptom.

APERTIONS, in *Architecture*, are the openings in a building; as doors, windows, ſtair-caſes, chimneys, outlets and inlets for light, ſmoke, &c.

The *apertions* ſhould be as few as may be; it being a rule, that all openings are weakenings: and they ſhould not approach too near the angles of the walls.

APERTOR *oculi*, in *Anatomy*, a name given by Spigelius and others to the muſcle called the APERIENS *palpebram*, and LEVATOR *palpebræ ſuperioris* by others.

APERTURE, the opening of any thing; or a hole, cleft, or vacant place, in ſome otherwiſe ſolid or continuous ſubject. It comes from *aperire, to open*.

In *Geometry*, *aperture* is uſed for the ſpace left between two lines, which mutually incline towards each other to form an angle.

In *Optics*, *aperture* is the hole next the object-glaſs of a teleſcope, or microſcope; through which the light and image of the object come into the tube, and are thence carried to the eye.

Aperture is alſo underſtood of that part of the object-glaſs itſelf which covers the former, and which is left pervious to the rays. See Telescope.

A great deal depends on having a juſt *aperture*.—To find it experimentally; apply ſeveral circles of black ſmutted paper, each bigger than the other, upon the face of the glaſs, from the breadth of a ſtraw to ſuch as leave only a ſmall hole in the glaſs; and with each of theſe, ſeparately, view ſeveral diſtinct objects; as the moon, ſtars, &c. that through which they appear the moſt diſtinctly, is to be pitched upon.

M. Auzout affirms, that he found, that the *apertures* of teleſcopes ought to be nearly in the ſubduplicate ratio of their lengths: but Huygens, who firſt introduced the uſe of *apertures*, aſſures us, he found by experience, that the *aperture* of an object-glaſs, e. gr. of 30 feet, is to be determined by this proportion: as 30 to 3, that is, as 10 to 1, ſo is the root of the diſtance of the focus of any glaſs multiplied by 30, to its *aperture*: and the focal diſtances of the eye-glaſſes are to be proportional to the *apertures*.—A table of *apertures* for teleſcopes of various lengths, &c. ſee under the article Telescope.

The greater or leſs *aperture* of an object-glaſs, it is to be noted, does not increaſe or diminiſh the viſible area of the object; all that is effected by this is, the admittance of more or fewer rays, and, conſequently, the more bright or obſcure appearance of the object; but the largeneſs of the *aperture* or focal diſtance, cauſes the irregularity of its refractions. See Aberration.

Hence, in viewing Venus through a teleſcope, a much leſs *aperture* is to be uſed than for the Moon, Jupiter, or Saturn, becauſe her light is ſo vivid and glaring.—Which conſideration does a little invalidate and diſturb M. Auzout's proportion, as is ſhewn by Dr. Hook, Phil. Tranſ. N° 4.

Apertura *tabularum*, in *Ancient Law-Books*, ſignifies the breaking open a laſt WILL and TESTAMENT.

Apertura *feudi* denotes the loſs of a feudal tenure, by default of iſſue to him to whom the feud or FEE was firſt granted.

APETALOUS, or Apetalose *plants*, are ſuch as are without, or have an imperfect or ſtamineous flower. They are ſo called becauſe not compoſed of thoſe tender, fugacious, coloured leaves called PETALA; but only of a calyx or cup, and of ſtamina or capillaments of ſtyles. Phil. Tranſ. N° 186.

The word comes from the privative particle α, and πεταλον, *folium, a leaf*.

The *apetalous* kind is ſubdivided by Ray 1. Into ſuch whoſe fruits are not contiguous to their flowers, as in hops, hemp, nettles, ſpinach, mercury, *palma Chriſti*, the American phyſic nut, &c. 2. Such as have a triquetrous or triangular ſeed, as the docks, ſorrels, arſmarts, knot-graſs, ſnake-weeds. 3. Thoſe which have round, compreſſed, and otherwiſe figured ſeeds, as the pond-weeds, oraches, ſea-purſlane, the blites, the amaranthi, the beets, ſome kalies, &c. See *Tab. 1. of Botany, Claſs* 15. See Leaf.

APEUCTIC, from απευχομαι, *I deprecate*, in the *Ancient Poetry*, denotes a kind of poem or prayer preferred to God for the averting ſome evil.

In which ſenſe, *apeucticum* ſtands contradiſtinguiſhed from *proſeucticum carmen*, which begs for ſome good, e. gr. *dii prohibete minas, dii talem avertite caſum, et placidi ſervate pios*.

APEX, the vertex or ſummit of any thing.

Apex is peculiarly uſed in *Antiquity* for a kind of cap or covering of the head, wore by the flamens, or prieſts of Jupiter. This was otherwiſe denominated *pileus epiroticus*, or *albanus*.

The *apex* is deſcribed as a ſtitched cap in form of a helmet, with the addition of a little ſtick fixed on the top, and wound about with white wool.

The other flamens only wore the *apex*, in the time of performing divine ſervice; the flamen dialis always wore it out of doors; for within it was allowed him to be bare-headed. See Apiculum.

Apex was alſo uſed among the Romans for the creſt of a helmet.

Apex is alſo uſed by *Grammarians*, for a long accent or mark, to denote that a ſyllable is to be pronounced long. Quinctilian condemns the practice of putting the *apex* on all long ſyllables; yet in ſome caſes he allows the *apex* neceſſary, e. gr. where the different lengths of a ſyllable diſtinguiſh the different ſenſes of a word, as in *malus*, which as long, or ſhort, denotes an *ill man*, or an *apple-tree*. See Accent.

APHÆRESIS, from αφαιρεω, *I take away*, in *Grammar*, a figure, whereby ſomething is taken away from the beginning of a word.

Thus *ciconia*, by *aphæreſis*, is written *conia*; *contemnere*, *temnere*; *omittere*, *mittere*, &c.

A like retrenchment at the end of a word is called APOCOPE.

Aphæresis, in *Medicine*, denotes a neceſſary taking away or removal of ſomething that is noxious.

In *Surgery*, it ſignifies an operation whereby ſomething ſuperfluous is taken away.

APHANES, *Parſley-piert*, in the Linnæan ſyſtem of botany, the name of a genus of plants, of the *tetrandria digynia* claſs; the characters of which are theſe: the cup is a tubular *perianthium*, remaining till the ſeeds are ripe; it conſiſts of one leaf divided at the extremity into eight ſegments, which are extremely ſmall, and alternately different in ſize. There are no petals; the *ſtamina* are four erect, pointed, and very ſmall filaments, inſerted on the rim of the cup; the *antheræ* are roundiſh. The piſtillum has two germina of an oval figure, and two ſtyles of the ſame length with the ſtamina, inſerted on the baſis of theſe germina; the ſtigmata are headed. The cup ſupplies the place of a fruit, ſhutting together at its mouth, and containing two oval, pointed, compreſſed ſeeds, of the length of the ſtyles.

APHASIA, from α, and φημι, *I ſpeak*, in the *Sceptic Philoſophy*, denotes a ſtate of doubt, wherein a perſon not knowing what to determine on, it is beſt for him to be ſilent.

In this ſenſe, *aphaſia* ſtands oppoſed to *phaſis*, under which are included both aſſertion and negation.

APHELIA, from αφελης, *ſimple*, in *Rhetoric*, is uſed to denote ſimplicity of DICTION.

APHELION, in *Aſtronomy*, that point of the earth's or a planet's orbit, in which it is at the greateſt diſtance from the ſun.

The word comes from απο, *from*, and ἡλιος, *ſun*.

Thus a planet being in A (*Tab. Aſtron. fig.* 1.), its utmoſt diſtance from the ſun S, is ſaid to be in its *aphelion.* In the ſyſtem or ſuppoſition of the ſun's moving round the earth, the point in which he appears when the planet is in its *aphelion*, is called *apogee.* The *aphelion* ſtands oppoſed to the *perihelion.*

The *aphelia* of all the primary planets are at reſt; excepting that thoſe planets neareſt the ſun, viz. Mercury, Venus, the Earth, and Mars, being acted upon by Jupiter and Saturn, their *aphelia* move a ſmall matter in conſequentia with reſpect to the fixed ſtars, and this in the ſeſquiplicate ratio of the diſtances of thoſe planets from the ſun.

Hence, if the *aphelion* of Mars move 35 minutes in conſequentia in reſpect of the fixed ſtars in 100 years; the *aphelia* of the Earth, Venus, and Mercury, will move, in 100 years, 18 min. 36 ſec. 11 min. 27 ſec. and 4 min. 29 ſec.

The method of finding the place of the *aphelion* is, by obſerving ſeveral of the greater digreſſions of the planet from the ſun; till by two or three repeated obſervations it be ſound to remain at a ſtand.—In the Phil. Tranſ. N° 128, we have a geometrical method of finding the *aphelia* of the planets, given by Dr. Halley.

Kepler places the *aphelion* of Saturn for the year 1700, in 28° 3′ 44″ of Sagittarius: De la Hire, in 29° 14′ 41″.—The *aphelion* of Jupiter in 8° 10′ 40″ of Libra: De la Hire in 10° 17′ 14″.—The *aphelion* of Mars in 0° 51′ 29″ of Virgo: De la Hire in 0° 35′ 25″.—The *aphelion* of the Earth in 8° 25′ 30″ of Cancer.—The *aphelion* of Venus in 30° 24′ 27″ of Aquarius: De la Hire in 6° 56′ 10″.—And the *aphelion* of Mercury in 15° 44′ 29″ of Sagittarius: De la Hire in 13° 3′ 40″.

The annual motion, according to Kepler, of the *aphelion* of Saturn is 1′ 10″, of Jupiter, 47′, of Mars, 1′ 7″, of Venus, 1′ 18″, and of Mercury, 1′ 45″. According to De la Hire, that of Saturn is 1′ 22″, of Jupiter, 1′ 34″, of Mars, 1′ 7″, of Venus, 1′ 26″, and of Mercury, 1′ 39″.

APHERNOUSLI, a ſpecies of pine growing wild on the Alps. The timber is large, and the planks made of it are of a finer grain, and more beautifully variegated than deal; and may therefore be applied to many uſes. It grows in bleak and barren ground, and moſt reſembles that which is called in England the Weymouth PINE.

APHESIS, from αφιημι, *I remit*, in the *Athenian Laws*, was applied to the caſe of a perſon deeply indebted, who deſired the people to remit part of the debt, on account of his diſability to make payment.

Voetius has a diſſertation expreſs on the words *apheſis* and *pareſis*, and their difference.

APHETERIA, in the *Ancient Military Art*, a kind of engines uſed in the beſieging of towns.

Suidas does not mention their particular form or ſtructure. Aquinus takes them to have been of the projectile kind.

APHILANTHROPY, from α, φιλος, *friend*, and ανθρωπος, *man*, among *Phyſicians*, denotes the ſtate or diſorder, wherein a perſon has an unnatural diſreliſh for mirth and ſociety, and indulges ſolitude and melancholy.

APHIOCEM, a compoſition made principally of the buds of hemp before they flower. It is much in uſe among the Arabs, and has the intoxicating quality of OPIUM.

APHIS, in the hiſtory of inſects, the name of a genus of animals, otherwiſe called *pediculus arboreus*, and in Engliſh the *tree-louſe.* The *aphis* belongs to the *hemiptera inſecta* of Linnæus.

The trunk of the *aphis* is reflex; the body terminates in two horns behind; the wings are four, and erect, or altogether wanting; and the legs are formed for walking, not leaping.

Of this genus there are a great many ſpecies, denominated from the trees or buſhes on which they are found. According to Dr. Richardſon's obſervations, the *aphides* are at one time of the year viviparous, and at another time oviparous. Thoſe of the roſe-tree came immediately under his notice; and of ten generations of them, which he obſerved regularly to ſucceed each other in the courſe of one ſpring, ſummer, and autumn, the firſt proceeds from eggs laid during the preceding autumn; the eight following are all produced viviparous, and conſiſt entirely of females, as does likewiſe the firſt. In the tenth generation, which uſually comes forth before the middle of September, a few male inſects appear. Theſe arrive at their full growth in about three weeks, and have an intercourſe with the females, who ſoon afterwards lay thoſe eggs which are hatched in the ſpring. Phil. Tranſ. Vol. lxi. N° 22.

APHLASTUM, from α and φλαςος, *frangible*, in the *Ancient Navigation*, a wooden ornament, ſhaped like a plume of feathers, faſtened on the gooſe's or ſwan's neck uſed by the ancient Greeks in the heads of their ſhips.

The *aphlaſtum* had much the ſame office and effect in a ſhip that the creſt had on a helmet. It ſeems alſo to have had this further uſe, viz. by the waving of a party-coloured ribband faſtened to it, to indicate from what quarter the wind blew.

The *aphlaſtum* was the proper ornament of the head, as the *arcoſtolium* was of the ſtern.

The Greek *aphlaſtum* anſwered to, and was probably the origin of the Latin *apluſtere.*

APHONIA, in *Medicine*, the ſtate of a perſon who is deprived of voice.

The word is compounded of the privative α, and φωνη, *voice*; q. d. a loſs of ſpeech, or voice.

Hippocrates, Lib. de Rat. Vict. in Morb. acut ſays, "a "ſtop put to the circulation of the blood and ſpirits, "cauſes a ſudden loſs of voice." Here Galen obſerves, that by this one ſymptom *aphonia*, are denoted the epilepſy, apoplexy, and cardiacal *ſyncope.* He adds, that an *aphonia* in ſick perſons is ſometimes cauſed by a diſorder affecting the organs of voice or reſpiration, with a reſolution, or by ſome other depravation of the faculty. An *aphonia* ſometimes proceeds from a diſorder of the brain, a refrigeration of the natural heat, and total ceſſation of the locomotive powers; when the organs of voice are in ſuch a ſtate of reſolution, that the patient can neither cry, groan, nor utter any ſound. It is more accurate, therefore, to render αφωνος, *deprived of voice* (*voce defectus ac privatus*), rather than dumb (*mutus*): ſince Hippocrates, περι σαρκων, and Ariſtotle, lib. iv. Hiſt. Anim. attribute voice to the dumb. *Foeſius.*

Among other cauſes which contribute to an *aphonia*, are the wanton abuſe of ſpiritous liquors, and frequent ſurfeits. The prognoſtics vary, according to the reſpective cauſes from which they proceed. That ſpecies which owes its origin to worms, hyſteric diſorders, or a different eruption of the *menſes*, is eaſily cured; whereas that kind of it which proceeds from a palſy of the tongue, either entirely fruſtrates the uſe of all means, or being cured, eaſily returns, and proves the direful harbinger of a more terrible diſorder of the brain.

The method of cure muſt be varied, according to the particular ſpecies or cauſes of the diſorder.

Menjotius has a diſſertation expreſs *de Aphonia.*

APHORISM, a maxim, general rule, or principle, of a ſcience; or a brief ſentence, comprehending a great deal of matter in a few words.

The word comes from αφοριζω, *I ſeparate*, q. d. a choice or ſelect ſentence.

The term is chiefly uſed in *Medicine* and *Law.*—We ſay, the *aphoriſms* of Hippocrates, of Sanctorius, of Boerhaave, &c. *aphoriſms* of the civil law, &c.

APHORISM is uſed in *Eccleſiaſtical Writers* for the leſſer excommunication, by which the delinquent was cut off from the benefit of the ſacraments and the prayers of the faithful; but allowed to bear a part in the reſt of the ſervice.

APHORISM is alſo uſed for a kind of figure in *Rhetoric*, whereby ſomething that has been ſaid is limited or corrected. This is otherwiſe called *dioriſmus.*

APHORISTIC, ſomething relating to, or partaking of the nature of *aphoriſms.*

The *aphoriſtic* method ſtands contradiſtinguiſhed from the *ſyſtematic*, or methodical, as alſo from the *diexodic*, or diſcurſive way.

The *aphoriſtic* method has great advantages, as containing much matter in a ſmall compaſs; ſentiments are here almoſt as numerous as expreſſions; and doctrines may be counted by phraſes. Every thing is cloſe and pertinent, no room for uſeleſs diſcuſſions; or for languiſhing connections, and tranſitions; there is hardly a word to be loſt.

APHRACTI, from α and φρακτος, *incloſed*, in the *Ancient Military Art*, denotes open veſſels, without decks or hatches, furniſhed only at head and ſtern with croſs planks, whereon the men ſtood to fight.

The *aphracti*, or open veſſels, ſtood contradiſtinguiſhed from *cataphracti*, or covered ones.

APHRODISIA, in *Antiquity*, feſtivals in honour of the goddeſs Αφροδιτη, or Venus. There were ſeveral of theſe *aphrodiſia* obſerved in divers parts of Greece; the moſt remarkable was that at Cyprus, firſt inſtituted by Cinyras, out of whoſe family certain prieſts of Venus were elected, and for that reaſon named Κινυραδαι. At this ſolemnity ſeveral myſterious rites were practiſed: all who were initiated to them offered a piece of money to Venus as an harlot, and received as a token of the goddeſs's favour a meaſure of ſalt, and a φαλλος; the former, becauſe ſalt is a concretion of ſea-water, to which Venus was thought to owe her birth; the latter, becauſe ſhe was the goddeſs of wantonneſs.

APHRODISIA, or APHRODISIASMUS, in *Medicine*, denotes the uſe of venery, or the act of copulation between male and female.

APHRODISIA is alſo uſed for the age of venery, more frequently denominated *puberty*.

APHRODISIACS, in *Pharmacy*, denote medicines proper to increaſe the ſeed, and promote luſt, or an inclination to venery.

In which ſenſe *aphrodiſiacs* ſtand contradiſtinguiſhed from *antaphrodiſiacs*.

Some authors give the appellation *aphrodiſiaca* to the EPILEPSY.

APHRODISIACE, in the writings of the ancients, a name given to a gem, ſuppoſed according to the idle traditions of thoſe times, to have a power of procuring love to the perſon who wore it about him ; all the deſcription we have of it is, that it was of a pale fleſh-colour ; but the ſtone, as well as its virtues, are wholly unknown to the world at preſent.

APHRODISIUS, in *Chronology*, denotes the eleventh month in the Bithynian year, commencing on the 25th of July in ours.

APHRODITA, in the hiſtory of inſects, a genus of ſea-inſects about two inches in length and one in breadth, of an oval figure, and aculeated ; it has alſo a perforation in the middle of the back, and is called in Engliſh the *ſea-mouſe*. It is one of the *gymnarthrodia*, or inſects with naked bodies, and may be met with in great abundance on the Kentiſh coaſt, among rocks. There are ſeveral ſpecies of it. It belongs to the order of *molluſca*, in the Linnæan arrangement of *worms*.

Columna calls it *pudendum regale* ; Bartholine, *vermis aureus* ; others, *eruca marina griſeo-fuſca* ; and ſome, *mus marinus*, or the *ſea-mouſe*.

APHRODITARIUM, in the *Ancient Pharmacy*, denotes a kind of dry medicine, compounded of frankincenſe, the ſcales of copper, ceruſs, ſtarch, and pomegranates, mixed in equal quantities.

The name is alſo given to a kind of *collyrium*, mentioned by Galen.

APHRODITE, in *Mythology*, a name of Venus, derived from αφρος, *froth*, becauſe, according to the poets, Venus is ſuppoſed to be produced from the froth or foam of the ſea.

APHRODITES, in *Natural Hiſtory*, a name given by ſome authors to the fineſt ſpecies of amethyſt.

APHROGALA, from αφρος, *froth*, and γαλα, *milk*, in the *Ancient Phyſic*, denotes a kind of whipt cream, or milk agitated till it be converted wholly into froth.

The *aphrogala* is directed by Galen, as proper againſt hot diſorders of the ſtomach.

APHROLITRUM, in the *Ancient Phyſic*, denotes the ſpume, or froth of *litrum*.

In which ſenſe, *aphrolitrum* ſeems to amount to the ſame with *aphronitrum*. Hoffman affirms, that the *nitron* and *litron* only differ in dialect. It appears, however, there was a great difference between the two medicines, *aphrolitrum* reſembling meal, or farina, and being of a kind of intermediate virtue between *aphronitrum* and ſalt.

APHRONITRE, a kind of nitre, mentioned by the ancients ; ſuppoſed to be the ſpume, or the lighteſt and ſubtileſt part thereof, emerging to the top.

The word is compounded of αφρος, *froth*, and νιτρον, *nitre*. Some modern naturaliſts rather take the ancient *aphronitre* to have been a native ſalt-petre, gathering like an eſfloreſcence on old walls, &c. now called *ſalt-petre of the rock*.

Greek authors expreſſed two different ſubſtances by the word *aphronitrum* ; the one only a particular appearance of the NATRUM, or native nitre of thoſe ages ; and the other a factitious ſubſtance, the froth or ſpume of the veſſels in which they boiled and purified their nitre. The earlieſt authors, however, diſtinguiſhed theſe two, calling the factitious ſubſtance *aphros nitron*, and the native *aphronitron* ; and Galen plainly tells us, that theſe were two different ſubſtances.

APHROSELENOS, among *Ancient Naturaliſts*, a denomination given to the SELENITES, or *lapis ſpecularis*.

APHTHÆ, in *Medicine*, little ulcers or pimples riſing in the mouth, the palate, gums, and at the root of the tongue ; attended with inflammation, and a difficulty of ſwallowing.

The word ſeems derived from φθιω, *I corrupt* ; or from απτω, *I kindle*.

Hippocrates applies the word to ulcers in the *pudenda* of women, alſo to thoſe in the *aſpera arteria* ; and Galen ſpeaks of the teſticles as ſubject to the ſame diſeaſe.

Sucking children are particularly ſubject to *aphthæ*, when either the nurſe's milk is corrupted, or the child's ſtomach becomes unfit for digeſtion : for, in theſe caſes, the ſharp acrimonious parts of the milk riſing up, eaſily exulcerate thoſe tender and delicate parts.

There are ſome *aphthæ* white, others red, others livid and blackiſh : the white and red ſorts are the leaſt dangerous, and the moſt eaſily cured ; the livid and black often prove mortal. The black THRUSH very rarely occurs ; but when it does, it is always a putrid ſymptom, and not an original diſeaſe. Dr. Hunter thinks theſe white ſpecks are inflammatory exudations, and not ulcers, which appears probable, from their dropping off in ſucceſſion to each other.

When they happen in grown perſons, they are owing to thin, ſerous, and ſharp humours, turned from the ſeveral parts of the body to the mouth.

External cauſes alſo frequently concur to the production of *aphthæ* ; and eſpecially a neglect of keeping the tongue and fauces clean ; the pernicious and prepoſterous method of curing fevers, and other inflammatory diſeaſes, by hot medicines ; and expoſing the bodies of children, when over heated, to a cold air, which, by checking perſpiration, has an almoſt unavoidable tendency to accumulate and hoard up ſaline and ſulphureous *ſordes* in the maſs of humours. Nor ought we on this occaſion to exclude other cauſes, which have an immediate and direct influence on the lax compages of the *fauces* ; ſuch as crumbs of bread or ſugar wrapt up in a piece of linen cloth in form of a tent, as alſo a piece of bread dipped in ale, and given to children to be ſucked.

A lineament of *mel roſatum* and oil of vitriol is eſteemed a good remedy for the *aphthæ* : plantane-water is alſo in uſe on the ſame occaſion. Dr. Canvance recommends the *oleum ricini* as a purge in this diſorder, for infants, and the ipecacuhana in the interval of purging, as a perſpirative.

APHTHARTODOCETÆ, a ſect, ſworn enemies of the council of Chalcedon.

The word is derived from αφθαρτος, *incorruptible*, and δοκεω, *I imagine* ; and was given them, becauſe they imagined the body of Jeſus Chriſt was incorruptible and impaſſible, and not capable of death.

They aroſe among the Eutychians, and made their firſt appearance in the year 535.

APHUA *cobites*, in *Zoology*, the name of a ſmall fiſh common in the Mediterranean and ſome other ſeas, and called by us the ſea-loach. It never exceeds three or four inches in length, its body is round, and flatted a little on the back ; its colour is white, variegated with black ſpots. Rondeletius.

APHYLLANTHES, in *Botany*, the name of a genus of plants, of the *hexandria monogynia* claſs ; the characters of which are theſe : The flower is of the liliaceous kind, and is compoſed of ſix petals, which ariſe from the center of a ſquamoſe, and in ſome degree tubular cup, the piſtil ariſes alſo from the cup, and finally becomes a trigonal turbinated fruit, which when ripe burſts into three parts or cells, which contain roundiſh ſeeds.

There is only one known ſpecies of this plant, which is the Montpelier *aphyllanthes*, called by ſome the blue Montpelier *pink*.

APHYLLON, in *Botany*. See *Broom*-RAPE.

APIARIA, in *Natural Hiſtory*, the name given by authors to a fly found only in autumn, and frequently met with on parſley ; it is a two winged fly, of a deep and ſhining black, and gathers wax on its legs in the manner of the bee. It is a ſpecies of the ATTELABUS.

APIARY, *bee-houſe* ; a place where bees are kept ; and furniſhed with all the apparatus neceſſary for that purpoſe.

The word comes from *apis*, *a bee*.

The *apiary* ſhould be ſcreened from high winds on every ſide, either naturally or artificially ; and well defended from poultry, &c. whoſe dung is offenſive to bees. Columella gives ſeveral directions reſpecting the ſituation of an *apiary*. He recommends a ſouth aſpect, and a proper medium between extreme heat and extreme cold : he prefers a low ſituation to an eminence, that the loaded bees may more eaſily deſcend to their habitation. The *apiary* ſhould likewiſe be near the dwelling-houſe, that the bees may be more conveniently watched ; and they ſhould be provided with water, if they are not ſituated near a running ſtream ; and the garden, in which the *apiary* ſtands, ſhould be well furniſhed with ſuch plants as afford a proper ſupply of food. Of theſe he ſpecifies thyme, the oak, the pine, the ſweet-ſmelling cedar, and all fruit-trees. Furze, broom, muſtard, clover, heath, buck wheat, &c. are excellent for this purpoſe.

Celſus adviſed that bees ſhould be removed, as occaſion required, to places abounding with autumnal flowers : and this method was practiſed by conveying the bees from Achaia to Attica, from Eubæa and the Cyclad iſlands to Scyrus, and alſo in Sicily, where they were brought to Hybla from other parts of the iſland. The ancient inhabitants of Lower Egypt, likewiſe, obſerving that plants bloſſomed, and fruits ripened, about ſix weeks ſooner in Upper Egypt than with them, availed themſelves of this circumſtance, and removed their bees thither, that they might reap the benefit of the more forward vegetation : and the ſame practice is continued in that country to the preſent day. About the end of October, hives of bees are embarked upon the Nile, and conveyed into Upper Egypt, where they arrive juſt as the inundation ſubſides, and the flowers begin to bud. When they have remained for ſome time at their fartheſt ſtation, they are brought two or three leagues lower down; and thus they are ſucceſſively removed, as the vegetation advances, from one ſtation to another, collecting, as they journey, the rich produce of the banks of the Nile, and return home about the beginning of February. This method of tranſporting bees from place to place, for the convenience of paſture, is practiſed in France, and might be adopted with great advantage in this kingdom. See BEE and HIVE.

APIASTELLUM, in *Botany*, the name of two different ſpecies of plants with different authors; Dodonæus expreſſing by it the common baum, and Apuleius the black bryony.

APIASTER, in *Zoology*, a name given by ſome authors to the bee-eater, called by the generality of authors MEROPS.

APIASTRUM, in *Botany*, a name given by the ancients to two different plants, of ſuch contrary form and qualities, that it is unlucky they ſhould have given occaſion of confounding them together, as miſtakes about them might be of fatal conſequence. The one of theſe plants was the poiſonous *water*-CROWFOOT; which they called *apiaſtrum*, becauſe of its having leaves that ſomewhat reſembled ſmallage. The other *apiaſtrum* is the common garden baum, ſo called by theſe writers, from their having obſerved that the bees were very fond of it. Beſides this, they have in ſome places called the SELINUM by this name, from its reſembling parſley, which they alſo called *apium*; and ſome of them have extended the name even to the animal world, and given it to a ſort of bird that feeds on bees.

APICES, *ſummits*, in *Botany*, little knobs growing on the tops of the *ſtamina* or chives in the middle of flowers.

The word is the nominative plural of *apex*, *the top* or *ſummit* of any thing.

They are commonly of a roundiſh figure.—By the microſcope they have been diſcovered to be, as it were, a ſort of *capſulæ ſeminales*, or ſeed-veſſels, containing in them ſmall globular, and often oval particles of various colours, and exquiſitely formed; called the FARINA *fæcundans*.

Theſe particles are a kind of male ſperm, which, falling down into the flower, fecundates and ripens the ſeed. See *Generation of* PLANTS.

APICULUM, in *Antiquity*, a kind of thread or fillet which the Flamens wore, in the heat of ſummer, in lieu of the APEX.

Feſtus ſpeaks of the *apiculum*, as a cover for the *apex*; but the paſſage ſeems to be corrupt.

APINEL, the name of a gentleman given to an American root, called by the natives *Yabacani*. See Hiſt. de l' Acad. Roy. an. 1724. Hiſt. 19.

APIOS, in *Botany*, a name given by many authors, to thoſe ſpecies of the TITHYMAL, or ſpurge, which have tuberoſe or knobby roots.

APIOS is alſo the name given by Boerhaave to ſome of the leguminous plants, compriſed by Linnæus under the name GLYCINE.

APIS, *muſca*, the *bee*, or *fly*, in *Aſtronomy*, a ſouthern conſtellation, containing the following ſtars:

Situation of the Stars.	Signs.	Long.			Lat.			Magn.
		°	′	″	°	′	″	
In the head, - -	♏	16	20	41	55	11	10	4
In the right wing,		16	36	29	56	29	50	4
In the left ditto,		22	22	15	56	43	27	5
In the tail, - - -		20	14	18	58	47	43	5

APIS, or APES, in *Zoology*, a genus of four-winged inſects with wings entirely membranaceous, and their tails furniſhed with a ſting; comprehending the BEE, HORNET, WASP, and HUMBLE-BEE.

This genus is ranged under the *hymenoptera* of Linnæus, and includes a great variety of ſpecies.

APIS, in *Mythology*, a divinity worſhipped by the ancient Egyptians at Memphis. It was an ox, having certain exterior marks; in which animal the ſoul of the great Oſiris was ſuppoſed to ſubſiſt. This animal had the preference to all others, as being the ſymbol of agriculture, the improvement of which that prince had ſo much at heart.

The Egyptians conſulted him as an oracle. If he accepted what was preſented him to eat, it was a good preſage; his refuſal was a bad omen. Dr. Bryant apprehends that the name of *apis* was an Egyptian term for a father; that it referred to the patriarch Noah; and that the creſcent which was uſually marked on the ſide of the animal, was a repreſentation of the ark. Ancient Myth. vol. ii. p. 420.

APITES, APITES VINUM, from απιος, *the pear-tree*; *perry*, wine of pears. It is thus prepared by ſome:

Cut and pound the pears, and having preſſed out the juice, to every twelve pints thereof add one pint of honey, and let it ferment.—After the ſame manner are prepared wines of *carobs*, *medlars*, and *ſervices*. All theſe kinds are aſtringents, have a greatful ſourneſs, are good for the ſtomach, and reſtrain inward fluxes. Dioſcorides, lib. v. cap. 32.

APIUM, in *Botany*, PARSLEY; of the *pentandria digynia* claſs.

The characters are, that it is a plant with an umbelliferous flower; each flower has five *ſtamina*. Under the flower is ſituated the *germen*, which afterwards becomes an oval channelled fruit, dividing into two parts, having two oval ſeeds channelled on one ſide, and plain on the other.

There are ſeven ſpecies; 1 *Common parſley*. 2. *Curled parſley*. 3. *Large rooted parſley*. 4. *Smallage*; or *water parſley*. 5. *Upright celery*. 6. *Celeriac*; or *turnep-rooted celery*. 7. *Greateſt Portugal parſley, with a leaf having three lobes and a yellowiſh flower*. See CELERY, PARSLEY, &c.

APIUM *antariticum*. See CELERY, *wild*.

APIUM *Macedonicum*. See BUBON.

APIUM *aniſum dictum*. See ANISE.

APIVORUS BUTEO, in *Zoology*, the name by which authors call the bird known in England by the name of the *honey*-BUZZARD. It is ſomewhat larger than the common buzzard; its beak is black, very much hooked, and proturberant in the middle, and covered to the noſtrils with a black wrinkled ſkin; its mouth opens very wide, and is yellow within. It builds its neſt with ſticks covered with wool, and ſometimes uſes the deſerted neſt of a kite to lay and breed its young in, which it feeds principally with the nymphs, or maggot worms of bees and waſps; and it is common to find pieces of honey-combs in the neſts. It feeds on newts, frogs, and other ſmall animals, and is remarkable for running very ſwiftly on the ground: the female is larger than the male, as in moſt other birds of prey. Ray.

APLUDA, in *Botany*, a genus of the *polygamia monoecia* claſs of plants.

The calyx is a common bivalve glume, with a female floſculus, and male peduncles.

APLUSTRE, or AMPLUSTRE, in the *Ancient Naval Architecture*, a carved tablet, ſomewhat after the manner of a ſhield, fixed by way of decoration to the extremity of a ſhip's head.

The *roſtra* or beaks of ſhips were ſometimes alſo called *apluſtria*.

But ſome think that the *apluſtre* anſwered to what we call the flag, or enſign.

APNOEA, from α and πνεω, *I breathe*, in *Medicine*, denotes a want of breath, or loſs of reſpiration.

In this ſenſe is the word uſed among the ancients, not as importing a total privation of breath, which would only be another name for death; but to denote the reſpiration very ſmall, and ſlow, ſo as to ſeem quite gone, as is the caſe in ſuffocations of the *uterus*, apoplexies, ſyncopes, lethargies, &c.

APOBAMINA, is uſed by ſome phyſicians for a liquor wherein pieces of gold, or chains heated red hot, have been extinguiſhed, in order to fortify the ſpirits and principal members.

APOBATERION, from αποβαινω, *I depart*, among the *Ancients*, a farewel ſpeech, or poem, made by a perſon on his departure out of his own country, or ſome other place where he had been kindly received, and entertained.

Such is that of Æneas to Helenus and Andromache, Æn. lib. iii.—The *apobaterion* ſtands oppoſed to the EPIBATERION.

APOBATHRÆ, in *Antiquity*, a kind of little bridges, or ſtairs, joining the land to ſhips, or one ſhip to another.

APOBEE, in *Botany*, a name give by the natives of Guinea to a ſpecies of corn-marygold, called by Petiver CHRYSANTHEMUM *acaulon Guineenſe foliis longis anguſtis*, from its having long and narrow leaves, and no ſtalk to ſupport the flower. The people of the place uſe this in the ſmall-pox, and other eruptive fevers, boiled in water, and the liquor drank warm. Phil. Tranſ. N° 232.

APOBOMIOI, from απο, *below*, and βωμος, *altar*, in *Antiquity*, ſacrifices offered on the bare earth, without altars.

APOCALYPSE, *Revelation*: the name of the laſt book in the canon of Scripture.

The word is formed of αποκαλυπτω, *I reveal*.

The *Apocalypſe* contains diſcoveries or revelations made to the apoſtle St. John, in the iſle of Patmos, during his baniſhment there, under the perſecution of Domitian.

This, of all the books of the New Teſtament, is that, about which the ancient fathers, and the practice of the church, were the moſt, and the longeſt, divided.—When it was firſt univerſally received as canonical, is not eaſy to decide. St. Jerom relates, that the Greek church doubted of its authenticity, even in his days: St. Baſil and Gregory Nazianzen abſolutely reject it; and the council of Laodicea never mention it in their canon of the ſacred writings.

Some attribute it to Cerinthus; and others, to another John, diſciple of St. John. Dionyſius Alexandrinus cenſures it as written in bad Greek, though he allows it to contain a myſtic ſenſe, which, he ſays, he admires, even where he does not underſtand it.

On the other hand, St. Juſtin, Irenæus, Theophilus Antiochenus, Melito, Apollonius, Clemens Alexandrinus, and Tertullian, make no doubt of its being canonical. The third council of Carthage, held in 397, placed it in the canon of the New Teſtament; and the churches both of the Eaſt and Weſt have acknowledged it ever ſince.

The Alogians are repreſented, by eccleſiaſtical writers, as great declaimers againſt the *Apocalypſe*, many of the flights whereof they turned into ridicule; particularly the viſions of the ſeven trumpets, the four angels bound on the river Euphrates, &c. St. Epiphanius defends it againſt them: the book, he obſerves, is not a mere hiſtory, but a prophecy: ſo that it is no wonder the author ſhould expreſs himſelf after the manner of the prophets, whoſe ſtyle is uſually figurative.

Of all their objections againſt the authority of this book, that ſeems the beſt grounded which is drawn from thoſe words in chap. ii. ver. 18. *Write to the angel of the church of Thyatira:* there was not, ſay they, any Chriſtian church at Thyatira at that time. St. Epiphanius, who grants them this point, is forced to have recourſe to the prophetic ſpirit; as if St. John had foreſeen there would be a church there in courſe of time.

Some late authors have made a good amendment to St. Epiphanius's anſwer: it is probable, in the time of that father, the catalogue of the biſhops, with other acts, which ſhew that there had been a church eſtabliſhed there from the time of the apoſtles, might not be known. Grotius adds, that though there was not, indeed, any church of Gentile converts at Thyatira when St. John wrote; yet there was one of Jews, as there had been another at Theſſalonica before St. Paul preached there.

Several orthodox writers have rejected the *Apocalypſe* as a book which countenanced the reveries of Cerinthus, touching the carnal reign of Chriſt on earth.

Though Dionyſius Alexandrinus(ap. Euſeb. Hiſt. Eccl. vii. 25.) allowed the *Apocalypſe* for an inſpired writing; yet he took it for the work of another John, different from St. John the Evangeliſt; which he endeavours to make appear from the diverſity of ſtyle. But we all know how precarious the arguments are, which are drawn from the mere conſideration of ſtyle. It is true, in moſt of the ancient Greek copies, both printed and manuſcript, we find the name *John the Divine*; but they who put this title, meant no more thereby than to denote the apoſtle St. John, whom the Greek fathers call *the Divine*; by way of eminence, to diſtinguiſh him from the other Evangeliſts.

There have been ſeveral other works publiſhed under the title of *Apocalypſes*. Sozomen mentions a book uſed in the churches of Paleſtine, called the *Apocalypſe*, or *Revelation of St. Peter*. He alſo mentions an *Apocalypſe* of St. Paul; which the Cophtæ retain to this day. Euſebius alſo ſpeaks of both theſe *Apocalypſes*. St. Epiphanius mentions an *Apocalypſe* of Adam: Nicephorus, an *Apocalypſe* of Eſdras: Gratian and Cedrenus, an *Apocalypſe* of Moſes, another of St. Thomas, and another of St. Stephen: St. Jerom, an *Apocalypſe* of Elias.

Porphyry, in his life of Plotin, makes mention of the *Apocalypſes* or revelations of Zoroaſter, Zoſtrian, Nicothæus, Allogenes, &c.

APOCARITES, from αποκειρω, *I cut off*, in *Eccleſiaſtical Hiſtory*, denote thoſe who aſſerted that the human ſoul is part of, or derived from, the ſubſtance of God.

The *apocaritæ* are ranked as a branch of the Manicheans.

APOCARPASUM, in *Natural Hiſtory*, a name given by the ancient Greeks, to a poiſonous drug, called alſo ſometimes ſimply *carpaſum*; it was the exudation of a tree growing in the country of the Abyſſines, and was ſo like the fineſt myrrh, that it was often mixed with it, and many lives were loſt by adminiſtering it as myrrh. The wood of the tree which produced it was alſo poiſonous, though in a leſs degree, and was called by the ſame writers *apocarpaſum*, as the wood of the balm of Gilead tree is *apobalſamum*.

APOCATASTASIS, from αποκαθιστημι, *I reſtore*, denotes the entire reſtitution, or redintegration of a thing.

In this ſenſe, we read of the *apocataſtaſis* of the world, or of all things.

APOCATASTASIS, among *Aſtronomers*, denotes the period of a planet, or the time wherein it returns to the ſame point of the zodiac from which it ſet out.

APOCATASTASIS is alſo uſed in *Medicine*, to denote the ſubſiding, or ſinking of a thing.

In this ſenſe, we read of the *apocataſtaſis* of urine, the *apocataſtaſis* of tumours; and other diſeaſes.

APOCATHARSIS, in a general ſenſe, denotes the ſame with *catharſis*, or expurgation.

In this ſenſe, we read of *apocatharſes* of bile, a ſymptom mentioned by Thucydides in the plague of Athens.

Quincy defines *apocatharſis* a purging upwards and downwards, but without ſufficient authority. Hence alſo *apocathartica*, a denomination ſometimes given to what we otherwiſe call ſimply CATHARTICS.

APOCHA, from απο and εχω, *I have*, in *Civil Law*, denotes an acquittance, or receipt given by the creditor to his debtor for money paid. In which ſenſe, the word ſtands contradiſtinguiſhed from *antapocha*, which is given by the debtor to the creditor. Reuſner and Zieglerus have diſſertations *de apochis*.

APOCHYLISMA, from απο and χυλιζω, *I extract the juice*, in *Pharmacy*, denotes an inſpiſſated vegetable juice; anſwering to what is called in the ſhops a ROB.

APOCOPE, a figure in *Grammar*, wherein part of the end of a word is cut off; as in *dic* for *dice*, *fac* for *face*, *nil* for *nihil*, *hyp* or *hypo* for *hypochondriacal*.

The word is compounded of the prepoſition απο, and the verb κοπτω, *I cut*.

A like retrenchment at the beginning of a word is called *apheræſis*.

When the *apocopation* is marked with a ſuperior comma (called an *apoſtrophus*), the word is ſaid to be *apoſtrophated*: as *thro'* for *through*.

APOCRISIARIUS, in *Antiquity*, an officer appointed to carry or deliver the meſſages, orders, and anſwers, of a prince or emperor.

The word is formed from αποκρισις, *reſponſum*, *anſwer*. Hence he is uſually called *reſponſalis*, q. d. anſwerer.

The *apocriſiarius* afterwards became the emperor's chancellor, and kept the ſeal. In the barbarous Latin we ſometimes meet with *aſecrata*, *ſecretary*, for *apocriſiary*. Zoſimus defines *apocriſiarius*, ſecretary for foreign affairs; being the ſame with what Vopiſcus, in the life of Aurelian, calls *notarius ſecretorum*.

The title of *apocriſiary* became at length appropriated, as it were, to the pope's deputy, or agent, who reſided at Conſtantinople to receive the pope's orders, and the emperor's anſwer.

St. Gregory was *apocriſiary* of pope Pelagius, at the time when he compoſed his morals on Job. The *apocriſiary* did the office of the modern NUNTIO. Sometimes, however, he had the rank and quality of the pope's LEGATE.

The inſtitution of *apocriſiarii* ſeems to have been in the time of Conſtantine, or not long after, when, the emperors being become Chriſtians, foreign churches had more occaſion to promote their ſuits at court than formerly; at leaſt we find the office eſtabliſhed by law in the time of Juſtinian. In one of the Novels it is ordered, that as no biſhop was to be long abſent from his church without ſpecial command from the emperor, if any one had occaſion to negociate any eccleſiaſtical cauſe at court, he ſhould prefer his petition either by the *apocriſiarius* of his church, appointed for ſuch purpoſe, or by the œconomus, or ſome of his clergy ſent expreſs. In imitation of the *apocriſiarii* of churches, almoſt every monaſtery had their *apocriſiarius* likewiſe, whoſe buſineſs was not to reſide in the royal city, as the former did, but to act as proctors for their monaſtery, or any member of it, when they had occaſion to enter any appearance at law, before the biſhop, under whoſe juriſdiction they were. This appears from another of Juſtinian's Novels, which requires the Aſcetics in ſuch caſes to anſwer by their *apocriſiarii*, or *reſponſales*. Du-Cange. Bingham. Orig. Eccleſ. lib. iii. cap. 13. § 6.

The hereſy of the Monothelites, and afterwards that of the Iconoclaſts, broke off the cuſtom of having a papal *apocriſiary* at Conſtantinople.

APOCRISIS, αποκρισις, literally denotes an anſwer. Under this denomination were anciently included, not only the reſcripts of the emperors to the petitions of parties, but all kinds of decrees and mandates.

We have ſeveral books extant under the title of *Apocriſes*, and ſome in oppoſition to theſe, under the title of *Antapocriſes*.

APOCRUSTICS, in *Medicine*, remedies endued with a repelling and aſtringent power, whereby they prevent the too great afflux of humours to a part diſeaſed.

The word is derived from αποκρυω, *pulſo*, *pello*, *I drive*.

Apocruſtics are uſually cold and aſtringent, and conſiſt of large particles, wherein they differ from drawing medicines, which are hot, and conſiſt of more ſubtile parts.

APOCRYPHAL, ſomething dubious; or that comes from an uncertain author, on which much credit cannot be repoſed.

We ſay, an *apocryphal* book, paſſage, hiſtory, &c. meaning, ſuch as are of ſuſpected authority.

Voſſius obſerves, that, with regard to the ſacred books, none are to be accounted *apocryphal*, except ſuch as have neither been admitted into the ſynagogue, nor the church, ſo as to be added to the canon, and read in public.

For this reaſon, alſo, the books of Sibyls were anciently called *apocryphal*, as being committed to the truſt of the *decemviri* alone: and for the like reaſon the annals of the Egyptians and Tyrians were called by the ſame name.

Before the Septuagint verſion, the books of the Old Teſtament were all *apocryphal* in this ſenſe. But in proceſs of time, the ſenſe of the word was changed, and thoſe books alone were called *apocryphal*, which were of doubtful or ſuſpected authority.

In the original meaning of the word, all the writings depoſited in the temple were called *apocryphal*: by reaſon they were kept ſecret from the people.

When the Jews publiſhed their ſacred books, they only gave the appellations of *canonical* and *divine* to ſuch as they thus made public; and ſuch as were ſtill retained in their archives they called *apocryphal*, for no other reaſon, but becauſe they were not public; ſo that they might be really ſacred and divine, though not promulged as ſuch.

Thus, in reſpect of the Bible, all books were called *apocryphal*, which were not inſerted in the Jewiſh canon of Scripture; and it is in this ſenſe that St. Epiphanius is to be underſtood, when he ſays, that the *apocryphal* books are not put in the ark among the other inſpired writings.

There has been a great diſpute between the Romaniſts and the Reformed, about the authority of thoſe books, now called, by the latter, *apocryphal*; and by the former, *deutero-canonical*; as Judith, Tobit, Eſdras, Maccabees, &c. the one having the opinions of many of the primitive fathers for their vouchers, and the others, the tradition of their church.

The word is derived from αποκρυπτειν, *to hide*; becauſe the origin of ſuch books was unknown, or becauſe they contain ſome myſteries not fit to be known.

M. Simon contends, that they muſt have been read in Greek, even by the apoſtles themſelves; which he infers from divers paſſages in their writings. He adds, that the church received them, with the other books of Scripture, from the Helleniſt Jews; and that if the churches of Paleſtine never admitted them, it was not for their accounting them *apocryphal* in the ſenſe the word is now uſed, but becauſe they read none but what were written in Hebrew.

To this may be oppoſed the authority of the greateſt part of writers in all ages, till the council of Trent; which makes a preciſe diſtinction between the books now called *apocryphal*, and thoſe contained in the Jewiſh canon. This council, ſeſſ. 4. declared ſix of them to be canonical, viz. Tobit, Judith, Wiſdom, Eccleſiaſticus, and the 1ſt and 2d of Maccabees; but joined Baruch with Jeremiah, which makes in all ſeven.

The *apocryphal* books are alſo called *acanonical*, and by ſome writers, *eccleſiaſtical* books, becauſe, though not held of divine authority, they were allowed to be read in churches, as containing many things tending to edification, and godly inſtruction; on which account they continue ſtill in uſe in the church of England, though forbidden in the other reformed churches.

Wolfius gives the literary hiſtory of the *apocryphal* books, their various editions, tranſlations, commentaries, &c.

We meet with numerous *apocryphal*, or ſuppoſititious books, publiſhed under the names of patriarchs, prophets, evangeliſts, apoſtles, primitive fathers, ſaints, martyrs, &c. *Apocryphal* propheſies, *apocryphal* goſpels, *apocryphal* epiſtles, *apocryphal* acts, *apocryphal* apocalypſes, &c.

The writing of books under ſpurious names, and obtruding them for the works of inſpired authors, though once reputed laudable, and conſecrated under the name of pious fraud, was condemned very early by an apoſtolical canon, in the inſtance of a prieſt, who was depoſed for forging the acts of Paul and Thecla. Bing. Orig. Eccleſ. lib. xvii. cap. 5.

Fabricius has publiſhed the fragments and remains of the *apocryphal* books both of the Old and New Teſtament. Fabric. Codex Pſeudepigraphus Veteris Teſtamenti. Hamb. 1722 & 1723. 8°. 2 vol. Codex Apocryphus Novi Teſtamenti, 2 vol. Hamb. 1719, &c. 8°.

APOCYMA, from απο, and κυμα, *wave*, in the *Materia Medica* of the *Ancients*, a name given by the Greek authors to a ſort of cement, uſed to daub over the bottoms of their ſhips, to preſerve them from injuries by the water; they called this alſo by the name of ZOPISSA, and Avicenna and Serapion call it *ketran*, *kitran*, or *alkitran*. It was a mixture of bees-wax and pitch melted together, and after it had been ſoaked ſome time in the ſea-water, it was ſuppoſed to have peculiar virtues, and was uſed in many compoſitions.

APOCYNUM, in *Botany*. See DOGS-BANE.

APODACRYTICA, from απο, and δακρυ, *a tear*, in *Pharmacy*, medicines proper to excite tears.

Some alſo uſe the term *apodacrytica*, for remedies proper to ſuppreſs tears.

APODECTÆ, from αποδεχομαι, *I receive*, in *Antiquity*, a denomination given to ten general receivers, appointed by the Athenians, to receive the public revenues, taxes, debts, and the like.

The *apodectæ* had alſo a power to decide controverſies ariſing in relation to money and taxes, all but thoſe of the moſt difficult nature and higheſt concern, which were reſerved to the courts of judicature.

APODECTÆI, in the Athenian government, officers appointed to ſee that the meaſures of corn were juſt.

The *apodectæi* were nearly related to the *agoranomi*.

APODEMICA, from αποδημεω, *I travel*, the doctrine or ſcience of travelling, whether for knowledge or devotion's ſake.

Jo. Meraker has publiſhed an *Apodemica*. Ranzovius a *Methodus apodemica*.

APODES, in a general ſenſe, from α and πους, denotes things without feet. Zoologiſts apply the name to a fabulous ſort of birds, ſaid to be found in ſome of the iſlands of the new world, which being entirely without feet, ſupport themſelves on the branches of trees by their crooked bills.

The Germans and Dutch have alſo their *apodes*, a ſort of birds ſomewhat like ſwallows, whoſe legs and feet are ſo very ſmall, that they ſeem rather formed for creeping than running.

APODES, is one of the four orders of fiſhes in the Linnæan diſtribution of animals. Their character is, that they have no belly fins.

APODICTICAL *argument*, or SYLLOGISM, ſignifies a clear, convincing proof, or demonſtration, of a thing.

The word is formed of αποδεικνυμι, *I demonſtrate*.

APODICTICAL *method* is uſed by ſome writers, to denote the ſyſtematical or ſcientifical method of teaching or writing.

APODIOXIS, from αποδιωκω, *I exclude*, in *Rhetoric*, a figure whereby we either paſs over a thing ſlightly, or refer treating of it to ſome other time or place.

This is alſo called by Latin writers, *rejectio*, e. gr. *Quid ego ſenatum defendam, judices? Equidem debeo, &c.* Again, *Quid ego ſenatum hoc loco defendam, judices? Fiat id rectius, tum quum, &c.*

APODIOXIS, in *Logic*, the rejection of ſuch things as do not neceſſarily belong to the queſtion to be conſidered.

APODIXIS, from αποδεικνυμι, in *Rhetoric*, denotes an evident proof, or demonſtration of a point.

We have ſeveral books extant under the names of *apodixes*, and ſome by way of anſwer to theſe, under that of *antapodixes*.

APODIXIS, in *Middle-age Writers*, denotes a receipt for money paid.

In which ſenſe it amounts to the ſame with *apocha*.

APODIXIS is alſo ſometimes uſed for a ſpecimen or proof of a thing.

APODOSIS, from αποδιδωμι, *I apply*, in *Rhetoric*, makes the third part of a complete *exordium*, being properly the application, or reſtriction of the *protaſis*.

The *apodoſis* is the ſame with what is otherwiſe called *axioſis*, and ſtands oppoſed to *protaſis*; e. gr. *protaſis*, all branches of hiſtory are neceſſary for a ſtudent; *cataſceue*, ſo that without theſe he can never make any conſiderable figure; *apodoſis*, but literary hiſtory is of a more eſpecial uſe, which recommends it, &c.

APODOSIS is alſo uſed, in ſpeaking of ſimiles, for that part which makes the application of them,

APODOSIS is alſo uſed in a rhetorical period, for the conſequent to a *protaſis*, or antecedent preceding.

APODOSIS is alſo uſed for a return to ſomething antecedent, or that went before.

This is otherwiſe called *antiſtrophe*.

APODYTERIUM, in *Antiquity*, a ſtripping-room, or apartment at the entrance of baths, wherein perſons dreſſed and undreſſed.

This was otherwiſe denominated *coriceum*, *gymnaſterium*, and *ſpoliarium*.

Some will have the *apodyterium* to have been the ſame with the *coniſterium*; but Voſſius ſhews they were two different places.

The word is formed of αποδυειν, *to undreſs*.

APOGEE, APOGÆUM, in *Aſtronomy*, that point in the orbit of the ſun, or a planet, which is fartheſt diſtant from the earth.

The word is formed of απο, *from*, and γη, *earth*.—In the corrupt Latin, *apogee* ſometimes ſignifies a grotto, or ſubterraneous vault.

The *apogee* is a point in the heavens at the extreme of the line of the apſides; in which the ſun, or a planet, is at the greateſt diſtance that it can be at, from the earth, in its whole revolution.

The oppoſite point to this is called the PERIGEE.

The ancient aſtronomers, regarding the earth as the centre of the ſyſtem, chiefly conſidered the *apogee* and *perigee*: the moderns, making the ſun the centre, change the *apogee* and *perigee* for APHELION and PERIHELION. See SYSTEM.

The quantity of the motion of the *apogee* may be found by comparing two obſervations thereof made at a great diſtance of time; converting the difference into minutes, and dividing it by the number of years elapſed between the two obſervations: the quotient gives the annual motion of the *apogee*.—Thus, from an obſervation made by Hipparchus in the year before Chriſt 140, whereby the ſun's *apogee* was found 5° 30′ of ♊; and another made by Ricciolus, in the year of Chriſt 1646, wherein it was found 7° 26′ of ♋; the annual motion of the *apogee* is found to be 1′ 2″.

APOGEE *of the moon.* See MOON.

APOGEE *of the equant*, is its fartheſt diſtance from the earth; or that point where the circumference of the EQUANT is interſected by the line of the *apſides*, in the remoteſt part of the diameter.

So the *perigee* of the *equant* is the oppoſite point, or the neareſt part of the diameter.

The mean *apogee* of the *epicycle* is a point where the epicycle is cut above, by a right line drawn from its centre to the centre of the *equant*, or the point of the epicycle moſt remote from the earth.

APOGRAPH, a copy or tranſcript of ſome book or writing.

The word is formed of απο, *ab, from*, and γραφω, *I write.* In this ſenſe, *apograph* ſtands oppoſed to *autograph*; as a *copy* to an *original.*

APOGRAPHE, in the *Ancient Law*, was, when a perſon being ſued for money ſuppoſed due to the public, pleaded that the charge was unjuſt, and withal produced all the money he was poſſeſſed of, and declared by what means it came to his hands.

Suidas adds, that it is ſometimes taken for an action againſt ſuch as neither paid the fines laid upon them before the ninth *prytanea* following their ſentence, nor were able to give ſufficient ſecurity to the city. Potter Arch. Græc. lib. i. cap. 23.

APOGRAPHE, in the Roman *Law*, denotes a catalogue, or inventory of goods.

APOLEPSIS, from απολειπω, *I leave*, in the Athenian *Law*, an action of divorce; brought when a woman had fled from her huſband.

APOLEPSIS, from απολαμϐανω, *I retain*, in the *Ancient Phyſic*, denotes a retention of the urine, or any other matter which ought to be evacuated.

APOLEPSIS is alſo underſtood of an interception of the blood or ſpirits, or an extinction of the native heat of the veins.

APOLEPSIS is alſo a denomination of a ſpecies of apoplexy, wherein the ſpeech, ſenſe, motion, &c. ſuddenly fail.

This ſeems to coincide with what is otherwiſe called a CATALEPSIS.

APOLIDES, from α, and πολις, *city*, in *Antiquity*, thoſe condemned for life to the public works, or exiled into ſome iſland, and thus diveſted of the privileges of Roman citizens.

APOLLINARIANS, APOLLINARISTS, called alſo by Epiphanius *Dimaritæ*, ancient heretics, who denied the proper humanity of Chriſt, and maintained that the body which he aſſumed was endowed with a ſenſitive, and not a rational ſoul, but that the Divine Nature ſupplied the place of the intellectual principle in man.

This ſect derived its name from Apollinaris, biſhop of Laodicea, in the fourth century.

The *Apollinarians* have been charged with other opinions, ſuch as, the *Millenarian* and *Sabellian*, the preexiſtence of the body of Chriſt, and the paſſion of his Deity; but eccleſiaſtical writers are not agreed with reſpect to theſe and other particulars. Their doctrine was firſt condemned by a council of Alexandria in the year 362, and afterwards in a more formal manner by a council at Rome in 375; and by another council in 378, which depoſed Apollinaris from his biſhopric. Notwithſtanding all, his doctrine ſpread through moſt of the churches of the Eaſt; and his followers were ſubdivided into various ſects. In 388, the emperor Theodoſius enacted a law, forbidding them to hold aſſemblies, to have any eccleſiaſtics or biſhops, or to dwell in cities. The rigorous execution of this law, in concurrence with the decrees of different councils, reduced them to a very ſmall number, and their doctrine had no long duration.

APOLLINARIAN *games, Apollinares ludi*, in *Antiquity*, games at Rome, celebrated yearly in honour of Apollo, on the fifth day of July, under the direction of the prætor, in the *Circus maximus.*

The occaſion was a kind of oracle delivered by the prophet Marcus after the fatal battle at Cannæ, declaring, that, to expel the enemy, and cure the people of an infectious diſeaſe, which then prevailed, ſacred games were to be annually performed in honour of Apollo. And that the prætor was to have the direction of them; and the *decemviri* to offer ſacrifices after the Grecian rite.

The ſenate ordered that this oracle ſhould be obſerved, becauſe another of the ſame Marcus, wherein he had foretold the overthrow at Cannæ, had been verified; for this reaſon they gave the prætor twelve thouſand *aſſes* out of the public caſh to defray the ſolemnity. There were ſacrificed an ox to Apollo, as alſo two white goats, and a cow to Latona; all with their horns gilt. Apollo had alſo a collection made for him, beſides what the people, who were ſpectators, gave voluntarily. The firſt prætor by whom they were held was P. Cornelius Sylla. For ſome time they were moveable or indictive, but at length were fixed, under P. Licinius Varus, to the fifth of July, and made perpetual.

The men, who were ſpectators at theſe games, wore garlands on their heads; the women performed their devotions in the temples at the ſame time, and at laſt they carouſed together in the veſtibles of their houſes, the doors ſtanding open.

The tradition reports, that, at the firſt celebration hereof, the people were ſuddenly invaded by the enemy, and obliged to take to their arms: upon which occaſion a cloud of darts and arrows falling upon their enemies, the Romans ſoon returned victors to their ſports.

The *Apollinarian* games were only ſcenical; and at firſt only obſerved with ſinging, piping, and other ſorts of muſic; but afterwards there were alſo introduced all kinds of mountebank-tricks, dances, and the like, yet ſo as that they ſtill remained ſcenical, no chariot races, wreſtlings, or the like laborious exerciſes of the body being ever practiſed at them.

Danet, and others, confound the *ludi Apollinares* with the ACTIACI.

APOLLINARES *ludi* was alſo a general name given to all SCENICAL games.

Theſe were alſo called *ludi liberales*, and *ſcenici.*

They differed from the *ludi theatrales*, in that the former were celebrated with all ſorts of plays, farces, poems, recitations, &c. the latter only by dancing and muſic.

This kind of *Apollinarians* had their ſhare in almoſt all the ſolemn games.

APOLLINARIS, in *Botany*, a name given by ſome authors to henbane.

APOLLO, in *Mythology*, a pagan deity worſhipped by the Greeks and Romans. He was the god of light and poetry; and was regarded as the inventor and patron of the fine arts. He had a famous temple at Delphos, where his oracle was in great eſtimation.

Apollo is principally diſtinguiſhed in ancient ſtatues by the beauty of his face, and the gracefulneſs of his figure. Accordingly Virgil calls him, the beautiful; and Tibullus, the well-ſhaped god. Æn. iii. ver. 119. Tibullus, lib. ii. El. iii. ver. 11.

APOLLO *Belvedere*, one in the firſt claſs of the ancient ſtatues. The excellence of this ſtatue conſiſts in the expreſſion of ſomething divine, whereas the reſt excel only in things that are common to men. This ſtatue may, perhaps juſtly enough, claim the preference, even in the ſuperior and diſtinguiſhed claſs of the beſt remains of all antiquity. There are about twenty ancient ſtatues, which the moderns have diſcovered, that are referred to the firſt claſs; and conſidered, each as the chief beauty in its kind.

APOLLONIA, in *Antiquity*, feaſts ſacred to Apollo at Egialea.

APOLLONIAN *hyperbola* and *parabola.* See HYPERBOLA, &c.

APOLOGETIC, APOLOGETICAL, ſomething ſaid or written, by way of excuſe or *apology*, for any action or perſon.

The *Apologetic* of Tertullian is a work full of ſtrength and ſpirit.—He there vindicates the Chriſtians from all that had been objected to them; particularly from the abominable crimes ſaid to be perpetrated at their meetings, and their want of love and fidelity to their country. The ground of this laſt accuſation was, their refuſing to take the accuſtomed oaths, and ſwear by the tutelary gods of the empire—Tertullian addreſſes his *Apologetic* to the magiſtrates of Rome; the emperor Severus being then abſent.

APOLOGUE, APOLOGUS, a moral FABLE; or a feigned relation, intended to inform and amend the manners. Jul. Scaliger derives the name απο λογȣ, inaſmuch as the *apologue* means ſomething more than what at firſt ſight it expreſſes.

Such are the fables of Æſop; whence, moral fables are uſually denominated *Æſopic Fables.*

F. De Colonia makes it eſſential to the *apologue*, that it contain what paſſes among brutes; and diſtinguiſhes it from the *parable* by this, that the latter, though feigned, conſiſts of poſſible circumſtances, which the former does not, ſince beaſts cannot ſpeak. There is this farther difference between them, that the latter is a ſimilitude drawn from natural, moral, or any other branches of knowlege; the former only from moral topics.

Apologue, according to ſome, differs from FABLE, as the former is uſed in ſpeeches and harangues, to perſuade; the latter in tragedies, comedies, and other pieces of poetry, to inſtruct and correct the manners. *Apologue* alſo differs from *ænus*, as the latter is only calculated for the uſe of men, and carries a graver and weightier admonition; whereas *apologues* are propoſed to children. We find many things in authors concerning the origin of *apologues*, the diſtinguiſhing characters of *apologues*, the uſe and advantages of the way of teaching by *apologues.* See Bayle, Dict. Crit. in voc. & Shafteſb. Charact. tom. iii.

APOLOGY, APOLOGIA, *defence*; a diſcourſe or writing in vindication of a perſon.

The word is formed of απολογειν, *to refute.*

The principal ancient *apologies* in favour of the Chriſtians are thoſe of Quadratus, written about the year 124, and addreſſed to the emperor Adrian; of Ariſtides, written ſoon after the former; two of Juſtin Martyr, one of which was written in the year 150, and addreſſed to Antonine, and the other in 166, addreſſed to the Roman ſenate; one of Athenagoras, in 166, to the emperors M. Aurelius, and Lucius Verus; the APOLOGETIC of Tertullian; and the dialogue of Minutius Felix, called *Octavius*, written in the third century.

APOLYSIS, from απολυω, *I releaſe*, in a general ſenſe, the ſolution, or reſolution of any thing. Thus we read of the *apolyſis* of a diſeaſe, the *apolyſis* of a bandage, or the like.

APOLYSIS, in a more particular ſenſe, denotes the excluſion of any thing. Thus we read of the *apolyſis* of the *fœtus*, the ſecundines, and the like.

APOMELI, in *Medicine*, a kind of decoction prepared of honey, or an honey-comb mixed with vinegar, and boiled a ſhort time, till the qualities of both be united, and the acrimony of the vinegar allayed.

The *apomeli* is repreſented as a kind of medium between mulſe and oxymel. It was anciently of great uſe among the Greeks, as a detergent, promoter of ſtool, urine, &c.

APOMYOS *Deus*, from απο, and μυια, *fly*, in the *Heathen Mythology*, a name under which Jupiter was worſhipped at Elis, and Hercules as well as Jupiter at the Olympic games. Theſe deities were ſupplicated under this name, to deſtroy or drive away the vaſt number of flies which always attended at the great ſacrifices; and in thoſe which accompanied the Olympic games, the firſt was always to the *Apomyos*, or *Myiagrus Deus*, that he might drive away the flies from the reſt. The uſual ſacrifice was a bull.

APONEUROSIS, among *Anatomiſts*, the ſpreading or expanſion of a nerve, or tendon, breadth-wiſe; in manner of a membrane.

The word is compounded of απο, *from*, and νευρον, *a nerve.*

APONEUROSIS ſometimes alſo ſignifies the cutting off a nerve, or tendon.—And in ſome writers we find it uſed for a TENDON itſelf.

APONEUROTICUS *muſculus*, in *Anatomy*, a name given by Spigelius, and ſome others, to a muſcle of the thigh, called by Cowper and Winſlow the *muſculus lati tendinis*, and *muſculus faſciæ latæ.* Winſlow has called it, with more propriety, the *muſculus vaginæ femoris.*

APONIA, from α, and πονος, *labour*, among *Phyſicians*, a ſtate of indolence, or the abſence of pain. In which ſenſe, the word amounts to the ſame with *anodynia.* Hence alſo *opona* is uſed by ſome for medicines which do not excite pain.

APONOGETON, in *Botany*, a name given by Pontedera to a genus of plants, called by Micheli and Linnæus ZANNICHELLIA.

APOPEMPTIC, from αποπεμπω, *I diſmiſs*, in the *Ancient Poetry*, a hymn addreſſed to a ſtranger on his departure from a place to his own country.

The ancients had certain holy days, wherein they took leave of the gods with *apopemptic* ſongs, as ſuppoſing them returning each to his own country.

APOPHASIS, from αποφημι, *I declare*, and *I deny*, in the *Civil Law*, an anſwer or reſcript of the prince.

Among *Logicians* the word is alſo uſed for a negation or denial.

APOPHASIS was alſo uſed for the account given of eſtates, at the exchange of them for the avoiding public employments. When any man would excuſe himſelf from any troubleſome and chargeable truſt, by caſting it on another richer than himſelf, the perſon produced had power to challenge him to make an exchange of eſtates, and thereby compel him to undergo the office he had before refuſed.

APOPHASIS, in *Rhetoric*, a figure whereby we really ſay or adviſe a thing, under a feigned ſhew of paſſing over, or diſſuading it.

Quintilian makes the *apophaſis* a ſpecies of irony. Scaliger holds it the ſame with what is otherwiſe called *occupatio.*

APOPHLEGMATISM, in *Medicine*, the operation of purging phlegm or *pituita* from the head.

APOPHLEGMATIZANTS, denote medicines proper to purge the head and brain of ſuperfluous phlegm, or ſerous humours.

Theſe are alſo, by many writers, denominated *apophlegmatiſms.*—The word is compounded of απο, *from*, and φλεγμα, *phlegm.*

Apophlegmatizants are of two kinds, one adminiſtered by the way of the mouth, and intended to operate by ſpitting; the other given by the noſtrils, to operate by ſneezing, &c.

APOPHORETA, from αποφερω, *I carry away*, in *Antiquity*, preſents made to the gueſts at a feaſt, or other entertainment, which they carried away with them.

APOPHRADES, from αποφρας, *unfortunate*, derived again from απο, and φραζω, *I ſpeak*, in *Phyſic*, denote a ſort of unhappy days, wherein either no *criſis*, or an ill one, is to be expected.

APOPHTHEGM, from απο, and φθεγγομαι, *I ſpeak*, a ſhort, wiſe, and pithy ſaying.

Such is that of Cyrus: *He is unworthy to be a magiſtrate, who is not better than his ſubjects.* Or this: *He that will not take care of his own buſineſs, will be forced to take care of that of others.* Or that of Artaxerxes Mnemon, when reduced to hunger by the loſs of his baggage: *How much pleaſure have I hitherto lived a ſtranger to?* Or that of Cato, *Homines nihil agendo diſcunt male agere.* Or, finally, that of Auguſtus, *feſtina lente.* The *apophthegms* of Plutarch are well known.

APOPHYGE, in *Architecture*, that part of a column where it begins to ſpring out of its baſe, and ſhoot upwards.

The word in its original Greek ſignifies *flight*; whence the French alſo call it *eſcape*, *congè*, &c. and we, ſometimes, the *ſpring* of the column.

The *apophyge*, in its original, was no more than the ring or ferril heretofore faſtened at the extremities of wooden pillars, to keep them from ſplitting; which afterwards was imitated in ſtone-work.

It is properly a large concave or arched member, ſerving either to connect two flat members together, or to join a flat member to another not flat.

In this ſenſe we may diſtinguiſh two *apophyges*, the upper and lower.

APOPHYGIS, *upper*, is that part, or ſweep, whereby a large flat member of the upper part of an order is connected to the lower.

This is alſo called by the French *le congé d' enhaut*, and by the Italians *il cavo di ſopra.*

APOPHYGIS, *lower*, *apophygis inferior*, is a concave member, which connects two flat parts in the lower part of an order. This the French call *le congé d' embas*, and the Italians, *il cavo di baſſo*, ſometimes alſo *il vivo di baſſo.*

APOPHYSIS, in *Anatomy*, a protuberance of a bone; or a part eminent, and jutting out beyond the reſt.

The word literally denotes a production outwards; formed from απο τȣ αποφυεσθαι, *to ariſe from.*

It is the ſame with what we otherwiſe call proceſs, eminence, probole, projecture, protuberance, ecphyſis, head, and the like.

Apophyſes differ from *epiphyſes*, as theſe latter are only appendages adhering or contiguous to a bone; whereas the former are productions or continuations of the bone itſelf, ſhooting out from it like branches from the trunk of a tree.

Apophyſes, with regard to figure, may be reduced to two kinds, round and long.

The former are called by the general name of *heads.* Theſe may be ſubdivided into two ſorts: if the head be large, oblong, and very prominent, it is called ſimply, *caput*; if flat and low, *condylus.*

The long kind are alſo ſubdivided into *acute* and *obtuſe*; the *acute*, terminating in a point, is called *corona.* There are divers ſpecies of this, diſtinguiſhed according to their figure, by different names. The *obtuſe* kind, terminating in a head, is called *cervix*, *collum*, or neck.

The general uſe of *apophyſes* is, 1. For the greater conveniency of articulation, whether it be with or without motion. 2. To afford a more commodious origination and inſertion to the muſcles; and, 3. To defend other parts. Heiſter. Their particular uſes will be indicated under the proper articles of each bone, &c.

APOPHYSES *mammillares* are the beginnings of the olfactory nerves, as far as the *os cribroſum*, where they divide into little fibres, which paſs through thoſe bones, and ſpread themſelves throughout the upper part of the noſe.

APOPHYSIS *mammillaris*, or *maſtoidea*, alſo denotes one of the external eminences of the *os petroſum.*

APOPHYSIS *raviana* denotes the larger proceſs of the MALLEUS of the ear, into which the muſcles of the bone are inſerted.

APOPHYSIS is alſo applied by Hippocrates to certain fleſhy excreſcences, found in moles, and female *fœtuſes* of ſeven months, as appearing rather proceſſes, and origins of members, than diſtinct members, ſuch as he ſays may be found in male *fœtuſes.*

APOPHYSIS, in *Botany*, an excreſcence from the receptacle of the *muſci.*

APOPLANESIS, from αποπλαναω, *I deceive*, in *Oratory*, a kind of fallacious defence, and flurring over, darkening and concealing things, in order to blind the judges, or the audience.

APOPLANESIS, in a more particular ſenſe, denotes a ſort of confutation, wherein the ſpeaker promiſes to anſwer what the adverſary objects in another place, but which being too difficult to anſwer, is afterwards forgot, and left to paſs unanſwered.

APOPLEPTIC, relating to an apoplexy.—Thus we ſay, an *apoplectic* fit, an *apoplectic* water, &c.

APOPLECTIC *veins*, a name ſometimes given to the *jugulars.* Theſe are ſometimes alſo denominated among ancient writers, *ſoporales.*

Some writers reſtrain *apoplectic* to the internal jugular, aſcending by the ſide of the *trachea*.

APOPLECTICA, *apoplectical medicines*, a name uſed by ſome for what we more properly call *antapoplectics*.

APOPLECTICAL *balſams* is a name given by ſome writers to a ſort of ſweet ſcented balms, prepared of diſtilled oils, and uſed by way of perfume.

APOPLEXY, in *Medicine*, a ſudden privation of all the ſenſes, and all the ſenſible motions of the body, excepting thoſe of the heart and lungs; attended with a great depravation, or ſuſpenſion, of the principal faculties of the ſoul.

The word comes from αποπλησσειν, *to ſtrike*, or *aſtoniſh*; this diſtemper ſtriking ſuddenly; and, as it were, like a thunder-bolt.

Hippocrates diſtinguiſhes two kinds of *apoplexies*; the one *ſtrong*, the other *weak*; only differing in the greater or leſs difficulty of reſpiration, and pulſation: in the former the pulſe and breath ſeem almoſt entirely ſtopped; in the latter there are conſiderable remains of them.

The more modern authors diſtinguiſh *apoplexies* from their cauſe, into *ſanguineous* and *ſerous*, to which may be added the *ſpaſmodic*, *ſymptomatic*, &c.

The fit of an *apoplexy* is uſually preceded by a violent pain in the head, a dimneſs and loſs of ſight or memory: ſometimes by an univerſal indolence; and ſometimes by a flux of pituitous matter by the noſe and mouth.—It is attended with a ſnorting and difficulty of breathing; ſometimes with a fever, rarely with a foaming at the mouth, frequently with a ſweat, hæmorrhoids, or diarrhœa.

A multitude of the moſt accurate obſervations have made it appear, that this diſorder ariſes from any cauſe that is capable of preventing either totally, or in part, the influx of the nervous fluid, ſecreted in the *cerebrum*, to the organs of ſenſe and voluntary motion; and the reflux of the ſame fluid from the abovementioned organs to the common ſenſory in the brain: whilſt the progreſs, and perhaps the return of the fluid, ſupplied by the *cerebellum* to and from the heart and organs of reſpiration, is preſerved in a degree ſufficient to ſupport in ſome meaſure their functions.

All theſe cauſes, as obſerved and delivered by authors, may for the greater perſpicuity be reduced to claſſes; in the firſt of which may be reckoned,

1. The natural make of the body: thus, when the head is naturally large, the neck ſhort, and as it ſometimes happens, conſiſting only of ſix *vertebræ*, whereas there ought to be ſeven; this ſtructure diſpoſes to an *apoplexy*, as it favours the congeſtion of blood and humours in the head. Thus alſo, if the body is corpulent, the capillary arteries will in general be ſubject to compreſſions; and in conſequence thereof a greater quantity of blood and humours will flow into the veſſels which convey them to the brain. Thus alſo a plethoric habit, and a redundancy of pituitous humours in the blood, lay a foundation for a ſtagnation of the juices, and a ſubſequent rupture of the veſſels of the brain.

2. To the ſecond claſs belong all thoſe cauſes which induce ſuch a change in the blood, lymph, and nervous fluid, as to render them incapable of circulating freely through their reſpective veſſels in the brain: among which are—polypous concretions in the carotid or vertebral arteries, whether formed originally about the heart, or within the *cranium*; theſe are diſcovered by a palpitation of the heart, an unequal pulſe, a vertigo, and temporary loſs of ſight often recurring, and which are increaſed by motion or heat; an inflammatory ſizineſs of the blood, which may be known by an acute continual fever, an inflammatory pain in the head, eyes, &c. —a thick, glutinous, pituitous, and ſluggiſh diſpoſition of the whole maſs of blood; whence old people, thoſe who are much ſubject to catarrhs, whoſe conſtitutions are cold and moiſt, and who are pale and leucophlegmatic, are very ſubject to *apoplexies*. It is not difficult to preſage an *apoplexy* from this cauſe, as it is generally preceded by an univerſal liſtleſſneſs and dulneſs of the ſenſes, unuſual ſlowneſs of ſpeech, tremors, ſtertors, *incubi* (night-mares), frequent diſcharges of pituitous humours by vomit, vertigos, ſhortneſs of breath on the leaſt motion, with a compreſſion of the cartilages of the noſe.

3. To the third claſs belongs whatever compreſſes the arteries themſelves, or the nervous veſſels of the brain, ſo as to prevent a free circulation of the fluids through them. People who are plethoric and bloated are much ſubject to this ſpecies of *apoplexy*; eſpecially if extraordinary motion or heat increaſe the velocity of the circulation. To ſuch, therefore, high feeding, ſpirituous liquors, acrid medicines, intenſe and long continued thought, are pernicious. All humours ariſing within the *cranium* properly belong to this claſs; as alſo a too great velocity of the blood in the veſſels of the head, determined by ſome impediment to the circulation in the arteries of the inferior parts, which may ariſe from an infinite number of cauſes. Hither alſo may be referred all compreſſions from whatever cauſe, of the veins without the head, which convey the refluent blood from the contents of the *cranium* toward the heart; as alſo effuſions of blood, *pus*, *ichor*, or lymph, which preſs externally on the *dura* or *pia mater*.

4. To the fourth claſs belong all thoſe cauſes, which by any means ſo diſſolve the texture of the arteries, veins, or lympheducts, belonging to the internal parts of the *cerebrum*, as to cauſe an extravaſation of their reſpective fluids, which then preſs upon and injure the medullary origins of the nerves of the *cerebrum*.

5. Some ſorts of poiſons, which are ſuddenly deleterious, may be ranked in the fifth claſs; but theſe may either be reduced to the ſecond, third, or fourth, or may be more properly ſaid to act on the lungs than the brain. Among theſe are the fumes of mineral ſulphurs, of charcoal, or that *gas ſylveſtris*, or incoercible ſpirit which exhales from vegetable juices during fermentation.

The anatomical inſpection of bodies which have died of *apoplexies*, and the hiſtorical obſervation of ſuch circumſtances as occur in the treatment of theſe caſes, furniſh us with a knowlege of their cauſes; and a due reflection upon theſe, naturally leads us to a diſtribution of them into the preceding claſſes, which are admirably adapted to the inveſtigation of the beſt methods of cure.

The part affected in a perfect *apoplexy* is the entire common ſenſory of the brain; but in a *parapoplexia* theſe parts only of the common ſenſory which are more compreſſed than the reſt; whilſt the *cerebellum*, and its dependencies, remain in the beginning of the diſorder unaffected. Boerhaave.

As to the prevention and cure of an *apoplexy*, no invariable rules can be laid down; for as the prediſpoſing and exciting cauſes, together with the parts principally affected, are various, the method of relief muſt alſo vary; and muſt be attempted before the diſorder grows inveterate; otherwiſe ſucceſs will be very precarious.

In general, however, to prevent an *apoplexy*, wine, hard labour, exceſs of eating, and ſleeping after dinner, are to be avoided: exerciſe is to be kept up, and care and chagrin to be reſtrained. To cure an *apoplexy*, medicines muſt be uſed that occaſion large evacuations, and nothing of the opiate or aſtringent kind ſhould be taken — During the fit, if the *apoplexy* be of the *ſanguineous* kind, copious bleeding in the jugulars is to be uſed, and the patient laid on his back; applying ſtrong volatiles to the noſe; alſo blow up ſtrong ſternutatories, and rub the temples with cephalic mixtures.—A mixture of common ſalt, diſſolved in a pint of water, has been ſometimes adminiſtered as the means of recovery.—A hot iron may alſo be applied near the *vertex* or *occiput*; and an epiſpaſtic to the neck; to which are to be added powerful purgatives, clyſters, &c.—Cupping and ſcarification on the head are recommended by ſome, in lieu of veneſection.—In the *ſerous* kind of *apoplexy*, bleeding ſhould rarely be admitted.

Dr. Flemmyng recommends trepanning for the cure of *apoplexies*. Med. Muſ. vol. II. p. 300, &c.

The diſeaſe ſometimes degenerates into a *paralyſis*.—And ſometimes only half the head is affected; in which caſe the diſeaſe is called ſimply a *hemiplegia*.

Apoplexy differs from *carus*, *lethargy*, and *coma*, as in thoſe three diſtempers the *ſtupor* is not ſo profound, nor is all ſenſation quite deſtroyed.

It differs from *ſyncope*, in that there is no ſenſible pulſe in this laſt; whereas in an *apoplexy*, the pulſe is perceptible almoſt till death.

It differs from an *epilepſy*, becauſe all motion is not aboliſhed in that, as in this; and it differs from the *palſy*, inaſmuch as the palſy is not attended with any *ſtupor*, nor does it deprive the patient of ſenſe and perception.

APOPLEXY is alſo reckoned among the diſeaſes of hawks, being a diſtemper which ſeizes their heads, occaſioned by too much greaſe and blood, or their having ſtood too long expoſed to the heat of the ſun, or having taken too long flights in the heat of the day.

Horſes are alſo ſaid to be ſubject to *apoplexies*, occaſioned by want of exerciſe, or too plentiful feeding.

The diſtemper ſhews itſelf by a giddineſs, reeling, trembling, and ſometimes falling ſuddenly down, without ſenſe or motion. The cure is by taking a large quantity of blood from the neck, and applying volatile ſpirits to the noſtrils.

APOPLISTÆ, from απο, and οπλον, *arms*, in *Ancient Laws*, a ſort of officers in the country, appointed to diſarm all private perſons, or thoſe not entitled to have arms; for the prevention of miſchief and violence.

APOPOMPÆ, in *Antiquity*, certain days in which ſacrifices ſices were offered to the gods called *pompæi*. Who theſe deities were is doubtful.

APOPSYCHIA, from αποψυχω, *I expire*, is ſometimes underſtood of effluvia, emitted from the ſun, moon, and other heavenly bodies; to which their influence on ſublunary things was aſcribed by aſtrologers.

APORIA, from αϖορεω, *I doubt*, in *Rhetoric*, denotes a ſtate of doubt or wavering, wherein the orator appears undetermined whether to ſay a thing or not: e. gr. *Eloquar an ſileam?* Shall I ſpeak out, or hold my tongue?

APORON, or Aporime, a problem difficult to reſolve, and which has never been reſolved, though it be not, in itſelf, impoſſible.

The word is derived from αϖορος, which ſignifies ſomething very difficult, and impracticable; being formed from the privative α and ϖορος, *paſſage*.

Such we conceive the quadrature of the circle; the duplicature of the cube; the triſection of an angle, &c.

When a queſtion was propoſed to any of the Greek philoſophers, eſpecially of the ſect of Academiſts; if he could not give a ſolution, his anſwer was, αϖορεω, q. d. *I cannot ſee through it*.

This word is alſo uſed by ſome law writers for an inexplicable ſpeech or diſcourſe.

APORRHOEA, Aporrhoes, in *Philoſophy*, ſulphureous effluvia, or exhalations, emitted from the earth, and ſubterraneous bodies.

The word is formed from αϖοῤῥεω, *defluo*, *to flow from*.

Aporrhoea, in *Phyſic*, is ſometimes particularly uſed for morbid or contagious *miaſmata*, or effluvia from unwholeſome bodies. The word is alſo uſed to denote a ſhedding or falling of the hair. See Alopecia.

APOS, in *Ornithology*. See *Sea*-Swallow.

APOSCEPARNISMUS, a ſpecies of fracture of the ſkull, or other bone, wherein a piece is taken clearly off, as if cut out with a hatchet; from σκεϖαρνον, an *ax*, or *hatchet*.

APOSIOPESIS, in *Rhetoric*, otherwiſe called *reticency*, and *ſuppreſſion*; a figure, by which a perſon really ſpeaks of a thing, at the ſame time that he makes a ſhew as if he would ſay nothing of it. See Preterition.

The word comes from αϖοσιωϖαω, *I am ſilent*.

It is commonly uſed to denote the ſame with ELLIPSIS. Jul. Scaliger diſtinguiſhes them. The latter, according to him, being only the ſuppreſſion of a word; as, *me, me: adſum qui feci*; the former, the omitting to relate ſome part of the action; as

Dixerat, atque illam media inter talia ferro
Collapſam adſpiciunt————————

Where the poet does not mention how Dido killed herſelf. This figure is of uſe to keep up the grandeur and ſublimity of a diſcourſe.

APOSITION, from αϖο and σιτος, *food*, in *Medicine*, an averſion to food. It amounts to much the ſame with *anorexia*; though ſome make a difference; alledging that the latter imports no more than an inappetency, or want of deſire to eat; the former, an averſion or loathing of it.

APOSPASMA, from αϖοσϖαω, *I tear off*, in *Medicine*, denotes a ſolution of continuity in ſome organical part, as a membrane, ligament, or the like.

Apospasma is alſo applied to metalline recrements, as *tutia*, *melanteria*, miſy, ſory, or the like.

APOSPHACELISIS, from αϖοσφακελιζω, à σφακελος, *mortification*, &c. in the *Ancient Phyſic*, denotes a mortification of a fleſhy part, happening in caſes of wounds, and fractures, from too tight a ligature.

APOSPHRAGISMA, from αϖο and σφραγιζω, *I ſeal*, in *Antiquity*, the figure or impreſſion of a ſeal.

It was forbid among the ancients to have the figure or image of God on their rings and ſeals. To this purpoſe the precept of Pythagoras, Εν δακτυλιω εικονα Θεȣ μη ϖεριφερειν! But in proceſs of time, this was little regarded; it was uſual enough to have the figures of Egyptian and other deities, as well as of heroes, monſters, friends, anceſtors, and even brutes, on their *dactyli*, or ring-ſeals. Thus Cæſar had the image of Venus, Pollio of Alexander, Auguſtus of the *ſphinx*, Pompey of a frog, Lentulus of his grandfather, &c.

APOSPONGISMUS, among *Ancient Phyſicians*, the application of a ſponge, whether dry or ſoaked with water, either to cleanſe the filth from a part, or to eaſe pains, allay itching, or refreſh the ſpirits.

APOSTAGMA, from αϖοϛαζω, *I diſtill*, in *Natural Hiſtory*, the muſt or juice which runs from the grapes ere they be trodden or preſſed.

This is otherwiſe called *apoſtalagma*.

APOSTASIS, from αφιϛημι, *I depart*, &c. in *Phyſic*, uſually ſignifies the ſame with abſceſs. See Imposthumation.

In which ſenſe, the word is uſed by Hippocrates and others, promiſcuouſly with αϖοϛημα, *apoſtem*.

Apostasis, in a more particular ſenſe, denotes a departure or removal of the morbid matter, in the criſis or ſolution of a diſeaſe.

Apostasis is alſo uſed by Hippocrates for a fracture of a bone, wherein ſome part is entirely ſeparated or broken off.

APOSTASY, a deſerting, or abandoning of the true religion.

The word is borrowed from the Latin *apoſtatare*, or *apoſtare*, to *deſpiſe*, or *violate*, any thing.—Hence, *apoſtatare leges* anciently ſignified to tranſgreſs the laws.—*Qui leges apoſtabit, terræ ſuæ reus ſit apud regem.* LL. Edw. Conſeſſ. The Latin *apoſtatare*, again, comes from αϖο, *from*, and ιϛημι, *I ſtand*.

Among the Romaniſts, *apoſtaſy* alſo ſignifies the forſaking of a religious order, whereof a man had made profeſſion; without a lawful diſpenſation.

The ancients diſtinguiſhed three kinds of *apoſtaſy*: the firſt, *à ſupererogatione*, is committed by a prieſt, or religious, who abandons his profeſſion, and returns to his lay ſtate; the ſecond, *à mandatis Dei*, by a perſon of any condition, who abandons the commands of God, though he retains his faith; the third, *à fide*, by him who not only abandons his good works, but alſo the faith.

There is this difference betwixt an *apoſtate*, and a *heretic*; that the latter only abandons a part of the faith, whereas the former renounces the whole.

Apoſtaſy is ſaid to have been anciently puniſhable, in England, by burning and tearing to pieces by horſes. Thus Fleta, lib. i. cap. 37. § 2. *Apoſtatæ & ſacrilegi, & hujuſmodi, detractari debent et comburi.* And, § 4. *Si inde convincantur, detractentur, & ſuſpendantur.* Where Du-Cange interprets, *detractari*, by *tirer a quatre chevaux*.

APOSTATA *capiendo*, a writ which anciently lay againſt one, who, having entered and profeſſed ſome order of religion, broke out again, and wandered the country, contrary to the rules of the order.

APOSTATE, in a general ſenſe, ſignifies a deſerter from the true religion.

In which ſenſe, *apoſtate* amounts to much the ſame with lapſed, perverted, &c.

APOSTERIGMA, from αϖο and ϛηριζω, *I ſupport*, in the *Ancient Phyſic*, denotes a reſt or ſupport for a diſeaſed part, without binding.

Such are pillows, cuſhions, and the like.

The word ſeems alſo to have been uſed by Hippocrates for a ſtoppage, or obſtruction of ſome vaſcular part.

A POSTERIORI.—Demonſtration *à poſteriori*. See Demonstration.

APOSTHUME, or Apostem, Apostema, in *Medicine*, a preternatural tumour; called alſo ABSCESS, and IMPOSTHUME.

The word comes from αφιϛημι, *abſcedo*, *I depart from one place*, and *fix in another*; alluding to the manner wherein the tumour is uſually formed of a tranſlated humour.

Aposthume is particularly uſed for a diſeaſe of hawks, which occaſions ſwellings in the head, ariſing from a redundancy of humours, and a preternatural heat of that part.

The *apoſthume* diſcovers itſelf by the ſwelling of the eyes, a moiſture iſſuing from the ears, and their wings extremely ſlothful.

APOSTIL, *apoſtilla*, in *Matters of Literature*, a marginal addition, or note to a book, paſſage, or the like.

APOSTLE, αϖοϛολος, one of the twelve diſciples of Jeſus Chriſt, commiſſioned by him to preach his goſpel, and propagate it to all the parts of the earth. They were limited to the number twelve, in alluſion to the twelve tribes of Iſrael.

The word originally ſignifies a perſon *delegated*, or *ſent*; from αϖοϛελλω, *mitto*; in which ſenſe it occurs in Herodotus, and other profane authors. Hence, in the New Teſtament, the term is applied to divers ſorts of delegates; and to the twelve diſciples by way of eminence.

St. Paul is frequently called the *apoſtle*, by way of eminence; and the *apoſtle of the Gentiles*, becauſe his miniſtry was chiefly made uſe of for the converſion of the Gentile world, as that of St. Peter was for the Jews, who is therefore ſtiled the *Apoſtle of the Circumciſion*.—The ſeveral *apoſtles* are uſually repreſented with their reſpective badges or attributes; St. Peter with the keys; St. Paul, with a ſword; St. Andrew, with a croſs or ſaltier; St. James minor, with a fuller's pole; St. John, with a cup, and winged ſerpent flying from it; St. Bartholomew, with a knife; St. Philip, with a long ſtaff, whoſe upper end is formed into a croſs; St. Thomas, with a lance; St. Matthew, with a hatchet; St. Matthias, with a battle-ax; St. James major, with a pilgrim's ſtaff, and a gourd bottle; St. Simon, with a ſaw; and St. Jude, with a club.

This appellation was alſo given to the ordinary travelling miniſters of the church.—Thus St Paul, in the Epiſtle to the Romans, xvii. 7. ſays, *Salute Andronicus and Jenia, my kinſmen and fellow-priſoners, who are of note among the* APOSTLES.

It was likewiſe a title given to thoſe ſent by the churches to carry their alms to the poor of other churches.—This uſage they borrowed from the ſynagogues, who called thoſe whom they ſent on this meſſage, by the ſame name; and the function or office itſelf αποϛολη, *apoſtole*, q d *miſſion*. —Thus St. Paul, writing to the Philippians, tells them, that Epaphroditus, their *apoſtle*, had miniſtered to his wants, ch. ii. 25. It is applied in like manner to thoſe perſons who firſt planted the Chriſtian faith in any place

Thus Dionyſius of Corinth is called the *apoſtle of France*; Xavier the *apoſtle of the Indies*, &c. In the Eaſt-Indies the Jeſuit miſſionaries are alſo called *apoſtles*.

In ſome ages of the church, the pope was peculiarly denominated the *apoſtle*.

APOSTLE is alſo uſed among the Jews, for a kind of officer anciently ſent into the ſeveral parts and provinces in their juriſdiction, by way of viſitor, or commiſſary; to ſee that the laws were duly obſerved, and to receive the monies collected for the reparation of the temple, and the tribute payable to the Romans.

The Theodoſian code, lib. xiv. *De Judæis*, calls thoſe *apoſtoli, qui ad exigendum aurum atque argentum a patriarcha certo tempore diriguntur*. Julian, the Apoſtate, remitted the Jews the *apoſtole*, αποϛολη; that is, as he himſelf explains it, the tribute they had been accuſtomed to ſend him.

Theſe *apoſtles* were a degree below the officers of the ſynagogues, called *patriarchs*, and received their commiſſions from them. Some authors obſerve, that St. Paul had borne this office; and that it is this he alludes to in the beginning of the Epiſtle to the Galatians: as if he had ſaid, Paul, no longer an *apoſtle* of the ſynagogue, nor ſent thereby to maintain the law of Moſes, but now an *apoſtle* and envoy of Jeſus Chriſt, &c. St. Jerom, though he does not believe that St. Paul had been an *apoſtle* of this kind; yet imagines, that he alludes to it, in the paſſage juſt cited.

APOSTLE, in the Greek *Liturgy*, is particularly uſed for a book containing the Epiſtles of St. Paul, printed in the order wherein they are to be read in churches, through the courſe of the year. Another book of the like kind, containing the Goſpels, is called Ευαγγελιον, *Goſpel*.

The *apoſtle*, of late days, has alſo contained the other canonical Epiſtles, the Acts of the *Apoſtles*, and the Revelations. Hence it is alſo called, *Acts of the Apoſtles*, Πραξαποϛολος; that being the firſt book in it.

APOSTLE is alſo thought by many to have been the original name for biſhops, before the denomination *biſhop* was appropriated to their order. Thus Theodoret ſays expreſly, the ſame perſons were anciently called promiſcuouſly both biſhops and preſbyters, whilſt thoſe who are now called biſhops, were called *apoſtles*.

In the arſenal of Bremen, there are twelve pieces of cannon called the *Twelve Apoſtles*, on a ſuppoſition, that the whole world muſt be convinced, and acquieſce in the preaching of ſuch *apoſtles*.

APOSTLE'S *Creed*, ſee CREED.

APOSTOLÆUM, or APOSTOLIUM, in *Eccleſiaſtical Writers*, denotes a church dedicated to, and called by, the name of an *apoſtle*.

Sozomen ſpeaks of the *apoſtolæum* of St. Peter at Rome, of the *apoſtolæum* of St. Peter and St. Paul at Quercus, near Chalcedon.

In this ſenſe *apoſtolæum* ſtands diſtinguiſhed from *prophetæum*, *martyrium*, &c.

APOSTOLARE, APOSTOLICARE, *apoſtolizing*, in ſome *Middle Age Writers*, denotes the being preferred to the dignity of POPE.

APOSTOLATE, in a general ſenſe, is uſed for miſſion.

In this ſenſe, Olearius has a diſcourſe concerning the *apoſtolate* of Chriſt. Lipſ. 1681. 4to.

APOSTOLATE more properly denotes the dignity or office of an apoſtle of Chriſt; but it is alſo uſed, in ancient writers, for the office of a biſhop.

In this ſenſe, we meet with ſeveral letters, petitions, requeſts, &c. directed to biſhops under the title of your *apoſtolate*, or *apoſtolatus veſter*.

But as the title *apoſtolicus* had been appropriated to the pope, ſo that of *apoſtolate* became at length reſtrained to the ſole dignity of the popedom.

Every biſhop's ſee was anciently dignified with the title of *ſedes apoſtolica*, an apoſtolical ſee, which is now the peculiar denomination of the ſee of Rome.

APOSTOLI, in *Law*, denote thoſe letters miſſive, which are demanded in caſes of *appeal*.

APOSTOLIC, APOSTOLICAL, ſomething that relates to the *apoſtles*, or deſcends from them.

Thus we ſay, the *apoſtolical* age, *apoſtolical* doctrine, *apoſtolical* character, conſtitutions, traditions, &c.

APOSTOLIC, in the *Primitive Church*, was an appellation given to all ſuch churches as were founded by the *apoſtles*; and even to the biſhops of thoſe churches, as being the reputed ſucceſſors of the *apoſtles*.—Theſe were confined to four, viz. Rome, Alexandria, Antioch, and Jeruſalem.

In after-times, other churches aſſumed the ſame quality, on account, principally, of the conformity of their doctrine with that of the churches which were *apoſtolical* by foundation, and becauſe all biſhops held themſelves ſucceſſors of the apoſtles, or acted in their dioceſes with the authority of apoſtles.

The firſt time the term *apoſtolical* is attributed to biſhops, as ſuch, is in a letter of Clovis to the council of Orleans, held in 511, though that king does not there expreſly denominate them *apoſtolical*, but (*apoſtolica ſede digniſſimi*) highly worthy of the *apoſtolical* ſee. In 581, Guntram calls the biſhops, met at the council of Maſon, *apoſtolical* pontiffs, *apoſtolici pontifices*.

In progreſs of time, the biſhop of Rome growing in power above the reſt; and the three patriarchates of Alexandria, Antioch, and Jeruſalem, falling into the hands of the Saracens, the title *apoſtolical* was reſtrained to the pope, and his church alone. Though ſome of the popes, and St. Gregory the Great, not contented to hold the title by this tenure, began, at length, to inſiſt, that it belong to them by another and peculiar right, as being the ſucceſſors of St. Peter. The council of Rheims in 1049 declared that the pope was the ſole *apoſtolical* primate of the univerſal church.

And hence a great number of a *apoſtolicals*; *apoſtolical* ſee, *apoſtolical* nuncio, *apoſtolical* notary, *apoſtolical* brief, *apoſtolical* chamber, *apoſtolical* vicar, &c.

APOSTOLIC *clerks*, ſee JESUATES.

APOSTOLICAL *conſtitutions*, ſee CONSTITUTION.

APOSTOLICAL *traditions*, ſee TRADITION.

APOSTOLICAL *fathers* is an appellation uſually given to the writers of the firſt century who employed their pens in the cauſe of Chriſtianity. Of theſe writers, Cotelerius, and after him Le Clerc, have publiſhed a collection in two volumes, accompanied both with their own annotations, and the remarks of other learned men.

APOSTOOLIANS, a ſect of the Mennonites, which firſt ſprung up in the year 1664, and derived its name from Apoſtool, one of the Mennonite miniſters at Amſterdam. They concurred with them in doctrine, and admitted to their communion thoſe only who profeſſed to believe all the ſentiments which are contained in their public confeſſion of faith.

APOSTOLICI, APOSTOLI, or APOSTLES, was a name aſſumed by three different ſects, on account of their pretending to imitate the manner and practice of the apoſtles. The firſt *apoſtolici*, otherwiſe called *Apotactitæ* and *Apotactici*, roſe out of the Encratitæ, and Cathari, in the third century. They made profeſſion of abſtaining from marriage, and the uſe of wine, fleſh, money, &c.

Gerhard Sagarelli was the founder of the ſecond ſect; he obliged his followers to go from place to place as the *apoſtles* did, to wander about cloathed in white, with long beards, diſhevelled hair, and bare heads, accompanied with women, whom they called their ſpiritual ſiſters. They likewiſe renounced all kinds of property and poſſeſſions, inveighed againſt the growing corruption of the church of Rome, predicted its overthrow, and the eſtabliſhment of a purer church on its ruins. Sagarelli was burnt alive at Parma in the year 1300, and was afterwards ſucceeded by Dulcinus, who added to the character of an apoſtle thoſe of a prophet and a general, and carried on a bloody and dreadful war for the ſpace of more than two years againſt Raynerius, biſhop of Vercelli; he was at length defeated, and put to death in a barbarous manner in the year 1307. Neverthleleſs, this ſect ſubſiſted in France, Germany, and in other countries, till the beginning of the fifteenth century, when it was totally extirpated under the pontificate of Boniface IX.

The other branch of *apoſtolici* were of the twelfth century. Theſe alſo condemned marriage, preferring celibacy, and calling themſelves the chaſte brethren and ſiſters; though each was allowed a ſpiritual ſiſter, with whom he lived in a domeſtic relation; and on this account they have been charged with concubinage: they held it unlawful to take an oath; they ſet aſide the uſe of baptiſm; and in many things imitated the Manichees. —Bernard wrote againſt this ſect of *apoſtolici*.

APOSTOLICUM is a peculiar name given to a kind of ſong or hymn, anciently uſed in churches.

The *apoſtolicum* is mentioned by Greg. Thaumaturgus as uſed in his time. Voſſius underſtands it as ſpoken of the apoſtles creed: Suicer thinks this impoſſible, for that this creed was then unknown in the churches of the Eaſt.

APOSTOLORUM *unguentum*, the *apoſtles ointment*, in *Pharmacy*, is a kind of detergent, or cleanſing unguent, compoſed of twelve drugs, the number of the apoſtles; whence its name.

It was invented by Avicenna, and is otherwiſe called *unguentum veneris*.—The principal ingredients are turpentine, reſin, wax, gum ammoniac, birth-wort roots, olibanum, bdellium, myrrh, and galbanum, opopanax, verdegriſe, litharge, oil of olives, and vinegar.

APOSTROPHE, in *Rhetoric*, a figure, whereby the orator, in an extraordinary commotion, turns his diſcourſe from the audience, and directs it to ſome other perſon, preſent or abſent, living or dead, or to inanimate nature.

The word is formed of *απο*, *ab*, *from*; and ςρεφω, *verto*, *to turn*.

Thus Cicero, in his oration for Milo, addreſſes himſelf to the great patriots who had ſhed their blood for the public; and calls them to the defence of his client. So the ſame orator in his firſt *Catilinarian* directs himſelf to Jupiter the protector of the city and empire, and beſeeches him to repel the parricide, &c.

The *apoſtrophe* is frequently alſo addreſſed to inanimates, as tombs, monuments, defuncts, &c.—Cicero's *apoſtrophe* to Tubero, in his oration for Ligarius, is judged one of the fineſt paſſages in his works.

That *apoſtrophe* of Demoſthenes, wherein he addreſſes himſelf to the Greeks ſlain at the battle of Marathon, is alſo famous. Cardinal Perron ſays, it has procured the orator as much glory, as if he had raiſed them from the dead.

APOSTROPHE, or APOSTROPHUS, in *Grammar*, alſo denotes a note or character placed over a letter, in lieu of a vowel, to denote that the vowel is cut off, and not to be pronounced.

As *ev'n* for *even*; *th' angelic hoſt*, for *the angelic*, &c.——The affectation of frequent *apoſtrophes*, ſo uſual among ſome late Engliſh writers, is a great abuſe.

In proſe, *apoſtrophes* are indefenſible, and tend to vitiate the language; their uſe in poetry is to reduce a line to the proper meaſure.

APOSTROPHE, in *Medicine*, denotes a loathing or averſion for food.

In which ſenſe the word amounts to the ſame with APOSITION.

APOSYRMA, from *αποσυρω*, *I take off*, in *Medicine*, denotes a diſquamation, or ſcaling of the ſkin.

In which ſenſe, the word amounts to much the ſame with ABRASION.

Greek writers uſe the word *apoſyrmata*, for what the Latins calls *abraſa*, viz. a ſuperficial kind of exulcerations, which raiſe the ſkin.

APOTACTITÆ, or APOTACTICI, an ancient ſect, who, affecting to follow the evangelical counſels of poverty, and the examples of the apoſtles, and primitive Chriſtians, renounced all their effects and poſſeſſions.

The word is formed from *αποτασσω*, or, *αποταττω*, *to renounce*.

It does not appear, that they gave into any errors during their firſt ſtate; ſome eccleſiaſtical writers aſſure us, they had divers holy virgins, and martyrs, under the perſecution of Diocleſian, in the fourth century; but they afterwards fell into the opinions of the Encratitæ, and taught, that the renouncing of all riches was not only a matter of counſel and advice, but of precept and neceſſity. And hence the ſixth law in the Theodoſian Code joins the *Apotactitæ* with the Eunomians and Arians.

APOTEICHISMUS, from *αποτειχιζω*, *derived from*, *απο*, and *τειχιζω*, *I raiſe a wall*, *or τειχος*, in the *Ancient Military Art*, a kind of line of circumvallation drawn round a place, in order to beſiege it.

This was alſo called *periteichiſmus*.

The firſt thing the ancients went about, when they deſigned to lay cloſe ſiege to a place, was the *apoteichiſmus*; which ſometimes conſiſted of a double wall, or rampart, raiſed of earth; the innermoſt to prevent ſudden ſallies from the town; the outermoſt to keep off foreign enemies from coming to the relief of the beſieged. This anſwered to what are called lines of contravallation and circumvallation, among the moderns.

APOTELESMA, from *αποτελεω*, *I perform*, in a general ſenſe, denotes an effect of ſome cauſe. It is alſo uſed for a prognoſtic, or natural prediction of an event.

In which ſenſe, Scaliger ſpeaks of the *apoteleſmata* of Hippocrates. The anſwers of aſtrologers deduced from the conſideration of the ſtars are particularly called *apoteleſms*, or *apoteleſmata*; which were the expreſſions they uſed, to denote the effects of the ſtars and planets on ſublunary bodies.

In which ſenſe, *apoteleſmata* amount to the ſame with influences.

APOTELESMATICA, the ſcience of *apoteleſms*, or the art of foretelling future events, from the aſpects and configurations of the heavenly bodies.

In this ſenſe, the word amounts to the ſame with what we otherwiſe call *judicial aſtrology*.

Sozomen denominates this *apoteleſmatical aſtronomy*.

Hence alſo aſtrologers are called *apoteleſmatici*, as ſynonymous with *mathematici*, *genethliaci*, *Chaldæi*, &c.

APOTHECARY, a perſon who profeſſes the practice of pharmacy, or that part of phyſic which conſiſts in the preparation and compoſition of medicines.

The word is derived from *αποθηκη*, *ſhop*, the place where he makes up, and expoſes his medicines to ſale.

The *apothecaries* in England are obliged to make up their medicines according to the formulas preſcribed in the college diſpenſatory.

Their ſhops are ſubject to the viſitation of the cenſors of the college; who are impowered to deſtroy ſuch medicines as they think not good.

The company of *Apothecaries* were incorporated by a charter from James I. procured at the ſolicitation of Dr. Mayerne and Dr. Atkins; till that time they only made a part of the grocers company; plums, ſugar, ſpice, Venice-treacle, mithridate, &c. were ſold in the ſame ſhop, and by the ſame perſon. The reaſon of ſeparating them was, that medicines might be better prepared, and in oppoſition to divers perſons who impoſed unwholeſome remedies on the people. Obſerv. on Caſe of Will. Roſe, ſect. 2.

In the year 1712, the 10th of queen Anne, an act paſſed for reviving and continuing ſeveral acts therein mentioned, one whereof was for exempting the apothecaries from ſerving the offices of conſtables and ſcavengers, and other pariſh and ward offices, and from ſerving upon juries; which act was made perpetual in the ninth year of George I.

They have a hall in Black Friers, where there are two fine laboratories, out of which all the ſurgeons cheſts are ſupplied with medicines for the royal Britiſh navy.

To his majeſty belong two *apothecaries*: the ſalary to the firſt, 320*l.* to the ſecond, 275*l.*—To the houſhold belong alſo two.

Bartholin complains of the too great numbers of *apothecaries* in Denmark; though there are but two allowed in all Copenhagen, and one in every other conſiderable town.

In Muſcovy, we are told, there are no *apothecaries* at all; but then there are no phyſicians neither, except two or three retained by the court, and thoſe rather for ſtate than ſervice.

Travellers ſpeak of a famous *apothecary*'s ſhop at Dreſden, furniſhed with four thouſand ſilver pots, all filled with the choiceſt drugs.

It is ſtrange, to what an height *apothecaries* have found means to carry their favourite polypharmacy, conſidering what a few ſimple eaſy medicines will anſwer all the purpoſes of their vaſt ſhops. The phyſicians of Paris, toward the beginning of the ſeventeenth century, began to oppoſe the growing evil. Patin was one of the warmeſt. They went ſo far, as at length to exclude the miniſtry of the *apothecaries* in almoſt all caſes. A valet, or a chambermaid, prepared and adminiſtered the purges, clyſters, &c. The bookſeller of the *Medecin Charitable* (which they had procured to be written for the purpoſe) made up and ſold moſt of the medicines directed in it; and even the phyſicians, when they wanted, ſent to him for them. Patin, Lett. 17. à Berlin.

The charitable diſpenſation of medicines by the Chineſe is well deſerving notice. They have a ſtone, which is ten cubits high, erected in the public ſquares of their cities; and on this ſtone are engraved the names of all ſorts of medicines with the price of each; and when the poor ſtand in need of any relief from phyſic, they go to the treaſury, where they receive the price each medicine is rated at.

APOTHECARY, *apothecarius*, in *Writers of the middle Age*, denotes a ſhop-keeper, or ware-houſe-keeper.

APOTHECARIUS is alſo uſed to denote a ſtore-keeper, or officer appointed to have the direction of a magazine, GRANARY, &c.

In which ſenſe *apothecarii* is ſometimes rendered by *horrearii* and *rationarii*.

APOTHEOSIS, in *Antiquity*, an heathen ceremony, whereby their emperors and great men, were placed among the gods.

The word is derived from *απο*, and Θεος, *God*.

After the *apotheoſis*, which they alſo called *deification* and *conſecration*, temples, altars, and images, were erected to the new deity; ſacrifices, &c. were offered, and colleges of prieſts inſtituted. Dio 47, 56, 59. Suet. Aug. 5. Tib. 40. Paterc. 1. Ovid. Pont. 4.

Images were erected to them with the attributes of divinity (Lucan 7. Dio 53. Capitolin. Antonin). And to demoliſh them was deemed treaſon (Venul. lib. vi. D. ad leg. Jug. mal) And even the ſenate decreed that oaths ſhould be taken in their names (Dio 44, 59, 60. Tac. Ann. 1.) Vid. Kirchm. de fun. Rom. 4 14.

It was one of the doctrines of Pythagoras which he had borrowed from the Chaldees, that virtuous, perſons, after their death, were raiſed into the order of the gods. And hence the ancients deified all the inventors of things uſeful to mankind; and thoſe who had done any important ſervice to the commonwealth.—Tiberius propoſed to the Roman ſenate the *apotheoſis* of Jeſus Chriſt, as is related by Euſebius, Tertullian, and Chryſoſtom. Juvenal, rallying the frequent *apotheoſes,* introduces poor Atlas, complaining that he was ready to ſink under the burden of ſo many new gods as were every day added to the heavens. Seneca ridicules the *apotheoſis* of Claudius with admirable humour.—Herodian, lib. iv. in ſpeaking of the *apotheoſis* of Servius, gives us a very curious deſcription of the ceremonies uſed in the *apotheoſis* of the Roman emperors. After the body of the deceaſed emperor, ſays he, had been burnt, with the uſual ſolemnities, they placed an image of wax, perfectly like him, but of a ſickly aſpect, on a large bed of ivory, covered with cloth of gold, in the veſtibule of the palace. The greateſt part of the day, the ſenate ſat ranged on the left ſide of the bed, dreſſed in robes of mourning; the ladies of the firſt rank ſitting on the right ſide, in plain and white robes, without any ornaments. This laſted for ſeven days ſucceſſively, during which, the phyſicians came from time to time to viſit the ſick, always making their report, that he grew worſe; till at length they publiſhed it, that he was dead.

This done, the young ſenators and Roman knights took the bed of ſtate upon their ſhoulders, carrying it through the Via Sacra to the Old Forum, where the magiſtrates were uſed to diveſt themſelves of their offices. There they ſet it down, between two kinds of amphitheatres, in the one whereof were the young men, and in the other the maidens of the firſt families of Rome, ſinging hymns ſet to ſolemn airs, in praiſe of the deceaſed. Theſe hymns ended, the bed was carried out of the city into the Campus Martius, in the middle of which place was erected a kind of ſquare pavilion, the inſide whereof was full of combuſtible matters, and the outſide hung with cloth of gold, and adorned with figures of ivory, and various paintings.

Over this edifice were ſeveral others, like the firſt in form and decoration, but leſs; always diminiſhing and growing ſlenderer towards the top. On the ſecond of theſe was placed the bed of ſtate; and a great quantity of aromatic perfumes, and odoriferous fruits and herbs, were thrown all around; after which, the knights made a proceſſion or cavalcade in ſolemn meaſures around the pile; ſeveral chariots alſo ran round it, thoſe who conducted them being clad in purple robes, and bearing the images of the greateſt Roman emperors and generals.

This ceremony ended, the new emperor came to the *catafalco,* or pile, with a torch in his hand; and, at the ſame time, fire was ſet to it on all ſides; the ſpices and other combuſtibles kindling all at once.

While this was doing, they let fly, from the top of the building, an eagle, which, mounting into the air with a fire-brand, carried the ſoul of the dead emperor along with it into heaven, as the Romans believed; and thenceforward he was ranked among the gods. It is for this reaſon, that the medals, wherein *apotheoſes* are repreſented, have uſually an altar with fire upon it; or elſe an eagle taking its flight into the air, and ſometimes two eagles.

APOTHERAPIA, from αποθεραπευω, *I cure,* in *Phyſic,* properly denotes a complete or finiſhed cure.

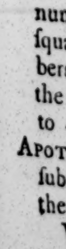
Apotherapia is alſo uſed, in the *Gymnaſtic Art,* for the laſt part of all regular exerciſe, viz. friction or unction with oil, before, as well as after bathing.

The deſign of this was partly to cleanſe the ſkin from any filth or duſt it might have contracted during the exerciſe, and partly to remove wearineſs.

APOTHERMUM, from απο, and θερμος, *hot,* in *Ancient Writers,* a ſharp kind of ſauce, like that prepared of muſtard, oil, and vinegar, or of vinegar alone.

APOTOME, in *Mathematics,* the remainder or difference of two incommenſurable quantities.

The word is derived from αποτεμνω, *I cut off.*



An *apotome,* in *Geometry,* is an irrational reſidue, as CB, ariſing, when from a rational line AC, called *a,* you cut off a rational part AB, called *b,* only commenſurable in power to the whole line AC. It may be expreſſed thus, $a-\sqrt{b}$. Such is the difference between the ſide of an equilateral triangle, and a perpendicular, from the vertex to the baſe.

Euclid makes ſix ſorts of *apotomes.*

Apotome *prima,* is when the greater number is a rational number, and the difference of the ſquares of both numbers is a ſquare number, e. gr. $3-\sqrt{5}$.

Apotome *ſecunda,* is where the leſſer number is a rational number, and the ſquare root of the difference of the ſquares of both numbers has a ratio expreſſible in numbers to the greater number; ſuch is $\sqrt{18}-4$, ſince the difference of the ſquares 18 and 16 is 2, and $\sqrt{2}$ is to $\sqrt{18}$ as 1 to 3, becauſe $\sqrt{18}=3\sqrt{2}$.

Apotome *tertia,* is when both the numbers which are ſubtracted from each other are irrational numbers, and the ſquare root of the difference of their ſquares has a ratio in numbers to the greater. This holds in $\sqrt{24}-\sqrt{18}$, for the difference of their ſquares 24 and 18 is 6, and $\sqrt{6}$ is to $\sqrt{24}$ as 1 is to 2, for $\sqrt{24}=2\sqrt{6}$.

Apotome *quarta,* is when the greater number is a rational number, and the ſquare root of the difference of the ſquares of both numbers has no ratio to it in numbers. Such is $4-\sqrt{3}$, for the difference of the ſquares 16 and 3, is 13. but the ſquare root of 13, viz. $\sqrt{13}$ has no numerical ratio to 4.

Apotome *quinta,* is when the leſſer number is a rational number, and the ſquare root of the difference of the ſquares of both numbers has no ratio in numbers to the greater number. Such is $\sqrt{6}-2$, for the difference of the ſquares 6 and 4, is 2, and $\sqrt{2}$ has to $\sqrt{6}$ no ratio in numbers.

Apotome *ſexta,* is where both numbers are irrational, and the ſquare root of the difference of their ſquares has no ratio in numbers to the greater. Such is the caſe in $\sqrt{6}-\sqrt{2}$, for the difference of the ſquares 6 and 2 is 4, and the root thereof 2 has to the $\sqrt{6}$ no ratio in numbers.

Peter Ramus cenſures Euclid's doctrine of *apotomes,* and even all the reſt delivered in the tenth book concerning irrational lines.

Apotome, in *Muſic,* is the difference of the tone *major* and LIMMA, expreſſed by $\frac{2187}{2048}$.

The Greeks thought, that the greater tone could not be divided into two equal parts; for which reaſon they called the firſt part αποτομη, and the other λιμμα; in this imitating Pythagoras and Plato.

The *apotome* is by ſome authors, as Boethius, called *hemitonium majus*; and the *limma, hemitonium minus.* He alſo calls the difference of theſe two, *comma.* The interval of two ſounds expreſſed by $\frac{125}{128}$, was called by the ancients *apotome major,* and that expreſſed by $\frac{2025}{2048}$, *apotome minor.*

APOTRAGOPOGON, in the *Materia Medica,* a name given by ſome of the old authors to the LADANUM.

APOTROPÆA, from αποτρεπω, *I avert,* in the *Ancient Poetry,* verſes compoſed for averting the wrath of incenſed deities; and the deities invoked for averting any threatened misfortune were called *Apotrepeans*: they were alſo called *Alexicaci,* from αλεξω, *I drive away*; and *averrunci* from *averrunco,* which denotes the ſame.

APOZEM, in *Medicine,* a form of remedy, otherwiſe called a DECOCTION.

The word is derived from αποζεω, *fervefacio, I make hot.*

Apozems are a claſs of liquid medicines, compoſed of the juices of divers plants, roots, woods, flowers, leaves, fruits, and ſeeds, drawn out by boiling in water, and ſweetened and clarified. An *apozem* differs from a *ſyrup,* in thickneſs and conſiſtence; the *ſyrup* being more denſe and viſcous than the *apozem,* from the quantity of ſugar. It differs from a *julap,* in that it is thicker, and more viſcous; and is not made with diſtilled waters, as *julaps* are, but only with common water.

There are purging *apozems,* cephalic *apozems,* hepatic *apozems,* antarthritic, diuretic, ſtyptic, &c. *apozems.*

Apozem differs from *infuſion,* on account of the greater degree of heat made uſe of in preparing the former, whereby the *apozem* becomes more fitly impregnated with thoſe parts of the ſubject which are readily ſoluble in boiling water.

Apozems are medicines of the extemporaneous kind, and therefore the leſs uſed, becauſe that which is once made up will not keep. What is directed in this form, is generally ſent to the patient in the quantity of a quart at a time, to be drank off plentifully as common drink.

APPANAGE, or Appenage. See Apanage.

APPARATOR. See Apparitor.

APPARATUS, from *apparo, I prepare,* properly ſignifies a formal preparation for ſome public and ſolemn action.

We ſay, the *apparatus* of a feaſt, coronation, &c. The prince made his entry with great *apparatus* and magnificence.

Apparatus is alſo uſed for the utenſils and appendages belonging to ſome more conſiderable machine. As, the furniture or *apparatus* of an air-pump, microſcope, &c.

Apparatus is ſometimes alſo uſed in *Chirurgery,* for the bandages, medicaments, and dreſſings of a part; or the ſeveral matters applied for the cure of a wound, ulcer, or the like.

There is no judging of the quality of a hurt, till after taking off the firſt *apparatus,* or coverings.

Apparatus is frequently uſed for the operation of cutting for the ſtone.

For this there are three ſorts of *apparatus,* viz. the *ſmall* (1), *great* (2), and *high apparatus* (3): which ſee deſcribed under the article Lithotomy.

Apparatus is alſo uſed as a title of ſeveral books compoſed in form of catalogues, bibliothecas, dictionaries, &c. for the eaſe and conveniency of ſtudy.

The *apparatus* to Cicero, is a kind of concordance, or collection of Ciceronian phraſes, &c. The *apparatus ſacer* of Poſſevin, is a collection of all kinds of eccleſiaſtical authors printed in 1611, in three volumes.—Gloſſaries, comments, &c. are alſo frequently called *apparatuſes*.

APPARENT, from *appareo*, *I appear*, that which is viſible, or evident to the eye, or the underſtanding.

Apparent *conjunction* of the planets is, when a right line, ſuppoſed to be drawn through the centre of two planets, does not paſs through the centre of the earth, but through the eye of the ſpectator.

Apparent *Altitude*, *Diameter*, *Diſtance*, *Heir*, *Horizon*, *Magnitude*, *Motion*, *Place*, *Time*, &c. See the ſeveral ſubſtantives.

APPARITION, in *Aſtronomy*, denotes a ſtar's or other luminary's becoming viſible, which before was hid.

In which ſenſe the word ſtands oppoſed to OCCULTATION.

The HELIACAL riſing is rather an *apparition* than a proper riſing.

Apparition, *circle of perpetual*. See Circle *of perpetual apparition*.

Apparition, in a general ſenſe, is the appearance or ſemblance of a thing.

Apparition is alſo uſed to denote a ſpectre, or præternatural appearance of ſome ſpirit, or the like.

We read of *apparitions* of angels, genii, dæmons, fairies, witches, departed ſouls, &c. *apparitions* of God, of Chriſt, the Virgin, ſaints, prophets, and of the devil himſelf.

Many of the *apparitions*, we are told of by writers, are doubtleſs mere deluſions of the ſenſe; many others were ſeen but in dreams or deliquiums; many others are fictions contrived merely to amuſe, or anſwer ſome purpoſe. *Apparitions*, it is certain, are machines that on occaſion have been of good ſervice to generals, to miniſters of ſtate, to prieſts, and others. It has been controverted whether an *apparition* be any proof of a future ſtate.

The abbé de St. Pierre has a diſcourſe expreſsly on the phyſical method of ſolving or accounting for *apparitions*; he makes them the effect of feveriſh dreams, diſturbed imaginations, &c.

APPARITOR, or **Apparitour**, or **Apparator**, a BEADLE in an UNIVERSITY, who carries the mace before the maſters, and the faculties.

Apparitor is alſo uſed in ſome ancient Engliſh laws, for a judge or juſtice.

Apparitor *comitatus*. There was formerly an officer called by this name, for which the ſheriffs of Buckinghamſhire had a conſiderable yearly allowance; and in the reign of queen Elizabeth, there was an order of court for making that allowance. But the cuſtom and reaſon of it are now altered.

Apparitors alſo denote meſſengers, who cite men to appear in the eccleſiaſtical courts.

Among the Romans, *apparitors* were the ſame with ſerjeants or tipſtaffs among us; or rather *apparitor* was a general term, and compriſed under it all the miniſters and attendants of the judges and magiſtrates, appointed to receive and execute their orders.—And hence, they ſay, the name was derived, viz. from *apparere*, *to be preſent*, *to be in waiting*.

Under the name *apparitores* were comprehended the *ſcribæ*, *accenſi*, *interpretes*, *præcones*, *viatores*, *lictores*, *ſtatores*, and even the *carnifices* or hangmen.

They were uſually choſen out of the freedmen of the magiſtrates, and their condition was held in ſo much contempt, that as a mark of ignominy, the ſenate appointed a city that had revolted from them to furniſh them with *apparitors*.

There were alſo a kind of *apparitors of cohorts*, called *cohortales*, or *conditionales*, as being attached to a cohort, and doomed to that condition.—The *apparitors* of the prætors, *prætoriani*, were thoſe who attended the prætors, or governors of provinces; and who, on their maſter's birth-day, were always changed, and preferred to better poſts.—Add, that the pontifices had alſo their *apparitors*, as appears from an inſcription of an ancient marble in the *Via Appia*:

APPARATORI
PONTIFICVM
PARMVLARIO.

APPAUMEE, from the French *paume*, *palm of the hand*, in *Heraldry*, denotes one hand extended with the palm appearing, and the thumb and fingers at full length.

APPEAL, in *Law*, ſignifies the removal of a cauſe from an inferior judge to a ſuperior; or the having recourſe to a ſuperior judge to rectify what is amiſs in a ſentence paſſed by an inferior.

Appeals to Rome were firſt introduced into England in the reign of king Stephen; and though they were not ſtrictly regarded in the ſucceeding reigns, they continued till the time of king Henry the Eighth, when they were finally aboliſhed by the 24th H. 8. c. 12. and 25th H. 8. c. 19.

Appeals lie from the archdeacon or his official to the biſhop, and again from the biſhop or his commiſſary to the archbiſhop; and by the 25th H. 8. c. 29. for lack of juſtice in the archbiſhop's courts, the party may *appeal* to the king in chancery, where commiſſioners are named, and by reaſon of this appointment they are called *delegates*; and after the deciſion of this court, a commiſſion of review has been ſometimes appointed.

Appeals lie from all the ordinary courts of juſtice to the houſe of lords, who judge *en dernier reſſort*; i. e. no *appeal* lies from them.

There are *appeals* from eccleſiaſtical juſtice to ſecular.—The firſt inſtance of this is that of Paulus Samoſatenus; who being condemned and depoſed by the ſecond council of Antioch, refuſed to ſurrender the epiſcopal houſe to Domnus, who had been elected his ſucceſſor; and *appealed* to the emperor.

Appeal is alſo uſed in *Common Law* in the ſame ſenſe with *accuſatio* among the *Civilians*. For as, in the *Civil Law*, cognizance of criminal caſes is taken either upon *inquiſition*, *accuſation*, or *denunciation*; ſo, in ours, it is taken either upon *indictment*, or *appeal*.

Indictment comprehends both *inquiſition* and *denunciation*.—*Appeal* or accuſation is a lawful declaration of another man's crime (which, by Bracton, muſt be felony at the leaſt) before a competent judge, by one that ſetteth his name to the declaration, and undertakes to make it good on the penalty that may otherwiſe enſue.

An *appeal* is commenced two ways; either by WRIT, or by BILL.

Appeal by *writ* is, when a writ is purchaſed out of chancery by one to another; to this end, that he *appeal* a third of ſome felony committed by him, finding pledges that he ſhall do it, and deliver this writ to the ſheriff to be recorded.

Appeal by *bill* is, when a man of himſelf gives up his accuſation in writing to the ſheriff or coroner; offering to undergo the burden of *appealing* the perſon therein named.

This practice is drawn from the Normans, as appears from the Grand Cuſtomary, wherein is a ſolemn diſcourſe both of the effects of this *appeal*, viz. the order of the combat, or the trial by inqueſt; which, by our law, was in the choice of the defendant.

Appeal *of mayhem* is an accuſing of one that hath maimed another.—But this being heretofore no felony, the *appeal* thereof was but in manner of an action of treſpaſs; ſo that there was nothing recovered but the damages.

Bracton calls this, *appellum de plagiis mahemio*, and has a whole chapter of it.—In king John's time, there is recorded an *appeal* againſt a Jew, *qui fecit ementulari quendam nepotem ſuum*.

Appeal *of rape* lies where a rape is committed on the body of a woman.

Appeal *of robbery* is a remedy given by the common law, whereby a perſon robbed of his goods may obtain reſtitution of them. But the three laſt kinds of *appeal* are now much out of uſe, becauſe of the intricacy of the pleadings, and the charge of proſecution; and the method of indictment is generally adopted.

Appeal *of wrong impriſonment* is uſed by Bracton for an action of wrong or falſe impriſonment.

Appeal is more particularly uſed for a private accuſation of a murderer, by one who had intereſt in the murdered party; or of any felon by one of his accomplices in the fact.

An *appeal* of death, which is now chiefly in uſe, is a vindictive action, which the law gives to a wife during widowhood, againſt the murderer of her huſband, or to the male heir at law, againſt one who kills his anceſtor. The *appeal* muſt be lodged in a year and a day after the death of the perſon murdered. If the perſon *appealed* be acquitted, the appellant ſhall be impriſoned for a year, reſtore damages to the party, and pay a fine to the king. 13th Ed. 1. ſt. 1. c. 13.

If an *appeal* of murder or felony be uſed by any common perſon againſt a peer; he ſhall be tried by commoners, and not by his peers.

The perſon who brings an *appeal* is called the *appellant*; and the perſon *appealed*, the *appellee*.

In an *appeal*, the king cannot pardon.

APPEARANCE, the exterior ſurface of a thing; or that which firſt ſtrikes the ſenſe, or the imagination.

The Academics maintain, that the ſenſible qualities of bodies are only *appearances*; and the like doctrine is held by ſome later philoſophers.

Our errors ariſe chiefly from a too haſty and precipitate aſſent of the will, which acquieſces too eaſily in the *appearances* of truth.

Appearance, in *Law*, is the defendant's engaging to anſwer a cauſe or action entered againſt him in ſome court of judicature.

Appearance, in the King's Bench, is the defendant's filing either of common or ſpecial bail, if the action be by bill.—It it be by original, the *appearance* muſt be with the PHILAZER of the county where the arreſt was.

Appearance, in the Common Pleas, muſt be entered with the PHILAZER there; but if it be by bill, with the PROTHONOTARY.

APPEARANCE, in *Perſpective*, is the repreſentation or projection of a figure, body, or like object, upon the perſpective plane.

The *appearance* of an objective right line is always a right line. See PERSPECTIVE.—The *appearance* of an opake body and a luminary being given, to find the *appearance* of the ſhadow; ſee SHADOW.

APPEARANCE *of a ſtar* or *planet*. See APPARITION.

APPEARANCES, in *Aſtronomy*, &c. are more uſually called *phænomena* and *phaſes*.

In *Optics* we uſe the term *direct appearance* for the view or ſight of any object by direct rays; without either refraction or reflexion.

APPEARANCES, *to ſave*, is to diſcharge one's duty ſeemingly, or acquit himſelf of the formalities and externals thereof; ſo as to ſave his character, and avoid giving ſcandal or offence.

APPEARANCES, in *Phyſiology*. See PHASMATA.

APPEASING *remedies*, in *Medicine*, are thoſe which aſſuage the pain in a diſeaſe, and give the patient ſome reſt, or reſpite; and at the ſame time contribute to the cure.

Theſe amount to the ſame with what we otherwiſe call PAREGORICS, ANODYNES, &c.

APPELLANT. See APPEAL.

APPELLANTS is particularly uſed in our time, for thoſe among the French clergy, who refuſed to ſubſcribe the conſtitution or bull *unigenitus*, iſſued by Clement XI. in 1713, and appeal from it, either to the pope better informed, or a general council.

The French biſhops, prieſts, monks, and even nuns, are divided into *appellants*, and *non-appellants*. The Janſeniſts and their followers are generally *appellants*.

APPELLATIVE, or *Noun* APPELLATIVE, in *Grammar*, a common name; or a name which belongs or is applicable to things of a certain kind.

The word is formed of *appellare*, *to name a thing*.

Such are the names, *man*, *angel*, *horſe*, *plant*, *tree*, &c.

Appellatives ſtand opppoſed to PROPER names, which belong only to individuals; as *Peter*, *Gabriel*, *Bucephalus*, &c.

APPELLEE, in the *Common Law*. See APPEAL.

In the *Civil Law*, *appellee*, *appellatus*, properly belongs only to the judge before whom an appeal is brought.

APPENAGE. See APANAGE.

APPENDANT, from *appendo*, *I hang by*, in *Law*, is underſtood of ſuch things as by time of preſcription have belonged, appertained, and been joined, to ſome other principal thing.

Thus an hoſpital may be *appendant* to a manor; a common of fiſhing, to a freehold; a ſeat in a church, to a houſe; or the like.

APPENDANT, *advowſon*. See ADVOWSON.

APPENDANT, *common*. See COMMON.

APPENDICULA denotes a little or diminutive APPENDIX.

The word is ſeldom uſed, except by anatomiſts, in the following phraſe:

APPENDICULA *vermiformis*, in *Anatomy*, a name given by ſome to the inteſtine *cæcum*, which they conſider only as an appendage of the *colon*, and not as the true *cæcum* of the ancients.

APPENDICULÆ *aſteriarum*, *wires of aſteriæ*, a name given by the writers on *Natural Hiſtory*, to certain ſmall branches which are placed in a circular order at different diſtances upon the columns of the *aſteriæ*.

APPENDIX, or APPENDAGE, a thing neceſſary to, or dependent on another.

The term is chiefly uſed in matters of literature, for an additional diſcourſe, placed at the end of any piece, or writing; to explain or proſecute ſomething there left deficient, or to draw concluſions therefrom.—In which ſenſe the word coincides with SUPPLEMENT.

APPENDIX, in *Anatomy*, is a part, in ſome meaſure, detached from another part, to which however it adheres, or is contiguous.

There are membranous *appendices*, of various figures, in moſt of the inner parts of the body.

The *cæcum* is by ſome writers called *appendix*, or *appendicula vermiformis*.

Mr. Monro aſſures us, he never ſaw the *appendix vermiformis* of any of the human fœtuſes which he diſſected, diſtended with *meconium*, and therefore he cannot allow it as a reſervoir of the *fæces* during geſtation. From the numerous mucous *lacunæ* in the human *appendix*, and the like ſtructure in the *cæca* of brutes, its uſe ſeems to be to furniſh *mucus* to lubricate the internal ſurface of the great ſac of the *colon*, and to moiſten the *fæces* in it, that they may be more eaſily puſhed forward out of this part of the gut, where there is the greateſt difficulty in their progreſs, and where by ſtagnating too long, they may bring on troubleſome ſymptoms. Witneſs the diſeaſe called PLACENTA *inteſtinalis*. Med. Eſſ. Edinb. vol. iv. art. 12.

APPENDIX is more particularly uſed in the ſame ſenſe with EPIPHYSIS.

APPENSA, or APPENDED *remedies*, ſuch as are outwardly applied, by hanging about the neck.

The word comes from *ad*, and *pendo*, *I hang to*.

Such are divers amulets, necklaces, phylacteries, &c.

APPERCEPTION, or ADPERCEPTION, is uſed by Leibnitz and his followers, for an attribute of the mind, conſidered as conſcious of, or reflecting on its own perceptions.

In which ſenſe the word amounts to the ſame with what Des Cartes and others call CONSCIENCE or CONSCIOUSNESS.

APPERTINANCES. See APPURTENANCES.

APPETITE, APPETITUS, APPETENCY, in *Philoſophy*, a deſire of enjoying ſomething wanted; or a complacency in the fruition of a thing preſent.

The word is formed of *ad*, *to*, and *peto*, *I crave*.

Some philoſophers define *appetite*, more generally, an inclination of the ſoul towards ſome object conſidered as good; or a propenſity to an object, in reſpect of the good that is apprehended in it.

The ſchoolmen diſtinguiſh *appetite* into *voluntary* and *natural*.

The firſt is the will itſelf, acting under a competent knowledge or information of the thing in hand: ſuch is the *appetite* or deſire of being happy. The ſecond is a kind of inſtinct, whereby we are mechanically driven to conſult our own preſervation.

Natural *appetite* is ſubdivided into *concupiſcible*, and *iraſcible*.

Others again divide it into *ſenſitive* and *rational*.

APPETITE, *ſenſitive*, is that which ariſes from a notion of goodneſs in the object, as impreſſed by the impulſe of the *ſenſes*.

APPETITE, *rational*, is that which ariſes from an apprehenſion of good in the object, as conceived by the underſtanding.

APPETITE is reſtrained, by Hutcheſon, to ſuch of our deſires as have a previous painful and uneaſy ſenſation, antecedently to any opinion of good in the object; nay, ſo as that the object is often chiefly eſteemed good only for its allaying this pain or uneaſineſs, or if it give alſo poſitive pleaſure, yet the uneaſy ſenſation is previous to, and independent of this opinion of good in it.

APPETITES are paſſions directed to general objects, in contradiſtinction to paſſions directed to particular objects, which retain their proper name. Thus we ſay, an *appetite* for fame, for glory, for conqueſt, for riches; but we ſay the *paſſion* of love, of gratitude, of envy, &c. *Appetite* may be alſo diſtinguiſhed from *paſſion*, ſince the latter has no exiſtence till a proper object be preſented; whereas the former exiſts firſt, and then is directed to an object. Elem. Crit. vol. i. p. 44.

APPETITE, in *Medicine*, is more particularly uſed to denote a natural periodical call or deſire to eat and drink, in order to repair what had been waſted by the ſeveral excretions of the body.

A loſs or proſtration of *appetite* is called ANOREXIA.—A prepoſterous *appetency* of things not proper for food is called PICA.

An immoderate *appetite* is called BULIMIA, or *fames canina*.—Some, however, diſtinguiſh between the βυλιμια, and canine *appetite*; making it the diſtinguiſhing character of the latter, that it is attended with a lientery, or other cœliacal flux.

APPETITE, *exceſſive*. See OREXIS.

APPETITE, *defective*. The defect of *appetite* is of two kinds, and is uſually divided, by medical writers, under two names, the *anorexia* and *nauſea*.

The *anorexia* is a too great abſtinence from foods, which ſometimes has its origin from depravation of the ſtomach, ſometimes from other cauſes more remote.

The *nauſea* is defined to be a plenary abſtinence from foods, being a complaint of the ſame nature and origin with the *anorexia*, but differing in degree.

The ſigns are very obvious ſo far as a diſtaſte to food, which is common to both; but there is this difference, that in an *anorexia* the patients uſually eat ſomething, though without *appetite*, and are troubled always with a pain and uneaſineſs in the ſtomach after it; but in the *nauſea* there is a greater diſreliſh of food of all kinds, and frequent ſtraining to vomit. Men of idle lives, and ſuch as drink too freely of ſtrong liquors, are ſubject to *idiopathic* defects of *appetite*, from actual injuries in the ſtomach; others labouring under the different diſeaſes before mentioned, are as often ſubject to the *ſymptomatic*. People of a ſanguine habit, when afflicted with a loſs of *appetite*, always find great relief in acids of the milder kind; and thoſe of a leucophlegmatic habit are often cured by taking ſmall doſes of *elixir proprietatis* every day before dinner. Some perſons are very fond of external applications to the ſtomach in thoſe caſes, but theſe are rarely found to be of any great ſervice. The beſt of them is a plaſter of *tacamahaca*, with oil of maſtic.

APPIADES, in *Mythology*, five divinities ſo called becauſe their temples were at Rome near the fountains of Appius; viz. Venus, Pallas, Veſta, Concord, and Peace.

APPIAN *Way*, a great Roman highway, paved by Appius Claudius, cenſor of Rome, in the 444th year of that city. It commenced at the gate Capenna, now called St. Sebaſtian's, and paſſing over the mountain called St. Angeli, croſſes the plain of Valdranus, the *Palus Pontines*, and ends at Capua.

Caius Gracchus placed the ſmall columns called *termini*, which marked the miles.

APPLAUSE, properly ſignifies an approbation of ſomething, witneſſed by clapping of hands.

The word comes from the verb *plaudere*, *to clap the hands*. The ancient way of *applauding* by clapping the hands, is ſcarce retained any where but in colleges and theatres.—Such a tragedy was acted with great *applauſe*; ſuch a ſtudent maintained a theſis with *applauſe*, &c.

There were three ſpecies of *applauſe*, denominated from the different noiſes made in them, viz. *bombus*, *imbrices*, and *teſtæ*; the firſt a confuſed din, made either by the hands or the mouth; the ſecond and third by beating on a ſort of ſounding veſſels placed in the theatres for this purpoſe.

Perſons were inſtructed to give *applauſe* with ſkill; and there were even maſters who profeſſed to teach the art. The proficients in this way let themſelves out for hire to the vain-glorious among the poets, actors, &c. and were properly diſpoſed to ſupport a loud *applauſe*. Theſe they called *laudicoeni*.

At the end of the play, a loud peal of *applauſe* was expected, and even aſked of the audience, either by the chorus, or the perſon who ſpoke laſt. The *formula* was, *ſpectatores plaudite*, or *valete & plaudite*.

The *plauſores*, or applauders, were divided into *chori*, and diſpoſed in theatres oppoſite to each other, like the choriſters in cathedrals; ſo that there was a kind of concert of *applauſes*.

APPLE-*tree*, *malus*, in *Botany*. In the Linnæan ſyſtem, this is a ſpecies of the *pyrus*, and belongs to the genus of *icoſandria pentagynia*. The characters of it are, that the branches ſpread, and are more depreſſed than thoſe of the pear-tree. The flower conſiſts of five leaves, which expand in form of a roſe. The fruit is hollowed about the foot-ſtalk, and is for the moſt part roundiſh, and umbilicated at the top; is fleſhy, and divided into five cells or partitions, in each of which is lodged one oblong ſeed. There are three ſpecies: the *wild apple*, with a very ſour fruit, commonly called *crab*: the *wild crab* of Virginia, with a ſweet-ſcented flower: and the *dwarf apple*, commonly called *Paradiſe apple*.

Apples are no natural fruit, but the mere creatures of art. The way of propagating them, is by ſowing kernels in the ground, which only produce crabs or wildings, different in figure and taſte from the parent fruit. To turn theſe to *apples* of any particular kind, is the buſineſs of engrafting. A cyon of an *apple*-tree inſerted into a crab-ſtock, occaſions the crab-tree from that time to produce *apples* of the ſame quality with thoſe from whence the cyon was taken. Mr. Ray lays it down as a rule, that the fruit always follows the cyon.

In the nurſeries, there are three ſorts of ſtocks generally uſed to graft *apples* upon; the firſt are called *free-ſtocks*, which are raiſed from the kernels of all ſorts of *apples* indifferently, and by ſome theſe are alſo termed crab-ſtocks; for all thoſe trees which are produced from the ſeeds before they are grafted, are termed crabs without any diſtinction. But ſuch ſtocks ſhould always be preferred, as are raiſed from the kernels of crabs, where they are preſſed for verjuice; and ſeveral old writers on this ſubject are of the ſame opinion. Auſten, who wrote a hundred years ago, ſays, "The ſtock which he accounts beſt for *apple* grafts is the crab, which is better than ſweeter *apples* to graft on, becauſe they are uſually free from canker, and will become very large trees, and I conceive will laſt longer than ſtocks of ſweeter *apples*, and will make fruits more ſtrong and hardy to endure froſts."—It is very certain, that by frequent grafting ſome ſorts of *apples* upon free-ſtocks, the fruits have been rendered larger, but leſs firm, poignant, and of ſhorter duration. The ſecond ſort of ſtocks is the *Dutch creeper*; theſe are deſigned to ſtint the growth of trees, and keep them within compaſs for dwarfs or eſpaliers. The third ſort is the *Paradiſe apple*, which is a very low ſhrub; ſo only proper for trees which are kept in pots by way of curioſity, for theſe do not continue long.

For the method of *grafting*, ſee ENGRAFTING.

For the method of planting orchards to the greateſt profit, the ſoil and ſituation is of great import. The beſt ſituation is the aſcent of gentle hills, facing the ſouth or ſouth-eaſt; but this aſcent muſt not be too ſteep, leſt the earth ſhould be waſhed down by heavy rains.

The ground intended to be planted ſhould be well prepared the year before, by thorough plowing. when, if ſome dung be laid on, it will be of great ſervice to the trees. If, in the preceding ſpring, a crop of peaſe or beans is planted on the ground, ſo as that the ground between the rows may be horſe-hoed, it will deſtroy the weeds, looſen the ground, and prove a good preparation for the trees; for the earth cannot be too much wrought or pulverized for this purpoſe. Theſe crops will be off the ground, before the ſeaſon for planting the trees, which is to be performed when they begin to ſhed their leaves.

In chuſing the trees, ſuch as are but of two years growth from the graft are to be preferred; old trees, or ſuch as are grafted upon old ſtocks, ought never to be planted. The diſtance they ſhould be planted at, where the ſoil is good, muſt be fifty or ſixty feet; though forty feet may be ſufficient where the land is not ſo good: nothing can be of worſe conſequence, than the crowding trees too cloſe together.

When the trees are planted, they ſhould be ſtaked, to prevent their being ſhaken or blown out of the ground by ſtrong winds. But in doing this, particular care ſhould be taken to put ſtraw, hay-bands, or woollen cloth between the trees and the ſtakes, to prevent them from being rubbed or bruiſed by the ſtakes; for if their bark ſhould be rubbed off, it will occaſion wounds which will not heal in ſeveral years, if they ever recover from them. If the winter ſhould prove very ſevere, it will be proper to cover the ground about their roots with ſome muck, to prevent the young fibres from being injured.

It is a common practice in many parts of England, to lay the ground down for paſture, after the trees are grown pretty large in the orchards; but this is by no means adviſeable, for trees of above twenty years growth have frequently been almoſt deſtroyed by horſes in the compaſs of one week: and if ſheep are put into the orchards, they will conſtantly rub themſelves againſt the trees, and their greaſe ſticking to the bark, will ſtint their growth, and finally ſpoil them. Therefore, wherever orchards are planted, it will be much better to keep the ground in tillage; but whatever crops are ſown, ſhould not be too near the trees, leſt the nouriſhment ſhould be drawn away from them: nor ſhould the plough come too near the ſtems, leſt the roots and bark ſhould be injured. But it will be of great ſervice to dig the ground about the trees, where the plough does not come, every ſpring and autumn, for five or ſix years after planting; by which time the roots will have extended themſelves to a greater diſtance.

In pruning orchard trees, nothing more ſhould be done, but to cut out all thoſe branches which croſs each other, and which if left would rub and tear off the bark from each other; as alſo decayed branches; but never to ſhorten any of their ſhoots. Branches broken by the wind, ſhould be cut off, either down to the diviſion of the branch, or cloſe to the ſtem from which it proceeds; all ſuckers or ſhoots from their ſtems ſhould be entirely taken of: the beſt time for this work is in November, for it ſhould not be done in froſty weather, nor when the ſap begins to be in motion.

In the planting eſpaliers, if there is an extent of ground in the kitchen-garden, it will be proper to plant in this manner not only ſuch ſorts as are for the uſe of the table, but alſo a quantity of trees to ſupply the kitchen. Where the kitchen-garden is but ſmall, the latter muſt be ſupplied from the ſtandard-trees; but as many of theſe kitchen apples are large, and hang late in the autumn, they are much more expoſed to ſtrong winds on ſtandards than in eſpaliers; for which reaſon, where the ground will admit of it, eſpaliers are to be preferred. The proper diſtance for theſe trees is not leſs than twenty-five or thirty feet, for ſuch ſorts as are of a moderate growth (if upon crab or free ſtocks); but the larger growing ſorts ſhould not be allowed leſs room than thirty-five feet; which will be found near enough, if the ground is good, and the trees properly trained: for, as their branches ſhould not be ſhortened, but trained at their full length, in a few years they will be found to meet.

The next thing to be obſerved, is the making proper choice of ſuch ſorts of fruit as grow nearly alike, to plant in the ſame eſpalier. This is of great conſequence in the diſtance to be allowed them; otherwiſe the eſpalier will make an irregular appearance.

The choice of trees is the next article, which ſhould be but one, or at moſt but two years old from the graft. The ſtocks ſhould be young, ſound and ſmooth, free from canker, which have not been cut down in the nurſery: when taken up, all the ſmall fibres ſhould be entirely cut off from their roots, which, if left on, would turn mouldy, decay, and obſtruct the new fibres in their growth; the extremities of the roots ſhould be ſhortened, and all bruiſed and miſplaced roots ſhould alſo be cut away. As to pruning the heads of theſe trees, nothing more need be done, than to cut off thoſe branches which cannot be trained to the line of the eſpalier. In planting, the roots ſhould not be placed too deep in the ground, eſpecially if the ſoil be moiſt, but rather elevated on a little hill, which it will be neceſſary to allow for the raiſing of the borders afterward. Theſe trees ſhould be ſtaked like thoſe in the orchard, until the eſpalier is put to them,

In pruning theſe trees, the chief point is, never to ſhorten any of the branches, unleſs there is an abſolute want of ſhoots to fill the eſpalier; for where the knife is much uſed, it only multiplies uſeleſs ſhoots, and prevents their fruiting: ſo that the beſt method to manage theſe trees, is to go over them three or four times in the growing ſeaſon, and rub off all ſuch buds and ſhoots as are irregularly produced, training the others down to the ſtakes where they are to remain. If this is carefully minded in the ſummer, there will be little leſt to be done in the winter. The diſtances at which theſe branches ſhould be trained from each other, are, for the larger ſorts of fruit ſeven or eight inches, and for the ſmaller, five or ſix. If, contrary to theſe plain inſtructions, the trees are ſuffered to grow rude in ſummer, there will be much difficulty to bring down the ſtubborn ſhoots afterward, without breaking. All the ſorts of *apples* produce their fruit upon curſons or ſpurs, ſo that theſe ſhould never be cut off, as they will continue fruitful for ſeveral years. The method of making ESPALIERS is exhibited under that article; it need only therefore be obſerved, that it will be beſt to defer making the eſpalier, till the trees have had three or four years growth: for before that time, the branches may be ſupported by a few upright ſtakes, until there is a ſufficiency of them to furniſh the lower part.

The beſt method of preſerving *apples* for winter uſe, is to let them hang upon the trees until there is danger of froſt, to gather them in dry weather, and then to lay them in large heaps to ſweat for a month or ſix weeks They ought then to be carefully looked over, all which have the leaſt appearance of decay taken out, the ſound fruit wiped dry, and packed up in large oil jars, which have been thoroughly ſcalded and dry, and then ſtopped cloſe, to exclude the air. If this plan is duly obſerved, the fruit will keep a long time ſound, and their fleſh remain plump; whereas when expoſed to the air, their ſkins will ſhrivel, and their pulp ſoften. See CYDER, and ORCHARD.

Among the various kinds of *apples*, ſome are uſed for the deſert, ſome for the kitchen, and ſome for cyder-making. Thoſe uſed for the deſert, are the following, placed as they ſucceſſively ripen after one another: the white juncating, the margaret *apple*, the ſummer pearmain, the ſummer queening, the embroidered *apple*, the golden rennet, the ſummer white calville, the ſummer red calville, the ſilver pippen, the aromatic pippen, *la reinette griſe*, *la haute bonte*, the royal ruſſetting, Wheeler's ruſſet, Sharp's ruſſet, the ſpine *apple*, the golden pippen, the nonpareil, the *l'api*, or *pomme d'api*.

Thoſe for the kitchen uſe, in the order of their ripening, are theſe; the codling, the ſummer marygold, the ſummer red pearmain, the Holland pippen, the Kentiſh pippen, the courpendu, Loan's pearmain, the French rennet, the French pippen, the royal ruſſet, the monſtrous rennet, the winter pearmain, the *pome violette*, Spencer's pippen, the ſtone pippen, and the oaken pipen.

Thoſe moſt eſteemed for cyder are, the Devonſhire royal wilding, the redſtreak *apple*, the whitſour, the Herefordſhire under-leaf, and the John *apple*, or *deux annes*, everlaſting hanger, and gennet moyle. Miller.

The *apple* is compoſed of four diſtinct parts, viz. the pill, the *parenchyma*, the branchery, and the core. The pill or ſkin, is only a dilatation of the outermoſt ſkin or rind of the bark of the branch on which it grew. The *parenchyma* or pulp, as tender and delicious as it is found, is only a dilatation, or, as Dr. Grew calls it, a ſwelth or ſuperbience of the inner part of the bark of the branch. This appears not only from the viſible continuation of the bark from the one through the pedicle or ſtalk to the other, but alſo from the ſtructure common to both. The branchery or veſſels, are only ramifications of the woody part of the branch, ſent throughout all the parts of the parenchyma, the greater branches being made to communicate with each other by inoſculations of the leſs. Grew's Anat. of Veget. lib. i. cap. 6. lib. iv. cap. 1.

The *apple* core is originally from the pith of the branch; the ſap of which finding room enough in the parenchyma, through which to diffuſe itſelf, quits the pith, which by this means hardens into core.

The juice of *apples* is a *menſtruum* for iron. A ſolution of iron in the juice of the *apples* called *golden rennets*, evaporated to a thick conſiſtence, proves an elegant chalybeate, which keeps well.

Dr. Lewis obſerves, that the young ſhoots of monk's rhubarb in the ſpring, approach in taſte to ſome ſorts of *apples*, and that of late they have been employed in that early ſeaſon, as a *ſuccedaneum* to *apples* for culinary purpoſes. Neumann's Works, p. 361, w.

Mr. Boyle has given ſeveral experiments on *apples* in the air-pump, and the production of air, &c. thereby. Vide Phil. Works abridg. tom. ii. p. 567, ſeq. 609. 630, ſeq. 645, ſeq.

APPLE is alſo a name given to divers fruits, bearing ſome reſemblance in figure, rotundity, and the like, to the orchard *apple*.

APPLE, *Adam's*. See CITRON, and *Pomum* ADAMI.

APPLE, *bitter*, a name ſometimes given to the fruit of the COLOCYNTHIS.

APPLE, *blad*, *cactus*. See *Melon* THISTLE.

APPLE, *cuſtard*, *annona*, in *Botany*; a genus of the *polyandria polygyna* claſs. Its characters are theſe; the flower hath in ſome ſpecies three, in others ſix petals, three large, and three alternately ſmaller. The *germen* becomes an oval or oblong fruit, having a ſcaly rind and one cell, in which are lodged many oval ſmooth ſeeds. There are eight ſpecies.

Theſe plants, which are natives of the warm parts of America, are too tender to produce fruit in this country, where they are only preſerved for the beauty of their leaves.

APPLE, *dwarf*. See DWARF-*trees*.

APPLE-*fly*, in *Natural Hiſtory*, the name given by authors to a ſmall green fly found ſometimes within an *apple*, and hatched of a worm or maggot, very frequently found infeſting that fruit.

APPLE, *love*. See LYCOPERSICON.

APPLE, *mad*. See MAD *apple*.

APPLE, *male balſam*, *momordica*. See *Male* BALSAM *apple*.

APPLE, *marchaſite*, ſo called by Dr. Grew, on account of its figure, as being round except on one ſide, where it falls in, and has a ſtalk like a young *apple*. Muſ. Reg. Soc. P. 3. § 2. cap. 3.

Among the ancient ornaments of churches, we read of *golden apples*, *poma aurea*; by which it ſhould ſeem, we are to underſtand the globular parts of candleſticks. Du-Cange.

Some ancient cuſtomaries alſo ſpeak of *apples* of wax, POMA *de cera*.

APPLE, *May*. See DUCK'*s foot*.

APPLES, *oak*, are a kind of excreſcences or exudations of the nutritious juice of that tree, joined with ſome degree of putrefaction.

The like are ſometimes alſo found on willows.

APPLE, *of the eye*. See PUPIL.

APPLE, *pine*. See PINE *apple*.

APPLE, *prickle*, is remarkable for the ſeveral tuſſucks or bunches of thorns, with which it is armed all around; each bunch conſiſting of ſix or eight thorns, ſome erect, others couched a little, and crooked outwards, of ſeveral lengths, from one inch to above two.

APPLE, *ſoap*, *ſapindus*. See SOAP *berry tree*.

APPLE, *ſtar*, *chryſophyllum*, in *Botany*; a genus of the *pentandria monogynia* claſs. Its characters are theſe: it hath a bell-ſhaped flower, cut at the brim into ten ſegments, which are alternately ſpread open; and five ſhort *ſtamina*, with a roundiſh *germen*, which becomes a pulpy fruit with ten cells, in four or five of which is lodged a ſingle ſeed. There are two ſpecies, natives of the Weſt-Indies.

APPLE, *thorn*. See THORN *apple*.

APPLICATE, APPLICATA, *Ordinate* APPLICATE, in *Geometry*, is a right line drawn acroſs a curve, ſo as to be biſected by the diameter thereof.

Applicate is the ſame with what we otherwiſe call *ordinate*.

APPLICATE *number*. See CONCRETE.

APPLICATION, the act of *applying* one thing to another, by approaching or bringing them nearer together.

Motion is defined by a ſucceſſive *application* of any thing to different parts of ſpace.

The *application* of a veſicatory to the neck, or other part, produces an irritation of the bladder.

The true and great ſecret in phyſic is, how to *apply* a medicine, not how to make it.

Application is alſo uſed for the adjuſting, accommodating, or making a thing quadrate to another.

Thus we ſay, the *application* of a fable, &c.

Application, in *Theology*, is particularly uſed, by ſome divines, for the act whereby our Saviour transfers, or makes over to us, what he had earned or purchaſed by his holy life, and death.

Accordingly it is by this *application* of the merits of Chriſt, that we are to be juſtified, and intitled to grace and glory.

The ſacraments are the ordinary means, or inſtruments, whereby this *application* is effected.

Application is ſometimes alſo uſed in *Geometry*, for what in *Arithmetic* we call division.

Application alſo ſignifies the fitting or applying of one quantity to another, whoſe areas, but not figures, are the ſame.

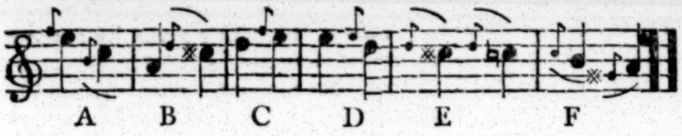
Thus Euclid ſhews how, on a right line given, to *apply* a parallelogram that ſhall be equal to a right-lined figure given.

APPLY, among *Mathematicians*, ſometimes ſignifies to transfer a line given into a circle, moſt commonly, or into any other figure; ſo that its ends may be in the perimeter of the figure.

Apply denotes alſo as much as *divide*, eſpecially among Latin writers; who, as they ſay, *duc* AB *in* CB, draw AB into CB, when they would have AB multiplied by CB; or rather when they would have a right-angled parallelogram made of thoſe lines: ſo they ſay, *applica* AB *ad* CB, *apply* AB to CB, when they would have CB divided by AB;

which is thus expreſſed, $\frac{CB}{AB}$.

APPOGGIATURA, in *Muſic*, according to Graſſineau, is when in any part of a ſong, there are two notes at ſome diſtance from one another, as a third, or fifth; and in ſinging ſuch paſſage, the muſicians put in ſmall intermediate notes, aſcending, or deſcending: as in the example A.



But the *appoggiatura* is not always intermediate, unleſs it be in the order of time (ſee the examples B and C); nor is it confined to diſtant notes. It may be uſed in paſſing from a note to the neareſt ſound either above or below it. See the examples D, E, and F.

The *appoggiatura* is commonly marked by a ſmaller kind of note, as in the examples before given, and is eſſential to muſical taſte and expreſſion.

The word is derived from *appoggiare*, to lean on.

APPOINTEE, a foot-ſoldier in the French army, &c. who for his long ſervice, and bravery, receives pay above private ſentinels.

Theſe have been ſuppreſſed in France, except in the regiment of French guards, where forty *appointees* are ſtill retained to each company of 150 men.

Till the year 1670, they had alſo captains and lieutenants under the appellation of *appointees*, who, without reſiding in the regiment, received their pay. See Anspessades.

Appointee, in *Heraldry*, is when two or more things are placed touching each other at the points or ends.

APPOINTMENT, a penſion or ſalary given by great lords and princes to perſons of worth and parts, in order to retain them in their ſervice.

The term is chiefly uſed among the French.—The king of France gives large *appointments* to ſeveral of the officers in his ſervice.

Appointments differ from wages, in that the latter are fixed and ordinary, being paid by the ordinary treaſurers; whereas *appointments* are annual gratifications granted by *brevet* for a time uncertain, and are paid out of the privy purſe.

APPORTIONMENT, or **Apporcionment**, **Apportionamentum**, in *Law*, a dividing of a rent into two or more parts, or portions, according as the land whence it iſſues is divided among two, or more proprietors.

Thus if a man, having a rent-ſervice iſſuing out of land, purchaſe a part of the land; the rent ſhall be *apportioned*, according to the value of the land.—So if a man let lands for years, reſerving rent, and a ſtranger afterward recover part of the lands, the rent ſhall be *apportioned*.

But a rent-charge cannot be *apportioned*, nor things that are entire; as if one hold land by ſervice, to pay to his lord yearly at ſuch a feaſt a horſe, or a roſe; there, if the lord purchaſe a part of the land, this ſervice is totally extinct; becauſe ſuch things cannot be divided without hurt to the whole.—But if part of the land, out of which a rent-charge iſſues, deſcends to the grantee of the rent, this ſhall be *apportioned*.—A man purchaſes part of the land where he hath common appendant, the common ſhall be *apportioned*: of common appurtenant it is otherwiſe; and if by the act of the party, the common is extinct. Common appendant and appurtenant may be *apportioned* on alienation of part of the land to which it is appendant or appurtenant.—Conditions generally are entire, and cannot be *apportioned* by the act of the party; a contract may not be divided or *apportioned*, ſo as to ſubject a man to two actions. Danv. Abr. 505. 1 Inſt. 149.

APPOSAL *of ſheriffs*, is the charging them with money received on their account in the exchequer, 22 & 23 Car. II.

APPOSER ſignifies an examiner. In the court of exchequer, there is an officer called the foreign *appoſer*.

In the office of confirmation, in the firſt liturgy of Edward VI. the rubric directs the biſhop, or ſuch as he ſhall appoint, to *appoſe* a child; and a biſhop's examining chaplain was anciently called his *poſer*.

APPOSITION, from *ad*, *to*, and *pono*, *I put*, the act of putting or applying one thing to another.

Apposition is uſed in *Phyſics*, in ſpeaking of bodies which derive their growth from the adjunction or union of neighbouring bodies.

Moſt bodies of the foſſil or mineral kingdom are formed by *juxta-poſitions*, or the *appoſitions* of parts, brought to join and adhere to each other.

Apposition, in *Grammar*, denotes the putting two or more ſubſtantives together in the ſame caſe, and without any copulative conjunction between them.

Thus, Flanders, bloody theatre, horrible ſcene of war; love, enemy of human quiet; peace, parent of riches, ſource of faction, &c.

APPOSITORIUM, in *Chemiſtry*, denotes a veſſel made of earthen-ware or glaſs, of a conical figure, whoſe bigger end receives the neck of a retort, while the narrower is inſerted into the receiver.

Its uſe is, where a ſtrong open fire is required, to prevent the red hot retort, by the immediate contact of its neck, from burſting the receiver.

APPRAISER, from *ad*, *to*, and *pretium*, *value*, one who rates, or ſets a value upon goods, &c. He muſt be a ſkilful and honeſt perſon. It is not a buſineſs of itſelf, but is practiſed by brokers of houſehold furniture, to which ſet of men the word is chiefly applied. Yet upholſterers and other brokers are employed, or even any perſon or perſons who are ſuppoſed to be ſkilled in the commodities to be appraiſed or valued. They are employed in caſes of death, executions brought in upon goods, or of ſtock to be turned over from one perſon to another, or divided between copartners; and are called *ſworn appraiſers*, from their taking an oath to do juſtice between party and party.

They ſometimes appraiſe on behalf of both ſides, each party agreeing to have the ſame *appraiſer* or *appraiſers*; ſometimes in oppoſition, each party chuſing one or more of a ſide; and ſometimes by commiſſion or deputation of truſtees, maſters in chancery, &c.

APPREHENSION, in *Logic*, denotes the ſimple attention of the mind to an object preſented either to our ſenſe, or our imagination, without paſſing a judgment, or making any inference.

The word literally denotes the action of the hand, whereby it takes hold of, and graſps any thing; being formed of *ad*, and *prehendo*, *I catch*.

In this ſenſe, *apprehenſion* differs from *notion*, as the act of the mind, whereby a *notion* is formed, differs from an act of the mind, whereby we attend to a *notion* already formed.

Apprehension is likewiſe uſed to expreſs an inadequate and imperfect idea: and thus it is applied to our knowledge of God, in contradiſtinction to *comprehenſion*.

Apprehension, in *Law*, ſignifies the ſeizing a criminal, in order to bring him to juſtice. See Arrest.

APPRENDRE, in our *Ancient Law-Books*, a fee or profit to be taken or received.

APPRENTICE, from *apprendre*, *to learn*, one who is bound by covenant to ſerve a tradeſman or artificer a certain time; uſually ſeven years; upon condition of the maſter's inſtructing him in his art or myſtery.

Apprentices may likewiſe be bound to huſbandmen, or even to gentlemen; and they, as well as tradeſmen, are compellable to take the children of the poor, whom the overſeers, with the conſent of two juſtices, may bind till the age of twenty-four years. *Apprentices* may be diſcharged on reaſonable cauſe; but if any, whoſe premium has been leſs than ten pounds, run away from their maſters, they are compellable to ſerve out the time of abſence, or give ſatisfaction for it, at any period within ſeven years after expiration of the original contract. *Apprentices* gain a ſettlement in that pariſh where they laſt ſerved forty days; and by the 5th of Elizabeth,

c. 4. they have an excluſive right to exerciſe the trade in which they have been inſtructed, in any part of England. However, the reſolutions of the courts have in general rather confined than extended the reſtriction of this ſtatute. See Blackſtone's Com. vol. i. p. 426, &c.

In France, the ſons of tradeſmen, living in their father's houſe till ſeventeen years of age, are reputed to have ſerved an *apprenticeſhip*. In that country, the times of ſerving are different in the different profeſſions, from three years to eight.—After ſerving out an *apprenticeſhip*, the perſon becomes what they call an *aſpirant*, or candidate for maſter-ſhip, and is to be examined by proper officers as to his ſkill and proficiency, and alſo to exhibit a *chef d'oeuvre* or maſter-piece in the art he has been bred to, before he be ſuffered to ſet up to practiſe for himſelf. And the cuſtom of France in regard to *apprentices*, is not unworthy the imitation of other nations.

Anciently, benchers in the inns of court were called *apprentices of the* LAW, in Latin *apprenticii juris nobiliores*; as appears by Mr. Selden's note on Forteſcue: and ſo the learned Plowden ſtiles himſelf. See BENCHER.

Sir Henry Finch, in his *Nomotechnia*, writes himſelf, *apprentice de ley:* Sir Edward Coke, in his Inſt. ſays, *apprenticii legis*, in pleading, are called, *homines conſiliarii, & in lege periti*; and in another place, *apprentices* and other counſellors of law.

APPROACH. See ACCESS and APPROXIMATION.

The *curve of equable approach, acceſſus æquabilis*, firſt propoſed by M. Leibnitz, has given the analyſts ſome trouble.—The buſineſs is to find a curve, wherein a body deſcending by the ſole power of gravity ſhall approach the horizon equally in equal times.—This curve has been found by Bernouilli, Varignon, Maupertuis, and others, to be the ſecond cubical parabola, ſo placed as that its point of regreſſion is uppermoſt. Vide Hiſt. Acad. R. Sciences, an. 1699, p. 82. Idem, an. 1730, p. 129. Mem. p. 333.

APPROACH, in *Gardening*, is uſed in ſpeaking of the method of inarching or INOCULATING, which is called GRAFTING by *approach*.

Some phyſicians alſo ſpeak of a method of curing diſeaſes by touching or *approach*. See APPROXIMATION.

APPROACHES, in *Fortification*, the ſeveral works made by the beſiegers for advancing or getting nearer to a fortreſs, or place beſieged. See *Tab. Fortif. fig.* 21.

Such are trenches, mines, ſaps, lodgments, batteries, galleries, epaulments, &c.

APPROACHES, or *Lines of* APPROACH, are particularly uſed for trenches dug in the ground, and their earth thrown up on the ſide next the place beſieged; under ſhelter or defence whereof the beſiegers may approach, without loſs, to the parapet of the covered way; and plant guns, &c. wherewith to cannonade the place.

The lines of *approach* are to be connected by parallels or lines of communication.

The beſieged frequently make COUNTER-*approaches*, to interrupt and defeat the enemies *approaches*.

The ancients made their *approaches* towards the place beſieged, much after the ſame manner as the moderns. M. de Follard ſhews, that they had their trenches, their ſaps, parallels, &c. which though uſually held of modern invention, appear to have been practiſed long before, by the Greeks, Romans, Aſiatics, &c. In Polyb. t. ii. p. 161.

APPROACHING, in *Fowling*, a term uſed to expreſs ſuch devices as are contrived for the getting within ſhot of ſhy birds. It is principally uſed in marſhy low places.

The beſt method of *approaching* is by means of three hoops, tied together at proper diſtances, according to the height of the man that is to uſe it, and having boughs of trees tied all round it, with cords to hang it over his ſhoulders; a man getting into this, conceals himſelf, and approaches by degrees towards his game in the form of a moving buſh.

Geeſe, ducks, and teal, quit the waters in the evening, and paſs the night in the fields, but at the approach of morning they return to the water again, and even when on the water they will retire to great diſtances, on the approach even of a horſe or cow, ſo that the buſineſs of the ſtalking horſe is of little uſe; but this device of *approaching* by the moving buſh, ſucceeds tolerably well with them.

APPROBATION, a ſtate or diſpoſition of the mind wherein we put a value upon, or become pleaſed with, ſome perſon or thing. Moraliſts are divided on the principle of *approbation*, or the motive which determines us to approve and diſapprove. The Epicureans will have it to be only SELF-*intereſt*; according to them, that which determines any agent to approve his own action, is its apparent tendency to his private happineſs; and even the *approbation* of another's action flows from no other cauſe but an opinion of its tendency to the happineſs of the approver, either immediately or remotely. Others reſolve *approbation* into a moral ſenſe, or a principle of benevolence, by which we are determined to approve every kind affection either in ourſelves or others; and all publicly uſeful actions, which we imagine to flow from ſuch affection, without any view to our own private happineſs.

Dr. Adam Smith thinks it needleſs to introduce any new power of perception, in order to account for the principle of *approbation*; and apprehends, that *ſympathy* is ſufficient to account for all the effects aſcribed to this peculiar faculty. This ſyſtem places virtue in utility, and accounts for the pleaſure with which the ſpectator ſurveys the utility of any quality from *ſympathy* with the happineſs of thoſe who are affected by it. This *ſympathy*, he obſerves, is different both from that by which we enter into the motives of the agent, and from that by which we go along with the gratitude of the perſons who are benefited by his actions: and he ſays, it is the ſame principle with that by which we approve of a well-contrived machine.

According to others, reaſon or the underſtanding, the ſame faculty by which we diſtinguiſh between truth and falſehood, enables us to diſtinguiſh between what is fit and unfit, amiable and odious, both in actions and affections: and they argue, that ſuch are the natures of certain actions, that when perceived, as they are, by a reaſonable being, there muſt reſult in him certain emotions and affections. An excellent writer adds, that in contemplating the actions and affections of moral agents, we have both a perception of the underſtanding and a feeling of the heart; and the latter, or the effects in us accompanying our moral perceptions, are deducible from two ſprings. They partly depend on the poſitive conſtitution of our natures; but the moſt ſteady and univerſal ground of them is the eſſential congruity between the object and the faculty.

Hutcheſon's Inquiry, &c. Tract 2. ſect 4. and Eſſ. on Paſſ. p. 207. Smith's Theory of Mor. Sent. Parts 4. and 6. Cudworth's Immut. Mor. B. 1. Price's Review, &c. ch. 2.

APPROBATION, in *Civil Law*. It is a maxim among civilians, *Approbare dicitur qui non improbat. He is judged to approve who does not diſapprove.*

By the civil law, a mere approbation of a crime after commiſſion, does not make a perſon guilty, but an *approbation* attended with fact, is equivalent to a command.

APPROBATION is more particularly uſed, in ſpeaking of recommendations of books, given by perſons qualified or authorized to judge of them.

Thoſe appointed to grant licences, and imprimaturs, frequently expreſs their *approbations* of books.

Books were formerly ſubjected to a licenſer in England, ſee 13th Car. 2. c. 33. which act is long ſince expired; and being incompatible with the noble principles of the REVOLUTION, has never ſince, and we hope never will be, revived.

APPROPRIARE *ad honorem*, in *Law*, ſignifies to bring a MANOR within the extent and liberty of ſuch an HONOUR.

APPROPRIARE *communam*, in *Law*, ſignifies to diſcommon, i. e. to ſeparate and incloſe any parcel of land, which before was open common.

APPROPRIATE, APPROPRIATED, in *Philoſophy*, is underſtood of ſomething which is indeed common to ſeveral; yet, in ſome reſpects, is peculiarly attributed to one.

APPROPRIATE, in *Law*, is underſtood of a church or benefice, the patronage whereof is annexed to ſome church-dignitary, who appoints a vicar to ſerve the cure; the patron receiving the chief produce of it.

There are computed to be in England 3845 churches *appropriate* and *impropriate*.

APPROPRIATION, the act of *appropriating*, i. e. of applying a church-benefice, which of its own nature is *juris divini*, and no perſon's patrimony, to the proper and perpetual uſe of ſome religious community, to enjoy for ever.

This contrivance ſeems to have ſprung from the intereſted policy of the monaſtic orders, who begged and bought, for maſſes and obits, and ſometimes even for money, all the *advowſons* within their reach, and then *appropriated* the benefices to their own corporation. By a clauſe in the ſtatutes of the 27th of Hen. 8. c. 28. and the 31ſt of Hen. 8. c. 13. which diſſolved the monaſteries, the *appropriations* of the ſeveral parſonages were given to the king, in as ample a manner as they were before held by the abbots, &c. The *alien* PRIORIES had in former reigns been diſſolved, and aſſigned to the crown: and from theſe two ſources have ariſen all the lay *appropriations* or ſecular parſonages now in the kingdom; theſe having been afterwards granted from time to time by the crown.

Appropriation is where the advowſon of a parſonage is given or belongs to any biſhoprick, religious houſe, college, &c. and to their ſucceſſors; ſo that the houſe or body is both patron and parſon, and ſome one of the members officiates as vicar.

It is called *appropriation*, becauſe the profits of the living are appropriated to the uſe of the patrons; ſo that parſons, though they are not ordinarily accounted *domini uſufructuarii*, having no right of fee-ſimple; yet, by reaſon of the perpetuity of their ſucceſſion, are here reputed owners of the fee-ſimple, and are therefore called *proprietarii*.

To make an *appropriation*, after licence obtained of the king in chancery, the conſent of the dioceſan, patron, and incumbent, is neceſſary, if the church be full; if it be void, the dioceſan and the patron, upon the king's licence, may conclude it.

To diſſolve an *appropriation*, it is enough to preſent a clerk to the biſhop, and for him to inſtitute and induct him: for, that once done, the benefice returns to its former nature. This is called DISAPPROPRIATION. See Blackſtone's Com. vol. I. p. 385, &c. ed. 4.

APPROVEMENT, APPROVEAMENTUM, or APPROVIAMENTUM, is ſometimes uſed in ancient writers for an improvement, or riſe of the VALUE and worth of a thing.

Thus to *approve*, *approbare*, is to make the beſt benefit of a thing, by increaſing the rent, &c. *Cum omnibus approviamentis, & aliis pertinentiis ſuis, &c.*

Hence, in ſome ancient ſtatutes, bailiffs of lords in their franchiſes are called their *approvers*.

A bailiff is not to think it below him to *approve*, *approvare*, his maſter's goods; but of his barley to make malt, of his wool to make cloth, &c.

APPROVEMENT is more particularly uſed where a man hath common in the lord's waſte, and the lord incloſeth part of the waſte for himſelf; leaving ſufficient common, with egreſs and regreſs, for the commoner. Reg. Jud. 8, 9

APPROVER, in our *Laws*, one who, confeſſing felony in himſelf, appealeth or impeacheth another or more of his accomplices.

He is ſo called from the French *approuver*, *comprobare*, becauſe he muſt prove what he hath alledged in his appeal. This proof was anciently either by battle, or by the country, at the choice of the appellee: and the form of this accuſation may be found in Crompt. Juſt. 250. See alſo Bracton, lib. 3. Staundf. Pl. Cor. 52.

APPROVERS of the king, are thoſe who have the letting of the king's DEMESNES in ſmall manors, &c.

In the ſtatute of the 1ſt of Ed. 3. c. 8. ſheriffs are called the king's *approvers*.

It being in the diſcretion of the court to ſuffer one to be an *approver*, this method of late hath ſeldom been practiſed. But we have in caſes of burglary and robbery on the highway, what ſeems to amount to the ſame by ſtatute; it being ordained, that where perſons charged with ſuch crimes out of priſon, diſcover two others concerned in the crime, they ſhall have a pardon, &c. Stat. 5th Anne, c. 31.

APPROVER is particularly uſed in *Ancient Law Writers*, for a bailiff or land ſteward, appointed to have the care of a manor, franchiſe, or the like, and improve and make the moſt of it for the benefit of his maſter.

In this ſenſe, the word is alſo written *appruare*.

APPROVERS are called, in *Middle-age Writers*, *probatores* and *approbatores*.

APPROXIMATION, from *ad*, and *proximus*, *near to*, in *Arithmetic* and *Algebra*, a continual approach ſtill nearer and nearer to a root or quantity ſought, without a poſſibility of ever arriving at it exactly.

We have divers methods of *approximation* delivered by Wallis, Raphſon, Halley, &c. all of them being no other than ſerieſes infinitely converging, or approaching ſtill nearer to the quantity required, according to the nature of the ſeries.

It is evident, that if a number propoſed be not a true ſquare, it is in vain to hope for a juſt quadratic root thereof, explicable by rational numbers, integers or fractions; whence, in ſuch caſes, we muſt content ourſelves with *approximations*, ſomewhat near the truth, without pretending to accuracy: and ſo for the cubic root, of what is not a perfect cube; and the like for ſuperior powers.

This the ancients were aware of, and accordingly they had their methods of *approximation*; which, though ſcarce applied by them beyond the quadratic, or perhaps the cubic root, are yet equally applicable, by due adjuſtments, to the ſuperior powers alſo: as is ſhewn in the Philoſoph. Tranſact. Nº 215. or Ph. Tr. ab. vol. i. p. 98. ib. vol. iv. p. 80.

If there be a non-quadratic or non-cubic number; the former being expreſſed by $aa+b$, and the latter by $aaa+b$, where aa and aaa are the greateſt ſquare and cube in the propoſed numbers; then $\sqrt{aa+b} = a + \frac{ab}{2aa+\frac{1}{2}b} = a + \frac{b}{2a} - \frac{bb}{8a^3}$, &c. and $\sqrt{a^3+b} = a + \frac{ab}{3aaa+b} = \frac{1}{2}a + \sqrt{\frac{1}{4}aa + \frac{b}{3a}} = a + \frac{b}{3a^2} - \frac{b^2}{9a^5}$, &c. will be eaſy and expeditious *approximations* to the ſquare and cube root.

To extract the root of an equation by APPROXIMATION.—1°. For a quadratic equation ſuppoſe the equation $x^2-5x-31=0$; let the root be $8+y$, ſo that y may denote the fraction, whereby the aſſumed number either exceeds or comes ſhort of the root: then

$$\begin{array}{l} x^2=64+16y+y^2 \\ -5x=-40-5y \\ -31=-31 \\ \hline -7+11y+y^2=0 \end{array}$$

Since the powers of fractions are continually decreaſing; and we only here want a root nearly true; y^2 is caſt away: upon which,

$$\begin{array}{l} -7+11y=0 \\ \hline y=\frac{7}{11}=\frac{6}{10} \text{ nearly } =0.6 \end{array}$$

Wherefore $x=8+0.6=8.6$

Suppoſe $x=8.6+y$. Then

$$\begin{array}{l} x^2=73.96+17.2y+y^2 \\ -5x=-43-5y \\ -31=-31 \\ \hline 73.96-43-31+17.2y-5y=0 \\ -0.04+12.2y=0 \\ \hline 12.2y=0.04 \\ \hline y=0.04\div12.2=0.0032 \end{array}$$

Therefore $x=8.6+0.0032=8.6032$

Suppoſe $x=8.6032+y$; then will

$$\begin{array}{l} x^2=74.01505024+17.2064+y^2 \\ -5x=-43.0160-5y \\ -31=-31.00000000 \\ \hline -0.00094976-12.2004y=0 \\ \hline y=0.000094976\div12.20640000 \\ \quad =0.000077808 \end{array}$$

Therefore $x=8.6032+0.000077808=8.603277808$.

Suppoſe, again, the root of a cubic equation $x^3+2x^2-23x-70=0$ be required by *approximation*; here let the root be $5+y$, ſince the terms are omitted wherein y^2 and y^3 are found; there is no neceſſity for expreſſing them in the transformation of the equation. Wherefore, we find

$$\begin{array}{l} x^3=125+75y\ldots \\ +2x^2=50+20y\ldots \\ -23x=-115-23y \\ -70=-70 \\ \hline -10+72y=0 \\ \hline y=\frac{10}{72}=0.1 \text{ nearly.} \end{array}$$

Therefore $x=5+0.1=5.1$

Suppoſe $x=5.1+y$: Then will

$$\begin{array}{l} x^3=132.651+78.03y\ldots \\ +2x^2=52.02+20.4y \\ -23x=-117.3-23y \\ -70=-70 \\ \hline -2.629+75.43y=0 \\ 75.43y=2.629 \\ \hline y=2.629\div75.43=0.0348 \end{array}$$

Wherefore $x=5.1+0.0348=5.1348$.

And after the ſame manner might one proceed to infinity, *approximating* by every ſucceſſive operation nearer to the exact value of the root of the propoſed equation. The *rectification* and *quadrature* of the circle, together with many other problems both in geometry and algebra, afford inſtances of *approximation*. See EQUATION.

APPROXIMATION, in *Medicine*, denotes a magnetical kind of cure, or method of tranſplanting a diſeaſe into ſome other ſubject, whether animate or vegetable, by bringing it in immediate contact with the patient.

APPUI, in the *Manege*, q. d. reſt or ſtay upon the hand, is the reciprocal effort between the horſe's mouth and the bridle-hand; or the ſenſe of the action of the bridle on the hand of the horſeman.

A juſt *appui* of the hand is the nice bearing up or ſtay of the bridle; ſo that the horſe, being awed by the ſenſibility and tenderneſs of his mouth, dares not reſt too much upon the bit-mouth, nor check or beat upon the hand to withſtand it.

A dull *appui*, is when a horſe has a good mouth, but his tongue is ſo thick, that the bit cannot work, or bear upon the bars; the tongue not being ſo ſenſible as the bars: though the like effect is ſometimes owing to the thickneſs of his lips.—A horſe is ſaid to have no *appui*, when he dreads the bit-mouth; is too apprehenſive of the hand, and cannot bear the bit.—He is ſaid to have too much *appui*, when he reſts or throws himſelf too much or too hardily, upon the bit—Horſes deſigned for the army, ought to have a full *appui* upon the hand.

APPULSE, from *ad*, and *pulſo*, *I act on*, in a general ſenſe, a thing's being brought to, or in contact with another.

Articulation is either by *appulſe*, i. e. when one of the moveable organs touches and reſts on ſome of thoſe which are immoveable; or without *appulſe*, only by inclination of the moveable organ to the immoveable.

APPULSE *of cattle*, *appulſus pecoris*, in the *Civil Law*, the right of driving them to water.

APPULSE, in *Aſtronomy*, the approach of any planet to a conjunction with the ſun, or a ſtar.

It is a ſtep towards a tranſit, occultation, conjunction, eclipſe, &c.

M. Flamſted, M. de la Hire, and others, have given obſervations of the moon's *appulſes* to the Pleiades. Phil. Tranſ. Nº 76. p. 361. M. Acad. Scienc. an. 1708.

The *appulſes* of the planets to the fixed ſtars have always been of great uſe to aſtronomers, in order to fix the places of the former. The ancients, wanting an eaſy method of comparing the planets with the ecliptic, which is not viſible, had ſcarce any other way of fixing their ſituations, but by obſerving their tract among the fixed ſtars, and remarking their *appulſes* to ſome of thoſe viſible points. Hiſt. Acad. Science. an. 1710. p. 417.

Dr. Halley has publiſhed a method of determining the places of the planets, by obſerving their near *appulſes* to the fixed ſtars. Phil. Tranſ. Nº 369.

The beſt method of diſcovering the longitude at ſea, is by obſervations of the *appulſes* of the moon to the fixed ſtars. See LONGITUDE.

Of all the celeſtial obſervations hitherto made, none are capable of ſo perfect an exactneſs, as the near *appulſes* of the moon and planets to the fixed ſtars; for though the places of the ſtars have not as yet attained their ultimate preciſion, yet ſuch obſervations are ever good. the places of the planets being thereby aſcertained in proportion to the correctneſs of any catalogues that may be made hereafter. But the ordinary number of ſtars, with which the planets may be thus compared, being ſmall, the opportunities of obſerving are conſequently rare; whence appears the great uſe of a full catalogue of all the teleſcopal ſtars within the zodiac, viz. that thereby opportunities of obſerving *appulſes* may be more frequent. Since the royal obſervatory at Greenwich was put under Dr. Halley's care, he endeavoured to put himſelf in a condition to ſupply the many and great vacancies to be met with in the preſent zodiac; and for the ſervice of aſtronomy publiſhed a map, or planiſphere of the ſtarry zodiac; wherein are accurately laid down all the ſtars, to which the moon's *appulſe* has ever been obſerved in any part of the world. Phil. Tranſ. abr. vol. vi. p. 170.

APPURTENANCES, or APPERTINANCES, in *Common Law*, ſignify things belonging to ſome other as their principal.

The word is formed of *ad*, *to*, and *pertinere*, *to belong*.

Appurtenances may either be things corporeal, as hamlets belonging to a chief manor; or incorporeal, as liberties and ſervices of tenants. See APPENDANT.

APRICOT, *Armeniaca*, or *Præcocia mala*, in *Botany*, a well-known fruit. The characters of this tree are, that the flower is compoſed of five large roundiſh petals, which ſpread open, whoſe baſe is inſerted in the empalement. In the center is placed a round *germen*, attended by upwards of twenty awl-ſhaped *ſtamina*. The *germen* afterwards becomes a roundiſh pulpy fruit, having a longitudinal furrow, incloſing a roundiſh nut, which is a little compreſſed on the ſides. The ſpecific title given by Linnæus to the *apricot*, is *prunus floribus ſubſeſſilibus foliis ſubcordatis:* and he ranges it in the claſs of plants, intitled *icoſandria monogynia*.

There are ſeven varieties; the Maſculine, Orange, Algier, Roman, Turkey, Breda, and Bruſſels, APRICOTS: and they ripen in the order here enumerated.

The method of cultivating and propagating the ſeveral ſorts of this fruit, is this: they are all to be propagated by GRAFTING them on plum-ſtocks, and will readily take with almoſt any ſpecies of plum, provided that the ſtock be in a thriving condition.

The Breda and Bruſſels *apricots*, are beſt to be made ſtandard-trees; all the reſt are to be propagated againſt walls, and ſhould have an eaſt or weſt aſpect. The borders under theſe walls ſhould be ſix feet wide at leaſt, and ſhould be two feet deep in earth. If the place where they are planted be a loamy ſoil, the beds are to be raiſed pretty high above the level of the ground, and if chalk or gravel, it muſt be removed to a conſiderable width, to make room for freſh ſoil to be put in, but it need not be dug more than two feet deep. The beſt ſoil for them is freſh earth from a paſture ground, taken to ten inches deep, and laid with the turf among it to rot together, for a twelvemonth before it is uſed.

Such trees ſhould be choſen for planting as are but of one year's growth from the budding; and where the ſoil is dry, or moderately ſo, October is the beſt ſeaſon for planting. For the manner of planting, ſee PLANTING.

No part of the head ſhould be cut off at this time, unleſs there are ſome foreright ſhoots which will not come near the wall. In a good ſtrong ſoil, or againſt a low wall, theſe trees ſhould be planted at eighteen feet aſunder; the ſtem is to be placed four inches from the wall, and the head inclined toward the wall; the branches ſhould be then nailed up to the wall, and the ſurface over the earth muſt be covered with rotten dung, to keep out the froſts. In February the dung is to be removed, and the tree being held very ſteady, the top is to be cut off to about three eyes above the bud, leaving the ſloping ſide towards the wall. If the weather proves dry after this, they muſt be gently watered, and ſome turf or mulch laid round the root to keep off the ſun's heat: and what branches are produced muſt be nailed up, except ſuch as are produced foreright, which muſt be cut off.

At Michaelmas, when the trees have done growing, the branches muſt be again unnailed, and cut off to a proper length, the ſtronger ſhoots being left of nine or ten inches long, the weaker five or ſix inches After they are thus ſhortened, they muſt be again nailed up, and that as much in an horizontal direction as poſſible. The ſecond and third ſummer the ſame rules muſt be obſerved, all the foreright ſhoots muſt be diſplaced as they are produced, nailing in the others horizontally to the wall; ſo that the middle of the tree may be kept open; and never ſhorten any of the ſhoots in ſummer, unleſs to furniſh branches for ſome vacant ſpaces on the wall; and this ſhould never be done later that April. The *apricot* produces its bloſſom buds not only on the laſt year's wood but alſo on the curſons or ſpurs from the two years old wood; great care muſt therefore be taken not to injure or diſplace theſe.

The Bruſſels and Breda *apricots* being planted for ſtandards, require very little management, only in autumn or ſpring cut away all the dead wood, and ſuch branches as croſs one another. The Bruſſels *apricot* is the fineſt of all the kinds: it is ripe in the middle of Auguſt. Miller.

APRICOT-*water*. To a quart of water, put ſix or eight *apricots* ſliced, and the kernels bruiſed; boil the whole, to extract the taſte; and when cold, add four or five ounces of ſugar. When that is diſſolved, ſtrain it.

APRIL, the fourth month of the YEAR, according to the common computation; but the ſecond, according to that of the aſtronomers.

The word is derived from *Aprilis*, of *aperio*, *I open*; becauſe the earth, in this month, begins to open her boſom for the production of vegetables

In this month the ſun travels through the ſign Taurus.

A PRIORI, *Demonſtration*. See DEMONSTRATION.

APRON, in *Naval Architecture*, is a piece of curved timber fixed behind the lower part of the ſtern, immediately above the foremoſt end of the keel.

APRON is alſo a name given to a platform or flooring of plank, raiſed at the entrance of a dock, againſt which the dock-gates are ſhut.

APRON, in *Gunnery*, a piece of lead, which caps or covers the vent or touch-hole of a great gun.

APSINTHATUM, in *Phyſic*, a kind of potion to ſtrengthen the ſtomach. See ABSINTHIATUM.

APSIS, or ABSIS, ſignifies the bowed or arched roof of a houſe, room, or oven, &c. as alſo the ring or compaſs of a wheel.

APSIS, in *Eccleſiaſtical Writers*, denotes an inner part in the ancient churches, wherein the clergy ſat, and where the altar was placed.

It is ſuppoſed to have been thus called, becauſe covered with an arch or vault of its own, by the Greeks called αψις, and by the Latins *abſis*. Iſidore, with leſs probability, imagines it ſo called as being the moſt luminous part; from απτειν, *to give light*.

Apſis, in this ſenſe, amounts to the ſame with what is otherwiſe called *choir*, *concha*, *camera*, and *preſbyterium*; and ſtands oppoſite to the *nave*, or body of the church.

Apsis is more particularly uſed for the biſhop's ſeat, or throne, in ancient churches.

This was more peculiarly called *apſis gradata*, becauſe raiſed on ſteps above the ordinary ſtalls.—It was alſo denominated *exedra*, and in latter times *tribune*.

Apsis is alſo uſed for a reliquary, or caſe, wherein the relics of ſaints were anciently kept.

It took the name *apſis*, from its being round, or arched at the top; or perhaps from the place where it was kept.

The *apſis* was commonly placed on the altar: it was uſually of wood, ſometimes, alſo of gold and ſilver, with ſculptures, &c.

Apsis, in *Aſtronomy*, is applied to two points in the orbits of planets, wherein they are at the greateſt, and the leaſt, diſtance from the ſun, or earth.

The *apſis* at greateſt diſtance is called the *higher* or *ſumma apſis*; that at leaſt diſtance, the *lower*, *ima apſis*, or *inſima*.

The two *apſides* are alſo called *auges*.

The higher *apſis* is more particularly denominated the *aphelion*, or *apogee*; the lower, the *perihelion*, or *perigee*.

The diameter which joins theſe two points is called the *line of the apſides*, and this paſſes through the centre of the orbit of the planet, and the centre of the earth or ſun. In the modern aſtronomy this line makes the longer axis of the elliptical orbit.—Such is the line AP (*Tab. Aſtron. fig.* 1.) drawn from the aphelion A to the perihelion P.

The eccentricity is reckoned in the line of the *apſides*; being the diſtance between the center of the orbit of the planet, C, and the center of the ſun or earth, S, according as the Copernican, or the Ptolemaic ſyſtem is followed. For the motion of the line of the *apſides*, ſee **Apogee.**

The motion of a planet from one *apſis* to another, e. gr. of the moon, from apogee to perigee, and back again from perigee to apogee, are conſidered by mechanical philoſophers as oſcillations, and accounted for from the laws of the pendulum; conſequently they muſt one day ceaſe, when the equilibrium is reſtored. Vid. Horreb. Clav. Aſtronom. cap. 20.

Others apprehended ſomething immechanical in the motion; and propoſe, as inſoluble queſtions, How the equilibrium was firſt deſtroyed; why not reſtored again; and whence the breach is continually renewed? Vid. Mem. de Trev. Avril 1730. p. 709, ſeq.—But theſe are perſons unacquainted with the ſecrets of the Newtonian philoſophy. Vid. Newt. Prin. lib. i. ſeq. 9. Herman. Phoron. lib. i. cap. 4. See alſo Distance, Gravitation, Orbit, Period, and Planet.

APSYCHIA, from α privative, and ψυχη, *ſoul*, in *Medicine*, a ſwooning or fainting away, called alſo *lypopſychia* and *apopyſchia*.

APSYCTOS, from α, and ψυχω, *I cool*, a word uſed by the ancients, as the name of a ſtone found in Arcadia, and of the colour of iron, the quality of which they ſay was, that when once heated red-hot, it would never grow cold again. It is eaſy to ſee that this is an impoſſibility; and that ſome errors among the ancients, and miſunderſtandings of their works by later writers, have given the occaſion for propagating ſo idle an opinion.

We have ſome ſtones indeed in England, that when once heated will retain a warmth a long time, but all the other accounts ſeem groundleſs; our warming ſtone, uſed in Cornwall and Yorkſhire to lay at the feet of people's beds, will retain warmth eight or ten hours; and there is a ſort of red ſtone cut out of the ſalt mountains near Cordova, and formed into broad tiles called *ruggiolos* by the Italians, which being once well heated, will retain a ſenſible warmth twenty-four hours; but theſe do not at all come up to the qualities of this imaginary ſtone of the ancients. See Asbestos.

APSYRTUS, in the *Materia Medica* of the ancients, a name given to the common *marrubium*, or horehound, a plant at that time as well as now eſteemed very good in coughs, and other complaints of the breaſt.

APTERIA, from α, and πτερον, *wing*, in the *Hiſtory of Inſects*, a claſſical name, comprehending all thoſe inſects which have no wings.

They are of the ſeventh order in the claſs of inſects in the Linnæan ſyſtem.

This ſeries is divided into two claſſes: 1. Such as have neither wings nor limbs, called APTERIA ANARTHRA. And, 2. Such as have limbs, but no wings, called APTERIA PODARIA.

AP-THANES, an ancient term for the higher nobility in Scotland. See Thane.

APTITUDE, from *aptus*, *fit*, the natural diſpoſition any thing hath to ſerve for ſuch or ſuch a purpoſe.—Thus, oil hath an *aptitude* to burn, and water to extinguiſh fire.

Aptitude, or **Aptness**, is often uſed in ſpeaking of the talents of the mind, for a promptitude, or diſpoſition to learn things with eaſe and expedition.

In which ſenſe *aptneſs* amounts to the ſame with what the Greeks call ευμαθια, and the Latins *bona indoles*, and we ſometimes *docility*.

Charlton divides *aptneſs* into theſe parts, viz. *acuteneſs*, *ſagacity*, and *memory*.

APTOTE, in *Grammar*, a noun indeclinable, or which is without any variation of caſe.

The word is derived from the privative α, and πτωσις *caſus*.

Such are the words, *fas*, *nefas*, &c.

APUA, in *Zoology*, the name of a ſmall ſea-fiſh, ſuppoſed by many to be produced of the ſlime and mud of the ſhores. But ſuch opinions are all groundleſs. There are two ſpecies of this fiſh, 1. the *apua vera*, 2. the *apua phalerica*.

Apua *membras*, in *Zoology*, a name by which ſome have called the PILCHARD.

APUS, *Avis Indica*, in *Aſtronomy*, a conſtellation of the ſouthern hemiſphere placed near the pole, between the *triangulum auſtrale*, and the chameleon, ſuppoſed to repreſent the bird of paradiſe.

The *apus* is ſuppoſed one of thoſe birds called APODES, as having no feet.

The ſtars contained in his conſtellation, according to Sharp's catalogue annexed to the Britiſh, are the following eleven.

Situation of the Stars.	Signs	Longitude			Latitude			Magnitude
		°	′	″	°	′	″	
In the head	♐	21	6	38	44	32	55	5
In the neck		21	24	49	46	52	22	6
In the root of the tail, northern		19	2	3	54	31	7	4
Middle		17	31	2	55	59	9	5
Southern		18	43	32	56	0	22	4
5.								
In northern part of the tail, 1ſt.		9	45	0	52	2	56	6
2d.		10	44	10	51	51	33	6
In middle of the tail, northern		10	26	44	58	13	8	4
Middle.		9	53	26	59	45	2	6
Southern		10	48	29	60	32	10	5
10.								
Nearer the pole		14	28	24	62	4	45	4

Apus, in *Ornithology*, a ſpecies of the *ſwallow*.

Apus, likewiſe denotes a ſpecies of the *monoculus* genus of inſects,

APUTTASY, in *Botany*, a name given by the people of Guinea to a tree, a decoction of which is in great uſe among them for waſhing the mouth to cure the ſcurvy in the gums, and preſerve the teeth. Phil. Tranſ. N° 232.

APYCNI, in the *Ancient Muſic*, was uſed for ſuch chords or ſounds of the ſcale, as could never enter the SPISSUM. They were fixed, or STABILES.

APYCNON, from α, and πυκνος, *non ſpiſſimum*, *rarum*, in the *Ancient Muſic*, was applied to thoſe two conjunct intervals of a tetrachord, which taken together were greater than the third.

This happened only in the two diatonic genera.

APYRENOS, properly ſignifies without kernels. The Greek writers, however, did not always keep up rigidly to the ſenſe of this word, but ſometimes applied it to ſuch fruits as had fewer and ſofter kernels than others of the ſame kind.

APYREXY, in *Medicine*, the intermiſſion of a fever, or ague.

The word is formed of the privative α, and πυρ, *ignis*, *heat*.

APYROI, in *Antiquity*, a denomination given to ALTARS whereon ſacriſice was offered without fire.

In which ſenſe, the word ſtands contradiſtinguiſhed from EMPYROI.

APYROMETALLUM, in *Metallurgy*, a name by which ſome authors have called gold, from its reſiſting the force of fire.

APYRON, ſomething that has not undergone the fire.

In this ſenſe, *ſulphur vivum*, or native ſulphur, is particularly denominated *apyron*.

Some authors alſo give the denomination *apyron*, to a modern proceſs for making *æthiops* mineral without fire, by trituration alone.

APYROUS, in *Chemiſtry*, is a word applied to denote that property in ſome bodies, by which they reſiſt the moſt violent fire, without any ſenſible alteration.

Apyrous bodies ought to be diſtinguiſhed from thoſe which are *refractory*.

Refractory ſubſtances, are thoſe which cannot by violent heat be fuſed, whatever other alteration they may ſuſtain.

AQUA, in *Natural Hiſtory*, *Phyſics*, *Chemiſtry*, *Medicine*, WATER, &c. which ſee.

The word is Latin, and ſuppoſed to be compounded of *a* and *qua*, q. d. *from which*; alluding to the opinion that water is the baſis, or matter, of all bodies.

AQUA *alexiteria ſimplex*, the name now given in the London diſpenſatory to the ſimple water commonly called milk water. It is ordered to be made in the following manner: take mint a pound and an half, tops of ſea-wormwood, and leaves of angelica, all freſh and green, of each a pound; add as much water as is neceſſary to prevent burning, and diſtil off three gallons.

AQUA *alexiteria ſpirituoſa*, the name of a compound or cordial water, brought into uſe by the London diſpenſatory. It is ordered to be made of half a pound of green mint, and four ounces of angelica leaves, with the ſame quantity of tops of ſea-wormwood, and a gallon of proof ſpirit; adding water enough to prevent burning, and diſtilling off a gallon.

This with a double proportion of the angelica, and the addition of a pint of vinegar after the diſtillation, makes what is called the AQUA *alexiteria ſpirituoſa cum aceto*, which is intended to ſupply the place of the treacle-water, of the former diſpenſatories.

AQUA *aluminoſa bateana*, a form of medicine in the London Pharmacopœia, compoſed in the following manner: take alum and white vitriol of each half an ounce, water a quart; boil the whole together, that the ſalts may be diſſolved; and then letting it ſettle, filtre it through paper.

Quincy gives another proceſs for making alum water; as alſo its uſe in medicine; for which ſee ALUMINOUS.

AQUA *chryſulca*, a ſubtle kind of *aqua regia*, called alſo *aqua pugilum*. Three parts of *ſal ammoniac*, and two of nitre, injected into a tubulated retort made red-hot, yield this acid compound ſpirit. Neumann, p. 225.

AQUA *fortis* is a corroſive liquor prepared from nitre and vitriol; and ſerving as a menſtruum wherewith to diſſolve ſilver, and all other metals, except gold; whence its name. See ACID *nitrous*.

Aqua fortis is made by diſtilling purified nitre with calcined vitriol, or rectified oil of vitriol, in a ſtrong heat: the liquor, which riſes in blood-red fumes, being collected, is the *aqua fortis*.

In preparing compound *aqua fortis*, ſome mix either ſand, or clay, or aſhes, with the calcined vitriol and nitre, in order to hinder their melting too readily; and thus prevent the too haſty evaporation: when the fuſion is thus prevented, the parts of the ſalts receive more violent impreſſions from the fire, and are better converted into a volatile ſpirit, which is the *aqua fortis*.

If to the ſpirit of nitre, &c. thus diſtilled, ſea-ſalt, or ſal ammoniac, be added, it commences *aqua regia*; and will no longer diſſolve ſilver, but will now diſſolve gold. Hence, to try whether or no *aqua fortis* be pure; put a grain of a ſolution of ſilver in *aqua fortis*, into a like quantity of the water in queſtion; and, if the ſolution remains without either the water's turning milky, or the ſilver precipitating, the *aqua fortis* is pure. If theſe conſequences happen, the *aqua fortis* is bad.

The fault of ſuch *aqua fortis* happens either from the uſe of too violent and long continued a fire, or becauſe the mixture of the vitriol and the nitre have been careleſsly made, or too large a proportion of the former uſed; in this caſe, when the diſtillation draws towards the end, there appear white milky fumes in the recipient; theſe are vitriolic; and this phænomenon plainly ſhews the fault of the menſtruum, and might ſerve to prognoſticate the before mentioned precipitation. This calx of ſilver ſeldom proves fluid in the fire, but runs into a kind of *luna cornea*, and ſhews that the nitre has been impure, and has contained ſome portion of ſea-ſalt. Cramer.

It is a liquor of various and extenſive uſe.—It is very ſerviceable to refiners for parting or ſeparating of ſilver from gold.—To the workers in moſaic, for ſtaining and colouring their woods. See MARQUETRY.—To dyers, in their colours, and particularly in ſcarlet.—To other artiſts, for the colour of bone and ivory; which is done by ſteeping the matter therein, after firſt tinging it with copper and verdegriſe, &c.

Aqua fortis converted into *aqua regia*, by diſſolving in it a fourth of its weight of ſal ammoniac, is uſed for ſtaining ivory hafts, and bones, of a fine purple colour.—Bookbinders throw it on leather, and thereby made marbled covers for books.—Diamond-cutters uſe it to ſeparate diamonds from metalline powders.—It is, farther, of ſervice in etching copper, or braſs plates. See ETCHING.

Silver is very nicely and finely purified by means of this menſtruum in the following manner: diſſolve ſilver that has been copelled in a clean glaſs body, with a ſufficient quantity of *aqua fortis*; if the ſolution is at all turbid, filtre it through paper into another clean glaſs; pour into this ſolution by little and little ſpirit of ſalt, or a ſolution of common ſalt, or ſal ammoniac, enough to produce a perfect *aqua regia*. The limpid ſolution will now immediately become milky: let it reſt for ſome hours, and all the ſilver will ſubſide to the bottom in form of a white powder, which may be ſooner effected, by pouring a large quantity of pure water on the ſolution if highly charged. Waſh the powder with many freſh waters, or with the phlegm of ſpirit of ſalt or *aqua fortis*, till the calx and water are both perfectly inſipid; then ſeparate the remaining water by a filtring paper, and dry the calx. Put this into a crucible well rubbed over on the inſide with ſoap, and cover it with about one half of any fixed alkaline ſalt, very dry and beaten to a fine powder; ſqueeze the whole well down with a finger; cover the crucible with a tile, and ſet it in a wind furnace; make at firſt a middling fire, only to make the veſſel grow red-hot, and then increaſe it to a higher degree; when the fuſion is completed take out the crucible, and let the ſilver either cool in it, or elſe pour it into an ingot. Cramer.

The beſt *aqua fortis* is often-tinged with a greeniſh colour, which happens, if to *aqua fortis*, having been expoſed ſome days to the air, and having loſt its red fuming ſpirit, there be poured ſome freſh ſtrong *aqua fortis* ſtill emitting its fumes, or if *aqua fortis* be diluted with water. As this colour may however proceed from copper diſſolved in it, to be certain that it does not, a little is to be poured into a cucurbit, and as much of ſome alkaline liquor to be added to it as will ſaturate the acid. Then if there be ever ſo little copper in it, the colour becomes a deep blue, and there is a cloudy precipitation made, becauſe the nitre has been regenerated by this proceſs, and does not diſſolve copper ſo much as *aqua fortis* does; but if there be no copper in the *aqua fortis*, the colour diſappears.

The nice aſſayer, after having carefully proved his *aqua fortis*, muſt concentrate it to a certain degree; for, if too weak, it often retards the ſolution, and ſometimes does not even affect the ſilver; but this concentration is only to be in a certain degree; for, if it be carried too far, and the *aqua fortis* be made too ſtrong by it, it vaniſhes into fumes, which ruſh violently out of the receiver, or veſſel, in which the ſolutions are made, though ſufficiently high, and carries away a part of the ſilver with it in vapours; and if there is any thing of gold in the ſilver, it will be corroded into a fine duſt, which it is very difficult afterwards to collect together.

When *aqua fortis* is too weak, it is to be put into a deep cucurbit, and the watry part is to be drawn from it, by a gentle fire, till yellow fumes begin to ariſe. To find out whether it be too ſtrong, the following method is to be uſed: Melt together one part of gold, and four parts of ſilver; of this make a flat plate, which cut into three or more parts; roll up each part, that it may be conveniently put into the neck of a crucible; when rolled up, and gently heated at a fire, put it into a cucurbit, and pour upon it three times its weight of *aqua fortis*, ſetting it in a gentle heat: if the ſilver is eroded from the gold, and the gold retain the ſame figure of a piece of plate rolled up, and there appear no reddiſh duſt at the bottom of the veſſel, then the *aqua fortis* has its proper degree of ſtrength: but if the diſſolution has been made with ſo much violence, that the gold was eroded, or the plate almoſt broken, then the *aqua fortis* was too ſtrong. It muſt then be diluted with a tenth, or an eighth part, of *aqua fortis* phlegm, or, if that is not at hand, with the ſame quantity of common water. This done, the trial is to be repeated, by the diſſolution of a like plate rolled up; and this ſeveral times over, till the ſilver be diſſolved, without the leaſt diminution of the gold. By this the aſſayer is aſſured of a due degree of ſtrength in his menſtruum, for all the purpoſes he requires.

Aqua fortis is better than in the common ſtate, when it is recovered by fire from a metal which had been diſſolved by it. It may be almoſt entirely recovered by fire, from ſuch ſolutions. Lemery, in his curious account of the *arbor martis*, obſerves, that the experiment ſucceeds much better with *aqua fortis*, drawn once from a diſſolution of iron, than with the common kind; and Cramer gives a very accurate and ready way of obtaining ſuch a revived *aqua fortis*, in any quantity, in this manner: put into a glaſs alembic, a pound or more of any metalline ſolution in *aqua fortis*; diſtil it into a large recipient, over a gentle fire, ſo that the drops may follow one another, at the interval of ſome ſeconds. When the liquor of this quantity is thus drawn off, let ſuch another quantity be put warm into the ſame cucurbit, to the reſiduum of the former; let this be diſtilled in the ſame manner, till all its liquor is drawn off, and then more added, till the whole quantity intended to be diſtilled is thus diveſted of its liquor. After all this, when the yellowiſh vapours begin to appear from the remainder, a dram of ſuet muſt be put into the veſſel, leſt the diſſolved metal ſhould, when dried up, adhere ſo faſt to the ſides of the veſſel, as to give great trouble in ſeparating it; and when, at laſt, the calx ſhall be quite dry, let it be ſeparated and fuſed with pot-aſhes; thus will the metal be recovered, and the receiver will contain the *aqua fortis* revived from it.

AQUA *marina*, AQUE *marine*, in *Natural Hiſtory*, a gem, or precious ſtone, of a ſea-green colour; whence its name.

It is of about the ſame hardneſs with the amethyſt.

Some of the critics contend for its being the fixth ſtone in the *rationale* of the Jewiſh high-prieſt. Others will have this ſtone a *turquoiſe*; and Leo de Juda, and Hutterus, tranſlate it *hyacinthus*.

Several of the lapidaries take it, however, to be the BERYL; which coincides with the firſt opinion; the *beryl* being only another name for the *aqua marina.*—Pliny repreſents this as related to the *ſmaragdus*, but of a colour leſs briſk, and imitating a pure ſea-water green.

This gem may be imitated, by adding at ſeveral different times to it twenty pounds of cryſtal glaſs, made without magneſia, and well purified from glaſs-gall, ſix ounces of calcined braſs or copper, and a quarter of an ounce of prepared zaffre.

AQUA *mercurialis*, a preparation of *aqua regia*, and ſublimate of mercury, with a little mercury, placed in a ſand-heat till the ſolution of the mercury be made.

It is a mark of perfection of the *aqua mercurialis*, if it turn a piece of copper caſt into it, of a ſilver colour.

It is by this water, that the alchemiſts pretend, all metalline bodies may be reduced to their firſt matter, or mercury.

AQUA *naphæ*, is a name given to the diſtilled water of orange-flowers.

AQUA *omnium florum*, in *Pharmacy*, ſignifies the diſtilled water of cows-dung, when they are at graſs.—Some alſo call cows urine by this name. And, in Engliſh, *all-flower-water*.

AQUA *pugilum*. See AQUA *chryſulca*.

AQUA *regia*, or AQUA *regalis*, an acid corroſive ſpirit, or water, ſerving as a menſtruum to diſſolve gold.

It is thus called, becauſe it diſſolves gold, which is vulgarly eſteemed the king of metals.—It is ſometimes alſo called *aqua chryſulca*, and *ſtygia.*—The baſis, or eſſential ingredient of *aqua regia*, is common, or ſea-ſalt; which is the only ſalt in nature that will operate on gold.

By mixing nitrous and marine acids in various ways, *aqua regia* is made, and a menſtruum is obtained, capable of acting upon certain bodies, which no pure acid can diſſolve, or but imperfectly.

In making common *aqua regia*, the ſalt ſhould be previouſly pulveriſed, in a glaſs or ſtone mortar, and a gentle warmth applied to promote its ſolution in the ſpirit. Neumann, p. 220.

GOLD and PLATINA, in their aggregated ſtate, cannot be diſſolved by any other acid; and TIN and REGULUS of *antimony* are better and moſt eaſily diſſolved by it. The only difference between the ſeveral ſorts of *aqua regia* prepared in different manners, is this, that when it is made by merely diſſolving *ſal ammoniac*, or common ſalt, in nitrous acid, it then contains *ammoniacal*, or cubic nitre; but theſe neutral ſalts do not exiſt in the *aqua regia* made by the mixture of the two acids, or by diſtillation.

The diſſolving power of *aqua regia* is not injured by its containing theſe neutral ſalts; and as the *aqua regia* in which they remain is moſt eaſily and moſt cheaply prepared, it is more generally uſed than any of the other preparations of it.

It is neceſſary, however, to obſerve, that the *ammoniacal* nitre in the *aqua regia* may occaſion conſiderable differences in the nature of the precipitates made from ſolutions of metals in this menſtruum, by ſeparating from theſe precipitates any of thoſe metallic ſubſtances, which it is capable of diſſolving, and alſo by a portion of it adhering to PRECIPITATES. For inſtance, gold precipitated by a fixed alkali from an *aqua regia* made by mixing the pure nitrous and marine acids, does not *fulminate*; but if it be precipitated from an *aqua regia* made by diſſolving *ſal ammoniac* in nitrous acid, it does *fulminate*. See AURUM *fulminans*.

As to the proportions of nitrous and marine acids, or of *ſal ammoniac*, which ought to be employed in the preparation of *aqua regia*, there are no eſtabliſhed rules. Common *aqua regia* is made by diſſolving four ounces of *ſal ammoniac* in ſixteen ounces of nitrous acid; but theſe proportions ought to be varied, according to the nature of the ſolutions intended. To diſſolve, for example, the greateſt quantity of regulus of antimony, the *aqua regia* ought to be compoſed of four parts of nitrous acid to one of marine. To diſſolve the greateſt poſſible quantity of PLATINA, the beſt proportion is equal parts of the two acids. In general, the greater proportion of marine acid, or of *ſal ammoniac* that there is in *aqua regia*, the imperfect metals, and TIN in particular, are the leſs calcined and precipitated by it.

An *aqua regia* compoſed of two parts of ſpirit of nitre, and one part of ſpirit of ſalt, or of *ſal ammoniac*, makes a clear ſolution of nearly an equal weight of TIN, without forming any precipitate; but for this purpoſe, the operation muſt be performed ſlowly, and heat muſt be avoided as much as poſſible.

The mixture of the nitrous and marine acids, in order to make *aqua regia*, preſents a very ſingular and remarkable phenomenon. For the vapours of this mixture are more expanſive, and more difficult to be confined, than the vapours of either of the acids, before mixing them; which proves a reaction of theſe acids upon each other. This phenomenon is but very little ſenſible, when the acids employed contain much ſuperabundant water, but is more manifeſt in proportion as theſe are more concentrated. M. Macquer obſerved, that upon mixing moderately ſmoaking nitrous and marine acids, which had remained without occaſioning any diſturbance in their bottles, an *aqua regia* has been formed infinitely more ſmoaking, and which has made the ſtopper fly out of the containing bottle, particularly in weather ſomewhat warm. Mr. Beaumé, when diſtilling a pretty ſtrong nitrous acid upon *ſal ammoniac*, obſerved, that the vapours which paſſed were ſo elaſtic, that notwithſtanding every precaution, it was impoſſible to continue the diſtillation.

Aqua regia does not diſſolve ſilver; but when the quantity of marine acid contained in the *aqua regia* is very ſmall, the acid of nitre does then diſſolve ſilver, which is immediately afterwards attacked by the marine acid, without which it forms the metallic ſalt called LUNA *cornea*, and is precipitated. An exact ſeparation of gold and ſilver is therefore better made by *aqua fortis*, than by this acid; as the former can never diſſolve gold, whereas the latter may, and very frequently does, more or leſs, corrode and diſſolve ſilver. *Aqua regia* diſſolves a greater quantity of lead than marine acid. All the other metals it perfectly diſſolves.

According to Gellert's Table, the ſubſtances which *aqua regia* diſſolves, are placed in the following order, beginning with thoſe with which it moſt powerfully unites. *Phlogiſton, zinc, iron, regulus of cobalt, copper, tin, arſenic, biſmuth, mercury, lead, regulus of antimony, gold.*

In this Table, copper is erroneouſly placed before tin, as the latter metal readily precipitates the former. Macquer's Dict.

Dr. Prieſtley has found, that an *aqua regia*, of much greater power in the ſolution of gold than the common ſort, may be prepared by the impregnation of ſpirit of ſalt with the nitrous vapour. Exp. and Obſ on Air, vol. iii. p. 219.

AQUA *ſecunda*. This is nothing elſe but *aqua fortis* diluted with much pure water. It is employed in ſeveral arts, to clean the ſurface of metals, and of certain ſtones, and for various other purpoſes.

AQUA *ſicca philoſophorum*, a cant term, invented by ſome alchemiſts for the flowers of zinc, called by ſeveral other as unmeaning names, by theſe writers; as *ſericum*, philoſophic cotton, and TALC.

A preparation of theſe flowers, by means of vinegar, has alſo been called oil of talc, and many great properties aſcribed to it; but it is truly no other than the oil of the grape, from which the vinegar was made, and has no title to any thing that has been ſaid of it.

AQUA *ſulphurata*, *ſulphur water*, a new name for what was originally called *gas ſulphuris* by Van Helmont.

It is water impregnated with the fumes of burning ſulphur; and is conveniently prepared in the following manner: Take a quart of water, and half a pound of brimſtone; put the water into a large glaſs receiver; place it with its mouth ſideways, and then let the ſulphur be ſet on fire, in an iron ladle fixed to a wooden plug, made to go freely into the neck of the receiver, which ſhould be pretty long. This plug will then keep the ladle up horizontally, that it ſhall not dip into the water, and a cloth is to be thrown ſlightly over the mouth of the receiver, to confine the fumes. Let the burning of the ſulphur be repeated as often as the fumes from the laſt ſubſide, till the whole is burnt away. See GAS.

AQUA *vitæ* is commonly underſtood of what we otherwiſe call *brandy*, or the diſtilled *ſpirit of wine*, either ſimple, or prepared with aromatics, differently, according to the different intentions.

Some, however, diſtinguiſhed between them; appropriating the term *brandy* to what is procured from wine, or the grape; and *aqua vitæ* to that drawn after the ſame manner from malt, &c.

The common *aqua vitæ* is made by diſtilling wine in large copper ſtills, fitted with worms, ſo that the liquor flows out of the beak of the ſtill in a conſtant ſtream, and the diſtillation is continued till the liquor ceaſes to be inflammable. To make pure ſpirit, it ſhould be again diſtilled and rectified.

AQUA *vitriolica cærulea*, a form of medicine in the London Pharmacopœia, made in the following manner: take blue vitriol three ounces; alum and ſtrong ſpirit of oil of vitriol, of each two ounces; water a pint and a half; boil the ſalts in water till they are diſſolved, and then add the oil of vitriol, and finally, ſtrain the whole through paper.

Neumann gives a different account of the *aqua cærulea*, or ſapphirina of the ſhops. He ſays, that ſal ammoniac, quick-lime, and water, kept for a night in a copper or braſs veſſel, or along with pieces of copper, diſſolve a part of the metal, by which the liquor is tinged blue, and is called *aqua cærulea*. In this compoſition the copper is diſſolved by the volatile alkali of the *ſal ammoniac*, extricated by the quick-lime. Neumann's Works, p. 220.

AQUA *& igni interdictio*. See INTERDICTION.

AQUÆ *bajalus*, an ancient name for the clerk officiating under the chief miniſter, whoſe buſineſs was to aſſiſt him in carrying the holy water. The office correſponding to it at preſent is that of the PARISH-*clerk*.

AQUÆ *hauſtus*, in the *Civil Law*, a right of drawing water, and carrying it through another's ground.

AQUÆ *pavor* is uſed by ſome to denote the *hydrophobia*. Phil. Tranſ. Nº 147.

AQUÆDUCT, AQUÆDUCTUS, q. d. *ductus aquæ*, *a conduit of water*, is a conſtruction of ſtone or timber, built on an uneven ground, to preſerve the level of water, and convey it, by a canal, from one place to another.—There are *aquæducts* under ground, and others raiſed above it, ſupported by arches.—The Romans were very magnificent in their *aquæducts*; they had ſome that extended an hundred miles. Frontinus, a man of conſular dignity, and who had the direction of the *aquæducts* under the emperor Nerva, tells us of nine that emptied themſelves through 13,594 pipes, of an inch diameter. Vigenere has obſerved, that, in the ſpace of twenty-four hours, Rome received from theſe *aquæducts* no leſs than five hundred thouſand hogſheads of water.—The three chief *aquæducts* now in being are thoſe of the Aqua Virginea, Aqua Felice, and Aqua Paulina. The firſt was repaired by pope Paul IV. The ſecond was conſtructed by pope Sixtus V. and is called from the name which he aſſumed before he was exalted to the papal throne. The third was repaired by pope Paul V. in the year 1611.—The *aquæduct* built by Lewis XIV. near Maintenon, for carrying the river Bure to Verſailles, is perhaps the greateſt in the world. It is 7000 fathoms long, and its elevation 2560 fathoms; containing 242 arcades. Vid. Phil. Tranſ. ap. Lowth. i. p. 594.

AQUÆDUCT, AQUÆDUCTUS, in *Anatomy*, denotes a bony kind of canal, or paſſage, in the *os petroſum*, ſuppoſed to contribute to the purpoſes of hearing.—It is called *aquæduct* not only on account of its form, but, as ſome alſo imagine, from its ſerving to diſcharge any foreign matters collected in the inner cavities of the ear.—It is ſometimes alſo called *aquæductus Fallopii*, from the name of its firſt diſcoverer.—Several authors confound it with the *tuba Euſtachiana*.

The *aquæductus Fallopii* is ſometimes alſo called *meatus cæcus*; by others *meatus cochlearis*, and *meatus capreolaris*; by others *canalis particularis*, *meatus auditorius internus*, and *foramen auditorum internum*, called alſo *hydroparaſtates*.

AQUÆMANILIS, from *aqua*, *water*, and *manus*, *hand*, is particularly uſed, in *Eccleſiaſtical Writers*, for a kind of baſon or laver, anciently placed in the veſtibles of churches, ſerving to waſh the hands in.

Aquæmanilis ſtood contradiſtinguiſhed from *urceolus*, as the former was placed under the hands, the latter above them, from whence the water trickled down by a cock. The prieſt alſo, after celebrating maſs, waſhed his fingers in an *aquæmanilis*.

In the inventories of church plate, we frequently find mention of *aquæmaniles*, *aquaminilia*, *aquiminalia*, of ſilver gilt, wrought, &c. Du-Cange.

AQUAGE, a water-courſe.

AQUALICULUS, in *Anatomy*, a name given by ſome to the region of the body, wherein the trunk terminates, and the thighs commence, and in which alſo the privities are placed.

The *aqualiculus* is the ſame with what others call PUBES, others the *hypogaſtrium*, *ſumen*, *imus venter*, &c.

AQUARIANS, AQUARII, a ſect toward the cloſe of the ſecond century, who, inſtead of wine, uſed nothing but water in the ſacrament.

It is ſaid the occaſion of the abuſe was owing to the perſecution which prevailed in thoſe times: for the Chriſtians, being then obliged to celebrate the ſacrament in the night, found it neceſſary to make uſe of water, leſt the ſmell of the wine ſhould betray them to the heathens. But they afterwards went farther, and actually forbid the uſe of wine in the euchariſt, even when it might be uſed with ſafety.

Epiphanius tells us, the *Aquarians* were the followers of Tatian; and were ſo called from the word *aqua*, *water*, becauſe they abſtained wholly from wine, and did not uſe it even in the euchariſt.

AQUARIUS, in *Aſtronomy*, the eleventh ſign in the ZODIAC, reckoning from Aries; from which alſo the eleventh part of the ecliptic takes its name.

The ſun moves through *Aquarius* in the month of January; it is marked thus, ♒.

The poets feign, that *Aquarius* was Ganymede, whom Jupiter raviſhed under the ſhape of an eagle, and carried away into heaven, to ſerve as a cup-bearer, in the room of Hebe and Vulcan; whence the name.—Others hold, that the ſign was thus called, becauſe, when it appears in the horizon, the weather uſually proves rainy.

The ſtars in the conſtellation *Aquarius*, in Ptolemy's catalogue, are 45; in Tycho's 41; in Hevelius's 47; in Flamſtead's Britannic Catalogue 108; the longitudes, latitudes, &c. whereof, according to the former, are given by Hevelius: according to the laſt, they are as follows; to which are added the *informes*.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.	Latitude.	Magnitude.
			° ′ ″	° ′ ″	
Preced. in the handkerchief against the hand.	ι	♒	7 24 06	8 06 41N.	5
			8 6 58	18 16 36	6
			8 38 46	12 24 42N.	5
			9 22 28	11 34 51N.	7
			9 34 34	11 38 54N.	6
5.					
Subſeq. in handkerchief.	μ		8 44 13	8 16 10N.	4.5
			9 32 59	7 17 53N.	6
			9 19 20	3 51 52N.	6.7
			9 28 11	3 19 30N.	6
			11 37 44	11 05 06N.	6
10.					
			11 51 38	11 49 00N.	6
			12 23 54	10 30 14N.	6
In the preced. hand.	ν		12 04 13	4 47 48N.	5
			14 18 30	6 21 43N.	6
			16 12 10	10 41 41N.	6
15.					
			16 53 23	10 25 12N.	6
			15 30 33	5 45 41N.	6
			15 01 16	2 17 03N.	5
			16 14 35	5 11 33N.	5
			18 10 20	11 14 10N.	6
20.					
			18 13 15	11 03 19N.	6
In the preced. ſhoulder.	β		19 04 22	8 38 43N.	3
Under the ſhoulder as in armpit.	ξ		19 47 16	5 59 14N.	6
			22 50 57	13 12 28N.	6
In the head.	d		23 38 27	15 21 47N	6
25.					
			23 56 30	14 13 55N.	6
			25 39 39	15 07 14N.	6
			28 15 21	11 58 21N.	6
			22 24 57	4 37 29 S.	6
			26 16 22	5 04 48N.	6
30.					
Low. in the hind ſhoulder.	ο		27 47 19	9 10 58N.	5
			28 35 40	10 13 14N.	6
South in the fore hip.	ι		24 24 01	2 03 15 S.	4
Right one in the hind ſhoulder.	α		29 02 16	10 40 38N.	3
			23 19 51	6 37 47 S.	6.5
35.					
			27 04 33	2 59 48N.	6
			26 24 14	0 26 43N.	6
North in the preced. hip.	e		26 09 58	0 15 37 S.	6
			25 38 49	2 52 39 S.	6
			26 40 30	6 49 12 S.	1.8
40.					
			23 34 22	9 27 45 S.	6
			27 07 35	1 59 02 S.	7
Preced. of two in the poſter. ſide.	θ		28 55 44	2 43 47N.	4
			29 51 55	4 56 30N.	6
			27 27 46	2 36 5 S.	6
45.					
			29 42 07	2 23 30N.	5.6
Subſeq. of the ſame.	δ		24 59 38	10 33 45 S.	5.6
That in the hind arm.	γ	♓	2 23 11	8 14 49N.	3
		♒	24 11 54	13 39 11 S.	5
			28 37 05	3 17 42 S.	6

Names and ſituations of the ſtars.	Bayer's Char.	Signs.	Longitud.	Latitude.	Magnitude.
			° ′ ″	° ′ ″	
		♓	1 41 48	4 49 11N.	6
North of three in the hind. hand	ϖ		4 16 51	10 29 08N.	5
That upon the hips.		♒	27 53 23	6 28 36 S.	6
			29 58 16	1 21 25 S.	6
Preced. of the reſt in the hand.	ζ	♓	4 34 31	8 51 30N.	4
55.					
		♒	29 32 41	4 48 32 S.	6
That in the hind buttock.	σ	♓	1 03 54	1 12 33 S.	5
			1 13 10	1 30 40 S.	6
South of two in the fore leg.	υ	♒	28 11 42	10 51 40 S.	5
		♓	5 12 26	6 55 47N.	6
60.					
		♒	29 43 15	7 58 31 S.	6
Subſeq. of 3 in the hand.	η	♓	6 04 53	8 09 42N.	4
Preced. in the pouring out of water	κ		5 06 13	4 07 47N.	5
			3 2 33	1 18 10 S.	6
			4 7 20	1 48 50 S.	6
65.					
North in the fore leg.	g		0 54 55	9 56 24 S.	6
			5 20 9	1 05 6N.	6
Following that to the ſouthward.	g		1 29 54	11 00 40 S.	6
Lower of the northern ones in the hind. leg.	τ		3 40 24	5 55 41 S.	5
			5 10 46	2 44 36 S.	7
70.					
Upper of north in the hind. leg.	τ		4 16 52	5 38 42 S.	6.5
			6 56 2	0 3 28N.	6
South and ſubſeq. in the pouring out of the water.	λ		7 14 41	0 23 00 S.	4
			5 54 23	4 11 08 S.	6
			5 49 58	4 45 24 S	7
75.					
South in the hind leg.—*Scheat.*	δ		4 33 49	8 11 17 S.	3
			4 25 11	8 37 01 S.	6
			7 50 34	0 12 44 S.	6
Laſt in the water.—*Fomalhault.*		♒	29 28 59	21 04 54 S.	1.1
		♓	9 42 30	1 41 29N.	7
80.					
			9 28 5	0 43 10 S.	7
			9 55 30	0 23 0 S.	7
Firſt of the contig. in the flexure of the water.	b		10 04 10	1 40 14 S.	6
Second.	b		10 04 59	1 44 15 S.	7
3d, and fourth of the contig.	b		10 08 41	1 57 45 S.	6
85.					
Preced. in the laſt flexure.	c		3 59 44	16 34 34 S.	6
			10 37 30	1 52 34 S.	6
North.	c		5 40 53	14 29 07 S.	4
Subſeq. and ſouth of three.	c		5 14 53	15 41 55 S.	5.6
In the ſecond flexure of the water.	φ		12 48 57	1 01 25 S.	5
90.					
North of 3 contig. in the water.	ψ		11 57 28	3 58 03 S.	5
Firſt behind the ſecond flexure.	χ		12 43 56	2 49 51 S.	6
Middle of three.	ψ		12 24 17	4 15 45 S.	5
Single one more ſouth than thoſe.			10 58 04	8 18 02 S.	6
South of the contig.	ψ		12 28 16	4 45 39 S.	5
95.					
			14 22 28	0 33 14 S.	6.7
			11 08 02	10 07 57 S.	6
North of the three following in the laſt flexure.	b		9 08 42	14 46 26 S.	5
Middle of the three following in the laſt flexure.	b		9 35 12	15 34 16 S.	5
			10 30 55	16 45 48 S.	5
100.					
South of thoſe three.	b		11 04 19	16 30 21 S.	5
Over the laſt flexure but one.	b		15 20 30	11 01 46 S.	5
Northern of the three in the laſt flexure.	A		14 09 42	14 40 56 S.	6
Second.	A		Unknown	Unknown S.	
Following it.	ω		15 52 17	11 36 20 S.	5
105.					
Middle, in the ſame flexure.	A		14 48 24	15 10 17 S.	6
Contiguous to that.	A		14 51 40	15 42 36 S.	6
Subſeq. in the laſt flexure but one.	A		15 58 18	16 26 59 S.	6
Middle of informes behind the laſt flexure.			19 26 16	16 14 06 S.	5
North of informes behind the laſt flexure.			21 57 12	15 16 03 S.	5
South of informes behind the laſt flexure.		♓	21 12 12	18 45 54 S.	5

AQUARTIA, in *Botany*, a genus of the *tetrandria monogynia* claſs; with a bell-ſhaped calyx, and a round corolla, with linear ſegments, and a many-ſeeded berry.

AQUATIA, in *Middle Age Writers*, a right of fiſhing three days in the year. Du-Cange.

In ancient deeds, we find divers grants of this privilege of *aquatia*, or *aquatura*, ſometimes alſo called *aquaria*.

In ſome writings *aquatia* ſeems alſo to have ſignified a fee, or other ſervice, paid for the privilege of fiſhing.

AQUATIC, ſomething which lives, breeds, or grows, in or about the water.

Thus we have *aquatic* plants, and *aquatic* animals.

Trees which grow peculiarly on the banks of rivers, or in marſhes, &c. are alſo called *aquatics*.

The ancient Romans had alſo their *aquatic*, or *aquatile* gods, *dii aquitales*, called by Catullus, *dii littorales*; concerning whom we have an inſcription in Reineſius, NEPTVNNO ET DIS AQVITILIBVS

To this claſs belonged the Tritons, the miniſters of Neptune.

AQUATIC *inſects*, ſee INSECTS.

AQUATIC *road*, ſee ROAD.

AQUATIC *ſpider*, in *Zoology*. See SPIDER.

AQUATICUM, in *Middle Age Writers*, is a right of uſing a water. Hence *aquaticum in foreſta*, &c. Du-Cange.

AQUATUM, in ſome *Phyſical Writers*, denotes a thing diluted with water.

AQUATUM *ovorum* is uſed by ſome naturaliſts, for what is otherwiſe called GRANDO, but more uſually CHALAZA.

AQUEOUS, AQUOSUS, ſomething that partakes of the nature of WATER, or abounds therewith.

Thus milk is ſaid to conſiſt of an *aqueous* or ſerous, and a butyrous part.

The chemiſts ſeparate the *aqueous* part or phlegm from all bodies by diſtillation.

AQUEOUS *bath*. See BATH.

AQUEOUS *humour*, is the firſt or outermoſt, and the rareſt of the three humours of the eye.

It lies immediately above the *tunica aranea*, and ciliary ligament, and under the *cornea*, which it cauſes to protuberate a little; and is ſuppoſed to be furniſhed by certain ducts provided for the purpoſe.—It is found ſo ſpirituous, that it will not freeze in the ſevereſt froſt.

Anatomiſts are divided about the origin and conveyance of this humour.—It is certain, the ſource muſt be pretty plentiful, inaſmuch as, if by any accident the coats it is contained in be wounded, ſo that the humour runs out, and the *cornea* collapſes, the wound readily heals, by only cloſing the eye, and the humour recruits: of which we have numerous inſtances among phyſicians.

Dr. Nuck thinks he has diſcovered the ducts in the ſclerotica, whereby this humour is furniſhed.

Others, denying the reality of thoſe ducts, ſuppoſe it immediately derived from the arteries. Dr. Drake admits the ducts, and takes them to be only branches of the excretory ducts of the grandula innominata, and lachrymalis; which piercing the tunics of the eye, deliver their liquor by ways hitherto unknown.

Mr. Warner obſerves, that this humour is ſecreted by the extremities of the moſt minute lymphatic arteries of the iris; and that a proper quantity of it is received, and occaſionally returned again, into the larger veins, and courſe of general circulation, by means of minute lymphatic, or abſorbent veins, correſponding to thoſe arteries.

AQUETTA, a name for a kind of poiſon made much uſe of by the Roman women, under the pontificate of Alexander VIII.

AQUIFOLIUM. See HOLLY, and BIRD-*Lime*.

AQUILA, in *Natural Hiſtory*, &c. See EAGLE.

AQUILA, in *Aſtronomy*, a conſtellation of the northern hemiſphere; uſually joined with Antinous.

The ſtars in the conſtellation *Aquila* and Antinous, in Ptolemy's Catalogue, are 15; in Tycho's, 19; in Hevelius's 42; in the Britannic Catalogue, 71: the longitudes, latitudes, magnitudes, &c. whereof, according to the two firſt, are given by Hevelius; according to the laſt, they are as follow.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.	Latitude. North.	Magnitude.
			° ′ ″	° ′ ″	
Preced. of three inform. towards Sagittary.	m	♑	4 40 57	14 59 07	4
South. of three inform. towards Sagittary.	o		6 26 14	14 02 30	5
Subſeq. of three inform. towards Sagittary.	n		6 48 32	14 46 57	5
			8 03 00	25 03 26	5
			8 14 05	22 00 29	6
5.					
Preced. of three inform. before Antinous's foot.	l		8 04 40	18 13 27	4
			9 14 07	19 37 16	6
			9 17 24	19 33 22	6
Mid. of 3 before Antinous's foot.	k		10 30 35	16 54 11	5.4
			13 30 29	36 28 51	6
10.					
			13 33 55	36 11 45	6
Subſeq. of the ſame.	i		11 44 42	16 53 33	4
Preced. in the eagle's tail.	ι		13 56 58	37 36 43	3.4
Preced. in Antinous's heel.	g		12 17 25	18 52 40	6
Subſeq.	b		12 46 59	18 29 26	6
15.					
Bright one in Antinous's foot.	λ		13 02 15	17 39 36	3.4
Subſeq. in the eagle's tail.	ζ		15 28 34	36 13 48	3
			15 27 48	33 24 32	6
			15 14 46	28 23 48	6
			14 16 37	14 22 17	5.6
20.					

Names and ſituations of the ſtars.	Bayer's Char.	Signs.	Longitud.	Latitude. North.	Magnitude.
			° ′ ″	° ′ ″	
			15 58 34	24 48 45	5
			17 08 30	26 54 11	5
			17 05 48	23 05 48	6
			17 03 34	22 21 55	7
Preced. of 3 in the root of the tail	ω		18 42 18	33 31 53	6
25.					
In Antinous's thigh.	*f*		16 36 51	16 36 09	6
South in Antinous's leading ſide.	*d*		17 20 05	21 04 44	6
Mid. and North in root of the tail	A		19 23 33	34 13 27	6
			Unknown	Unknown	
From right ſhould. toward S. W.	δ		19 17 21	24 50 54	3.4
30.					
			20 48 04	33 32 05	6
From right ſhould. towards South	ν		19 06 40	22 04 17	5
			18 53 27	17 57 38	6
			19 27 21	18 22 46	6
	c		20 03 35	23 34 00	6
35.					
In Antinous's belly.	ε		19 39 55	18 49 10	6
That below Antinous's knee.	*k*		19 29 24	10 58 21	6
North in the preced. ſhoulder.	μ		22 27 58	28 42 30	4
Againſt Antinous's hind. knee.	κ		20 31 47	14 23 03	3.4
			21 10 48	18 25 21	6
40.					
In the hind. ſide of Antinous.			21 30 47	20 02 59	3.4
			21 09 46	16 42 00	6
			21 52 21	19 46 29	6
South in the preceding ſhoulder.	σ		23 28 56	26 30 44	6
			22 41 20	20 31 04	6
45.					
			25 52 03	33 02 08	6
South in begin. of the hind. wing	χ		25 52 20	32 39 21	6
North.	ψ		26 48 33	34 00 06	6
That immediately preced. Lucida	υ		25 44 15	28 22 04	6
Preced. of two in the hind. ſhould	γ		26 37 08	31 16 52	3
50.					
			23 18 26	10 05 20	5
Subſeq. of the ſame.	π		27 36 29	32 19 49	6
Between the ſhoulders, called Lucida Aquila.	α		27 23 24	29 19 11	1.2
That over the Lucida.	ο		27 53 01	30 51 20	6.5
In Antinous's hind. ſhoulder.	η		26 06 54	21 33 23	3.4
55.					
			24 33 02	12 05 11	5
			24 44 54	12 24 10	6
			26 32 00	20 43 43	6
Subſeq. below the Lucida.	ξ		28 17 56	28 46 12	5
In the eagle's neck.	β		28 06 44	26 44 20	3.4
60.					
In the verge of the wing behind the ſhoulder.	φ		29 36 57	31 32 17	6
			28 50 17	19 16 01	6
In the middle of the head.	τ	♒	0 42 27	27 03 16	6
		♑	29 47 36	19 07 27	6
In Antinous's hind. hand.	θ	♒	0 35 30	18 45 35	3
65.					
			1 02 33	18 28 07	5.6
Laſt of the hind. wing.	S		5 47 33	34 06 12	5
		♒	4 17 48	15 16 50	6
			4 43 44	15 39 39	5
			6 35 14	15 31 49	5
70.					
			7 24 03	16 48 56	4

Aquila, in *Chemiſtry*, has ſeveral ſignifications, according to the epithets joined with it.

Aquila *alba*, is a name given to a combination of corroſive ſublimate, with freſh mercury, called *mercurius dulcis*.

Aquilæ *arbor*, in *Botany*, a name given, by ſome authors, to the tree whoſe wood is the *agallochum*, or lignum aloes of the ſhops.

AQUILEGIA, in *Botany*. See Columbine.

AQUILICIUM, or Aquælicium, in *Antiquity*, a ſacrifice, celebrated among the Romans, in time of exceſſive droughts, to obtain rain of the gods.

Danet calls this *aquiliciana*. The prieſts who officiated at it were denominated *aquilices, quia aquam eliciebant*, becauſe they brought down water: but where he finds this new order of prieſts, he does not tell us.

AQUILIFER, from *aquila, eagle*, and *fero, I bear*, among the Romans, an enſign-bearer, who carried the ſtandard on which the eagle was repreſented.

AQUILINE, Aquilinus, ſomething belonging to an eagle. Hence, *aquiline* noſe denotes a hooked noſe, or ſuch as is like the beak of an eagle; called alſo a hawk's noſe.

AQUILO, is uſed by Vitruvius for the north-eaſt wind; or that which blows at 45° from the north towards the eaſt point of the horizon.

The poets gave the name *aquilo* to all ſtormy winds dreaded by the mariners.

AQUILUS, among the *Ancients*, a dark, or duſky colour, approaching to black.

Hence ſome of the heathen gods were called *dii aquili*, q. d. *nigri*.

Aquilus, in *Ornithology*, a ſpecies of pelican.

AQUIMINARIUM, in *Antiquity*, a kind of luſtral veſſel wherein the Romans carried their holy water for expiation, and other religious offices.

AQUIQUI, in *Natural Hiſtory*, the name of a particular ſpecies of monkey, called by the people of Braſil, the king monkey, as being much larger than all the other monkies.

AQUO, in *Zoology*, a name by which ſome authors have called the agonus, a fiſh much approaching to the nature of the alausa, or shad.

AQUOSE *ducts, ductus* Aquosi *Nuckii*. See Aqueous. *Humour*.

AQUULA, the name of a diſorder of the eyes, called alſo *hydatis*.

ARA *thuribuli*, the *Altar of incenſe*, in *Aſtronomy*, a ſouthern conſtellation, not viſible in our hemiſphere, conſiſting, according to Ptolemy, of ſeven ſtars; and according to Sharp's Catalogue, annexed to that of Mr. Flamſtead, of nine ſtars, as in the following table.

Situation of the ſtars.	Signs.	Longitud.	Latitude.	Magnitude
		° ′ ″	° ′ ″	
In the baſe, the northern.	♐	21 35 52	23 5 26	5
The ſouthern.		27 18 30	26 36 5	5
In the middle of the altar.		21 5 56	26 29 30	4
In the fire-place, northern.		15 47 21	30 13 34	3
Southern.		20 27 32	33 2 44	4
5.				
Middle.		20 22 43	32 11 43	4
In the middle of the flame.		16 2 21	33 1 46	4
In the top of ditto, 1ſt.		15 6 17	36 13 12	4
2d.		21 44 30	37 17 24	4

Ara *parva, the little altar*, a denomination, in the *Ancient Surgery*, given to an elegant kind of bandage, ſaid to have been invented by Soſtratus.

ARAB, or Arabian *horſe*, is ſaid to be nurſed with camel's milk: there are many ſtrange reports of this beaſt. The duke of Newcaſtle aſſures us, that the ordinary price of one is 1000, 2000, or 3000 pounds; and that the Arabs are as diligent in keeping the genealogies of their horſes, as princes of their families. They ſtrike medals on every occaſion to keep up the pedigree. The fortune the Arabians give their ſons, when arrived at manhood, is, two ſuits of arms, with two ſcimeters, and a horſe; which always lies in the next room to them.—Yet of thoſe of the breed brought into England few have proved very extraordinary.

ARABANT, from *aro, I plough*, in *Law, ad curiam domini*, was intended of thoſe who held by the tenure of ploughing and tilling the lord's lands within the manor.

ARABESQUE, or Arabesk, ſomething done after the manner of the Arabians.

Arabeſque, Grotesque, and *Moreſque*, are terms applied to ſuch paintings, ornaments of freezes, &c. wherein there are no human or animal figures, but which conſiſt wholly of imaginary foliages, plants, ſtalks, &c.

The words take their riſe from hence, that the Moors, Arabs, and other Mahometans, uſe theſe kinds of ornaments; their religion forbidding them to make any images or figures of men, or other animals.

Arabeſc is uſed by Stephen Riou, Eſq. in his book on Architecture, to denote that ſtyle of building which is vulgarly called *Modern Gothic*, which he alſo terms *Saracenic* and *Moreſc*; the introduction of which he aſcribes to the Moors, or, which he ſays is the ſame thing, to the Arabians or Saracens, who have expreſſed, he adds, in their architecture, the ſame taſte as in their poeſy, which are both ſalſely delicate, crowded with ſuperfluous ornaments, and often very unnatural. This manner of building, he ſays, was introduced into Europe through Spain. The Cruſades gave the Chriſtians an idea of *Saracenic* architecture, which they afterwards imitated. Sir C. Wren diſtinguiſhes the heavy *Gothic* as *Anglo-Saxon*, the lighter as *Arabeſc*.

ARABIC, or Arabian, ſomething that relates to Arabia, or the Arabs.

Arabic *figures*, or *characters*, are the numeral characters commonly made uſe of in arithmetical computations.

The *Arabic* characters ſtand contradiſtinguiſhed to the Roman.

The learned are generally of opinion, that the *Arabic* figures were firſt taught us by the Saracens, who borrowed them from the Indians.—Scaliger was ſo ſatisfied of their novelty, that he immediately pronounced a ſilver medallion he was conſulted about, modern; upon his being told that the numeral figures 234, 235, were upon it. The common opinion is, that Planudes, who lived towards the cloſe of the thirteenth century, was the firſt Chriſtian who made uſe of them. Father Mabillon even aſſures us, in his work *de Re Diplomatica*, that he has not found them any where earlier than the fourteenth century. Yet Dr. Wallis inſiſts on their being of a much older ſtanding; and concludes they muſt have been uſed in England, at leaſt as long ago as the time of Hermannus Contractus, who lived about the year 1050, if not in ordinary affairs, yet at leaſt in mathematical ones, and particularly in the aſtronomical tables. Vide Wall. Algebr. c. 4.

The ſame author gives us an inſtance of their antiquity in England, from a mantle-tree of a chimney, in the parſonage-houſe of Helmdon in Northamptonſhire, wherein is the following inſcription in *baſſo relievo*, M° 133, being the date of the year 1133. Philoſ. Tranſact. N° 154.

Mr. Luffkin furniſhes a yet earlier inſtance of their uſe, in the window of a houſe, part of which is a Roman wall, near the market-place in Colcheſter; where, between two carved lions, ſtands an eſcutcheon, containing the figures 1090. Philoſ. Tranſact. N° 255.

Mr. Huet is even of opinion, that theſe characters were not borrowed from the Arabs, but from the Greeks; and that they were originally no other than the Greek letters, which we all know that people made uſe of to expreſs their NUMBERS by.

ARABIC, *gum*. See GUM.

ARABIC, or ARABIAN *learning*, is divided into two ſtates, or periods, viz. Ante-Mahometan, and Mahometan.

The *Arab* learning in this firſt period, conſiſted, according to Abulpharagius, in the knowledge of their language, the propriety of diſcourſe, the compoſition of verſe, and the ſcience of the ſtars: but their chief attention ſeems to have been directed to *oratory* and *poetry*. Hiſt. Dynaſt. Renaudot de Barbar. Ariſt. verſ Fabricii Bibl. Græca, lib. vi. cap. 5. § 6.

The ſecond period is more diſtinguiſhed, at leaſt from the time of Al-Mamon, the ſeventh caliph of the family of the Abaſſides, who flouriſhed about the year 820, and has the honour of being the founder of the modern *Arabian* learning. He ſent for all the beſt books out of Chaldea, Greece, Egypt, and Perſia, relating to phyſic, aſtronomy, coſmography, muſic, chronology, &c. and penſioned a number of learned men, ſkilled in the ſeveral languages and ſciences, to tranſlate them into *Arabic*. By this means, divers of the Greek authors, loſt in their own country and language, have been preſerved in *Arabic*. Elmac. Hiſt. Sar. lib. ii. cap. 8. Leo Africanus de Viris illuſt. ap. Arabes, cap. 1. Fabricii Bib. Græc. lib. vi. cap. 9. Græv. in Præf. ad Tab. Geog. Voſſ. de Sect. Phil. cap. 3. § 17.

From that time *Arabia* became the chief ſeat of *learning*; and we find mention by Abulpharagius, Pococke, D'Herbelot, and Hottinger, of learned men, and books without number.

The revival of *learning* in the tenth century, by Gerbert, known after his elevation to the pontificate by the title of Silveſter II. and afterwards among the Europeans in general, may be aſcribed to the inſtructions and writings of the *Arabian* doctors and philoſophers, and to the ſchools which they founded in ſeveral parts of Spain and Italy. And in the twelfth century, the inquiſitive of different countries frequented the ſchools of the Saracens in Spain, and diſſeminated the knowledge which they obtained there after their return. At this time, many of the learned productions of the *Arabians* were tranſlated into Latin, which facilitated the general progreſs of ſcience.

ARABIC, or ARABIAN *logic*, was that of Ariſtotle, as explained by Aviſenna and Averrhoes.

ARABIC *marble*, *Arabicum marmor*, a name given by the ancient Greeks, to a ſpecies of marble brought from Egypt and Arabia, and remarkable for its beautiful whiteneſs.

ARABIC, or ARABIAN *oratory*, according to Renaudot, conſiſted in a luxuriancy of quaint, high-flown words, epithets, and deſcriptions.

ARABIC, or ARABIAN *philoſophy*, before Mahomet, was Sabian, and included the ſyſtem and ceremonies of that ſect of idolaters. This it was that Mahomet ſet himſelf to decry; and he is even ſaid by ſome, to have carried his oppoſition ſo far, as to prohibit, if not puniſh, all ſtudy of *philoſophy*. But his followers, by degrees, got over this reſtraint; the love of learning increaſed; till, under the memorable caliphate of Al-Mamon, Ariſtotle's *philoſophy* was introduced and eſtabliſhed among them; and from them propagated, with their conqueſts, through Egypt, Africa, Spain, and other parts.

As they choſe Ariſtotle for their maſter, they chiefly applied themſelves to that part of philoſophy called *logic*, and thus became proficients in the knowledge of words, rather than things. Whence they have been ſometimes denominated, *Maſters of the wiſdom of words*; ſometimes the *Talking ſect*. Their *philoſophy* was involved in quaint arbitrary terms and notions, and their demonſtrations drawn from thence, as from certain principles, &c. Walch Hiſt. Logic. lib. ii. ſec. 2. § 1.

ARABIC, or ARABIAN *phyſic* and *phyſicians*, ſucceeded the Grecian, and handed down the art to us, having made conſiderable improvements, chiefly in the pharmaceutical and chemical parts.

It is certain we owe to them moſt of our ſpices and aromatics, as nutmegs, cloves, mace, and other matters of the produce of India. We may add, that moſt of the gentler purgatives were unknown to the Greeks, and firſt introduced by the *Arabs*, as manna, ſena, rhubarb, tamarinds, caſſia, &c. They likewiſe brought ſugar into uſe in *phyſic*, where, before, only honey was uſed. They alſo found the art of preparing waters and oils, of divers ſimples, by diſtillation and ſublimation.

The firſt notice of the ſmall-pox, and the meaſles, is likewiſe owing to them. Laſtly, the reſtoration of *phyſic* in Europe took its riſe from their writings.

M. Le Clerc has given a ſketch, and Dr. Freind, an ample hiſtory of the *Arabian phyſic*. We have alſo a *notitia* of all the *Arabian phyſicians*, by Fabricius.

ARABIC, or ARABIAN *poetry*, may be divided into two ages. The ancient, according to Voſſius, was no other than rhiming; was a ſtranger to all meaſure, and rule; the verſes looſe and irregular, confined to no feet, number of ſyllables; or any thing elſe, ſo that they rhimed at the end; oftentimes all the verſes in the poem ended with the ſame rhime. It is in ſuch verſe that the ALCORAN is ſaid to be written.

The modern *Arabian poetry* takes its date from the caliphate of Al Raſchid, who lived toward the cloſe of the eighth century. Under him *poetry* became an art, and laws of *proſody* were laid down. Clark, Proſod. Arab. cap. 1.

Their compariſons, in which they abound, are taken, with little choice, from tents, camels, hunting, and the ancient manners of the *Arabs*.

ARABIC, or ARABIC *tongue*, is a branch or dialect of the Hebrew.

F. Angelo de St. Joſeph ſpeaks much of the beauty and copiouſneſs of the *Arabic*. He aſſures us it has no leſs than a thouſand names for a ſword; five hundred for a lion; two hundred for a ſerpent; and eighty for honey.

ARABIC *verſions*. See BIBLES.

ARABIC *year*. See YEAR.

ARABICI, a ſect who ſprung up in Arabia, about the year 207, whoſe diſtinguiſhing tenet was, that the ſoul died with the body, and alſo roſe again with it.

Euſebius, lib. vi. c. 38. relates that a council was called to ſtop the progreſs of this riſing ſect; and that Origen aſſiſted at it; and convinced them ſo thoroughly of their error, that they abjured it.

ARABACUS *coſtus*. See COSTUS.

ARABIS, in *Botany*, a genus of the *tetradynamia ſiliquoſa*; *baſtard tower* MUSTARD.

ARABISM, ARABISMUS, an idiom, or manner of ſpeaking peculiar to the Arabs, or the Arabic language.

R. Martin maintains, that the ו ſometimes expreſſes an oath in the Hebrew as well as the Arabic.

ARABIST, a perſon curious of, and ſkilled in the learning and languages of the Arabians: ſuch were Erpenius and Golius. The ſurgeons of the 13th century are called *Arabiſts* by Severinus. Freind. Hiſt. Phyſ. tom. ii. p. 301.

ARABLE *land*, anciently called ARALIA, in ſuch as is fit for tillage, or ploughing; or which is actually ploughed up from time to time.

It is thus called from the Latin *arare*, of *aratrum*, a PLOUGH.

ARABUM *lepra*. See LEPROSY.

ARABUM *ſandaracha*. See SANDARACHA.

ARAC, or ARRAC, a ſpirituous liquor, imported from the Eaſt Indies; chiefly uſed by way of dram, and in punch. The nature and compoſition of this celebrated liquor has been much controverted.—The name *arac*, Mr. Lockyer aſſures us, is an Indian word for ſtrong waters of all kinds; for that they call our ſpirits and brandy, *Engliſh arac*.—But what we underſtand by the name *arac*, is really no other than a ſpirit procured by diſtillation, from a vegetable juice called *toddy*, which flows by inciſion out of the cocoa-nut tree, and ſome other trees, like the birch-juice procured among us

The *toddy*, Mr. Lockyer adds, is a pleaſant drink of itſelf, when new, but purges thoſe not uſed to it; and, when ſtale, is heady; and finally makes good vinegar. The Engliſh at Madraſs uſed it as leaven to raiſe their bread with.

Others are of opinion, that the *arac* or *arrac*, is a vinous ſpirit obtained by diſtillation, in the Eaſt Indies, from rice or ſugar, fermented with the juice of cocoa nuts.

The *Goa arac* is made from the *toddy*, the *Batavia arac* from rice and ſugar. There is likewiſe a kind of ſhrub from which *arac* is made.

Goa and Batavia are the chief places for *arac*.—At Goa there are divers kinds; ſingle, double, and treble diſtilled. The double diſtilled, which is that commonly ſent abroad, is but a weak ſpirit in compariſon with Batavia *arac*; yet on account of its peculiar and agreeable flavour, is preferred to all the other *aracs* of India. This is attributed to the earthen veſſels, which they uſe at Goa to draw the ſpirit; whereas at Batavia they uſe copper ſtills.

The *Parier arac*, made at Madraſs, and the *Columbo*, and *Quilone arac*, at other places, being fiery hot ſpirits, are little valued by the Europeans, and therefore rarely imported; though highly prized among the natives. In the beſt *Goa arac*, the ſpirits of the cocoa juice do not make above a ſixth or eighth part.

The manner of making the *Goa arac* is this. The juice of the trees is not procured in the way of tapping, as we do; but the operator provides himſelf with a parcel of earthen pots, with bellies and necks like our ordinary bird-bottles: he makes faſt a number of theſe to his girdle, and any way elſe that he commodiouſly can about him. Thus equipped, he climbs up the trunk of a cocoa-tree; and when he comes to the boughs, he takes out his knife, and cutting off one of the ſmall knots, or buttons, he applies the mouth of the bottle to the wound, faſtening it to the bough with a bandage; in the ſame manner he cuts off other buttons, and faſtens on his pots, till the whole number is uſed: this is done in the evening, and deſcending from the tree, he leaves them till the next morning; when he takes off the bottles which are moſtly filled, and empties the juice into the proper receptacle. This is repeated every night, till a ſufficient quantity is produced, and the whole being then put together, is left to ferment, which it ſoon does.

When the fermentation is over, and the liquor or waſh is become a little tart, it is put into the ſtill, and a fire being made, the ſtill is ſuffered to work as long as that which comes over has any conſiderable taſte of ſpirit.

The liquor thus procured is the low wine of *arac*, and this is ſo poor a liquor, that it will ſoon corrupt and ſpoil, if not diſtilled again, to ſeparate ſome of its phlegm; they therefore immediately after pour back this low wine into the ſtill, and rectify it to that very weak kind of proof-ſpirit, in which ſtate we find it.

The *arac* we meet with, notwithſtanding its being of a proof-teſt, according to the way of judging by the crown of bubbles, holds but a ſixth, and ſometimes but an eighth part of alcohol, or pure ſpirit; whereas our other ſpirits, when they ſhew that proof, are generally eſteemed to hold one half pure ſpirit. Shaw's Eſſay on Diſtilling.

There is a paper of obſervations on *arac*, in the Melanges d'Hiſtoire Natur. tome V. p. 302. By fermenting, diſtilling, and rectifying the juice of the American maple, which has much the ſame taſte as that of the cocoa, the author ſays, he made *arac* not in the leaſt inferior to any that comes from the Eaſt Indies; and he thinks the juice of the ſycamore and of the birch trees would equally anſwer the end.

Beſide the common ſorts of Goa and Batavia *arac*, there are two others leſs generally known; theſe are the bitter *arac*, and the black *arac*.

By ſtat. 11th Geo. 1. c. 30. *arac* on board a ſhip within the limits of any port of Great Britain, may be ſearched for and ſeized, together with the package; or if found unſhipping or unſhipped, before entry, may be ſeized by the officers of exciſe, in like manner as by the officers of the cuſtoms.

Upon an exciſe officer's ſuſpicion of the concealment of *arac*, and oath made of the grounds of ſuch ſuſpicion, before the commiſſioners, or a juſtice of peace; they may empower him to enter ſuch ſuſpected places, and ſeize the liquors, with the caſks, &c. If the officers are obſtructed, the penalty is 100*l*.

Arac is not to be ſold but in warehouſes, entered as directed in the 6th of Geo. 1. c. 21. upon forfeiture, and the caſks, &c. If permits are not returned which are granted for the removal of *arac*, or if the goods are not ſent away within the time limited, the penalty is treble the value. If the permits are not returned, and the decreaſe is not found to be ſufficient, the like quantity is forfeited. Permits are not to be taken out, but by direction in writing of the proprietor of the ſtock, or his known ſervant, upon forfeiture of 50*l*. or three months impriſonment.

By ſtat. 9th Geo. 2. c. 35. if *arac* is offered to ſale without a permit, or by any hawker, pedlar, &c. with a permit; the perſon to whom it is offered, may ſeize and carry it to the next warehouſe belonging to the cuſtoms or exciſe, and bring the perſon offering the ſame before any juſtice of the peace, to be committed to priſon, and proſecuted for the penalties incurred by ſuch offence. The perſon ſeizing ſuch goods may proſecute in his own name; and on recovery is intitled to one third part of the groſs produce of the ſale: and the commiſſioners are, if deſired, upon a certificate from the juſtice of the offender's being committed to priſon, to advance to the ſeizer 15*s*. per gallon for the *arac* ſo ſeized.

Arac (except for the uſe of ſeamen, two gallons each) found in any ſhip or veſſel arrived from foreign parts, at anchor, or hovering within the limits of any port, or within two leagues of the ſhore; and not proceeding on her voyage (unleſs in caſe of unavoidable neceſſity and diſtreſs of weather, notice whereof muſt be given to the collector or chief officer of the port, upon the ſhip's arrival) is forfeited; with the boxes, caſks, or other package, or the value thereof.

ARACARI, in *Zoology*, the name of a Braſilian bird, of the WOODPECKER kind. It is of the ſize of our common green woodpecker, and has a very large, ſharp, and ſomewhat hooked beak. Marggrave. See PICUS, and *Tab. Birds*, N° 14.

ARACHIS, in *Botany*, *arachidna*, *arachinoides*, and *arachidnoides*. See EARTH-NUT.

ARACHNOIDES, in *Anatomy*, a fine, thin, tranſparent membrane, which lying between the *dura* and *pia mater*, is ſuppoſed to inveſt the whole ſubſtance of the brain, *medulla oblongata*, and ſpinal marrow.

The word is borrowed from αραχνη, *a ſpider*, or *ſpider's web*, and ειδος, *form*; in regard to the fineneſs of the part, which is ſuppoſed to reſemble that of a ſpider's web.

Many anatomiſts deny the exiſtence of ſuch third *meninx*, or membrane; and contend that it ought rather to be regarded as the external *lamina* of the *pia mater*, which ſends its internal *lamella* between the folds of the cortical part of the brain.

ARACHNOIDES, or ARANEA *tunica*, is likewiſe uſed for a fine ſlender tunic, wherewith the cryſtalline humour is encompaſſed.

This, others call *cryſtalloides*, and *tunica cryſtallina*, or *capſula cryſtallina*.—Many have even doubted of its exiſtence; which is the more extraordinary, ſince Galen ſpeaks of it, and compares it to a pellicle of an onion; Veſalius repreſents it as reſembling fine tranſparent horn.—It is eaſily found in quadrupeds, eſpecially the ſheep, ox, and horſe; and though it be a little more difficult to diſcover in man, yet after a perſon has once been ſhewn it, he will readily find it.

What is ſurpriſing, Briggs ſays not a word of it; and ſo able an anatomiſt as Ruyſch, was long in ſuſpenſe about it: it was only by means of his injections that he diſcovered it in man; though ſo eaſy to diſcern in a ſheep.

The *arachnoides* adheres by its poſterior part to the vitreous tunic.—In man it is about twice as thick as a ſpider's web, at leaſt the fore-part of it; in an ox it is as thick again as in man; and in an horſe it is thicker than in an ox.

It has three uſes: firſt, to retain the cryſtalline in the collet of the vitreous humour, and prevent its changing ſituation: ſecondly, to ſeparate the cryſtalline from the aqueous humour, and prevent its being continually moiſtened therewith: thirdly, the lymphatics furniſh a liquor which they diſcharge into its cavity, wherewith the cryſtalline is continually refreſhed, and kept in right order; inſomuch that when this liquor is wanting, the cryſtalline ſoon dries, grows hard, and opake, and may even be reduced to powder. *Vide* Petit, in Mem. Acad. R. Scienc. an. 1730. p. 622, ſeq.

ARACHNOIDES, in *Natural Hiſtory*, the name of one of the genera of the ECHINI *marini*; the diſtinguiſhing characters of which are, that it is of a circular circumference, but variouſly broken in at the edges. The mouth is round, and placed in the center of the baſe, and the aperture for the *anus* is quadrangular, and ſituated in one of the ſides, on the upper ſuperficies, but near the edge. Klein. See *Tab. of Teſtaceous and Cruſtaceous* Animals, N° 8.

ARACUS, in *Botany*; *ſtrangle* TARE, or *wild* VETCH. A plant which grows in hedges, on banks, and among corn. It is a herb in uſe, and has the ſame qualities with the other ſpecies of the VICIA.

ARACUS *aromaticus*, in the *Materia Medica*, a name given by ſome authors to the VANILLA uſed in chocolate-making.

ARADOS, in *Hippocrates*, ſignifies that perturbation which is excited in the ſtomach by concocting meats of different qualities. *Arados* alſo ſignifies any internal perturbation cauſed by purging medicines, vehement exerciſes, or other cauſes.

ARÆOMETER, ARÆOMETRUM, an inſtrument wherewith to meaſure the denſity or gravity of fluids.

The word is formed of *αραιος*, *thin*, and *μετρον*, *meaſure*.

The *aræometer*, or water-poiſe, is uſually made of glaſs; conſiſting of a round hollow ball, which terminates in a long ſlender neck, hermetically ſealed at top; there being firſt as much running mercury put into it, as will ſerve to balance or keep it ſwimming in an erect poſition.

The ſtem is divided into degrees (as repreſented *Tab. Pneumatics*, *fig.* 18.); and by the depth of its deſcent into any liquor, the lightneſs of that liquor is concluded; for that fluid in which it ſinks leaſt, muſt be heavieſt; and that in which it ſinks loweſt, lighteſt.

M. Homberg has invented a new *aræometer*, deſcribed in Philoſ. Tranſact. N° 262. thus: *A* (*fig.* 19.) is a glaſs bottle or matraſs, with ſo ſlender a neck, that a drop of water takes up in it about five or ſix lines, or half of an inch. Near that neck is a ſmall capillary tube *D*, about ſix inches long, and parallel to the neck.—To fill the veſſel, the liquor is poured in at the mouth *B* (which is widened to receive a tunnel), till it run out at *D*; that is, till it riſe in the neck to the mark *C*, by which means you have always the ſame bulk or quantity of liquor; and conſequently, by means of the balance, can eaſily tell, when different liquors fill it, which weighs moſt, or is moſt intenſely heavy.

Some regard, however, is to be had in theſe trials to the ſeaſon of the year, and degree of heat and cold in the weather: becauſe ſome liquors rarefy with heat, and condenſe with cold, more than others; and accordingly take up more or leſs room.

By means of this inſtrument, the ingenious author has made a table, to ſhew the different weights of the ſame bulk of the moſt conſiderable chemical liquors, both in ſummer and winter; as follows:

The *aræometer* full of	Weighed in ſummer.			In winter.		
	oz.	*dr.*	*gr.*	*oz.*	*dr.*	*gr.*
Quick-ſilver,	11	00	06	11	00	32
Oil of tartar,	01	03	08	01	03	31
Spirit of urine,	01	00	32	01	00	43
Oil of vitriol,	01	03	58	01	04	03
Spirit of nitre,	01	01	40	01	01	70
——— ſalt,	01	00	39	01	00	47
Aqua fortis,	01	01	38	01	01	55
Vinegar,	00	07	55	00	07	60
Spirit of wine,	00	06	47	00	06	61
River water,	00	07	53	00	07	57
Diſtilled water,	00	07	50	00	07	54

The inſtrument itſelf weighed, when empty, one drachm twenty-eight grains. See HYDROMETER.

ARÆOPAGUS. See AREOPAGUS.

ARÆOPAGITIC. See AREOPAGITIC.

ARÆOSTYLE, ARÆOSTYLOS, in the *Ancient Architecture*, a ſort of INTERCOLUMNATION, wherein the columns were placed at the diſtance of eight, or, as ſome ſay, ten modules from one another. See *Tab. Archit.* E *fig.* 40.

In the *aræoſtyle*, the columns were the wideſt and openeſt they were ever planted at; whence the name—from the Greek *αραιος*, *rarus*, and *ϛυλος*, *column*.

The *aræoſtyle* is chiefly uſed in the Tuſcan order; at the gates of great cities, and fortreſſes.

ARÆOTICS, in *Medicine*, ſuch remedies as tend to open the pores of the ſkin, and render them large enough for the morbific matter's being carried off by ſweat, or inſenſible perſpiration.

To the claſs of *aræotics* belong diaphoretics, ſudorifics, &c.

ARAF, or AL-ARAF, in the *Mahometan Theology*, a kind of ſeparation or partition-wall between paradiſe and hell. Sale's Koran.

ARAHUM, or HARAHUM, in *Ancient Writers*, denotes a place conſecrated or ſet apart for holy purpoſes. Du-Cange.

Hence the phraſe, in *araho jurare*, or *conjurare*, to make oath in the church; becauſe, by the Ripuarian laws, all oaths were to be taken in the church, on the relics of the ſaints.

ARAIGNEE, in *Fortification*, ſometimes denotes a branch, return, or gallery, of a mine.

ARAIRE, the name of a ſmall plough uſed in Provence and Languedoc, in France.

ARAIS ALNIL, in *Botany*, the name given by the people of Ægypt, to the FABA *Ægyptia*, or heads of the NILUFAR. Proſper Alpin.

ARALIA, in *Botany*, a genus of the *pentandria digynia* claſs; berry-bearing *angelica*. The characters are, that it is an umbelliferous plant with a globular umbel, having a ſmall *involucrum*; the flower hath five oval petals, and five ſhort ſtyles. The *germen* afterward turns to a roundiſh channeled berry, having five cells, each containing one oblong hard ſeed. There are three ſpecies; the Canada *berry-bearing angelica*; the *berry-bearing angelica* with a naked ſtalk; and the *angelica-tree*.

The inhabitants of Canada, and thoſe of Virginia, call the firſt ſpecies of *aralia* by the name of *ſarſaparilla*; becauſe its roots have almoſt the ſame figure and virtues. M. Sarrazin writes from thence, that he had a patient who had been cured of an *anaſarca*, about two years before, by a drink made of theſe roots: and aſſures us that the roots of the ſecond ſpecies, well boiled and applied by way of cataplaſm, are very excellent for curing old ulcers; as alſo the decoction of them, with which they bathe and ſyringe wounds: and he does not at all doubt but the virtues of the third ſpecies are the ſame with thoſe of the ſecond. Phil. Tranſ. abr. vol. V.

ARALIA, in *Ancient Law Writers*, denotes arable or ploughing lands.

This is otherwiſe denominated *aratoria*, *araturia*.

In Domeſday, for Eſſex, we meet with *decem acras prati, duos runcal. quatuor aralia*.—Where *aralia* ſeems to denote land fit for ploughing or tillage, by way of contradiſtinction to *runcalia*, which was over-run with briars and thorns. Du-Cange.

ARALIASTRUM, in *Botany*; ſee GINSENG.

ARANEA, a genus of the *aptera* inſects of Linnæus. See SPIDER.

ARANEA *concha*, in *Natural Hiſtory*, the name of a kind of ſea-ſhell, of which there are ſeveral ſpecies: we call them in Engliſh the ſpider-ſhells; they are of the family of the MUREX, and their peculiar character is the having digitated lips. The ſeveral ſpecies have different numbers of fingers, from the lip of the ſhell, as four, five, ſix, ſeven, or eight.

ARANEA *tunica*; ſee ARACHNOIDES.

ARANEUS *marinus*, the *ſea-ſpider*, a name by which ſome authors have called the fiſh more uſually known by the name of DRACO *marinus*, and ſuppoſed to have ſomething venomous in the ſpines of its back-fin. Aldrovand.

ARANNEA, a ſilver ore found only in the mines of Potoſi, or in the ſingle mine there of Catamito. It owes its name to ſome reſemblance it bears to a cobweb, being compoſed of threads of pure ſilver, which to the ſight appear like a ſilver lace when burned to ſeparate the ſilk from it. It is the richeſt of all kinds of ſilver ore.

ARAPABACA, a name given by Plumier to the *ſpigelia* of Linnæus, or the *worm*-GRASS.

ARARAUNA, in *Zoology*, the name of a Braſilian bird, of the MACAW kind. Marggrave.

ARATEIA, in *Antiquity*, a yearly feſtival celebrated at Sicyon, on the birth-day of Aratus, wherein divers honours were paid by a prieſt conſecrated to this ſervice, who for diſtinction's ſake wore a ribband beſpangled with white and purple ſpots.

The *arateia* were ſolemnized with much pomp of muſic, the choiriſters of Bacchus attending. Potter, Archæol. l. ii. c. 20.

ARATO-BAFABEN, a fixed ſtar of the ſecond magnitude in the head of the DRAGON.

ARATRUM *terræ*, in our *Ancient Law-Books*, as much land as can be yearly tilled with one plough.—*Hoc manerium eſt* 30 *aratrorum*.

ARATURA *terræ*, an ancient ſervice which the tenant was to do his lord, by plowing his land.

ARBALET. See BOW, and BALISTA.

ARBITER, in the *Civil Law*, a judge nominated by the magiſtrate, or choſen voluntarily by two contending parties, on whom they confer a power by compromiſe, of deciding their differences according to law.

The Romans ſometimes ſubmitted to a ſingle *arbiter*; but ordinarily they choſe ſeveral; and thoſe always in an uneven number.

In matters wherein the public was concerned, as crimes, marriages, affairs of ſtate, &c. it was not allowed to have recourſe to *arbiters*.—Nor was it permitted to appeal

peal from an *arbitral* ſentence; the effect of an appeal being to ſuſpend the authority of a juriſdiction, not of a compact.

Among the moderns, there are properly divers kinds of *arbiters*; ſome obliged to go by the rigour of the law; and others are authorized by the contending parties to relax, or give way to natural equity; theſe are properly called ARBITRATORS.

ARBITRARY, in a general ſenſe, that which is not defined, or limited by any certain, expreſs law, or conſtitution, but is left ſolely to the judgment and diſcretion of another.—The puniſhment of ſuch a crime is *arbitrary.*—*Arbitrary* fines or mulcts are uſually called *amercements.*

The word is formed from *arbitrium, will*; whence alſo *arbiter, arbitrator.*

ARBITRARY *power.* See DESPOTISM, MONARCHY, &c.

ARBITRATION, or ARBITRAGE, the referring of a cauſe or quarrel to the deciſion of one or more indifferent perſons, under the quality and denomination of *arbiters* or *arbitrators.*

An *arbitration* is either general, that is, including all actions, quarrels, and demands; or ſpecial, which includes one or more matters, or facts ſpecified.

By ſtat. 9th and 10th W. 3. c. 15. ſec. 1. after May 11th, 1698, all merchants and others deſiring to end any controverſy, for which there is no remedy but by perſonal action, or ſuit in equity, by *arbitration*, may agree that their ſubmiſſion of the ſuit to the award or umpirage of any perſons, ſhall be made a rule of any of his Majeſty's courts of record, which the parties ſhall chuſe; and may inſert ſuch their agreement in their ſubmiſſion, or the condition of the bond or promiſe: and upon producing an affidavit of ſuch agreement, and upon reading and filing ſuch affidavit in the court ſo choſen, the ſame may be entered of record in ſuch court, and a rule of court ſhall be thereupon made, that the parties ſhall ſubmit to, and finally be concluded by, ſuch *arbitration* or umpirage; and in caſe of diſobedience thereto, the party neglecting or refuſing, ſhall be ſubject to all the penalties of contemning a rule of court, and proceſs ſhall be iſſued accordingly; which ſhall not be ſtopped or delayed by any order, &c. of any other court, either of law or equity, unleſs it appear on oath, that the *arbitrators* or umpire miſbehaved themſelves, and that ſuch award was corruptly or unduly procured.

Sec. 2. Any *arbitration* or umpirage procured by corruption or undue means ſhall be void, and ſet aſide by any court of law or equity, ſo as ſuch corruption or undue practice be complained of in the court where the rule is made for ſuch *arbitration*, before the laſt day of the next term after ſuch *arbitration* made and publiſhed to the parties.

The power of *arbitrators* is to be regulated by the compromiſe between the parties, as to what concerns the differences they are to determine; and whatever they decree beyond that, is of no effect.

ARBITRATOR, an extraordinary judge or commiſſioner, in one or more cauſes between party and party, choſen by their mutual conſent.

Among us, two *arbitrators* are uſually choſen by the contending parties: and in caſe theſe cannot agree, a third is added, and is called an *umpire*; in whoſe deciſion both ſides are bound to acquieſce.

The civilians make a difference between *arbiter* and *arbitrator*: though both ground their power on the compromiſe of the parties, yet their liberty is diverſe: for an *arbiter* is tied to proceed and judge according to the forms of law; whereas an *arbitrator* is permitted wholly to uſe his own diſcretion, without ſolemnity of proceſs, or courſe of judgment, to hear and accommodate the controverſy committed to him; ſo it be *juxta arbitrium boni viri.*

ARBITREMENT. See ARBITRATION.

ARBOR, in *Natural Hiſtory, Botany*, &c. See TREE.

ARBOR, in *Chemiſtry.*—ARBOR *philoſophica* is a name common to ſeveral metalline cryſtallizations; thus called from their ramifications reſembling a tree.

Of this kind, is the ARBOR *Dianæ*, ſometimes alſo called ARBOR *Lunæ*, a kind of effloreſcence or cryſtallization, in which *aqua fortis* incorporated with ſilver and mercury, being put in water, expands and ſhoots itſelf into an appearance of a tree, with branches, leaves, and flowers.

The *arbor* DIANÆ is properly a precipitation of ſilver with mercury: the operation of making it belongs to the head of AMALGAMATION. It has its name from the ſilver which chemiſts call *Diana*, or the *Moon.* The experiment is generally conſidered merely as curious and amuſing.

Albertus Magnus is ſaid to have produced a tree before the king of France, while he ſat at dinner: this paſſed at that time for a palingeneſia, or reſuſcitation; but it may more naturally be referred to the ſpecies of germinations we are ſpeaking of.

The method of preparing the *arbor* DIANÆ, according to Lemery, is as follows. "Diſſolve an ounce of fine "ſilver in a ſufficient quantity of ſpirit of nitre, very "pure and moderately ſtrong; mix the ſolution in a "matraſs, with about twenty ounces of diſtilled water; "add two ounces of mercury, and let the whole remain "at reſt. In about forty days, a kind of ſilver tree will "be formed on the mercury, with branches reſembling "vegetable ramifications."

This proceſs is very long; the following, by M. Homberg, is much ſhorter. "Make an AMALGAM without "heat, of four drams of filings of ſilver, or rather of "ſilver-leaf, and of two drams of mercury; diſſolve "this in four ounces, or a ſufficient quantity of ſpirit "of nitre, pure and moderately ſtrong; dilute this ſolution in about a pound and a half of diſtilled water; "ſhake the mixture, and preſerve it in a bottle with a "glaſs ſtopper. When the preparation is to be uſed, an "ounce of it is to be put in a phial together, with "about the ſize of a pea of an *amalgam* of gold, or of "ſilver, which ought to be as ſoft as butter, and the "whole is to remain at reſt. Some ſmall filaments are "to be ſeen iſſuing from the ſmall *amalgam*, which "quickly increaſe, branch out on both ſides, and take "the form of ſhrubs."

Another kind of artificial vegetation may be produced, ſays Dr. Lewis, by ſpreading a few drops of ſolution of ſilver upon a glaſs plate, and placing in the middle a ſmall piece of any of the metals that precipitate ſilver, as particularly of iron. The ſilver quickly concretes into curious ramifications all over the ſurface of the plate. Neumann's Works, p. 47.

ARBOR *Martis* is a germination of iron, reſembling a natural plant.

The *arbor Martis* is but of late invention; we owe it to the younger Lemery.

The manner of the diſcovery was this: on a diſſolution of iron filings in ſpirit of nitre contained in a glaſs, he poured oil of tartar *per deliquium*: upon this the liquor ſoon ſwelled very conſiderably, though with very little fermentation; and was no ſooner at reſt, than there aroſe a ſort of branches adhering to the ſurface of the glaſs, which, continuing to grow, at length covered it all over.

The form of the branches was ſo perfect, that one might even diſcover a kind of leaves and flowers thereon; ſo that this vegetation has as good a title to the appellation of *arbor* MARTIS, as the former has to that of *arbor* DIANÆ. See Hiſtoir. Acad. Royal. an. 1706.

ARBOR *genealogica, tree of conſanguinity*, ſignifies a lineage drawn out, under the figure or reſemblance of root, ſtock, branches, &c.

ARBOR *porphyriana*, among the ſchoolmen, denotes a ſcale of beings; or a figure conſiſting of three rows or columns of words; the middlemoſt whereof contains the ſeries of genera and ſpecies, and bears ſome analogy to the trunk; and the extremes, containing the differences, to the branches of a tree.

	SUBSTANCE	
Thinking		Extended
	BODY	
Inanimate		Animate
	ANIMAL	
Irrational		Rational
	MAN	
This		That
	PLATO.	

The *arbor porphyriana* is otherwiſe called SCALA *predicamentalis.*

ARBOR is alſo figuratively uſed in *Mechanics*, for the principal part of a machine, which ſerves to ſuſtain the reſt. —It is alſo uſed for a ſpindle, or axis, whereon a machine turns; thus, *arbor* of a CRANE, a MILL, a windmill, &c.

ARBOREOUS, ARBOREUS, is applied by ſome naturaliſts to ſuch excreſcences, funguſes, moſſes, and other paraſites, as grow on trees; in contradiſtinction to ſuch as grow on the ground: ſuch are the *lichenoides* and *agarics.*

ARBORESCENT, a term uſed to denote any thing that ſhoots or grows up in form of a tree.

Botaniſts ſpeak of *arboreſcent* ſhrubs and plants; the SEDUM *arboreſcens*, &c. Mineraliſts treat of *arboreſcent* metals, *arboreſcent* ſilver, *arboreſcent* iron, *arboreſcent* ſtones, &c. The *fungus marinus* is ranked by ſome in the claſs of *arboreſcent* fluors; the chemiſts produce *arboreſcent*

boreſcent cryſtallizations, which they call philoſophical trees. Phil. Tranſ. N° 198. N° 111. and N° 129.

Zoologiſts give inſtances of *arboreſcent* animals, particularly fiſhes.

The *arboreſcent* STAR-*fiſh*, *ſtella arboreſcens*, is one of the curioſities of nature found in ſeveral cabinets of natural rarities.

ARBORIBONZES, in *Modern Hiſtory*, prieſts of Japan, who live an erratic life, and ſubſiſt on alms. They dwell in caverns, and cover their heads with bonnets made of the bark of trees.

ARBORIS *pecten*. See PECTEN.

ARBORIST, ARBORISTA, a perſon ſkilled in trees, their kinds, forms, natures, &c.

Arboriſt is an appellation of leſs extent than *botaniſt*.

ARBOR *ſcientiæ*, a general diſtribution or ſcheme of ſcience or knowledge.

Arbor *vine*. See CONVOLVOLUS.

Arbor *vitæ*. See THUYA.

ARBOUR, among *Gardeners*, &c. a kind of ſhady bower or cabinet, contrived to take the air in; yet to keep out the ſun and rain.

Arbours are now gone much into diſuſe; being apt to be damp, and unwholſome.—They are diſtinguiſhed into *natural* and *artificial*.

Arbours, *natural*, are formed only of the branches of trees, interwoven artfully, and borne up by ſtrong lattice-work, poles, hoops, &c. which make galleries, halls, porticoes, and green viſtas, naturally covered.

The trees wherewith theſe *arbours* are formed, are uſually the female elm, or lime-tree; becauſe they eaſily yield, and, by their great quantity of ſmall boughs, form a thick bruſh-wood; the lower parts are uſually filled up with horn-beam, or the like.

Arbours, *artificial*, and cabinets, are made of lattice-work, borne up by ſtandards, croſs-rails, circles and arches of iron. For theſe *arbours*, they make uſe of ſmall fillets of oak, which being planted, and made ſtraight, are wrought in chequers, and faſtened with wire.

ARBUSCULA is uſed by Bradley, to denote a little, or dwarf tree, above the rank of ſhrubs, but below that of trees, ſuch, e. gr. as the elder.

ARBUSTIVA, in *Botany*, an order of plants in the *Fragmenta Methodi Naturalis* of Linnæus.

ARBUSTUM implies a number or multitude of trees, planted for the fruit ſake.

Such are *oliveta*, *avellaneta*, *vineta*, &c.

The word was more peculiarly applied to a place planted with trees for faſtening vines to, which are hence called by Columella *arbuſtivæ*.

Arbustum is ſometimes alſo uſed to denote an orchard, or field wherein trees are planted at ſuch diſtance, that there is room for ploughing, and growing corn between.

ARBUTUS, in *Botany*, a genus of the *decandria monogynia* claſs; the STRAWBERRY-*tree*. The characters are, that the flower hath a ſmall obtuſe empalement, which is cut into five parts, upon which the *germen* ſits. The flower is of one leaf, ſhaped like a pitcher; at the bottom of the flower is ſituated the globular *germen*, which afterward becomes an oval or round berry, having five cells, which are filled with hard ſeeds. There are five ſpecies.

The common ſtrawberry-tree is one of the greateſt ornaments in the months of October, November, and frequently great part of December; that being the ſeaſon when the trees are in flower, and the fruit of the former year is ripe; for the fruit is a whole year growing to perfection.

The beſt method to propagate the *arbutus*, is from ſeeds: therefore when the fruit is perfectly ripe, they ſhould be gathered and mixed with dry ſand, to preſerve them till the middle or latter end of March, which is the proper ſeaſon for ſowing them, in order to have ſtrong plants before winter. They muſt be ſown in pots, which ſhould be plunged into a moderate hot-bed, which will greatly forward their vegetation; and if they are properly managed, they will grow eight or ten inches high before winter.

Theſe trees are tolerably hardy, and are ſeldom hurt, except in extreme hard winters, which many times kill the young and tender branches, but rarely deſtroy the trees: therefore, however dead the trees may appear after a hard winter, yet they ſhould be ſuffered to remain till the ſucceeding ſummer has ſufficiently demonſtrated what are living and what are dead.

The beſt ſeaſon for tranſplanting the *arbutus* is in September, at which time the bloſſoms are beginning to appear; and at that ſeaſon, if they ſhould prove very dry, and they are kept moiſt, they will take root very ſoon: but toward the beginning of November their roots ſhould be well covered with mulch, to keep out the froſt. Miller.

ARC; ſee ARK.

The words are formed from *arcus*, *a bow*.

ARCA, in *Zoology*, a genus of the *teſtacea* worms in the Linnæan ſyſtem.

Arca *cordis* is uſed by ſome anatomiſts, to denote the PERICARDIUM.

ARCADE, in *Architecture*, is uſed to denote any opening in the wall of a building formed by an ARCH. See *Tab. Archit. fig.* 40.

ARCADIANS, a literary ſociety eſtabliſhed at Rome in 1690. See ACADEMIES.

ARCÆ *cuſtos*, a title anciently given to the archdeacon, on account of his having the cuſtody of the church's cheſt, or treaſure.

ARCANGIS, in the *Turkiſh Armies*, an inferior kind of infantry, which ſerve as *enfans perdus*, and to harraſs and pillage the enemies frontiers.

The *Arcangis* are an order inferior to the *Janiſaries*; and, when any of them diſtinguiſh themſelves, are uſually preferred into the *Janiſaries* order.—They have no pay, but are to ſubſiſt on their plunder.

ARCANNA, a kind of red chalk, called by phyſiologiſts RUBRICA *fabrilis*, as being uſed by carpenters to colour their lines, for marking timber, &c.

ARCANUM literally ſignifies a *ſecret*; and is therefore very pertinently applied by quacks and impoſtors in medicine, who conceal their ignorance and fraud under a pretence of ſecrecy.—Hence a multitude of *arcana*.

There are alſo ſtanding officinal compoſitions, under the denomination of *arcana*.—Such are the

Arcanum *corallinum*, a preparation of red precipitate; made by diſtilling it with the ſpirit of nitre, and repeating the diſtillation again and again, till a fine red powder be procured. This powder is boiled in water, and the water poured off, and tartarized ſpirit of wine put to the powder: two or three cohobations are made; which leave a powder, much like the prince's powder, and ſaid to be of good uſe in the gout, dropſy, ſcurvy, &c. It operates chiefly by ſtool. It is, therefore, in fact nothing elſe but *red* PRECIPITATE, on which ſpirit of wine has been two or three times burnt, with an intention of rendering it milder.

Arcanum *duplicatum* is prepared of the *caput mortuum* of *aqua fortis*, by diſſolving it in hot water, filtrating, and evaporating it to a cuticle; and then leaving it to ſhoot. It is entirely the ſame in compoſition and effect with *vitriolated* TARTAR; and is ſometimes called *ſal catholicum*, and *ſal de duobus*.

The *arcanum duplicatum*, or *panacea duplicata*, is extolled as a diuretic, and ſudorific.—The recipe was purchaſed at the expence of 500 dollars, by that great virtuoſo the duke of Holſtein. Schroder, that prince's phyſician, writes wonders of its great uſes in hypochondriacal caſes, and in continued and intermitting fevers, ſtone, ſcurvy, &c. Mixed with the paſte employed in binding books, it ſecures them effectually againſt all injury from that miſchievous inſect, the BOOK-*worm*.

Arcanum *duplicatum catholicum*, in *Medicine*, a name given by Wedelius, to a compound medicine adminiſtered by him and others of the ſame time, with great ſucceſs, in a peſtilential fever, attended with a dyſentery, which raged for many years together in Germany, and yielded ſo well to nothing as to this medicine. It was compoſed of bezoar, plantane-root, and the root of *colchicum*. This laſt root has generally been eſteemed a poiſon of late times, though the authors of the greateſt antiquity have ſhewn a much greater reſpect for it, and called it the ſacred root, or *hierobulbus*.

Arcanum *Joviale* is made of an *amalgama* of mercury and tin, digeſted in ſpirit of nitre; the ſpirit being drawn off, the remaining matter is wetted with ſpirit of wine, and the ſpirit burnt away; and this for ſeveral times, till the pungent taſte is wholly gone: what remains is uſed much with the ſame intentions as the *antihecticum Poterii*, and is recommended by ſome as a ſudorific.

Arcanum *tartari*, is a neutral ſalt ſoluble in water and ſpirit of wine, formed from the combination of vinegar with fixed alcalies.

ARC-Boutant, in *Building*, a kind of flat arch, or part of an arch, abutting againſt the feet of an arch, or reins of a vault, to ſupport, and prevent their giving way.

The name is French; formed of *arc* and *bouter*, *to abut*.

Arc-boutants are only arched BUTTRESSES.

ARCEUTUM is uſed, in ſome *Ancient Law-Writers*, for a procuration due to a biſhop, abbot, or archdeacon, from their clergy, in time of entertainment.

ARCH, Ark, Arcus, a part of any curve line; e. gr. of a circle, an ellipſis, or the like.

Arch *of a circle* is a part of the circumference thereof, leſs than a half, or ſemicircle.—Such is AEB (*Tab. Geometry*, *fig.* 6.)

The baſe or line AB, that joins the two extremes of the arch,

arch, is called the CHORD; and AD half of the chord biſected by the diameter at right angles, is the SINE of half the ſaid *arch*, viz. AE.

All angles are meaſured by *arches*.—To know their quantity, an *arch* is deſcribed, having its centre in the point of the ANGLE.

Every circle is ſuppoſed to be divided into 360 degrees; and an *arch* is eſtimated according to the number of thoſe degrees it takes up. Thus an *arch* is ſaid to be of 30, of 80, of 100 degrees. See DEGREE.

ARCHES, *concentric*. See CONCENTRIC.

ARCHES, *equal*, are ſuch *arches* of the ſame or equal circle, as contain the ſame number of degrees. See EQUAL.—Hence,

In the ſame or equal circles, equal chords ſubtend equal *arches*.—And hence, again, *arches* intercepted between parallel chords are equal.

A radius, CE, *fig*. 6. which biſects the chord in D, does alſo biſect the *arch* in E; and is perpendicular to the chord; and on the contrary. And hence the problem, to *biſect an arch*, is ſolved, by drawing a line CE from the center perpendicular to the chord in D.

ARCHES, *ſimilar*, are thoſe which contain the ſame number of degrees of unequal circles. See SIMILAR, and LIKE.—Such are the *arches* AB and DE, *fig*. 87.

Two radii being drawn from the centre of two concentric circles, the two *arches* intercepted between them bear the ſame ratio to their reſpective peripheries; and alſo the two ſectors to the areas of their reſpective circles. See ANGLE.

To find the CENTER *of gravity* of an *arch* of a circle; ſee CENTER *of gravity*, &c.

For the ſines, tangents, &c. of *arches*; ſee SINE, TANGENT, &c.

ARCH, in *Aſtronomy*.—*Diurnal* ARCH of the ſun is part of a circle parallel to the equator, deſcribed by the ſun in his courſe betwixt riſing and ſetting. See DAY, DIURNAL, &c.

His *nocturnal arch* is of the ſame kind; excepting that it is deſcribed betwixt his ſetting and riſing. See NIGHT, NOCTURNAL, RISING, &c.

The latitude and elevation of the pole are meaſured by an *arch* of the meridian; and the longitude, by an *arch* of a parallel circle. See ELEVATION, LATITUDE, LONGITUDE, &c.

ARCH *of progreſſion*, or *direction*, is an *arch* of the ecliptic, which a planet ſeems to paſs over, when its motion is according to the order of the ſign. See DIRECTION.

ARCH *of retrogradation* is an *arch* of the ecliptic, deſcribed while a planet is retrograde, and moves contrary to the order of the ſign. See RETROGRADATION.

ARCH *of ſtation*. See STATION, and STATIONARY.

ARCH *between the centres* is an *arch*, as AI (*Tab. Aſtronomy, fig*. 35.) paſſing from the centre of the moon's ſhadow, A, perpendicular to her orbit OB. See ECLIPSE.

If the aggregate of the *arch* between the centres AI, and the apparent ſemidiameter of the moon, be equal to the ſemidiameter of the ſhadow, the eclipſe will be total without any duration; if leſs, total with ſome duration; and if greater, yet leſs than the ſum of the ſemidiameters of the moon and the ſhadow, partial.

ARCH *of viſion* is the ſun's depth below the horizon, at which a ſtar, before hid in his rays, begins to appear again.

TABLE exhibiting the *Arch* of *Viſion* of the PLANETS and FIXED STARS.

Planets.		°	′
Mercury,	-	10	0
Venus,	-	5	0
Mars,	-	11	30
Jupiter,	-	10	0
Saturn,	-	11	0

Fixed Stars. Magnitude.		°
1	-	12
2	-	13
3	-	14
4	-	15
5	-	16
6	-	17

However, the quantity of this *arch* is not always the ſame; but varies with the latitude, declination, right aſcenſion or deſcenſion, and diſtance of any planet or ſtar. Ricciol. Alm. v. i. p. 42.

See *Poetical* RISING.

ARCH, in *Architecture*, is a concave ſtructure, raiſed with a mould bent in form of the *arch* of a curve, and ſerving as the inward ſupport of any ſuperſtructure.—See *Tab. Archit. fig*. 40. E.

An *arch*, ſays Sir Henry Wotton, is nothing but a narrow or contracted *vault*; and a VAULT is a dilated *arch*.

Arches are uſed in large intercolumnations of ſpacious buildings; in porticoes, both within and without temples; in public halls, as cielings, the courts of palaces, cloiſters, theatres, and amphitheatres.

They are alſo uſed as buttreſſes and counter-forts, to ſupport large walls laid deep in the earth, for foundations of bridges and aqueducts, for triumphal arches, gates, windows, &c.

Arches are ſuſtained by piers, impoſts, &c.

Arches are either circular, elliptical, or ſtraight.

ARCHES, *circular*, are of three kinds; viz.

ARCHES, *ſemicircular*, thoſe which make an exact ſemicircle; and have their centre in the middle of the chord of the *arch*; called alſo by the French builders, *perfect arches*, and *arches en plein centre*.

ARCHES, *ſcheme*, from the Italian *ſumo*, *imperfect*; thoſe which are leſs than a ſemicircle, and conſequently are flatter *arches*; containing, ſome 90 degrees, others 70, and others only 60; called alſo *imperfect* and *diminiſhed arches*.

ARCHES *of the third and fourth point*, as ſome of our workmen call them, though the Italians call them *di terzo* and *quarto acuto*, becauſe they always concur in an acute angle at top.—Theſe conſiſt of two *arches* of a circle meeting in an angle at the top, and are drawn from the diviſion of the chord into three or four, or more parts, at pleaſure. Of this kind are many of the *arches* in old Gothic buildings; but on account both of their weakneſs and unſightlineſs, they ought, according to Sir Henry Wotton, to be for ever excluded out of all buildings.

ARCHES, *elliptical*, conſiſt of a ſemi-ellipſis; and were formerly much uſed inſtead of mantle-trees in chimneys. Theſe have commonly a key-ſtone, and chaptrels or impoſts.

ARCHES, *ſtrait*, are thoſe, whoſe upper and under edges are ſtraight; as in the others they are curved; and thoſe two edges alſo parallel, and the ends and joints all pointing towards a centre.—Theſe are principally uſed over windows, doors, &c.

The doctrine and uſe of ARCHES is well delivered by Sir Henry Wotton, in the following theorems.—Firſt; All matter, unleſs impeded, tends to the centre of the earth in a perpendicular line.

Secondly; All ſolid materials, as bricks, ſtones, &c. in their ordinary rectangular form, if laid in numbers, one by the ſide of another, in a level row, and their extreme ones ſuſtained between two ſupporters; thoſe in the middle will neceſſarily ſink, even by their own gravity, much more if preſſed down by any ſuperincumbent weight.—To make them ſtand, therefore, either their figure or their poſition muſt be altered.

Thirdly; Stones, or other materials, being figured *cuneatim*, i. e. wedge-wiſe, broader above than below, and laid in a level row, with their two extremes ſupported as in the preceding theorem, and pointing all to the ſame centre; none of them can ſink, till the ſupporters or butments give way, becauſe they want room in that ſituation to deſcend perpendicularly. But this is a weak ſtructure; becauſe the ſupporters are ſubject to too much impulſion, eſpecially where the line is long; for which reaſon the form of ſtraight *arches* is ſeldom uſed, excepting over doors and windows, where the line is ſhort.—In order to fortify the work, therefore, we muſt not only change the figure of the materials, but alſo their poſition.

Fourthly; If the materials be ſhaped wedge-wiſe, and be diſpoſed in form of a circular *arch*, and pointing to ſome centre; in this caſe, neither the pieces of the ſaid *arch* can ſink downwards, for want of room to deſcend perpendicularly; nor can the ſupporters or butments ſuffer much violence, as in the precedent platform: for the convexity will always make the incumbent weight rather reſt upon the ſupporters, than heave them outwards: whence this corollary may be fairly deduced, that the ſecureſt of all the *arches* above mentioned is the ſemicircular; and of all vaults, the hemiſpherical.

Fifthly; As ſemicircular vaults, raiſed on the whole diameter, are the ſtrongeſt; ſo thoſe are the moſt beautiful, which, keeping to the ſame height, are yet diſtended one fourteenth part longer than the ſaid diameter: which addition of width will contribute greatly to their beauty, without diminiſhing any thing conſiderable of their ſtrength.

It is, however, to be obſerved, that, according to geometrical ſtrictneſs, to have the ſtrongeſt *arches*, they muſt not be portions of circles, but of another curve, called the CATENARIA, whoſe nature is ſuch, that a number of ſpheres diſpoſed in this form will ſuſtain each other, and form an *arch*.

Dr. Gregory even ſhews, that *arches*, conſtructed in other curves, only ſtand, or ſuſtain themſelves, by virtue of the *catenaria* contained in their thickneſs; ſo that were they made infinitely ſlender or thin, they muſt tumble of courſe; whereas the *catenaria*, though infinitely ſlender, muſt ſtand, becauſe no one point thereof tends downward more than any other. See Philoſoph. Tranſact. Nº 231.—See farther of the theory of *arches* under the article VAULT.

Arch is particularly uſed for the ſpace between the two piers of a bridge.

The chief or *maſter-arch* is that in the middle; which is wideſt, and uſually higheſt, and the water under it deepeſt: being intended for the paſſage of boats, or other veſſels.—We read of bridges in the Eaſt, which conſiſt of 300 *arches*.

Arch-*ſtone*. See Key-*ſtone*, and Voussoir.

Arch, *triumphal*, is a gate or paſſage into a city, built of ſtone or marble, and magnificently adorned with architecture, ſculpture, inſcriptions, &c. ſerving not only to adorn a triumph, at the return from a victorious expedition, but alſo to preſerve the memory of the conqueror to poſterity.

The moſt celebrated *triumphal arches*, now remaining of antiquity, are that of Titus, of Septimius Severus, and of Conſtantine, at Rome, of which we have figures given us by Des Godetz. —One of the gates of Orange is a *triumphal arch* of C. Marius.—The gates, Peyro at Montpelier, and of St. Denis, St. Martin, and St. Antoine, at Paris, may alſo be reckoned *triumphal arches* of the moderns.

Arch, *mural*. See Mural.

Arch, in the ſcripture-ſenſe. See Ark.

Arch, or **Archi**, is alſo a term without any meaning of itſelf, but which becomes very ſignificant in compoſition with other words; as it heightens and exaggerates them; and has the force of a ſuperlative, to ſhew the greateſt degree, or eminence of any thing.

The word is formed of αϱχη, *beginning*; whence αϱχος, *princeps*, *chief*.

Thus we ſay, *arch*-treaſurer, *arch*-angel, *arch*-biſhop, *arch*-heretic, &c. to denote ſuch as have a pre-eminence over others. So alſo *arch*-fool, *arch*-rogue, &c. to expreſs folly, and knavery, in the utmoſt degree.

In Engliſh, we uſually cut off the final *i*, from *archi*, though with very ill effect; as the words with which it is joined, ſound much harſher on that account, than they would do, were it preſerved entire, as it is in moſt other languages.

ARCHÆUS. See Archeus.

ARCHANGEL, an intellectual ſubſtance or angel, placed in the ſecond order among the bleſſed ſpirits which compoſe the celeſtial HIERARCHY.

The word is compounded of the Greek αρχος, *prince*, and αγγελος, *angel*.

Archangel, in *Botany*, *lamium*, a genus of the *didynamia gymnoſpermia*; *dead* NETTLE. The characters are, that the flower hath a permanent empalement, which is cut into five equal ſegments at the top, which end in beards. The flower is of the lip kind, with one petal, ſwollen at the chops, and compreſſed; the upper lip is arched, obtuſe, and entire; the under is heart-ſhaped, and indented at the end. It hath four awl-ſhaped *ſtamina*, two of which are longer than the other. It hath a four-cornered *germen*, which afterwards becomes four three-cornered ſeeds, ſitting in the open empalement. There are ſeveral ſpecies; but as many of them are weeds, there are few who care to admit them into their gardens.

The common ſort grows naturally in moſt parts of England, under hedges and by the ſides of highways: it is alſo a troubleſome weed in gardens; but as it ſtands in moſt diſpenſaries as a medicinal plant, it is therefore inſerted. Its flowers are reputed ſoft and lubricating, and as ſuch adminiſtered in ſome female weakneſſes, as the whites, and difficulty of urine. A conſerve of them is alſo made in the ſhops, but ſeldom preſcribed.

Archangel, *baum-leaved*. See Melittis.

Archangel, *yellow*. See Galeopsis.

ARCHBISHOP, Archiepiscopus, a metropolitan prelate, having ſeveral ſuffragan biſhops under him.

Archbiſhops were not known in the Eaſt, till about the year 320; and though there were ſome ſoon after this, who had the title, yet that was only a perſonal honour, by which the biſhops of conſiderable cities were diſtinguiſhed.—It was not till of late that *archbiſhops* became metropolitans, and had ſuffragans under them.

Athanaſius appears to be the firſt who uſed the title *archbiſhop*, which he gave occaſionally to his predeceſſor; Gregory Nazianzen, in like manner, gave it to Athanaſius; not that either of them were intitled to any juriſdiction, or even any precedence, in virtue of it.

Among the Latins, Iſidore Hiſpalenſis is the firſt that ſpeaks of *archbiſhops*. He diſtinguiſhes four orders or degrees in the eccleſiaſtical hierarchy, viz. *patriarchs*, *archbiſhops*, *metropolitans*, and *biſhops*.

England is divided into two *archbiſhopricks*, or *provinces*.

ARCHBISHOPRICK, Archiepiscopatus, the dignity of *archbiſhop*; or the province under his juriſdiction.

There are now two *archbiſhopricks* in England; viz. of Canterbury, and York; the prelates whereof are called *primates*, and *metropolitans*; with this only difference, that the former is called primate of *all* England, and the latter ſimply, primate of England.

The *archbiſhop*, beſide the inſpection of the biſhops and inferior clergy in the province over which he preſides, exerciſes epiſcopal juriſdiction in his own dioceſe. He is guardian of the ſpiritualities of any vacant ſee in his province, as the king is of the temporalities; and exerciſes eccleſiaſtical juriſdiction in it. He is intitled to preſent by lapſe to all the eccleſiaſtical livings in the diſpoſal of his dioceſan biſhop, if not filled within ſix months. He has likewiſe a cuſtomary prerogative, upon conſecrating a biſhop, to name a clerk or chaplain to be provided for by ſuch biſhop; in lieu of which it is now uſual to accept an OPTION. He is ſaid to be *inthroned* when veſted in the *archbiſhoprick*; whereas biſhops are ſaid to be *inſtalled*.

The *archbiſhop* of Canterbury had anciently, viz. till the year 1152, juriſdiction over Ireland as well as England, and was ſtyled a *patriarch*, and ſometimes *alterius orbis papa*, and *orbis Britannici pontifex*. Matters were done and recorded in his name thus, *anno pontificatus noſtri primo*, &c. The firſt *archbiſhop* of Canterbury was Auſtin, appointed by king Ethelbert, on his converſion to chriſtianity, about the year 598.

He was alſo *legatus natus*. See Legate.

He even enjoyed ſome ſpecial marks of royalty; as, to be patron of a biſhoprick, which he was of Rocheſter; and to make knights, coin moneys, &c.—He is ſtill the firſt peer of England, and the next to the royal family; having precedence of all dukes, and all great officers of the crown. It is his privilege, by cuſtom, to crown the kings and queens of this kingdom. He may retain and qualify eight chaplains; whereas a duke is by ſtatute allowed only ſix.

He has, by common law, the power of probate of wills and teſtaments, and granting letters of adminiſtration.

He has alſo a power to grant licences and diſpenſations in all caſes formerly ſued for in the court of Rome, and not repugnant to the law of God. He accordingly iſſues ſpecial licences to marry, to hold two livings, &c. and he exerciſes the right of conferring degrees.

He is addreſſed with the title of *Grace*, and *Moſt Reverend Father in God*; and writes himſelf by *Divine Providence*; whereas biſhops only uſe by *Divine Permiſſion*.

He alſo holds ſeveral courts of judicature; as court of arches, court of audience, prerogative court, and court of peculiars.

The *archbiſhop* of York has the like rights in his province, as the *archbiſhop* of Canterbury. He has precedence of all dukes not of the royal blood; and of all officers of ſtate, except the lord high chancellor. He has alſo the rights of a count palatine over Hexamſhire. The firſt *archbiſhop* of York was Paulinus, appointed by pope Gregory about the year 622. He had formerly juriſdiction over all the biſhops of Scotland; but in the year 1470, pope Sextus IV. created the biſhop of St. Andrew's, archbiſhop and metropolitan of all Scotland.

ARCH-BUTLER, Archipincerna, the great butler or ſkinker of the empire.

The king of Bohemia is *arch-butler*: and his buſineſs as ſuch is to preſent the firſt cup at an imperial entertainment; but he is not obliged to officiate with his crown on. He has for vicar or deputy the hereditary prince of Limbourgh.

ARCH-CHAMBERLAIN, Archicamerarius, an officer of the empire; much the ſame with what in England we call *great chamberlain*.

The elector of Brandenbourg is *arch-chamberlain* of the empire, being ſo appointed by the golden bull; and, in that quality, he bears the ſceptre before the emperor, walking on the left-hand of the elector of Saxony. At ſome ſolemnities he alſo ſerves on horſeback like other electors, carrying a baſon with a towel in his hands: which, alighting, he ſets for the emperor to waſh.—He has his vicar, or ſub-*arch-chamberlain*, who is prince of Hohenzollern, of the houſe of Brandenbourg.

ARCH-CHANCELLOR, Archicancellarius, a great chancellor, who anciently preſided over the notaries, that is, the ſecretaries of a court.

This office chiefly obtained in France, under the two firſt races of their kings; and afterwards under the empire: as they had three ſeveral territories, Germany, Italy, and Arles; they had three *arch-chancellors*: and hence the three *arch-chancellors* ſtill ſubſiſting in Germany; the archbiſhop of Mentz being *arch-chancellor* of Germany, the archbiſhop of Cologn of Italy, and the archbiſhop of Treves of Arles.

Bern. de Mallincrot, in an expreſs treatiſe *de Archichancellariis*

chancellariis Imperii Romani, ſhews, that theſe three archbiſhops were *arch-chancellors* before they were electors.—We alſo read of *arch-chancellors* of Burgundy, &c.

ARCH-CHANTOR, ARCHICANTOR, the chief or preſident of the chantors of a church.

ARCHDEACON, ARCHIDIACONUS, a church-officer veſted with a juriſdiction over the laity and clergy, next after the biſhop, either through the whole dioceſe, or only a part of it.

The *archdeacon*, ſometimes alſo called *arch-levite*, was originally the firſt and eldeſt of the deacons who attended on the biſhop: whence his name.

But as the *archdeacons*, in their original inſtitution, had no relation to the dioceſe, but only to the epiſcopal ſee, ſo it was by ſeveral ſteps and degrees that they attained to the power they now enjoy. At their firſt inſtitution, their proper buſineſs was, to attend the biſhop at the altar, to direct the deacons and other inferior officers in their ſeveral duties, for the orderly performance of divine ſervice, to attend the biſhop at ordinations, and to aſſiſt him in the management of the revenues of the church; but without any thing that could be called juriſdiction in the preſent ſenſe of the word, either in the cathedral or out of it. Gibſon.

An *archdeacon* was not known before the council of Nice: his function is ſince become a dignity; and even ſet above that of prieſt: though anciently it was quite otherwiſe. The *archdeacon* was the biſhop's chief miniſter for all external concerns, and particularly the adminiſtration of the temporalities. He took care that order and decency were obſerved in divine ſervice; looked to the ornaments and utenſils of the church; had the direction of the poor, and the inſpection of the manners and behaviour of the people: for which reaſon he was called the *biſhop's heart, and eye*; *oculus epiſcopi, & cor epiſcopi.*

Theſe advantages ſoon gained him ſuperiority over prieſts, who had only ſpiritual functions. But he had no juriſdiction over them till the ſixth century; though by that time he was become ſuperior to the archimandrite, or rural dean.

In the tenth century, *archdeacons* were conſidered as having juriſdiction in their own right, or attached to their office; with a power of delegating it to others. But from that time meaſures were taken to leſſen their power, by increaſing their number.—He whoſe diſtrict lay in the capital city, took the quality of *great-archdeacon.*

We have ſixty *archdeacons* in England: their office is to viſit every two years in three, to inquire into the reparations and moveables belonging to the church, reform abuſes in eccleſiaſtical matters, and bring the more weighty affairs before the biſhop; beſides which, they have alſo a power to ſuſpend, excommunicate, and in many places to prove wills, and in ſome to inſtitute to benefices.

It is one part of the *archdeacon*'s office to induct all clerks into their benefices within his juriſdiction; and, by the act of uniformity, he is now obliged to be in prieſts orders.

Many *archdeacons*, in old foundations, have, by preſcription, their courts and officials, as biſhops have.

Archdeaconries are commonly given by biſhops, who do therefore prefer to the ſame by collation: but if an *archdeaconry* be in the gift of a layman, the patron doth preſent to the biſhop, who inſtitutes in like manner as to another benefice; and then the dean and chapter do induct him, that is, after ſome ceremonies, place him in a ſtall in the cathedral church to which he belongeth, whereby he is ſaid to have a place in the choir.

ARCH-*ſubdeacon*, *archiſubdiaconus*, the firſt or chief among the ſubdeacons, as the archdeacon is among the deacons.

In ſome copies of the Roman ordinal, he is called *ſub-archidiaconus.*

ARCH-DRUID, ARCHIDRUIDA, the chief or pontiff of the ancient DRUIDS in a nation.

ARCHDUKE, ARCHIDUX, a duke veſted with ſome quality, pre-eminence, and authority, above other dukes.

The *archduke* of Auſtria is a very ancient title. There have alſo formerly been *archdukes* of Lorrain and Brabant. Auſtria was erected into a marquiſate by Otho, or Henry I. and into a duchy by Frederic I. in 1156; but we do not well know when, or why, the title *archduchy* was given it.—It is commonly held, that duke Frederic IV. firſt aſſumed the quality: others ſay, it was firſt given by the emperor Maximilian I. in 1459, and ample privileges annexed to it.

The principal privileges of this ſtate are, that the *archduke* ſhall diſtribute juſtice in his own dominions, without appeal; that he ſhall be judged to have received the inveſtiture of his ſtates, after having demanded it three times; and that he cannot be deprived of his countries, even by the emperor, and the ſtates of the empire: that no affair of the empire can be concluded without his participation; and that he have a power of creating counts, barons, and gentlemen, throughout the whole empire: which are privileges to which the other dukes of the empire are entire ſtrangers.

ARCH-*count*, *archicomes*, a title anciently given to the earl of Flanders, on account of his great power and riches.

ARCH-*monaſtery*, *archimonaſterium*, an appellation ſometimes given to the greater monaſteries, and abbies.

ARCH-*notary*, *archinotarius*, the *primicerius*, or chief of the notaries.

This officer is ſuppoſed by ſome to have differed from the *arch-chancellor*, though wherein the difference conſiſted does not appear.

ARCHÆOGRAPHIA, the art of deſcribing or explaining ANTIQUITIES. See ANTIQUE.

ARCHÆOTA, a keeper of ancient records.

ARCHAISM, properly denotes a phraſe or diction now obſolete, and out of uſe, though anciently deemed good, or paſſable.

ARCHAISM, *etymologic*, *archaiſmus etymologicus*, is when either an obſolete word, declenſion, or conjugation is uſed.

ARCHAISM, *ſyntactic*, *archaiſmus ſyntacticus*, is an unuſual and obſolete conſtruction in diſcourſe.

ARCHARD, in *Commerce*, a kind of green fruit, pickled in vinegar, much valued throughout the Eaſt Indies.

The beſt are thoſe brought from Perſia, in bottles, much like ſmall cucumbers among us.

ARCHE, *ἀρχη*, is a Greek word, importing the *beginning.*

ARCHE, among *Phyſicians*, is the beginning or firſt period of a diſeaſe.

ARCHED *fountain*. See FOUNTAIN.

ARCHED *ſkene*, or *ſcheme*, in *Architecture*, is uſed to denote a flat *arch*, leſs than a ſemicircular one.

ARCHED *legs*, is an imperfection in a horſe, when being in his natural poſition he has his legs bent forwards; ſo that his whole leg makes a kind of arch or bow.

This uſually ariſes from exceſſive labour, whereby the back-ſinews are made to ſhrink up, ſo that the legs remain *arched*, and naturally tremble after a little riding; though the diſorder is natural to ſome horſes.

ARCHEMY, *archemia*, is uſed by ſome to denote the art of tranſmuting leſs perfect metals into the more perfect. In which ſenſe, *archemy* differs from *alchemy*, as a part from the whole.

ARCHENDA, in the *Ancient Phyſic*, a kind of powder prepared of *alcanna* and leaves of the Egyptian LIGUSTRUM, wherewith the people ſmeared their feet after bathing, as a preſervative againſt ſweating and ſtench.

ARCHERS, a kind of militia or ſoldiery, armed with bows and arrows.

The word is formed of *arcus, a bow*; whence *arcuarius*, and even *arquis*, and *arquites*, as they are alſo denominated in the corrupt ſtate of the Latin tongue.

Archers were much in uſe in former times; but they are now laid aſide, excepting in Turkey, and ſome of the eaſtern countries; where there are companies of *archers* ſtill ſubſiſting in their armies; and with which they did terrible execution at the battle of Lepanto.

The name *archer*, however, is ſtill retained even where the thing is loſt: thus in France, the officers who attend the lieutenants de police, and provoſts, to make captures, ſeizures, arreſts, &c. are called *archers*; though their arms be only halberds or carabines.—In this ſenſe they ſay, the *archers* of the *grand prevot de l'hotel*; of the *prevot des marchands*; the city *archers*; the *archers du guet*, or of the watch, &c.—Small parties of *archers*, called alſo *gens de marechauſſée*, are continually patrolling on the great roads, to ſecure them againſt robbers.—The carriages of Lyons, &c. are always eſcorted by a party of *archers.*

To the diligence of theſe *archers*, or marſhals men, it is partly owing, that perſons now travel in all parts of France in the utmoſt ſecurity; there being fewer robberies on the highway in that whole kingdom in a year, than about London in a week.

They have alſo their *archers des pauvres*, *archers of the poor*; whoſe office it is to ſeize ſuch beggars as they find in the ſtreets, and carry them to the hoſpitals.

ARCHERY, the art or exerciſe of ſhooting with bow and arrow.

Archery was greatly encouraged among our anceſtors, and many ſtatutes were made for the regulation thereof: whence it was that the Engliſh *archers* became the beſt in Europe. See 3d H. 8. c. 3. 6th H. 8. c. 2. 33d H. 8. c. 9. 8th Eliz. c. 10.

It was forbid, by ſtatute, to ſhoot at a ſtanding mark; unleſs it be for a rover, where the *archer* is to change his mark at every ſhot.—Any perſon above twenty-four years old is alſo forbid to ſhoot with any prick-ſhaft, or flight, at a mark of eleven ſcore yards or under. 33d H. 8. c. 9.—The former was a proviſion for making good markſmen at ſight; the latter for giving ſtrength and ſinews.

ARCHERY, in our ancient cuſtoms, a ſervice of keeping a bow for the uſe of the lord, to defend his caſtle.

ARCHES, or *Court of* ARCHES. See COURT *of Arches*.

ARCHES, among *Navigators*, is particularly uſed for the Archipelago.

ARCHETYPE, ARCHETYPUS, the firſt pattern, or model, by which any work is formed, or which is copied after, to make another like it.

The word is compounded of αρχη, *beginning*, and τυπος, TYPE.

In this ſenſe the word coincides with *original*, or *prototype*; and ſtands oppoſed to *copy*.

Among minters, &c. *archetype* is peculiarly uſed for the ſtandard or original weight, by which the other weights are to be adjuſted and examined.

Philoſophers, particulary the Platoniſts, talk of an *archetypal* world; meaning, the world, ſuch as it exiſted in the Divine Mind, or in the idea of God, before the viſible creation.

ARCHEUNUCH, ARCHIEUNUCHUS, the chief of the eunuchs.

The *archeunuch* was one of the principal officers in Conſtantinople, under the Greek emperors.

ARCHEUS, an obſcure term, uſed chiefly among the *Ancient Chemiſts*, to expreſs ſome occult principle of life and motion, the cauſe of all the effects which we obſerve in nature.

The word is derived from αρχη, *principle*.

As the chemiſts differ in their ideas of a vital cauſe; the term *archeus* becomes applied to very different things: though moſt of them conceive it of the nature of fire.

Some uſe *archeus*, to denote the fire lodged in the centre of the earth; to which they aſcribe the generation of metals and minerals, and which they believe to be the principle of life in vegetables.

Others, by the word *archeus*, mean a certain univerſal ſpirit, diffuſed throughout the whole creation, the active cauſe of all the phænomena in nature.

Others, inſtead of *archeus*, chooſe to call this the *anima mundi*; and others, the *Vulcan* or *heat* of the earth.

They add, that all bodies have their ſhare of this *archeus*; and that, when this is corrupted, it produces diſeaſes, which they call *archeal diſeaſes*.

They likewiſe attribute ideas to it; which for this reaſon they call *archeal ideas*.

Helmont is a great aſſertor of the dogma of an *archeus*.

It is likewiſe uſed to ſignify that peculiar fluid among the vegetable claſſes, which determines every particular plant to its odour, taſte, and other qualities.

The fruit of a plant is the part in which the ſeed is conceived and formed, the ſeed is the embryo of the plant, with a *placenta* or *cotyledon*, to which it is faſtened by an umbilical ſtring. The cotyledons uſually contain a balſam, which appears to be the laſt and higheſt preparation of the moiſt kind, which nature here lays up for the uſe of the offspring. In this is an oily tenacious matter, which repels all other moiſt things, defends the embryo, and, by its tenacity, retains and fetters the thin pure ſpirit, which is the ultimate bounds and object of the actions of nature in plants, and which would elſe eaſily fly away; this the chemiſts call the *archæus* and *ſpiritus rector*; the oil is too groſs ever to enter the fine veſſels of the embryo. But this ſpirit being invigorated by a vegetable power, breathes, it is ſaid, a vital principle, and impreſſes the ſpecific character on the food deſtined for the embryo, by which means every thing afterwards turns to the proper nature of the plant; in this ſpirit the fragrant odour, and peculiar taſte of the plant is lodged, and even its colour has a near dependance on it. Boerhaave's Chem.

ARCHIACOLYTHUS, an ancient dignity, in cathedral churches: the miniſters whereof were divided into four orders, or degrees, viz. *prieſts*, *deacons*, *ſubdeacons*, and *acolythi*; each of which had their chiefs. The chief of the *acolythi* was called *archiacolythus*. Du-Cange.

ARCHIATER, ARCHIATRUS, properly denotes the chief phyſician of a prince who retains ſeveral.

The word is formed of αρχη, *principium*, *chief*; and ιατρος, *medicus*, a *phyſician*.

ARCHIDAPIFER, or chief ſewer, is a great officer of the empire.

The elector of Bavaria is *archidapiſer*.—The palatine of the Rhine at one time pretended this office was annexed to his palatinate; but he has ſince deſiſted.

ARCHIEROSYNES, in the Grecian *Antiquity*, a high-prieſt veſted with authority over the reſt of the prieſts, and appointed to execute the more ſacred and myſterious rites of religion.

ARCHIGALLUS, in *Antiquity*, the high-prieſt of Cybele, or the chief of the eunuch-prieſts of that goddeſs, called Galli.

ARCHIGERONTES, in *Antiquity*, the chiefs or maſters of the ſeveral companies of artificers at Alexandria. Some have miſtaken the *archigerontes* for the arch-prieſts, appointed to take the confeſſions of thoſe who were condemned to the mines.

ARCHIGUBERNUS, ARCHIGUBERNETA, or ARCHIGUBERNITES, in *Antiquity*, the commander of the imperial ſhip, or that which the emperor was aboard of. Some have confounded the office of *archigubernus* with that of *præfectus claſſis*, or admiral, but the former was under the command of the latter.

Potter takes the proper office of the *archiguberneta* to have been, to manage the marine affairs, to provide commodious harbours, and order all things relating to the failing of the fleet, except what related to war.

ARCHIL, *Archilla*, *Rocella*, or *Orſeille*, is a white moſs, which grows on the rocks in many parts of the Archipelago, and in the Canary and Cape de Verd iſlands; and, according to Linnæus's account, on the weſtern coaſt of England. It belongs to the third of Dillenius's genus of *coralloides*, and to the *lichenes fruticuloſi* of Linnæus. This moſs is imported as it is gathered, and the demand for it is ſo great, that, as M. Hellot informs us, no leſs than 2600 quintals, or 130 ton weight of it, is annually collected in different places. Thoſe who prepare it for the uſe of the dyer grind it betwixt ſtones, ſo as to bruiſe it thoroughly without reducing it to powder, and then moiſten it occaſionally with ſtrong ſpirit of urine, or urine itſelf mixed with quicklime. In a few days it acquires a purpliſh red, and at length a blue colour. The dyers ſeldom uſe this drug by itſelf, becauſe of its dearneſs, and the periſhableneſs of its beauty; but they chiefly employ it to give a bloom to other colours, as pinks, &c. and this is done by paſſing the dyed cloth, or ſilk, through hot water lightly impregnated with the *archil*. However, the bloom thus communicated ſoon decays upon being expoſed to the air; though, M. Hellot ſays, that by adding a ſmall quantity of the ſolution of tin, the colour obtained from this drug changes towards a ſcarlet, and gives a durable dye. Prepared *archil* will readily yield its colour to water, to volatile ſpirits, and to ſpirit of wine; and it is accordingly uſed to colour the ſpirits of thermometers; but being confined from the air, the ſpirits loſe their colour, and, as M. l'Abbé Nollet obſerves, regain it, upon being again expoſed to the air. He repeated the experiment ſeveral times with ſucceſs. A ſolution of *archil* in water gives a durable ſtain of a beautiful violet, or purpliſh blue colour, to marble. M. du Fay informs us, that he has ſeen pieces of marbles ſtained with it, that preſerved their colour for two years, without any ſenſible change. It ſinks deep into the marble, and makes it more brittle. The dye yielded by this ſubſtance, it is ſuppoſed, was known as early as the days of Theophraſtus. Linnæus apprehends, that there are ſeveral other common moſſes, from which valuable colours might be extracted. The French dyers uſe a cruſtaceous moſs growing upon rocks in Auvergne, and prepared with lime and urine, as a ſuccedaneum to the Canary *archil*. Dr. Lewis's Ed. of Neumann's Chem. Works, p. 438. Phil. Tranſ. vol. li. p. 652. Raii Hiſt. Plant. i. p. 74. Micheli Nova Plant. p. 78. See LICHEN.

ARCHILOCHIAN, a term in *Poetry*, applied to a ſort of verſes, whereof *Archilochus* was the inventor.

Theſe conſiſt of ſeven feet; the four firſt whereof are ordinarily *dactyls*, though ſometimes *ſpondees*; the three laſt *trochees:* for inſtance:

> *Solvitur acris hyems grata vice veris & Favoni.* Hor.

It is uſual to mix *iambic* verſes of ſix feet, abating a ſyllable, with *Archilochian* verſes; this Horace himſelf has done in the ODE now cited.

Theſe verſes are called *dactylic*, on account of the *dactyls* at the beginning.

ARCHI-LUTE. See ARCILEUTO.

ARCHIMAGUS, in the *Ancient Perſian Religion*, the chief prieſt or head of the order of magi.

The *archimagus* anſwered to the high-prieſt among the Jews, or the pope now among the Romaniſts, being the head of the whole religion.

The *archimagus* reſided in the fire temple, a place held in the ſame veneration among them, as the temple of Mecca among the Mahometans; every perſon of the ſect being under a kind of obligation to make a pilgrimage to it once in their lives. Zoroaſter is ranked as the firſt *archimagus*.

ARCHIMANDRITE, the ſuperior of a monaſtery; amounting to what we now call ABBOT.

Covarruvias obſerves, that the word literally denotes the chief or leader of a flock; in which ſenſe it may be applied to any eccleſiaſtical ſuperior; and accordingly, we find the name ſometimes attributed to archbiſhops. But among the Greeks, where it is chiefly uſed, it is always reſtrained to the chief of an abbey.

ARCHIMEDES's *Screw.* See SCREW *of Archimedes.*

ARCHIMEDES's *Burning-glaſs.* See BURNING-*glaſs.*

ARCHIMIME, ARCHIMIMUS, is the ſame thing, in effect, with arch-buffoon, or mimic.

The *archimimes*, among the Romans, were perſons who imitated the manners, geſtures, and ſpeech, both of people living, and thoſe who were dead.

At firſt they were only employed on the theatre; but were afterwards admitted to their feaſts, and at laſt to their funerals; where they walked after the corpſe, counterfeiting the geſtures and behaviour of the perſon who was carried to the funeral pile; as if he were ſtill alive.

ARCHIPELAGO, in *Geography*, a ſea interrupted by a great number of iſlands.

The word is formed by corruption of *Ægeopelagus*, q. d. *Ægean ſea*, which, again, is formed of Αιγαιον Πελαγος, a name originally given it by the Greeks; but for what reaſon is not agreed on.

The moſt celebrated *Archipelago*, and that to which the name is in ſome meaſure appropriated, is that between Greece, Macedonia, and Aſia; wherein are the iſlands of the Ægean ſea; which is called the *White Sea*, in contradiſtinction to the Euxine, which they call the *Black Sea.*

All theſe iſlands lie between the 35th and 40th degrees of north latitude. Some of them are called *Cyclades*, becauſe they form, as it were, a crown or circle round the iſle of Delos; the others are called *Sporades*, as being diſperſed without any order between Aſia, and the iſle of Candia.

The modern geographers mention other *Archipelagos*; as, that of Lazarus, near the coaſt of Malabar and Malacca; the *Archipelago* of Mexico; and that of the Caribbees, wherein are many iſlands; that of the Philippines, called, by ſome, the *great Archipelago*, containing ſeveral iſlands; and all thoſe of the Moluccos, of Celebes, &c.

ARCHIPHERACITÆ, miniſters in the Jewiſh ſynagogues appointed to read and interpret the Perakim, or titles and heads of the law, and the prophets.

The *archipheracita* was not the ſame with the *archiſynagogus*, as Grotius, and others, have miſtakenly imagined; but rather the chief or principal of theſe appointed to read, explain, and profeſs the law, in their ſchools.—And hence the name, which is formed of αρχος, *chief*; and the Hebrew or Chaldee, פרק, *diviſion*, or *chapter.*

ARCHIPRESBYTER. See ARCH-PRIEST.

ARCHISTRATEGUS, the generaliſſimo, or captain-general of an army. See STRATEGUS.

ARCHISYNAGOGUS, in the Jewiſh *Hiſtory*, the chief or ruler of the ſynagogue.

Theſe are ſometimes alſo called the angels or princes of the ſynagogues: the Jews alſo called them *chachamim*, i. e. *wiſe.*

Archiſynagogues were perſons of authority in each ſynagogue, who preſided in aſſemblies held therein, invited thoſe to ſpeak whom they judged capable of it; and decided all diſputes relating to money, &c. They had a power to have thoſe whipped who were convicted of acting contrary to the law; alſo a right of excommunicating or caſting out of the ſynagogue, thoſe whom they found to merit this puniſhment. Their number was different according to the extent of the city, or the number of perſons that came to the ſynagogue; in ſome there were ſeventy, in others eight or ten, and in others not above one. Vitringa de Synagog.

ARCHITECT, a perſon ſkilled in architecture, or the art of BUILDING: who forms plans and deſigns for edifices, conducts the work, and directs the ſeveral artificers employed in it.

The word is derived from αρχος, *princeps*, and τεκτων, *faber*, *workman*; q. d. the principal workman.

The moſt celebrated *architects* are Vitruvius, Palladio, Scamozzi, Serlio, Vignola, Barbaro, Cataneo, Alberti, Viola, Inigo Jones, De Lorme, Perrault, S. Le Clerc, Sir Chriſtopher Wren, and the earl of Burlington.

Vitruvius enumerates twelve qualities requiſite to conſtitute a good *architect*; that he be docile and ingenious; well educated; ſkilled in deſigning; in geometry; optics; arithmetic; hiſtory; philoſophy; muſic; medicine; law; and aſtronomy.

Cloſe application to the ſtudy of ancient maſters, and the remaining works of the ancients, together with judgment and taſte to ſelect, and properly to apply the hints which ſuch examples afford, joined to a particular genius for the ſtudy of this art, are abſolutely neceſſary to render an *architect* eminent in his profeſſion.

ARCHITECTOGRAPHIA, the deſcription of ancient buildings, temples, theatres, arches, pyramids, baths, gates, aquæducts, tombs, and the like.

ARCHITECTONIC, that which builds a thing up regularly, according to its nature and intentions.

ARCHITECTURE, ARCHITECTURA, the art of BUILDING, i. e. of erecting edifices, proper for habitation or defence, as houſes; for domeſtic concerns, as ſtabling, barns, and all out-offices; for devotion, as temples, churches, &c. for ſtate, as public offices, halls, theatres, &c. for monuments and mauſoleums, and for trade.

Architecture is ſcarce inferior to any of the arts in point of antiquity.—Nature and neceſſity taught the firſt inhabitants of the earth to build themſelves huts, tents, and cottages; from which, in courſe of time, they gradually advanced to more regular and ſtately habitations, with variety of ornaments, proportions, &c. See Vitruvius's account of the origin of *architecture*, under ORDER.

The ancient writers repreſent the Tyrians as the firſt among whom *architecture* was carried to any tolerable pitch; and hence it was that Solomon had recourſe thither for workmen to build his temple.

To what a degree of magnificence the Tyrians and Egyptians carried *architecture*, before it came to the Greeks, may be learned from Iſaiah xxiii. 8. and from Vitruvius's account of the Egyptian Oeci; their pyramids, obeliſks, &c.

Yet, in the common account, *architecture* ſhould be almoſt wholly of Grecian original: three of the regular orders or manners of building are denominated from them, viz. Corinthian, Ionic, and Doric; and there is ſcarce a ſingle member, or moulding, but comes to us with a Greek name.

Be this as it will, it is certain the Romans, from whom we derive it, borrowed what they had entirely from the Greeks; among whom it was in its greateſt glory under Pericles.

Under Auguſtus, *architecture* arrived at its higheſt perfection. Tiberius neglected it, as well as the other polite arts. Nero, amongſt a number of horrible vices, ſtill retained an uncommon paſſion for building; but luxury and diſſoluteneſs had a greater ſhare in it, than true magnificence.—Apollodorus excelled in *architecture*, under the emperor Trajan, by which he merited the favour of that prince; and it was he who raiſed the famous Trajan column, ſubſiſting to this day; though robbed of its ornaments, in order to decorate the arch of Conſtantine.

After this, *architecture* began to decline again; and though the care and magnificence of Alexander Severus ſupported it for ſome time, yet it fell with the weſtern empire, and ſunk into a corruption, from whence it was not recovered for the ſpace of twelve centuries.

The ravages of the Viſigoths, in the fifth century, deſtroyed all the moſt beautiful monuments of antiquity; and *architecture* thenceforward became ſo coarſe and artleſs, that their profeſſed architects underſtood nothing at all of juſt deſigning, wherein its whole beauty conſiſts; and hence a new manner of building took its riſe, which is called the *Gothic.*

Charlemagne did his utmoſt to reſtore *architecture*; and the French applied themſelves to it with ſucceſs, under the encouragement of H. Capet: his ſon Robert ſucceeded him in this deſign; till by degrees the modern *architecture* was run into as great an exceſs of delicacy, as the Gothic had before done into maſſiveneſs. To theſe may be added, the Arabeſk and Moriſk, or Mooriſh *architecture*, which were much of a piece with the Gothic, only brought in from the ſouth by the Moors and Saracens, as the former was from the north by the Goths and Vandals.

The church built by Helen over the ſuppoſed ſepulchre of our Saviour, is in this ſtyle, ornamented with foliage and figures of angels in the capitals, and on the impoſts. This ſeems to have been the firſt corruption of the ancient architecture; and it was ſucceeded by the Gothic, which ſtyle of building has a fine effect in places of devotion; ſuch are many of our cathedrals and old churches.

The architects of the 13th, 14th, and 15th century, who had ſome knowledge of ſculpture, ſeemed to make perfection conſiſt altogether in the delicacy and multitude of ornaments, which they beſtowed on their buildings, with exceſſive care and ſolicitude; though frequently without any conduct or taſte.

In the two laſt centuries, the *architects* of Italy and France were wholly bent upon retrieving the primitive ſimplicity and beauty of ancient *architecture*; in which they did not fail of ſucceſs: inſomuch that our churches, palaces, &c. are now wholly built after the antique.

The rules of *architecture* require, that, in a fabric judiciouſly and elegantly erected, there ſhould be ſolidity, conveniency, and beauty; to which, according to the taſte of ſome of the moſt refined maſters, are added order, diſpoſition, proportion, decorum, and oeconomy. Theſe eight requiſites are eſteemed by the beſt judges, to conſtitute the neceſſary parts of *architecture*.

Solidity, implies the choice of a good foundation, and good materials to work with, properly applied. Convenience conſiſts in ſo diſpoſing the various parts of a ſtructure, that they may not croud and embarraſs each other, or appear diſagreeable to the inſpector. Beauty, is that engaging form, and pleaſing appearance, which captivate at one glance, as it were, the ſight of the ſpectator. Order, gives each part of the building a proportionate extent, adapted to the magnitude of the whole. Diſpoſition, is the due ranging, and agreeable union of all the parts, in order to render the whole agreeable at all times, and, in general, means the proper and convenient arrangement of the apartments. Proportion, is the relation that the whole work has to its conſtituent parts; and which each part hath to the complex idea of the whole: for among buildings that are perfect in their kind, from any particular part, we may form a judgment of the taſte of the whole. For example, the diameter of a column, or the dimenſions of a triglyph, gives us a right idea of the whole with which they have connexion. To expreſs the relation which many things have to each other, as to their magnitude, and the variety of their parts, Vitruvius, the great architect, indifferently uſes the words proportion, eurythmy, and ſymmetry; the two laſt whereof are nearly ſynonymous with the firſt. *Decorum*, or decency, conſiſts in making the whole aſpect of the fabric ſo correct, that nothing ſhall appear but what is founded on the principles of geometry, and delicacy of judgment. Theſe have regard to deſign, cuſtom, and nature. Deſign induces to chuſe other diſpoſitions for a church than a palace. The regard we pay to cuſtom inclines us to decorate the elevations of ſuch houſes which are ſumptuous and magnificent within. The regard we have to the nature of places, from an inherent taſte, perhaps natural to mankind, makes us pitch upon different proſpects, for different parts of an edifice. Thus we chuſe to expoſe bed-chambers, and libraries, to the morning ſun; winter apartments to the weſt; and galleries of paintings to the north; they requiring an equal light. Oeconomy, inſtructs the artiſt to have regard to the expence to be made of his deſign, the quality of the materials near the places where he builds; and to take his meaſures judiciouſly for the order and diſpoſition.

Architecture is commonly divided into *civil*, *military*, and *naval*, or *marine*.

ARCHITECTURE, *civil*, is the art of deſigning edifices of every kind for the uſes of civil life in every capacity; as habitations for dwelling, churches, meetings, ſynagogues, colleges, halls, palaces, &c.

Civil architecture may be diſtinguiſhed, with regard to the ſeveral periods, or ſtates thereof, into the *antique*, *Gothic*, *modern*, &c.

Another diviſion of *civil architecture* ariſes from the different proportions which the different kinds of buildings rendered neceſſary, that we might have ſome proper for every purpoſe, according to the bulk, ſtrength, delicacy, richneſs, or ſimplicity required.

Hence aroſe five orders or manners of building, all invented by the ancients at different times, and on different occaſions, viz. *Tuſcan*, *Doric*, *Ionic*, *Corinthian*, and *Compoſite*; the hiſtory, characters, &c. of each whereof, ſee under their reſpective articles, COMPOSITE, CORINTHIAN, DORIC, IONIC, and TUSCAN.

What forms an order is, the column with its baſe and capital; ſurmounted by an entablature, conſiſting of architrave, frieze, and cornice; and ſuſtained by a pedeſtal.

For a general view of the elements of *architecture*, with the rules which obtain with reſpect to the matter, form, proportion, ſituation, foundation, diſtribution, covering, apertures, &c. ſee BUILDING.

For particulars, ſee CEILING, DOOR, FOUNDATION, ROOF, WALL, WINDOW, &c.

There are ſeveral arts ſubſervient to *architecture*, as carpentry, maſonry, paving, joinery, ſmithery, glazing, plumbing, plaſtering, gilding, painting, &c. See CARPENTRY, GILDING, JOINERY, MASONRY, PAINTING, PAVING, PLUMBING, SCULPTURE, &c. See alſo BRICK, GLASS, LEAD, MORTER, STONE, TILE, TIMBER, &c.

We have no Greek authors at this time extant on *architecture*.—The firſt who wrote of it was Agatharchus the Athenian, who was ſeconded by Democritus and Theophraſtus.—Among the Latins, Fuſſitius, Terentius Varro, Publius Septimius, Ruſus, and Epaphroditus, all wrote *De Re Architectonica*.

But, of all the ancients, Vitruvius is the only entire author whoſe works we have; though Vegetius relates, that there were 700 architects at Rome in his time.—He lived in the reigns of Julius Cæſar, and of his ſucceſſor Auguſtus, and compoſed a complete ſyſtem of *architecture*, in ten books, which he dedicated to that prince.

M. Perrault has extracted all the rules out of Vitruvius's prolix work, and has methodized and publiſhed them in a little abridgment.—Several authors have alſo endeavoured to explain the text of Vitruvius, particularly Philander, Barbaro, and Salmaſius, in notes added to their ſeveral Latin editions; Rivius and Perrault, in the notes to their German and French verſions; and Baldus, in his *Lexicon Vitruvianum* enlarged by De Laet.—The ſame M. Perrault has alſo compoſed an excellent treatiſe of *the five orders*, which may be eſteemed a ſupplement to Vitruvius, who left the doctrine of the orders defective.

The authors upon *architecture*, ſince Vitruvius, are—Leon Baptiſta Alberti, who, in 1512, publiſhed ten books of the art of building, in Latin, deſigned to outvie Vitruvius; in which, however, he has not ſucceeded. His work has abundance of good things; but it is deficient in the doctrine of the orders.—Seb. Serlio, who wrote ſeven books of *architecture*, five of which, concerning the five orders, were made public in 1502, throughout all which, he ſtrictly adheres to Vitruvius's rules: the ſeventh was ſince publiſhed in 1575; but the ſixth, concerning private buildings, has not yet appeared.—And. Palladio, who wrote four books of *architecture*, containing the fundamental rules of the art, with various inſtances of all the kinds of works, publiſhed in Italian in 1575; the two firſt books are rendered into High Dutch, and enlarged with annotations by Boeckler.—Phil. de Lorme, who publiſhed nine books of *architecture* in French in 1567; J. Barozzi de Vignola, who, in 1631, made public his rules of the five orders, in Italian; this work has been ſince tranſlated, with large additions, by Daviler, under the title of *Cours d'Architecture*, &c. and ſince alſo in High Dutch, with notes.

To theſe are to be added Vincent Scamozzi, in his Idea of univerſal Architecture, publiſhed in 1615, in Italian; Car. Phil. Dieuſſart, in his Theatre of Civil Architecture, publiſhed in High Dutch in 1697, wherein he not only delivers the rules of *architecture*, but explains and compares the five orders, as laid down by Palladio, Vignola, Scamozzi, and others; which ſame deſign was alſo executed in French by R. Freart de Cambray, in a Parallel of the ancient Architecture with the modern, publiſhed in French in 1650, and ſince tranſlated into Engliſh, with additions, by Mr. Evelyn. Fr. Blondel, director of the Royal Academy of *Architecture*, in 1698, gave a Courſe of Architecture, in French; being a collection from all the celebrated writers upon the ſubject of the orders, &c. Nic. Goldman, in a treatiſe *De Stylometris*, publiſhed in Latin and High Dutch, in the year 1661, has done good ſervice, by reducing the rules and orders of *architecture* to a farther degree of perfection, and ſhewing, how they may be eaſily delineated by means of certain inſtruments invented by him.

Laſtly, the Elements of Architecture are very ingeniouſly laid down by Sir H. Wotton.—The ſame are alſo reduced by Sturmius, and Wolfius, to certain rules and demonſtrations; and thus is *architecture* brought into the form of a mathematical art; by the firſt, in his *Matheſis Juvenilis*, and by the ſecond, in his *Elementa Matheſeos*, tom. ii. an 1715.

ARCHITECTURE, *counterfeit*, is that which has its projectures painted either in black or white, or coloured after the manner of marble; as is ſeen practiſed in the frontiſpieces and palaces in Italy, and in the pavilions of Marly.

This painting is done in freſco, upon plaiſtered walls; and in oil, on walls of ſtone.

Under the name of *counterfeit architecture*, which we otherwiſe call *ſcene-work*, is likewiſe comprehended, that painted on ſlight boards or planks of wood, whereon the columns, pilaſters, and other parts of building, ſeem to ſtand out, with a relievo; the whole being coloured in imitation of various marbles, metal, &c. and ſerving in the decorations of theatres, triumphal arches, public entries, funeral pomps, &c.

ARCHITECTURE, *military*, is the art of ſtrengthening and fortifying places, to ſcreen them from the inſults of enemies, and the violence of arms.

This we more uſually call FORTIFICATION.

The buſineſs of *military architecture* is to erect forts, caſtles, and other fortreſſes, with ramparts, baſtions, &c.

Thoſe who have excelled in *military architecture*, are Coehorn, Pagan, Vauban, Scheiter, and Blondel; from whom all who have wrote ſince have chiefly derived what they have communicated to the world. See FORTIFICATION.

ARCHITECTURE, *naval*, or *Ship* BUILDING, is that which teaches the conſtructions of ſhips, gallies, and other floating veſſels for the water; with ports, moles, docks, &c. on the ſhore.

How it was eſteemed in the days of Homer, may be ſeen in his Odyſſ. V. 244. See SHIP, and the articles there referred to.

ARCHITECTURE *in* PERSPECTIVE, is a ſort of building, wherein the members are of different meaſures and modules, and diminiſh in proportion to their diſtances; to make the work appear longer and larger to the view than really it is.

Such is the celebrated pontifical ſtair-caſe of the Vatican, built under pope Alexander VII. by the cavalier Bernino.

ARCHITHALASSUS, in *Conchyliology*, a name given by ſome authors to a very beautiful and precious ſhell of the *voluta* kind, called by us the admiral.

The curious in Holland have three ſpecies of this ſhell, which they call *archithalaſſus primus*, *ſecundus*, and *aurantius*, the admiral, the vice-admiral, and the orange ADMIRAL.

ARCHITRAVE, in *Building*, that part of a column, or order of column, which lies immediately upon the capital. See *Tab. Archit. fig.* 24, 25, 26, 27, 28.

The Greeks call it *epiſtyle.*

The *architrave* is the loweſt member of the entablature.

The *architrave* is ſuppoſed to repreſent the principal beam in timber buildings; whence the name, which is formed of αρχος, *chief*, and *trabs*, *beam.*

The *architrave* is different in the different orders. In the Tuſcan it only conſiſts of a plain face, crowned with a fillet; and is half a module in height.

In the Doric and Compoſite, it has two faces, or *faſciæ*; and three in the Ionic and Compoſite; in which laſt order it is $\frac{10}{12}$ of a module high, though but half a module in the reſt. See a table of the meaſures of the ſeveral parts of the *architrave* in the different orders, under COLUMN.

Architects, however, allow themſelves a great latitude in this part; ſome uſing more members than others; and many of them having two or three forms of *architraves*. The proportions here laid down are taken from Vignola. *Architrave* is ſometimes alſo called the *reaſon-piece*, or *maſter-beam* in timber-buildings, as porticos, cloiſters, &c. In chimneys it is called the *mantle-piece*, and over the jaumbs of doors, or lintels of windows, the HYPERTHYRON.

ARCHITRAVE *corniche*. See CORNICHE.

ARCHITRAVE *doors*, as thoſe which have an *architrave* on the jaumbs, and over the door, upon the cap-piece, if ſtrait; or on the arch, if the top be curved.

ARCHITRAVE-*windows*, of timber, are commonly an OGEE raiſed out of the ſolid timber, with a liſt over it; though ſometimes the mouldings are ſtruck, and laid on; and ſometimes they are cut in brick.

The upper *faſcia* is called the *header*, or *heading architrave*; and the lower the *jack.*

ARCHITRICLINUS, in *Antiquity*, the maſter or director of a feaſt, charged with the order and œconomy of it, the covering and uncovering of the tables, the command of the ſervants, and the like.

The word *architriclinus* properly imports the chief or maſter of a *triclinium*, or dining room. His office properly differed from that of *modimperator*, or *arbiter bibendi*, as the latter was appointed by the gueſts, the *architriclinus* by the perſon who gave the feaſt.

The *architriclinus* was ſometimes alſo called *ſervus tricliniarcha*, and by the Greeks προγευστης, i. e. *prægustator*, or *fore-taſter*. Potter alſo takes the *architriclinus* for the ſame with the SYMPOSIARCHA.

ARCHITYPE. See ARCHETYPE.

ARCHIVAULT, in *Architecture*, the inner *contour* of an ARCH; or a band or frame adorned with mouldings, running over the faces of the arch-ſtones, and bearing upon the impoſts.—See this repreſented in the lines that bound the arch over E. See *Tab. Archit. fig.* 40.

The word is French, *archivolte*; where it ſignifies the ſame thing; formed of *arcus volutus.*

It is different in the different orders.—In the Tuſcan, it has only a ſingle face; it has two faces crowned, in the Doric and Ionic; and the ſame mouldings with the ARCHITRAVE in the Corinthian and Compoſite.

ARCHIVE, or ARCHIVES, a chamber or apartment wherein the records, charters, and other papers and evidences, of a ſtate, houſe, or community, are preſerved, to be conſulted occaſionally.

The word comes from *arca*, a *cheſt*; or the Greek αρχαιον, which Suidas uſes in the ſame ſenſe. In ſome Latin writers we meet with *archarium.*

We ſay, the *archives* of a college, of a monaſtery, &c. The *archives* of ancient Rome were in the temple of Saturn; the *archives* of the court of chancery are in the rolls office.—In the code we meet with *archivum publicum, vel armarium publicum, ubi acta & libri exponebantur. Cod. de fid. inſtrum. auth. ad hæc* xxx. q. I. Trev.

ARCHIVIST, *archiviſta*, a keeper of an ARCHIVE.

Under the emperors, the *archiviſt* was an officer of great dignity, held equal to the proconſuls, veſted with the quality of a count, ſtyled *clariſſimus*, and exempted from all public offices, and taxes. Among the ancient Greeks and Perſians, the truſt was committed to none but men of the firſt rank; among the Franks, the clergy being the only men of letters, kept the office among themſelves.

Since the erection of the electoral college, the archbiſhop of Mentz has had the direction of the ARCHIVES of the empire.

ARCHIZUPANUS, a title given to the prince or deſpot of Servia.

The word is compounded of αρχι and ζυπανος, *governor.* In an epiſtle of pope Innocent III. he is called *Magnus Jupanus.*

ARCH-MARSHAL, ARCHIMARISCALLUS, the grand marſhal of the empire.

The elector of Saxony is *archmarſhal* of the empire; and in that quality he goes immediately before the emperor, bearing a naked ſword.

ARCH-MINISTER, the prime miniſter of a prince, or ſtate.

Charles the Bald having declared Boſon his viceroy in Italy, under the title of duke, made him alſo his firſt miniſter under that of *archiminiſter.*

The word is derived from the Greek αρχος, and the Latin *miniſter.*

ARCHON, in *Antiquity*, the chief magiſtrate of the city and commonwealth of Athens.

The word is Greek, αρχων; which literally ſignifies *a commander.*

After the Athenians had aboliſhed monarchy, they created *archons*, who were obliged to render an account of their adminiſtration to the people.

Some of theſe were annual, and others perpetual. Medon, the ſon of Codrus, was the firſt of the latter, and Creon of the former.—The occaſion of their inſtitution was this: Codrus, king of Athens, having devoted himſelf, for the good of his people, in the war with the Heraclidæ; his ſons, Medon and Nileus, diſputed the crown betwixt them: the Athenians took this occaſion of diſſolving their monarchy, and, in lieu of kings, created perpetual governors, under the name of *archons.*—Medon, ſon of Codrus, was he who firſt had this charge; and his deſcendants (from him called *Medontidæ*) enjoyed it for 287 years. But a perpetual magiſtracy ſeemed to this free people too lively an image of royalty, the very ſhadow whereof they were reſolved to aboliſh. Accordingly, the adminiſtration of an *archon*, which had before been perpetual (viz. in the firſt year of the ſeventh olympiad), they now reduced to ten years, and, about ſeventy years after, to one year; with a view of recovering, as oft as poſſible, the authority into their own hands, which they never transferred to the magiſtrates, but with regret.—There were, in all, thirteen perpetual, and ſeven decennial *archons*; the firſt of whom was eſtabliſhed in the 24th olympiad.

Under the Roman emperors, ſeveral other Greek cities had two *archons*, for chief magiſtrates; which were the ſame with the *duumviri* in the colonies, and *municipia.*

ARCHON is alſo applied, by ſome authors, to divers officers, both civil and religious, under the eaſtern or Greek empire.

Thus, biſhops are ſometimes called *archontes*; and the ſame may be ſaid of the lords of the emperor's court. We alſo read of the *archon of the antimenſia*, *archon of archons*, *grand archon*, *archon of churches*, *archon of the goſpel*, *archon of the walls*, &c.

ARCHONTICI, in *Church Hiſtory*, a ſect which aroſe towards the cloſe of the ſecond century; thus called from the Greek αρχοντες, q. d. *principalities*, or *hierarchies of angels*; becauſe they held the world to have been created not by the Supreme God, but by certain ſubordinate powers, called *archontes*, or *angels*. The *archontici* were a branch of VALENTINIANS.

ARCHONTIUM, αρχοντιον, denotes a dignity in the Greek church.

ARCH-PRIEST, ARCHPRESBYTER, a prieſt, or preſbyter, eſtabliſhed in ſome dioceſes, with a pre-eminence over the reſt.

Anciently, the *arch-prieſt* was the firſt perſon after the biſhop: he was ſeated, in the church next after the biſhop; and even acted as his vicar, in his abſence, as to all ſpiritual concerns.

In the ſixth century, there were found ſeveral *arch-prieſts* in the ſame dioceſe; from which time ſome will have them to have been called *deans.*

In the ninth century, they diſtinguiſhed two kinds of cures or pariſhes: the ſmaller, governed by ſimple prieſts; and the baptiſmal churches, by *arch-prieſts*; who, beſide the immediate concern of the cure, had the inſpection of the other inferior prieſts, and gave an account of them to the biſhop, who governed the chief, or cathedral church, in perſon.

There are *arch-preſbyters* ſtill ſubſiſting in the Greek church; veſted with moſt of the functions and privileges of *chorepiſcopi*, or rural deans.

ARCH-PRIOR, was a name ſometimes given to the maſter of the order of TEMPLARS.

ARCH-TREASURER, *architheſaurarius*, the great treaſurer of the German empire.

This office was created with the eighth electorate, in favour of the elector Palatine, who had loſt his former electorate, which was given to the duke of Bavaria, by the emperor Ferdinand II. who took it away from Frederic V. elector Palatine, after the battle of Prague, where he was defeated in maintaining his election to the crown of Bohemia.

The dignity of *arch-treaſurer* was conteſted between the elector of Brunſwic, now king of Great Britain, who claimed it in virtue of his deſcent from the elector Frederic, and the elector Palatine.

ARCILEUTO, ARCHILUTE, a long and large lute, having its baſs ſtrings lengthened after the manner of the theorbo, and each row doubled, either with a little octave or an uniſon.—It is uſed by the Italians for playing a thorough baſs.

ARCION, in *Botany*, a name given by ſome of the ancient writers on medicine, to the plant we call TUSSILAGO, or COLT'S-FOOT.

ARCIVÆ *aves*, in *Antiquity*, birds which gave bad omens, either by their flight, noiſe, or manner of eating.

They were called *arcivæ*, ſometimes alſo *arculæ*, *quia arcebant ne quid fieret*, prevented or forbad things being done.

ARCTAPELIOTES, in *Coſmography*, the wind which blows at the 45° from the north, towards the eaſt.

In this ſenſe *arctapeliotes* amounts to the ſame with what we call a north-eaſt wind.

ARCTATIO, a ſtreightneſs; in particular, it is applied to the inteſtines conſtipated from an inflammation; and to a preternatural ſtreightneſs of the *muliebre pudendum*, or *uterus*. It is alſo called *arctitudo*.

ARCTIC, in *Aſtronomy*, an epithet given to the north pole, or the pole raiſed above our horizon.

It is called the *arctic* pole, on occaſion of the conſtellation of the *Little Bear*, in Greek called αρκτος, the laſt ſtar in the tail whereof nearly points out the north POLE.

ARCTIC *circle* is a leſſer circle of the ſphere, parallel to the equator, and 23° 30′ diſtant from the north pole; from whence its name.

This, and its oppoſite, the *antarctic*, are called the two *polar circles*; and may be conceived to be deſcribed by the motion of the poles of the ecliptic, round the poles of the equator, or of the world.

ARCTIUM, in *Botany*. See BURDOCK.

ARCTOMYS *Palæſtinorum*, in *Zoology*, the name of an animal of the rat kind, but very large, being of a middle ſize between the rat and the rabbit: it lives in caves, and feeds on vegetables, and is a fierce and bold creature. It uſes its fore-feet as hands, and has a cuſtom of ſitting on the buttocks, and in this poſture looks very like a bear.

ARCTOPHYLAX, in *Aſtronomy*, a conſtellation, otherwiſe called BOOTES.

ARCTOPUS, in *Botany*, a genus of the *polygamia dioecia*.

ARCTOTHECA. See ARCTOTIS.

ARCTOTIS, or ANEMONOSPERMOS, in *Botany*, belongs to the *ſyngeneſia polygamia neceſſaria* claſs. The characters are, that the common empalement is ſcaly and ſilvery; the flower is compoſed of many female florets, which are ranged round the border; the germen afterwards becomes a ſingle roundiſh ſeed, covered with a ſoft down. The middle or diſk of the flower is compoſed of hermaphrodite florets; in the centre is placed a ſmall germen, ſupporting a cylindrical ſtyle with a ſingle ſtigma. Theſe flowers are abortive. There are eight ſpecies.

Theſe plants are natives of the country about the Cape of Good Hope, from whence they have been brought to ſome curious gardens in Holland and England. They ſhould be frequently renewed by cuttings, becauſe the old plants are ſubject to decay in winter; therefore, if young plants are not annually raiſed, the ſpecies may ſoon be loſt.

ARCTURUM *infra*, a ſmall ſtar of the ſeventh or eighth magnitude, to the ſouth of *arcturus*, obſerved by Mr. Flamſtead, and ſo named by him, whoſe place is not determined in the Britiſh Catalogue.

ARCTURUS, in *Aſtronomy*, a fixed ſtar, of the firſt magnitude, in the conſtellation of ARCTOPHYLAX, or BOOTES. The word is formed of αρκτος, *bear*; and ουρα, *tail*; q. d. *bear's tail*; as being very near it.

This ſtar was known to the ancients, as in the following verſe of Virgil:

Arcturum, pluviaſque Hyades, geminoſque Triones.

See alſo Job. ix. 9. xxxviii. 32.

Mr. Hornſby concludes, that *arcturus* is the neareſt ſtar to our ſyſtem viſible in the northern hemiſphere, becauſe the variation of its place, in conſequence of a proper motion of its own, is more remarkable than that of any other of the ſtars; and by comparing a variety of obſervations reſpecting both the quantity and direction of the motion of this ſtar, he infers, that the obliquity of the ecliptic decreaſes at the rate of 58″ in one hundred years; a quantity which nearly correſponds to the mean of the computations framed by Mr. Euler, and M. de la Lande, upon the principles of attraction. Phil. Tranſ. vol. lxiii. p. i. N° 14.

ARCTUS, αρκτος, in *Aſtronomy*, a name given by the Greeks to two conſtellations of the northern hemiſphere; by the Latins called URSA *major* and *minor*, and by us the *greater* and *leſſer* BEAR.

ARCUALIA *oſſa*, in *Anatomy*, a name uſed by ſome for the *oſſa ſyncipitis*, by others for the *oſſa temporum*.

ARCUALIS *ſutura*, among *Surgeons*, denotes the coronal SUTURE.

ARCUATION is uſed, by ſome writers in *Surgery*, for an incurvation of the bones; ſuch as we ſee in the caſe of rickets, &c.

ARCUATION, in *Gardening*, denotes a method of raiſing trees by layers.

This, Switzer obſerves, is now the general method of raiſing ſuch trees as cannot be raiſed from ſeed; as the *platanus*, elm, *abele*, lime, alder, willow, &c.

The firſt thing here done is, to procure large and ſtrong mother-plants called *ſtools*. Theſe, being planted in a trench, will throw out twenty, thirty, forty, or fifty, plants apiece; which may be begun to be laid about the Michaelmas following; at which time, if the ſtools have been carefully managed, they will have ſhot five, ſix, or more, main branches out of the root; and on every one of theſe, as many ſide or collateral branches.

Theſe main branches are to be bent down to the ground; and, when thus laid quite round the ſtool, and pegged faſt down, the ſmall ones may be ſerved in the ſame manner: thus the main branches are to be covered over, all except the top; and the ſmall, or ſide branches, to be covered over two or three inches thick upon the joints. This done, they may be treaded, to make them take root the better,

About the middle of September they may be opened; when, it is probable, they will have taken root: otherwiſe they may lie till next ſpring; and then, taking them up, they are to be planted in the nurſery. Miller.

ARCUBALISTA, in the *Military Art*, a kind of *baliſta*, probably made after the faſhion of a bow.

It is mentioned by Vegetius; but the deſcription of it omitted by him, as too well known then, though now hard to be gueſſed at.

Thoſe who fought with this weapon were called *arcubaliſtarii*, ſometimes *manubaliſtarii*.

ARCUCCIO, ſee ARCUTIO.

ARCUTIO, a machine made of a board covered with pieces of hoops, like the tilt of a waggon; uſed in Italy to prevent children from being overlaid and ſmothered by nurſes, or others.

Every nurſe in Florence is obliged to lay her child in an *arcutio*, under pain of excommunication.—See a figure and deſcription of the *arcutio*, given by Mr. St. John, in Phil. Tranſ. N° 442. Abridg. vol. vii. part 4. p. 46.

ARDAMON, or ARDAMA, in *Antiquity*, a veſſel of water placed at the door of a perſon deceaſed, till the time of burial, as a token that the family was in mourning, and to ſerve to ſprinkle and purify perſons as they came out of the houſe.

ARDASSES, in *Commerce*, the coarſeſt of all the ſilks of Perſia; and, as it were, the refuſe of each kind. In this ſenſe, they ſay, the *legis*, the *houſets*, the *chouſs*, and the *payas ardaſſes*, to ſignify the worſt of thoſe four ſorts of Perſian ſilks.

ARDASSINES, in *Commerce*, called in France *ablaques*; a very fine ſort of Perſian ſilks, little inferior in fineneſs to the *ſourbaſtis*, or rather *cherbaſſis*, and yet it is little uſed in the ſilk manufactures of Lyons and Tours, becauſe that kind of ſilk will not bear hot water in the winding.

ARDEA, in *Zoology*, a genus of the order of *grallæ*, belonging to the claſs of *aves*, in the Linnæan ſyſtem.

ARDENT, ARDENS, ſomething hot, and, as it were, burning. The word is formed of *ardere*, *to burn*.

ARDENT *fever* is a violent burning FEVER, otherwiſe called CAUSUS.

ARDENT *ſpirits* are thoſe diſtilled from fermented vegetables; thus called, becauſe they will take fire, and burn.

Such are, brandy, ſpirit of wine, rum, arrack, &c.

ARDENTES, in *Middle Age Writers*, an appellation given to thoſe afflicted with the *ignis ſacer*, or ERYSIPELAS.

They were thus called, as ſeeming to be ſcorched or burnt with the diſeaſe.

Hence alſo the abbey of St. Genevieve at Paris is called *domus ardentium*, becauſe, as it is ſaid, great numbers were cured of that diſtemper at the ſhrine of this ſaint, in the reign of Lewis VI.

ARDEOLA, in *Zoology*, the name of a very beautiful bird, of the Braſils, of the heron kind, but no larger than a pigeon.

ARDERS, fallowings, or ploughings of grounds. See Fallow, Ploughing, &c.

ARDESIA. See *Iriſh* Slate.

ARDOR *ventriculi*, a heat in the ſtomach, uſually expreſſed by the term HEART-*burn*, or CARDIALGY.

ARDUINA, *baſtard* LYCIUM, in *Botany*, a genus of the *pentandria monogynia* claſs: the corolla of which has a ſingle petal; the ſtigma is bifid, and the fruit is a double-celled berry with a ſingle ſeed.

ARE, or A-LA-MIRE, one of the eight NOTES in the ſcale of muſic.

AREA, in general, denotes any plain ſurface, whereon we walk, &c.

The word is Latin, importing more properly, a threſhing-floor; and is derived from *arere*, *to be dry*.

Area, in *Architecture*, denotes the ſpace or ſcite of ground on which an edifice ſtands. It is alſo uſed for inner courts, and thoſe portions of ground.

Area, in *Geometry*, denotes the ſuperficial content of any FIGURE.

Thus, if a figure, e. gr. a field, be in form of a ſquare, and its ſide be 40 feet long, its *area* is ſaid to be 1600 ſquare feet: or it contains 1600 little ſquares, each a foot every way. Hence, to find the *area* of a triangle, ſquare, parallelogram, rectangle, trapezium, rhombus, polygon, circle, or other figure, is to find the magnitude or capacity thereof in ſquare meaſure.—To do which, ſee the article Triangle, &c.

To find the *area* of fields, and other incloſures, they firſt ſurvey or take the angles thereof, then plot them on paper, and thus caſt up their contents in acres, roods, &c. after the uſual manner of other plain figures.

The law by which the planets move round the ſun, is this; that a line, or radius, drawn from the centre of the ſun to the centre of the planet, always ſweeps or deſcribes elliptic *areas* proportional to the times. Thus, the ſun being ſuppoſed in S, and a planet in A (*Tab. Aſtronomy*, *fig.* 61. Nº 2.); and letting it proceed, in any given time, to B; in ſuch progreſs, its radius AS will have deſcribed the *area* ASB. Suppoſe, again, the planet to be arrived to P; then the elliptic ſpace PSD being drawn equal to the other ASB, the planet will move through the arch PD in the ſame time as through the arch AB.

Sir I. Newton demonſtrates, that whatever bodies do obſerve ſuch law in their motions about any other body, do gravitate towards ſuch body.

Area is alſo uſed, in *Medicine*, for a diſeaſe which makes the hair fall.

The *area* is a general kind of depilation; and is diſtinguiſhed into two ſpecies, ALOPECIA, and OPHIASIS.

Area, in *Optics*. See Field.

AREB, a kind of imaginary money, uſed in the dominions of the great mogul.

Four *arebs* are equal to one *crou*, or 100 *lacs*; one *lac* to 100,000 *roupees*.

ARECA, or Areck, a fruit of the Eaſt Indies, wherein they drive an incredible trade, and of which they make a prodigious conſumption; there being ſcarce any perſon from the richeſt to the pooreſt, who does not make uſe of it. See *Table of Microſpical Objects*, Claſs 2.

The tree which bears the *areck*, is tall, ſtrait, thin, and round. It is of the palm kind, and has no branches; but its leaves are beautiful to the ſight. They form a round tuft on the top of the trunk, which is as ſtrait as an arrow. It grows ſometimes to the height of thirty-five feet, and is a great ornament in gardens.

The ſhell which contains the fruit is yellowiſh, ſmooth without, but rough and hairy within, in which it pretty much reſembles the ſhell of the cocoa-nut. Its ſize is equal to that of a large walnut; its kernel is as big as a nutmeg, to which it bears a great reſemblance without; and when cut, has the ſame whitiſh veins within. In the centre of the fruit, when it is ſoft, is contained a greyiſh and almoſt liquid ſubſtance, which grows hard, in proportion as it ripens. The fruit when ripe is aſtringent, but not unpalatable.

The chief uſe that is made of *areck*, is to chew it with leaves of betle, mixing with it a chalk in a red paſte, made of ſea-ſhells. In order to chew it, they cut the *areck* into four quarters, and take one quarter of it, which they wrap in a leaf of betle, over which they lay a little of that chalk; afterward they tie it by twiſting it round. This bit thus prepared is called *pinang*, which is a Malayan word uſed all over the Eaſt Indies. The *pinang* promotes ſpitting very much; the ſpittle is red, which colour the *areck* gives it. This maſtigation cools the mouth, and faſtens the teeth and gums. Some pretend that *areck* ſtrengthens the ſtomach, when the juice of it is ſwallowed, and moſt of the Indians do ſwallow it. Another property aſcribed to it, is the curing, or carrying off, all that might be unwholſome or corrupt in the gums. Of this fruit the extract is made, which in our ſhops is called *terra japonica*. To this extract they ſometimes join that of another plant, named *lycium*, and alſo calcined ſhells; it is generally adulterated. Geoffroy.

AREM, or Al-Arem, a vaſt mound, or dam, which formed a ſtupendous reſervoir above the city Saba, whoſe rupture cauſed an inundation, famous in eaſtern writers. Sale's Prel. Diſc.

The word *arem* is Arabic, and literally ſignifies any mound, or dam, for the containing of water.

ARENA, among the Romans, ſometimes ſignified the ſame with an *amphitheatre*; viz. a place where the GLADIATORS had their combats.

The word is Latin, and ſignifies *ſand*; becauſe the place was always ſtrewed with ſand, to conceal from the view of the people the blood ſpilt in the combat.

Properly ſpeaking, *arena* was only the pit or ſpace in the middle of thoſe places, where the athletæ and gladiators performed.

The *arena* was the ſame thing, with regard to the gladiators, that the *campus*, or field, was to ſoldiers and armies; viz. the place where they fought.—He who fought in the *arena*, was called *arenarius*. Nero is ſaid to have ſtrewed the *arena* with gold-duſt.

Arena, in *Architecture*, is the middle or body of a temple, and comprehends the whole ſpace between the *antæ*, and the extreme wall of the building.

ARENARIA, in *Botany*. See *ſea*-CHICKWEED.

Arenaria, in *Zoology*, the name of a bird, called in Engliſh the *ſanderling*, and in ſome places, particularly in Cornwall, the *curwillet*.

It is a water-bird, of the long-legged, and open-footed, not webbed, kind, and is a little larger than the *tringa minor*, or *ſand*-PIPER.—Theſe birds are common about the ſea-ſhore, and generally fly in large flocks.

Arenaria, in *Ancient Writers*, is uſed for ſand-pits, or ground out of which ſand is dug. Vitruvius.

ARENARII, in *Antiquity*, gladiators who combated with beaſts in the *arena*, or amphitheatre. The *arenarii* were ſlaves of the loweſt rank, ſo that though manumitted, they were not capable of being Roman citizens. They were the ſame with what were otherwiſe called BESTIARII.

ARENARIUM, in *Eccleſiaſtical Writers*, denotes a cemetery or burying-ground.

The *aneraria* were properly a kind of pits, or holes, under ground, wherein the ancient Chriſtians, not only buried their dead, but held their religious aſſemblies, in times of perſecution. Baron. Annal. and Du-Cange.

ARENATION is uſed, by ſome *Phyſicians*, for a kind of dry bath, in which the patient only ſits with his feet on hot ſand.

AREOLA, or Areola *mamillaris*, in *Anatomy*, the coloured circle which ſurrounds the nipple. See Breast.

AREOPAGUS, or Aræopagus, in *Antiquity*, a ſovereign tribunal at Athens; famous for the juſtice and impartiality of its decrees; to which the gods themſelves are ſaid to have ſubmitted their quarrels.

Authors are divided, as to the reaſon and origin of the name: ſome imagine *areopagus* the proper name of the court of juſtice, which was ſituate on a hill, in Athens; and that in this court the ſenate of that illuſtrious city aſſembled.—Others ſay, that *areopagus* was the name of the whole ſuburbs of Athens, wherein ſtood the hill on which the court was built; and the name *areopagus* ſeems to countenance this laſt opinion; for it ſignifies literally, the hill or rock of Mars; from ϖαγος, *hill*; and αρειος, belonging to Mars. In effect, the denomination might either ariſe hence, that the *areopagus* was built in a place where had been a temple of Mars; or, becauſe the firſt cauſe pleaded there was that of this god, who was accuſed of killing Halirrhotius, the ſon of Neptune, and tried here before twelve gods, and acquitted by a majority of voices: or, finally, becauſe the Amazons, whom the poets feign to have been the daughters of Mars, when they beſieged Athens, pitched their tents, and offered ſacrifices to the god of war in this place.

This tribunal was in great reputation among the Greeks; and the Romans themſelves had ſo high an opinion of it, that they truſted many of their difficult cauſes to its deciſion. Authors are not agreed about the number of the judges who compoſed this auguſt court. Some reckon thirty-one, others fifty-one, and others five hundred: in effect, their number ſeems not to have been fixed, but to have been more or leſs in different years.—By an inſcription quoted by Volaterranus it appears, they were then three hundred.

At firſt this tribunal only conſiſted of nine perſons, who had all diſcharged the office of archons, had acquitted themſelves with honour in that truſt, and had likewiſe given an account of their adminiſtration before the *logiſtæ*, and undergone a very rigorous examination. Their ſalary was equal, and paid out of the treaſury of the republic: they had three *oboli* for each cauſe.

The *areopagites* were judges for life.—They never ſat in judgment but in the open air, and that in the night-time; to the intent that their minds might be more preſent and attentive; and that no object, either of pity or averſion, might make any impreſſion upon them. However, ſome maintain, that the building in which the *areopagites* aſſembled, was not wholly uncovered; and they obſerve, that among the ruins, large ſtones have been found, whoſe joints are in the ſame angle with the pediment that muſt have been uſed for a covering.—All pleadings before them were to be in the ſimpleſt and moſt naked terms; without exordium, epilogue, or appeal to the paſſions.

At firſt they only took cognizance of criminal cauſes; but in courſe of time their juriſdiction became of greater extent.—Mr. Spon, who examined the antiquities of that illuſtrious city, found ſome remains of the *areopagus* ſtill exiſting in the middle of the temple of Theſeus, which was heretofore in the middle of the city, but is now without the walls.—The foundation of the *areopagus* is a ſemicircle, with an eſplanade of 140 paces round it, which properly made the hall of the *areopagus*. There is a tribunal cut in the middle of a rock, with ſeats on each ſide of it, where the *areopagites* ſat, expoſed to the open air.

This court is ſaid by ſome to have been inſtituted by Solon; but others carry it much higher, and aſſert it to have been eſtabliſhed by Cecrops, about the time that Aaron died; viz. in the year of the world 2553, maintaining withal, that Solon only made ſome new regulations in it, increaſed its power and privileges, and made it ſuperior to the *ephetæ*, another celebrated court inſtituted by Draco.—In effect, Demoſthenes himſelf, in his oration againſt Cteſiphon, owns himſelf at a loſs on the point: *The inſtitutors of this tribunal*, ſays he, *whatever they were, whether gods or heroes*, &c.

AREOMETER. See ARÆOMETER.

AREOSTYLE. See ARÆOSTYLE.

AREOTICS. See ARÆOTICS.

ARES, a term framed by Paracelſus, to expreſs a hidden diſpoſer, in the three principles of things, from which each being receives its proper form and ſubſtance, and aſſumes its own ſpecific nature, not that of any other being.

Paracelſus diſtinguiſhes the *ares* into *archeical*, which is *natural*; and *chemical*, which is *artificial*. See ARCHÆUS.

ARETALOGI, in *Antiquity*, a ſort of philoſophers, chiefly of the Cynic or Stoic tribe, who having no ſchool or diſciples of their own, haunted the tables of great men, and entertained them in their banquets with diſputations on virtue, vice, and other popular topics. Pitiſcus Lex. Theſe are ſometimes alſo denominated *circulatores philoſophi*. Calvin Lex. Jur.

ARETHUSA, in *Botany*, a genus of the *gynandria diandria* claſs; with a tubular *nectarium* within the bottom of the corolla, and a ſtyle connected with the lower lip.

ARETIA, in *Botany*, a genus of the *pentandria monogynia* claſs; the corolla is ſhaped like a ſalver, and divided into five ſegments, with an oval tube; the ſtigma is depreſſed above, and the capſula is globular and ſingle celled.

ARETOLOGY, ARETOLOGIA, that part of moral philoſophy which treats of virtue, its nature, and the means of arriving at it.

ARGAL, or ARGEL, the hard lees ſticking to the ſides of wine-veſſels; more frequently called TARTAR.

ARGEA, or ARGEI, in *Antiquity*, human figures made of ruſhes, thrown annually by the veſtals into the river Tiber, on the day of the ides of May.

This ceremony we learn from Feſtus and Varro; the latter of whom, however, ſays, they were caſt by the prieſts, unleſs by *ſacerdotibus* we ſuppoſe he meant *prieſteſſes*. He adds, that the number of figures was thirty. Plutarch, in his Roman Queſtions, inquires, why they were called *argea?* There are two reaſons aſſigned: the firſt, that the barbarous nation, which firſt inhabited theſe parts, caſt all the Greeks they could meet with into the Tiber; for *Argians* was a common name for all Grecians; but that Hercules perſuaded them to quit ſo inhuman a practice, and to purge themſelves of the crime, by inſtituting this ſolemnity.—The ſecond, that Evander, an Arcadian, and a ſworn enemy of the *Argians*, to perpetuate that enmity to his poſterity, ordered the figures of *Argians* to be thus caſt into the river.

ARGEMON, or ARGEMA, in *Medicine*, an ulcer about the *iris* of the eye, comprehending part of the white, and part alſo of the black.

The *argemon* appears of a red colour, on the outſide of the *iris*, and white within it. When it ſpreads far, and eats deep, it ſometimes occaſions the UVEA to fall.

ARGEMONE, in *Botany*. See *Prickly* POPPY.

ARGEMONION, in *Botany*, a name given by ſome of the later Greek writers, to the plant called SARCOCOLLA by the other writers of their times.

ARGENT, in *Heraldry*, ſignifies the colour white, uſed in the coats of gentlemen, knights, and baronets. Barons, and all nobles, have the white colour called *pearl*; and ſovereign princes have theirs called *luna*.—Without either *argent* or *or*, the heralds ſay, there can be no good armory.

Argent is expreſſed, in engraving, by the parts being left plain, without any ſtrokes from the graver.

The word is French, derived from the Latin *argentum*, SILVER; this colour being ſuppoſed the repreſentation of that metal: whence the Spaniards call this field *campo de plata*, a *ſilver field*.

In the doubling of mantles, where the white is ſuppoſed to repreſent a fur, and not a metal, it may be blazoned *white*.

ARGENTARIA *creta*, *ſilver chalk*, in *Natural Hiſtory*, a name given to an earth, not properly a chalk, but a kind of TRIPELA. It is a very beautiful earth, of a looſe friable texture, and perfectly pure white. It is dug in Pruſſia, and is much eſteemed for cleaning plate. It has alſo been found in France, and of late in Ireland. There are many white chalks of various hues, which are dug in Germany, America, Italy, and other countries. That dug in the duchy of Mantua in Italy, is much uſed by painters, and at Rome vulgarly called *geſſo*.

ARGENTARIUS is frequently uſed in *Roman Writers*, for a money-changer or banker.

The *argentarii* were monied people, who made a profit either by the changing, or lending of money at intereſt. Theſe had their *tabernæ*, or offices, in the *forum Romanum*, built there as early as the reign of L. Tarquinius Priſcus. The *argentarii* and *fæneratores* were much hated, on account of their covetouſneſs and extortion. Du-Cange and Pitiſcus.

ARGENTARIUS, in *Writers of the Middle Age*, an officer entruſted with the cuſtody of money.

In this ſenſe *argentarius* amounts to the ſame with the Greek αργυροφυλαξ, and our *caſhier*. Du-Cange.

ARGENTARIUS *miles*, in our *Old Writers*, an officer of the exchequer, whoſe buſineſs it was to carry up the bag of money from the lower exchequer to the higher, in order to its being examined or told. Spelman.

ARGENTARII is alſo applied, in the *Civil Law*, to thoſe who adorned military arms with ſilver or gold.

In which ſenſe the word amounts to the ſame with BARBARICARII.

ARGENTATI *milites*, in *Antiquity*.—Livy, l. 6. ſpeaks of *argentati milites*, as diſtinguiſhed from *aurati*. Aquinas ſuppoſes theſe to have been ſimilar to the ARGYRASPIDES and CHRYSASPIDES; but the deſcriptions do not quadrate. Livy only repreſents the *argentati* as cloathed in white linen coats. Aquin. Lex. Mil. See ARGYRASPIDES.

ARGENTEUM *os*, in *Natural Hiſtory*. See OS *argenteum*.

ARGENTICOMUS, among *Ancient Aſtrologers*, denotes a kind of ſilver-haired comet, of uncommon luſtre, ſuppoſed to be the cauſe of great changes in the planetary ſyſtem.

ARGENTIL, an old Engliſh name for the plant called *percipier Anglorum*; in Engliſh, PARSLEY *piert*, or PARSLEY *break-ſtone*. See APHANES.

ARGENTINA, in *Ichthyology*, the name of a genus of fiſh, of the MALACOPTERYGIOUS kind; and in the Linnæan ſyſtem, of the order of *abdominales*: the characters of which, according to Artedi, are theſe: the body is oblong and cylindric; the teeth are placed on the tongue and palate. Artedi mentions only one ſpecies of this genus; this has large eyes, and the tail is forked. It is caught about the ſhores of Italy.

Mr. Ray deſcribes the *argentina* to be a ſmall fiſh of the harengiform kind, caught in the Mediterranean, and common in the markets of Rome.

ARGENTINA, a medicinal plant, nearly reſembling CINQUEFOIL, of ſome uſe as a cooler and aſtringent.

ARGENTUM. See SILVER.

ARGENTUM *album*, mentioned in Domeſday Book, ſignifies, according to Spelman, bullion, or ſilver uncoined. In thoſe ancient days, ſuch metal paſſed as money from one to another in payment. *Sumitur pro ipſo hoc metallo penſili non ſignato.*

ARGENTUM *Dei*, *God's penny*, anciently ſignified *earneſt-money*, or money given to bind a bargain; in ſome places called *erles*, or *arles*, and by the civilians and canoniſts, ARRHÆ. *Et cepit de prædicto Henrico tres denarios de* argenti *Dei præ manibus.*

ARGENTUM *Moſaicum*, or *muſivum*, is an amalgam or metalline paſte, which may be eaſily bruiſed into ſilver-like flakes of powder, and is uſed for colouring plaſter figures, and for other purpoſes, as a pigment. It conſiſts of equal parts of tin, biſmuth, and mercury, melted together. The powder is mixed with white of eggs, or ſpirit varniſh, and then applied to the intended work, which is afterwards burniſhed. See GILDING and SILVERING.

ARGESTES, is uſed by Vitruvius for the wind which blows from that quarter of the horizon, which is 75° from the ſouth, and weſtward.

Ricciolus uſes the term to denote the wind which blows at 22° 30′ from the weſt towards the north, coinciding with that which is otherwiſe called *Weſt-North-Weſt*. Aſt. Reform.

ARGETENAR, in *Aſtronomy*, a ſtar of the fourth magnitude, in the flexure of the conſtellation ERIDANUS.

ARGILLA, or ARGIL, *clay*; a general name for all earths uſed in pottery, brick, and tile-making, and for the like purpoſes. See CLAY.

ARGILLACEOUS *earths*, ſuch as form with water a tenacious paſte, or ſoft ſtones; they burn hard, are corroded by ſtrong coction in the concentrated mineral acids, but not acted on by moderate digeſtion. They are the baſis of earthen wares. They vitrify with ſalts, with arſenic, with gypſum, and difficultly with lead. See Neumann's Works; and Dr. Lewis's Additions, p 21 & ſeq.

ARGO, in *Antiquity*, a ſhip or veſſel celebrated among the poets; being that wherein the Argonauts, of whom Jaſon was the chief, made their expedition, in queſt of the golden fleece.

The occaſion of this expedition is thus repreſented by Greek writers. Phryxus, flying with his ſiſter Helle from the rage of their ſtep-mother Ino, the daughter of Cadmus, went on board a ſhip, whoſe enſign was a *golden ram*, and ſailed to Colchic (now Mingrelia, part of Georgia.) Helle was drowned by the way, in that ſea which from her was called the Helleſpont, now the Dardanelles. This was the ground of the poetical fable, that a *ram with a golden fleece* ſwam away with them to Colchis; and that the Argonauts undertook their famed expedition, in order to find that fleece.

Sir Iſaac Newton thinks that this expedition was really an embaſſy ſent by the Greeks, during the inteſtine diviſions of Egypt, in the reign of Amenophis, to perſuade the nations upon the coaſts of the Euxine and Mediterranean ſeas, to take that opportunity of ſhaking off the yoke of Egypt, which Seſoſtris had laid upon them: and that fetching the golden fleece, was only a pretence to cover their true deſign.

Jaſon, having happily accompliſhed his enterpriſe, conſecrated the ſhip *Argo* to Neptune; or, as others ſay, to Minerva, in the Iſthmus of Corinth; where, they add, it did not remain long before it was tranſlated into heaven, and made a conſtellation.

The generality of authors repreſent the ſhip *Argo* as of a long make, reſembling the modern galleys; and furniſhed with thirty benches of rowers. It could not however be of any great bulk, ſince the Argonauts were able to carry it on their backs from the Danube to the Adriatic ſea.

ARGO *navis*, or the *ſhip*, in *Aſtronomy*, is a conſtellation of fixed ſtars, in the ſouthern hemiſphere, whoſe ſtars, in Ptolemy's catalogue, are 45; in Tycho's, 11; in the Britannic catalogue, and Sharp's Appendix, 64: the longitudes, latitudes, magnitudes, &c. whereof are as follow:

Situation of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnit.
			°	′	″	°	′	″	
		♌	0	38	1	46	45	50S	6
		♋	27	26	26	35	18	5	6
nder the ſhield in the ſtern.	τ	♌	1	34	22	49	14	58	4.5
		♋	27	32	40	35	9	13	6
5.			27	32	26	32	54	5	6
			29	22	18	37	32	35	5
nder the northern ſhield.	ξ	♌	1	44	14	44	58	49	3.4
		♋	28	43	17	33	8	53	5.6
the top of the ſtern.			29	2	0	34	9	45	4
10.			29	26	5	35	3	10	6
	c	♌	3	20	43	42	36	40	4
			4	10	24	42	53	10	6
		♋	27	55	7	17	48	27	4
		♌	4	34	24	39	4	45	6
15.	ι		7	5	31	43	18	24	3
			5	39	6	38	20	40	5
			3	56	19	32	30	17	6
			4	22	52	32	59	10	6
			4	15	47	32	6	27	4.5
20.			5	44	40	34	44	10	5.6
			7	20	0	34	57	0	6
the ſtern.			7	30	6	31	29	17	6
the middle of the ſhield.			2	17	3	46	3	8	5
the rudder.		♋	29	40	48	47	24	53	3
25.		♌	7	8	40	49	40	47	6

Situation of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
In the keel.		♋	26	33	9	58	31	55	3
		♌	5	17	56	58	25	50	5
			7	6	24	57	44	5	4
In the tranſom.			10	16	2	58	4	27	5
30.			14	46	31	58	20	37	2
			11	19	21	59	42	38	4
At the bottom of the maſt.			29	54	6	57	21	30	5
			28	16	24	58	14	45	5
		♍	3	42	27	60	7	53	5
In the middle of the maſt. 35.			2	45	38	61	8	17	5
		♌	22	58	28	51	9	53	4
In the ſail.			22	42	5	48	55	16	3.4
			21	40	27	43	18	22	4
In the ſection of the tranſom.			23	0	39	42	52	9	5
40.		♍	7	21	51	55	52	3	2
			10	1	42	59	18	36	5
In the keel.		♌	4	58	47	63	47	21	3.4
			23	34	7	64	26	51	2
Below the keel.		♍	19	20	46	72	38	59	2
45.		♌	26	58	39	70	17	59	3
		♍	15	6	26	67	10	36	2
			12	56	10	66	15	44	4
			25	3	13	63	42	3	3.2
		♎	0	23	49	64	13	53	4
50.			4	54	36	65	21	30	5
			1	32	2	67	4	54	2
		♍	29	35	19	67	30	10	4
			29	53	19	70	6	50	5
		♎	7	2	14	69	27	31	5
55.			2	8	50	59	56	6	4
			13	13	59	66	17	16	5
In the helm.		♋	13	24	32	66	5	19	3
		♊	25	50	54	66	16	30	5
Canobus.		♋	11	16	49	75	50	19	1
60.			23	58	28	72	51	14	3
		♊	18	50	51	74	27	30	4
Between Canobus and the Flying Fiſh.		♌	20	37	49	83	1	59	4
		♍	10	56	22	51	9	46	4
Between the ſhip and Centaur.			23	11	20	48	14	45	4

ARGOL, the ſame with TARTAR.

ARGOL. See ARCHIL.

ARGONAUTA, a genus of worms of the *teſtacea* order.

ARGONAUTIC, ſomething belodging to the ARGONAUTS.

The *argonautic* expedition is one of the greateſt *epochas*, or periods of hiſtory, which Sir Iſaac Newton endeavours to ſettle, and from thence to rectify the ancient CHRONOLOGY. This he ſhews, by ſeveral authorities, to have been one generation, or about thirty years earlier than the taking of Troy; and forty-three years later than the death of SOLOMON.

Dr. Bryant rejects the hiſtory of the *Argonautic* expedition as a Grecian fable, founded indeed on a tradition derived from Egypt, and ultimately referring to Noah's preſervation, &c. in the ark. Anc. Myth. vol. ii. p. 473.

ARGONAUTICA, in *Literary Hiſtory*, denote poems on the ſubject and expeditions of the ARGONAUTS. We have the *Argonautics* of Orpheus in epic verſe, publiſhed by H. Stephens; the *Argonauticon* of Valerius Flaccus, in eight books of Latin heroics, in imitation of Apollonius, with reſpect to which Burman obſerves, that the imitator has often ſurpaſſed the original; the *Argonautics* of Apollonius Rhodius, an heroic poem, conſiſting of four books, *opus*, as Quintilian calls it, *non contemnendum*.

ARGONAUTS, in *Antiquity*, a company of fifty-one, according to Valerius Flaccus, or, according to Apollonius Rhodius, forty-four heroes, who embarked along with Jaſon, in the ſhip *Argo*, for Colchis, with a deſign to obtain the golden fleece.

Hercules, Theſeus, Caſtor, Orpheus, &c. were of the number of the *Argonauts*.

ARGONAUTS *of St. Nicholas*, was the name of a military order, inſtituted by Charles III. king of Naples, in the year 1382, for the advancement of navigation, or, as ſome ſay, merely for preſerving amity among the nobles.

They wore a collar of ſhells, incloſed in a ſilver creſcent, whence hung a ſhip with this device, *Non credo tempori, I do not truſt time.* Hence theſe *Argonaut* knights came to be called *knights of the ſhell.* They received the order of St. Baſil, archbiſhop of Naples; and held their aſſemblies in the church of St. Nicholas, their patron.

ARGOS, αργος, from α negative, and εργον, *work*, or *buſineſs*; as if it were αεργος. So αργος αργυρος is *ſilver not worked*; αργοι πυροι, in Hippocrates, is *crude wheat, not prepared, but ſuch as it is, taken from the floor.*

ARGUMENT, in *Rhetoric*, is ſome reaſon, or ſeries of reaſoning, by which we eſtabliſh the proof, or ſhew the probability, of ſome given propoſition.

Logicians, ſomewhat more ſcientifically, define *argument*, a *medium*, from whoſe connection with two extremes, the connection of the two extremes themſelves is inferred.

Arguments are termed *grammatical*, *logical*, *phyſical*, *metaphyſical*, *moral*, *mechanical*, *theological*, &c. according to the art, ſcience, or ſubject, from whence the middle term is borrowed. Thus, if we prove that no man ſhould ſteal from his neighbour, becauſe the ſcripture forbids it; this is a *theological argument:* if we prove it from the law of the land; it is *political:* but if we prove it from the principles of reaſon and equity; the *argument* is *moral.*

Arguments are either *certain* and *evident*, or *doubtful* and merely *probable*. *Probable arguments* are thoſe whoſe concluſions are proved from ſome probable medium. *Evident* and *certain arguments*, are thoſe which prove their concluſions by clear media and undoubted principles: theſe are called *demonſtrations*.

In reaſoning, Mr. Locke obſerves, that men ordinarily uſe four ſorts of *arguments*. The firſt is to alledge the opinions of men, whoſe parts and learning, eminency, power, or ſome other cauſe, have gained a name; and ſettled their reputation in the common eſteem, with ſome kind of authority: this may be called *argumentum ad verecundiam*. Secondly, another way is to require the adverſaries to admit what is alledged, as a proof; or to aſſign a better: this he calls *argumentum ad ignorantiam*. A third way, is to preſs a man with conſequences, drawn from his own principles or conceſſions: this is known by the name of *argumentum ad hominem*. Fourthly, the uſing proofs drawn from any of the foundations of knowledge or probability: this he calls *argumentum ad judicium*; and obſerves, that it is the only one of all the four, that brings true inſtruction with it; and advances us in our way to KNOWLEDGE. For, 1. it argues not another man's opinion to be right, becauſe I out of reſpect, or any other conſideration but that of conviction, will not contradict him. 2. It proves not another man to be in the right way, nor that I ought to take the ſame with him, becauſe I know not a better. 3. Nor does it follow, that another man is in the right way, becauſe he has ſhewn me that I am in the wrong: this may diſpoſe me perhaps for the reception of truth, but helps me not to it. That muſt come from proofs and arguments, and light ariſing from the nature of things themſelves; not from my ſhamefacedneſs, ignorance, or error. See REASON, and REASONING.

Beſides theſe, there are other *arguments* enumerated by different writers; as the *argumentum ab amore*, which is uſed to engage the reaſon by the affections; the *argumentum ad ignaviam*, called by the Greeks αργος λογος, which always concludes in favour of inaction; the *argumentum ab invidia*, which is made uſe of to render an adverſary's opinion odious; M. le Clerc has a diſſertation on this *argument* as applied to theology; and alſo the *argumentum a tuto*, drawn from the conſideration of its being ſafer to chooſe one ſide of the queſtion than the other, when the evidence is equal on both ſides. This has been much uſed againſt atheiſts and infidels: it was firſt ſtarted by Arnobius, and adopted by ſeveral advocates for chriſtianity, as Paſchal, Tillotſon, Gaſtrel, &c. Lord Shaftſbury and others have endeavoured to explode it: Clarke and Leibnitz only allow it a moral force. Moſheim has a diſſertation on this *argument*, viz. De Vi Argumenti quod *a tuto* dicitur in Theologia. Wolfem. 1723. 4°.

Logicians divide their *arguments*, with regard to their form, into *ſyllogiſms*, *enthymemes*, *inductions*, &c.

An *argument in form*, is a *ſyllogiſm* framed according to the ſtrict rules of *logic*.—According to Ariſtotle, the *enthymeme* is the *argument* of *rhetoric*, as the *ſyllogyſm* is that of *logic*.—*Rhetoric* is defined by ſome, the art of finding *arguments* adapted to perſuade, or gain belief.

Rhetoricians divide *arguments*, with reſpect to the places they are drawn from, into *intrinſic* or *artificial*; and *extrinſic* or *inartificial*, or *remote*.

ARGUMENTS, *artificial*, or *intrinſic*, by the Greeks called εντεχνα, by Cicero *inſita*, are the proper invention of him who ſpeaks: or they are thoſe which are taken from the ſubject treated of; of which there are ſeveral kinds, viz. genus and ſpecies, form, cauſe, and effect, &c. See each in its place, GENUS, &c.

To theſe ſome add two other places of *argument*, viz. the manners, and the paſſions.

ARGUMENTS, *inartificial*, or *extrinſic*, ατεχνα, by Cicero called *aſſumpta*, are thoſe which are borrowed from abroad, and are only applied by the orator to the point in hand; ſuch are laws, common report, books, oaths, torture, and witneſſes.

The places, or general heads of *arguments*, with regard to their end, may be divided into, 1. Thoſe intended to perſuade or diſſuade, which are chiefly drawn from the conſiderations of profit, honour, and equity: 2. Thoſe intended to praiſe, or diſpraiſe: and, 3. Thoſe intended to accuſe and defend.

ARGUMENT, *dialectical*. See DIALECTICAL.

ARGUMENT is alſo uſed for a ſyllabus, or abridgment of the ſubject of a book, hiſtory, comedy, or the like.

We have almoſt loſt the original uſe of prologues, which was to give the *argument* of the play.

ARGUMENT, in *Aſtronomy*, is an arch whereby we ſeek another unknown arch proportional to the firſt.

Hence

ARGUMENT *of inclination* is an arch of a planet's orbit, intercepted between the aſcending node, and the place of the planet from the ſun, numbered according to the ſucceſſion of the ſigns. See INCLINATION.

ARGUMENT, *menſtrual*, *of latitude*, is the diſtance of the moon's true place from the ſun's true PLACE.

By this we find the quantity of the real obſcuration in eclipſes, or how many digits are darkened in any place. See ECLIPSE.

ARGUMENT *of the moon's menſtrual longitude*, or *Menſtrual* ARGUMENT *of the longitude*, is an arch of her eccentric, LP (*Tab. Aſtron. fig.* 32.) intercepted between her true place once equated L; and a right line PQ, drawn through the centre of the eccentric B, parallel to the menſtrual line of the apſides.

The *annual argument* of longitude is repreſented by the angle DAH.

ARGUMENTATION, the act of inventing or framing *arguments*, of making inductions, and drawing concluſions. See INDUCTION, &c.

Argumentation, according to Cicero, is the delivering or unfolding of an argument.—The matter of *argumentations* is propoſitions; the form, their due diſpoſition, with regard to one another, ſo as a concluſion may be drawn from them. See ENTHYMEME, PROPOSITION, RATIOCINATION, SORITES, SYLLOGISM, &c.

ARGUS, a kind of animal full of eyes, called in Iceland *oſcabicorn*; of which Wormius has given a deſcription, and Jacobus has given an account. It is of the teſtaceous kind, of an oblong form, reſembling a crab's tail, and about two fingers breadth in length.

ARGUS, a ſpecies of pheaſant in the Chineſe Tartary.

ARGUS-*ſhell*, in *Conchyliology*, a ſpecies of porcelain-ſhell, beautifully variegated with ſpots, reſembling in ſome meaſure thoſe in a peacock's tail.

ARGUTIÆ, witty and acute ſayings, which commonly ſignify ſomething further than what their mere words at firſt ſight ſeem to import.

Writers on rhetoric ſpeak of divers ſpecies of *argutiæ*, viz.

ARGUTIÆ *ab alieno*, when ſomething is ſaid, which ſeems repugnant either to the nature and property of a thing, or to common cuſtom, the laws, &c. which yet in reality is conſiſtent therewith; or when ſomething is given as a reaſon of another, which yet is not the reaſon of it. For inſtance, *ſi Caius nihil didiciſſet, erraſſet minus:* again, *aureum hoc ſæculum eſt, quia plurimus jam auro bonos venit.*

ARGUTIÆ *ab alluſione*, thoſe wherein alluſion is made to ſome hiſtory, fable, ſentence, proverb, or the like; e. gr. *multi umbram captant & carnem amittunt.*

ARGUTIÆ *a comparatis*, when two things are compared together, which yet at firſt ſight appear very different from each other, but ſo as to make a pretty kind of *ſimile* or *diſſimile*; e. gr. *par eſt pauper nil cupiens principi omnia habenti.*

ARGUTIÆ *a repugnantibus*, when two things meet in a ſubject, which yet regularly cannot be therein; or when two things are oppoſed to each other, yet the epithet of the one is attributed to the other; e. gr. *dum tacent clamant.*

ARGYRASPIDES, or ARGYROASPIDES, in *Antiquity*, perſons armed with ſilver bucklers, or BUCKLERS ſilvered.

The *argyraſpides*, according to Quintus Curtius, made the ſecond corps of Alexander's army; the firſt was the *phalanx*.

According to Juſtin's account, lib. xii. c. 7. Alexander having penetrated into India, and extended his empire as far as the ocean; for a monument of his glory, ordered the armour of his ſoldiers, and the houſings of his horſes, to be adorned with ſilver.—And hence commanded them to be called *argyraſpides*, from the Greek *αργυρος*, *ſilver*, and *ασπις*, *buckler*.

By this author it ſhould ſeem, that Alexander's whole army were called *argyraſpides.*—After that prince's death, the *argyraſpides* deſpiſed all other chiefs of the army, diſdaining to obey any other, having borne arms under Alexander.

ARGYRITÆ *agonis*, in *Antiquity*, games in which money was the prize. Potter.

ARGYRITIS, in *Natural Hiſtory*, a name given by the ancients to a ſubſtance reſembling ſilver.

In this ſenſe, *argyritis* was uſed to ſignify ſuch litharge as was of a white colour, by way of diſtinguiſhing it from that which was yellow, which they dignified with the name *chryſitis*, as we do at preſent with that of litharge of gold.

The *argyritis* of late writers, ſeems to have been the ſame with the *lapis magnetis* of the ancients, mentioned by Theophraſtus, and diſtinguiſhed from the MAGNET.

ARGYRODAMAS, in *Natural Hiſtory*, a ſort of ſilver-coloured TALC, which bears the fire, and neither burns, melts, nor changes its hue. Plott's Hiſt. Staff.

Hence its denomination among the ancients of *argyrodamas, quaſi argentum indomitum.*

ARGYROGONIA is uſed by ſome alchemiſts for a kind of argentific, or ſilver-making ſeed, of a white colour, pretended to be procurable from a ſolution of that metal perfectly concocted.

Argyrogonia ſtands contradiſtinguiſhed from *chryſogonia.*

ARGYROLIBANOS, in the *Materia Medica* of the *Ancient Greeks*, a word uſed to expreſs the white kind of *olibanum.*

ARGYROPOEIA, in *Alchemy*, the art of making ſilver, out of other more imperfect metals.

The word is formed of αργυρος, *ſilver*, and ποιεω, *I make.*

ARIADNIA, in *Antiquity*, ſolemn feſtivals held at Naxos in honour of *Ariadne.*

The *ariadnia* are ſaid to have been inſtituted by Theſeus, in atonement for his cruelty in expoſing *Ariadne*, big with child, on that coaſt. They were of a mournful caſt; one part of the ceremony was for a young woman to lie down, and counterfeit all the agonies of a woman in labour. Plut. in Theſ. and Potter's Arch.

ARIANS, followers of *Arius*, a preſbyter of the church of Alexandria about the year 315; who owned Chriſt to be God, yet maintained him inferior to the Father even as to his deity, and his eſſence to be different from that of the Father, and that he was neither co-eternal nor co-equal with him: alſo that the Holy Ghoſt was not God.

The *Arians* owned, that the ſon was the word, but denied that word to have been eternal; aſſerting, that it had only been created before all other beings.—They held, that Chriſt had nothing of man in him, but the fleſh, with which the λογος or *word* was joined, which ſupplied the reſt.

The *Arians* were firſt condemned and anathematized by a council at Alexandria in 320, under Alexander, biſhop of that city; who accuſed *Arius* of impiety, and cauſed him to be expelled from the communion of the church: and afterwards by 380 fathers in the general council of Nice, aſſembled by Conſtantine in the year 325. But, notwithſtanding that, it was not extinguiſhed: on the contrary, it became the reigning religion, eſpecially in the Eaſt, where it obtained much more than in the Weſt. *Arius* was recalled from baniſhment by the emperor Conſtantine, in two or three years after the council of Nice; and the laws that had been enacted againſt him were repealed. In the year 335, Athanaſius, his zealous opponent, was depoſed and baniſhed into Gaul; and *Arius* and his followers were reinſtated in their privileges, and received into the communion of the church: in little more than a year after this, he fell a victim to the reſentment of his enemies, and died a tragical death, occaſioned probably by poiſon, or ſome other violence. The *Arian* party found a protector in Conſtantius, who ſucceeded his father in the empire of the Eaſt; and the zeal with which he abetted them, produced many animoſities and tumults to the time of his death, in the year 362. They underwent various revolutions, perſecuting and oppreſſed, under ſucceeding emperors, according to the degree of intereſt they had in the civil power; till, at length, Theodoſius the Great exerted every poſſible effort to ſuppreſs and diſperſe them.

The *Arians* were divided into various ſects, of which ancient writers give an account under the names of *Semi-Arians*, *Euſebians*, *Aetians*, *Eunomians*, *Acacians*, *Pſathyrians*, and others. But they have been commonly diſtributed into three claſſes, viz. the genuine *Arians*, *Semi-Arians*, and *Eunomians.*

Arianiſm was carried in the fifth century into Africa under the Vandals; and into Aſia under the Goths: Italy, the Gauls, and Spain, were alſo deeply infected with it: and towards the commencement of the ſixth century, it was triumphant in many parts of Aſia, Africa, and Europe. But it ſunk almoſt all at once, when the Vandals were driven out of Africa, and the Goths out of Italy, by the arms of Juſtinian. However, it revived again in Italy under the protection of the Lombards, in the ſeventh century.

Eraſmus ſeems to have aimed, in ſome meaſure, to reſtore *Arianiſm*, at the beginning of the ſixteenth century, in his commentaries on the New Teſtament: accordingly, he was reproached by his adverſaries, with *Arian* interpretations and gloſſes, *Arian* tenets, &c. To which he made little anſwer, ſave that there was no hereſy more thoroughly extinct than that of the *Arians: Nulla hereſis magis extincta quam Arianorum.* But the face of things was ſoon changed: Servetus, a Spaniard by nation, publiſhed in 1531, a little treatiſe againſt the Trinity; which once more ſet the hereſy of the *Arians* on foot in the Weſt.—Indeed he rather ſhewed himſelf a *Photinian*, than an *Arian*; only that he made uſe of the ſame paſſages of ſcripture, and the ſame arguments againſt the divinity of our Saviour, with the proper *Arians.*

It is true, Servetus had not, properly ſpeaking, any diſciples; but he gave occaſion, after his death, to the forming of a new ſyſtem of *Arianiſm* in Geneva, much more ſubtil and artful than his own; and which did not a little perplex Calvin.—From Geneva, the new *Arians* removed to Poland, where they gained conſiderable ground; but at length became SOCINIANS.

The appellation *Arian* has been indiſcriminately applied, in more modern times, to all thoſe who conſider Jeſus Chriſt as inferior and ſubordinate to the Father; and whoſe ſentiments cannot be ſuppoſed to coincide exactly with thoſe of the ancient *Arians.* Mr. Whiſton was one of the firſt divines, who revived this controverſy in the beginning of the eighteenth century. He was followed by Dr. Clarke, who publiſhed his famous book, intitled, "The Scripture Doctrine of the Trinity," &c. in conſequence of which, he was reproached with the title of *Semi-Arian.* He was alſo threatened by the convocation, and combated by argument. Dr. Waterland, who has been charged with verging towards *Tritheiſm*, was one of his principal adverſaries. The hiſtory of this controverſy, during the preſent century, may be found in a pamphlet, intitled, "An Account of all the conſiderable Books and Pamphlets that have been wrote "on either Side, in the Controverſy concerning the "Trinity, from the Year 1712; in which is alſo con-"tained, an Account of the Pamphlets written this laſt "Year, on each Side, by the Diſſenters, to the End of "the Year 1719." Publiſhed at London, 1720.

ARIANISM, the doctrine of *Arius*, who lived in the beginning of the fourth century. See UNITARIAN.

ARIDED, in *Aſtronomy*, a fixed ſtar of the ſecond magnitude, in the extremity of the ſwan's tail.

This is alſo called HIEREZIM, ADIGEGE, and ARIDEF.

ARIDELOSIS, αριδηλωσις, in *Rhetoric*, is ſometimes uſed for the figure commonly called SYNONYMIA.

ARIDULLAM, in *Natural Hiſtory*, the name of a foſſile ſubſtance, uſed in the Eaſt Indies in intermittent fevers. It is of a greeniſh yellow colour, and coarſe texture, and, when burnt, emits fumes ſmelling like arſenic. It is properly of the ZARNIC kind, though ſomewhat different from all the European kinds.

ARIDURA, in *Phyſic*, a dryneſs, or want of juice and moiſture in the parts.

ARIDURA is alſo uſed by ſome for an *aridity*, or conſumption.

ARIDURA is more particularly uſed to denote a hectic fever.

ARIDURA is more frequently uſed, by *Modern Writers*, to denote a particular atrophy, or waſting of ſome ſingle member of the body.

In which ſenſe, it amounts to the ſame with what we otherwiſe call WITHERING.

ARIES, or the *ram*, in *Aſtronomy*, the firſt of the twelve ſigns of the zodiac; from which alſo a twelfth part of the ecliptic takes its denomination.

The ſtars in the conſtellation *Aries*, in Ptolemy's catalogue, are 18; in Tycho's, 21; in Hevelius's, 27; in the Britannic catalogue, 66: the longitudes, latitudes, magnitudes, &c. whereof, are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.	Latitude.	Magnitude.
			° ′ ″	° ′ ″	
		♈	26 58 25	11 04 58N	7.6
			26 48 15	9 01 26	7.6
			26 36 18	5 57 3	6
			26 49 04	5 23 59	7.6
Preced. ſtar in the horn.	γ		28 51 00	7 08 58	4
5.					
Subſ. and more north ſtar in the horn.	β		29 37 59	8 28 16	3
		♉	0 54 20	10 57 12	
In the neck.	ι	♈	29 10 57	5 20 12	6
In the crown of the head.	λ	♉	1 22 15	10 47 47	5
			3 26 14	12 31 52	6.7
10.					
			4 02 12	12 04 02	6
That under the Lucida.	κ		2 55 08	9 13 29	6
Informis over the head.	α		3 19 18	9 57 12	2
			4 40 46	12 05 32	6
			2 43 49	5 56 58	6
15.					
			5 04 35	11 57 00	8
In the noſe, the more north of two.	η		3 46 50	7 22 45	6
			3 25 14	6 08 45	7
			1 49 50	1 46 25	6.7
			5 59 38	11 27 44	6
20.					
			5 43 40	10 46 20	7
In the noſe the more ſouth.	θ		4 32 25	5 43 39	6.5
	θ		4 41 59	5 27 23	7
In the extremity of the foremoſt foot.	ξ		3 00 49	3 33 31S.	5
			3 30 53	4 09 43	7
25.					
		♉	7 19 13	4 44 07N	6.7
			6 41 33	2 40 42	6.7
			7 31 45	4 41 30	6
			6 18 40	0 01 15S.	6.7
Informis, *alias* 16th of the triangle.			10 14 15	8 49 48N	7
30.					
			6 20 07	2 44 12	5.6
The north in the loins.	ν		9 48 35	6 07 56	6
Informis, *alias* the 17th of the triangle.			11 48 01	10 51 52	5
The ſouth in the loins.	μ		9 59 55	4 01 56	6
Informis, *alias* the 18th of the triangle.			12 35 47	11 17 13	4
35.					
			9 45 08	1 44 43	7
In the preced. hind knee.	ο		9 03 43	0 36 24S.	6
			8 17 35	3 21 50	7
Moſt northern of the informes.			14 00 55	12 28 08N	4
			10 52 39	1 56 14	6
40.					
Brighteſt of the informes.			13 51 45	10 25 37	3
In the leg.	π	♉	10 47 52	1 06 13	6
In the hindmoſt knee.	σ		10 35 46	1 19 37S.	6
	ρ		12 09 32	0 58 37	6
In the thigh or hip, the north.	ς		12 32 11	1 28 58	6.7
45.					
The ſouth.	ς		12 34 24	1 10 03	6.7
			13 42 08	3 34 37	6.7
In the root of the tail.	ε		14 10 09	4 08 01	5
Alias, 20th of the triangle.			16 13 50	8 51 53	7
			13 44 34	0 46 38	7
50.					
Alias, 21ſt of the triangle.			16 22 21	8 59 42	7
Alias, 22d of the triangle.			16 39 20	7 29 05	6
			15 03 56	0 16 22	7
			15 30 48	1 05 39	6.7
Alias, 23d of the triangle.			18 38 06	10 54 25	7
55.					
Alias, 24th of the triangle.			18 41 02	8 58 25	7.6
Foremoſt of the three in the tail.	δ		16 30 18	1 47 34	4
The middle.	ζ		17 36 34	2 51 19	5
			20 19 30	8 23 00	7
			20 03 05	6 59 28	7
60.					
Laſt of the tail.	τ		19 03 42	2 34 05	5
			20 56 54	8 45 25	6
The middle.	τ		19 18 49	2 04 57	6
			20 39 45	5 51 39	6
The third.			19 41 15	2 02 52	7
		♉	21 06 22	3 46 01	7

Aries alſo denotes a *battering ram*; or a military engine with an iron head, much in uſe among the ancients, to batter and beat down the walls of places beſieged.

Of this there were three kinds; the firſt rude and plain, the others artificial and compound.

The firſt ſeems to have been no more than a great beam, which the ſoldiers bore in their arms, and with one end of it, by main force, aſſailed the walls. This required a great force to work it; yet produced but a ſmall effect.

The ſecond or compound ram is deſcribed by Joſephus (*de Excid. Hieroſol.* 3.) thus: "The ram is a vaſt long "beam, like the maſt of a ſhip, ſtrengthened at one end "with a head of iron, ſomething reſembling that of a "ram, whence it took its name. This is hung by the "middle, with ropes, to another beam, which lies acroſs "a couple of poſts; and hanging thus equally balanced, "is, by a great number of men, violently thruſt for-"ward, and recoiled backward, and ſo ſhakes the wall "with its iron head. Nor is there any tower or wall ſo "thick or ſtrong, as to reſiſt the repeated aſſaults of "this forcible machine."

The third only differed from the former, in that it was covered with a χελωνη or ſcreen to guard the ſoldiers, whence it is alſo called *teſtudo arietaria.*

M. Felibien deſcribes a fourth ſort of *battering ram*, which ran on wheels; and was the moſt perfect and effectual of them all. Vitruvius affirms, that the *battering ram* was firſt invented by the Carthaginians, while they laid ſiege to Cadiz: theirs was the ſimple kind firſt mentioned: Pephaſmenos, a Tyrian, afterwards contrived to ſuſpend it with ropes; and finally, Polydus, the Theſſalian, to mount it on wheels, at the ſiege of Byzantium, under Philip of Macedon. Yet Pliny aſſures us, the *ram* was invented at the ſiege of Troy; and that it was this that gave occaſion to the fable of a wooden horſe.

The *engine* oppoſed to the *ram* was called *lupus, the wolf.*—Plutarch tells us, that Mark Antony, in the Parthian war, uſed a *ram* of 80 feet long; and Vitruvius aſſures us, they were ſometimes made 106, and ſometimes 120 feet long; to this great length, perhaps, the force of the engine was in great meaſure owing.

The *ram* was managed at once by a whole century of ſoldiers; ſo that it played continually, and without intermiſſion; being uſually covered with a *vinca*, to protect it from the attempts of the enemy.

ARIETATION. See **Earthquake.**

ARIETUM *levatio*, an ancient kind of ſportive exerciſe, probably the ſame with what of later times is called *running at the quintain.*

ARILLUS, in *Botany*, the exterior coat or tunic of the ſeed, which comes off of itſelf.

ARIMANIUS, one of the chief deities of Perſia. This deity, according to the philoſophy of Zoroaſter revived by the Manichæans, is the principle of evil, which at laſt will be totally vanquiſhed by Oroſmades, the author of good.

ARINGA, in *Ichthyology*, a name given by Paulus Jovius and others to the HERRING.

ARIOLI, in *Antiquity*, a kind of prophets, or religious conjurers, who by abominable prayers, and horrible ſacrifices at the altars of idols, procured anſwers to their queſtions concerning future events. Iſid. Orig. l. viii. c. 9.

Theſe are alſo called *barioli*, and their operation, *bariolation.*

Sometimes they were denominated *aruſpices*, or *haruſpices.*

The *arioli* were diſtinguiſhed by a ſlovenly dreſs, diſorderly and matted beards, hair, &c.

ARISARUM, or **Arum**, in *Botany*. See **Wake** *robin.*

ARISE.—*Licence to* **Arise.** See **Licence.**

ARISH, a Perſian long meaſure, containing 3197 Engliſh feet. Arbuth. Tab. 32.

The Perſian *ariſh*, according to Mr. Greaves, is a long meaſure equal to $38\frac{364}{1000}$ Engliſh inches.

ARISI, *rice*, an Indian word, which does not properly ſignify the plant which produces the rice, but the ſeed itſelf, when cleanſed from its huſk, and rendered fit for uſe. The Indians call it *ariſi* in this ſtate; but in the huſk, and upon the plant, they call it *nellon.*

ARISTA, in *Ichthyology*; ſee **Atherina.**—In *Aſtronomy*, the ſame as **Spica Virginis.**

Arista, in *Botany*, a long needle-like beard, that grows out from the huſk of corn, or graſs; called alſo the *awn.*

ARISTARCHUS, in its original Greek, ſignifies *beſt prince*; but in its ordinary uſe among the learned, denotes a very ſevere *critic*; there having been a learned grammarian of that name, who criticized on the verſes of the very beſt poets, as Homer, &c.

Hence we derive the title of ſeveral books; as *Ariſtarchus ſacer*, the name of Heiniſius's notes on the New Teſtament; *Ariſtarchus Anti-Bentleianus*, &c.

ARISTIDA, in *Botany*, a genus of the *triandria digynia* claſs: the calyx of which is a bivalve ſubulated glume, of the length of the corolla; the corolla is a glume of one valve, opening longitudinally, hairy at the baſe, and terminated by three ſub-equal patulous *ariſtæ*: the fruit is a connivent glume, containing a naked filiform ſingle ſeed, of the length of the corolla.

ARISTOCRACY, in *Politics*, a form of government, where the ſupreme power is lodged in the hands of the optimates, i. e. of a council, or ſenate compoſed of the principal perſons of a ſtate, either in reſpect of nobility, capacity, or probity.

The word is derived from αριστος, *optimus*, and κρατεω, *impero, I govern.*

The ancient writers of politics prefer the *ariſtocratical* form of government to all others.—The republic of Venice is an *ariſtocracy.*

Ariſtocracy ſeems to coincide with *oligarchy*; which, however, is more ordinarily uſed to ſignify a corruption of an *ariſtocratical* ſtate, where the adminiſtration is in the hands of too few; or where ſome one or two uſurp the whole power.

ARISTOLOCHIA, popularly called BIRTHWORT; a medicinal plant, uſed as an ingredient in Venice treacle, and many other compoſitions.

Cicero derives its name from its inventor *Ariſtolochus*: others from its virtues.—Theſe laſt ſuppoſe it formed from αριστος, *optimus*, and λοχεια, *lochia*, or *purgations*, becauſe it is found of excellent uſe in bringing down the lochia, or diſcharges of women newly delivered.

Some alexipharmic qualities are alſo aſcribed to them; on which account they have a place in the compoſition of the *theriaca*, and ſome other medicines of the ſame tribe. Externally applied, they are reckoned detergent and ſuppurative, and, for that reaſon, make a part of the ſtyptic plaſters of Crollius and Paracelſus. Taken internally, they are great reſolvers of viſcidities, and therefore much recommended againſt the gout, aſthma, &c. They allay the exceſſive pains after child-birth, and are very ſerviceable for the neceſſary purgations on that occaſion.

Some of the ſpecies are uſed in America, particularly one in Virginia, whoſe roots are uſed againſt the bites of venomous beaſts, in malignant fevers, and the ſmall-pox. Its alexipharmic virtue has occaſioned it to be called *Viperinum Virginiæ*, and *Serpentaria Virginiana*, otherwiſe SNAKE-*root*.

ARISTOPHANEUM, in the *Ancient Phyſic*, a name given to a kind of emollient plaſter, prepared of pitch, wax, opopanax, apochyma, and vinegar.

ARISTOTELIA, in *Antiquity*, annual feaſts, celebrated by the citizens of Stagiris, in honour of *Ariſtotle*, who was born there; and in gratitude for his having procured from Alexander the rebuilding, and re-peopling of that city, which had been demoliſhed by king Philip. Ammon. in Viti *Ariſtot.* Stanley's Hiſt. of Philoſ. P. vi. c. 8.

ARISTOTELIAN, ſomething that relates to the philoſopher *Ariſtotle.*—Thus we ſay, an *Ariſtotelian* dogma, the *Ariſtotelian* ſchool, &c.

The philoſopher from whom the denomination ariſes, was the ſon of Nicomachus, phyſician of Amyntas king of Macedonia, born in the year of the world 3566, before Chriſt 348, at Stagira, a town of Macedonia, or, as others ſay, of Thrace; whence he is alſo called the *Stagirite.*

At ſeventeen years of age he entered himſelf a diſciple of Plato, and attended in the academy till the death of that philoſopher. Repairing afterwards to the court of king Philip, at his return he found that Xenocrates, during his abſence, had put himſelf at the head of the academic ſect; upon which he choſe the Lyceum for the future ſcene of his diſputation.

It being his practice to philoſophize walking, he got the appellation *Peripateticus*; whence his followers were alſo called *Peripatetics.*

In the ſchools, *Ariſtotle* is called the *Philoſopher*; and the *prince of Philoſophers.* Such was the veneration paid to him, that his opinion was allowed to ſtand on a level with reaſon itſelf; nor was there any appeal from it admitted, the parties, in every diſpute, being obliged to ſhew, that their concluſions were no leſs conformable to *Ariſtotle*'s doctrine than to truth.

Laertius, in his life of *Ariſtotle*, enumerates his books, to the number of 4000; of which, ſcarce above 20 have ſurvived to our age: they may be reduced to five heads; the firſt, relating to poetry and rhetoric; the ſecond, to logics; the third, to ethics and politics; the fourth, to phyſics; and the fifth, to metaphyſics. In all which, as there are many things excellent, particularly what relate to poetry, rhetoric, and the paſſions; ſo there are others, which the improvements of later ages have taught us to explode and deſpiſe.

ARISTOTELIAN *philoſophy*, the philoſophy taught by *Ariſtotle*, and maintained by his followers.

The *Ariſtotelian* is otherwiſe called the *Peripatetic philoſophy*; the riſe and fate whereof, ſee under PERIPATETICS.

ARISTOTELIANS, a ſect of philoſophers, otherwiſe called *Peripatetics.*

The *Ariſtotelians* and their *dogmata* prevailed for a long while, in the ſchools and univerſities; even in ſpite of all the efforts of the Carteſians, Newtonians, and other corpuſcularians. But the ſyſtems of the latter have at length gained the pre-eminence; and the Newtonian philoſophy in particular is now very generally received.

The principles of *Ariſtotle*'s philoſophy, the learned agree, are chiefly laid down in the four books *de Cœlo*: the eight books of *Phyſical Auſcultation*, φυσικης ακροασεως, belonging rather to logics, or metaphyſics, than to phyſics. Inſtead of the more ancient ſyſtems, he introduced *matter*, *form*, and *privation*, as the principles of all things; but he does not ſeem to have derived much benefit from them in natural philoſophy. His doctrines are, for the moſt part, ſo obſcurely expreſſed, that it has not yet been ſatisfactorily aſcertained what were his ſentiments on ſome of the moſt important ſubjects. He attempted to refute the Pythagoræan doctrine concerning the twofold motion of the earth; and pretended to demonſtrate, that the matter of the heavens is ungenerated, incorruptible, and ſubject to no alteration: and he ſuppoſed that the ſtars were carried round the earth in ſolid orbs.

The reader will find a diſtinct and candid account of the logical part of his philoſophy, by Dr. Reid, Profeſſor of Moral Philoſophy in the Univerſity of Glaſgow, in the ſecond volume of Lord Kaimes' Sketches of the Hiſtory of Man. Edinb. 4to. 1774. p. 165.

J. Harris, Eſq. has publiſhed a ſenſible commentary on his Categories, under the title of *Philoſophical* ARRANGEMENTS.

See a more particular account of the principles of the *Ariſtotelian* philoſophy, under the articles ACCIDENT, ANTIPERISTASIS, ELEMENT, FUGA VACUI, FORM, PRINCIPLE, QUALITY, SYMPATHY, &c.

ARISTOTELICA *rota.* See ROTA.

ARISTOTUS, in *Ichthyology*, a name given by Albertus and others to the fiſh which we call the SHAD, or the mother of herrings. See THRISSA and CLUPEA.

ARITHMANCY; ſee ARITHMOMANCY.

ARITHMETIC, ARITHMETICA, the art of numbering; or, that part of mathematics, which conſiders the powers and properties of numbers, and teaches how to compute or calculate truly, and with expedition and eaſe.

Some authors chooſe to define *arithmetic*, the ſcience of diſcrete quantity.

Arithmetic conſiſts chiefly in the four great rules or operations of ADDITION, SUBTRACTION, MULTIPLICATION, and DIVISION.

It is true, for the facilitating and expediting of computations, mercantile, aſtronomical, &c. divers other uſeful rules have been contrived; as, the rules of proportion, of alligation, of falſe poſition, extraction of ſquare and cube roots, progreſſion, fellowſhip, intereſt, barter, rebate, reduction, tare and tret, &c.—But theſe are only applications of the firſt four rules. See theſe rules under their ſeveral heads, ADDITION, &c.

We have very little intelligence about the origin and invention of *arithmetic*: hiſtory neither fixes the author, nor the time.—In all probability, however, it muſt have taken its riſe from the introduction of commerce; and conſequently it ſhould be of Tyrian invention.

From Aſia it paſſed into Egypt (Joſephus ſays, by means of Abraham). Here it was greatly cultivated and improved; inſomuch that a large part of the Egyptian philoſophy and theology ſeems to have turned altogether upon numbers. Hence thoſe wonders related by them about unity, trinity; the numbers, ſeven, ten, four, &c. In effect, Kircher, in his Oedip. Ægypt. tom. ii. p. 2. ſhews, that the Egyptians explained every thing by numbers; Pythagoras himſelf affirming, that the nature of numbers goes through the whole univerſe; and that the knowledge of numbers is the knowledge of the Deity.

From Egypt *arithmetic* was tranſmitted to the Greeks, who handed it forward, with great improvements, which it had received by the computation of their aſtronomers, to the Romans; from whom it came to us.

The ancient *arithmetic*, however, fell far ſhort of that of the moderns: moſt of what they did, was to conſider the various diviſions of numbers; as appears from the treatiſes of Nicomachus, written in the third century of Rome, and that of Boethius, ſtill extant. A compendium of the ancient *arithmetic*, written in Greek, by Pſellus, in the ninth century from our Saviour, was given us in Latin by Xylander, in 1556.—A more ample work of the ſame kind was written by Jordanus, in the year 1200, publiſhed with a comment by Faber Stapulenſis in 1480. A treatiſe of *arithmetic* was alſo written by Johannes de Sacro Boſco, who died about the year 1256.

Arithmetic, under its preſent ſtate, is variouſly divided into different kinds; *theoretical*, *practical*, *inſtrumental*, *logarithmical*, *numerous*, *ſpecious*, *decimal*, *dynamical*, *tetractycal*, *duodecimal*, *ſexageſimal*, &c.

ARITHMETIC, *theoretical*, is the ſcience of the properties, relations, &c. of numbers, conſidered abſtractedly;

with the reaſons and demonſtrations of the ſeveral rules. Euclid furniſhes a *theoretical* ARITHMETIC, in the ſeventh, eighth, and ninth books of his Elements.—Barlaamus Monachus has alſo given a theory for demonſtrating the common operations, both in integers and broken numbers, in his Logiſtica, publiſhed in Latin by J. Chambers, an Engliſhman, in 1600.—To which may be added, Lucas de Borgo, who, in an Italian treatiſe publiſhed in 1523, gives the ſeveral diviſions of numbers from Nicomachus, and their properties from Euclid; with the algorithm, both in integers, fractions, extractions of roots, &c.

Arithmetic, *practical*, is the art of numbering or computing; that is, from certain numbers given, for finding certain others, whoſe relation to the former is known.

As, if a number be required equal to two given numbers 6 and 8.

The firſt entire body of *practical arithmetic*, was given by Nic. Tartaglia, a Venetian, in 1556, conſiſting of two books; the former, the application of *arithmetic* to civil uſes; the latter, the grounds of algebra. Something had been done before by Stifelius, in 1544, where we have ſeveral particulars concerning the application of irrationals, coſſics, &c. no where elſe to be met with.

We omit other mere practical authors, which have come ſince, the number whereof is almoſt infinite; as Gemma Friſius, Metius, Clavius, Ramus, Buckley, Diggs, Record, Wingate, Cocker, Leybourn, Malcolm, &c. &c. The *theory* of *arithmetic* is joined with the *practice*, and even improved in ſeveral parts, by Maurolycus, in his *Opuſcula Mathematica*, 1575; by Heneſchius, in his *Arithmetica Perfecta*, 1609, where the demonſtrations are all reduced into the form of ſyllogiſms; and by Taquet, in his *Theoria & Praxis Arithmetices*, 1704.

Arithmetic, *harmonical*, is ſo much of the doctrine of numbers, as relates to the making the compariſons, reductions, &c. of muſical intervals.

Arithmetic, *inſtrumental*, is that where the common rules are performed by means of inſtruments contrived for eaſe and diſpatch; ſuch are ſeveral ſorts of ſcales, and ſliding-rules; ſuch, more particularly, are Napier's bones, deſcribed under their proper article: Sir Sam. Morland's inſtrument, the deſcription whereof was publiſhed by himſelf, in 1666; that of M. Leibnitz, deſcribed in the Miſcellan. Berolin. and that of Polenus, publiſhed in the Venetian Miſcellany, 1709.

The Chineſe have little regard to any rules in their calculations; inſtead of which, they uſe an inſtrument already deſcribed. See Abacus and Shwan-pan.

To theſe may be added,

Arithmetic, *logarithmetical*, performed by tables of logarithms.

The beſt piece on this ſubject, is Hen. Brigg's Arithmetica Logarithmica, 1624.

To this head may alſo be added, the Univerſal Arithmetical Tables of Proſthaphæreſes, publiſhed in 1610, by Herwart ab Hohenburg; whereby multiplication is eaſily and accurately performed by addition, and diviſion by ſubtraction.

Arithmetic, *logiſtical*. See Logistical.

Arithmetic, *numerous*, is that which gives the calculus of numbers, or indeterminate quantities; and is performed by the common numeral, or Arabic characters.

Arithmetic, *ſpecious*, is that which gives the calculus of quantities; uſing letters of the alphabet inſtead of figures, to denote the quantities.

Specious arithmetic coincides with what we uſually call *algebra*, or *literal arithmetic*.

Dr. Wallis has joined the numeral with the literal calculus; and by means hereof, demonſtrated the rules of fractions, proportions, extractions of roots, &c. a compendium of which is given by Dr. Wells, under the title of Elementa Arithmeticæ, an. 1698.

Arithmetic, *decimal*, or *decadal*, is that performed by a ſeries of ten characters, ſo that the progreſſion is from 10 to 10.

Such is the common *arithmetic* among us, which makes uſe of the ten Arabic figures, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9; after which we begin 10, 11, 12, &c.

This method of computation is not very ancient, being utterly unknown to the Greeks and Romans.—It was introduced into Europe by Gerbert, who was afterwards pope, under the name of Sylveſter II. who borrowed it from the Moors of Spain.—No doubt it took its origin from the ten fingers of the hands, which were made uſe of in computations before *arithmetic* was brought into an art.

The Eaſtern miſſionaries aſſure us, that to this day the Indians are very expert at computing on their fingers, without any uſe of pen and ink. Let. Edif. & Cur.—Add, that the natives of Peru, who do all by the different arrangement of grains of maiſe, outdo any European, both for ſureneſs and diſpatch, with all his rules.

Arithmetic, *decimal*, is alſo uſed for the doctrine of decimal fractions.

Arithmetic, *binary*, or *dyadic*, is that wherein only two figures, unity, or 1, and 0, are uſed. See Binary *Arithmetic*.

M. Dangicourt, in the Miſcell. Berol. gives us a ſpecimen of the uſe hereof in arithmetical progreſſions; where he ſhews, that the laws of progreſſion may be more eaſily diſcovered hereby, than in any other method where more characters are uſed.

Arithmetic, *tetractic*, is that wherein only the figures 1, 2, 3, and 0, are uſed.

We have a treatiſe of this *arithmetic*, by Erhard Weigel; but both *binary*, and this, are little better than curioſities, eſpecially with regard to practice; inaſmuch as the numbers may be much more compendiouſly expreſſed by *decadal arithmetic*, than by either of them.

Arithmetic, *vulgar*, is that converſant about integers and vulgar fractions.

Arithmetic, *ſexageſimal*, or *ſexagenary*, is that which proceeds by ſixties; or the doctrine of ſexageſimal fractions; ſuppoſed to have been invented by Ptolemy, in the ſecond century. In this notation, the integral numbers from 1 to 59 were expreſſed in the common way; then *ſixty* was called a *ſexagena prima*, and marked I′; twice *ſixty*, or 120, II′; and ſo on to 59 times 60, or 3540, which is LIX′. *Sixty* times *ſixty*, or 3600, was called *ſexagena ſecunda*, and marked with two daſhes, I″; twice 3600, I″; and ten times 3600, X″, &c. And in this way the notation was continued. But if a number leſs than *ſixty* was joined with any of the *ſexageſimal* integers, their proper expreſſion was annexed without the daſh; e. g. four times 60 and 25 is IV′ XXV; the ſum of twice 60, ten times 3600, and 15, is X″ II′ XV, &c. So near did the inventor of this method approach to the Arabic notation: inſtead of *ſexageſimal* progreſſion, he had only to ſubſtitute *decimal*; to make the ſigns of numbers from 1 to 9 ſimple characters, and to introduce a character which ſignifies nothing by itſelf, ſerving only to fill up places. The *ſexagenæ integrorum* were ſoon laid aſide, after the introduction of the Arabic notation; but the *ſexageſimal* fractions continued till the invention of *decimals*. See Sexagesimal.

Sam. Reyher has invented a kind of ſexagenal rods, in imitation of Napier's bones, by means whereof the *ſexagenary arithmetic* is eaſily performed.

Arithmetic, *political*, is the application of *arithmetic* to political ſubjects; as, the ſtrength and revenues of princes, number of inhabitants, births, burials, &c. See Political *Arithmetic*.—To this head may be referred the doctrine of Chances, Gaming, &c.

Arithmetic *of infinites*, is the method of ſumming up a ſeries of numbers conſiſting of infinite terms; or of finding the ratios thereof.

This method was firſt invented by Dr. Wallis; as appears from his Opera Mathematica, where he ſhews its uſe in geometry, in finding the areas of ſuperficies, and the contents of ſolids, and their proportions.—But the method of FLUXIONS, which is an univerſal *arithmetic* of infinites, performs all this much more eaſily; and multitudes of other things, which the former will not reach.

Arithmetic *of rationals* and *irrationals*. See Rational, &c.

ARITHMETICAL *complement* of a logarithm, is what the logarithm wants of 10.0000000.

Thus the *arithmetical complement* of 7.1079054, is 2.8920946, where each figure but the laſt is ſubtracted from 9, and that from 10.

It is ſometimes alſo uſed in trigonometrical calculations, when radius or 10.0000000 is the firſt term, to ſave the labour of ſubtraction. It is diſtinguiſhed by placing a point before, and another after the index; thus, .2.8920946.

Arithmetical *medium*, or *mean*. See Medium.

Arithmetical *progreſſion*. See Progression.

Arithmetical *proportion*. See Proportion.

Arithmetical *ratio*. See Ratio.

ARITHMOMANCY, a kind of divination, or method of foretelling future events, by means of numbers.

The word is compounded of *αριθμος*, *number*, and *μαντεια*, *divination*.

The GEMATRIA, which makes the firſt ſpecies of the Jewiſh CABBALA, is a ſort of *arithmomancy*.

ARK, or Arc, *arcus*, in *Geometry*, *Aſtronomy*, &c. See Arch.

Ark, Arca, in the ſcripture-language, denotes a kind of floating veſſel built by Noah, for the preſervation of the ſeveral ſpecies of animals from the deluge.

The *ark* has afforded ſeveral points of curious inquiry among the critics and naturaliſts, relating to its form, capacity, materials, time of building, place of reſting after the flood, &c.

Noah is computed to have been an hundred years in building the *ark*, viz. from the year of the world 1555, to the flood, which happened in the year 1656; at leaſt this is the common opinion of the learned. Origen, lib. iv. contra Celſ. St. Auſtin, de Civit. Dei, lib. xv. c. 27. and contra Fauſtum, lib. xii. c. 18. and in his Queſt. 5. and 23. on Gen. Rupert, lib. iv. in Gen. xx. aſſert as much; and are followed by Salian, Torniel, Spondeus, Pelletier, &c.

Yet Beroſus affirms, that Noah only began to build the *ark* ſeventy-eight years before the flood: Solomon Jarchi, on the other hand, will have it to have been an hundred and twenty years in building, Tanchuma fifty-two, and the Mahometans only two years. See the texts, Gen. vi. &c. F. Fournier, in his Hydrography, gives into the opinion of the fathers; noting, that the hands employed in it were only Noah and his three ſons. To this purpoſe he alledges the inſtance of Archias of Corinth, who, with the help of three hundred workmen, built Hiero's great ſhip in one year. Add, that Noah's eldeſt ſon was not born till about the time when the *ark* was begun, and the younger after; ſo that it was a long time before they could do their father any ſervice.—However, for ſo large a building, a prodigious number of trees muſt have been required, which would employ a great number of workmen to fell and hew, were it poſſible for three men to have laid them.

The wood whereof the *ark* was built, is called in ſcripture עצי גפר, *etſe gopher, gopher wood:* and in the LXX. *ξυλα τετραγωνα, ſquare timbers.* Onkelos and Jonathan render *gopher* by קדרום, *kedros, cedar:* St. Jerom, in the Vulgate, by *ligna lævigata, planed wood*; and elſewhere, *ligna bituminata*, q. d. *pitched wood.* Kimchi tranſlates it, *wood moſt proper to float*; Vatable, *light wood*, which ſwims in the water without corrupting: Junius Tremellius, and Buxtorf, a kind of cedar, by the Greeks called κεδρελατη; Avenarius and Munſter, *pine*; Fuller and Bochart, *cypreſs*; others, *fir*; Caſtalio, *turpentine*, &c.—Pelletier prefers the opinion of thoſe who hold the *ark* made of cedar: his reaſons are, the incorruptibility of that wood; the great plenty thereof in Aſia, whence Herodotus and Theophraſtus relate, that the kings of Egypt and Syria built whole fleets of it in lieu of deal; and the common tradition throughout the Eaſt imports, that the *ark* is preſerved entire to this day on mount Ararat.

The dimenſions of the *ark*, as delivered by Moſes, are three hundred cubits in length, fifty in breadth, and thirty in height; which, compared with the great number of things it was to contain, ſeem to many to have been too ſcanty. And hence an argument has been drawn againſt the authority of the relation. Celſus long ago laughed at it, calling it *κιβωτον αλλοκοτον, the abſurd ark.* To ſolve this difficulty, many, both of the ancient fathers, and later critics, have been put to very miſerable ſhifts. Origen, St. Auguſtine, and others, maintain, that by the cubits here ſpoken of, we are to underſtand the Egyptian geometrical cubits, equal, according to them, to ſix vulgar cubits, or nine feet. But the truth is, it does not appear there ever was any ſuch meaſure as a geometrical cubit, either among Egyptians or Jews.—Others account for it, by aſſerting the ſtature of mankind, in the firſt ages, to have been much greater than in our days; and, conſequently, the cubit, which is taken for a part of the human body, proportionably larger. But this does not avail, ſince the ſame reaſon will infer an equal augmentation of the ſize of other animals.—Others ſuppoſe the ſacred cubit to be that here ſpoken of, which was a hand's breadth longer than the civil one: but this only affords a ſmall ſupply; beſide, the ſacred cubit does not appear to have been ever uſed, except in ſacred edifices, as the temple and tabernacle.

This difficulty is much better ſolved by Buteo and Kircher, who, ſuppoſing the common cubit of a foot and a half, prove geometrically, that the *ark* was abundantly ſufficient for all the animals ſuppoſed to be lodged therein. The capacity of the *ark* will be doubled, if we admit, with Cumberland, &c. that the Jewiſh cubit was 21.888 inches.—Snellius computes the *ark* to have been above half an acre in area. Cuneus, and others, have alſo calculated the capacity of the *ark*.—Dr. Arbuthnot computes it to have been 81062 tuns.—Father Lamy ſays, that it was an hundred and ten feet longer than the church of St. Mary at Paris, and ſixty-four feet narrower; to which his Engliſh tranſlator adds, that it muſt have been longer than St. Paul's church in London, from weſt to eaſt, broader than that church is high in the inſide, and about fifty-four feet in height, of our meaſure.

The things contained in the *ark* were, beſides eight perſons of Noah's family, one pair of every ſpecies of unclean animals, and ſeven pair of every ſpecies of clean animals, with proviſions for them all, during the whole year.—The former appears, at firſt view, almoſt infinite; but if we come to a calculus, the number of ſpecies of animals will be found much ſmaller than is generally imagined; out of which, in this caſe, are to be excepted ſuch animals as can live in the water; and biſhop Wilkins imagines, that only ſeventy-two of the quadruped kind needed a place in the *ark*.

It appears to have been divided into three ſtories; and it is agreed on, as moſt probable, that the loweſt ſtory was deſtined for the beaſts, the middle for the food, and the upper for the birds, with Noah and his family; each ſtory being ſubdivided into different apartments, ſtalls, &c. Though Joſephus, Philo, and other commentators, add a kind of fourth ſtory, under all the reſt; being, as it were, the hold of the veſſel, to contain the ballaſt, and receive the filth and fæces of ſo many animals.

Drexelius makes three hundred apartments; father Fournier, three hundred and thirty-three; the anonymous author of the Queſtions on Geneſis, four hundred; Buteo, Temporarius, Arias Montanus, Wilkins, Lamy, and others, ſuppoſe as many partitions as there were different ſorts of animals.—Pelletier only makes ſeventy-two, viz. thirty-ſix for the birds, and as many for the beaſts: his reaſon is, that if we ſuppoſe a greater number, as three hundred and thirty-three, or four hundred, each of the eight perſons in the *ark* muſt have had thirty-ſeven, forty-one, or fifty ſtalls to attend and cleanſe daily, which he thinks impoſſible. But there is not much in this; to diminiſh the number of ſtalls, without a diminution of the animals, is vain; it being, perhaps, more difficult to take care of three hundred animals in ſeventy-two ſtalls, than in three hundred.

Buteo computes, that all the animals contained in the *ark* could not be equal to five hundred horſes; he even reduces the whole to the dimenſions of fifty-ſix pair of oxen. Father Lamy enlarges it to ſixty-four pair, or an hundred and twenty-eight oxen; ſo that ſuppoſing one ox equal to two horſes, if the *ark* had room for two hundred and fifty-ſix horſes, there muſt have been room for all the animals. And the ſame author demonſtrates, that one floor of it would ſuffice for five hundred horſes, allowing nine ſquare feet to an horſe.

As to the food in the ſecond ſtory, it is obſerved by Buteo from Columella, that thirty or forty pounds of hay ordinarily ſuffices an ox for a day; and that a ſolid cubit of hay, as uſually preſſed down in our hay-racks, weighs about forty pounds; ſo that a ſquare cubit of hay is more than enough for one ox one day.—Now it appears that the ſecond ſtory contained 150,000 ſolid cubits; which, divided between two hundred and ſix oxen, will afford each more hay by two thirds than he can eat in a year.

Biſhop Wilkins computes all the carnivorous animals equivalent, as to the bulk of their bodies, and their food, to twenty-ſeven wolves; and all the reſt to two hundred and eighty beeves. For the former he allows the ſuſtenance of 1825 ſheep, and for the latter 109,500 cubits of hay: all which will be eaſily contained in the two firſt ſtories, and much room to ſpare.—As to the third ſtory, no body doubts of its being ſufficient for the fowls, with Noah, his ſons and daughters.

Upon the whole, the learned biſhop remarks, that of the two, it appears much more difficult to aſſign a number and bulk of neceſſary things to anſwer the capacity of the *ark*, than to find ſufficient room for the ſeveral ſpecies of animals already known to have been there.—This he attributes to the imperfection of our liſts of animals, eſpecially thoſe of the unknown parts of the earth; adding, that the moſt expert mathematician, at this day, could not aſſign the proportions of a veſſel better accommodated to the purpoſe, than is here done; and hence finally concludes, that "the capacity of the "*ark*, which had been made an objection againſt ſcrip- "ture, ought to be eſteemed a confirmation of its divine "authority; ſince, in thoſe ruder ages, men, being leſs "verſed in arts and philoſophy, were more obnoxious "to vulgar prejudices than now; ſo that had it been an "human invention, it would have been contrived ac- "cording to thoſe wild apprehenſions which ariſe from a "confuſed and general view of things; as much too "big, as it has been repreſented too little."

Ark *of the Covenant*, in ſcripture, denotes a kind of cheſt, wherein, by God's command, Exod. xxv. 16. were kept the two tables of ſtone, whereon God had engraven the ten commandments, given to Moſes on the mount, and held in high veneration among the Hebrews. It contained likewiſe the golden pot that had manna and Aaron's rod, and the tables of the covenant. Heb. ix. 4.

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We have an account of a man whoſe *arm*, with the *ſcapula*, was torn off by a mill, and who was cured without any hæmorrhage. Phil. Tranſact. Nº 449. ſec. 5.

Arm, in the *Manege*, is applied to a horſe, when he endeavours to defend himſelf againſt the bit; to prevent obeying, or being checked thereby.

A horſe is ſaid to *arm* himſelf, when he preſſes down his head, and bends his neck, ſo as to reſt the branches of the bridle upon his briſket; in order to withſtand the effort of the bit, and guard his bars, and his mouth.

A horſe is ſaid to *arm himſelf with the lips*, when he covers the bars with his lips, and deadens the preſſure of the bit.—This frequently happens in thick-lipped horſes.—The remedy is by uſing a bit-mouth, forged with a canon or ſcratch-mouth, broader near the bankers than at the place of its preſſure, or reſt upon the bars.

For *arming againſt the bit*, the remedy is, to have a wooden ball covered with velvet, or other matter, put on his chaul; which will ſo preſs him between the jawbones, as to prevent his bringing his head ſo near his breaſt.

Arm, in *Geography*, is uſed for a branch of a ſea, or river. Italy and Sicily are only parted by an *arm* of the ſea.—St. George's *arm*, in the Mediterranean, is the Thracian Boſphorus.

Arm, among *Gardeners*, is ſometimes uſed in reſpect of cucumbers and melons, in the ſame ſenſe as branch, of other plants.

Arm is alſo uſed figuratively for *power*.—The ſecular *arm* is the lay or temporal authority of a ſecular judge; to which recourſe is had for the execution of the ſentences paſſed by eccleſiaſtical judges.

The church ſheds no blood: even the judges of inquiſition, after they have found the perſon guilty, ſurrender him to the ſecular *arm*.

The council of Antioch, held in 341, decrees, that recourſe be had to the ſecular *arm* to repreſs thoſe who refuſe obedience to the church: for ſecular *arm*, they here uſe exterior power.

Arm, in the *Military Art*, *Heraldry*, &c. See ARMS and ARMOUR.

Arm, in *Sea-Language*.—A ſhip is ſaid to be *armed*, when fitted out, and provided, in all reſpects, for war.

Armed ſhip more peculiarly denotes a veſſel that is occaſionally taken into the ſervice of government in time of war, and employed to guard ſome particular coaſt, or attend on a fleet. All ſhips of this ſort are commanded by an officer of the navy, and are upon the ſame eſtabliſhment with the king's ſloops.

Alſo, a croſs-bar ſhot is ſaid to be *armed*, when ſome rope-yarn, or the like, is rolled round about one end of the iron bar which runs through the ſhot, both that the ſhot may be the better rammed down into the gun, and leſt the ſharp end of the bar ſhould catch into any honeycombs within the cylinder of the piece.

Arm, *yard*. See YARD.

Arm, in reſpect of the *Magnet*.—A load-ſtone is ſaid to be *armed*, when it is capped, caſed, or ſet in iron or ſteel; in order to make it take up the greater weight; and alſo to diſtinguiſh readily its poles.

It is ſurpriſing, that a little iron faſtened to the poles of a MAGNET, ſhould ſo vaſtly improve its force, as to render it 150 times ſtronger than when naked. Mr. Butterfield told Dr. Liſter, that ſome load-ſtones would gain much more, and others vaſtly leſs, by *arming*, than one would expect; and he has obſerved, that there are ſome magnets, which ſeem to act more powerfully *unarmed*, than *armed*. Whether the magnetic force of ſome paſſes more eaſily through iron than that of others; or whether the effect depends on the different quality of iron, experiments have not yet aſcertained.—A ſtrong load-ſtone ought to have thick irons, and a weak one but thin ones: ſo that a ſtone may be eaſily overſhod.

The uſual armour of a LOAD-*ſtone*, in form of a right-angled *parallelepipedon*, conſiſts of two thin pieces of ſteel or iron, of a ſquare figure, and a thickneſs proportionable to the goodneſs of the ſtone: if a weak ſtone have a ſtrong armour, it will produce no effect; and if the armour of a ſtrong load-ſtone be too thin, its effect will not be ſo conſiderable as when thicker.—The proper thickneſs is found by filing it thinner and thinner, till its effect is found at the greateſt poſſible ſtrength.

The armour of a ſpherical LOAD-*ſtone*, conſiſts of two ſteel ſhells faſtened to one another by a joint, and covering a good part of the convexity of the ſtone. This alſo is to be filed away till the effect is found the greateſt.

Kircher, in his book *de Magnete*, tells us, that the beſt way to *arm* a load-ſtone, is, to drill a hole through the ſtone from pole to pole, and in that, to place a ſteel rod of a moderate length; which rod, adds he, will take up more weight at the end, than the ſtone itſelf *armed* the common way can do.

Gaſſendus and Cabæus preſcribe the ſame method of *arming* a load-ſtone: but Muſchenbroek has found, by repeated trials, that the uſual armour already mentioned is preferable to that obtained in this way; and he gives the following directions for preparing it. When the poles of the magnet have been diſcovered, by means of ſteel filings and a ſmall needle, he directs that thoſe parts where the poles lie ſhould be rubbed or ground into parallel planes, without ſhortening the polar axis; and the magnets may be afterwards ſhaped into the figures of cubes or parallelopipeds, or any other that may be found moſt convenient. Plates of the ſofteſt iron ſhould then be prepared, of the ſame length and breadth with the whole polar ſides of the propoſed magnet. The thickneſs of theſe plates, ſo as that they may admit and convey the greateſt quantity of the magnetic virtue, is to be previouſly determined by experiment, in a manner which he preſcribes for the purpoſe: a thicker piece of iron is to be annexed at right angles to theſe plates, which is called *pes armaturæ*, the foot or baſe of the armour: the plates, accurately ſmoothed and poliſhed, are to be applied and firmly tied to each of the polar ſides, whilſt the thicker part or baſe is made cloſely to touch the lower part of the magnet. In this way, he ſays, almoſt all the magnetic virtue iſſuing from the poles enters into the armour, is directed to the baſe, and condenſed by means of its roundneſs, ſo as to ſuſtain the greateſt weight of iron. Phyſ. Exper. and Geom. Diſſert. 1729. p. 131. See MAGNET *armed*.

ARMA *dare*, to give arms, in ſome ancient charters, ſignifies to dub, or make a knight.

ARMA *deponere*, to lay down arms, was a puniſhment anciently enjoined when a man had committed an offence. Leg. Hen. I.

ARMA *mutare*, q. d. to change arms, was a ceremony uſed to confirm a league or friendſhip.

ARMA *moluta* were ſharp weapons: Fleta calls them *arma emolita*.

ARMA *reverſata*, inverted arms, was a puniſhment when a man was convicted of treaſon or felony.

ARMADA, a Spaniſh term, ſignifying a fleet of men of war. The *armada* which attempted to invade England in the time of queen Elizabeth, is famous in hiſtory; it was partly ſcattered by the wind, and partly ſubdued by the Engliſh fleet. On which occaſion a medal was ſtruck with this motto, *Afflavit Deus, et diſſipantur*.

ARMADILLA, in the Spaniſh America, denotes a ſquadron of men of war, to the number of ſix or eight, from twenty-four to fifty pieces of cannon, which the king maintains, to prevent foreigners from trading with the Spaniards and the Indians, both in time of war, and peace.

The veſſels of this *armadilla* are thoſe that have been ſo much talked of, under the name of *guarda coſtas*.

They have even power to take all Spaniſh merchantſhips they meet with on the coaſts, that have not licences from the king.

The South ſea has its *armadilla*, as well as the North ſea. The ordinary abode of the former are at Calao, a port of Lima; that of the latter, at Carthagena.

ARMADILLO, in *Zoology*, the name of an animal ſomewhat approaching to the *hedge*-HOG kind, and called by the Latin authors the ECHINUS *Braſilienſis*. It is alſo called *tatou*; and by Linnæus, *dalypus cingulis novem, palmis tetradactylis, plantis pentadactylis*.

We have ſeveral ſpecies of this creature deſcribed to us; but the moſt uſual, is of the figure and ſize of a large pig, and has a bony covering, which extends over the whole body, the head and the tail. This is compoſed of a number of very elegant ſcales, which have two junctures near the hinder part of the head, by means of which the creature is able to move its neck. On the back there are ſeven diviſions, with a thick membrane between; and in all other parts of the body the ſhell is whole. The legs, ſo far as they come in ſight, are in the ſame manner defended by a bony covering. The feet are made like hands; each has five toes, and the nails are round. Its colour is a ſort of reddiſh tawny. It digs up the ground with its noſe, in the manner of a hog, but much more nimbly; the tail is thick at the inſertion, and tapers to the extremity. The creature feeds on roots and fruits, as potatoes, melons, and the like; but will eat meat alſo if it comes in its way. It is uſually found in dry places. Ray.

This creature gathers himſelf up, when he pleaſes, head, feet, and tail, within his ſhell, and becomes as round as a ball; and this he does, not only when purſued, but every time he ſleeps. He is ſo good at digging, that, unleſs tied up, he will make his way out under the walls of a houſe. He is extremely valued among the Braſilians, for the whiteneſs and delicacy of his fleſh, and furniſhes a principal diſh at their beſt feaſts. The plates of his ſhell, powdered and given in a doſe of a dram, are eſteemed a ſudorific, and a remedy for the *lues venerea*. See *Tab. of Quadrupeds*, N° 21.

See a deſcription and drawing of one of theſe animals, in Phil. Tranſ. vol. LIV. N° 97.

ARMAMAXI, in *Antiquity*, a kind of Scythian chariots, or carriages, compoſed of two wheels, variouſly adorned with crowns, ſhields, breaſt-plates, and other ſpoils, carried in proceſſion after the images of the gods and great men. The word is compoſed of the Latin *arma*, and the Greek *αμαξα*, *plauſtrum*, *carriage*.

Theſe were ſometimes called *amaxi*, or *amaxæ*. Pitiſc. Lex. Ant.

ARMAMENT, a large body of forces, raiſed and provided with the furniture of war, either for land or ſea ſervice.

ARMAN, among *Farriers*, a confection of great efficacy to prevent a total loſs of appetite in horſes.

ARMARIUM *unguentum*, among *Hermetical Philoſophers*, a SYMPATHETIC ointment, or weapon-ſalve, whereby wounds are ſaid to have been cured at a diſtance, by only dreſſing the weapon.

ARMATIUM, in *Ancient Phyſic*, a deterſive kind of *collyrium*, of great value in removing aſperities of the eye-lids. Its chief ingredients were *æs uſtum*, gum ammoniac, and the roots of the tree *thus*. The preparation is deſcribed by Galen, Aëtius, Paulus, and Scribonius.

ARMATURE, ARMATURA, in a general ſenſe, is the ſame with what we otherwiſe call armour.

ARMATURA is more particularly uſed in the *Ancient Military Art*, for a kind of exerciſe, performed with miſſive weapons, as darts, ſpears, arrows, and the like.

In this ſenſe, *armatura* ſtands contradiſtinguiſhed from *palaria*; the latter being the exerciſe of the heavy-armed, the former of the light-armed.

The *armatura* was practiſed with great diligence among the Romans: they had their *campidoctores*, on purpoſe to inſtruct the *tyrones*, or young ſoldiers, in it. Under it were included, the throwing of the ſpear or javelin, ſhooting with bows and arrows, &c.

ARMATURA is alſo an appellation given to the ſoldiers who were light-armed.

Aquinus ſeems, without reaſon, to reſtrain *armatura* to the *tyrones*, or young ſoldiers, under diſcipline or tutorage in the exerciſe above mentioned.

ARMATURA is alſo a denomination given to the ſoldiers in the emperor's retinue. Du-Cange.

Of theſe we find two ſchools, mentioned in the *notitia imperii*, called the *armaturæ ſeniores*, and *armaturæ juniores*. Their commander was entitled TRIBUNUS *armaturarum*.

ARMED, in SEA-*Language*, &c. See ARM.

ARMED, in *Heraldry*, is uſed in reſpect of beaſts and birds of prey, when their teeth, horns, feet, beak, talons, or tuſks, are of a different colour from the reſt.—He bears a cock, or a falcon, *armed*, or, &c.

ARMENA, in *Botany*, a name given by Pliny to a kind of wild aſparagus; but the ancient Greeks have uſed the ſame word to expreſs the young ſhoots of the common aſparagus, at the time when they are eaten; and not only theſe, but the young ſprouts of the cabbage, and of all other eſculent plants.

ARMENIACA, in *Botany*; ſee APRICOT.

ARMENIAN *bole*; ſee BOLE.

ARMENIAN *ſtone*, *lapis* ARMENUS, a mineral ſtone, or earth, of a blue colour, ſometimes ſpotted with green, black, and yellow. It is a very ſcarce foſſil, anciently brought only from Armenia, but is now found very pure, though in ſmall quantities, in the mines at Goſſelaer in Saxony.

The *Armenian ſtone*, in its harder ſtate, bears a near reſemblance to *lapis lazuli*, from which it ſeems only to differ in degree of maturity: they are diſtinguiſhed by this, that the *lapis armenus* is ſofter, and inſtead of ſparks of gold, is often ſpeckled with green.

Boerhaave ranks it among ſemi-metals; and ſuppoſes it compoſed of a metal and earth. Woodward ſays, it owes its colour to an admixture of copper.

Its chief uſe is in Moſaic work, though it has ſome place alſo in phyſic. It is a very valuable ſubſtance in painting, being a bright and florid blue. It was in ſo high eſteem as a paint, among the ancients, that counterfeits were continually attempted to ſerve in its place.

Both this and the *lapis lazuli* are ORES of copper.

ARMENIANS, in reſpect of religion, a diviſion among the eaſtern Chriſtians; thus called from *Armenia*, the country anciently inhabited by them.

Some have ſuppoſed, that Chriſtianity was eſtabliſhed in *Armenia* by the apoſtle St. Bartholomew; but this is certain, that in the beginning of the fourth century, the *Armenian* Chriſtians were in a very flouriſhing ſtate.

The *Armenian* church, in the ſixteenth century, was governed by three patriarchs, the chief of whom reſided in a monaſtery at Echmiazin. There were other biſhops among them, who aſſumed the title of patriarchs, without prerogatives annexed to it; though, by authority derived from the chief patriarch, they were allowed to conſecrate biſhops, and every third year to make and diſtribute the holy chriſm, or ointment, which is the privilege of the patriarchs alone.

The *Armenians*, ſince the conqueſt of their country by Scha Abbas, king of Perſia, have had no fixed place of habitation, but are diſperſed in divers parts of Perſia, Turky, and Tartary, and even ſome parts of Europe, particularly Poland.—Their chief employment is merchandize, in which they excel.—The cardinal de Richelieu, we are told, had a deſign to make an eſtabliſhment of them in France, for promoting the commerce of that country. And the chancellor Seguier granted them a printing-houſe at Marſeilles.

With regard to religion, there are two kinds of *Armenians*; the one catholics, and ſubject to the pope, having a patriarch in Perſia, and another in Poland. The other make a peculiar ſect, having two patriarchs in Natolia. The *Armenians* are generally accuſed of being Monophyſites, and only allowing of one nature in Jeſus Chriſt. As to the Euchariſt, they agree with the Greeks, except in this, that they mix no water with their wine, and uſe unleavened bread after the manner of the Latins.

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The other part conſiſts of two bones, called FOCILS; viz. the *radius*, and *cubitus*, or *ulna*.

The muſcles whereby this part is moved, are the *biceps*, *brachiæus internus*, *gemellus*, *brachiæus externus*, *anconæus*, *pronator radii teres*, and *quadratus*; *ſupinator longus*, and *brevis*.—See each in its place.—The uſual venæſections are in the *arm*.

We have an account of a man whoſe *arm*, with the *ſcapula*, was torn off by a mill, and who was cured without any hæmorrhage. Phil. Tranſact. Nº 449. ſec. 5.

Arm, in the *Manege*, is applied to a horſe, when he endeavours to defend himſelf againſt the bit; to prevent obeying, or being checked thereby.

A horſe is ſaid to *arm* himſelf, when he preſſes down his head, and bends his neck, ſo as to reſt the branches of the bridle upon his briſket; in order to withſtand the effort of the bit, and guard his bars, and his mouth.

A horſe is ſaid to *arm himſelf with the lips*, when he covers the bars with his lips, and deadens the preſſure of the bit.—This frequently happens in thick-lipped horſes.—The remedy is by uſing a bit-mouth, forged with a canon or ſcratch-mouth, broader near the bankers than at the place of its preſſure, or reſt upon the bars.

For *arming againſt the bit*, the remedy is, to have a wooden ball covered with velvet, or other matter, put on his chaul; which will ſo preſs him between the jawbones, as to prevent his bringing his head ſo near his breaſt.

Arm, in *Geography*, is uſed for a branch of a ſea, or river. Italy and Sicily are only parted by an *arm* of the ſea.—St. George's *arm*, in the Mediterranean, is the Thracian Boſphorus.

Arm, among *Gardeners*, is ſometimes uſed in reſpect of cucumbers and melons, in the ſame ſenſe as branch, of other plants.

Arm is alſo uſed figuratively for *power*.—The ſecular *arm* is the lay or temporal authority of a ſecular judge; to which recourſe is had for the execution of the ſentences paſſed by eccleſiaſtical judges.

The church ſheds no blood: even the judges of inquiſition, after they have found the perſon guilty, ſurrender him to the ſecular *arm*.

The council of Antioch, held in 341, decrees, that recourſe be had to the ſecular *arm* to repreſs thoſe who refuſe obedience to the church: for ſecular *arm*, they here uſe exterior power.

Arm, in the *Military Art*, *Heraldry*, &c. See Arms and Armour.

Arm, in *Sea-Language*.—A ſhip is ſaid to be *armed*, when fitted out, and provided, in all reſpects, for war.

Armed ſhip more peculiarly denotes a veſſel that is occaſionally taken into the ſervice of government in time of war, and employed to guard ſome particular coaſt, or attend on a fleet. All ſhips of this ſort are commanded by an officer of the navy, and are upon the ſame eſtabliſhment with the king's ſloops.

Alſo, a croſs-bar ſhot is ſaid to be *armed*, when ſome rope-yarn, or the like, is rolled round about one end of the iron bar which runs through the ſhot, both that the ſhot may be the better rammed down into the gun, and leſt the ſharp end of the bar ſhould catch into any honeycombs within the cylinder of the piece.

Arm, *yard*. See Yard.

Arm, in reſpect of the *Magnet*.—A load-ſtone is ſaid to be *armed*, when it is capped, caſed, or ſet in iron or ſteel; in order to make it take up the greater weight; and alſo to diſtinguiſh readily its poles.

It is ſurpriſing, that a little iron faſtened to the poles of a MAGNET, ſhould ſo vaſtly improve its force, as to render it 150 times ſtronger than when naked. Mr. Butterfield told Dr. Liſter, that ſome load-ſtones would gain much more, and others vaſtly leſs, by *arming*, than one would expect; and he has obſerved, that there are ſome magnets, which ſeem to act more powerfully *unarmed*, than *armed*. Whether the magnetic force of ſome paſſes more eaſily through iron than that of others; or whether the effect depends on the different quality of iron, experiments have not yet aſcertained.—A ſtrong load-ſtone ought to have thick irons, and a weak one but thin ones: ſo that a ſtone may be eaſily overſhod.

The uſual armour of a LOAD-*ſtone*, in form of a right-angled *parallelepipedon*, conſiſts of two thin pieces of ſteel or iron, of a ſquare figure, and a thickneſs proportionable to the goodneſs of the ſtone: if a weak ſtone have a ſtrong armour, it will produce no effect; and if the armour of a ſtrong load-ſtone be too thin, its effect will not be ſo conſiderable as when thicker.—The proper thickneſs is found by filing it thinner and thinner, till its effect is found at the greateſt poſſible ſtrength.

The armour of a ſpherical LOAD-*ſtone*, conſiſts of two ſteel ſhells faſtened to one another by a joint, and covering a good part of the convexity of the ſtone. This alſo is to be filed away till the effect is found the greateſt.

Kircher, in his book *de Magnete*, tells us, that the beſt way to *arm* a load-ſtone, is, to drill a hole through the ſtone from pole to pole, and in that, to place a ſteel rod of a moderate length; which rod, adds he, will take up more weight at the end, than the ſtone itſelf *armed* the common way can do.

Gaſſendus and Cabæus preſcribe the ſame method of *arming* a load-ſtone: but Muſchenbroek has found, by repeated trials, that the uſual armour already mentioned is preferable to that obtained in this way; and he gives the following directions for preparing it. When the poles of the magnet have been diſcovered, by means of ſteel filings and a ſmall needle, he directs that thoſe parts where the poles lie ſhould be rubbed or ground into parallel planes, without ſhortening the polar axis; and the magnets may be afterwards ſhaped into the figures of cubes or parallelopipeds, or any other that may be found moſt convenient. Plates of the ſofteſt iron ſhould then be prepared, of the ſame length and breadth with the whole polar ſides of the propoſed magnet. The thickneſs of theſe plates, ſo as that they may admit and convey the greateſt quantity of the magnetic virtue, is to be previouſly determined by experiment, in a manner which he preſcribes for the purpoſe: a thicker piece of iron is to be annexed at right angles to theſe plates, which is called *pes armaturæ*, the foot or baſe of the armour: the plates, accurately ſmoothed and poliſhed, are to be applied and firmly tied to each of the polar ſides, whilſt the thicker part or baſe is made cloſely to touch the lower part of the magnet. In this way, he ſays, almoſt all the magnetic virtue iſſuing from the poles enters into the armour, is directed to the baſe, and condenſed by means of its roundneſs, ſo as to ſuſtain the greateſt weight of iron. Phyſ. Exper. and Geom. Diſſert. 1729. p. 131. See MAGNET *armed.*

ARMA *dare*, to give arms, in ſome ancient charters, ſignifies to dub, or make a knight.

ARMA *deponere*, to lay down arms, was a puniſhment anciently enjoined when a man had committed an offence. Leg. Hen. I.

ARMA *mutare*, q. d. to change arms, was a ceremony uſed to confirm a league or friendſhip.

ARMA *moluta* were ſharp weapons: Fleta calls them *arma emolita.*

ARMA *reverſata*, inverted arms, was a puniſhment when a man was convicted of treaſon or felony.

ARMADA, a Spaniſh term, ſignifying a fleet of men of war. The *armada* which attempted to invade England in the time of queen Elizabeth, is famous in hiſtory; it was partly ſcattered by the wind, and partly ſubdued by the Engliſh fleet. On which occaſion a medal was ſtruck with this motto, *Afflavit Deus, et diſſipantur.*

ARMADILLA, in the Spaniſh America, denotes a ſquadron of men of war, to the number of ſix or eight, from twenty-four to fifty pieces of cannon, which the king maintains, to prevent foreigners from trading with the Spaniards and the Indians, both in time of war, and peace.

The veſſels of this *armadilla* are thoſe that have been ſo much talked of, under the name of *guarda coſtas.*

They have even power to take all Spaniſh merchant-ſhips they meet with on the coaſts, that have not licences from the king.

The South ſea has its *armadilla*, as well as the North ſea. The ordinary abode of the former are at Calao, a port of Lima; that of the latter, at Carthagena.

ARMADILLO, in *Zoology*, the name of an animal ſomewhat approaching to the *hedge*-HOG kind, and called by the Latin authors the ECHINUS *Braſilienſis.* It is alſo called *tatou*; and by Linnæus, *dalypus cingulis novem, palmis tetradactylis, plantis pentadactylis.*

We have ſeveral ſpecies of this creature deſcribed to us; but the moſt uſual, is of the figure and ſize of a large pig, and has a bony covering, which extends over the whole body, the head and the tail. This is compoſed of a number of very elegant ſcales, which have two junctures near the hinder part of the head, by means of which the creature is able to move its neck. On the back there are ſeven diviſions, with a thick membrane between; and in all other parts of the body the ſhell is whole. The legs, ſo far as they come in ſight, are in the ſame manner defended by a bony covering. The feet are made like hands; each has five toes, and the nails are round. Its colour is a ſort of reddiſh tawny. It digs up the ground with its noſe, in the manner of a hog, but much more nimbly; the tail is thick at the inſertion, and tapers to the extremity. The creature feeds on roots and fruits, as potatoes, melons, and the like; but will eat meat alſo if it comes in its way. It is uſually found in dry places. Ray.

This creature gathers himſelf up, when he pleaſes, head, feet, and tail, within his ſhell, and becomes as round as a ball; and this he does, not only when purſued, but every time he ſleeps. He is ſo good at digging, that, unleſs tied up, he will make his way out under the walls of a houſe. He is extremely valued among the Braſilians, for the whiteneſs and delicacy of his fleſh, and furniſhes a principal diſh at their beſt feaſts. The plates of his ſhell, powdered and given in a doſe of a dram, are eſteemed a ſudorific, and a remedy for the *lues venerea.* See *Tab. of Quadrupeds*, N° 21.

See a deſcription and drawing of one of theſe animals, in Phil. Tranſ. vol. LIV. N° 97.

ARMAMAXI, in *Antiquity*, a kind of Scythian chariots, or carriages, compoſed of two wheels, variouſly adorned with crowns, ſhields, breaſt-plates, and other ſpoils, carried in proceſſion after the images of the gods and great men. The word is compoſed of the Latin *arma*, and the Greek *αμαξα, plauſtrum, carriage.*

Theſe were ſometimes called *amaxi*, or *amaxæ.* Pitiſc. Lex. Ant.

ARMAMENT, a large body of forces, raiſed and provided with the furniture of war, either for land or ſea ſervice.

ARMAN, among *Farriers*, a confection of great efficacy to prevent a total loſs of appetite in horſes.

ARMARIUM *unguentum*, among *Hermetical Philoſophers*, a SYMPATHETIC ointment, or weapon-ſalve, whereby wounds are ſaid to have been cured at a diſtance, by only dreſſing the weapon.

ARMATIUM, in *Ancient Phyſic*, a deterſive kind of *collyrium*, of great value in removing aſperities of the eye-lids. Its chief ingredients were *æs uſtum*, gum ammoniac, and the roots of the tree *thus.* The preparation is deſcribed by Galen, Aëtius, Paulus, and Scribonius.

ARMATURE, ARMATURA, in a general ſenſe, is the ſame with what we otherwiſe call armour.

ARMATURA is more particularly uſed in the *Ancient Military Art*, for a kind of exerciſe, performed with miſſive weapons, as darts, ſpears, arrows, and the like.

In this ſenſe, *armatura* ſtands contradiſtinguiſhed from *palaria*; the latter being the exerciſe of the heavy-armed, the former of the light-armed.

The *armatura* was practiſed with great diligence among the Romans: they had their *campidoctores*, on purpoſe to inſtruct the *tyrones*, or young ſoldiers, in it. Under it were included, the throwing of the ſpear or javelin, ſhooting with bows and arrows, &c.

ARMATURA is alſo an appellation given to the ſoldiers who were light-armed.

Aquinus ſeems, without reaſon, to reſtrain *armatura* to the *tyrones*, or young ſoldiers, under diſcipline or tutorage in the exerciſe above mentioned.

ARMATURA is alſo a denomination given to the ſoldiers in the emperor's retinue. Du-Cange.

Of theſe we find two ſchools, mentioned in the *notitia imperii*, called the *armaturæ ſeniores*, and *armaturæ juniores.* Their commander was entitled TRIBUNUS *armaturarum.*

ARMED, in SEA-*Language*, &c. See ARM.

ARMED, in *Heraldry*, is uſed in reſpect of beaſts and birds of prey, when their teeth, horns, feet, beak, talons, or tuſks, are of a different colour from the reſt.—He bears a cock, or a falcon, *armed*, or, &c.

ARMENA, in *Botany*, a name given by Pliny to a kind of wild aſparagus; but the ancient Greeks have uſed the ſame word to expreſs the young ſhoots of the common aſparagus, at the time when they are eaten; and not only theſe, but the young ſprouts of the cabbage, and of all other eſculent plants.

ARMENIACA, in *Botany*; ſee APRICOT.

ARMENIAN *bole*; ſee BOLE.

ARMENIAN *ſtone*, *lapis* ARMENUS, a mineral ſtone, or earth, of a blue colour, ſometimes ſpotted with green, black, and yellow. It is a very ſcarce foſſil, anciently brought only from Armenia, but is now found very pure, though in ſmall quantities, in the mines at Goſſelaer in Saxony.

The *Armenian ſtone*, in its harder ſtate, bears a near reſemblance to *lapis lazuli*, from which it ſeems only to differ in degree of maturity: they are diſtinguiſhed by this, that the *lapis armenus* is ſofter, and inſtead of ſparks of gold, is often ſpeckled with green.

Boerhaave ranks it among ſemi-metals; and ſuppoſes it compoſed of a metal and earth. Woodward ſays, it owes its colour to an admixture of copper.

Its chief uſe is in Moſaic work, though it has ſome place alſo in phyſic. It is a very valuable ſubſtance in painting, being a bright and florid blue. It was in ſo high eſteem as a paint, among the ancients, that counterfeits were continually attempted to ſerve in its place.

Both this and the *lapis lazuli* are ORES of copper.

ARMENIANS, in reſpect of religion, a diviſion among the eaſtern Chriſtians; thus called from *Armenia*, the country anciently inhabited by them.

Some have ſuppoſed, that Chriſtianity was eſtabliſhed in *Armenia* by the apoſtle St. Bartholomew; but this is certain, that in the beginning of the fourth century, the *Armenian* Chriſtians were in a very flouriſhing ſtate.

The *Armenian* church, in the ſixteenth century, was governed by three patriarchs, the chief of whom reſided in a monaſtery at Echmiazin. There were other biſhops among them, who aſſumed the title of patriarchs, without prerogatives annexed to it; though, by authority derived from the chief patriarch, they were allowed to conſecrate biſhops, and every third year to make and diſtribute the holy chriſm, or ointment, which is the privilege of the patriarchs alone.

The *Armenians*, ſince the conqueſt of their country by Scha Abbas, king of Perſia, have had no fixed place of habitation, but are diſperſed in divers parts of Perſia, Turky, and Tartary, and even ſome parts of Europe, particularly Poland.—Their chief employment is merchandize, in which they excel.—The cardinal de Richelieu, we are told, had a deſign to make an eſtabliſhment of them in France, for promoting the commerce of that country. And the chancellor Seguier granted them a printing-houſe at Marſeilles.

With regard to religion, there are two kinds of *Armenians*; the one catholics, and ſubject to the pope, having a patriarch in Perſia, and another in Poland. The other make a peculiar ſect, having two patriarchs in Natolia. The *Armenians* are generally accuſed of being Monophyſites, and only allowing of one nature in Jeſus Chriſt. As to the Euchariſt, they agree with the Greeks, except in this, that they mix no water with their wine, and uſe unleavened bread after the manner of the Latins.

They abſtain very rigorouſly from eating of blood, and meats ſtrangled, and are much addicted to faſting; inſomuch that, from their diſcourſe, one would conclude that almoſt their whole religion conſiſted in faſting.

The monaſtic order is in great repute among them, ſince one of their patriarchs introduced that of St. Baſil; but part of them, which have united with the church of Rome, have changed their ancient rule, for that of the Dominicans.

Armenian *bibles*; ſee Bibles.

ARMERIUS; ſee Dianthus.

ARMIGER, *armour-bearer*, in *Modern Writers*, denotes a title of dignity, rendered in Engliſh by *Eſquire*.

ARMILAUSA, in *Antiquity*, a ſhort military coat, reaching down only to the knee. Aquin. and Pitiſc. Lex. Ant.

It was thus called, as being divided both before and behind, and only cloſe about the ſhoulders, *in armos tantum clauſa*, quaſi *armiclauſa*. Iſid. Orig. l. xix. c. 22.

The word is ſometimes alſo written *armelauſa*, *armilauſia*, *armicaſia*, and *armilcaſia*.

Armilausa is alſo applied, in *Eccleſiaſtical Writers*, to the ſcapular of monks and canons; thus called, on account of its hanging from the arms, or ſhoulders. Schmid. Lex. Eccleſ. p. 73.

The ſame habit is vulgarly called *patience*.

ARMILLA *membranoſa* is a name given, by ſome anatomiſts, to the annular ligament.

ARMILLARY, Armillaris, in *Aſtronomy*, an epithet given to an artificial ſphere, compoſed of a number of metalline circles, repreſentative of the ſeveral circles of the mundane ſphere, put together in their natural order.

The word is formed of the Latin *armilla*, *a bracelet*.

Armillary ſpheres eaſe and aſſiſt the imagination to conceive the conſtitutions of the heavens, and the motions of the heavenly bodies.

Such is that repreſented (*Tab. Aſtron. fig.* 21.)—Where P and Q repreſent the poles of the world, AD the equator, EL the ecliptic and zodiac, PAGD the meridian, or the ſolſtitial colure, T the earth, FG the tropic of cancer, HT the tropic of capricorn, MN the arctic circle, OV the antarctic, N and O the poles of the ecliptic, and RS the horizon.

The *armillary* ſphere not long ſince conſtructed by Dr. Long, in Pembroke-hall, Cambridge, is eighteen feet in diameter; and more than thirty perſons may conveniently ſit in it. The lower part of the ſphere inviſible in England is cut off; the whole apparatus is ſo contrived, that it may be turned round with as little labour as it takes to wind up a jack.

Armillary *trigonometer*, an inſtrument firſt contrived by Mr Mungo Murray, and improved by Mr. Ferguſon, conſiſting of five ſemicircles; viz. meridian, vertical circle, horizon, hour circle, and equator; ſo adapted to each other by joints and hinges, and ſo graduated and divided, as to ſerve for expeditiouſly reſolving many problems in aſtronomy, dialling, and ſpherical trigonometry. For the drawing, deſcription, and method of uſing it, ſee Ferguſon's Tracts, p. 80, &c.

ARMILLATI *milites*, thoſe who wore bracelets on their left arms, beſtowed on them by their generals, or emperors. Though the term is more frequently applied to ſoft and effeminate ſoldiers, who wore bracelets on their arms, not as the rewards of their prowefs, but marks of their foppery. Aquin. Lex.

ARMILUSTRIUM, in *Antiquity*, a feaſt held among the Romans; wherein they ſacrificed, armed at all points, and with the ſound of trumpets.

Some define *armiluſtrium* to have been a feaſt, wherein a general review was made of all the forces in the Campus Martius.—But this does not come up to the point; for Varro does not derive the word from the Latin *arma* and *luſtrare*, *to make a review*; but from the cuſtom of holding this feaſt in the place where the reviews were uſed to be made, or rather from their going round the place armed with bucklers.

The ſacrifice was intended for the proſperity of the arms of the people of Rome; and was celebrated on the fourteenth of the calends of November.

ARMINGS, in a ſhip, are the ſame with *waſt-clothes*, being red cloths, hung about the outſides of the ſhip's upper-works, fore and aft; and before the cubbridge-heads.

There are ſome alſo hung round the tops, and called *top-armings*.

ARMINIANISM, the doctrine of Arminius and of his followers. See Arminians.

ARMINIANS, the followers of Arminius, a celebrated miniſter of Amſterdam, and afterwards profeſſor of theology in the univerſity of Leyden. Arminius, though educated at Geneva, and having imbibed the doctrines concerning predeſtination and grace maintained by Calvin, Beza, Zanchius, &c. began to expreſs his doubts concerning them in the year 1591; and upon farther inquiry adopted ſentiments more nearly reſembling thoſe of the Lutherans, than of the Calviniſts. After his appointment to the theological chair at Leyden, he thought it his duty to avow and vindicate the principles which he had embraced; and the freedom with which he publiſhed and defended them, expoſed him to the reſentment of thoſe that adhered to the theological ſyſtem of Geneva, which then prevailed in Holland; but his principal opponent was Gomar, his colleague. The controverſy which was thus begun, became more general after the death of Arminius, in the year 1609, and threatened to involve the United Provinces in civil diſcord. The *Arminian* tenets gained ground under the mild and favourable treatment of the magiſtrates of Holland, and were adopted by ſeveral perſons of merit and diſtinction. The *Calviniſts*, or *Gomariſts*, as they were now called, appealed to a national ſynod; accordingly the ſynod of Dort was convened by order of the States General, in 1618, and was compoſed of eccleſiaſtical deputies from the United Provinces, as well as from the reformed churches of England, Heſſia, Bremen, Switzerland, and the Palatinate. The principal advocate in favour of the *Arminians* was Epiſcopius, who at that time was profeſſor of divinity at Leyden. It was firſt propoſed to diſcuſs the principal ſubjects in diſpute, and that the *Arminians* ſhould be allowed to ſtate and vindicate the grounds on which their opinions were founded: but ſome difference ariſing as to the proper mode of conducting the debate, the *Arminians* were excluded from the aſſembly; their caſe was tried in their abſence; and they were pronounced guilty of peſtilential errors, and condemned as corrupters of the true religion. In conſequence of this deciſion, they were treated with great ſeverity; they were deprived of all their poſts and employments; their miniſters were ſilenced, and their congregations were ſuppreſſed. However, after the death of prince Maurice, who had been a violent partizan in favour of the *Gomariſts*, in the year 1625, the *Arminian* exiles were reſtored to their former reputation and tranquillity; and under the toleration of the ſtate, they erected churches, and founded a college at Amſterdam, appointing Epiſcopius to be the firſt theological profeſſor. The *Arminian* ſyſtem has very much prevailed in England ſince the time of archbiſhop Laud, and its votaries in other countries are very numerous.

The diſtinguiſhing tenets of the *Arminians* may be comprized in the following five articles; relating to predeſtination, univerſal redemption, the corruption of man, converſion, and perſeverance. With reſpect to the firſt, they maintained, "That God, from all eternity, determined to beſtow ſalvation on thoſe, who he foreſaw, "would perſevere unto the end in their faith in Chriſt "Jeſus; and to inflict everlaſting puniſhments on thoſe, "who ſhould continue in their unbelief, and reſiſt, "unto the end, his divine ſuccours: ſo that election "was conditional, and reprobation in like manner the "reſult of foreſeen infidelity, and perſevering wickedneſs."

On the ſecond, the *Arminians* taught, "That Jeſus "Chriſt, by his ſufferings and death, made an atonement for the ſins of all mankind in general, and of "every individual in particular; that, however, none "but thoſe who believe in him, can be partakers of "their divine benefit."

On the third article, they held, "That true faith cannot "proceed from the exerciſe of our natural faculties and "powers, nor from the force and operation of free "will; ſince man, in conſequence of his natural corruption, is incapable either of thinking or doing any "good thing; and that therefore it is neceſſary, in order to his converſion and ſalvation, that he be regenerated and renewed by the operation of the Holy "Ghoſt, which is the gift of God through Jeſus "Chriſt."

Fourthly, "That this divine grace, or energy of the "Holy Ghoſt, begins and perfects every thing that "can be called good in man, and conſequently all "good works are to be attributed to God alone; that, "nevertheleſs, this grace is offered to all, and does not "force men to act againſt their inclination, but may be "reſiſted, and rendered ineffectual, by the perverſe "will of the impenitent ſinner."—Some modern *Arminians* interpret this and the laſt article with a greater latitude.

Fifthly, "That God gives to the truly faithful, who "are regenerated by his grace, the means of preſerving themſelves in this ſtate;" and though the firſt *Arminians* made ſome doubt with reſpect to the cloſing part of this article, their followers uniformly maintain, "that the regenerate may loſe true juſtifying faith, forfeit their ſtate of grace, and die in their ſins."

The modern ſyſtem of *Arminianiſm* likewiſe, founded on a comprehenſive plan projected by Arminius himſelf, as appears from a paſſage in his laſt will, extends the limits of the Chriſtian church, and relaxes the bonds of fraternal communion in ſuch a manner, that Chriſtians of all ſects and denominations, whatever their ſentiments and opinions may be, papiſts excepted, may be formed into one religious body, and live together in brotherly love and concord. But, in order to avoid the reproach of being altogether unconnected by any common principles, Epiſcopius drew up a confeſſion of faith, expreſſed for the moſt part in words and phraſes of Holy Scripture, which the *Arminians* have generally adopted, though not enjoined upon them by any authoritative obligation.

The *Arminians* are alſo called *Remonſtrants*, from an humble petition intitled their *Remonſtrance*, which, in the year 1610, they addreſſed to the States of Holland. Their principal writers are, Arminius, Epiſcopius, Vorſtius, Grotius, Curcellæus, Limborch, Le Clerc, and Wetſtein; not to mention many others, of more modern date. Brandt's Hiſt. of the Reformation in the Netherlands; and Moſheim's Eccleſ. Hiſt. by Dr. Maclean, vol. V.

ARMISTICE, ARMISTITIUM, a ſhort truce, or a ceſſation of arms for a ſmall time.

ARMOISIN, in *Commerce*, a ſilk ſtuff, or kind of taffety, of an indifferent goodneſs; made at Lyons, and at ſeveral places in Italy. There are half *armoiſins*, made at Avignon, which are of inferior quality, and leſs price than the others. Some pretend that the word *armoiſin* comes from the Italian *armeſino*; or that thoſe ſilks were thus called, becauſe there were coats of arms delineated on the cloths in which they were wrapped.

There is alſo a taffety of this name manufactured in the Eaſt Indies; but of an inferior quality to thoſe made in Europe.

ARMONIAC; ſee *Sal* AMMONIAC.

ARMONICA is a name which Dr. Franklin has given to a muſical inſtrument conſtructed with drinking-glaſſes. It is well known, that a drinking-glaſs yields a ſweet tone, by paſſing a wet finger round its brim. Mr. Puckeridge, of Ireland, was the firſt who thought of playing tunes formed of theſe tones. He collected a number of glaſſes of different ſizes, fixed them near each other on a table, and tuned them by putting into them water, more or leſs, as each note required. Mr. Delaval, F. R. S. made an inſtrument in imitation of that which was contrived by Mr. Puckeridge; and from this inſtrument, Dr. Franklin took the hint of conſtructing his *armonica*.

The glaſſes for this muſical inſtrument, are blown as near as poſſible in the form of hemiſpheres, having each an open neck or ſocket in the middle. The thickneſs of the glaſs near the brim is about one tenth of an inch, increaſing towards the neck, which in the largeſt glaſſes is about an inch deep, and an inch and a half wide within; but theſe dimenſions leſſen, as the ſize of the glaſſes diminiſhes, only obſerving that the neck of the ſmalleſt ſhould not be ſhorter than half an inch. The diameter of the largeſt glaſs is nine inches, and that of the ſmalleſt three inches: between theſe there are twenty-three different ſizes, differing from each other a quarter of an inch in diameter. For making a ſingle inſtrument, there ſhould be at leaſt ſix glaſſes blown of each ſize, and out of theſe, thirty-ſeven glaſſes (which are ſufficient for three octaves with all the ſemitones) may be found, that will either yield the note required, or one a little ſharper, and fitting ſo well into each other, as to taper regularly from the largeſt to the ſmalleſt. The glaſſes being choſen, and the note for which each glaſs is intended being marked upon it with a diamond, they are to be tuned by diminiſhing the thickneſs of thoſe that are too ſharp, which is done by grinding them round from the neck towards the brim, comparing, by means of a well-tuned harpſichord, the tone drawn from the glaſs by your finger, with the note you want, as ſounded by the correſponding ſtring of the harpſichord. The largeſt glaſs in the inſtrument is G, a little below the reach of a common voice, and the higheſt G, including three complete octaves: and they are diſtinguiſhed by painting the apparent parts of the glaſſes within ſide, every ſemitone white, and the other notes of the octave with the ſeven priſmatic colours; ſo that glaſſes of the ſame colour (the white excepted) are always octaves to each other.

When the glaſſes are tuned, they are to be fixed on a round ſpindle of hard iron, an inch in diameter at the thickeſt end, and tapering to a quarter of an inch at the ſmalleſt. For this purpoſe, the neck of each glaſs is fitted with a cork, projecting a little without the neck; theſe corks are perforated with holes of different diameters, according to the dimenſion of the ſpindle in that part of it where they are to be fixed. The glaſſes are all placed within one another; the largeſt on the biggeſt end of the ſpindle, with the neck outwards; the next in ſize is put into the other, leaving about an inch of its brim above the brim of the firſt; and the others are put on in the ſame order. From theſe expoſed parts of each glaſs, the tone is drawn, by laying a finger upon one of them, as the ſpindle and glaſſes turn round. The ſpindle thus prepared, is fixed horizontally in the middle of a box, and made to turn on braſs gudgeons at each end. A ſquare ſhank comes from its thickeſt end through the box, on which ſhank a wheel is fixed by a ſcrew: this will ſerve, like a fly, to make the motion equable, when the ſpindle is turned by the foot like a ſpinning-wheel. The wheel is eighteen inches in diameter, and conceals near its circumference about twenty-five pounds of lead, and may be made of mahogany. An ivory pin is fixed in the face of the wheel, about four inches from the axis; over which is put the loop of the ſtring, that comes up from the moveable ſtep to give it motion. The box is about three feet long, eleven inches wide at the biggeſt end, and five inches at the ſmalleſt end: it is made with a lid, which opens at the middle of its height, and turns up by back-hinges. The inſtrument, thus completed, ſtands on a neat frame with four legs. This inſtrument is played upon by ſitting before it, as before the keys of a harpſichord, turning the ſpindle with the foot, and wetting the glaſſes now and then with a ſpunge and clean water. The fingers ſhould be firſt ſoaked in water, and rubbed occaſionally with fine chalk, to make them catch the glaſs, and bring out the tone more readily. Different parts may be played together, by uſing both hands; and the tones are beſt drawn out, when the glaſſes turn *from* the ends of the fingers, not when they turn *to* them.

The advantages of this inſtrument, ſays Dr. Franklin, are, that its tones are incomparably ſweet beyond thoſe of any other; that they may be ſwelled and ſoftened at pleaſure, by ſtronger or weaker preſſures of the finger, and continued to any length: and when it is once well tuned, it never again wants tuning. Franklin's Letters, &c. on Philoſophical Subjects, p. 428.

ARMOR, or ARMOUR, a defenſive habit, wherewith to cover and ſecure the body from the attacks of an enemy. In ancient ſtatutes this is frequently called HARNESS.

Parts of *armor* are, the buckler, cuiraſs, helmet, coat of mail, gantlet, &c.

A complete *armor* anciently conſiſted of a caſque or helm, a gorget, cuiraſs, gantlets, taſſes, braſſets, cuiſhes, and covers for the legs, to which the ſpurs were faſtened.—This they called *armor cap-a-pie*; and was the wear of the cavaliers, and men at arms.

The infantry had only part of it; viz. a pot or head-piece, a cuiraſs, and taſſes; but all light.—Laſtly, the horſes themſelves had their *armor*, wherewith to cover the head and neck.

Of all this furniture of war, ſcarce any thing is now retained, except the cuiraſs; the gorget or neck-piece, worn by officers, being at preſent only a badge of honour, and of no defence.

The gallantry of going to the battle naked, without any defenſive *armor*, prevailed ſo far, that the French, during the reign of Louis XIV. were obliged to be continually iſſuing ordonnances to reſtrain it; in conſequence of which, the general officers, and thoſe of the cavalry, were obliged to reſume the cuiraſs, which yet has been but ill obſerved.

ARMOR, *Coat*, is the eſcutcheon of any perſon, or family, with its ſeveral charges, and other furniture; as mantling, creſt, ſupporters, motto, &c.

Thus we ſay, a gentleman of *coat-armor*; meaning one who bears arms.

ARMORACIA, in *Botany*, a name given by the ancients to a kind of RADISH. Pliny mentions it, but his account is very unſatisfactory.

ARMORIAL, ſomething that relates to arms, or heraldry. In this ſenſe we ſay an *armorial* figure, *armorial* bearing, *armorial* enſign, the *armorial* lily of France, *armorial* lion or leopard of England, &c.

ARMORIAL is alſo a title given to ſeveral books, which contain the arms of a number of perſons of quality.

In this ſenſe, we meet with the French *armorial*, the Spaniſh *armorial*, &c.

ARMORIC, or AREMORIC, ſomething that belongs to the province of Bretagne, or Britany, in France.

The name *Armorica* was anciently given to all the northern and weſtern coaſt of Gaul, from the Pyreneans to the Rhine; under which name it was even known in Cæſar's time. Cæſ. de Bell. Gall. lib. vii. cap. 14.

ARMORIC, abſolutely uſed, denotes the language in uſe among the inhabitants of Britany.

The French uſually call this language *Bas-breton*; compounded, ſays M. Menage, of *ar*, *upon*, and *mor*, *ſea*.

The *Armoric* is a dialect of the Welch, and ſiſter of the Corniſh language.

The inhabitants of Britany, of Cornwall, and of Wales, formerly underſtood each other's ſpeech; though conſiderable diverſities have crept in between theſe languages, ſince their ſeparation from each other.

The inhabitants of Britany, Mr. Lluyd obſerves, by their intercourſe with the French, have much altered their ancient orthography; beſides that there are ſeveral words in the *Armoric* which have no affinity with the Welch; and that both the *Armoric* and Corniſh retain ſeveral ancient words and phraſes which are loſt in the Welch.

Julian Manoir, a Jeſuit, has publiſhed an *Armoric* grammar and vocabulary in French, which has been tranſlated into Engliſh by Mr. Williams, and publiſhed with notes by Mr. Lluyd. In Archæol. tit. 3. & 4. p. 180, &c. Before him, Yvon Quillivere had publiſhed an *Armoric* vocabulary at Paris, 1521.

Toland has given a catalogue of ſeveral *Armoric* words, which prove to be Iriſh; alſo a vocabulary *Armoric* and Iriſh.

ARMOURER, a maker of arms, or armour.

The Roman *armourers* were diſpoſed in certain places in the empire, it being forbid either to ſell, or buy, or make arms elſewhere. They were exempt from all offices, and taxes, and received a ſalary from the public.

When once they had taken the employment on themſelves, neither they, nor their children, were allowed to quit it. To prevent this, they had a kind of note, or ſtigma, impreſſed on the arm, whereby they might be known. If any of them fled, or ſecreted their ware, the reſt were obliged to anſwer for him; on account of which, the effects of ſuch as died without a legal heir went to the college.

There were fifteen *armamentaries*, or repoſitories of arms, in the Eaſtern empire, placed near the frontiers, and nineteen in the Weſtern. Pitiſc. Lex. Ant.

ARMOURER *of a ſhip*, a perſon whoſe office is to take care that the arms be in a condition fit for ſervice.

ARMORY, or **ARMOURY**, a ſtore-houſe of arms, or a place wherein military habiliments are kept, to be ready for uſe. There are *armories* in the Tower, and in all arſenals, citadels, caſtles, &c.

ARMORY is alſo uſed for a branch of HERALDRY; being the knowledge of coat-armors, as to their blazons, and various intendments.

ARM *pit*. See AXILLA.

ARMS, **ARMA**, in a general ſenſe, includes all kinds of weapons, whether for defence, or offence.

Nicod derives the word from the Latin phraſe, *quod operiant armos*, becauſe they cover the ſhoulders or ſides; but Varro derives *arma, ab arcendo, eo quod arceant hoſtes*.

It is ſuppoſed, that the firſt artificial *arms* were of wood, and were only employed againſt beaſts; and that Belus, the ſon of Nimrod, was the firſt that waged war: whence, according to ſome, came the appellation *bellum*.—Diodorus Siculus takes Belus to be the ſame with Mars, who firſt trained ſoldiers up to battle.

Arms of ſtone, and even of braſs, appear to have been uſed before they came to iron and ſteel.—Joſephus aſſures us, that the patriarch Joſeph firſt taught the uſe of iron *arms* in Egypt, arming the troops of Pharaoh with a caſque and buckler.

What contributed moſt to render the Romans maſters of the world, was, that having ſucceſſively warred againſt all nations, they conſtantly renounced their own methods, *arms*, &c. whenever they met with better.—Thus Romulus, during his war with the Sabins, a bold and warlike nation, adopted their broad buckler, in lieu of the ſmall Argian buckler, which he had uſed till that time. Monteſq. Conſid. ſur les Cauſ. de la Grand. des Rom. chap. i. p. 2. ſeq.

The principal *arms* of the ancient Britons were hatchets, ſcythes, lances, ſwords, and bucklers: the Saxons, &c. brought in the halbard, bow, arrows, arbalets, &c.

By the ancient laws of England, every man was obliged to bear *arms*, except the judges and clergy. Under Henry VIII. it was expreſly enjoined on all perſons to be regularly inſtructed, even from their tender years, in the exerciſe of the *arms* then in uſe; viz. the long bow and arrows; and to be provided with a certain number of them. 33 H. 8.

ARMS, **ARMA**, in *Law*, are extended to any thing which a man takes in his hand in his wrath, to caſt at, or ſtrike another.—So Crompton—*Armorum appellatio non ubique ſcuta, & gladios, & galeas ſignificat, ſed & fuſtes & lapides.* See VI & *Armis*.

By the common law, it is an offence for perſons to go or ride armed with dangerous weapons: but gentlemen may wear common armour, according to their quality, &c. 3d Inſt. The king may prohibit force of *arms*, and puniſh offenders according to law; and herein every ſubject is bound to be aiding. Stat. 7 Edw. 1. None ſhall come with force and *arms* before the king's juſtices, nor ride armed in affray of the peace, on pain to forfeit their armour, and to ſuffer impriſonment, &c. 2 Ed. 3. c. 3.

The importation of *arms* and ammunition are prohibited, by 1 Jac. 2. c. 8. and by 1 W. and M. ſtat. 2. c. 2. Proteſtant ſubjects may have *arms* for their defence. So likewiſe, *arms*, &c. ſhipped after prohibition, are forfeited, by 29 Geo. 1. c. 16. ſec. 2.

Arms of offence in uſe among us at preſent, are, the ſword, piſtol, muſquet, bayonet, pike, &c.

The *arms* of the Highlanders are, the broad ſword, target, poniard, and whinyar or durk, &c.

There are ſeveral acts of parliament for diſarming the Highlands; ſee 1 Geo. 1. c. 54. 11 Geo. 1. c. 26. 19 Geo. 2. c. 39. 21 Geo. 2. c. 34. 26 Geo. 2. c. 22. and 29.

ARMS *of defence*. See ARMOR.

Fire-**ARMS** are thoſe charged with powder and ball: ſuch are cannon, mortars, and other ordnance; muſquets, carabines, piſtols, and even bombs, granadoes, carcaſſes, &c.

For the rebound or reſilition of *fire-arms*, ſee REBOUND.

In the Hiſtory of the Royal Academy for the year 1707, we have an account of ſome experiments made with *fire-arms* differently loaded, by M. Caſſini. Among other things he obſerves, that by loading the piece with a ball which is ſomewhat leſs than the calibre; and only laying a little gunpowder below the ball, and a good deal above it, it will yield a vehement noiſe, but have no ſenſible effect or impulſe on the ball.

This he takes to have been all the ſecret of thoſe people who pretended to ſell the art of rendering one's ſelf invulnerable, or ſhot-proof.

ARMS, *baſs of*, was a kind of combat in uſe among the ancient cavaliers.

ARMS, *ſtand of.*—A *ſtand of arms* ſignifies a muſquet, a bayonet, a ſword, belt, and cartridge-box.

ARMS *of parade*, or *courteſy*, were thoſe uſed in the ancient juſts, and tournaments; which were commonly unſhod lances, ſwords without edge or point, wooden ſwords, and even canes.

ARMS denote the natural weapons, or parts of defence, of beaſts; as claws, teeth, tuſks of elephants, beaks of birds, &c.

ARMS are alſo uſed figuratively for the profeſſion of a ſoldier.—Thus we ſay, he was bred to *arms*.—See FRATERNITY, LAW, PLACE, SUSPENSION *of arms*.

ARMS, or **ARMORIES**, are alſo uſed, in *Heraldry*, for marks of dignity and honour, regularly compoſed of certain figures and colours, given or authorized by ſovereigns, and borne in banners, ſhields, coats, &c. for the diſtinction of perſons, families, and ſtates; and paſſing by deſcent to poſterity.

They are called *arms*, in regard they are borne principally on the buckler, cuiraſs, banners, and other apparatus of war.—They are alſo called COATS *of arms*, COAT-*armor*, &c. becauſe anciently embroidered on ſur-coats, &c.

Some will have the name to have been firſt occaſioned by the ancient knights, who in their juſts and tournaments bore certain marks (which were frequently their miſtreſs's favours) in their armour, i. e. their helms or ſhield, to diſtinguiſh them from each other.

There has been a great diſpute, among the learned, about the origin of *arms*.—Favyn will have them to have been from the beginning of the world; Segoin, from the time of Noah; others, from that of Oſiris, which is ſupported by ſome paſſages in Diodorus Siculus. Some again, from the example of the patriarch Jacob, who, when he bleſſed his ſons, gave them marks of diſtinction, which the twelve tribes bore on their enſigns; others, from the times of the Hebrews, becauſe *arms* were given to Moſes, Joſhua, the twelve tribes, David, &c.

Others will have them to have taken their riſe in the heroical age, and under the empires of the Aſſyrians, Medes, and Perſians; building upon the accounts of Philoſtratus, Xenophon, and Quintus Curtius.

Some pretend that the uſe of *arms*, and the rules of BLAZON, were regulated by Alexander.—Others will have them to have had their original under the empire of Auguſtus; others, during the inundations of the Goths; and others, under the empire of Charlemagne. Chorier obſerves, that, among the ancient Gauls, each man bore a mark on his buckler, by the ſight whereof he might be known to his fellows; and hence he refers the original of the *arms* of noble families. Camden has obſerved ſomething like this of the ancient Picts, and Britons, who, going naked to the wars, painted their bodies with BLAZONS, and figures of divers colours, which he ſuppoſes to have been different in different families, as they fought divided by kindreds. Yet Spelman ſays, that the Saxons, Danes, and Normans, firſt brought *arms* from the North into England; and thence into France.

Upon the whole, it is certain, that, from time immemorial, there have been ſymbolical marks in uſe among men, to diſtinguiſh them in armies, and to ſerve as ornaments for ſhields and enſigns; but theſe marks were uſed arbitrarily as devices, emblems, hieroglyphics, &c.

and were not regular *armories*, like ours, which are hereditary marks of the nobility of a houſe, regulated according to the rules of HERALDRY, and authorized by princes.

Before Marius, even the EAGLE was not the conſtant enſign of the Roman army; but they bore in their ſtandards a *wolf*, *leopard*, or *eagle*, indifferently, according to the fancy of the generals.

The ſame diverſity has been obſerved with regard to the French and Engliſh; on which account, authors are divided when they ſpeak of the ancient *arms* of thoſe countries.—In effect, it appears, from all the beſt authors, that the armories of houſes, as well as the double names of families, were not known before the year 1000. And ſeveral have even endeavoured to prove, that the uſe of *arms* did not begin till the time of the firſt croiſades of the Chriſtians in the Eaſt.

The truth is, it appears to have been the ancient tournaments that occaſioned the fixing of armories.

Henry the Fowler, who regulated the tournaments in Germany, was the firſt who introduced theſe marks of honour, which appear to be of an older ſtanding in Germany, than any other part of Europe.—It was then that COATS *of arms* were firſt inſtituted; which were a kind of livery compoſed of ſeveral bars, fillets, and colours; whence came the *feſs*, *bend*, *pale*, *chevron*, and *lozenge*; which were ſome of the firſt elements of ARMORIES. See BEND, CROSS, FESS, &c.—Thoſe who had never been concerned in any tournament, had no *arms*, though they were gentlemen.

Such of the nobility and gentry as croſſed the ſea, in the expeditions to the Holy Land, alſo aſſumed theſe tokens of honour to diſtinguiſh themſelves.

Before theſe times, we find nothing upon ancient tombs but croſſes, with Gothic inſcriptions, and repreſentations of the perſons deceaſed. The tomb of pope Clement IV. who died in 1268, is the firſt whereon we find any *arms*; nor do they appear on any coins ſtruck before the year 1336. We meet with figures, it is true, much more ancient, both in ſtandards, and on medals; but neither cities nor princes ever had *arms* in form: nor does any author make mention of *blazoning* before that time.

Originally, none but the nobility had a right of bearing *arms*; but king Charles V. having ennobled the Pariſians, by his charter in 1371, he permitted them to bear *arms*: from whoſe example, the more eminent citizens of other places did the like.

Camden refers the original of hereditary *arms* in England, to the time of the firſt Norman kings. He ſays, their uſe was not eſtabliſhed till the reign of king Henry III. and inſtances in ſeveral of the moſt conſiderable families in England, wherein, till that time, the ſon always bore different *arms* from the father.—About the ſame time it became the cuſtom here in England, for private gentlemen to bear *arms*; borrowing them from the lords of whom they held in fee, or to whom they were the moſt devoted. See BEARINGS.

ARMS, at preſent, follow the nature of titles, which being made hereditary, theſe are alſo become ſo, being the ſeveral marks for diſtinguiſhing of families and kindreds, as names are of perſons and individuals.

Arms make the object of the art of HERALDRY.

ARMS are variouſly diſtinguiſhed by the *Heralds*.

ARMS *of alliance*, are thoſe which families, or private perſons, join to their own, to denote the *alliances* which they have contracted by marriage.

ARMS, *aſſumptive*, are ſuch as a man has a right to aſſume of himſelf, in virtue of ſome gallant action.

As, if a man who is no gentleman of blood, nor has coat armour, takes a gentleman, lord, or prince, priſoner in any lawful war; he becomes entitled to bear the ſhield of ſuch priſoner, and enjoy it to him and his heirs.—The foundation hereof is that principle in *Military Law*, that the dominion of things taken in lawful war, paſſes to the conqueror.

ARMS, *canting*, are thoſe wherein the figures bear an alluſion to the name of the family.—Such are thoſe of the family of La Tour in Auvergne, who bear a tower; that of the family of Prado in Spain, whoſe field is a meadow.

Moſt authors hold theſe the moſt noble and regular, as is ſhewn by an infinity of inſtances produced by father Varenne and Menetrier.—They are much debaſed, when they come to partake of the REBUS.

ARMS, *charged*, are ſuch as retain their ancient integrity and value, with the addition of ſome new honourable CHARGE or BEARING, in conſideration of ſome noble action.

ARMS *of community*, are thoſe of biſhopricks, cities, univerſities, and other bodies corporate.

ARMS *of conceſſion*, or augmentation of honour, are either *entire arms*, or elſe one or more figures given by princes, as a reward for ſome extraordinary ſervice.

ARMS *of dominion*, are thoſe which emperors, kings, and ſovereign ſtates bear; being annexed to the territories which they poſſeſs. Thus the three lions are the *arms* of England; the *fleurs de lys* thoſe of France, &c.

ARMS *of family*, or *paternal arms*, are ſuch as belong to a particular family, and which no other perſon has a right to aſſume.

ARMS, *full*, or *entire*, are ſuch as retain their primitive purity, integrity, or value; without any alterations, diminutions, abatements, or the like.

It is a rule, that the ſimpler and leſs diverſified the *arms*, the more noble and ancient they are.—For this reaſon, Garcias Ximenes, firſt king of Navarre, and his ſucceſſors for ſeveral ages, bore only GULES, without any figure at all.

The *arms* of princes of the blood, of all younger ſons, and junior families, are not pure, and full; but diſtinguiſhed and diminiſhed by proper differences, &c. See DIFFERENCE, &c.

ARMS *of patronage*, are thoſe which governors of provinces, lords of manors, &c. add to their family *arms*, in token of their peculiar ſuperiority and juriſdiction. See alſo PATRONAGE.

ARMS *of pretenſion*, are thoſe of ſuch kingdoms or territories to which a prince or lord has ſome claim, and which he adds to his own, though the kingdoms or territories be poſſeſſed by a foreign prince, or other lord. Thus the kings of England have quartered the *arms* of France with their own, ever ſince the claim of Edward III. to that kingdom, in 1330.

ARMS *of ſucceſſion*, are aſſumed by thoſe who inherit eſtates, manors, &c. by will, intail, or donation, and which they either impale or quarter with their own *arms*.

ARMS are alſo ſaid to be *parted*, *couped*, *quartered*, &c. See PARTI, &c.

Arms are ſaid to be *falſe* and *irregular*, when there is ſomething in them contrary to the eſtabliſhed rules of HERALDRY.—As, when metal is put on metal, or colour on colour, &c.

The laws, and other affairs of *arms*, with the cognizance of offences committed therein, belong, among us, to the earl-marſhal, and college of *arms*. See COLLEGE *of arms*.

ARMS, in *Falconry*, denote the legs of an hawk, from the thigh to the foot. See HAWKING.

ARMS, *king at*. See KING *at arms*.

ARMS, *herald at*. See HERALD.

ARMS, *pourſuivant at*. See POURSUIVANT.

ARMY, a large body of ſoldiers, conſiſting of horſe and foot, under the command of a general, with ſeveral ranks of ſubordinate officers under him.

An *army* conſiſts of ſquadrons and battalions, and is uſually divided into three corps; which are ranged in three lines. The firſt line is called the *van-guard*; the ſecond, the *main body*; and the third, the *rear-guard*, or *body of reſerve*.—The middle of each line is poſſeſſed by foot; the cavalry forms the wings on the right and left; and ſometimes they alſo place ſquadrons of horſe in the intervals between the battalions.

When the *army* is ranged in order of battle, there are five feet diſtance between the horſes, and three between the foot. But in the ſhock the file contracts, and its front leſſens almoſt to one half.

In each line the battalions are diſtant from each other about 180 feet, a diſtance about equal to the extent of their front; and the ſame holds of the ſquadrons, which are about 300 feet diſtant, the extent of their own front. Theſe intervals are left for the ſquadrons and battalions of the ſecond line, to range themſelves againſt the intervals of the firſt line; and thoſe of the third line, againſt the intervals of the ſecond; that both the one and the other may march more readily through theſe ſpaces to the enemy.

There are uſually 300 feet left between the firſt line and the ſecond, and 600 between the ſecond line and the third; that there may be room to rally when the ſquadrons and battalions are broke. Sauv. Nouv. Ecol. Milit. p. 266.

Long experience has ſhewn, that in Europe, a prince with a million of ſubjects cannot keep an *army* of above ten thouſand men, without ruining himſelf. It was otherwiſe in the ancient republics: the proportion of ſoldiers to the reſt of the people, which is now as about one to an hundred, might then be as about one to eight. The reaſon ſeems owing to that equal partition of lands, which the ancient founders of commonwealths made among their ſubjects; ſo that every man had a conſiderable property to defend, and had means to defend it with. Whereas, among us, the lands and riches of a nation being ſhared among a few, the reſt have no way of ſubſiſting, but by trades, arts, and the like: and have neither any free property to defend, nor means to enable them to go to war in defence of it, without ſtarving their families. A large part of our people are either artiſans or ſervants, and ſo only miniſter to the luxury and effeminacy of the great. While the equality of lands ſubſiſted, Rome, though only a little ſtate, being refuſed the ſuccours which the Latins were obliged to furniſh after the taking of the city in the conſulate of Camillus, preſently raiſed ten legions within their own walls: which was more, Livy aſſures us, than they were able to do in his time, though maſters of the greateſt part of the world. A full proof, adds the hiſtorian, that we are not grown ſtronger; and that what ſwells our city is only luxury, and the means and effects of it. Vid. Liv. Dec. 1. lib. 7. and Conſid. ſur les Cauſ. de la Grand. des Rom. chap. iii. p. 24.

Our *armies* anciently were a ſort of militia, compoſed chiefly of the vaſſals and tenants of the lords.

When each company had ſerved the number of days or months enjoined by their tenure, or the cuſtoms of the fees they held, they returned home. See TENURE, FEE, &c.

The *armies* of the empire conſiſt of divers bodies of troops, furniſhed by the ſeveral circles. See EMPIRE, and CIRCLE.

The groſs of the French *armies*, under the Merovingian race, conſiſted of infantry. Under Pepin and Charlemagne, the *armies* conſiſted almoſt equally of cavalry and foot: but ſince the declenſion of the Carlovingian line, the fees being become hereditary, the national *armies*, ſays Le Gendre, are chiefly cavalry.

The *armies* of the Grand Signior conſiſt chiefly of JANISARIES, SPAHIS, and TIMARIOTS.

ARMY, *naval*, is a number of ſhips of war, equipped and manned with ſailors and marines, under the command of an admiral, with other inferior officers under him.

ARMY *of obſervation*, is employed by beſiegers, to prevent relief being brought into a place, or the ſiege being raiſed by the enemy.

ARMY, *royal*, is an *army* marching with heavy cannon; capable of beſieging a ſtrong, well-fortified city.

For the diſeaſes incident to *armies*, ſee DISEASE, CAMP, GARRISON, HOSPITAL, SOLDIER, &c.

ARNABOS, in the *Materia Medica*, a name of an aromatic drug, deſcribed by Paulus Ægineta, and other of the Greek phyſicians, and ſuppoſed to be the ſame with the *zarnab* of Aviſenna, that is, with the CARPESIA of the more ancient Greek writers.

This was a drug much uſed as an aromatic and cordial, and allowed in many caſes to be a good ſubſtitute for CINNAMON. It was the young ſhoots of the CUBEB-*tree*, or ſomething of that kind.

ARNALDIA, in *Phyſic*, a ſlow malignant kind of diſeaſe, frequent formerly in England; the moſt diſtinguiſhing ſymptom whereof was a falling of the hair.

Authors are much at a loſs for the nature and kind of this diſeaſe, which appears to have been peculiar to our country. From the deſcription given of it in an ancient chronicle, Mollerus concludes it to have been a ſpecies of the venereal diſeaſe, as that diſtemper appeared in thoſe days in this country.

ARNICA, in *Botany*, a genus of the *ſyngeneſia polygamia ſuperflua* claſs. Its characters are, that it hath a compound flower; the borders or rays being compoſed of many female florets, which ſpread open; the diſk or middle hath many hermaphrodite flowers, which are tubulous, and have each five ſhort *ſtamina*. In the hermaphrodite flowers, the *germen* is ſituated below the flower, which afterwards becomes a ſingle oblong ſeed, crowned with long ſlender down. There are two ſpecies; which grow on the Alps, and in the northern parts of Europe.

There is another *arnica*, which Neumann calls *ſchweedenſis*, that is, a ſpecies of the *aſter*. P. 361.

Dr. Bruckner recommends the decoction of *arnica vera*, or PLAVIENSIS, in feveriſh diſorders, accompanied with hæmorrhages, effloreſcentiæ, &c.

Neumann ſays, the flowers and leaves are emetic, or purgative; and it is ſaid, he adds, that an infuſion of them is remarkably ſerviceable for reſolving coagulated blood from falls, &c. and in obſtructions of different kinds. He gives alſo the chemical hiſtory of this ſpecies of DORONICUM. P. 356.

ARNODI, in *Antiquity*, the ſame with RHAPSODI.

The word is compounded of *αρνος*, *a lamb*, which was their uſual reward; and *ωδη*, *ſong*, or *ſinging*.

ARNOLDISTS, ARNALDISTS, in the twelfth century; ſo called from their chief, Arnold of Breſſe, who was a great declaimer againſt the wealth and vices of the clergy; and who is alſo charged with preaching againſt baptiſm, and the euchariſt.

After raiſing great diſturbances at Breſſe and Rome, he was burnt at this latter place in 1155, and his aſhes caſt into the Tiber.—His diſciples were alſo called *Publicans*, or *Poplicani*.

ARNOTTA, in *Botany*, a name given by the peaſants of Burgundy, and many other places, to certain roots which they frequently turn up, from five or ſix inches depth, in plowing the ground. They carefully collect theſe, and eat them, after roaſting in the aſhes, or otherwiſe; by which ſort of cooking they acquire the taſte of a cheſnut, and are found to be a very wholſome and nouriſhing food. They are blackiſh on the outſide, and white within, and are of the ſize of a ſmall walnut. They are common in the north of Scotland, and called *arnots*.

ARNULPHIN, *Arnulphinus*, a coin of the value of a ducat and an half, current in ſome parts of France in the 15th century. Du-Cange.

AROBE, by ſome ſpelt and pronounced *arrobe*; in Spaniſh, *arroba*; in the language of Peru, *arroue*: a weight uſed in Spain, Portugal, Goa, Brazil, and throughout all Spaniſh America. All theſe *arobes* are ſcarcely like each other but in name, being very different in weight, and in their proportion to the weights of other countries. The *arobe* of Madrid, and almoſt all over Spain, weighs twenty-five Spaniſh pounds.

AROLEC, the name of a weight, in uſe in ſome parts of America, and in quantity equal to twenty-five pounds of our weight.

AROMA is, by ſome authors, particularly applied to denote MYRRH.

AROMA *Germanicum*, a denomination given by Platerus to ELECAMPANE.

Some writers give the title *aroma Germanicum* to JUNIPER-*berries*, on account of the great eſteem they are in among that people, for their ſpicy, warm qualities; in which reſpect they are by many preferred to ginger itſelf.

AROMA *philoſophorum*, is uſed by ſome for SAFFRON.

Others give the appellation of *aroma philoſophorum* to Paracelſus's AROPH.

AROMATIC, AROMATICUS, is underſtood of a drug, plant, or the like, which yields a briſk fragrant ſmell, and a warm ſpicy taſte.

The word is formed of *αρωμα*, which is compounded of *αρι*, *very*, and *οδμη*, or *οσμη*, *ſmell*.

AROMATICS, or AROMATIC *medicines*, are either *ſimple* or *compound*.—To this claſs belong moſt cardiac, cephalic, and carminative remedies, with many ſtomachic ones.

Of this kind are frankincenſe, ſtorax, benjoin, cinnamon, mace, cloves, nutmeg, pepper, &c.—Such alſo are lavender, marjoram, ſage, thyme, roſemary, &c.

The peculiar qualities of *aromatics* reſide in their eſſential oils, and reſinous parts. The more eſſential oil any vegetable affords, the weaker the oil is, and *vice verſâ*. The taſte and pungency of ſome of them reſide in the oil, and of others of them in a fixt gummy reſinous matter.

Powders which have *aromatic*, or other acrid particles in them, not only abſorb liquors, but give more or leſs ſtimulus; and as the effect of all irritation is ſome degree of inflammation, which in ſores is principally removed by a ſubſequent increaſed ſuppuration, theſe powders may aſſiſt to ſeparate corrupted from ſound parts. Such of them as have balſamic particles in their compoſition, encourage the ſuppuration moſt.

Several of them reſiſt the putrefaction of animal ſubſtances, and therefore may preſerve a carious bone, or the matter coming from it, from ſuch a high degree of putrefaction as they might otherwiſe attain.

Beſide theſe effects on the ſore, regard muſt always be had to their operation, if any of their particles are abſorbed by the blood-veſſels, for ſome of them produce a fever in a greater or leſs degree, others become purgatives, &c. Med. Eſſ. Edinb. vol. V. art. 24.

Aromatics are of particular ſervice in cold cachectic habits, where the load of humours has been forced away by ſtrong detergents and cathartics; as they tend to ſtrengthen the fibres, and prevent a relapſe.—Hence alſo they become of neceſſary uſe after purging, and carrying off the waters of a dropſy, or in the intervals, to fortify the ſprings, and prevent a filling again.

AROMATICUM *roſatum*, is a compound officinal powder, made of red roſes, liquorice, aloes-wood, yellow ſanders, cinnamon, cloves, mace, gum tragacanth, nutmegs, cardamoms, galangals, ſpikenard, ambergriſe, and muſk, all mixed together. It is chiefly preſcribed in cordial and cephalic boluſes and electaries, to ſtrengthen the ſtomach and head, which all *aromatics* have a tendency to do.

AROMATICUM *vinum*. See VINUM.

AROMATICUS *calamus*. See CALAMUS.

AROMATITIS, in *Ancient Phyſiology*, a kind of bituminous ſtone, by ſome repreſented as a gem, both in ſmell and colour reſembling myrrh.

It is ſaid to have been found in Arabia and Egypt, and to have been in great uſe among ladies, as a perfume.

ARONDE, in *Fortification*. See DOVETAIL, and QUEUE *d'Aronde*.

ARO-ORCHIS, in *Botany*. See GALANGAL.

AROPH, a term uſed by Paracelſus, to denote a medicine endued with a power of breaking or diſſolving the ſtone in the human body.

In which ſenſe, *aroph* amounts to the ſame with *lithontriptic*. Van Helmont aſſures us, that he was poſſeſſed of the *aroph*; and from his account, it ſeems to have been a preparation of ſaffron and rye-bread, digeſted with ſpirit of wine, in a horſe-dung heat, and at length diſtilled. Vid. Cnoeffel. in Ephem. Acad. N. C. Dec. I. An. 4. Obſ. 109.

AROPH *Paracelſi* is alſo a name given to a kind of chemical flowers, elegantly prepared by ſublimation, from equal quantities of *lapis hæmatitis* and *ſal ammoniac*; ſaid to be of great efficacy in quartan agues, the *plica Polonica*, and hypochondriac diſeaſe.

This is alſo called *aroma philoſophorum*.

AROPH is alſo uſed to denote MANDRAGORA.

ARORNOS, in *Botany*, a name by which ſome authors have called the JUNIPER.

AROURA, a Grecian meaſure, of fifty feet.

AROURA was more frequently uſed for a ſquare meaſure, the half of the plethron.

The Egyptian *aroura* was the ſquare of a hundred cubits. Arbuth. Tab. 9.

ARPAGIUS, or rather HARPAGIUS, in ſome ancient inſcriptions, ſignifies a perſon who died in the cradle, at leaſt in early youth.

The word is formed from ἁρπαζω, *rapio, I ſnatch*.

The Romans made no funerals for their *arpagii*.—They neither burnt their bodies, nor made tombs, monuments, or epitaphs for them, which occaſioned Juvenal to ſay,

—— *Terra clauditur infans,*
Et minor igne rogi. ——

In after-times it became the cuſtom to burn ſuch as had lived to the age of forty days, and had cut any teeth; though theſe they alſo called ἁρπακτοι, or ἁρπαγμενοι, q. d. *rapti, raviſhed*. The uſage ſeems to have been borrowed from the Greeks; among whom, Euſtathius aſſures us, it was the cuſtom never to bury their children either by night or full day, but at the firſt appearance of the morning; and that they did not call their departure by the name of death, but by a ſofter appellation, ἡμερας αρπαγη; importing, that they were raviſhed by Aurora, or taken away to her embraces.

ARPENT. See ACRE.

ARQUATA, in *Zoology*, the name of a bird, called alſo by ſome NUMENIUS, and commonly known in England by the name of the CURLEW.

The male in this ſpecies is ſomewhat ſmaller than the female, and is called the *jack curlew*.

It is well known to be a very delicately taſted bird. Ray.

ARQUATA *minor*, in *Zoology*, the name uſed by authors for the bird called by our ſportſmen the WIMBREL.

ARQUEBUSADE, in *Medicine*, is a name given to a kind of water originally of French invention, recommended as uſeful in caſes of gun-ſhot wounds, from whence it derives its name. The compoſition of it is not generally known, but it is ſaid to be made from mint, ſage, mugwort, &c. and lime-water diſtilled in wine. It is alſo called *aqua vulneraria, aqua ſclopetaria*, and *aqua catapultarum*.

ARQUEBUSS, a large hand-gun, ſomething bigger than our muſquet; and called, by ſome, a caliver. See HARQUEBUSS.

ARQUEBUSS *a Croc*, is a ſort of ſmall fort-arm, which carries a ball of about three half ounces; now only uſed in Old Caſtile, and ſome garriſons of the French.

ARRACHEE, in *Heraldry*, is underſtood of repreſentations of plants forcibly torn up by the roots, with their roots hanging at them.

In this ſenſe, *arrachee* amounts to the ſame with what is otherwiſe called *eradicate*, or *eraſed*. Niſb. Her.

ARRACK; ſee ARAC.

ARRAIATIO *peditum*, the ranging or arraying of foot-ſoldiers.

ARRAIGN, or ARAIGN, in *Law*, ſignifies to ſet a thing in order, or in its place.

It is derived from the French *arraiſoner*, i. e. *ad rationem ponere, to call a man to anſwer in form of law*; which comes from the barbarous Latin *adrationare*, i. e. *placitare*.—In which ſenſe, to *arraign* a criminal, is *ponere eum ad rationem*.

Thus, he is ſaid to *arraign* a writ of *novel diſſeiſin*, who prepares and fits it for trial before the juſtices of the circuit. To *arraign* the aſſize, is to cauſe the demandant to be called to make the plaint, and to ſet the cauſe in ſuch order, as the tenant may be forced to anſwer thereto.

A priſoner is alſo ſaid to be *arraigned*, when he is indicted, and brought forth to TRIAL. But no man is properly *arraigned*, except at the ſuit of the king, upon an indictment found againſt him, or other record, wherewith he is to be charged: and this *arraignment* requires that the priſoner appears to be tried, and holds up his hand at the bar, for the certainty of the perſon, and makes a ſufficient plea to the indictment. 1 Inſt. 262. 263. The priſoner is to hold up his hand only in treaſon and felony; but this is only a ceremony: if he own that he is the perſon, it is ſufficient without it; and then upon his *arraignment* his fetters are to be taken off, and he is to be treated with all the humanity imaginable. 2 Inſt. 315. 3 Inſt. 35. The pleas upon *arraignment* are either the general iſſue, not guilty; plea in abatement, or in bar; and the priſoner may demur to the indictment; alſo he may confeſs the fact, but then the court has nothing more to do than to proceed to judgment againſt him. Till lately, if he ſtood mute, and did not put himſelf upon trial, he muſt have ſuffered the penance *pain fort & dure*, in caſes of felony, &c. 3 Inſt. 217. But now, by 12 Geo. III. c 20. ſtanding mute in felony or piracy is made a conviction. In indictments of high treaſon, or petit larceny, ſtanding mute was always equivalent to a conviction, and the criminal ſhall receive the ſame judgment and execution. For the ſolemnity of the *arraignment* and trial of a priſoner, ſee Dalt. c. 185. p. 515.

ARRANGEMENT, or RANGEMENT, the diſpoſition of the parts of a whole, in a certain order.

The modern philoſophy ſhews us, that the diverſity of the colours of bodies, depends entirely on the ſituation and *arrangement* of the parts, which reflect the light differently; the diverſity of taſtes and ſmells on the different *arrangements* of the pores, which render them differently ſenſible; and the general diverſity of bodies on the different *arrangement* of their parts.

The happy *arrangement* of words makes one of the greateſt beauties of diſcourſe.

ARRANGEMENTS, *philoſophical*. This title is given by the ingenious J. Harris, Eſq. to a moſt excellent commentary on the CATEGORIES of Ariſtotle; it is juſt as happy a ſimplification of *Logic*, as his *Hermes* is of *Grammar*. Both theſe valuable books, ſo well calculated to convey ſenſible and preciſe notions of logic and grammar, might be very uſefully and compendiouſly exhibited in the forms of a *logical* and *grammatical* tree, after the manner of genealogical tables.

ARRAS HANGINGS, a ſort of rich TAPESTRY, made at Arras, in the county of Artois, in Flanders.

ARRAY, in *Law*, the ranking or ordering a jury or inqueſt of men impanelled on any cauſe.

The word may be derived either from the obſolete French, *array, order*; or from *raye, a line, ſtroke*, &c. Hence to *array* a pannel, ann. 3 Hen. V. &c. is to ſet forth the men impanelled one by another.—By the ſtatute, every *array* in aſſize ought to be made four days before.

ARRAYERS, or ARRAJERS, ARRAITORES, is uſed, in ſome ancient ſtatutes, for ſuch officers as had care of the ſoldiers armour, and ſaw them duly accoutred in their kinds. Stat. 12 R. II. c. 6.

In ſome reigns, commiſſioners have been appointed for this purpoſe. Such were the commiſſioners of *array* appointed by king Charles I. in the year 1642.

ARREARS, ARREARAGES, ARRERAGIUM, or ARRIERAGIUM, the remains of an account; or a ſum of money remaining in the hands of an accomptant.

The word is derived from the French *arrerages*, which is formed from *arriere, behind*.

ARREARS is alſo uſed more generally for a remainder of rents or monies unpaid at the due time; whether they be rents of a manor, or any other thing reſerved: called alſo, in ſome writers, *arrieragium firmarum*.

ARRENTATION, in the *Foreſt-Law*, the licenſing an owner of lands in the foreſt, to incloſe them with a low hedge, and ſmall ditch, in conſideration of a yearly rent.

Saving the arrentations, denotes a power reſerved to give ſuch licences for yearly rent.

ARREST, in *Common Law*, the apprehending or reſtraining of one's perſon, in execution of the command of ſome court, or officer of juſtice.

The word *arreſt* is French, and is uſed in that language for a decree or determination of a cauſe debated to and fro: in which ſenſe it ſeems derived from αρεστον, *placitum, the pleaſure of the court*.

Hence, when a perſon is legally ſtopped, apprehended, and reſtrained of his liberty, for debt, &c. he is ſaid to be *arreſted*, or put under an *arreſt*; which is the beginning of impriſonment.

None ſhall be *arreſted* for debt, treſpaſs, &c. or other cauſe of action, but by virtue of a precept or commandment out of ſome court: but for treaſon, felony, or breach of the peace, a man may *arreſt* without precept or warrant. Term de Ley. 54. Perſons preſent at the committing a felony, muſt uſe their endeavours to apprehend the offender, under penalty of fine and impriſonment. 3 Inſt. 117. 4 Inſt. 177. The king cannot command any one by word of mouth to be *arreſted*; but he muſt do it by writ, or order of his courts, according to law: nor may the king *arreſt* any man for ſuſpicion of treaſon or felony, as his ſubjects may; becauſe if he doth wrong, the party cannot have action againſt him. 2 Inſt. 186. If a bailiff lays hold of one by the hand (whom he hath a warrant to *arreſt)* as he holds it out at the window, this is ſuch a taking of him, that the bailiff may juſtify the breaking open of the houſe to carry him away. 1 Vent. 306. When a perſon has committed treaſon or felony, &c. doors may be broke open to *arreſt* the offender; but not in civil caſes, except it be in purſuit of one *arreſted*, or where a houſe is recovered by real action, to deliver poſſeſſion to the perſon recovering. Plowd. 5. Rep. 91. Action of treſpaſs, &c. lies for breaking open a houſe to make *arreſt* in a civil action. Mod. Caſ. 105. But if it appear that a bailiff found an outer door, &c. open; it is ſaid he may open the inner door to make an *arreſt*. Comber. 327. An *arreſt* in the night, as well as the day, is lawful. 9 Rep. 66. By ſtat. 29 Car. II. c. 7. *arreſt* ſhall not be made on a Sunday, except in caſes of treaſon, felony, or for breach of the peace. But a perſon may be retaken on a Sunday, if *arreſted* the day before, &c. Mod. Caſ. 231.

To *move* or *plead in arreſt of judgment*, is, to ſhew cauſe why judgment ſhould be ſtayed, though there be a verdict in the cauſe.

Judgment may be *arreſted* for good cauſe in criminal caſes, as well as civil; if the indictment be inſufficient, &c. 3 Inſt. 210. Four days are allowed to move in *arreſt* of judgment.

To *plead in arreſt of taking the inqueſt*, is, to ſhew cauſe why an inqueſt ſhould not be taken.

ARRESTANDIS *bonis ne diſſipentur*, a writ which lies for him whoſe cattle or goods are taken by another, who, during the controverſy, makes, or is likely to make away with them, and will hardly be able to give ſatiſfaction for them afterwards.

ARRESTANDO *ipſum, qui pecuniam recepit ad proficiſcendum in obſequium regis*, &c. is a writ which lies for the apprehenſion of him that hath taken preſs-money to ſerve in the king's wars, and hides himſelf when he ſhould go.

ARRESTO *facto ſuper bonis mercatorum alienigenorum*, &c is a writ which lies for a denizen againſt the goods of ſtrangers, or perſons of another country, found within this kingdom, in recompence of goods taken from him in that country, after he hath been denied reſtitution there.

This anſwers to what among the ancient civilians was called *clarigatio*, now barbarouſly REPRISALIA.

ARRETED, ARRECTACUS, is ſometimes uſed in our ancient LAW-*books* for imputed, or laid to.—As, no folly may be *arreted* to one under age.

ARRETS, among *Farriers*, denote a ſort of mangy tumours on the ſinews of the hind legs of a horſe, between the ham and the paſtern; called alſo *rat-tails*.

The name is taken from the reſemblance they bear to the *arretes*, or back-bones of fiſhes.

ARRHABONARII, in *Eccleſiaſtical Hiſtory*, a ſect, in the ſixteenth century, who held that the euchariſt is neither the real fleſh and blood of Chriſt, nor yet the ſign of them, but only the pledge or earneſt thereof.

The word is derived from ἀῤῥαβων, *arrha*, *earneſt*.

ARRHÆ, or *Argentum Dei*. See EARNEST, &c.

ARRHAPHON, denotes a ſkull without ſutures, found to be the cauſe of incurable CEPHALALGIÆ.

ARRHENOGOGON, in *Botany*, a name given by ſome to the *parietaria*, or PELLITORY *of the wall*.

ARRHEPHORIA, a feaſt among the Athenians, inſtituted in honour of Minerva, and Herſe, daughter of Cecrops.

The word is compoſed of ἀῤῥητον, *myſtery*, and φερω, *I carry*; on account of certain myſterious things which were carried in proceſſion at this ſolemnity.

Boys, or, as ſome ſay, girls, between ſeven and twelve years of age, were the miniſters that aſſiſted at this feaſt, and were denominated ἀῤῥηφοροι.

This feaſt was alſo called *Herſiphoria*, from Herſe, the daughter of Cecrops, on whoſe account it is ſaid to have been firſt eſtabliſhed.

ARRIAGI, in the *Materia Medica*, a name given by ſome authors, particularly by Serapion and Aviſenna, to a fine kind of CAMPHOR.

ARRIERE-BAN, or ARIERE-*ban*, in the *French Cuſtoms*, is a general proclamation, whereby the king ſummons to the war all that hold of him; both his vaſſals, i. e. the nobleſſe, and the vaſſals of his vaſſals.

M. Caſeneuve takes the word to be compoſed of *arriere* and *ban*: the *ban*, according to him, denotes the convening of the nobleſſe or vaſſals, who hold fees immediately of the king; and *arriere*, thoſe who only hold of the king mediately.

To the provoſt of Paris belong the convoking and commanding of the *arriere-ban*.

ARRIERE-*fee*, or *fief*, is a FEE dependent on ſome other ſuperior one.

Arriere-fees commenced at the time when the counts and dukes, rendering their governments hereditary in their families, diſtributed to their officers certain parts of the royal domains which they found in their provinces; and even permitted thoſe officers to gratify the ſoldiers under them with parts thereof.

ARRIERE-*guard*. See REAR-*guard*.

ARRIERE-*vaſſal*, or *tenant*, the VASSAL or tenant of another vaſſal or tenant.

ARROBAS, or AROBAS. See AROBE.

ARROGATION; ſee ADROGATION.

ARRONDIE, in *Heraldry*. CROSS-*arrondie*, or *rounded*, is that whoſe arms are compoſed of ſections of a circle, not oppoſite to each other, ſo as to make the arm bulge out thicker in one part than another; but both the ſections of each arm lie the ſame way, ſo that the arm is every where of an equal thickneſs; and all of them terminating at the edges of the eſcutcheon, like the plain croſs.

ARROW, a miſſive weapon of offence, ſlender, pointed and barbed, made to be caſt or ſhot with a bow. See ARCHERY.

We ſay, a flight of *arrows*: *arrows* are alſo called *ſhafts*.

ARROW-*makers* are called *fletchers*, who were formerly, as well as *bowyers*, perſons of great conſequence in the commonwealth.—*Arrow*-heads and quarels were to be well boched or braſed, and hardened at the points with ſteel; the doing of which ſeems to have been the buſineſs of the *arrow*-ſmith. Vid. Stat. 7 H. IV. c. 7.

ARROW, in *Aſtronomy*, *Trigonometry*, &c. See SAGITTA.

ARROW, in *Fortification*, is a work placed at the ſaliant angles of the glacis, and conſiſts of two parapets, each forty toiſes long. This work has a communication with the covert-way, of about twenty-four or thirty feet broad, called *caponier*; and a ditch before it, of five or ſix toiſes.

ARROW, in *Surveying*, is uſed for ſmall ſtraight ſticks about two feet long, ſhod with iron ferrils. Their uſe is to ſtick into the ground, at the end of the CHAIN.

ARROW, *elf*. See ELF-*arrows*.

ARROW, *magical*, a ſort of weapon very common among the barbarous inhabitants of Lapland, and many other of the northern climates; and ſuppoſed to poſſeſs very ſtrange virtues.

ARROW, *wild-fire*. See WILD-FIRE.

ARROW-*head*, *ſagittaria*, in *Botany*, a genus of the *monoecia polyandria* claſs. Its characters are theſe: it hath male and female flowers on the ſame plant; the male flowers have a permanent empalement of three concave leaves; they have three roundiſh petals, which ſpread open, and many awl-ſhaped *ſtamina*, collected into a head terminated by erect ſummits. The female flowers are ſituated below the male; theſe have a three-leaved empalement, and three petals as the male, but no *ſtamina*; they have many compreſſed *germina* collected in a head, ſituated upon very ſhort ſtyles, and have permanent acute *ſtigmata*. The *germina* afterwards become oblong compreſſed ſeeds, having longitudinal borders, and are collected in globular heads. There are two ſpecies. See SAGITTARIUM *alexipharmacum*.

ARROW-*headed graſs*. See TRIGLOCHIN.

ARROW-*root*, *Indian*, *maranta*, in *Botany*; a genus of the *monandria monogynia* claſs. Its characters are theſe: the flower hath one petal of the grinning kind, with an oblong compreſſed tube cut into ſix ſmall ſegments, repreſenting a lip-flower. It has one membranaceous *ſtamen*, appearing like a ſegment of the petal, and a roundiſh *germen* ſituated under the flower, which turns to a roundiſh three-cornered capſule with three valves, containing one hard rough ſeed. There are two ſpecies, natives of the warm parts of America.

It is eſteemed a ſovereign remedy againſt the bite of waſps, and the poiſon of the MANCHINEEL-*tree*.

ARS *Notoria*. See NOTORIUS.

ARS *Theſſalica*, *Theſſalian art*, is uſed by *Ancient Writers*, for a ſpecies of MAGIC, whereby, it is pretended, they could draw the moon and ſtars out of heaven.

It was denominated *Theſſalian* from its ſuppoſed inventors, the people of Theſſaly.

ARSCHIN, a long meaſure uſed in China, to meaſure ſtuffs; of the ſame length with the Dutch ell, which is two feet eleven lines.

ARSE-*verſe*, in *Antiquity*, a term, or formula, inſcribed on doors, to prevent fire.

It is ſaid to be of Tuſcan origin, where the word *arſe* ſignies *avert*, and *verſe*, *fire*. Pitiſc. Lex. Ant.

ARSELLA, in *Botany*, a name given by ſome of the

Greek writers, to the *argemone*, a kind of wild poppy; and by others, to the common *agrimony*. Both one and the other of theſe plants they alſo ſometimes called SARCOCOLLA.

ARSENAL, a royal or public magazine, or place appointed for the making and keeping of arms, neceſſary either for defence or aſſault.

The *arſenal* of Venice is the place where the gallies are built and laid up.—The *arſenal* of Paris is that where the cannon or great guns are caſt. It has this inſcription over the gate:

Ætna hæc Henrico vulcania tela miniſtrat,
Tela Gigantæos debellatura furores.

There are *arſenals*, or ſtore-houſes, appropriated to naval furniture and equipments.—At Marſeilles is the *arſenal* for the gallies; and at Toulon, Rochefort, and Breſt, are thoſe for the men of war.

ARSENIC, ARSENICUM, in *Natural Hiſtory*, a ponderous mineral ſubſtance, volatile and uninflammable, which gives a whiteneſs to ſeveral metals in fuſion, and proves extremely cauſtic, or corroſive, to animals, ſo as to become a violent poiſon.

The word is compounded of *ανηρ*, *man*, or *αρσην*, *male*, and *νικαω*, *I kill*; alluding to its poiſonous quality.

Arſenic is dug out of mines in Saxony, near Goſlar; in Bohemia, in the valley of Joachim; and in England, in the Mendip hills, in great quantities. It has ſo ſtrong a corroſive quality, as ſometimes to burn and ulcerate the hands and feet of the miners; and is a deadly poiſon for all known animals. All the three kinds of *arſenic* are extracted from it; and it likewiſe ſerves to make *zaffera*, uſed by potters in giving a blue colour to their veſſels; and the *encauſtum cœruleum*, or that kind of blue ſometimes uſed by painters; and often by women, to mix with their ſtarch for whitening and ſtiffening linen. The way to make all theſe is taught by Kunkel, in his Art of making Glaſs.

Arſenic is made by ſublimation from COBALT: the method of which, as practiſed in Hungary, is given us by Dr. Krieg, in the Philoſophical Tranſactions, Nº 293.—The COBALT being beat to powder, and the light ſandy part waſhed off, by a current of water, they put what remains into the furnace; the flame of which paſſing over the powder, takes along with it the *arſenical* part, in form of a ſmoke; which being received by a chimney, and carried thence into a cloſe wooden channel, ſticks by the way to the ſides; and is ſcraped off, in form of a whitiſh or yellowiſh powder.—From what remains of the *cobalt*, they proceed to make SMALT.

Arſenic conſiſts of an acid ſalt, and a kind of mercurial metallic ſubſtance, which diſcovers itſelf when it is diſtilled in a retort, mixed with ſoap, ſuet, oil, or any fat or oily ſubſtance: for with a ſtrong degree of fire, the *arſenic* will be raiſed into the neck of the retort in a metallic form, like *antimony*. The ſulphur contained in *arſenic* is in ſo ſmall a proportion, that it does not flame when caſt on burning coals; though *cobalt* contains a great quantity of ſulphur, which conſequently has been ſeparated from the *arſenical* parts in the calcination and deflagration, and ſo evaporated: but the ſmell of *arſenic* proves, that ſome ſulphur ſtill remains in it.

Arſenic is very volatile; for if any quantity of it is put into a crucible, and ſet over a fire, it neither burns, nor perfectly melts, but it will preſently evaporate in white fumes, without leaving any remainder. Geoffroy. This poiſonous mineral, though not found native in its perfect form, but buried in ores of various kinds, yet is capable of being ſeparated, and raiſed out of that ore, by the vapours continually paſſing through the earth; and, in this caſe, is carried up into the air, and occaſions many of the epidemical and fatal diſeaſes, to which the countries, where minerals are found in the earth, are ſubject. Delafont does not ſcruple to attribute the plague itſelf to the air's being infected with theſe *arſenical* exhalations, entering the human body, either by the pores, or by reſpiration, or both.

Arſenic is attracted with a different force by different metals, and attracts them reciprocally: of all metals, it abſorbs iron moſt greedily; after this, copper, tin, lead, ſilver, and gold, in this order of ſucceſſion; therefore, all metals may be freed from the foulneſs of *arſenic* by iron. The *ſcoriæ* may be uſed for this purpoſe in fuſion, in an open fire; for though they do not produce this effect as *ſcoriæ*, yet here being reduced to iron again, they act in the ſame manner as if pure iron had been put in.

Lead mixed with *arſenic*, and expoſed to the fire, is, in great part, immediately carried away in form of a thick ſmoke; the remainder is a glaſs of a fine ſaffron colour. Silver is alſo penetrated by *arſenic* in the ſame manner, and loſes its malleability; but the *arſenic* vaniſhes from it in a ſtrong fire, in the form of a ſmoke. Gold, penetrated by *arſenic*, becomes very brittle, and loſes its colour; and, being ſuddenly thrown into a violent fire part of it is ſublimed.

The ſmalleſt quantity of *cryſtalline arſenic*, being mixed with any metal, renders it friable, and abſolutely deſtroys its malleability.

Hence, the refiners dread nothing ſo much as *arſenic* in their metals; nor could any thing be ſo advantageous to them, were ſuch a thing to be had, as a *menſtruum* that would abſorb, or act on *arſenic* alone; for then their metals would be readily purified, without flying off, or evaporating.

A ſingle grain of *arſenic* will turn a pound of copper into a beautiful white metal, called *alchemy*, looking like ſilver. This hint many perſons have endeavoured to improve on, for making ſilver, but in vain, as the mixture could never be brought to ſuſtain the hammer: ſome have been hanged for coining ſpecies of this ſpurious ſilver.

The chemiſts furniſh ſeveral preparations of *arſenic*, which all turn on repeated ablutions and ſublimations, to blunt its corroſive ſalts, and change it into a ſafe medicine, after the manner of ſublimate.—Such are *ruby of arſenic*, &c. But it ſcarce appears worth the pains.

Arſenic, though a virulent poiſon, has been introduced into medicine. Mr. Boyle mentions a balſam made of it, with nitre and ſpirit of wine, or vinegar, as efficacious in the cure of venereal ulcers.

Dr. Cheyne mentions pills made of *arſenic*, as uſed for the cure of obſtinate quartans.

Arſenic is applied to many mechanical purpoſes. It is uſed by dyers, as an ingredient in their compoſitions for ſcarlets, and other fine red colours; by goldſmiths, for enamelling; by makers of glaſs, for promoting the fuſion of fritt, and the tranſparency of glaſs; by potters, for a white glazing; by aſſayers, in form of glaſs, for promoting the ſcorification of ores which contain tin and antimony, for the preparation of compound metals, and for whitening copper and braſs. Neumann obſerves, that a beautiful metal, like the fineſt ſteel, may be made by melting caſt iron with *arſenic*, glaſs, and a little tin; and that a metal reſembling ſilver may be made from iron, tin, *arſenic*, and perhaps a little copper. Mr. Brandt (Act. Upſal. 1733.) propoſes to make a varniſh for ſhips, of *arſenic*, with pitch, ſulphur, or roſin, to preſerve the timber from rotting, and from worms. See Neumann's Natural Hiſtory of this ſubſtance, and his account of its various kinds, effects, uſes, &c. in Dr. Lewis's edition of his Works, p. 140, & ſeq.

Arſenic is by ſome ranked in the claſs of *ſulphurs*.

There are divers kinds of *arſenics*; viz. yellow, red, and cryſtalline or white.

ARSENIC, *native*, is called ORPIMENT. It is of a yellow or orange colour; whence it is alſo denominated *auripigmentum*. It is chiefly found in copper-mines, in a ſort of glebes or ſtones, of different figures and ſizes. Its colour, though always yellow, yet admits of different ſhades and mixtures, as a golden yellow, reddiſh yellow, greeniſh yellow, &c. It is found to contain a portion of gold, but ſo little, as not to quit the coſt of ſeparating it; but there is beſides this a yellow factitious *arſenic*, made of the white *arſenic* and ſulphur.

Our yellow and red *arſenics* are artificial, being only white *arſenic* mixed with different proportions of ſulphur. The white is the ſtrongeſt, the yellow is weaker, and the red weakeſt. White *arſenic*, ſublimed with one tenth of its weight of ſulphur, is yellow; and with one fifth it is red. Both the yellow and the red foſſil *arſenics*, when of a ſmooth texture, are called *zarnichs*; but when compoſed of ſmall ſcales or leaves, they are called *auripigmenta*.

ARSENIC, *regulus of*, is the moſt fixed and compact part thereof, prepared by mixing it with pot-aſhes and ſoap, then fuſing the whole, and caſting it into a mortar; upon which the heavieſt part falls to the bottom.

ARSENIC, *cauſtic oil of*, is a butyrous liquor, like butter of antimony, prepared of *arſenic*, and corroſive ſublimate, being a combination of marine acid with the *arſenic*.—It ſerves to eat off fungous fleſh, and to cleanſe carious bones, &c.

Some recommend rock cryſtal reduced to an impalpable powder, as an antidote againſt *arſenic*; but large quantities of milk, oils, or fat broths, are more to be depended on, while the poiſon remains in the *primæ viæ*: but after it has got into the blood, alexiterial medicines are to be uſed, ſuch as Venice treacle, mithridate, bezoar, powder of vipers, contrayerva root, and ſuch like, and afterwards a milk diet. Geoffroy.

ARSENICAL *magnet*, *magnes arſenicalis*, is a preparation of antimony, with ſulphur and white *arſenic*.

ARSENOTHELYS, among *Ancient Naturaliſts*, the ſame with hermaphrodite.

The Greeks uſe the word both in ſpeaking of men and beaſts.—It is formed from αρσην and θηλυς, *male* and *female*.

ARSMART, *perſicaria*, in *Botany*. Its characters are theſe: the flower hath no empalement; it hath one petal, which is permanent, and cut into five ſegments, which ſpread open; it has in ſome ſpecies five, and in others ſix ſhort ſtamina, terminated by roundiſh ſummits, and a three-cornered germen, ſupporting two or three ſhort ſlender ſtyles, crowned by ſingle ſtigmas. The germen afterwards becomes a roundiſh, acute-pointed ſeed, wrapped up in the petal of the flower.

This, in the Linnæan ſyſtem, belongs to the genus POLYGONUM.—There are ſeveral ſpecies.

The common *arſmart* without ſpots, is by ſome eſteemed a good diuretic, but it ſeems too acrid to be given internally without great caution. Externally it is uſed by many in cataplaſms againſt indurated tumours, and in inveterate ulcers: that with ſpotted leaves has no virtues.

Arſmart, by its heat and pungency, becomes almoſt intolerable to the tongue; and hence it obtains in ſcorbutic, hypochondriac, and other diſorders, ariſing from a ſluggiſh circulation of the fluids.

Several value its diſtilled water for its efficacy in the ſtone in the kidneys or bladder. Some alſo uſe the plant in external applications, particularly to diſſipate bruiſed blood; others for the tooth-ach, &c.

ARSIS *and theſis*, in *Proſody*, are names given to the two proportional parts into which every FOOT or RHYTHM is divided.

By *arſis* and *theſis* are uſually meant no more than a proportional diviſion of the metrical feet, made by the hand or foot of him that beats the time.

As in meaſuring the quantities of words the hand is elevated, as well as let fall; that part of the time which is taken up in meaſuring the foot, by lifting the hand up, is termed *arſis*, or *elevatio*; and the part where the hand is let fall, *theſis*, or *poſitio*. Vid. Auguſtin. de Muſica, lib. ii. cap. 10. *In plaudendo enim quia elevatur & ponitur manus, partem pedis ſibi elevatio vendicat, partem poſitio.*

Fugha per ARSIN *& theſin*. See FUGUE.

ARSON, *ab ardendo*, in the law of England, a felony at common law, in maliciouſly and voluntarily burning the houſe, or out-houſes, of another by night or by day. See Hawkins's Pleas of the Crown, book i. chap. 39.

As to the puniſhment of *arſon*, it ſeems now clearly ſettled, that the principal, not being in holy orders, is excluded from the benefit of clergy. See Hawk. lib. cit. book ii. chap. 33. ſect. 107.

In ſome places this crime is puniſhed by burning the offender. And this was the old Roman law. See INCENDIARY.

ARSURA, in *Ancient Cuſtoms*, a term uſed for the melting of gold or ſilver, either to refine them, or to examine their value. Spelman.

The method of doing this is explained at large in the Black Book of the Exchequer, aſcribed to Gervaiſe, in the chapter De Officio Militis Argentarii, being in thoſe days of great uſe, on account of the various places, and different manners in which the king's money was paid.

ARSURA is alſo uſed for the loſs or diminution of the metal in the trial. In this ſenſe, a pound was ſaid *tot ardere denarios*, to loſe ſo many penny-weights.

ARSURA is alſo uſed for the duſt and ſweepings of ſilverſmiths, and others, who work in ſilver melted down. Du-Cange.

ARSURA is alſo uſed, in ſome writers, for the diſeaſe called ERYSIPELAS, or IGNIS *ſacer*.

ART, is defined to be a habit of the mind preſcribing rules for the due production of certain effects; or the introducing of changes in bodies from ſome foreknowledge and deſign in a perſon endued with a principle or faculty of acting.

The word *art* is derived from αρος, *utility*, *profit*; and is found in that ſenſe in Æſchylus.

According to Lord Bacon, it is a proper diſpoſition of the things of nature by human thought and experience, ſo as to make them anſwer the deſigns and uſes of mankind. Nature, according to that philoſopher, is ſometimes free, and at her own diſpoſal; and then ſhe manifeſts herſelf in a regular order: as we ſee in the heavens, plants, animals, &c.—Sometimes ſhe is irregular and diſorderly, either through ſome uncommon accident, or depravation in matter, when the reſiſtance of ſome impediment perverts her from her courſe; as in the production of monſters.—At other times ſhe is ſubdued and faſhioned by human induſtry, and made to ſerve the ſeveral purpoſes of mankind.—This laſt is what we call *art*.—In which ſenſe, *art* ſtands oppoſed to *nature*.

Hence, the knowledge of nature may be divided into the hiſtory of *generation*, of *pretergeneration*, and of *arts*.—The firſt conſiders NATURE at *liberty*; the ſecond, her *errors*; and the third, her *reſtraints*.

ART is alſo uſed for ſcience or knowledge reduced into *practice*.

Several of the ſchoolmen hold logic and ethics to be *arts*; inaſmuch as they do not terminate in mere *theory*, but tend to *practice*.

In this ſenſe ſome branches of the mathematics alſo are *arts*; others, matters of *doctrine*, or *ſcience*.—*Statics* is wholly ſcientifical, as it comprehends the mere contemplation of motion: *mechanics*, on the contrary, is an *art*, as it reduces the doctrine of *ſtatics* into practice.

ART is more commonly uſed to denote a certain ſyſtem or collection of rules, precepts, and inventions or experiments, which being duly obſerved, make the things a man undertakes ſucceed, and render them advantageous and agreeable.

In this ſenſe, *art* is oppoſed to *ſcience*, which is a collection of ſpeculative principles, and concluſions.

The nature and origin of *art*, and its diſtinction from ſcience, are conſidered more at large in the preface to this work.

Arts, according to the foregoing definition, may be divided into *active* and *effective*.—Such as leave no external effect after their operation, as dancing, fiddling, &c. are called *active* or *practical arts*: thoſe which do leave an effect behind them, as painting, &c. are called *effective arts*.

Farther, with reſpect to their ſcope and object, they may be divided into *human*, as *medicine*; and *divine*, as *theology*.

ARTS, *human*, again, may be ſubdivided into *civil*, as *law*, *politics*, &c. *military*, as *fortification*, &c. *phyſical*, as *agriculture*, *chemiſtry*, *anatomy*, &c. *metaphyſical*, as *logic*, pure *mathematics*, &c. *philological*, as *grammar*, *criticiſm*, &c. *mercantile*, to which belong the *mechanical arts* and *manufactures*. See each in its place.

Arts are more properly divided into *liberal* and *mechanical*.

ARTS, *liberal*, are thoſe that are noble, and *ingenious*; or which are worthy of being cultivated without any immediate regard to the lucre ariſing from them.—Such are *poetry*, *muſic*, *painting*, *grammar*, *rhetoric*, the *military art*, *architecture*, and *navigation*.

ARTS, *mechanical*, are thoſe, wherein the hand and body are more concerned than the mind; and which are chiefly cultivated for the ſake of the profit attending them.—Of which kind are moſt of thoſe which furniſh us with the neceſſaries of life, and are popularly known by the name of trades.—Such are *weaving*, *turnery*, *brewing*, *maſonry*, *clock-making*, *carpentry*, *joinery*, *foundery*, *printing*, &c.

The *mechanical arts* take their denomination from μηχανη, *machine*; as being all practiſed by means of ſome machine or inſtrument.

With the *liberal arts* it is otherwiſe; there being ſeveral of them which may be learnt and practiſed without any inſtrument at all: as *logic*, *eloquence*, *medicine* properly ſo called, &c.

The *arts* which relate to the ſight and hearing, Lord Bacon obſerves, are reputed *liberal*, beyond thoſe which regard the other ſenſes, and are chiefly employed in matters of luxury: theſe are uſually called the *fine arts*; ſuch are *poetry*, *painting*, *ſculpture*, *muſic*, *gardening*, and *architecture*.

It has been well noted by philoſophers, that, during the riſe and growth of ſtates, the *military arts* chiefly flouriſh; when arrived at their height, the *liberal arts*; and when in a declining ſtate, the *voluptuary arts*.

There are alſo divers particular *arts*; as the *art* of *memory*, the *art* of *deciphering*, the *art* of *ſwimming*, *art* of *diving*, &c.

Democritus maintained, that men learnt all their *arts* from brutes; that the *ſpider* taught them *weaving*; the *ſwallow*, *building*; the *nightingale*, *muſic*; and ſeveral kinds of *medicine*.

ART, *term of*. See TERM.

ARTS, *bachelor of*. See BACHELOR.

ARTS, *maſter of*. See MASTER, DEGREE, FACULTY.

ART is alſo applied to divers imaginary, and even ſuperſtitious doctrines and inventions.—Such are, Lully's ART, or the *tranſcendental* ART. This is an art by means of which a man may diſpute whole days on any topic in nature without underſtanding the leaſt tittle of the thing in diſpute; thus called from its inventor Raymond Lully. It conſiſts chiefly in diſpoſing the ſeveral ſorts of beings into divers ſcales or climaxes, to be run down in a deſcending progreſſion.—Thus, whatever was propoſed as the ſubject of diſcourſe, they would ſay, firſt, it is a being, and conſequently, one true, good, perfect: then, it is either created, or uncreated. Again, every created being is either body or ſpirit, &c.

ARS *notoria* is a pretended manner of acquiring ſciences by infuſion, without any other application than a little faſting, and performing a few ceremonies. It was ſolemnly condemned by the Sorbonne in 1320.

ART, *St. Anſelm's*, is a ſuperſtitious manner of curing wounds, by barely touching the linen wherewith thoſe wounds had been covered.

Delrio, in his Diſquiſitiones Magicæ, obſerves, that ſome Italian ſoldiers, who practiſed this *art*, attributed the invention thereof to St. Anſelm; but he aſſures us withal, that it was really invented by Anſelm of Parma, a celebrated magician.

ART, *St. Paul's*, is a branch of the *ars notoria*, ſo called as being ſuppoſed to have been taught by St. Paul, after his being taken up into the third heaven.

ART *and Part*, is a phraſe uſed in the north of England, and in Scotland.—When any one is charged with a crime, they ſay he is *art and part* in committing the ſame; that is, he was concerned both in the contrivance and in the execution of it.

The facts inferring *art and part* need not to be particularly laid in the libel or indictment, for theſe general words, as terms of ſtated ſignification, are ſufficient. Yet theſe facts may be ſet forth, and it is proper ſo to do, if the proſecutor chooſes to confide in the court rather than in the jury. Vid. Mackenz. Crim. Law.

One may be *art and part*, 1. By giving counſel to perpetrate, without diſtinction, whether the crime would have been committed without ſuch counſel or not: this being what can never be perfectly known. But it is to be obſerved, that in the more atrocious crimes, he that gives counſel is equally puniſhed as he that commits them; but in the leſs atrocious, leſs ſeverely. And ſometimes reaſons of mitigation are taken from the age, the manner of adviſing, &c.

2. By aid and aſſiſtance, and that either previous, or concomitant, or ſubſequent, to the commiſſion of the crime.

3. By a clear and explicit mandate to commit the crime, or to do ſomewhat unlawful in itſelf, which with great probability might produce it, if executed by the hand of the mandatory, and not that of another.

ART, *hermetical*. See HERMETICAL.

ART, *hyſſopic*. See HYSSOPIC.

ARTABA, an ancient meaſure of capacity uſed by the Perſians, Medes, and Egyptians.

The Perſian *artaba* is repreſented by Herodotus as bigger than the Attic *medimnus* by three Attic *chœnixes*; from which it appears, that it was equal to $6\frac{3}{4}$ Roman *modii*; conſequently that it contained $166\frac{2}{3}$ pounds of wine or water; or $126\frac{2}{3}$ pounds of wheat.

The Egyptian *artaba* contained five Roman *modii*, and fell ſhort of the Attic *medimnus* by one *modius*; conſequently held $133\frac{1}{3}$ pounds of water or wine, 100 pounds of wheat, or 60 of flour.

The Babylonians allowed their god Belus twelve *artabas* of fine flour for his daily ſuſtenance; which will amount to 60 Roman *modii*, and conſequently 720 pounds of flour.

The Median *artaba* was of the ſame content with the Attic *medimnus*, and conſequently equal to ſix Roman *modii*, held 160 pounds of water, or wine, and 120 of wheat. Beverin. de Pond. & Menſ. part 2. p. 125.

ARTADA, or ARTADAR, is uſed by ſome writers for REALGAR burnt, or calcined; commended by Paracelſus in malignant ulcers, and by Foreſtus for the cure of the POLYPUS.

ARTANITA *of the ancients*. See LEONTOPETALON.

ARTEDIA, in *Botany*, a genus of the *pentandria digynia* claſs. We have no Engliſh name for this genus. The characters are, that it is an umbelliferous plant; the rays of the large umbel are difform, the flowers of the ſmall ones in the diſk are male, and the rays are hermaphrodite. Theſe have each five ſlender ſtamina; thoſe flowers that compoſe the rays have a ſmall germen at bottom, which afterward becomes a roundiſh compreſſed fruit, with a leafy border; this ſplits into two, and contains two oblong ſeeds with ſcaly borders. There are two ſpecies, natives of the Eaſt.

ARTEMISIA, in *Antiquity*, yearly feſtivals obſerved in divers cities of Greece, particularly Delphi, in honour of Diana, ſurnamed Artemis.

In the *Artemiſia*, a mullet was ſacrificed to this goddeſs, as being thought to bear ſome reſemblance to her, becauſe it is ſaid to hunt and kill the SEA-*hare*. Athen. lib. vii.

ARTEMISIA, in *Botany*. See MUGWORT.

ARTEMONITES, in *Church Hiſtory*, Chriſtians in the third century who denied the divinity of Chriſt, aſſerting him to have only had a human nature, though divinely ſent, and more excellent than the prophets. Prateol. Elench. Hær. l. i. n. 70.

ARTENNA, in *Zoology*, the name of a water-bird, of the ſize of a hen, of a browniſh colour on the back, and white on the belly; having a hooked bill, and its three fore-toes connected by a membrane, but the hinder one looſe. It is found on the iſland Tremiti in the Adriatic ſea, and is ſuppoſed to be the *avis* DIOMEDIS of the ancients. Ray.

ARTERIA *aſpera*. See ASPERA.

ARTERIA *ſacra*. See SACRA.

ARTERIA *venoſa*, a name given by the ancients to what we call the pulmonary vein, or that veſſel whereby the blood is conveyed from the lungs to the left ventricle of the heart. Gorr. Def. Med. p. 54.

The denomination was anciently given it, on a ſuppoſition of its being an air veſſel, and that it ſerved for the conveyance of the vital aura from the lungs to the heart.

ARTERIACS, ARTERIACA, medicines proper for diſorders of the *trachea*, and the voice.

Arteriacs are reduced by Galen into three kinds: 1. Such as are void of all acrimony, ſerving to mollify the aſperities of the part; to which kind belong, gum tragacanth, *aſter ſamius*, *amylum*, or ſtarch, milk, &c. 2. Thoſe of an acrimonious quality, whereby they ſtimulate even the ſound parts; ſuch are honey, turpentines, bitter almonds, iris root, &c. 3. Thoſe of an intermediate kind, ſoft and mild, yet detergent; ſuch are butter, and divers preparations made of almonds, milk, honey, &c.

ARTERIAL, or ARTERIOUS, in *Anatomy*, ſomething that relates to the arteries. See ARTERY.

The *arterial* blood is ſuppoſed more warm, florid, and ſpirituous, than the venal.

ARTERIOSA *vena*, or *arterial vein*, a denomination given to the pulmonary artery, or that veſſel whereby the blood is conveyed from the right ventricle of the heart to the lungs.

ARTERIOSUS *canalis*, is a tube in the heart of a *fœtus*; which, with the *foramen ovale*, ſerves to maintain the circulation of the blood, and to divert it from the lungs.

ARTERIOTOMY, in *Chirurgery*, &c. the operation of opening an artery; or of letting blood with a lancet by the arteries, practiſed in ſome extraordinary caſes.

The word is formed of αρτηρια, and τεμνω, *ſeco*, *I cut*.

The word *arteriotomy*, according to its etymology, ſignifies that chirurgical operation, by which, for the ſafety of the patient, the arteries are opened almoſt in the ſame manner with the veins, in order to procure a diſcharge of blood. But though in our own days this operation is not ſo frequently attempted as in former ages, for fear not only of too great an effuſion of blood, but alſo of an ANEURISM; yet if it is cautiouſly performed, it has the ſuffrage of the greateſt phyſicians in its favour; as being a practice of ſingular uſe, and unattended with any bad conſequences. Accordingly we read that the more ancient phyſicians opened arteries in various parts of the body.

Arteriotomy, however, being a hazardous operation, is ſeldom uſed with deſign, except in the forehead, the temples, and behind the ears, where the arteries are eaſily cloſed again by means of the *cranium* underneath, which would be very difficult to effect in any other part.—In the other parts it uſually proves fatal; and we have numerous inſtances of perſons killed in bleeding, by the opening an artery inſtead of a vein.

Opening an artery is much more difficult than the opening a vein, as the veſſel ſeldom appears plainly through the ſkin, and there is no guide but its vibration under the finger.

In the operation of *arteriotomy*, the patient muſt be placed in a good light, and the ſurgeon muſt place two fingers of his left-hand, at a ſmall diſtance from each other, both on the artery. He muſt then obſerve the courſe of the veſſel, and cut down into it deeper than in *phlebotomy*, and raiſe the point of the lancet, ſo as to make a ſufficient orifice: in this he need not fear the cutting of the veſſel quite through, for even that is attended with no ill conſequences after deligation. If now the blood follows the lancet in a very florid and ſalient ſtream, you may be ſatisfied the artery is well opened: if this is not the caſe it muſt be cut again; but as in this operation, the fine point of a lancet is apt to be broke againſt the bone, the uſe of a ſmall ſcalpel is preferable. A pound or a pound and half of blood ſhould be taken by this operation: when the ſufficient quantity of blood is taken, the deligation muſt be made with three compreſſes, each larger than the other, laying on the ſmalleſt firſt, in which muſt be included a farthing, a bit of lead, or of chewed paper, to compreſs the artery againſt the bone, and the head muſt continue tied up with a proper bandage eight days. Heiſter.

Fernelius, Severinus, Tulpius, and Catherwood, have endeavoured to introduce *arteriotomy* in apoplectic caſes, as much preferable to veneſection.

ARTERY, in *Anatomy*, a hollow fiſtulous canal, appointed to receive the blood from the ventricles of the heart, and diſtribute it to all parts of the body, for the maintenance of heat and life, and the conveyance of the neceſſary nutriment.—See *Tab. Anat.* (*Angeiol.*) *fig.* 1.

The word is, ſome imagine, derived from αηρ, *aer*, the *air*, and τηρεω, *ſervo*, *to keep*; but others, who underſtand

ſtand the uſe of the part better, derive it from *αιρω, I lift*, becauſe of its continual throbbing or beating.

The *arteries* are ordinarily compoſed of three coats or membranes. The firſt or outermoſt, nervous or tendinous; being a thread of fine blood-veſſels with nerves, for nouriſhing the other coats. The ſecond muſcular, and made up of circular, or rather ſpiral fibres; of which there are more or fewer ſtrata according to the bigneſs of the *artery:* theſe fibres have a ſtrong elaſticity, by which they contract themſelves with force, when the power by which they have been ſtretched out ceaſes. The third and inmoſt coat is a fine, denſe, tranſparent membrane, keeping the blood within its channels, which otherwiſe, upon the dilatation of an *artery*, would eaſily ſeparate the ſpiral fibres from one another. As the *arteries* grow ſmaller, theſe coats grow thinner.

All the *arteries* are conical, i. e. they begin with the trunk, and, growing leſs and narrower, end in branches ſo minute, that they eſcape the ſight, unleſs aſſiſted with microſcopes; by which, in the tails of tadpoles, and very ſmall eels, the extremities of the *arteries* ſeem, by the ſwift uninterrupted courſe of the blood, to be inoſculated, or continued to the originations of the veins: though by the tranſparency of thoſe veſſels, the actual continuation be not viſible.

The coats of the *arteries* are of a very denſe, cloſe contexture; by which means the blood not being viſible through them, they generally appear white. Add, that the blood, proceeding from a greater capacity to a leſs, is thereby ſomewhat obſtructed in its paſſage; but being forced on by the motion of the heart, it diſtends the coats, and thereby occaſions a ſalient motion, called the PULSE. —By this thickneſs and whiteneſs of the *arteries*, with the pulſation obſerved therein, *arteries* are diſtinguiſhed from veins.

The pulſe of the *arteries*, like that of the heart, conſiſts of two reciprocal motions, a *ſyſtole* or contraction, and a *diaſtole* or dilatation: but they keep oppoſite times; the *ſyſtole* of the one anſwering to the *diaſtole* of the other.

All the *arteries* of the body, we have obſerved, ariſe in two large trunks, from the two ventricles of the heart. That from the right ventricle is called the *pulmonary artery*, ſerving to carry the blood into the lungs: that from the left, the *aorta*, or *great artery*; which, by its numerous ramifications, furniſhes all the reſt of the body, as far as the remoteſt ſtages of CIRCULATION.

The great *artery*, after it leaves the heart, divides into two large trunks, called the *aſcending*, or upper, and *deſcending*, or lower *trunks*.

The *aſcending trunk*, or *aorta aſcendens*, conveys the blood to the head, and other upper parts of the body, and is ſubdivided into three branches.—The firſt, the right *ſubclavian*, whence ariſe the *carotid*, *vertebral*, *cervical*, right *axillary*, &c.—The ſecond, is the left *carotid*.—The third, the left *ſubclavian*; whence ariſe the left *cervical*, *vertebral*, and *axillary*.—See each deſcribed in its proper article, AXILLARY, CAROTID, CERVICAL, SUBCLAVIAN, VERTEBRAL, &c.

The deſcending trunk, or *aorta deſcendens*, carries the blood to the trunk, and the lower parts of the body.

Out of this ariſe the *bronchial*, *intercoſtals*, *cœliac*, *phrenic*, *meſenteric*, *emulgent*, *ſpermatic*, *iliac*, *umbilical*, *epigaſtric*, *hypogaſtric*, *crural*, &c. with their ſeveral ramifications.—See each in its place.

Mr. Weitbrecht concludes, from the ſmall quantity of blood thrown out of the heart into the *arteries*, and the great reſiſtance in the capillary *arteries*, that all or much the larger ſhare of what is ſent out of the heart, is retained in the *arteries* during the *ſyſtole* of the heart, and is ſent forward into the veins, by the contraction of the *arteries*, but ſo, that the veins can have no pulſation, becauſe ſo much as is received from the veins is thrown into the heart at the ſame time. The ſmallneſs of the quantity of blood thrown out of the heart makes him think, that the pulſation of the *arteries* cannot be ſo much owing to their diſtention, as to their change of place; and he ſays he perceived, upon trial, that all the *arteries* of the body are not dilated or contracted at the ſame time.

The *auricles* alſo, according to him, ſerve to give an *impetus* to the blood in the ventricles of the heart; for the blood moves ſo ſlow in the veins, that its *momentum* would not be ſufficient to diſtend, and to give a ſpring great enough to the ventricles. The pulmonary blood acquiring conſiderable velocity by the motion of the lungs, requires a much leſs *auricle* from the blood of the *vena cava*. Comment. Acad. Petrop. tom. vi. & vii.

A draught of the ſeveral *arteries*, with their diviſions and ſubdiviſions, in their natural order and poſition, as taken from the life, ſee in plate *Anatomy* (*Angeiol. fig.* 6.)

ARTERY is alſo applied to that fiſtulous tube, compoſed of cartilages and membranes, which deſcends from the mouth to the lungs, for the conveyance and reconveyance of the air, in reſpiration.

This is particularly called the *aſpera arteria*, or *trachæa*, and popularly the WIND-*pipe*.

ARTERY, *wounded*. See ANEURISM.

ARTHANITA, in *Botany*. See CYCLAMEN, and SOW-BREAD.

ARTHEL, ſomething caſt into a court, in Wales, or its marches; whereby the court is letted or diſcontinued for the time.—The caſting of *arthel* is prohibited, 26 Hen. VIII. cap. 6.

ARTHRITIC *Waters*. See WATER.

ARTHRITICA, in *Botany*, a name given by ſome to the PRIMROSE, and by others to the *ground*-PINE.

ARTHRITIS, in *Medicine*, a diſeaſe better known under the name of the GOUT.

The word is formed from *αρθρον, articulus, joint*; in regard the chief ſeat of that diſtemper is in the joints.

ARTHRODIA, in *Anatomy*, a ſpecies of ARTICULATION, wherein a flat head of one bone is received into a ſhallow ſocket of another.

The word is formed from *αρθρον, articulus*, and *δεχομαι, recipio, I receive*.

Such is the articulation of the *humerus* with the *ſcapula*.

ARTHRODIA, or ARTHRODIUM, in *Natural Hiſtory*, the name of a genus of CRYSTAL, of which there are five ſpecies. See *Tab. Foſſils, Claſs* 3.

ARTHRODIA, in *Zoology*, a lately eſtabliſhed claſs of *animalcula*, containing thoſe with viſible limbs.

ARTHROSIS, in *Anatomy*, a juncture of two bones, deſigned for motion; called alſo *articulation*.

The word is formed from *αρθρον, articulus*.

ARTICHOKE, in *Botany*, called by the Latins CYNARA, of the *ſyngeneſia polygamia æqualis* claſs. Its characters are theſe: It hath a compound flower made up of many hermaphrodite florets, included in one common ſcaly empalement. The florets are tubulous, equal, and uniform, divided at the top into five narrow ſegments; and they have five ſhort, hairy ſtamina. At the bottom of each is ſituated an oval germen, which afterward becomes a ſingle, oblong, compreſſed, four-cornered ſeed, crowned with long hairy down.

We have two ſorts of *artichokes* that are cultivated in the Engliſh gardens, which we ſhall diſtinguiſh here, only by the names whereby they are generally known among gardeners.

The beſt ſort is what the gardeners call the globe *artichoke*. This hath large heads, with broad brown ſcales, which turn inward; the fleſhy part at the bottom of the ſcales is very thick, and is therefore much preferred to the other, called the French *artichoke*; the ſtalks of which do generally grow taller, with ſmaller heads, formed more conical than thoſe of the globe; the ſcales are narrower, of a greener colour, and frequently turned outward. The fleſhy part, or bottom, is not near ſo thick, and hath a diſagreeable perfumed taſte. This was almoſt totally rooted out of the Engliſh gardens before the hard froſt in 1739-40, when the greateſt part of the roots of the other ſort were deſtroyed; many perſons were ſupplied the following ſpring with plants from Guernſey, where they cultivate only the latter ſort; but ſince the other has been increaſed again, this green ſort has been rooted out of moſt gardens, to make way for the globe *artichoke*.

The manner of propagating this uſeful plant, is from ſlips or ſuckers taken from the old plant in February and March; theſe, if planted in a good ſoil, will produce a good fruit the autumn following. The old *artichoke* ſtocks are to be dreſſed in the latter end of February, or beginning of March; this muſt be thus performed; with a ſpade remove all the earth from about the ſtock, down below the part from which the young ſhoots are produced. Then make choice of two of the cleareſt and ſtraighteſt, and moſt promiſing plants which are produced from the under-part of the ſtock; let theſe be left for a crop; then with a thumb force off all the other buds and young ſhoots cloſe to the head of the ſtock from whence they are produced, and with the ſpade draw the earth about the two plants which are left, cloſing it faſt with the hands to each of them, and ſeparating them aſunder as far as can be without breaking them, then crop off the tops of the leaves which hang down.

When this is done, a crop of ſpinach may be ſowed between the ſtocks, which will be gathered off before they come to ripen; in the beginning of May, when the *artichokes* begin to fruit, all the young plants produced ſince the dreſſing muſt be removed, and all the ſuckers taken off, leaving only the one principal fruit; and when the *artichoke* is fit to gather, the ſtock muſt be cut down cloſe to the ground, that it may ſhoot out new ſprouts before

October, which is the ſeaſon for earthing them, or, as the gardeners call it, landing the *artichoke* ſtocks. Miller.

The earthing them is thus done; cut off all the ſprouts cloſe to the ground, then dig trenches between the rows, covering up the ſtocks with the earth in ridges; thoſe *artichokes* which are planted in a moiſt rich ſoil will always produce the largeſt fruit, but the roots will not live through the winter in a very moiſt one.

The *artichoke* is a pleaſant, wholeſome, and very nouriſhing food; the roots are reckoned to be aperitive, cleanſing, and diuretic; good for the jaundice, and to provoke urine.

The French and Germans eat not only the heads, but alſo the young ſtalks boiled, and ſeaſoned with butter and vinegar. The Italians ſeldom boil the heads, but eat them raw, when young, with ſalt, oil, and pepper.

Artichokes have the reputation of promoting venereal inclinations to a very great degree; the ſtalks, preſerved in honey, are ſaid to be an excellent pectoral; but they ſhould firſt be blanched, like celery.

The common leaves, boiled in white wine whey, are much commended in the jaundice, as is alſo the juice of theſe leaves. James.

ARTICHOKE, *Jeruſalem*, is the root of a ſpecies of the *helianthus*, or SUN-*flower* of the perennial kind, which is propagated in many gardens for the uſe of the kitchen; it is a very agreeably taſted root, but watery and windy, and therefore at preſent generally diſregarded.

It is propagated by planting out the ſmaller roots, or even pieces of the larger, which have buds to them, in the ſpring or autumn; they muſt be allowed a very conſiderable diſtance, for they ſpread immoderately, and multiply very quick. The autumn following, when their ſtems decay, the roots may be taken up for uſe. They are but an unſightly plant, though very tall, and are commonly placed in obſcure corners of a garden. Miller.

ARTICLE, ARTICULUS, a little part or diviſion of a book, writing, or the like.—Aquinas divides his ſum of theology into ſeveral queſtions; and each queſtion into divers *articles*.—Such an account conſiſts of ſo many *articles*.

ARTICLE is alſo applied to the ſeveral clauſes or conditions of a contract, treaty of peace, or the like.

In this ſenſe we ſay, *articles* of marriage, *articles* of capitulation, preliminary *articles*, &c.

ARTICLES *of the clergy*, ARTICULI *cleri*, are certain ſtatutes touching perſons and cauſes eccleſiaſtical, made under Edward II. and III.

ARTICLE *of faith* is by ſome defined a point of Chriſtian doctrine, which we are obliged to believe, as having been revealed by God himſelf, and allowed and eſtabliſhed as ſuch by the church.

The thirty-nine *articles* were founded, for the moſt part, upon a body of *articles* compiled and publiſhed in the reign of Edward VI. They were firſt paſſed in the convocation, and confirmed by royal authority in the year 1562. They were afterwards ratified anew in the year 1571, and again by Charles I. The law requires a ſubſcription to theſe *articles* of all perſons ordained to be deacons or prieſts, 13 El. cap. 12. of all clergymen inducted to any eccleſiaſtical living, by the ſame ſtatute, and of licenſed lecturers and curates, 13 El. cap. 12. and 13 and 14 Ch. II. cap. 4. of the heads of colleges, of chancellors, officials and commiſſaries, and of ſchoolmaſters. By 1 Wil. 3. cap. 18. diſſenting teachers are to ſubſcribe all, except the 34th, 35th, and 36th, and part of the 20th (and in the caſe of Anabaptiſts, except alſo part of the 27th); otherwiſe they are exempted from the benefits of the act of toleration.

ARTICLE, *articulus*, in *Anatomy*, denotes a joint, or juncture, of two or more bones of the body.

ARTICLE *of death*, *articulus mortis*, the laſt pangs, or agony of a dying perſon.

The pope uſually ſends his benediction to the cardinals, &c. *in articulo mortis*.

ARTICLE, in *Arithmetic*, ſignifies the number 10, or any number juſtly diviſible into ten parts; as 20, 30, 40, &c. —Theſe are ſometimes called *decads*, and ſometimes *round numbers*.

ARTICLE, in *Grammar*, denotes a particle uſed in moſt languages for the declining of nouns, and denoting the ſeveral caſes and genders thereof.

The uſe of *articles* ariſes chiefly hence, that in languages which have not different terminations, to expreſs the different ſtates and circumſtances of nouns, there is ſomething required to ſupply that office.

The Latins have no *articles*; but the Greeks, and moſt of the modern languages, have had recourſe to them, for fixing and aſcertaining the vague ſignification of common and appellative names.

The Greeks have their ὁ, the eaſtern tongues their *he emphaticum*; the Italians their *il*, *lo*, and *la*.—The French their *le*, *la*, and *les*.—The Germans their *der*, *das*, *dat*.

The Engliſh alſo have two *articles*, *a* and *the*; which, being prefixed to ſubſtantives, apply their general ſignification to ſome particular things. See letter A.

Some grammarians make the *article* a diſtinct part of ſpeech; others will have it a pronoun; and others a noun adjective. See SPEECH and PRONOUN.

Articles are of great ſervice in a language, as they contribute to the more neat and preciſe expreſſing of ſeveral properties and relations, which muſt otherwiſe be loſt. And hence one great diſadvantage of the Latin, above other languages which have *articles*; in that the *article* being either expreſſed, or left out, makes an alteration in the ſenſe, which the Latins cannot diſtinguiſh. —Thus when the devil ſaid to our Saviour, *Si tu es Filius Dei*, it may either be underſtood, *if thou art a Son of God*, or, *if thou art the Son of God*.—Scaliger, from the want of *articles* in the Latin, has concluded them uſeleſs. The Italians even prefix *articles* to proper names, which do not naturally need any, becauſe they of themſelves ſignify things individually.—Thus they ſay, *il Arioſto*, *il Taſſo*, *il Petrarcha*.—Even the French join the *article* to the proper names of kingdoms, provinces, &c. as *la Suede*, *la Normandie*.—And we likewiſe annex it to the names of certain mountains and rivers; as the *Rhine*, the *Danube*, the *Alps*, &c.

ARTICLE, *indefinite*. The article *a* is ſaid to be *indefinite*, becauſe applied to names taken in their more general and confuſed ſignification; as, he travelled with the port and equipage of *a* prince; where the words, *a prince*, may be underſtood of any prince in the general. Or, *a* reſpects our primary perception, and denotes individuals, as unknown.

ARTICLE, *definite*. The *article the* is ſaid to be *definite*, or *demonſtrative*, as fixing the ſenſe of the word it is put before, to one individual thing. Or *the* reſpects our ſecondary perception, and denotes individuals as known. See DEFINITIVE.

Fa. Buffier diſtinguiſhes a third kind of *articles* in French, which he calls *intermediate*, or *partitive*; ſerving to denote part of the thing expreſſed by the ſubſtantives they are added to: as, *des ſcavants ont cru*, *ſome learned men have ſuppoſed*. &c. I want *de la lumiere*, *ſome light*, &c.

The uſe and diſtinction of the *definite* and *indefinite articles le* or *la*, and *de* or *du*, make one of the greateſt difficulties in the French tongue, as being utterly arbitrary, and only to be acquired by practice.—We may add, that in the Engliſh, though the *articles* be ſo few, yet they are of ſuch frequent uſe, that they eaſily diſcover any ſtranger, from a natural Engliſhman.

ARTICULARIS, ARTICULAR, in *Medicine*, an epithet applied to a diſeaſe, which more immediately infeſts the *articuli*, or joints.

The *morbus articularis* is the ſame with the Greek ἀρθριτις, and our GOUT.

ARTICULATE *ſounds* are thoſe which expreſs the letters, ſyllables, &c. of any alphabet, or language. See INARTICULATE.

Brutes cannot form *articulate* ſounds, or they cannot *articulate* the ſounds of their voice; excepting ſome few birds, as the *parrot*, *pye*, *raven*, *ſtarling*, &c.

ARTICULATED *libel*, *libellus articulatus*, that wherein the parts of a fact are ſet forth to the judge in ſhort, diſtinct *articles*.

This amounts to much the ſame with what is otherwiſe called *libellus poſitionalis*.

ARTICULATED *leaf*. See LEAF.

ARTICULATED *radius*, in *Natural Hiſtory*. See RADIUS *articulatus*.

ARTICULATION, in *Grammar*, a diſtinct pronunciation of words and ſyllables.

Articulation is that part of grammar, which treats firſt of ſounds and letters; then of their combinations, for the compoſing of ſyllables and words. Hence he who pronounces his words clearly and diſtinctly, is ſaid to pronounce them *articulately*.

ARTICULATION, ἀρθρωσις, in *Anatomy*, the juncture or connexion of two bones. The bones cannot ſerve the intended purpoſes, except the ſeveral pieces are fitly adjuſted, and then kept together in different ways. The moſt ancient oſteologiſts (ſpeaking only of the perfect bones of an adult) called the firſt of theſe *articulation*, and the other SYMPHYSIS.

Articulation thus underſtood is of two kinds, one moveable, by which the bones are allowed a certain degree of motion; the other immoveable, by which they are fixed together without motion. The firſt is commonly called DIARTHROSIS; that is (according to the expreſſion of Carolus Stephanus, an ancient phyſician of the faculty at Paris) an *articulation* ſeparated; the other *ſynarthroſis*, or an *articulation* conjoined. There is ſtill another ſpecies of *articulation*, which cannot well be reduced to either of the two former, as partaking of both: this, therefore, may be eſtabliſhed as a third kind, by the name of AMPHIAR-

PHIARTHROSIS, which agrees better to this ſort, than to the other *articulations*, to which it has ſometimes been applied.

ARTIFICERS, thoſe who work with the hands, and ſell things faſhioned by them into other forms.

Artificers amount to the ſame with what we otherwiſe call *handicrafts* and *mechanics:* ſuch are ſmiths, carpenters, taylors, ſhoemakers, weavers, and the like.

The Roman *artificers* had their peculiar temples, where they aſſembled and choſe their own patron, to defend their cauſes: they were exempted from all perſonal ſervices. Taruntenus Paternus reckons thirty-two ſpecies of *artificers*, and Conſtantine thirty-five, who enjoyed this privilege. The *artificers* were incorporated into divers colleges or companies, each of which had their tutelar gods, to whom they offered their worſhip. Several of theſe, when they quitted their profeſſion, hung up their tools, a votive offering to their gods. Pitiſc. Lex. Ant.

Artificers were held a degree below merchants, and *argentarii*, or money-changers, and their employment more ſordid. Some deny, that in the earlieſt ages of the Roman ſtate, *artificers* were ranked in the number of citizens; others, who aſſert their citizenſhip, allow that they were held in contempt, as being unfit for war, and ſo poor that they could ſcarce pay any taxes. For which reaſon they were not entered among the citizens, in the cenſor's books; the deſign of the *cenſus* being only to ſee what number of perſons were yearly fit to bear arms, and to pay taxes towards the ſupport of the ſtate. It may be added, that much of the *artificers* buſineſs was done by ſlaves, and foreigners, who left little for the Romans to mind but their huſbandry and war. Dion. Hal. l. ii. p. 98.

By means of the *arts*, the minds of men are engaged in inventions beneficial to the whole community; and thus prove the grand preſervative againſt that barbariſm and brutality, which ever attend on an indolent and inactive ſtupidity.

By the Engliſh laws, *artificers* in wool, iron, ſteel, braſs, or other metal, going out of the kingdom into any foreign country without licence, are to be impriſoned three months, and fined in a ſum not exceeding one hundred pounds. And ſuch as going abroad, and not returning on warning given by our embaſſadors, &c. ſhall be diſabled from holding lands by deſcent or deviſe, from receiving any legacy, &c. and be deemed aliens. Stat. 5. Geo. I. cap. 27. By 23 Geo. II. cap. 13. § 1. penalty is alſo inflicted on ſeducing *artificers* to go abroad.

Ramazini has a treatiſe on the diſeaſes of *artificers*.

Artificer *by fire*, a denomination ſometimes given to chemiſts, and workers in metals.

ARTIFICIAL, ſomething made by art; not produced naturally, or in the common courſe of things.

Artificial is alſo frequently uſed for *factitious*.

Thus we have *artificial* ſal ammoniac, *artificial* borax, &c.

Artificial *fire-works* are compoſitions of inflammable materials; chiefly uſed on ſolemn occaſions, by way of rejoicing. See Sav. Etr. tom. iv. p. 66.

Artificial *lightning*. See ELECTRICITY and LIGHTNING.

Artificial *lines*, on a ſector or ſcale, are certain lines ſo contrived, as to repreſent the logarithmic ſines and tangents; which, by the help of the line of numbers, will ſolve all queſtions in *trigonometry*, *navigation*, &c. pretty exactly.

Artificial *magnets*. See MAGNETS.

Artificial *muſic*, that which is according to the rules of art; or executed by inſtruments invented by art. It is alſo uſed, in another ſenſe, for ſome artful contrivance in muſic; as when a piece is ſung in two parts; one whereof is by B molle, or flat, and the other by B ſharp. See Artificii Muſicali del Signor Vitali.

ARTILLERY, the heavy equipage of war; comprehending all ſorts of great fire-arms, with their appurtenances; as cannons, mortars, bombs, petards, muſquets, carbines, &c.

In this ſenſe, the word *artillery* coincides with what we otherwiſe call *ordnance*.

The Perſians, we are told in the embaſſy of Figueroa, would never, in 1518, have either *artillery* or *infantry* in their armies, becauſe they hindered their charging and retiring with that nimbleneſs wherein their chief military addreſs and glory lay.

The term *artillery* is ſometimes alſo applied to the ancient inſtruments of war, as the *catapultæ*, battering rams, &c.

Artillery, *park of*, is that place in a camp ſet apart for the *artillery*, or large fire-arms.

Artillery, *traile*, or *train of*, is a ſet or certain number of pieces of ordnance, mounted on carriages, with all their furniture fit for marching. To this frequently belong mortar-pieces, with bombs, carcaſes, &c. It is under the direction of the maſter of the *artillery*.

There are trains of *artillery* in moſt of the king's magazines; as in the Tower, at Portſmouth, Plymouth, Windſor, &c.

Artillery *guard* is a detachment from the army to ſecure the artillery. This corps is in the front, and their centries are round the park. Upon a march they go in the front and rear of the *artillery*, and muſt be ſure to leave nothing behind. If a gun or waggon break down, the captain is to leave a part of his guard to aſſiſt the gunners and matroſſes in getting it up again.

The writers upon *artillery* are, Caſimir Semionowitz, a Pole, Buchnerus, Braunius, Mieth, S. Remy in his Memoires d'Artillerie, M. Belidor, M. le Blond, and Muller on Artillery, which contain an accurate deſcription of all the machines and inſtruments of war now in uſe, with every thing that relates to them.

Artillery *company of London*, is a band of infantry, conſiſting of about four hundred men.

Their officers are a leader, two lieutenants, two enſigns, three gentlemen of arms, two ſerjeants, and a provoſt-marſhal.

Artillery is alſo uſed for what we otherwiſe call *pyrotechnia*, or the art of fire-works, with the inſtruments and apparatus belonging thereto.

ARTIPHYES, in the *Ancient Phyſic*, denotes an even, entire, and perfect critical day; ſuch, according to Hippocrates, are the fourteenth and forty-ſecond days.

ARTISAN. See ARTIST.

ARTISCUS, in *Medicine*, denotes a *troche*, but more particularly that prepared of viper's fleſh, mixed up with bread, to be uſed in the compoſition of venice treacle.

Theſe are more particularly called *artiſci theriaci*, or *theriacal troches*.

They were formerly in great vogue, and brought with much parade from Venice; but Zwelfer diſcovered their vanity; ſince which time, vipers powder has been generally ſubſtituted for them, in the preparation of the treacle.

ARTIST, in a general ſenſe, a perſon ſkilled in ſome art; or, according to Mr. Harris's definition, a perſon poſſeſſing an habitual power of becoming the cauſe of ſome effect, according to a ſyſtem of various and well-approved precepts.

In this ſenſe, we ſay, an excellent, a curious *artiſt*. The pre-eminence is diſputed between ancient and modern *artiſts*, eſpecially as to what relates to ſculpture, painting, and the like. At Vicenza, we are told of a privilege granted to *artiſts*, like that of clergy in England; in virtue of this, criminals adjudged to death ſave their lives, if they can prove themſelves the moſt excellent and conſummate workmen in any uſeful art. This benefit is allowed them *in favorem artis*, for the firſt offence, except in ſome particular crimes, of which coining is one. The exception is juſt, ſince here the greater the *artiſt*, the more dangerous the perſon. Evelyn's Diſc. of Medals, ch. vii. p. 237, &c.

Artist, *artiſta*, in an academical ſenſe, denotes a philoſopher or proficient in the faculty of arts.

Artist is more peculiarly underſtood of a *chemiſt* or *alchemiſt*.

In which ſenſe it is, that Paracelſus and other ADEPTS uſe the word.

ARTIZOOS, is uſed by ſome ancient phyſicians for an infant ſhort-lived, by reaſon of a difficult birth, whereby he was long detained in the paſſage from the womb.

ARTOMELI, in *Ancient Pharmacy*, a kind of cataplaſm, prepared of bread and honey, applied chiefly to the *præcordia*.

ARTOTYRITES, or ARTOTYRITÆ, a branch of the ancient *Montaniſts*, who firſt appeared in the ſecond century; chiefly in Galatia.

They uſed bread and cheeſe in the Euchariſt, or perhaps bread baked with cheeſe.—Their reaſon was, that the firſt men offered to God not only the fruits of the earth, but of their flocks too.

Hence, according to St. Auguſtine, came their name, which is compoſed of αρτος, *bread*, and τυρος, *cheeſe*.

ARVALES *fratres* were prieſts in ancient Rome, who aſſiſted in the ſacrifices of the *Ambarvalia* offered every year to Ceres and Bacchus for the proſperity of the principal fruits of the earth, viz. the corn and wine.

They were inſtituted by Romulus, and were twelve in number; all of them perſons of the firſt diſtinction; the founder himſelf having been of the body.—They made a college, called *collegium fratrum arvalium*.

The mark of their dignity was a garland, compoſed of ears of corn tied with a white ribband: this, Pliny ſays, was the firſt crown in uſe at Rome.

According to Fulgentius, Acca Laurentia, Romulus's nurſe, was the firſt founder of this order of prieſts: ſhe, it ſeems, had twelve ſons, who uſed to walk before her in proceſſion to the ſacrifice; one of whom dying, Romulus, in favour of his nurſe, promiſed to take his place; and hence, ſays he, came this ſacrifice, the number twelve, and the name of brother.—Pliny (lib. xvii. cap. 2.)

2.) ſeems to indicate the ſame thing, when he mentions, that Romulus inſtituted prieſts of the fields, after the example of Acca Laurentia his nurſe.

ARVIL-*ſupper*; an entertainment made at funerals in the northern part of England; and *arvil*-bread is the bread delivered to the poor on ſuch occaſions.

ARUM, *African*. See CALLA.

ARUM, *floating*. See ORONTIUM.

ARUM, in *Botany*. See WAKE-*Robin*.

ARUNCUS, *greater meadow ſweet*, in *Botany*, the name of a genus of plants, called by Tourneſort, and others, BARBA *capræ*; and by Linnæus SPIRÆA.

This plant has been ſuppoſed to be of the ſame genus with the *filipendula*; but, by the cloſe examination of the flowers, they appear to be extremely different.

ARUNDELIAN *Marbles*, MARMORA *Arundeliana*, or Oxford MARBLES, are ancient ſtones, whereon is inſcribed a chronicle of the city of Athens, engraven in capital letters in the iſland of Paros, one of the Cyclades, 263 years before Jeſus Chriſt.

They take their name from Thomas earl of Arundel, who procured them out of the Eaſt, or from Henry his grandſon, who preſented them to the univerſity of Oxford.—An account of all their inſcriptions was publiſhed in 1676, by Dr. Prideaux.

ARUNDO, in *Botany*. See REED.

ARUNDO *Indica*, in the *Materia Medica*, the name of the ARUNDO *ſanguinem draconis manans* of Moriſon. This is the plant from the fruit of which, by maceration in warm water, they get a kind of dragon's blood, which makes the fine red of the Indian varniſhes. Dale.

ARURA, in *Antiquity*. See AROURA.

ARURA, in *Middle Age Writers*, denotes a field ploughed and ſowed.

ARUSPICES, an order of prieſts among the ancient Romans, who foretold things to come, chiefly by inſpecting the entrails of beaſts which were killed in ſacrifice.

The word ſeems more properly written *haruſpices*; as being derived from *haruga*, which ſignifies the entrails of victims; and *aſpicere*, *to view* or *conſider*.

The doctrine or diſcipline of the *aruſpices* was formed into a preciſe art, called *aruſpicina*.

Cato, who was an *augur*, uſed to ſay, he wondered how one *aruſpex* could look at another without laughing in his face. By which we learn what opinion he had of the ſolidity of the *aruſpicina*.

ARUSPICI *libri*, a kind of ſacred writings among the ancient Hetrurians, wherein the laws and diſcipline of the *aruſpices* were deſcribed.

Theſe were alſo called *rituales*, ſometimes *fulgurales libri*, as directing how to take indications from thunder, lightning, &c.

ARVUM, in *Ancient Agriculture*, properly denoted ground ploughed, but not ſowed.

Though the word is alſo ſometimes extended to all arable, or corn land, in contradiſtinction from paſture.

ARX, in the *Ancient Military Art*, a town, fort, or caſtle, for defence of a place.

The *arx*, in ancient Rome, was a diſtinct edifice from the capitol, though ſome have confounded the two. According to Ryckius, the *arx*, properly ſpeaking, was a place on the higheſt part of the Capitoline Mount, ſtronger and better fortified than the reſt, with towers and pinnated walls; in which was alſo the temple of Jupiter Capitolinus. Struv. Synt. Ant. Rom. c. 11. p. 522.

ARX alſo denoted a conſecrated place on the Palatine Mount, where the augurs publicly performed their office.

Some will have the *arx* to have been the augural temple; but Varro expreſly diſtinguiſhes between the two.

ARX was particularly uſed for a public place in Rome, ſet apart for the operations of the AUGURS.

In which ſenſe, *arx* amounts to the ſame with what is otherwiſe called *auguraculum*, and *auguratorium*, and in the camp *augurale*.

Out of this *arx* it was that the *feciales*, or heralds, gathered the graſs uſed in the ceremony of making leagues and treaties. Liv. i. c. 24.

ARYTÆNOIDES, in *Anatomy*, the third and fourth cartilages of the LARYNX, ſituate under the *thyroides*; called alſo *guttales*: thus called on account of the figure of an αρυταινα, *ewer*; which, together, they ſomewhat reſemble: and the name is compounded of that word, and ειδος, *ſhape*, or *figure*.

ARYTÆNOIDEUS, in *Anatomy*, one of the muſcles ſerving to cloſe the LARYNX; otherwiſe called little *arytænoideus*, and *aryartænoideus*, as deriving its origin from the poſterior and inferior part of the *arytænoides*.

The *arytænoideus* has its head in one *arytænoid* cartilage, and its tail in the other; and ſerves to bring them together, and ſhut the *rima* or *glottis*.

ARYTHMUS, or ARHYTHMUS, in *Medicine*, is uſed by ſome for a ſinking, or failure of the pulſe, ſo that it can no longer be felt; but it more properly denotes an irregularity, or want of due order and proportion of the PULSE.

The word is formed from the privative α, and ρυθμος, *modulus*, or *meaſure*.

AS, among *Antiquaries*, ſometimes ſignifies a particular weight; in which ſenſe the Roman *as* is the ſame with the Roman *libra*, or *pound*.

The word is by ſome derived from ἀις, which, in the Doric dialect, is uſed for εις, *one*, q. d. an entire thing; though others will have this money named *as*, quaſi *æs*; becauſe made of braſs.—Budæus has written nine books *de aſſe, & ejus partibus*, of the *as*, and its parts.

The *as* had ſeveral diviſions. See the table under AS, an integer.

AS was alſo the name of a Roman coin, which was made of different matters, and different weights, in different ages of the commonwealth.

Under Numa Pompilius, according to Euſebius, the Roman money was either of wood, leather, or ſhells.—In the time of Tullus Hoſtilius, it was braſs, and was called *as*, *libra*, *libella*, or *pondo*, becauſe actually weighing a pound, or twelve ounces. The Romans reckoned by *aſſes* before they coined ſilver, in the 485th year of the city, and afterwards they kept their accounts in SESTERCES.

When the firſt Punic war had exhauſted the treaſury, they reduced the *as* to two ounces. In the ſecond Punic war, Hannibal preſſing hard on them, the *aſſes* were farther reduced to an ounce a-piece.—Laſtly, by the Papirian law, they took away half an ounce more, and reduced the *as* to a bare half-ounce: and it is generally thought, that it reſted here all the time of the commonwealth, and even till Veſpaſian's reign.

This laſt was called the Papirian *as*, becauſe the law juſt mentioned was paſſed in the year of Rome 563, by C. Papirius Carbo, then tribune of the people. Thus, there were four different *aſſes* in the time of the commonwealth.

The figure ſtamped on the *as* was at firſt a ſheep, ox, or ſow; and from the time of the kings, a Janus with two faces on the one ſide, and the *roſtrum* or prow of a ſhip on the reverſe.

The triens and quadrans of copper had the figure of a ſmall veſſel called *ratis*, on the reverſe. Thus Pliny: *Nota æris*, (i. e. *aſſis*) *fuit ex altera parte Janus geminus, ex altera roſtrum navis: in triente vero & quadrante rates.* Hiſt. Nat. lib. xxxiii. cap. 3.—Hence theſe pieces were ſometimes called *ratiti*.

AS was alſo uſed to denote any *integer*, or whole.—Whence the Engliſh word *ace*.

Thus, *as* ſignified the whole inheritance; whence *hæres ex aſſi*, the heir to the whole eſtate.

So the *jugerum*, or Roman acre of land, being reckoned the *integer*, was called *as*, and divided, like it, into twelve *unciæ*.

The *as*, and its parts or diviſions, ſtand thus:

1	As	12 *Unciæ*	$\frac{1}{2}$	*Semis*	6 *Unciæ*
$\frac{11}{12}$	*Deunx*	11	$\frac{5}{12}$	*Quincunx*	5
$\frac{5}{6}$	*Dextans*	10	$\frac{1}{3}$	*Triens*	4
$\frac{3}{4}$	*Dodrans*	9	$\frac{1}{4}$	*Quadrans*	3
$\frac{2}{3}$	*Bes*	8	$\frac{1}{6}$	*Sextans*	2
$\frac{7}{12}$	*Septunx*	7	$\frac{1}{12}$	*Uncia*	1

ASA, among *Naturaliſts*. The writers of the later ages have formed this word *aſa* from the *laſar* of the ancients, and attributed it to a gum very different from that anciently known by the name they have thus corrupted.

The *aſa* of the ancients was an odoriferous and fragrant gum; and the *aſa* of the after-ages had ſo little title to this epithet, that they diſtinguiſhed it by one, expreſſing its being of an offenſive or ſtinking ſmell.

The Arabian writers, according to this diſtinction, deſcribe two kinds of *aſa*, the one *ſtinking*, the other *aromatic*; and the modern Greeks preſerved the name *aſa*, or *laſar*, to the ſtinking gum the Latins called by that name, but added a diſtinctive epithet to expreſs its ſmell, and called it *ſcardolaſarum*.

ASA *dulcis*, in the *Materia Medica*, a name by which ſome authors have called the *benjamin*, or BENZOIN of the ſhops. Dale.

ASA *fœtida*, ſee ASSA *fœtida*.

ASAPHEIS, ασαφεις, from α negative, and σαφης, *clear*, *open*; in Hippocrates, in Prorrh. & Coac. are ſuch patients as do not utter their words in a clear manner. The defect is occaſioned, as Galen ſays, Comm. 2. in Prorrh. "either by ſome hurt which the organs of ſpeech have "contracted from a diſorder of the nerves, or elſe by a "*delirium*."

ASAPPES, or AZAPES, an order of ſoldiers in the Turkiſh army, whom they always expoſe to the firſt ſhock of the enemy; to the end that the enemy being thus fatigued, and their ſwords blunted, the ſpahis and janizaries may fall on, and find an eaſy conqueſt.

The word is derived from the Turkiſh *ſaph*, which ſignifies *rank*, from whence they have formed *aſphaph, to range in battle*.

The *aſappes* are ſaid to be held of ſo little value, that they frequently ſerve as bridges for the cavalry to paſs over, in bad roads, and as faſcines to fill up the ditches of places beſieged.—The greateſt part of them are natural Turks; they travel on foot, and have no pay, but the plunder they can get from the enemy.

ASARABACCA, or ASSARA-BACARA, in *Botany*, a plant ſuppoſed to be mentioned by Pliny and Dioſcorides, under the name of *baccharis*, or *nardus ruſtica*; by us called ASARUM; of the *dodecandria monogynia* claſs.

Its characters are, that the flower hath no petals, but a thick coloured empalement, and twelve ſhort ſtamina. At the bottom of the empalement is incloſed a thick germen, which afterward turns to a thick capſula, having ſix cells containing ſeveral oval ſeeds. There are three ſpecies.

Among the ancients it was much in uſe as an emetic and cathartic. It is chiefly uſed among us as a ſternutatory, in order to which, it is dried and reduced to a powder, to be taken as a ſnuff; in which quality it drains the head of mucous humours. It is alſo a powerful emmenagogue, and has been recommended by authors in the gout, dropſy, and many other chronic diſorders.

ASARINA, in *Botany*, baſtard ASARUM, a ſpecies of the ANTIRRHINUM, in the Linnæan ſyſtem. Its characters are, that the flower is of one leaf, of the grinning kind, divided at the top into two lips, the upper one divided in two parts, the lower one ſlightly divided into three obtuſe parts. The two lips join cloſe together, ſo as to form a kind of ſnout. It hath four ſtamina; in the centre is placed a round germen, which afterward turns to a round huſk, divided into two cells, full of roundiſh ſeeds. There are two ſpecies.

ASAROTA, *ασαρωτα*, from *α* and *σαιρω*, *I ſweep*, a kind of painted pavements in uſe before the invention of moſaic work. The moſt celebrated was that at Pergamus, painted by Seſus, and exhibiting the appearance of crumbs, as if the floor had not been ſwept after dinner, whence, according to Pliny, the denomination. Perrault ſuppoſes them to have been a black kind of pavements of a ſpongy matter. Plin. Nat. Hiſt. lib. xxxvi. cap. 25. Perrault ad Vitruv. lib. vi. cap. 5.

ASARUM, in *Botany*. See ASARABACCA, and ASARINA.

ASASI, in *Botany*, a name given, by the people of Guinea, to a tree, the leaves of which being boiled in water, and held in the mouth, cure the tooth-ach. This tree, in its form and manner of growing, reſembles the laurel; the leaves are very hard and ſtiff, and grow alternately on the ſtalks; they have ſhort pedicles, and the branches are blackiſh and rugged, but they are variegated with ſmall reddiſh ſpangles, or ſcaly protuberances. Phil. Tranſ. N° 232.

ASBESTINE, ſomething incombuſtible, or that partakes of the nature and qualities of the *lapis aſbeſtos*. Such as *aſbeſtine* paper and cloth. See ASBESTOS.

ASBESTOS, a mineral ſubſtance, of a whitiſh, or ſilver colour, and a woolly texture; conſiſting of ſmall threads, or delicate fibres, endued with the wonderful property of reſiſting fire, and remaining unconſumed in the intenſeſt heat.

The word properly ſignifies an incombuſtible body; it is formed of the privative *α*, and *σϐεννυμι*, *extinguo*.

This lanuginous mineral is ſometimes alſo called *amianthus*, and ſometimes *ſalamandra*, or *ſalamander's wool*, from the candle-wicks ſaid to be made anciently of it. From a pungent quality, which Agricola ſays it has on the tongue, though without aſtringency, it has been by ſome called *alumen*, having the epithet of *plumeum* added to it, taken from its downy filaments, to diſtinguiſh it from the other alums; though it is to be obſerved, the true plume-alum is another ſort of body, being a real efflореſcence of alum.

From its light grey colour, it is called *polia* and *corſoides*; and from its likeneſs to the hoary fibres of ſome ſorts of mat-weed, *ſpartapolia*. From the capacity it has of being ſpun into thread, it is called *linum*, with ſome diſtinguiſhing epithet, taken either from its quality, as *linum aſbeſtinum vivum*, or *incombuſtibile*; or from the place where it is found, as *linum foſſile*, *linum Indicum*, *Creticum*, *Cypricum*, and *Carpaſium*, or *Caryſtium*. Beſides the places whence it borrows its names, it is alſo found in Tartary, at Namur, in the Low Countries, in Thuringia among the mines, in the Old Noricum, in Egypt, in the mountains of Arcadia, at Puteoli, in the iſland of Corſica, in the iſland of Angleſey in Wales, and in Aberdeenſhire in Scotland, at Montauban in France, and in the kingdom of Siberia.

Naturaliſts generally reckon it among the ſtones, whence its appellation of *lapis aſbeſtos*, &c. But Dr. Plot rather judges it a *terra lapidoſa*, or middle ſubſtance, between ſtone and earth. As to its generation, the ſame author takes it to be a mixture of ſome ſalt, and a pure earth without ſulphur, coagulated in the winter, and hardened by the heats in ſummer. The ſalt, Ja. Heſſus pretends, is a liquid alum of a milky ſubſtance, inclining to yellow, that ſweats out of the earth, and ſmells like rotten cheeſe.

The *aſbeſtos*, or *lapis aſbeſtos*, is really a ſort of native, fiſſile ſtone, which one may ſplit into threads or filaments, very fine and brittle, yet ſomewhat tractable, ſilky, and of a greyiſh ſilvery colour, not unlike talc of Venice. Acids have no effect upon it.

It is almoſt inſipid to the taſte, indiſſoluble in water; and, expoſed to the fire, it neither conſumes nor calcines.—A large burning-glaſs, indeed, reduces it into little glaſs globules, in proportion as the filaments ſeparate; but common fire only whitens it.

Theſe filaments are of different lengths, from one inch to ten.—The ſtone is uſually found incloſed within other very hard ſtones; though ſometimes growing to the ſurfaces of them, and ſometimes detached or ſeparate from any.

The proprietor of a forge in France found great quantities of a ſubſtance, which anſwered all the common uſes of native *aſbeſtos*. Upon a farther inquiry into the nature of it, he concludes, that both the one and the other are calcined iron deprived of its phlogiſton; and by reuniting the phlogiſton with them, he can reſtore both to their primitive ſtate of iron. Phil. Tranſ. vol. li. part 2. N° 72.

The *aſbeſtos*, applied to any part of the body, excites an itching; and yet we read of it as anciently preſcribed for diſeaſes of the ſkin; and particularly for the itch: unleſs it were rather the *alumen plumoſum* that was meant hereby; for even at this day, they are frequently confounded. The induſtry of mankind has found a method of working this untoward mineral, and employing it in divers manufactures, chiefly cloth and paper.

The manufacture is, undoubtedly, difficult enough. Pliny calls the *aſbeſtos*, *inventu rarum, textu difficilimum*: Wormius aſſures us, that the method of making cloth of *aſbeſtos* is now entirely unknown: in reality, one would ſcarce imagine the thing practicable, without the mixture of ſome other pliant matter, as wool, hemp, or flax, along with the *aſbeſtos*, the filaments of this latter appearing too coarſe and brittle, to make any tolerable fine work. However this be, Bapt. Porta aſſures us, that, in his time, the ſpinning of *aſbeſtos* was a thing known to every body at Venice.

Sig. Caſtagnatta, ſuperintendant of ſome mines in Italy, is ſaid to have carried the manufacture to ſuch perfection, that his *aſbeſtos* was ſoft and tractable, much reſembling lamb-ſkin dreſſed white: he could thicken and thin it at pleaſure, and thus either make it into a very white ſkin, or a very white paper.

This kind of linen cloth was chiefly eſteemed by the ancients; though then better known, and more common, than among us, being held equally precious with the richeſt pearls: nor is it now of mean value, even in the country where it is moſt generally made, a China cover (i. e. a piece of twenty-three inches and three quarters long) being worth eighty tale, i. e. 36*l.* 13*s.* 4*d.* Pliny ſays, he himſelf had ſeen napkins thereof, which, being taken foul from the table, after a feaſt, were thrown into the fire, and by that means were better ſcoured than if they had been waſhed in water, &c. But its principal uſe, according to Pliny, was for the making of ſhrouds for royal funerals, to wrap up the corpſe, ſo that the aſhes might be preſerved diſtinct from thoſe of the wood, &c. whereof the funeral pile was compoſed: and the princes of Tartary, according to the accounts in the Philoſophical Tranſactions, ſtill uſe it at this day in burning their dead. Some of the ancients are ſaid to have made themſelves cloaths of it, particularly the Brachmans, among the Indians. The wicks for their perpetual lamps, according to Dr. Liſter, were alſo made of it; and ſome to this day uſe it for the wicks of ſuch lamps as they would not have any trouble with; becauſe the *aſbeſtos* never waſting, there is no occaſion for ſhifting the wick: Septalla, canon of Milan, had thread, ropes, nets, and paper, made of the *aſbeſtos*. A handkerchief or pattern of this linen was long ſince preſented to the Royal Society, a foot long, and half a foot broad. This gave two proofs of its reſiſting fire; though, in both experiments, it loſt above three drachms in its weight. When taken out red-hot, it did not burn a piece of white paper, on which it was laid. Mr. Villette pretends, that his large burning concave uſually vitrifies the *aſbeſtos*.

The method of preparing the incombuſtible paper and cloth is thus deſcribed by Ciampini. The ſtone is laid to ſoak in warm water, then opened and divided by the hands, that the earthy matter may be waſhed out. The ablution being ſeveral times repeated, the flax-like filaments are collected and dried; and they are moſt conveniently ſpun with an addition of flax. Two or three filaments of the *aſbeſtos* are eaſily twiſted along with the flaxen thread, if the operator's fingers are kept oiled. The cloth alſo, when woven, is beſt preſerved by oil from breaking or waſting. On expoſure to the fire, the flax and the oil burn out, and the cloth remains pure and white. Probably from the diſſipation of ſome extraneous matter of this kind proceeded the diminution of weight in the handkerchief juſt recited; for pure *aſbeſtos* leaves nothing. The ſhorter filaments which ſeparate in waſhing the ſtone, may be made into paper in the common manner. Phil. Tranſ. N° 273.

It is firſt neceſſary to obſerve, that in the ſearching after this ſubſtance, the diſtinction between the *aſbeſtoſes* and amianthi is carefully to be obſerved, the one of theſe being compoſed of the long threads, and the other of very ſhort and abrupt ones; this is their great diſtinction, and all the *aſbeſtoſes*, or long-threaded ones, are more or leſs fitted for this work, and none of the *amianthi*, or ſhort-threaded ones, are at all ſo. Beſides, the *aſbeſtos* is ſomewhat heavier than the amianthus.

Asbestos, *falſe*, is a name given to plume-alum. See *Plume* Allum.

ASCARIDES, in *Medicine*, a ſlender ſort of worms, found in the *inteſtinum rectum*, chiefly of children, and frequently voided with their *fæces*; ſometimes alſo adhering to the fundament, or even pendent from it.

They are thus called from ασκαριζω, *I leap*, on account of their continual troubleſome motion, cauſing a moſt intolerable itching. They are ranged by Linnæus among the *vermes inteſtinæ*.

The *aſcarides* are worms not ſo dangerous as ſome others, but more difficult to be expelled, and that for ſeveral reaſons. The firſt is, becauſe thoſe creatures are remote from the ſtomach; ſo that remedies loſe their virtue before they can come where the worms are. The ſecond is, becauſe the *aſcarides* are wrapt up in viſcous humours, which hinder the operation of medicines. The third is, becauſe theſe worms aſcend ſometimes into the *cœcum*. Now that gut being like the bottom of a ſack, the *aſcarides* keep themſelves as it were intrenched in that place. However it be, it is better to attack them below.

The beſt known remedy for them is Harrowgate water, at the ſpring; the flower of brimſtone taken with treacle, in ſuch a quantity as to purge the patient gently every day, is perhaps the next moſt efficacious remedy. The fumes of tobacco, injected in form of a clyſter, have been ſucceſsfully uſed for expelling *aſcarides*. Med. Obſ. and Inq. vol. ii. p. 307.

Aſcarides are ſaid to be often the occaſion of a *prolapſus ani*. See Procedentia.

The name *aſcarides* is alſo given by M. Reaumur to a ſort of ſmall *worms* or maggots, bred from the eggs of winged animals; which bury themſelves between the membranes of the leaves of plants, and there eat away the parenchymatous ſubſtance.

As ſmall as theſe *aſcarides* in general are, they do not fail to ſhew the proper characters, by which they may be reduced to regular claſſes: thoſe which have had their origin from the eggs of butterflies, are truly and properly caterpillars in miniature; the others are maggots from flies; and if from beetles, they are hexapode *worms*.

Of the little caterpillars, ſome have ſixteen feet, ſome only fourteen; and ſome of them are perfectly ſmooth and equal all over the body; others have a number of rings or annular diviſions, like the larger caterpillars; their ſeveral changes in arriving at the fly-ſtate are the ſame with thoſe of the common ſilk-worm, and other ſpecies of large caterpillars.

The *ovula* of the parent butterfly are depoſited ſingly, only one being placed on a leaf; for the little caterpillar is of the nature of the ſolitary, not the gregarious animals. Theſe eggs are ſo ſmall, as to be ſcarce viſible, except to an obſerver ſo accurate as M. Reaumur; but he not only diſcovered them lying upon the leaves of plants, but traced them to the time of their hatching; and obſerved this curious particular, that the caterpillar never enjoys the light or free air, but as ſoon as ever it is hatched eats its way through the integument of the leaf; and, under the cover of its ſhell, buries itſelf among the parenchymatous matter, whence it never comes out again till it arrives at the fly ſtate.

The worms which are hatched of the eggs of flies, make their way as ſpeedily into the ſubſtance of the leaf; but with this difference in the manner of doing it, that as the caterpillar eats its way through with its teeth, the *worm* ſtrikes its head forcibly againſt it ſeveral times, and by repeated blows at length breaks a hole in it, large enough to admit its little body; and then feeds on the parenchyma of the leaf, in the ſame manner with the caterpillar. Theſe finally change into their chryſalis ſtate, within the covert of the membrane of the leaf.

The laſt kind of *aſcarides* which are to become beetles, make their way into the ſubſtance of the leaf in the ſame manner; and when they have fed their deſtined time upon its parenchyma and juices, they ſometimes change in the covering of the membrane, and ſometimes come out of their holes, and chooſe the ſurface of the leaf for the ſcene of this great cataſtrophe.

ASCENDANT, in *Genealogy*, is underſtood of anceſtors, or ſuch relations as have gone before us: ſuch are father, grandfather, &c.—They are thus called in contradiſtinction to deſcendants, or the deſcending line. It is a canon in law, that inheritances never lineally *aſcend*. Marriage is always forbid between the *aſcendants* and *deſcendants*, in a direct line.

Ascendant, in *Aſtrology*, denotes the *horoſcope*; or the degree of the ecliptic which riſes upon the horizon, at the time of the birth of any one.

This is ſuppoſed to have an influence on the perſon's life and fortune, by giving him a bent and propenſity to one thing more than another.

In the celeſtial theme, this is alſo called the *firſt houſe*, the *angle of the Eaſt*, or *Oriental Angle*, and the *ſignificator of life*.—Such a planet ruled in his *aſcendant*.—Jupiter was in his *aſcendant*, &c.

Hence the word is alſo uſed in a moral ſenſe, for a certain ſuperiority which one man has over another, from ſome unknown cauſe.

ASCENDENS *obliquus*. See Obliquus.

ASCENDING, in *Aſtronomy*, is underſtood of thoſe ſtars, or degrees of the heavens, &c. which are riſing above the horizon, in any parallel of the equator.

Ascending *latitude* is the latitude of a planet when going towards the north pole.

Ascending *node* is that point of a planet's orbit, wherein it paſſes the ecliptic, to proceed northward.

This is otherwiſe called the *northern node*, and is repreſented by this character ☊. See Node, &c.

Ascending *ſigns*, among *Aſtrologers*, are thoſe which are upon their aſcent, or riſe, from the *nadir*, or loweſt part of the heavens, to the *zenith*, or higheſt.

Ascending, in *Anatomy*, is applied to ſuch veſſels as carry the blood upwards, or from lower to higher parts of the body. The *aſcending aorta*, *aorta aſcendens*, is the ſuperior trunk of the artery, which furniſhes the head.

The *aſcending cava*, *vena cava aſcendens*, is a large vein, formed by a meeting or union of the iliacs of one ſide, with thoſe of the other. See *Tab. Anat.* (*Splanch.*) *fig.* 1. *lit.* o. (*Angeiol. fig.* 6. *lit.* cc.)

Many of the ancient anatomiſts called this the *deſcending cave*; as imagining that the blood deſcended from the liver by this vein, to ſupply the parts below the diaphragm. But the moderns have ſhewn, that it has a quite contrary uſe, and ſerves for the conveyance of the blood from the lower parts to the heart; whence its appellation *aſcendant*.

ASCENSION, Ascensio, a riſing or moving upward.

Ascension, in *Theology*, is particularly uſed for that miraculous elevation of our Saviour, when he mounted to heaven, in the ſight of his apoſtles.

Ascension-*day*, popularly called *Holy Thurſday*, a feſtival of the church, held ten days before Whitſuntide, in memory of our Saviour's *aſcenſion*.

Ascension, in *Aſtronomy*, is either *right* or *oblique*.

Ascension, *right*, of the ſun, or of a ſtar, is that degree of the equinoctial, accounted from the beginning of Aries, which riſes with the ſun, or ſtar, in a right ſphere.

Or, right *aſcenſion*, is that degree and minute of the equinoctial, counted as before, which comes to the meridian with the ſun, or ſtar, or other point of the heavens.

The reaſon of thus referring it to the meridian, is, becauſe that it is always at right angles to the equinoctial, whereas the horizon is only ſo in a right, or direct ſphere.

The right *aſcenſion* ſtands oppoſed to the right *deſcenſion*.

Two fixed ſtars, which have the ſame right *aſcenſion*, i. e. are at the ſame diſtance from the firſt point of Aries in a right ſphere; or, which amounts to the ſame, are in the ſame meridian, riſe at the ſame time.—If they be not in the ſame meridian, the difference between the time when they riſe is the preciſe difference of their right *aſcenſion*.—In an oblique ſphere, where the horizon cuts all the meridians obliquely, different points of the meridian never riſe or ſet together; ſo that two ſtars, on the ſame meridian, never riſe or ſet at the ſame time; and the more oblique this ſphere, the greater is the interval of time between them.

To find the right *aſcenſions* of the ſun, ſtars, &c. trigonometrically, ſay, As radius is to the coſine of the ſun's greateſt declination, ſo is the tangent of the diſtance from Aries to Libra, to the tangent of right *aſcenſion*.—To find the right *aſcenſions* mechanically by the globe, ſee Globe.

The *arch of right aſcenſion* is that portion of the equator intercepted between the beginning of Aries, and the point of the equator which is in the meridian: or, it is the number of degrees contained therein.—This coincides with the right *aſcenſion* itſelf.—The right *aſcenſion* is the ſame in all parts of the globe.

We ſometimes alſo ſay, the *right aſcenſion* of a point of the ecliptic, or any other point of the heavens.

The difference between the *right* and *oblique aſcenſions* is called the ASCENSIONAL *difference*.

Ascension, *angle of right*. See Angle.

Ascension, *oblique*, is an arch of the equator intercepted between the firſt point of Aries, and that point of the equator, which riſes together with a ſtar, &c. in an oblique ſphere.

The oblique *aſcenſion* is numbered from weſt to eaſt; and is more or leſs, according to the different obliquity of the ſphere.

To find the oblique *aſcenſions* of the ſun, either trigonometrically, or by the globe, ſee Globe.

The *arch of oblique aſcenſion*, is an arch of the horizon intercepted between the beginning of Aries, and the point of the equator, which riſes with a ſtar, or planet, in an oblique ſphere.—This coincides with the *oblique aſcenſion* itſelf.—The *oblique aſcenſions* change according to the latitude of the places.

Ascension *and deſcenſion*, *refraction of*. See Refraction.

ASCENSIONAL *difference* is the difference between the right and oblique *aſcenſion* of the ſame point on the ſurface of the ſphere.

To find the *aſcenſional* difference trigonometrically; having the latitude of the place, and the ſun's declination given, ſay, As radius is to the tangent of the latitude, ſo is the tangent of the ſun's declination to the ſine of the *aſcenſional* difference.

If the ſun be in any of the northern ſigns, and the *aſcenſional* difference, as DO, be ſubtracted from the right *aſcenſion* reckoned at D (*Tab. Aſtronomy*, *fig.* 63.) the remainder will be the oblique *aſcenſion* at O.—If he be in a ſouthern ſign, the *aſcenſional* difference being added to the right *aſcenſion*, the ſum is the oblique *aſcenſion*; and thus may tables of oblique *aſcenſions* be conſtructed for the ſeveral degrees of the ecliptic, under the ſeveral elevations of the pole. The ſun's *aſcenſional* difference converted into time, is juſt ſo much as he riſes before or after ſix o'clock.

ASCENSORIUM ſometimes occurs in our ancient writers for a ſtair, or ſtep.

ASCENT, Ascensus, the motion of a body tending from below upwards; or the continual receſs of a body from the earth.

In this ſenſe the word ſtands oppoſed to *deſcent*.

The Peripatetics attribute the ſpontaneous *aſcent* of bodies to a principle of levity, inherent in them.

The moderns deny any ſuch thing as ſpontaneous levity, and ſhew, that whatever *aſcends*, does it in virtue of ſome external impulſe, or extruſion. Thus it is that ſmoke, and other rare bodies, *aſcend* in the atmoſphere; and oil, light woods, &c. in water: not by any external principle of levity, but by the ſuperior gravity, or tendency downwards of the parts of the medium wherein they are.

The *aſcent* of light bodies in heavy mediums is produced after the ſame manner as the *aſcent* of the lighter ſcale of a balance.—It is not that ſuch ſcale has an internal principle, whereby it immediately tends upwards; but it is impelled upwards by the preponderancy of the other ſcale; the exceſs of the weight of the one having the ſame effect by augmenting its impetus downwards, as ſo much real levity in the other: becauſe the tendencies mutually oppoſe each other, and that action and reaction are always equal. See this farther illuſtrated under the articles Specific *Gravity*, and Fluid.

Ascent *of Bodies on inclined Planes*. See the doctrine and laws of them under *Inclined* Plane.

Ascent *of fluids* is particularly underſtood of their riſing above their own level, between the ſurfaces of nearly contiguous bodies, or in ſlender capillary glaſs tubes, or in veſſels filled with ſand, aſhes, or the like porous ſubſtances.

This effect happens as well *in vacuo*, as in the open air, and in crooked, as well as ſtrait tubes. Some liquors, as ſpirit of wine, and oil of turpentine, *aſcend* ſwifter than others; and ſome riſe after a different manner from others. Mercury does not aſcend at all, but rather ſubſides.

The *phænomenon*, with its cauſes, &c. in the inſtance of capillary tubes, will be ſpoken of more at large under Capillary *tube*.

As to planes. Two ſmooth poliſhed plates of glaſs, metal, ſtone, or other matter, being ſo diſpoſed as to be almoſt contiguous, have the effect of ſeveral parallel capillary tubes; and the fluid riſes in them accordingly: the like may be ſaid of a veſſel filled with ſand, &c. the divers little interſtices whereof form, as it were, a kind of capillary tubes. So that the ſame principle accounts for the appearance in them all. And to the ſame may probably be aſcribed the *aſcent* of the ſap in vegetables. Thus Sir I. Newton. "If a large pipe of glaſs be filled "with ſifted aſhes, well preſſed together, and one end "dipped into ſtagnant water, the fluid will *aſcend* ſlowly "in the aſhes, ſo as in the ſpace of a week or fortnight "to reach the height of thirty or forty inches above the "ſtagnant water. This *aſcent* is wholly owing to the "action of thoſe particles of the aſhes which are upon "the ſurface of the elevated water; thoſe within the "water attracting as much downwards as upwards: it "follows, that the action of ſuch particles is very ſtrong; "though being leſs denſe and cloſe than thoſe of glaſs, "their action is not equal to that of glaſs, which keeps "quick-ſilver ſuſpended to the height of ſixty or ſeventy "inches, and therefore acts with a force which would "keep water ſuſpended to the height of about ſixty feet. "By the ſame principle, a ſponge ſucks in water, and "the glands in the bodies of animals, according to their "ſeveral natures and diſpoſitions, imbibe various juices "from the blood." Optics, p. 367.

If a drop of oil, water, or other fluid, be laid on a glaſs plane, perpendicular to the horizon, ſo as to ſtand without breaking, or running off; and another plane, inclined to the former ſo as to meet a-top, be brought to touch the drop, then will the drop break, and *aſcend* towards the touching end of the planes; and it will *aſcend* the faſter in proportion as it is higher, becauſe the diſtance between the planes is conſtantly diminiſhing.—After the ſame manner, the drop may be brought to any part of the planes, either upward or downward, or ſideways, by altering the angle of inclination.

Laſtly, if the ſame perpendicular planes be ſo placed, as that two of their ſides meet, and form a ſmall angle, the other two being only kept apart by the interpoſition of ſome thin body; and thus immerged in a fluid tinged with ſome colour; the fluid will aſcend between the planes, and this the higheſt where the planes are neareſt; ſo as to form a curve line, which is found to be a juſt *hyperbola*, one of the *aſymptotes* whereof is the line of the fluid, the other being a line drawn along the touching ſides.—The phyſical cauſe, in all theſe *phænomena*, is the ſame power of Attraction.

Ascent *of vapour*. See Cloud and Vapour.

Ascent, in *Aſtronomy*, &c. See Ascension.

Ascent, in *Logic*, denotes a kind of argumentation, wherein we riſe from particulars to univerſals.

As, when we ſay, this man is an animal, and that man is an animal, and the other man, &c. therefore, every man is an animal.

ASCESIS, properly denotes exerciſe of the body. It is formed from the verb ασκειν, uſed by the ancients in ſpeaking of the ſports and combats of the *athletæ*.

Ascesis is alſo uſed by philoſophers, to denote an exerciſe conducive to virtue, or to the acquiring a greater degree of virtue. Buddæus has a diſſertation on this philoſophical *aſceſis*.

ASCETERIUM, in *Eccleſiaſtical Writers*, is frequently uſed for a monaſtery, or place ſet apart for the exerciſes of virtue and religion.

The word is formed from *aſceſis*, *exerciſe*, or *aſcetra*, one who performs exerciſe. Originally it ſignified a place where the *athletæ*, or gladiators, performed their exerciſes.

ASCETIC, an ancient appellation given to ſuch perſons as, in the primitive times, devoted themſelves more immediately to the exerciſes of piety and virtue, in a retired life; and, particularly, to prayer, abſtinence, and mortification.

The word is derived from ασκεω, *exerceo*, *I exerciſe*.

Afterwards, when the monks came in faſhion, this title was beſtowed upon them; eſpecially upon ſuch of them as lived in ſolitude.

Ascetic is alſo a title of ſeveral books of ſpiritual exerciſes.—As, the *Aſcetics*, or devout treatiſes of St. Baſil, archbiſhop of Cæſarea in Cappadocia.

We alſo ſay the *aſcetic* life, meaning the exerciſe of prayer, meditation, and mortification.

A SECRETIS. See Secretary.

ASCHARIOUNS, or Ascharians, followers of Aſcharius, one of the moſt celebrated doctors among the Mahometans.

ASCHIA, in *Ichthyology*. See Grayling.

ASCIA, in *Antiquity*, an inſtrument ſuppoſed of the ax-kind, uſed in the fabric of the Roman tombs, and frequently repreſented on them.

The *formula ſub aſcia dedicare*, is frequently found inſcribed on ancient tomb-ſtones. We alſo meet with *regum aſcia ne poleito*, among the antique laws of the Twelve

Tables. Theſe expreſſions, and the figure of the *aſcia*, as ſeen on the tombs, have puzzled ſeveral antiquaries, who have formed very curious conjectures concerning it. F. Martin rejects all their opinions; and with conſiderable probability affirms, that the *aſcia* was a hoe, or ſort of pick-ax for digging up the ground, which is to this day called *aſſados*, or *aſſaidos*, in Languedoc. This *aſcia* he pretends was not an inſtrument of common uſe, but conſecrated and employed only for digging of graves; and that it is the ſame with what Sidonius Apollinarius calls *raſtrum funebre*, wherewith the Gauls digged their graves. Lib. iii. ep. 12.

This, he thinks, appears plainly to be the ſignification of the word, from the Latin proverb, *ipſe mihi aſciam in crus impegi*; which often happens to thoſe who work with this inſtrument.

On this footing the famous law of the Twelve Tables, wherein the *aſcia* is mentioned, and the explication of which has puzzled all our antiquaries, contained only a prohibition to dig graves with an inſtrument of iron or copper, ſuch as the *aſcia*. In reality it was a tradition obſerved by the remoteſt antiquity, that no inſtrument made of thoſe metals ſhould be uſed in ſepulchres.

Dom. Martin has given a diſſertation concerning the funeral monuments of the Romans, conſecrated *ſub aſcia*. La Relig des Gaul. tom. ii. liv. 5.

ASCIA is alſo uſed, in *Surgery*, for a kind of bandage, ſomewhat oblique, or crooked; whoſe form and uſe are well deſcribed by Scultetus, in his Armam. Chirurg. p. 1. tab. 54. fig. 3.

ASCII, in *Geography*, are thoſe inhabitants of the globe, who, at certain times of the year, have no ſhadow.

The word is formed of the privative *α*, and *σκια*, *umbra*, *ſhadow*.

Such are the inhabitants of the torrid zone; becauſe the ſun is ſometimes vertical to them.—To find on what days the people of any parallel are *aſcii*, ſee GLOBE.

ASCIDIA, a genus of the order of *molluſca* worms, in the Linnæan ſyſtem.

ASCINDOE, in *Botany*, a name given by the people of Guinea to a ſhrub, which they uſe in medicine, boiling it in water, and giving the decoction in gonorrhœas, and the like complaints. Petiver has named it the prickly Guinea ſhrub, with roundiſh crenated leaves, and filamentous flowers. The leaves are about an inch wide, and about an inch and a half long; they ſtand on ſhort foot-ſtalks; and at the ends of the branches, there ſtand cluſters of ſtamineous flowers. The thorns on the large branches are very ſtrong. Phil. Tranſ. N° 232.

ASCITÆ, in *Antiquity*, a ſect, or branch, of Montaniſts, who appeared in the ſecond century.

The word is derived from *ασκος*, a *bag*, or *bottle*.

The *Aſcitæ* were ſo called, becauſe they introduced a kind of Bacchanals into their aſſemblies, who danced round a bag or ſkin blowed up; ſaying, they were thoſe new bottles filled with new wine, whereof Jeſus Chriſt makes mention, Matth. ix. 17.—They are ſometimes alſo called *Aſcodrogitæ*.

ASCITES, in *Medicine*, a ſpecies of DROPSY, affecting chiefly the *abdomen*, or lower belly.

The word is borrowed from *ασκος*, *uter*, *bag*, or *bladder*.

The *aſcites* is the ordinary WATER-DROPSY.

ASCLEPIA, in *Antiquity*, feaſts celebrated through Greece in honour of Bacchus.

ASCLEPIAD, ASCLEPIADEUS, a Greek or Latin verſe of four feet, containing a ſpondee, a choriambus, and two dactyls; or, which amounts to the ſame, a ſpondee, two choriambuſes, and a pyrrhichius.

Such is the verſe,

Mæcenas atavis edite regibus.
And, *Sublimi feriam ſidera vertice.*

ASCLEPIAS, in *Botany*, *Vincetoxicum*, *Hirundinarea*. See SWALLOW-*Wort*.

ASCODRUTÆ, in *Antiquity*, a ſect in the ſecond century, who rejected all uſe of ſymbols and ſacraments, on this principle, that incorporeal things cannot be communicated by things corporeal, nor divine myſteries by any thing viſible.

ASCOGEPHYRUS, in *Middle Age Writers*, denotes a bridge ſupported on bags made of leather, or bullocks hides. Such bridges appear to have been in uſe among the ancients, and to have given the denomination to a tribe of Arabs, hence called *Aſcitæ*.

Hence alſo the appellation *aſcomanni*, given to pirates, by reaſon of their uſing bridges, or rather boats made of leather. Plin. Hiſt. Nat. lib. vi. c. 9. Du-Cange.

ASCOLIA, in *Antiquity*, a feaſt, which the peaſants of Attica celebrated in honour of Bacchus.

They ſacrificed a he-goat to him (as being the deſtroyer of vines); and of the victim's ſkin made a foot-ball, which they blew up, and anointed with ſome unctuous matter; or, as Potter thinks, they made a bottle of it, which they filled with oil and wine. The young people playing at this, and keeping themſelves always on one foot, whilſt the other was ſuſpended in air, by their frequent falls, gave occaſion of diverſion to the ſpectators. He that held the ſport longeſt, and made the largeſt hops, was the conqueror. Hence the game called *aſcoliaſm*. Pitiſcus.

ASCRIPTI, or ADSCRIPTI, in *Antiquity*, thoſe who entered their names in the colonies, and became *coloni*.

ASCRIPTITII, or ADSCRIPTITII, a kind of villains who coming from abroad, ſettle in the lands of ſome new lord, whoſe ſubjects or ſervants they commence; being ſo annexed to the lands, that they may be transferred and ſold with the ſame.

The *aſcriptitii* are annexed to the land they hold, ſo that they cannot ſtir from it; beſides, that whatever they acquire accedes to the benefit of the lord of the land. Du-Cange, and Calv. Lex. Jur.

ASCRIPTITII is ſometimes alſo uſed in ſpeaking of aliens or foreigners, newly admitted to the freedom of a city or country.

ASCRIPTITII was alſo uſed in the *Military Laws*, for the recruits appointed to ſupply the loſſes of the legions, called alſo ACCENSI.

ASCRIPTIVI, in *Antiquity*. See ASCRIPTITII.

ASCUS, in *Natural Hiſtory*, a word uſed by De Laet, as the name of that pouch or bag which nature has given to the OPOSSUM, or POSSUM, as our common people in America call it, for the receiving the young ones into it in time of danger.

This *aſcus* is a ſkinny bag, ſeparate from the reſt of the body, and only adhering by a membrane to the bottom of the belly. It is a vulgar error to ſuppoſe, that the young of this animal are taken back again into the womb, in time of danger, they being only at liberty to creep into and out of this bag, prepared on purpoſe for them.

ASCYRUM, in *Botany*. See *St.* PETER'S-WORT.

ASEKI, or ASEKAI, the name which the Turks give to the favourite ſultaneſſes, who have brought forth ſons. Theſe are greatly diſtinguiſhed above others in their apartments, attendants, penſions, and honours. They have ſometimes ſhared the government. The ſultana who firſt preſents the emperor with a male child, is reckoned the chief favourite, is called *buyuk aſeki*, and ranks as a legitimate wife: though, from the time of Bajazet I. the ſultans are forbid to marry by a public law, which Solyman II. violated in favour of Roxalana.

ASELLI, two fixed ſtars of the fourth magnitude, in the conſtellation CANCER.

ASELLI is ſometimes uſed for MILLEPEDES.

ASELLII *Pancreas*. See PANCREAS.

ASELLUS, in *Ichthyology*, the name of a genus of fiſh, including the *cod* and *whiting*; of which writers enumerate ſeveral ſpecies. See Willughby's Hiſt. Piſc. p. 160. See COD and FISHERY.

ASEMOS, *ασημος*, from *α* negative, and *σημα*, a *ſign*, is an epithet applied to events that fall out contrary to all appearance, and without any manifeſt cauſe.

ASEPTA, in *Medicine*, *ασηπτα*, from *α* negative, and *σηπω*, *to putrefy*; ſignifies any thing unputrefied, or unconcocted.

ASH-*tree*, *fraxinus*, in *Botany*, a genus of the *polygamia dioecia* claſs. Its characters are, that it hath hermaphrodite and female flowers on the ſame tree, and ſometimes on different trees. The hermaphrodite flowers have no petals, but a ſmall empalement including two erect ſtamina. In the centre is ſituated an oval compreſſed germen, which afterward becomes a compreſſed bordered fruit, ſhaped like a bird's tongue, having one cell, incloſing a ſeed of the ſame form. The female flowers are the ſame, but have no ſtamina. There are ſix ſpecies.

Theſe trees are now propagated in plenty in the nurſeries for ſeed, as there have been of late years a great demand for all the hardy plants of trees and ſhrubs which will live in the open air; but all thoſe trees which are grafted upon the common *aſh*, are not ſo valuable as thoſe which are raiſed from ſeeds, becauſe the ſtock generally grows much faſter than the grafts; whereby the lower part of the trunk, ſo far as the ſtock riſes, will often be twice the ſize of the upper; and if the trees ſtand much expoſed to the wind, the grafts are frequently broken off to the ſtock, after they are grown to a large ſize, which is a great diſappointment to a perſon, after having waited ſeveral years, to ſee their trees ſuddenly deſtroyed. Beſide, if the wood of either of the ſorts is valuable, it can be of little uſe when the trees are ſo raiſed.

The common *aſh* propagates itſelf in plenty by the ſeeds which ſcatter in the autumn; ſo that where the ſeeds happen to fall in places where the cattle do not come, there will be plenty of plants come up in the ſpring. But where any perſon is deſirous to raiſe a quantity of the trees, the ſeeds ſhould be ſown as ſoon as they are ripe, and then the plants will come up the following ſpring; but if the ſeeds are kept out of the ground till ſpring, the plants will not come up until the year after, which is the ſame with all the ſorts of *aſh*.

When the plants are come up, they muſt be kept clean from weeds during the ſummer; and if they make any good progreſs in the ſeed-bed, they will be fit to tranſplant by the following autumn; therefore there ſhould be ſome ground prepared to receive them, and as ſoon as their leaves begin to fall, they may be tranſplanted. In taking them up, care ſhould be taken not to tear off any of their roots; to prevent which, they ſhould be taken up with a ſpade, and not drawn up, as is frequently practiſed. For, as many of the plants which riſe firſt from ſeeds, will outſtrip the others in their growth, ſo it is frequently practiſed to draw up the largeſt plants, and leave the ſmaller to grow a year longer before they are tranſplanted: and to avoid hurting thoſe which are left, the others are drawn out by hand, and thereby many of their roots torn off or broken. The better way therefore is to take up all, tranſplanting the larger ones together in rows, and the ſmaller by themſelves. The rows ſhould be three feet aſunder, and the plants a foot and a half diſtant in the rows. In this nurſery they may remain two years, by which time they will be ſtrong enough to plant where they are to remain; for the younger they are planted out, the larger they grow: ſo that where they are deſigned for uſe, they ſhould be planted very young; and the ground where the plants are raiſed ſhould not be better than that where they are deſigned to grow.

If a wood of theſe trees is rightly managed, it will turn greatly to the advantage of its owner; for by the underwood which will be ready for cutting every eight or ten years, there will be a continual income, more than ſufficient to pay the rent of the ground, and all other charges: and ſtill there will be a ſtock preſerved for timber, which in a few years will be worth forty or fifty ſhillings a tree.

The beſt ſeaſon for felling theſe trees, is from November to February; for if it be done too early in autumn, or too late in the ſpring, the timber will be ſubject to be infeſted with worms, and other inſects: but for lopping of pollards, the ſpring is preferable for all ſoft woods.

This timber is of excellent uſe to the wheelwright and cartwright, for ploughs, axle-trees, wheel-rings, harrows, bulls, oars, blocks for pullies, and many other purpoſes. Miller's Gardener's Dict.

ASH, *mountain*; ſee SERVICE-*tree*.

ASH, *poiſon*; ſee POISON-*wood*.

ASHES, *cineres*, the terrene or earthy part of wood, and other combuſtible bodies, remaining after they are burnt or conſumed with fire.

This name is generally applied to the ſubſtance remaining of bodies containing an inflammable matter, after they have been deprived of it, by burning, or calcination in open air. Pewterers, for example, give the name of *tin-aſhes* to the earth of this metal, which in fuſion has been deprived of its phlogiſton and metallic properties.

Aſhes are properly the earth and fixed ſalts of the fuel, which the fire cannot raiſe; all the other principles being gone off in the ſmoke.

The chemiſts frequently call the *aſhes* of a body its *calx*. —*Aſhes*, if well burnt, are uſually pure white, becauſe the oil to which they owe their blackneſs when in a coal, is ſuppoſed quite evaporated. The *aſhes* of kali, fern, or the like, are a principal matter in the compoſition of glaſs.

The *aſhes* of all vegetables are found to contain iron, inſomuch that M. Geoffroy makes it a chemical problem, which he propoſes to the public, *to find aſhes without any particles of iron therein.*—Whether the metal exiſted in the plants themſelves, or is produced in them by the operation of calcination, is a point very ingeniouſly controverted between Meſſ. Geoffroy and Lemery the younger, in the Memoirs of the Royal Academy. See the ſubſtance of the diſpute under METAL.

Aſhes are of conſiderable uſe in making lixiviums, or lyes, for the purpoſes of medicine, for bleaching, and for ſugar-works, &c.

White *aſhes* were forbid to be exported, 2 and 3 Ed. VI. c. 26. on account of their neceſſary uſe in the making of ſoap, and ſaltpetre; as well as for the whitening of linen, and the dying and ſcouring of woollen cloth.

In the bills of entry, we find divers ſorts of *aſhes* imported from abroad: as POT-*aſhes*, PEARL-*aſhes*, from Germany; wood or SOAP-*aſhes*, and WEED-*aſhes*. See POT-*aſhes*, &c.

The ancients preſerved the *aſhes* of their dead anceſtors with great care and piety, in urns made for the purpoſe. See URN, &c.

The *aſhes* of all kinds of fuel make a fine manure for lands. They are the moſt proper for cold and wet lands, and ſhould be kept dry till the time of uſing them, that the rain may not waſh out their ſalts. One load of dry *aſhes* are found by the farmers to go as far as two loads that have been more careleſly kept. The wetting them moderately ſometimes with urine, or ſoap-ſuds, adds to their virtue. Six loads of common *aſhes* are generally allowed to an acre; but two loads of thoſe preſerved in this manner, will be ſufficient for the ſame quantity of ground.

The advantage that vegetable *aſhes* are of to land, is abundantly ſeen in the profit of the farmer, by burning his ſtubble, &c. But ſea-coal *aſhes* are the beſt for cold lands, and their virtue is found to be the moſt laſting of that of any kind.

Aſhes are a great improvement for graſs ground, as well as ploughed lands. On the former they are to be ſtrewed in April, and on the latter, as ſoon as the corn is ſown. Soap-*aſhes*, after the ſoap-boilers have done with them, are found alſo to be of very great advantage to cold and ſour lands. The worſt ſort of land we have, which is naturally over-run with furze and heath, has been tried with this manure, in large quantities, and vaſt crops of wheat have been obtained from it for ſix years together. Kiln-*aſhes*, ſuch as are made of ſtraw, furze, &c. are as good as any, but they are very light. The maltſters in the Weſt of England ſift theſe over their corn and graſs, but being very light, this muſt by no means be done in windy weather, and ſucceeds beſt of all when done juſt before rain or ſnow.

Pot-*aſhes*, after the pot-aſh-men have done with them, are alſo of great ſervice; but as they have been, in a great meaſure, deprived of their ſalt, they are to be laid on in conſiderable quantity.

Turf-*aſhes* are very good for all ſorts of land, but eſpecially for clay-land; but theſe are much the better, when mixed firſt with lime.

ASHES, *pot*; ſee POT-*aſhes*.

ASHLAR, a term uſed among *Builders*; by which they mean common or free ſtones, as they come out of the quarry, of different lengths and thickneſſes.

ASHLERING, among *Builders*, ſignifies quartering, to lath to, in garrets, about 2½, or 3 feet high, perpendicular to the floor, up to the underſide of the rafters.

ASH-WEDNESDAY, the firſt day of Lent, ſuppoſed to have been ſo called from a cuſtom in the church, of ſprinkling aſhes that day on the heads of penitents then admitted to penance.

ASIARCHA, in *Antiquity*, the ſuperintendant of the ſacred games in Aſia. Montfaucon. Pal. Græc. lib. ii. c. 6. p. 161.

The *Aſiarcha* differed from the *Galatarcha*, *Syriarcha*, &c. Some will have the *Aſiarchs* to have been perſons of rank, choſen in the way of honour, to procure the celebration of the ſolemn games, at their own expences.

ASIATIC *ſtyle*; ſee STYLE.

ASIICTOS, in *Natural Hiſtory*, a name given by the ancients to a ſtone, deſcribed to have been of a black colour, variegated with ſpots and veins of red.

ASILUS, in *Zoology*, the name uſed by many for the LUTEOLA, or *regulus non criſtatus*, an extremely ſmall bird, common among willows.

ASILUS, in *Zoology*, the name of a genus of inſects, belonging to the *diptera* of Linnæus, called in Engliſh the HORNET-*fly*, or WASP-*fly*.

The diſtinguiſhing characters of this genus are theſe: they are of the two-winged kind, with a ſtyle or oblong body, terminated by a protuberance or head, and called a ballancer, under each wing: to this add, that the head is furniſhed, by way of mouth, with a ſnout of a ſubulated figure, which is ſimple and very ſharp at the extremity. They are among the largeſt of the FLY-kind.

Authors have called theſe inſects by the names of MUSCÆ *crabroniformes*, MUSCÆ *rapaces*, and MUSCÆ *veſpiformes*.

ASINARII, an appellation given, by way of reproach, to the ancient Chriſtians, as well as Jews, from a miſtaken opinion, among heathens, that they worſhipped an aſs.

The appellation was originally given to the Jews, and only became applied to the Chriſtians: the Jews were charged with keeping a golden aſs's head in the ſanctuary of the temple, to which, on certain occaſions, they paid adoration; in memory of a herd of aſſes, which in their paſſing through the wilderneſs, ſhewed Moſes the way, under a diſtreſſing want of water, to a ſpring. Tacit. Hiſt. lib. v.

Some had even the impiety to repreſent Chriſt with an aſs's ears, and one foot hoofed, holding a book, with the inſcription *Deus Chriſtianorum* ονοχηλος. Crinit. de Honeſt. Diſcipl. lib. i. c. 9.

ASINIUS *lapis*, a name given by ſome writers of the middle ages, to a ſtone, ſaid to be found in thoſe places frequented by the wild aſs. See BEZOAR.

ASINUS *piſcis*, in *Zoology*, a name given by ſome authors to the ÆGLEFINUS, or common haddock, called alſo ONOS. Willughby.

ASIO, in *Zoology*, a name given by Aldrovandus, and others, to the OTUS, or leſſer horn-owl.

ASKER, a name uſed in ſome parts of England for the water-newt, or EFT.

ASLANI, in *Commerce*, a name given to the Dutch dollar, current in moſt parts of the Levant.

The word is alſo written corruptly, *aſſelani*. It is originally Turkiſh, and ſignifies a lion, which is the figure ſtamped on it. The Arabs taking the figure of the lion for a dog, call it *abuſketh*.

The *aſlani* is ſilver, but of a baſe alloy, and oftentimes counterfeit. It is current for 115 or 120 aſpers. See ASPER.

ASMODAI, the name given by the Jews to the prince of demons; and, according to R. Elias, the ſame with *Sammael*.

ASOTUS, in *Ichthyology*, a ſpecies of the SILURUS.

ASP, in *Natural Hiſtory*, a ſmall poiſonous kind of ſerpent, whoſe bite gives a ſpeedy, but eaſy death.

It is ſaid to be thus denominated from ασπις, *ſhield*, in regard to its manner of lying convolved in a circle, in the center of which is the head, which it exerts, or raiſes, like the *umbo* or *umbilicus* of a buckler.

This ſpecies of ſerpent is very frequently mentioned by authors, but ſo careleſly deſcribed, that it is not eaſy to determine which, if any of the ſpecies known at preſent, may properly be called by this name.

Naturaliſts mention three ſpecies of *aſps*; the firſt called *cherſæa*, the ſecond *chelidonia*, and the third *ptyas*, the moſt fatal of all.

It is with the *aſp* that Cleopatra is ſaid to have diſpatched herſelf, and prevented the deſigns of Auguſtus, who intended to have carried her captive to adorn his triumphal entry into Rome. But the fact is conteſted: Brown places it among his vulgar errors. The indications of that queen's having uſed the miniſtry of the *aſp*, were only two almoſt inſenſible pricks found in her arm. In reality, Plutarch ſays, it is unknown of what death ſhe died.

Lord Bacon makes the *aſp* the leaſt painful of all the inſtruments of death: he ſuppoſes its poiſon to have an affinity to opium; but to be leſs diſagreeable in its operation; which does not ſo well quadrate with the deſcription of the ſymptoms given by Dioſcorides and others. Immediately after the bite, the ſight becomes dim, a ſenſible tumour ariſes, and a moderate pain is felt in the ſtomach.

Matthiolus adds, that the bite is followed by a ſtupor of the whole body, paleneſs, coldneſs of the forehead, continual yawning, nictitation of the eye-lids, inclination of the neck, heavineſs of the head, ſinking into a profound ſleep, and laſtly convulſions.

The bite of the *aſp* is ſaid by Ariſtotle to admit of no remedy. Pliny and Ægineta allow of no other cure, but to cut off the wounded part. Others recommend burning the part, with the internal uſe of hot alexipharmic medicines.

The ancients had a plaſter called δι' ασπιδων, made of this terrible animal, of great efficacy as a diſcutient of *ſtrumæ*, and other indurations, and uſed likewiſe againſt pains of the gout. The fleſh and ſkin, or *exuvia* of the creature, had alſo their ſhare in the ancient *Materia Medica*.

ASPALATH, ASPALATHUM, in *Pharmacy*, the wood of a foreign tree, heavy, oleaginous, ſomewhat ſharp and bitter to the taſte, and of a ſtrong ſmell, and purple colour.

The *aſpalath* is otherwiſe called *lignum Rhodium*, or ROSE-*wood*; and by ſome, *Cypreſs-wood:* the former on account of its ſweet ſmell, or growth in the iſland of Rhodes; the latter from its being alſo found in the iſland of Cyprus. Though ſome will have *aſpalathum* a different wood from the *lignum Rhodium*.

Aſpalath was anciently in much repute, as an aſtringent, ſtrengthener, and drier; but it is now much diſuſed in internal practice.

In virtue, taſte, ſmell, and weight, it reſembles the *lignum aloes*; and in phyſic they are frequently ſubſtituted the one for the other.

Aſpalathum affords an oil of an admirable ſcent; reputed one of the beſt of perfumes; it is chiefly uſed in ſcenting pomatums, and liniments.

ASPALATHUS, in *Botany*, a genus of the *diadelphia decandria* claſs; the calyx of which conſiſts of a ſingle-leafed perianthium, divided into five ſegments; the corolla is papilionaceous; the fruit is a roundiſh, turgid, unilocular, bivalve pod; the ſeed is ſingle, and frequently kidney-ſhaped.

ASPARAGUS, in *Botany*, vulgarly called SPARROW-*graſs*; a genus of the *hexandria monogynia* claſs. Its characters are, that the flower is naked, having no empalement, and is of the bell-ſhaped kind, ſpread open, and reflexed on the top. Theſe are male and hermaphrodite, ſometimes on different plants, and at other times on the ſame ſtalks. The hermaphrodite flowers have a *germen*, which afterwards becomes a round berry, having three cells; in each of which is lodged one or two ſeeds. The male flowers have ſix *ſtamina*, but no *germen* or ſtyle; nor are ſucceeded by any berries. There are ten ſpecies, according to Mr. Miller; the firſt of which is the common *aſparagus*, which is cultivated for the uſe of the table, and may probably have been brought by culture to the perfection it now is, from the wild ſort which grows naturally in the fens of Lincolnſhire, where the ſhoots are no larger than ſtraws.

This *aſparagus* is propagated by ſeeds, in the procuring which, particular care ſhould be taken to get it from a perſon of ſkill and integrity. But where a perſon is in poſſeſſion of ſome good beds of *aſparagus*, it is much the beſt way to ſave it himſelf; in order to which, a ſufficient number of the faireſt buds ſhould be marked early in the ſpring, and be permitted to run up to ſeed; becauſe thoſe which run up after the ſeaſon for cutting the *aſparagus*, are generally ſo backward, as not to ripen the ſeeds, unleſs the ſummer is warm, and the autumn favourable.

There are ſome perſons who plant the ſeeds of *aſparagus* in the place where the roots are to remain, which is a very good method, if it is performed with care. The way is this; after the ground has been well trenched and dunged, they lay it level, and draw a line acroſs the ground, in the ſame manner as is practiſed in planting the young plants. With a dibble make holes at a foot diſtance, into each of which are to be dropped two ſeeds, for fear one ſhould miſcarry; which holes ſhould not be more than half an inch deep. Then cover the ſeeds, and remove the line a foot back for another row; and after four rows are finiſhed, leave ſpace for an alley between the beds. If it is to be taken up for hot beds, there may be ſix rows planted in each bed, nine inches diſtance between the rows. This ſhould be performed by the middle of February, becauſe the ſeeds lie long in the ground: but if onions are intended to be ſown upon the ground, that may be performed a fortnight or three weeks after, provided the ground be not ſtirred ſo deep as to diſturb the *aſparagus* ſeeds, in raking the onion ſeed into the ground.

A month after this, the *aſparagus* will come up; the crop of onions muſt then be thinned, and the weeds carefully cleared away. About Auguſt, the onions will be fit to pull up. In October following, cut off the ſhoots of the *aſparagus* within two inches of the ground, clear well all weeds away, and throw up the earth upon the beds, ſo as to leave them five inches above the level of the alleys. A row of coleworts may be planted in the middle of the alleys, but nothing muſt be now ſown on the beds. In the ſpring, the weeds muſt be hoed up; and all the ſummer, the beds kept clear of weeds. In October, they muſt be turned up, and earthed again, as in the preceding ſeaſon.

The ſecond ſpring after planting, ſome of the young *aſparagus* may be cut for the table. The larger ſhoots ſhould only be taken, and theſe ſhould be cut at two inches under ground, and the beds every year managed as in the ſecond year.

It is proper to take notice of a common error that has long prevailed with moſt people, which is, that of not dunging the ground for *aſparagus*, believing that the dung communicates a ſtrong rank taſte to it; which is a great miſtake, for the ſweeteſt *aſparagus* is that which grows on the richeſt ground, the poor ground occaſioning that rank taſte ſo often complained of.

The quantity of ground neceſſary to be planted with *aſparagus*, to ſupply a ſmall family, ſhould be at leaſt five or ſix rods; leſs than which will not do, for if there cannot be a hundred cut at a time, it will be ſcarcely worth while to plant it. Miller.

ASPARAGUS is a medicinal plant, which furniſhes one of thoſe called the five opening roots. It is a known diuretic; its top, or head, taken in the way of food, readily diſcovers itſelf in the ſmell of the urine: but its root is ſtill more ſtrongly endued with that quality, as containing more of the ſalt from which it is derived. Hence it becomes, among us, an ingredient in all compoſitions, intended to cleanſe the *viſcera*, and guard againſt jaundices, dropſies, &c. It is alſo of ſome uſe as a pectoral; and makes a chief ingredient in the ſyrup of marſhmallows, againſt the ſtone. Though foreign phyſicians ſpeak more ſparingly of the uſe and virtues of this medicine.

ASPARAGUS was alſo uſed by the ancient Greeks, to expreſs not only the young ſhoots of the plant of that name, but any other young ſprouts of an eatable plant. The ſprouts of the ſeveral kinds of cabbage were particularly expreſſed by this word, or ſometimes by the compound term *crambaſparagus*.

ASPASIA, among *Ancient Phyſicians*, a conſtrictive medicine for the *pudenda muliebria*. It conſiſted only of wool, moiſtened with an infuſion of unripe galls. Caſtell. Lex. Med.

ASPASTICUM, in *Eccleſiaſtical Writers*, a place, or apartment, adjoining to the ancient churches, wherein the biſhop and preſbyters ſat, to receive the ſalutations of the perſons who came to viſit them, deſire their bleſſing, or conſult them on buſineſs.

This is alſo called *aſpaticum*, *diaconicum*, *receptorium*, *metatorium* or *meſatorium*, and *ſalutatorium*; in Engliſh, *greeting-houſe*.

ASPECT, Aspectus, in *Gardening*, is uſed for what we otherwiſe call *expoſure*.

Aspect, in *Aſtronomy*, is uſed for the ſituation of the ſtars, or planets, in reſpect of each other; or, in *Aſtrology*, it denotes a certain configuration, and mutual relation between the planets, ariſing from their ſituations in the zodiac, whereby their powers are ſuppoſed to be mutually either increaſed or diminiſhed, as they happen to agree or diſagree in their active or paſſive qualities. Though ſuch configurations may be varied, and combined a thouſand ways, yet only a few of them are conſidered.—Hence, Wolfius more accurately defines *aſpect* the meeting of luminous rays emitted from two planets to the earth, either ſituate in the ſame right line, or including an angle which is one or more quota parts of four right angles.

The doctrine of *aſpects* was introduced by the aſtrologers, as the foundation of their predictions.—Hence, Kepler defines *aſpect* an angle formed by the rays of two planets meeting on the earth, able to excite ſome natural power or influence.

The ancients reckoned five *aſpects*, viz. *conjunction*, denoted by the character ☌; *oppoſition*, by ☍; *trine*, by △; *quadrate*, by □; and *ſextile*, by ✱.

Conjunction, and *oppoſition*, are the two extremes of the *aſpects*; the firſt being the beginning, and the ſecond the higheſt or ultimate term. See CONJUNCTION, and OPPOSITION.

Trigon, or *trine*, is the third part of a circle, or the angle meaſured by AB (*Tab. Aſtron. fig.* 3.).

Tetragon, or *quadrate*, is the fourth part of a circle, or the angle meaſured by the quadrant AD. *Sextile*, which is the ſixth part of a circle, or angle, is meaſured by the ſextant AG. See TRIGON, &c.

The *aſpects* are divided, with regard to their ſuppoſed influences, into *benign*, *malign*, and *indifferent*.

The quadrate *aſpect* and oppoſition are reputed *malign*, or *malific*; trine and ſextile, *benign*, or *friendly*; and conjunction, an *indifferent aſpect*.

To the five ancient *aſpects*, the modern writers have added ſeveral more: as *decile*, containing the tenth part of a circle; *tridecile*, three tenths; and *biquintile*, four tenths, or two fifths.—Kepler adds others, as he tells us, from meteorological obſervations: as the *ſemi-ſextile*, containing the twelfth part of a circle; and *quincunx*, containing five twelfths.—Laſtly, to the aſtrological phyſicians we owe, *octile*, containing one eighth; and *trioctile*, containing three eighths. Some have alſo added *quintile*, containing a fifth part of the circle; and *biquintile*, or two fifths.

The angle intercepted between two planets in the *aſpect* of conjunction is 0; in the ſemi-ſextile *aſpect*, 30°; in decile, 36°; in octile, 45°; in ſextile, 60°; in quintile, 72°; in quartile, 90°; in tridecile, 108°; in trine, 120°; in trioctile, 135°; in biquintile, 144°; in quincunx, 150°; in oppoſition, 180°.

Theſe angles, or intervals, are reckoned on the ſecondary circles; or according to the longitudes of the planets; ſo that the *aſpects* are the ſame, whether a planet be in the ecliptic, or out of it.

The *aſpects* are uſually divided into *partile* and *platic*.

Aspects, *partile*, are when the planets are juſt ſo many degrees diſtant, as is above expreſſed.—Theſe alone are the *proper aſpects*.

Aspects, *platic*, are when the planets do not regard each other from theſe very degrees; but the one exceeds as much as the other comes ſhort.—So that the one does not caſt its rays immediately on the body of the other, but only on its orb or ſphere of light.

Aspect, *double*, is uſed in painting, where a ſingle figure is ſo contrived, as to repreſent two or more different objects, either by changing the poſition of the eye, or by means of angular glaſſes.—Inſtances hereof, ſee under the articles ANAMORPHOSIS, CATOPTRIC, CISTULA, and MIRROUR.

ASPEN-*tree*; ſee POPLAR.

ASPER, in *Grammar*.—*Spiritus* ASPER, a character, or accent, in form of a *c*; placed over certain letters, in the Greek tongue, to ſhew they are to be ſtrongly aſpirated, and that the breath is here to ſupply the place of an *h*.

Asper, or **Aspre**, alſo ſignifies a little Turkiſh ſilver coin, wherein moſt of the grand ſignior's revenues are paid. The *aſper* is worth ſomething more than an Engliſh halfpenny.—The only impreſſion it bears, is that of the prince's name under whom it was ſtruck.—The pay of the janizaries is from two to twelve *aſpers per diem*.

Asper, in *Ichthyology*, a ſmall fiſh caught in the Rhone, ſo called from the roughneſs of its ſcales. Its head is large, in proportion to its body, and of a pointed ſhape. It has no teeth, but its jaws are ſharp to the touch. It is of a dark red colour, with large black ſpots. It is good to eat, being eſteemed aperitive. Lemery.

ASPERA *Arteria*, in *Anatomy*, the WIND-*pipe*; otherwiſe called the TRACHEA.

The *aſpera arteria* is a canal ſituate in the middle and fore-part of the neck, before the *œſophagus*: its upper end is called the LARYNX; from whence it deſcends to the fourth *vertebra* of the back, where it divides, and enters the lungs.—See *Tab. Anat. Angeiol. fig.* 2. & *lit.* c. *Splanch. fig.* 12. *litt.* tt. & ſ.

It is formed of annular cartilages, ranged at ſmall and equal diſtances from one another, and growing ſmaller and ſmaller, as they approach the lungs; thoſe of the *bronchia* being ſo cloſe to one another, that, in expiration, the ſecond enters within the firſt, and the third within the ſecond, and the following always enters the preceding.

Betwixt the *larynx* and the lungs, theſe cartilages make not complete rings; being flat on one ſide, and not finiſhing the whole circle, but repreſenting the figure of the ancient Greek *ſigma*: whence they are alſo denominated *ſigmoides*.—Their hind part, which is contiguous to the *œſophagus*, is membranous, that they may better contract and dilate, and give way to the food as it paſſes down the gullet.

The cartilages of the *bronchia* are completely annular: yet their capillary branches have no cartilages, but inſtead of them, ſmall circular ligaments, which are at pretty large diſtances from one another.—The uſe of the cartilages is to keep the paſſage for the air open; but in the capillary *bronchia*, they would hinder the ſubſiding of the veſſels.

Theſe cartilages are tied together by two membranes, external and internal: the external is compoſed of circular fibres, and covers the whole *trachea* externally; the internal is of an exquiſite ſenſe, and covers the cartilages internally: it is compoſed of three diſtinct membranes; the firſt woven of two orders of fibres; thoſe of the firſt order being longitudinal, for the ſhortening the *trachea*; theſe make the cartilages approach, and enter one another: the other order is of circular fibres, for contracting the cartilages.

When theſe two orders of fibres act, they aſſiſt, together with the external membrane, in expiration, in coughing, and in altering the tone of the voice.

The ſecond membrane is altogether glandulous; and the excretory veſſels of its glands, opening into the cavity of the *trachea*, ſeparate a liquor for moiſtening the ſame, and defending it from the acrimony of the air.—The laſt is a net of veins, nerves, and arteries; the veins are branches of the *vena cava*, the nerves of the recurrent; and the arteries are ſprigs of the *carotides*.

Tranſverſe ſections of the *aſpera arteria* have been commonly reputed mortal. Yet in the modern practice we find many inſtances to the contrary. In ſome dangerous caſes of quinſies, &c. they are even obliged to cut open this part. This operation is called BRONCHOTOMY, or LARYNGOTOMY.

In the Philoſoph. Tranſact. is a letter by Mr. John Keen, recommending the more frequent uſe of bronchotomy, or opening the wind-pipe, upon preſſing occaſions; which he urges from a remarkable caſe of a perſon who had the *trachea*, or wind-pipe, cut quite through beneath the *pomum Adami*, cured by ſtitching the wound, and uſing proper medicines.

There are curious obſervations on ſome peculiar advantages in the ſtructure of the *aſperæ arteriæ*, or WIND-*pipes* of ſeveral birds, and of the land-tortoiſe, in the Phil. Tranſ. vol. LVI. N° 24. an. 1766. The birds referred to are the wild *ſwan*, *colum*, *ſeras*, *crane*, Indian *cock*, and *demoiſelle*. See each, and TORTOISE.

ASPERGELLOUS, in *Botany*, the name given by Micheli to that genus of moſſes called, by Dillenius and others, *byſſus*. Linnæus preſerves the name of *byſſus* to theſe plants, but he removes them out of the claſs of moſſes, and places them under the general ſeries of funguſes, defining them to be funguſes compoſed of diſtinct capillary fibres, without knots.

ASPERGILLUM, in *Antiquity*, a long bruſh made of horſe-hair, fixed to a handle, wherewith the luſtral water was ſprinkled on the people in luſtrations and purifications. Horſley Brit. Rom. l. ii. c. 1.

This is alſo denominated *aſpergile*, and *aſperſorium*.

The ancients, inſtead of a bruſh, made uſe of branches of laurel and olive.

It is alſo uſed, in *Eccleſiaſtical Writers*, to denote the inſtrument in Romiſh churches, wherewith holy water is ſprinkled.

ASPERIFOLIOUS, in *Botany*, one of the diviſions or claſſes of plants in the *Fragmenta Methodi Naturalis* of Linnæus; ſo denominated, becauſe uſually rough-leaved. According to Mr. Ray, theſe plants make a diſtinct genus, the characters of which are, that the leaves ſtand alternately, or without any certain order, on the ſtalks: the flowers are monopetalous, but they have the margin cut into five diviſions, ſometimes deep, ſometimes ſhallow; and the upper ſpike or top of the plant is often curved back, ſomething like a ſcorpion's tail.

In the place of each flower, there uſually ſucceed four ſeeds; Mr. Ray ſuppoſes the *cerinthe* the only plant of this genus that hath leſs than four ſeeds at the baſe of each flower: this indeed hath but two.

To the claſs of *herbæ aſperifoliæ* belong the *pulmonaria maculoſa*, *cynogloſſa*, *borago*, *bugloſſa*, *anchuſa*, *echium*, *linum umbilicatum*, *heliotropium majus*, *aparine major*, *conſolida major*, *lithoſpermum*, *echium ſcorpioides*, and *cerinthe*.

They all poſſeſs the ſame general virtues, and are ſubaſtringent, and uſeful both internally and externally, as agglutinants.

ASPERITY, implies the inequality or roughneſs of the ſurface of any body; whereby ſome parts of it do ſo ſtick out beyond the reſt, as to hinder the hand, &c. from paſſing over it eaſily and freely.

Aſperity, or roughneſs, ſtands oppoſed to ſmoothneſs, evenneſs, politure, &c.—From the *aſperity* of the ſurfaces of contiguous bodies, ariſes friction.

According to the relations of Vermauſen, the blind man ſo famous for diſtinguiſhing colours by the touch, it ſhould appear, that every colour has its particular degree and kind of *aſperity*. He makes black the rougheſt, as it is the darkeſt of colours; but the others are not ſmoother in proportion as they are lighter; i. e. the rougheſt do not always reflect the leaſt light: for, according to him, yellow is two degrees rougher than blue, and as much ſmoother than green. See COLOURS.

ASPERJULA, a medicinal plant, reputed warm, and drying, recommended as an hepatic, and detergent.

This is alſo called ASPERGULA *odorata*, and *rubeola montana odorata*; in Engliſh, WOODRUFFE.

The ancients directed it externally in cataplaſms, to aſſuage and diſcuſs tumours, and applied it to the feet to promote delivery. But the moderns own no ſuch qualities in it; nor do they much uſe it internally.

ASPERSION, the act of ſprinkling with water, or ſome other fluid.

The word is formed of the Latin *aſpergere*, *to ſprinkle*; of *ad*, *to*, and *ſpargo*, *I ſcatter*.

Some contend for baptiſm by *aſperſion*, others by *immerſion*.

ASPERUGO, in *Botany*; ſmall wild BUGLOSS, or gooſe-*graſs*; a genus of the *pentandria monogynia* claſs; the characters of which are, that the flower is of one leaf, with a ſhort cylindrical tube, and hath five ſhort *ſtamina* in the centre, with four compreſſed *germina*, which afterwards become four oblong ſeeds, encloſed in the empalement. We have but one ſpecies, which alſo goes by the name of *great gooſe-graſs*, or *German madwort*.

This is an annual plant, which is found wild in ſome parts of England, as, near Newmarket, at Boxley in Suſſex, and in Holy Iſland. It is preſerved in the botanic gardens for variety, and may be eaſily propagated by ſeeds, which ſhould be ſown in autumn; and when the plants come up, they require no other culture than to keep them clear from weeds. They flower in May, and their ſeeds ripen in June.

ASPERULA, in *Botany*. See WOODRUFFE.

ASPHALATUS, in *Botany*. See ROBINIA.

ASPHALITES, in *Anatomy*, the fifth VERTEBRA of the loins.

It is thus called, becauſe conceived as the ſupport of the whole ſpine of the loins; from the privative *α*, and *σφαλλω*, *I ſupplant*.

ASPHALTOS, or ASPHALTUM, a ſolid, brittle, black, inflammable, bituminous ſubſtance, reſembling pitch, brought from the Eaſt, and particularly from Judea; whence it is alſo called *Jews-pitch*.

The *aſphaltos* of the Greeks is the *bitumen* of the Latins. Modern naturaliſts, who make a claſs of *bitumens*, generally place *aſphaltos* at the head of it, as being the moſt maturated and concocted of the whole tribe; but conſiſting of the ſame ſimple principles as the reſt.

It is chiefly found ſwimming on the ſurface of the *Lacus Aſphaltites*, or Dead Sea, where anciently ſtood the cities of Sodom and Gomorrah.—It is caſt up from time to time, in the nature of a liquid pitch, from the earth which lies under this ſea; and being thrown upon the water, it there ſwims like other fat bodies, and condenſes by little and little, through the heat of the ſun, and the ſalt that is in it: it burns with great vehemence; in which it reſembles *naphtha*; but is firmer as to conſiſtence. The genuine *aſphaltum* has no ſmell, and is not acted upon by water, nor highly rectified ſpirit of nitre, nor olive oil, nor the eſſential oils of aniſeed or turpentine.

The Arabs uſe it for pitching their ſhips, as we do common pitch.—Beſides this uſe, it was frequently employed in the embalming of the ancients. In a fluid ſtate, it is uſed for burning in lamps, and for varniſhes.

It is ſuppoſed to fortify the conſtitution, and reſiſt putrefaction; and to reſolve, attenuate, cleanſe, and cicatrize wounds: but is little uſed among us, either externally or internally.

It is uſual to ſophiſticate the *aſphaltos*, by mixing common pitch with it; the reſult whereof makes the factitious *piſſaſphaltum*, which the coarſeneſs of the black colour, and the fetid ſmell, eaſily diſcover. Moſt of that which is ſold in the ſhops under the name of *Jews-pitch*, is of the ſophiſticated kind. There is, however, beſide this, a native *piſſaſphaltum*.

ASPHALTUM alſo denotes a kind of bituminous ſtone, found near the ancient Babylon, and lately in the province of Neufchâtel; which, mixed with other matters, makes an excellent cement, incorruptible by air, and impenetrable by water; this was ſuppoſed to be the mortar ſo much celebrated among the ancients, wherewith the walls of Babylon, and the temple of Jeruſalem, were cemented.

It yields an oil which defends ſhips from water, worms, &c. much better than the ordinary compoſition; and which is alſo of good ſervice for the cleanſing and healing of ulcers, &c.

ASPHODELUS, in *Botany*. See KING'*s-ſpear*.

ASPHYXIA, is uſed by *Ancient Phyſicians*, to denote a privation, or ceſſation of the pulſe, through the whole body, and all its arteries.

The word is derived from *α*, and *σφυξις*, *a pulſe*.

In ſtrictneſs, no ſuch ceſſation can ever happen, except in caſe of death; but in ſome other caſes, the pulſe is found ſo remiſs and languid, as not to be perceivable by the touch.

Hence the *aſphyxia* is conſidered as an attendant of deep faintings, or deliquiums; and amounts to much the ſame with what is otherwiſe called *lipopſychia* or *ſyncope*.

Mr. Sage has lately publiſhed a treatiſe, recommending the volatile alkali fluor as the moſt effectual remedy in *aſphyxies*. See SUFFOCATION.

ASPHYXIA is alſo uſed by ſome for a privation of pulſe in ſome one part of the body, e. gr. in the arm, &c.

ASPIC, in *Botany*, a plant which grows in plenty in Languedoc, in Provence, and eſpecially on the mountain of St. Baume, in France. It is a kind of lavender, nearly like what grows in our gardens; both with regard to the figure and colour of its leaves and flowers. The botaniſts call it *male lavender*, *lavendula mas*, or *ſpica nardi*, *pſeudo nardus*, &c.

ASPILATES, or ASPLENITES, in the writings of the ancients, the name of a ſtone, famous for its virtues againſt the ſpleen, and many other diſorders; it was to be applied externally, and faſtened on to the part with camel's hair.

ASPINY, or ANGLIARY-*thorn*, a drug uſed in medicine; on which particular duties are impoſed, by the tariff of the cuſtom-houſe at Lyons.

ASPIRATE, ASPIRATIO, in *Grammar*, a character uſed to denote an aſpiration.

The *aſpirate*, by the Greeks called *ſpiritus aſper*, and marked over their vowels, ſeems to be of a very different nature from the letters; but is nevertheleſs a true letter, as well as the reſt, and a real conſonant.—By letters we do not mean the characters of the alphabet, which are changeable according to the languages and the people, and among the ſame people, according to time and cuſtom; and even according to the fancy of particular perſons.—Thus, ſome, for inſtance, write the *aſpirates*, or letters *aſpirated*; which, by others, are omitted; though both the one and the other pronounce alike; as in *huomo*, *huomini*, an Italian word frequently written *uomo*, *uomini*. But, by letters, we mean articulate ſounds, marked by them, and formed by the organs of ſpeech; viz. the throat, mouth, tongue, palate, teeth, &c.

Theſe ſounds are of two kinds, the one *ſimple*, and the other *compound*, or modified.—*Simple* are thoſe pronounced by a ſingle motion of the organ; ſuch are the vowels.

Compound ſounds are thoſe ſame ſimple ſounds modified by a motion of the organ, ſuperadded to the motion neceſſary to pronounce the ſimple ſound; of which kind are the conſonants.

Now an *aſpirate* is an effect or conſequence of a motion made by ſome of the organs of ſpeech; and therefore it muſt either be a vowel, or a conſonant.—The former it cannot be, as not being a ſimple ſound, or a ſound that may be pronounced by itſelf. It muſt therefore be a modificative, or conſonant; and in effect it has all the properties of one.

For, 1ſt, It reſults from a motion of the organ, which, of itſelf, produces no ſound. Thus the *ſpiritus* of the Greeks, our *h aſpirate*, as well as that of the French, and other people, has no more ſound of itſelf, than *b*, *c*, *d*, &c. and the ſame thing may be obſerved of the *aleph*, *heth*, and *caph*, of the Eaſtern languages.

2dly, On the contrary, our *h*, the *ſpiritus* of the Greeks, and the other *aſpirates* juſt mentioned, are pronounced with all the vowels, in the ſame manner as conſonants are.—They modify thoſe vowels, and are effects of a motion of the organ ſuperadded to the motion neceſſary to form the vowel. Thus, to pronounce *ha*, two motions of the organ are required as well as for *ba*, or *ca*, &c. one for *a*, which itſelf is a ſound; the other for *h*, which yields no ſound, no more than *b*; but adds ſomething to *a* which modifies it, and makes that *ha* is not mere *a*, nor *ba*, nor *ca*, &c. And this muſt hold ſtill more ſenſibly in the ſtronger *aſpirates*, as thoſe of the oriental tongues חָ, חֵ, חי, חו, חו, כּ, כֵ, &c. in all which, there are evidently two motions, the one to expreſs the vowel, and the other to modify it: now this being the nature and eſſence of a conſonant, it follows, that let them be denoted in what manner they will, whether as our *h*, as the orientals do, i. e. by proper characters in the courſe of the words themſelves; or, as the Greeks do ſome of theirs, by a ſign of aſpiration placed over the vowel; it matters not. The *aſpirate* is no leſs a conſonant in ἁιρω, than in χαιρω; in ἑω, than in χεω; in ὁλη, than in χολη; and ſo of others.

The third and laſt reaſon urged by ſome, is, that the Eaſtern languages, which, according to them, do not expreſs the vowels, do yet expreſs the *aſpirates*. This kind of argument ſeems, however, to be grounded on a miſtake; ſince it is more than probable, that the א, ה, ו, ע of thoſe languages, ſhould be ranked among the vowels, and were ſo uſed.

Add, that the *aſpirate* is frequently changed into a conſonant, and expreſſed by a conſonant. Thus, of ἑξ is made *ſex*; of ἑπτα, *ſeptem*; of ἑσπερος, *veſperus*, &c. of the Hebrew יין, ὁινος, and thence *vinum*, &c. Nay, even in the ſame language, Heſiod, ſpeaking of Hercules's buckler, uſes ʽΗρσυν for Θηρσυν; making no difference between a Θ and an *aſpirate*.

Hence it follows, that *aſpirates* are real conſonants; and that we ought not to exclude the *h* in our language, out of the number of letters.

Other grammarians contend, that the *h* is founded only by a ſtrong emiſſion of the breath, without any conformation of the organs of ſpeech, and conſequently is no letter. See H.

ASPIRATION, the act of aſpirating, i. e. of pronouncing any ſyllable, or word, ſtrongly; with a good deal of breath, and vehemence.

This we do, for inſtance, in thoſe words which have the letter *h* before them; as *harangue*, *hook*, *Holland*, *hero*, &c. whereas the like ſyllables are ſounded much ſofter and eaſier without the *h*; as in the *ear*, *eat*, &c. See H.

ASPIUS, in *Ichthyology*, a ſpecies of the *cyprinus*, belonging to the *abdominal* order. It is met with in the lakes of Sweden.

ASPLENIUM, in *Botany*; ſee Milt-*waſte*.

ASS, *aſinus*, in *Zoology*, a quadruped of the horſe kind, with a long head, long ears, a round body covered with a ſhort and coarſe fur, of a pale dun colour, with a ſtreak of black running down its back, and acroſs its ſhoulders, and a tail not hairy all the way, as in a horſe, but only at the end. As to his qualities, he is ſlow, lazy, and dull; but patient, proper to work hard, and to carry or drag heavy weights. The largeſt and ſtrongeſt of theſe animals are choſen for ſtallions to leap mares, which are deſigned in ſtuds for the breeding mules; and ſome of thoſe mules are ſo highly valued, as to be ſold even dearer than the fineſt horſes.

Though the *aſs* agrees with the horſe in many reſpects, it nevertheleſs has but a mean reſemblance to that noble animal; being not only ſmaller, but wanting the ſymmetry and beauty, ſo conſpicuous in the horſe.

The *aſs*'s ears ſeem much over-proportioned in length to the head. Its eyes are large, but have nothing bright or ſtriking in them; and the neck is long, but lank; and the tail is very long.

So nearly allied are the horſe and *aſs* kind, that they will copulate together, the produce of which commixture is a MULE.

This animal is originally a native of Arabia, and other parts of the Eaſt; its ſize and ſpirit decline as it advances into the colder regions. It was loſt in England during the reign of queen Elizabeth; and probably introduced again in the ſucceeding reign. We find mention of it in the hiſtory of this country, as early as the time of king Ethelred, and afterwards in the reign of Henry III. Pennant's Zoology, vol. i. p. 14.

The fleſh of animals which have ſolid hoofs is very bad food; but of theſe, the beſt and lighteſt (as they ſay who have travelled over Aſia) is the fleſh of wild *aſſes*.

The blood of the *aſs* is ſaid to be ſudorific, and that of a young *aſs* to cure the jaundice.

Aſs's milk is very nouriſhing and abſtergent, and is therefore eſteemed good in a conſumption, in diſorders of the ſtomach, abſceſſes of the kidneys, the ſtone in the bladder, and arthritic pains. It is eſteemed gently cathartic, and was frequently directed by Hippocrates as a purge in large quantities. As a topic, it makes the gums firm, eaſes arthritic pains, and gives the face an agreeable whiteneſs, if waſhed with it. See Milk.

The urine of an *aſs* is a powerful remedy, as is ſaid, in diſorders of the kidneys, cures the itch, takes away warts and callous excreſcencies, relieves in atrophies, palſies of the limbs, and pains of the gout.

The dung of this animal alſo is of uſe in medicine.

We have known, ſays Aetius, the juice of *aſs*'s dung highly beneficial in a dyſentery, eſpecially if the beaſt has been fed upon the mountains, or has had an aſtringent paſture. If the juice be inſufficient, let the dung be moiſtened with the juice of plantain, which muſt afterwards be expreſſed and infuſed.

The hoofs of *aſſes*, calcined and drank every day, are ſaid to cure the epilepſy; and mixed and worked with oil, to diſcuſs ſtrumous ſwellings: alſo the aſhes of the ſame, well beaten in woman's milk, and reduced to a collyrium, are ſuppoſed to deterge cicatrices in the eyes, if rubbed thereon together with milk.

Wild *aſſes* are plentiful in many warm countries, particularly in Africa. See Zebra.

Ass, *cucumber*; ſee Momordica.

Asses, *order of*, *aſinorum ordo*, a denomination given to the Mathurins, or Trinitarians, becauſe they were anciently obliged, in travelling, to ride on *aſſes*, not horſes. This obligation was ſet aſide, by a new rule given the order by pope Clement, in 1267. Du-Cange.

ASSA-Dulcis; ſee Asa-*dulcis*.

Assa-*fœtida*, or Asa-*fœtida*, a gum, or reſin, brought from the Eaſt Indies, of a browniſh colour, a ſharp taſte, and a very ſtrong offenſive ſmell; whence it is alſo called *ſtercus diaboli*, or devil's dung.

The goodneſs of *aſſa-fœtida* is known by its colour and ſmell: a tolerable ſcent, and a clear colour, are the ſigns of its good quality; as a black colour, and a great ſtench, are proofs of the contrary. The ſtrong ſcent of this gum is much like that of garlic. The Engliſh and Dutch import it from Surat.

Geoffroy gives the following account of *aſſa-fœtida*. Many authors, ſays he, have doubted whether our *aſſa-fœtida* be that of the ancients, which was by them called the food of the gods. But when we conſider the deſcription of Dioſcorides, and the relations of travellers, who ſay that the Perſians, Indians, aud other Eaſtern nations uſe it in ſauces, and call it alſo the food of the gods; there can be no reaſon to queſtion, but that ours is the ſame with the ancients.

Aſſa-fœtida, ſays he, is a gum reſin, brought to us in lumps of different colours; white, yellowiſh, blue, or brown; which laſt is the worſt colour of all. It has a very ſtrong fœtid ſmell; and we are obliged to Kœmpfer for an exact hiſtory of the tree which produces it, and of the manner of gathering it, &c. In general, this tree, or large plant, is of the umbelliferous kind, growing plentifully in the province of Lahir, in the dominions of the Great Mogul; and in that of Chorazen, in Perſia. In the months of July and Auguſt, the country people make inciſions in the roots of theſe trees, through which the juice drains. It is whitiſh and thin at firſt, but by drying ſoon becomes thicker, and of a brown colour; in which form it is gathered, and preſerved for uſe. The root of the plant reſembles a large parſnep, and is externally black.

Aſſa-fœtida is an excellent remedy in all hyſteric diſorders, whether only ſmelled to, or mixt in what is taken internally. It is alſo eſteemed a good ſudorific, and ſtrengthens the ſtomach. The doſe is from twelve grains to half a dram: but with a view to the ſtomach only, it muſt be given in ſmaller doſes. Externally, it is a good diſſolvent, and in that intention is an ingredient in the *ceratum de galbano*, and is ſometimes tied to the bits of horſe's bridles.

The *aſſa-fœtida* plant is recommended by Mr. Lawrence to be cultivated in our fields, for the food of cattle, inſtead of clover, ſaintfoin, or other ſuch herbs as we ſow among corn, and make into hay in the ſucceeding ſummers, and uſed as food for cattle at other ſeaſons. This gentleman is of opinion, that the ſheep, fed on this plant, would afford mutton of a much finer flavour than any that we are at preſent acquainted with. But it ſeems ſtrange, that this ſhould be the effect of theſe creatures feeding on a plant of ſo ſtrong a ſcent, that, as the ſame author obſerves, one dram of the freſh root ſmells more than a hundred weight of the drug, as kept by the druggiſts, and that the whole air is ſtrongly and very diſagreeably ſcented with it, wherever it grows. Upon the whole, it ſeems probable, that though this plant, or the *cytiſus*, or ſeveral others, might be cultivated in England for the food of cattle, yet not any one would be ſo eaſily raiſed, or make ſo great an advantage to the farmer, as the SAINTFOIN.

ASSABA, the name given by the people of Guinea to a ſhrub which they are very fond of, for its medicinal virtue; they boil it in water, and rub it on a *bubo*, and it proves a cure. Phil. Tranſ. Nº 232.

ASSAC, or ASSAX, in the *Materia Medica* of the *Ancients*, the name given by the Arabians to the *gum ammoniac* of the Greeks; but by many of the qualities attributed to this drug, it does not appear to be the ſame that is now called ſo.

ASSACH, or ASSATH, a kind of purgation, anciently uſed in Wales, by the oaths of 300 men.

ASSAILANT, one that aſſaults, or ſets upon another. See ASSAULT.

ASSAPOORY, in *Natural Hiſtory*, a name given by the people of the Eaſt Indies to a peculiar ſpecies of ſlate, which they uſe in medicine, reducing it to powder, and ſtrewing this on burning coals, that the ſick perſon may receive the fumes of it. It is principally uſed for children, when they are diſordered by taking cold. The ſmell of it, while burning, is very offenſive.

ASSARABACCA; ſee ASARABACCA.

ASSARIUM, denotes a ſmall copper coin, being a part or diminutive of the *as*.

The word is uſed by Suidas indifferently with οϐολος, and νομισμα, to denote a ſmall piece of money; in which he is followed by Cujacius, who defines ασσαριον by *minimus æris nummus*.

We find mention of the *aſſarion* in the goſpel of St. Matthew, chap. x. ver. 29.

ASSARON, an ancient Jewiſh meaſure of capacity, equal to the tenth part of the EPHAH.

The *aſſaron* is the ſame with what is more frequently called *omer*, or *gomer*.

Joſephus calls it εσσαρον; in the Hebrew it is alſo written *aſſarith*. Calmet and Arbuthnot.

ASSART, ASSARTUM, in *Law*, an offence committed in the foreſt, by pulling up, by the roots, woods which ſerve as thickets and covert for the deer, and making them plain as arable land.

This is the greateſt treſpaſs that can be committed in the foreſt, being more than a waſte. For whereas waſte of the foreſt is but the felling and cutting the coverts, which may grow again; *aſſart* is a total extirpation. What we call *aſſartum*, is elſewhere termed DISBOSCATIO.

ASSART was alſo uſed for a parcel of land *aſſarted*. See ESSART.

ASSART-*rents* were thoſe formerly paid to the crown for the foreſt-lands *aſſarted*. See RENT.

ASSASIN, or ASSASSIN, a perſon who kills another with the advantage either of an inequality in the weapons, or by means of the ſituation of the place, or by attacking him at unawares.

The word *aſſaſſin* is ſaid, by ſome, to have been brought from the Levant, where it took its riſe from a certain prince of the family of the *Arſacidæ*, popularly called *Aſſaſins*, living in a caſtle between Antioch and Damaſco, and bringing up a number of young men, ready to pay a blind obedience to his commands; whom he employed in murdering the princes with whom he was at enmity. The *Aſſaſins*, or *Aſſaſinians*, *Aſſaſinii*, above mentioned, poſſeſſed eight or twelve cities about Tyre; they choſe themſelves a king, whom they called the *old man of the mountain*. In 1213, they aſſaſſinated Louis of Bavaria. They were Mahometans, but paid ſome tribute to the knights templars.—The favourers of the *Aſſaſins* were condemned by the council of Lyons, and under Innocent IV. in 1231.—The Tartars overcame them, and killed their ſenior of the mountain in 1257, upon which the faction became extinct.

There was a certain law of nations, an opinion received in all the republics of Greece and Italy, whereby he that *aſſaſſinated* an uſurper of the ſupreme power, was declared a virtuous man. At Rome, eſpecially, after the expulſion of the kings, the law was formal and ſolemn, and inſtances of it admitted. The commonwealth armed the hand of any citizen, and created him magiſtrate for that moment. Conſid. ſur les Cauſ. de la Grand. des Rom. chap. xi. p. 121.

ASSATION, the preparing or dreſſing foods, or medicaments, in their own juices, by an external heat, without addition of any foreign moiſture.

Aſſation, in reſpect of culinary matters, is more frequently called *roaſting*; and, in pharmacy, *uſtion*, or *torrefaction*.

The word is formed of the Latin *aſſare*, *to roaſt*.

ASSAULT, in the *Art of War*, an attack made upon a camp, fortreſs, or poſt, in order to carry or become maſter thereof.

An *aſſault* is properly a general furious attack, wherein the aſſailants do not ſcreen themſelves by any works.—We ſay, to give an *aſſault*, to be commanded to the *aſſault*, to ſtand an *aſſault*, to repulſe an *aſſault*, to carry by *aſſault*, &c.

While an *aſſault* laſts, and both parties are mixed, the fire of the batteries ceaſes; and there is no uſe of cannon on either ſide; for they are afraid of deſtroying their own men thereby.

A governor was formerly obliged to ſuſtain three *aſſaults* before he gave up the place.—It is very difficult ſaving a town from pillage that is carried by *aſſault*.

Few places, of late years, ſtand *aſſaults*: M. de Feuquiere finds but three in his time. The firſt was Neuhaſel in 1683, commanded by the Turkiſh baſhaw: it was taken, as moſt others muſt be, becauſe the column of infantry that marched to the breach, conſiſted of more ranks than that of the infantry which defended it.—The ſecond was Buda, the baſhaw of which was killed in the attack. He had ſome flanking works remaining, whoſe fires had not been entirely ruined by the artillery of the beſiegers.—The third was the caſtle of Namur, defended by M. de Boufflers; which was not carried, becauſe the column of infantry which attacked the breach, marched too far off unſheltered.—We may add Bergen-op-zoom, taken by the French in 1747.—Add, that it is almoſt impoſſible to carry a place by *aſſault* or ſtorm, when the breach may be defended by the fires of works not yet deſtroyed. In reality, it ſhould be defended by no other fires, but thoſe which are oppoſed to it in front, or from the breach itſelf. Feuq. Mem. chap. xcix. Such obſtinacy in defending places to the laſt extremity is no longer found, except among the Turks; with whom it is a point of religion not to ſurrender to the Chriſtians, by capitulation, any place where they have once had a moſque.—Though of late they have ſometimes departed from this maxim.

ASSAULT, ASSULTUS, or *Inſultus*, in *Law*, an offer, or attempt, to hurt the perſon of another.

Or, it is a violent injury offered to a man's perſon, of a larger extent than battery, becauſe it may be committed by only offering to give a blow; or even, according to ſome, by a threatening ſpeech, by preſenting a piſtol, or the like.—Though ſome, it is to be obſerved, deny that words can amount to an *aſſault*.

To rebuke a collector with foul words, ſo that he depart for fear, without doing his office, has been adjudged an *aſſault*; and to ſtrike a man, though he be not hurt, or ſometimes not even hit, with the blow, is reputed the ſame. For, in treſpaſs for *aſſault* and battery, a man may be found guilty of the *aſſault*, and excuſed of the battery. 25 Ed. III. c. 4. But every battery includes an *aſſault*.

The *aſſaulting* a perſon with offenſive weapons, with a deſign to rob (though no robbery enſues), is puniſhed with tranſportation for ſeven years. 7 Geo. II. c. 21. *Aſſaulting* in the ſtreet or highway, with intent to ſpoil people's cloaths, and ſo ſpoiling them, is felony and tranſportation, by 6 Geo. I. c. 23. ſec. 11. And *aſſaulting* a privy counſellor in the execution of his office, is felony without benefit of clergy, by 9 Ann, c. 16.

ASSAY, ESSAY, or SAY, in *Metallurgy*, the proof or trial of the goodneſs, purity, value, &c. of metals, and metalline ſubſtances.

In ancient ſtatutes, this is called *touch*; and thoſe who had the care of it, *keepers of the touch*.—Under Henry VI. divers cities were appointed to have *touch* for wrought ſilver-plate. 2 Hen. VI. c. 14.—By this, one might imagine they had no better method of *aſſaying* than the ſimple one, by the touch-ſtone; but the caſe is far otherwiſe. In the time of king Henry II. the biſhop of Saliſbury, then treaſurer, conſidering that though the money paid into the king's exchequer for his crownrents, did anſwer *numero & pondere*; it might nevertheleſs be mixed with copper or braſs: wherefore a conſtitution was made, called the *trial by combuſtion*; which differs little or nothing from the preſent method of *aſſaying* ſilver. See a deſcription of it in the Black Book in the Exchequer, written by Gervaſe of Tilbury, c. xxi.—This trial is alſo there called *eſſaium*, and the officer who made it is named *fuſor*. Vid. Lownd. Eſſ. Amend. Silv. Coin. p. 5, & 155.

The method ſtill in uſe of *aſſaying* gold and ſilver, was firſt eſtabliſhed by an act of the Engliſh parliament, in 1354. Anderſon's Com. vol. i. p. 187.

Assaying, *ars docimaſtica*, in its extent, comprehends particular manners of examining every ore, or mixed metal, according to its nature, with the beſt-adapted fluxes; ſo as to diſcover, not only what metals, and what proportions of metal, are contained in ores; but likewiſe how much ſulphur, vitriol, alum, arſenic, ſmalt, &c. may be obtained from every one reſpectively.

Aſſaying is more particularly uſed by moneyers and goldſmiths, for the making a proof or trial by the cuppel, or teſt, of the fineneſs or purity of the gold and ſilver to be uſed in the coining of money, and manufacture of plate, &c. or that have been already uſed therein.

There are two kinds of *aſſaying*; the one before metals are melted, in order to bring them to their proper fineneſs; the other after they are ſtruck, to ſee that the ſpecies be ſtandard.

For the firſt *aſſay*, the *aſſayers* uſe to take fourteen or fifteen grains of gold, and half a dram of ſilver, if it be for money; and eighteen grains of the one, and a dram of the other, if for other occaſions.

As to the ſecond *aſſay*, it is made of one of the pieces of money already coined, which they cut in four parts. The quantity of gold for an *aſſay* among us, is ſix grains; in France, nearly the ſame; and in Germany, about three times as much.

In order to the due ſeparation of metals from metals, or of a confuſed mixture of metals, ſuch as thoſe commonly called *electrums*, or ſuch as the Corinthian braſs was ſuppoſed to be, we muſt obſerve, that experience has taught us a certain effect of lead, which could not be well conceived *à priori*.

Assaying *gold*.—In order to the *aſſaying* of gold ores, it muſt be obſerved, that the method varies, according to the nature and diſpoſition of the mineral matters along with which the metals happen to be mixed; whether it be ſtoney, earthy, ſulphureous, arſenical, &c. The art of making *aſſays* with diſpatch upon gold and ſilver ores, depends upon the ſcorification or vitrification of thoſe heterogeneous foſſile ſubſtances which may be incorporated therewith: lead and the glaſs of lead, and antimony and its glaſs, being great ſcorificators or vitrifiers, they become the natural agents on ſuch occaſions.

Silver is ſeparated from gold by means of *aqua fortis*, which diſſolves the ſilver, and leaves the gold entire behind; but in order to the ſucceſs of the operation, the mixt maſs ſhould contain conſiderably more ſilver than gold, otherwiſe the particles of ſilver will be defended by thoſe of the gold from the action of the acid. The writers on *aſſaying* generally direct three parts of ſilver to one of gold; but Dr. Lewis obſerves, that leſs is ſufficient, and ſhould therefore be made uſe of.—The ſeparation of baſer metals is effected by keeping the maſs in fuſion for ſome time upon a cuppel, with the addition of lead. The lead with all the metals, ſilver and platina excepted, turns into a *ſcoria* or droſs, which riſes to the ſurface, and is no longer miſcible with any metallic body in its perfect metallic ſtate.

For various other proceſſes of *aſſaying*, the curious are referred to Dr. Lewis's Phil. Techn. who has treated this ſubject very copiouſly and very accurately.

The method of *aſſaying* gold by coppelling, is thus performed. The *aſſayer*, having weighed the gold he intends to make the trial in, very exactly, with ſcales that will turn with the hundredth part of a grain, and noted down the weight, he adds twice as much fine ſilver thereto; though this ſhould be in proportion to the fineneſs the gold ſeems to be of, the baſeſt gold requiring the leaſt ſilver. The gold and ſilver, thus weighed and mixed, are wrapped up in a piece of paper, to prevent their loſing any thing of their weight, which would diſturb the accuracy of the *aſſay*.

While the *aſſayer* is weighing his materials, a reverbatory fire is lighted in a furnace, furniſhed with a muffler, and a cuppel, or teſt, ſet therein to heat: this done, a little bullet of lead is put in the cuppel, of a weight proportionable to the quantity and quality of the gold to be *aſſayed*. The quantity of lead ſhould be at leaſt three or four times that of the gold; if the gold is very impure, ten or twelve times its quantity will be neceſſary. When copper and gold lie mixed in equal quantities, the copper will not be ſeparated from the gold with leſs than twenty times its quantity of lead; and if the copper be in very ſmall proportion, as a twentieth or thirtieth part of the gold and ſilver, upwards of ſixty parts of lead are neceſſary for one of the copper. When the lead is well melted, and appears very clean and bright, they put in the mixture of gold and ſilver, and let it fuſe till it appear of an opal colour, and have fixed itſelf, in a little lump, to the bottom of the cuppel.

This done, the cuppel is left to cool in the furnace itſelf; after which, the lump is ſeparated very exactly from the place where it ſtuck to the veſſel, and beaten or hammered on the anvil; heating it, again and again, on the coals, to promote the ſtretching. It is likewiſe made to paſs ſeveral times between poliſhed ſteel rollers, ſcrewed gradually cloſer and cloſer, till it is extended into a very thin plate.

When ſufficiently hammered, &c. they roll it up in form of a cornet, or coffin; and thus put it in a glaſs matraſs, capable of containing four ſpoonfuls of water; and, having added to it a quantity of *aqua fortis*, well corrected, that is, mixed with near one third of the quantity of river-water, they boil it over a wood-fire, till ſuch time as the *aqua fortis* yields no more red fumes.

This firſt water being poured off, and the cornet left alone at the bottom of the matraſs, they fill the matraſs again, but with pure *aqua fortis*; which, after boiling, is poured off in its turn, at ſuch time as the fumes are become white.—This done, they fill up the matraſs with river-water, to waſh the cornet.

When waſhed, they put it dry in a crucible, with a cover over it, and heat it till it become of a cherry-colour. But the uſe of a crucible is attended with this inconvenience, that ſmall particles of the earth are apt to adhere imperceptibly to the gold, and thus render the *aſſay* leſs certain.

This done, the *aſſay* is finiſhed; and there remains nothing but to weigh it againſt the ſame weight of fine gold, as was uſed at firſt, before the *aſſay*: for by comparing the firſt weight of the gold, before it was put in the fire, and the *aqua fortis*, with what it retained after it had thus undergone the teſt, they judge, from the greater or leſs loſs it has ſuſtained, of the quantity of alloy mixed with it.

By the above deſcribed proceſſes, gold may be ſeparated from all the known metallic bodies, platina excepted. See Platina.

The ultimate refinement of gold, is thought to be that procured by fuſing it thin along with antimony; wherein the antimony tears away and imbibes the ſubſtance of all the other metals, but leaves the gold untouched; which therefore, as the heavier body, falls like a regulus to the bottom of the melting cone. See an account of the proceſs, in Dr. Lewis's Phil. Techn. p. 156; upon which he obſerves, that platina cannot thus be ſeparated from the gold; that ſome of the ſilver will remain; and, in general, that gold cannot be ſo effectually purified by ſubſtances which operate upon the alloy, and not upon the gold, as by thoſe which act on the gold itſelf, and not on the alloy.

The *alloy* of gold is eſtimated by carats, that of ſilver by penny-weights. The carat with us is divided into four grains; among the Germans, into twelve parts; and by the French, into thirty-two. The Chineſe reckon by touches, of which the higheſt number denoting pure gold, and correſponding to our twenty-four carats, is one hundred.

Gold without an alloy, is ſaid to be twenty-four carats fine. According to the proportion of pure gold, to that of the alloy in an ounce, the mixture is ſaid to be ſo many carats fine. If there be two carats of alloy, to twenty-two of pure gold, it is ſaid to be twenty-two carats fine: if four of alloy, to twenty of gold, twenty carats fine, &c.

Assaying *ſilver*.—The proceſs is much the ſame as in gold; only leſs difficult, and ſhorter. The ſilver is weighed, as before; and the ſame furnace, and muffler, the ſame fire, the ſame cuppel, uſed. Add, that lead is likewiſe put in the cuppel, proportioned to the quantity and quality of the ſilver to be *aſſayed*.

The lead being well melted, and clear, the ſilver is put in; and after it is brought to an opal colour, and fixed in a lump at the bottom of the cuppel, which happens in about half an hour; they let it cool, and cleanſe it: and, laſtly, weigh it again, as in gold. And, from its diminution, they eſtimate the quantity of alloy.

The alloy of ſilver with copper, may be examined by the cuppel in the following manner: Firſt, have ready a touch-ſtone, and a ſet of touch-needles; wipe carefully both the touch-ſtone, and the metal to be examined, and rub the metal on the ſtone; compare its mark with the needles, and by that means make a gueſs at the quantity of copper contained, and of courſe know how much lead will be neceſſary for conſuming that quantity. But as the lead neceſſary for conſuming the copper is not in a quantity proportionable to that of the copper, when this is mixed with ſilver, we ſhall here give, from

Lazarus Erker, the quantity to be added in every caſe. We ſhall take for our examples, a ſeries of touch-needles, made according to the mark, divided into half-ounces and grains. See Touch-needles.

½ ounce ſilver,	½ ounce copper,	Marks of lead to be added.
15½	½	4.
15	1	6.
14	2	8.
12 and 13	4 and 3	10.
9 — 12	7 — 4	14.
4 — 8	12 — 8	15.
1 — 4	15 — 12	16.

Every body may reduce this table to the needles, made according to the mark of the avoirdupoiſe, or that of carats: nor is it neceſſary to proportion the quantities of lead to be added, ſo far as one half centner. Cramer.

In the mean time, let the metal to be tried with the needles undergo the operation of cuppelling, together with the quantity of lead indicated by the touching; and the fire muſt be made the gentler, as the ſilver is alloyed with a greater quantity of copper; and on the contrary, the ſmaller the quantity of the alloy of copper is, the ſtronger muſt be the fire to be uſed in the operation. When the lead, which muſt be firſt put into the cuppel, begins to ſmoke and boil, then the metal to be examined is to be added, and the fire continued till the copper is all conſumed, and reduced to yellow ſcoriæ; and the bead of ſilver left in the center of the cuppel muſt be weighed, which, ſubtracting the known quantity of ſilver in the lead uſed in the operation, will ſhew the quantity of ſilver, and conſequently that of the copper in the alloy.

Assaying *of lead*.—The *aſſay* of gold and ſilver being performed by means of lead; it is of the utmoſt importance the lead be free from any mixture of either of the two metals; otherwiſe the *aſſay* will be falſe, becauſe the gold and ſilver mixed with the lead will not evaporate like other kinds of alloy, but unite with the metal under *aſſay*.

To prevent this diſorder, and aſſure the operation, there is no way but firſt to *aſſay* the lead itſelf.

This *aſſay* is performed in the ſame furnace, and with the ſame cuppels, as thoſe of gold and ſilver; but the proceſs is incomparably more ſimple: all here required, when the cuppel is heated, being to put in the piece of lead to be *aſſayed*. If this lead evaporate entirely, it is fit for the purpoſe: on the contrary, if there remain any little grain of ſilver, &c. at the bottom, it muſt be ſet aſide.

Assaying *of tin*. See Tin.

Assay-Master, an officer, under certain corporations, entruſted with the care of making true *touch*, or *aſſay*, of the gold and ſilver brought to him; and giving a juſt report of the goodneſs or badneſs thereof.

Such is the *aſſay-maſter* of the mint in the Tower, called alſo *aſſayer of the king*.

The *aſſay-maſter* of the goldſmiths company is a ſort of aſſiſtant-warden, called alſo a *touch-warden*, appointed to ſurvey, *aſſay*, and mark all the ſilver work, &c. committed to him.—There are alſo *aſſay-maſters* appointed by ſtatute, at York, Exeter, Briſtol, Cheſter, Norwich, Newcaſtle, and Birmingham, for *aſſaying* wrought plate.

The *aſſay-maſter* is to retain eight grains of every pound Troy of ſilver brought to him; four whereof are to be put in the Pix, or box of deal, to be re-*aſſayed* the next year; and the other four to be allowed him for his waſte and ſpillings. 12 and 13 W. III. c. 4. 1 An. c. 9.

Note, The number of penny-weights ſet down in the *aſſay-maſter*'s report, is to be accounted as *per pound*, or ſo much in every pound of twelve ounces Troy.—For every twenty penny-weight, or ounce Troy, the ſilver is found by the *aſſay* to be *worſe* than ſtandard, or ſterling, ſix pence is to be deducted; becauſe every ounce will coſt ſo much to reduce it to ſtandard goodneſs, or to change it for ſterling.

In gold, for every carat it is ſet down to be *worſe* than ſtandard, you muſt account that in the ounce Troy it is worſe by ſo many times 3*s.* 8*d.* And for every grain it is ſet down worſe, you muſt account it worſe by ſo many times 11*d.* in the ounce Troy. And for every half grain 5*d.* ½; for ſo much it will coſt to make it of ſtandard goodneſs, &c. Touchſtone of Gold and Silver Ware, &c. p. 41, &c.

Assay-*balance*. The flat pieces of glaſs often placed under the ſcales of an *aſſay-balance*, ſeem, by their power of electricity, capable of attracting, and thereby making the lighter ſcale preponderate, where the whole matter weighed is ſo very ſmall. See Phil. Tranſ. N° 480, p. 245. The electricity of a flat ſurface of about three inches ſquare, has been known to hold down one ſcale, when there were about two hundred grains weight in the other. See Balance and Electricity.

Assay *of weights and meaſures*, ſignifies the trial or examination of common weights and meaſures, by the Clerk *of the market*.

ASSEMBLAGE, the joining, or uniting, of ſeveral things together; or, the things themſelves ſo joined, or united.

The *aſſemblage* of two bones for motion, is called Articulation.

Carpenters and joiners have various kinds and forms of *aſſemblage*; as, with mortiſes and tenons, with dovetails, &c. See Dove-tail, Mortise, &c.

The Europeans admire the Carpentry of ſome Indians, where the *aſſemblage* is made without either nails or pins. Herrera.

Assemblage is alſo uſed, in a more general ſenſe, for a collection of ſeveral things, ſo diſpoſed together, as that the whole has an agreeable effect.—It is with diſcourſe as with bodies, which owe their chief excellency to the juſt *aſſemblage* and proportion of their members.

ASSEMBLY, a meeting of ſeveral perſons in the ſame place, and with the ſame common deſign.

The word is formed of *adſimulare*; compounded of *ad*, *to*, and *ſimul*, *together*.

Aſſemblies of the clergy are called convocations, ſynods, councils; though that annual one of the kirk of Scotland retains the name *General Aſſembly*, &c.—The *aſſemblies* of judges, &c. are called *courts*, &c.—The *aſſemblies* of the Roman people were called *comitia*.—The *aſſembly* of a preacher, &c. is his audience.—The academies have their *aſſemblies*, or days of *aſſembly*.

Under the Gothic governments, the ſupreme legiſlative power was lodged in an *aſſembly* of the ſtates of the kingdom, held annually for the like purpoſes as our parliament.

Some feeble remains of this uſage ſtill ſubſiſt in the annual *aſſemblies* of the ſtates of Languedoc, Bretagne, and a few other provinces of France; but theſe are no more than ſhadows of the ancient *aſſemblies*. It is only in Great Britain, Sweden, and Poland, that ſuch *aſſemblies* retain their ancient powers and privileges.

Assemblies of the *campus Martii*, or *Maii*, of the field of *Mars*, or *May*; ſee Field *of Mars*, &c.—Rebellious *aſſembly*; ſee Rebellious.—Unlawful *aſſembly*; ſee Unlawful.

Assembly is particularly uſed in the *Beau-monde*, for a ſtated and general meeting of the polite perſons of both ſexes; for the ſake of converſation, gallantry, dancing, and play.

Assembly is alſo uſed in the *Military Art*, for the ſecond beat of the drum, being that before the march.

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ASSESSOR, Assessour, an inferior or ſubordinate officer the Exchequer, written by Gervaſe of Tilbury, c. xxi.—This trial is alſo there called *eſſaium*, and the officer who made it is named *fuſor*. Vid. Lownd. Eſſ. Amend. Silv. Coin. p. 5, & 155.

The method ſtill in uſe of *aſſaying* gold and ſilver, was firſt eſtabliſhed by an act of the Engliſh parliament, in 1354. Anderſon's Com. vol. i. p. 187.

Assaying, *ars docimaſtica*, in its extent, comprehends particular manners of examining every ore, or mixed metal, according to its nature, with the beſt-adapted fluxes; ſo as to diſcover, not only what metals, and what proportions of metal, are contained in ores; but likewiſe how much ſulphur, vitriol, alum, arſenic, ſmalt, &c. may be obtained from every one reſpectively.

Aſſaying is more particularly uſed by moneyers and goldſmiths, for the making a proof or trial by the cuppel, or teſt, of the fineneſs or purity of the gold and ſilver to be uſed in the coining of money, and manufacture of plate, &c. or that have been already uſed therein.

There are two kinds of *aſſaying*; the one before metals are melted, in order to bring them to their proper fineneſs; the other after they are ſtruck, to ſee that the ſpecies be ſtandard.

For the firſt *aſſay*, the *aſſayers* uſe to take fourteen or fifteen grains of gold, and half a dram of ſilver, if it be for money; and eighteen grains of the one, and a dram of the other, if for other occaſions.

As to the ſecond *aſſay*, it is made of one of the pieces of money already coined, which they cut in four parts. The quantity of gold for an *aſſay* among us, is ſix grains; in France, nearly the ſame; and in Germany, about three times as much.

In order to the due ſeparation of metals from metals, or of a confuſed mixture of metals, ſuch as thoſe commonly called *electrums*, or ſuch as the Corinthian braſs was ſuppoſed to be, we muſt obſerve, that experience has taught us a certain effect of lead, which could not be well conceived *à priori*.

Assaying *gold*.—In order to the *aſſaying* of gold ores, it muſt be obſerved, that the method varies, according to the nature and diſpoſition of the mineral matters along with which the metals happen to be mixed; whether it be ſtoney, earthy, ſulphureous, arſenical, &c. The art of making *aſſays* with diſpatch upon gold and ſilver ores, depends upon the ſcorification or vitrification of thoſe heterogeneous foſſile ſubſtances which may be incorporated therewith: lead and the glaſs of lead, and antimony and its glaſs, being great ſcorificators or vitrifiers, they become the natural agents on ſuch occaſions.

Silver is ſeparated from gold by means of *aqua fortis*, which diſſolves the ſilver, and leaves the gold entire behind; but in order to the ſucceſs of the operation, the mixt maſs ſhould contain conſiderably more ſilver than gold, otherwiſe the particles of ſilver will be defended by thoſe of the gold from the action of the acid. The writers on *aſſaying* generally direct three parts of ſilver to one of gold; but Dr. Lewis obſerves, that leſs is ſufficient, and ſhould therefore be made uſe of.—The ſeparation of baſer metals is effected by keeping the maſs in fuſion for ſome time upon a cuppel, with the addition of lead. The lead with all the metals, ſilver and platina excepted, turns into a *ſcoria* or droſs, which riſes to the ſurface, and is no longer miſcible with any metallic body in its perfect metallic ſtate.

For various other proceſſes of *aſſaying*, the curious are referred to Dr. Lewis's Phil. Techn. who has treated this ſubject very copiouſly and very accurately.

The method of *aſſaying* gold by coppelling, is thus performed. The *aſſayer*, having weighed the gold he intends to make the trial in, very exactly, with ſcales that will turn with the hundredth part of a grain, and noted down the weight, he adds twice as much fine ſilver thereto; though this ſhould be in proportion to the fineneſs the gold ſeems to be of, the baſeſt gold requiring the leaſt ſilver. The gold and ſilver, thus weighed and mixed, are wrapped up in a piece of paper, to prevent their loſing any thing of their weight, which would diſturb the accuracy of the *aſſay*.

While the *aſſayer* is weighing his materials, a reverbatory fire is lighted in a furnace, furniſhed with a muffler, and a cuppel, or teſt, ſet therein to heat: this done, a little bullet of lead is put in the cuppel, of a weight proportionable to the quantity and quality of the gold to be *aſſayed*. The quantity of lead ſhould be at leaſt three or four times that of the gold; if the gold is very impure, ten or twelve times its quantity will be neceſſary. When copper and gold lie mixed in equal quantities, the copper will not be ſeparated from the gold with leſs than twenty times its quantity of lead; and if the copper be in very ſmall proportion, as a twentieth or thirtieth part of the gold and ſilver, upwards of ſixty parts of lead are neceſſary for one of the copper. When the lead is well melted, and appears very clean and bright, they put in the mixture of gold and ſilver, and let it fuſe till it appear of an opal colour, and have fixed itſelf, in a little lump, to the bottom of the cuppel.

This done, the cuppel is left to cool in the furnace itſelf; after which, the lump is ſeparated very exactly from the place where it ſtuck to the veſſel, and beaten or hammered on the anvil; heating it, again and again, on the coals, to promote the ſtretching. It is likewiſe made to paſs ſeveral times between poliſhed ſteel rollers, ſcrewed gradually cloſer and cloſer, till it is extended into a very thin plate.

When ſufficiently hammered, &c. they roll it up in form of a cornet, or coffin; and thus put it in a glaſs matraſs, capable of containing four ſpoonfuls of water; and, having added to it a quantity of *aqua fortis*, well corrected, that is, mixed with near one third of the quantity of river-water, they boil it over a wood-fire, till ſuch time as the *aqua fortis* yields no more red fumes.

This firſt water being poured off, and the cornet left alone at the bottom of the matraſs, they fill the matraſs again, but with pure *aqua fortis*; which, after boiling, is poured off in its turn, at ſuch time as the fumes are become white.—This done, they fill up the matraſs with river-water, to waſh the cornet.

When waſhed, they put it dry in a crucible, with a cover over it, and heat it till it become of a cherry-colour. But the uſe of a crucible is attended with this inconvenience, that ſmall particles of the earth are apt to adhere imperceptibly to the gold, and thus render the *aſſay* leſs certain.

This done, the *aſſay* is finiſhed; and there remains nothing but to weigh it againſt the ſame weight of fine gold, as was uſed at firſt, before the *aſſay*: for by comparing the firſt weight of the gold, before it was put in the fire, and the *aqua fortis*, with what it retained after it had thus undergone the teſt, they judge, from the greater or leſs loſs it has ſuſtained, of the quantity of alloy mixed with it.

By the above deſcribed proceſſes, gold may be ſeparated from all the known metallic bodies, platina excepted. See Platina.

The ultimate refinement of gold, is thought to be that procured by fuſing it thin along with antimony; wherein the antimony tears away and imbibes the ſubſtance of all the other metals, but leaves the gold untouched; which therefore, as the heavier body, falls like a regulus to the bottom of the melting cone. See an account of the proceſs, in Dr. Lewis's Phil. Techn. p. 156; upon which he obſerves, that platina cannot thus be ſeparated from the gold; that ſome of the ſilver will remain; and, in general, that gold cannot be ſo effectually purified by ſubſtances which operate upon the alloy, and not upon the gold, as by thoſe which act on the gold itſelf, and not on the alloy.

The *alloy* of gold is eſtimated by carats, that of ſilver by penny-weights. The carat with us is divided into four grains; among the Germans, into twelve parts; and by the French, into thirty-two. The Chineſe reckon by touches, of which the higheſt number denoting pure gold, and correſponding to our twenty-four carats, is one hundred.

Gold without an alloy, is ſaid to be twenty-four carats fine. According to the proportion of pure gold, to that of the alloy in an ounce, the mixture is ſaid to be ſo many carats fine. If there be two carats of alloy, to twenty-two of pure gold, it is ſaid to be twenty-two carats fine: if four of alloy, to twenty of gold, twenty carats fine, &c.

Assaying *ſilver*.—The proceſs is much the ſame as in gold; only leſs difficult, and ſhorter. The ſilver is weighed, as before; and the ſame furnace, and muffler, the ſame fire, the ſame cuppel, uſed. Add, that lead is likewiſe put in the cuppel, proportioned to the quantity and quality of the ſilver to be *aſſayed*.

The lead being well melted, and clear, the ſilver is put in; and after it is brought to an opal colour, and fixed in a lump at the bottom of the cuppel, which happens in about half an hour; they let it cool, and cleanſe it: and, laſtly, weigh it again, as in gold. And, from its diminution, they eſtimate the quantity of alloy.

The alloy of ſilver with copper, may be examined by the cuppel in the following manner: Firſt, have ready a touch-ſtone, and a ſet of touch-needles; wipe carefully both the touch-ſtone, and the metal to be examined, and rub the metal on the ſtone; compare its mark with the needles, and by that means make a gueſs at the quantity of copper contained, and of courſe know how much lead will be neceſſary for conſuming that quantity. But as the lead neceſſary for conſuming the copper is not in a quantity proportionable to that of the copper, when this is mixed with ſilver, we ſhall here give, from

Lazarus Erker, the quantity to be added in every caſe. We ſhall take for our examples, a ſeries of touch-needles, made according to the mark, divided into half-ounces and grains. See TOUCH-NEEDLES.

½ ounce ſilver,	½ ounce copper,	Marks of lead to be added.
15½	½	4.
15	1	6.
14	2	8.
12 and 13	4 and 3	10.
9 — 12	7 — 4	14.
4 — 8	12 — 8	15.
1 — 4	15 — 12	16.

Every body may reduce this table to the needles, made according to the mark of the avoirdupoiſe, or that of carats: nor is it neceſſary to proportion the quantities of lead to be added, ſo far as one half centner. Cramer.

In the mean time, let the metal to be tried with the needles undergo the operation of cuppelling, together with the quantity of lead indicated by the touching; and the fire muſt be made the gentler, as the ſilver is alloyed with a greater quantity of copper; and on the contrary, the ſmaller the quantity of the alloy of copper is, the ſtronger muſt be the fire to be uſed in the operation. When the lead, which muſt be firſt put into the cuppel, begins to ſmoke and boil, then the metal to be examined is to be added, and the fire continued till the copper is all conſumed, and reduced to yellow ſcoriæ; and the bead of ſilver left in the center of the cuppel muſt be weighed, which, ſubtracting the known quantity of ſilver in the lead uſed in the operation, will ſhew the quantity of ſilver, and conſequently that of the copper in the alloy.

Assaying *of lead.*—The *aſſay* of gold and ſilver being performed by means of lead; it is of the utmoſt importance the lead be free from any mixture of either of the two metals; otherwiſe the *aſſay* will be falſe, becauſe the gold and ſilver mixed with the lead will not evaporate like other kinds of alloy, but unite with the metal under *aſſay*.

To prevent this diſorder, and aſſure the operation, there is no way but firſt to *aſſay* the lead itſelf.

This *aſſay* is performed in the ſame furnace, and with the ſame cuppels, as thoſe of gold and ſilver; but the proceſs is incomparably more ſimple: all here required, when the cuppel is heated, being to put in the piece of lead to be *aſſayed*. If this lead evaporate entirely, it is fit for the purpoſe: on the contrary, if there remain any little grain of ſilver, &c. at the bottom, it muſt be ſet aſide.

Assaying *of tin.* See TIN.

Assay-Master, an officer, under certain corporations, entruſted with the care of making true *touch*, or *aſſay*, of the gold and ſilver brought to him; and giving a juſt report of the goodneſs or badneſs thereof.

Such is the *aſſay-maſter* of the mint in the Tower, called alſo *aſſayer of the king*.

The *aſſay-maſter* of the goldſmiths company is a ſort of aſſiſtant-warden, called alſo a *touch-warden*, appointed to ſurvey, *aſſay*, and mark all the ſilver work, &c. committed to him.—There are alſo *aſſay-maſters* appointed by ſtatute, at York, Exeter, Briſtol, Cheſter, Norwich, Newcaſtle, and Birmingham, for *aſſaying* wrought plate.

The *aſſay-maſter* is to retain eight grains of every pound Troy of ſilver brought to him; four whereof are to be put in the PIX, or box of deal, to be re-*aſſayed* the next year; and the other four to be allowed him for his waſte and ſpillings. 12 and 13 W. III. c. 4. 1 An. c. 9.

Note, The number of penny-weights ſet down in the *aſſay-maſter*'s report, is to be accounted as *per pound*, or ſo much in every pound of twelve ounces Troy.—For every twenty penny-weight, or ounce Troy, the ſilver is found by the *aſſay* to be *worſe* than ſtandard, or ſterling, ſix pence is to be deducted; becauſe every ounce will coſt ſo much to reduce it to ſtandard goodneſs, or to change it for ſterling.

In gold, for every carat it is ſet down to be *worſe* than ſtandard, you muſt account that in the ounce Troy it is worſe by ſo many times 3*s*. 8*d*. And for every grain it is ſet down worſe, you muſt account it worſe by ſo many times 11*d*. in the ounce Troy. And for every half grain 5*d*. ½; for ſo much it will coſt to make it of ſtandard goodneſs, &c. Touchſtone of Gold and Silver Ware, &c. p. 41, &c.

Assay-*balance.* The flat pieces of glaſs often placed under the ſcales of an *aſſay-balance*, ſeem, by their power of electricity, capable of attracting, and thereby making the lighter ſcale preponderate, where the whole matter weighed is ſo very ſmall. See Phil. Tranſ. N° 480, p. 245. The electricity of a flat ſurface of about three inches ſquare, has been known to hold down one ſcale, when there were about two hundred grains weight in the other. See BALANCE and ELECTRICITY.

Assay *of weights and meaſures*, ſignifies the trial or examination of common weights and meaſures, by the CLERK *of the market.*

ASSEMBLAGE, the joining, or uniting, of ſeveral things together; or, the things themſelves ſo joined, or united.

The *aſſemblage* of two bones for motion, is called ARTICULATION.

Carpenters and joiners have various kinds and forms of *aſſemblage*; as, with mortiſes and tenons, with dovetails, &c. See DOVE-TAIL, MORTISE, &c.

The Europeans admire the CARPENTRY of ſome Indians, where the *aſſemblage* is made without either nails or pins. Herrera.

Assemblage is alſo uſed, in a more general ſenſe, for a collection of ſeveral things, ſo diſpoſed together, as that the whole has an agreeable effect.—It is with diſcourſe as with bodies, which owe their chief excellency to the juſt *aſſemblage* and proportion of their members.

ASSEMBLY, a meeting of ſeveral perſons in the ſame place, and with the ſame common deſign.

The word is formed of *adſimulare*; compounded of *ad*, *to*, and *ſimul*, *together*.

Aſſemblies of the clergy are called convocations, ſynods, councils; though that annual one of the kirk of Scotland retains the name *General Aſſembly*, &c.—The *aſſemblies* of judges, &c. are called *courts*, &c.—The *aſſemblies* of the Roman people were called *comitia*.—The *aſſembly* of a preacher, &c. is his audience.—The academies have their *aſſemblies*, or days of *aſſembly*.

Under the Gothic governments, the ſupreme legiſlative power was lodged in an *aſſembly* of the ſtates of the kingdom, held annually for the like purpoſes as our parliament.

Some feeble remains of this uſage ſtill ſubſiſt in the annual *aſſemblies* of the ſtates of Languedoc, Bretagne, and a few other provinces of France; but theſe are no more than ſhadows of the ancient *aſſemblies*. It is only in Great Britain, Sweden, and Poland, that ſuch *aſſemblies* retain their ancient powers and privileges.

Assemblies of the *campus Martii*, or *Maii*, of the field of *Mars*, or *May*; ſee FIELD *of Mars*, &c.—Rebellious *aſſembly*; ſee REBELLIOUS.—Unlawful *aſſembly*; ſee UNLAWFUL.

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ASSESSOR, **Assessour**, an inferior or ſubordinate officer of juſtice, chiefly appointed to aſſiſt the ordinary judge with his opinion and advice.

The word is formed of *ad*, *to*, and *ſedeo*, *I ſit*.

In this ſenſe, the maſters in chancery are *aſſeſſors* of the lord chancellor.

There are two kinds of *aſſeſſors* in the imperial chamber, *ordinary* and *extraordinary*.—The ordinary are now in number forty-one, whereof five are elected by the emperor, viz. three counts or barons, and two *juriſconſulti*, or civil lawyers. The electors appoint ten, the ſix circles eighteen, &c. They act in quality of counſellors of the chamber, and have ſalaries accordingly.

Assessor is alſo uſed for a perſon who *aſſeſſes*, or lays *aſſeſſments* of taxes, and other public duties.

In this ſenſe, *aſſeſſors*, among us, are inhabitants of a town, or village, elected by the community, to *aſſeſs*, or ſettle the taxes, and other impoſitions of the year, to fix the proportion which each perſon is to bear, according to his eſtate, and to ſee the collection made.—Theſe are alſo called in our law *aſſiſors*.—By the ſtat. 16 and 17 Car. II. two inhabitants in every pariſh were made *aſſeſſors* for the royal aid.

ASSETS, (Fr. *aſſez*, i. e. *ſatis*, *enough*) in *Law*, ſignifies goods enough to diſcharge that burden which is caſt upon the executor or heir, in ſatisfying the debts and legacies of the teſtator or anceſtor. Bro. tit. *Aſſets*. *Aſſets* are real or perſonal; where a man hath lands in fee-ſimple, and dies ſeiſed thereof, the lands which come to his heir, are *aſſets* real; and where he dies poſſeſſed of any perſonal eſtate, the goods which come to to the executor, are *aſſets* perſonal. *Aſſets* are alſo divided into *aſſets per deſcent*, and *aſſets inter maines*; *aſſets* by deſcent, is where a perſon is bound in an obligation, and dies ſeiſed of lands which deſcend to the heir, the land ſhall be *aſſets*, and the heir ſhall be charged as far as the land to him deſcended will extend: *aſſets inter maines*, is when a man indebted makes executors, and leaves them ſufficient to pay his debts and legacies; or where ſome commodity or profit ariſeth to them in right of the teſtator, which are called *aſſets* in their hands. Terms de Ley. 56. 77.

Leaſes are *aſſets* to pay debts, notwithſtanding the aſſent of the executor to the deviſe of them. 1 Lill. abr. 99. *Aſſets* in the hands of one executor, are *aſſets* in the hands of others; and if an executor hath goods of the teſtator in any part of the world, he ſhall be charged in reſpect of them. 6 Rep. 47. In actions againſt executors, the jury muſt find the value of the *aſſets*; for the plaintiff ſhall recover only according to the value of the *aſſets* found. 1 Rol. Rep. 58. A ſpecial judgment againſt *aſſets* only, ſhall have relation to, and bind the lands from the time of the filing the original writ or bill. Carth. Rep. 245.

ASSEVERATION, an earneſt affirmation, or avouching.

ASSIDEANS, or rather Hasideans, in *Antiquity*, a ſect among the Jews; thus called from the Hebrew הסידים, *hhaſidim*, *merciful*, *righteous*.

The *Aſſideans* are recorded as holding works of ſupererogation neceſſary. They were the fathers and predeceſſors of the PHARISEES; and from them likewiſe aroſe the ESSENI.

ASSIDENT *ſign*, *ſignum aſſidens*, in *Medicine*, a ſymptom which uſually attends a diſeaſe, but not always.

Thus a dry rough tongue, thirſt, and watching, are *aſſident ſigns* in an ardent fever.

In this ſenſe, *aſſidents* differ from *pathognomonics*, which are inſeparable from the diſeaſe.

ASSIDUUS, or Adsiduus, among the Romans, denoted a rich or wealthy perſon.

The word in this ſenſe is derived from *as aſſis*, q. d. a monied man.

Hence we meet with *aſſiduous* ſureties, *aſſidui fidejuſſores*, anſwering to what the French now call city ſureties or ſecurities, *cautions bourgeoiſe*.

When Servius Tullius divided the Roman people into five claſſes, according as they were aſſeſſed, or taxed to the public; the richer ſort who contributed ASSES, were denominated *aſſidui*; and as theſe were the chief people of buſineſs, who attended all the public concerns; thoſe who are diligent in attendances came to be denominated *aſſidui*.

Assidui was alſo uſed for volunteers, or thoſe who ſerved in the army at their own expence.

ASSIENTO, or Assienta, in matters of *Commerce*, a contract or convention between the king of Spain, and other powers, for furniſhing the Spaniſh dominions in America with negro ſlaves.

The term is originally Spaniſh, and ſignifies *a bargain*: accordingly the firſt *aſſiento* was a treaty or contract made with the French Guinea company, whereby they were put in poſſeſſion of this privilege, in conſideration of a certain duty which they were to pay to the king of Spain's farms, for every negro thus furniſhed.

The Spaniards, having almoſt deſtroyed the natural inhabitants of Spaniſh America, have been many years, and ſtill are, obliged to perform the work of their mines, and other laborious buſineſs, by negroes, of whom they could ſcarce ever obtain the number they have wanted: and it is certain, if they were fully ſupplied, they would get yearly above twice the ſilver perhaps they now do, or have done for many years paſt. It muſt be confeſſed, they have uſed variety of meaſures to obtain them. The Genoeſe undertook to ſupply them at a concerted price between them; for which end they formed a company called the *aſſiento*, who had their factors at Jamaica, Curaſoa, and Brazil: but by their ill management made nothing of this contract; nor did their ſucceſſors the Portugueſe. After them it fell into the hands of the French, who made ſo much of it, that they were enabled, by a computation made from the regiſters of Spain, to import into the French dominions, no leſs than 204,000,000 of pieces of eight. Yet they at length overglutted the market, and became ſufferers towards the concluſion.

By the treaty of Utrecht, Philip V. being declared king of Spain by the allies; it was one of the articles of the peace between England and France, that the *aſſiento* contract ſhould be transferred to the Engliſh. Accordingly a new inſtrument was ſigned in May 1713, to laſt thirty years; and the furniſhing of negroes to the Spaniſh America was committed to the *South-ſea* COMPANY, juſt then erected: though the firſt convention for this purpoſe was made in or about the year 1689.

In virtue hereof, they were yearly to furniſh 4800 negroes; for which they were to pay at the ſame rate as the French, with this condition, that during the firſt twenty-five years, only half the duty ſhall be paid for ſuch as they ſhall import beyond the ſtated number.

The laſt article gives them a farther privilege not enjoyed by the French; which is, that the Engliſh *aſſientiſts* ſhall be allowed, every year, to ſend to the Spaniſh America a ſhip of five hundred tons, loaden with the ſame commodities as the Spaniards uſually carry thither; with a licence to ſell the ſame, concurrently with them, at the fairs of Porto Bello, Carthagena, and Vera Cruz. This additional article was ſuppoſed as advantageous to the company, as the whole contract beſides; being granted contrary to the uſual Spaniſh policy, which has ever ſolicitouſly preſerved the commerce of their America to themſelves.

Some new articles have been ſince added to the ancient *aſſiento*; as, that the Engliſh ſhall ſend their regiſter-ſhip yearly, even though the Spaniſh flota and galleons do not go; and that, for the firſt ten years, the ſaid ſhip may be of 650 tons.

Finally, as the South-ſea company had on the whole been loſers by their trade, and as at the time of the treaty of Aix-la-Chapelle, in 1748, they had only four years more of their *aſſiento* term remaining (the war between Spain and England having commenced in 1739, and interrupted the continuance of it), which Spain was determined not to renew, at leaſt not on any promiſing terms; for theſe and other reaſons, it was concluded by the Britiſh court, to inſtruct her miniſter at Madrid, to obtain the beſt equivalent that could be procured for the remaining ſhort time of the company's *aſſiento* contract.

The manner of valuing the negroes, in order to ſettle the king of Spain's duty, is the ſame as delivered under Negro.

ASSIGN, in *Common Law*, a perſon to whom a thing is *aſſigned*, or made over.

The word *aſſign* is ſaid to have been introduced in favour of baſtards; who, becauſe they cannot paſs by the name of *heirs*, are compriſed under that of *aſſigns*.

ASSIGNABLE *Magnitude*, in *Geometry*, is uſed for any finite *magnitude*. And,

Assignable *Ratio*, for the *ratio* of any finite quantities.

ASSIGNEE, in *Law*, a perſon to whom a thing is appointed, or *aſſigned*, to be occupied, paid, or done.

An *aſſignee* differs from a *deputy* in this, that the *aſſignee* poſſeſſes or enjoys the things in his own right; and a *deputy* in the right of another.

Aſſignee may be ſo either by *deed*, or by *law*.

Assignee *by deed* is, when a leſſee of a term ſells and aſſigns the ſame to another: that other is his *aſſignee by deed*

Assignee *by law*, is he whom the law ſo makes, without any appointment of the perſon.

Thus, an executor is *aſſignee by law* to the teſtator, who dies poſſeſſed of a leaſe made to him and his *aſſigns*.

Assignees under a commiſſion of bankruptcy, are perſons to whom the bankrupt's eſtate is *aſſigned*, for the benefit of the creditors: they are choſen at one of the three meetings appointed by the commiſſioners, and publiſhed in the Gazette, by the major part, in value, of the creditors, who ſhall then have proved their debts; but they may be originally appointed by the commiſſioners, and afterwards approved or rejected by the creditors; and no creditor ſhall be admitted to vote in the choice of *aſſignees*, whoſe debt does not amount to ten pounds. The *aſſignees* may purſue any legal method of recovering the property veſted in them, by their own authority; but cannot commence a ſuit in equity, nor compound any debts owing to the bankrupt, nor refer any matters to arbitration, without the conſent of the creditors, or a major part of them in value, obtained at a Gazette meeting.

The *aſſignees* muſt, within twelve months after the commiſſion iſſued, give one and twenty days notice to the creditors of a meeting for a dividend; and within eighteen months, a ſecond and final dividend ſhall be made, unleſs all the effects were exhauſted by the firſt.

ASSIGNING is uſed for the act of appointing a deputy; or the making over a right to another.

In this ſenſe we ſay, ſuch lands or eſtates were *aſſigned* or made over to ſuch perſons for ſuch uſes, &c.—In the ſtat. 20 Edw. I. we read of juſtices *aſſigned* to take aſſizes, &c.

Assigning alſo ſignifies pointing out, or ſetting forth.—Thus we ſay, to *aſſign* the real cauſe of ſuch an event, &c.

To aſſign error, is to ſhew in what part of a proceſs at law an error is committed.

To aſſign falſe judgment, *verdict*, &c. is to declare how and where judgment, verdict, or the like, is unjuſt.

To aſſign waſte, is to ſhew eſpecially wherein the waſte is committed.

ASSIGNMENT, the act of *aſſigning*, or transferring the intereſt or property a man has in any thing; or of appointing and ſetting over a right to another.

No eſtate of freehold or term for years ſhall be *aſſigned*, but by deed in writing ſigned by the parties, except by operation of law. Stat. 29 Car. II. c. 3. If leſſee for years *aſſigns* all his term in his leaſe to another, he cannot reſerve a rent in the *aſſignment*; for he hath no intereſt in the thing by reaſon of which the rent reſerved ſhould be paid; and where there is no reverſion, there can be no diſtreſs: but debt may lie on it as on a contract. 1 Lill. abr. 99. If an *aſſignment* is made by an aſſignee, the firſt aſſignee is not ſuable for the rent; for if he be accepted by the leſſor, the admiſſion of one aſſignee is the admiſſion of twenty. Comp. Attorn. 491. Bonds, &c. are aſſigned by power of attorney, to receive and ſue in the aſſigner's name: but bills of exchange are aſſignable by indorſement; and the aſſignees may recover in their own names, by ſtat. 3 and 4 Ann, c. 9.

The *aſſignment of a dower*, is the ſetting out of a woman's marriage-portion by the heir.

Assignment, *novel*; ſee Novel.

ASSIMILATION, the act of *aſſimilating*; an act whereby a thing is rendered ſimilar, and like to another.

The word is compounded of *ad*, *to*, and *ſimilis*, *like*.

Assimilation, Assimilatio, in *Phyſics*, is properly a motion whereby bodies convert other duly diſpoſed bodies into a nature like, or homogeneous to their own.

Inſtances of this *aſſimilation* we ſee in flame, which converts the oily or other particles of fuel into its own fiery and luminous nature. The like alſo appears in air, ſmoke, and ſpirits of all kinds.

The like we ſee in vegetables, where the watery juices imbibed from the earth, being further prepared and digeſted in the veſſels of the plant, become of a vegetable nature, and augment the wood, leaves, fruit, &c.

So alſo, in animal bodies, we ſee the food *aſſimilated*, or changed into an animal ſubſtance, by digeſtion, chylification, and the other operations neceſſary to nutrition.

Assimilation, in *Rhetoric*; ſee Simile.

ASSIRATUM, in *Antiquity*, a bloody draught, wherewith treaties were ratified.

It was made of wine, and blood, called by the ancient Romans *aſſir*.

ASSIS, in *Phyſiology*, either denotes opium, or a powder made of hemp-ſeed, which being formed into boles about the bigneſs of cheſnuts, is ſwallowed by the Egyptians, who are hereby intoxicated, and become ecſtatic, and full of the moſt agreeable viſions.

This is alſo called by the Turks *aſſerac*.

ASSISA, or Assisia; ſee the articles Assise, and Tallage.

Assisa *cadere*, *to fall from the aſſiſe*, in *Law*, is to be nonſuited.

Assisa *cadit in juratum*, is where the thing in controverſy is ſo doubtful, that it muſt neceſſarily be tried by a jury,

Assisa *capi in modum aſſiſe*, is when the defendant pleads directly to the aſſiſe, without taking any exception to the count, declaration, or writ.

Assisa *continuanda*, is a writ directed to the juſtices, to take an aſſiſe for the continuance of a cauſe, where certain records alleged cannot in time be procured by the party.

Assisa *nocumenti*, is an aſſiſe of nuiſance.

Assisa *panis & cereviſiæ*, denotes the power or privilege of aſſigning, or adjuſting the weight and meaſure of bread and beer.

Assisæ *judicium*, in *Law*, ſignifies a judgment of the court, given either againſt the plaintiff or defendant, for default.

Assisa *proroganda*, is a writ directed to the juſtices of aſſiſe, for the ſtay of proceedings, on account of the king's buſineſs, wherein the party is employed.

ASSISE, or Assize, *aſſiſa*, in *Law*, a ſitting of judges, or juſtices, for the hearing or determining of cauſes.

The word is French, *aſſiſe*, of *aſſis*, *ſeated*; formed of the Latin *aſſideo*, *I ſit by*; which is compounded of *ad*, *to*, and *ſedeo*, *I ſit*.

Assise, *clerk of*; ſee Clerk.

Assise, or Assises, was anciently uſed for certain extraordinary ſittings of ſuperior judges, in the inferior courts depending on their juriſdiction; to inquire whether the ſubaltern judges and officers did their duty; to receive the complaints preferred againſt them; and take cognizance of appeals from them. Theſe are alſo called *mercurial aſſiſes*.

Assise was alſo a court or aſſembly, compoſed of ſeveral great perſons of the realm; held occaſionally in the king's palace, for the final deciſion of all affairs of importance.

This is more uſually called, among our writers, *placita*, *malla publica*, or *curiæ generales*. Yet there is ſome difference between *aſſiſes*, and *placita*.—The viſcounts, or ſheriffs, who originally were only lieutenants of the *comites*, or counts, and rendered juſtice in their place, held two kinds of courts, the one ordinary, held every day, and called *placitum*; the other extraordinary, called *aſſiſe*, or *placitum generale*; at which the count himſelf aſſiſted, for the diſpatch of the more weighty affairs.

Hence the term *aſſiſe* came to be extended to all grand days of judgment, at which the trials and pleadings were to be ſolemn and extraordinary.

The modern conſtitution of *aſſiſes* is pretty different from that hitherto ſpoken of.—Our *aſſiſe* may be defined a court, place, or time, where and when writs and proceſſes, either civil or criminal, or both, are conſidered, diſpatched, decided, &c. by judges and jury.

In this ſenſe we have two kinds of *aſſiſes*; *general* and *ſpecial*.

Assises, or Assizes, *general*, are thoſe held by the judges twice a year, in their ſeveral circuits.

The nature of theſe *aſſiſes* is explained by lord Bacon, who obſerves, that all the counties of the kingdom are divided into ſix circuits; through each of which two learned men, aſſigned by the king's commiſſion, ride twice a year, called *juſtices* or *judges of aſſiſe*, who have ſeveral commiſſions, by which they ſit; viz.

1. *A commiſſion of oyer and terminer*, directed to them, and many others of the beſt account in their reſpective circuits. In this commiſſion, the judges of *aſſiſe* are of the *quorum*; ſo that without them there can be no proceeding. This commiſſion gives them power to tranſact matters relating to treaſons, murders, felonies, and other miſdemeanours.

The ſecond is of *gaol-delivery*, which is only to the judges themſelves, and the clerk of the *aſſiſe* aſſociate.—By this commiſſion, they have concern with every priſoner in gaol, for what offence ſoever.

The third is directed to themſelves, and the clerk of the *aſſiſe*, to take writs of poſſeſſion, called alſo *aſſiſes*; and to do right and juſtice thereupon.

The fourth is to take the nisi prius, directed to the *juſtices*, and the clerks of *aſſiſes*; whence they are alſo called *juſtices of niſi prius*.

The fifth is a *commiſſion of peace*, in every county of their circuit; and all the juſtices of the peace, having no lawful impediment, are bound to be preſent at the *aſſiſes*, to attend the judges.

The ſheriff of every ſhire is alſo to attend in perſon, or by a ſufficient deputy allowed by the judges, who may fine him if he fail.

This excellent conſtitution of judges, circuits, and *aſſiſes*, was begun in the time of Henry II. though ſomewhat different from what it is now.

The *grand aſſiſe*, or trial by jury, inſtituted by Henry II. as an alternative inſtead of judicial combats, is particularly deſcribed by Glanvil, who was probably the adviſer of the meaſure.

For this purpoſe, a writ *De magna aſſiſa eligenda* was directed to the ſheriff, to return four knights, who were to elect twelve others to be joined with them; all theſe together formed the *grand aſſiſe*, ordained to try the matter of right.

The judges of *aſſiſe* came into uſe in the room of the ancient juſtices in eyre, *juſtitiarii in itinere*; who were appointed by the great council of the realm, A. D. 1176, 22 Hen. II. with a delegated power from the king's great court; and they made their circuit round the kingdom once in ſeven years, for the purpoſe of trying cauſes. They were afterwards directed by Magna Charta, c. 12. to be ſent into every county once a year. Blackſtone's Com. vol. iii.

Assise, *ſpecial*, is a particular commiſſion granted to certain perſons, to take cognizance of ſome one or two cauſes, as a diſſeiſin, or the like.—This was very frequently practiſed among our anceſtors. Bracton, lib. iii. c. 12.

Assise is alſo uſed for a writ directed to the ſheriff, for the recovery of poſſeſſion of things immoveable, whereof a man's ſelf, or anceſtors, have been diſſeiſed.

Lyttelton, and others, ſuppoſe theſe writs of *aſſiſe* to have given the denomination to the *aſſiſes*, or courts ſo called; and they aſſign ſeveral reaſons of the name of the writ: as,

1. Becauſe ſuch writs ſettle the poſſeſſion, and right, in him that obtains by them. 2. Becauſe originally they were executed at a certain time and place appointed; for, by the Norman law, the time and place muſt be known forty days before the judges ſit; and by our law there muſt be fifteen days preparation, except they be tried in the ſtanding courts at Weſtminſter.—But it is more natural to ſuppoſe the writs denominated from the courts; and that they were called *aſſiſes*, becauſe anciently tried at ſpecial courts of *aſſiſes*, ſet and appointed for that purpoſe.—Though of latter days, theſe are diſpatched at the general *aſſiſes*, along with the commiſſion of oyer and terminer, &c.

This writ is as well of things corporeal, as incorporeal rights, being of four ſorts, viz.

Assise *of novel diſſeiſin*, *aſſiſa novæ diſſeiſinæ*, which lies where a tenant in fee-ſimple, fee-tail, or for life, is lately diſſeiſed of his lands and tenements, rent-ſervice, rent-ſec, or rent-charge, common of paſture, common way, &c.

To this may be added, the bill of freſh force, directed to the officers or magiſtrates of cities or towns corporate: being a kind of *aſſiſe* for recovery of poſſeſſion in ſuch places, within forty days after the force, as the ordinary *aſſiſe* is in the county.

Assise *of mort d' aunceſtor*, *aſſiſa mortis anteceſſoris*, lies where a father, mother, brother, uncle, &c. dies ſeiſed of lands, tenements, rents, &c. held in fee-ſimple; and, after their death, a ſtranger abates. It is good as well againſt the abator, as any other in poſſeſſion.

Assise *of darrein preſentment*, *aſſiſa ultimæ preſentationis*, lies where a perſon, or his anceſtor, have preſented a clerk to a church; and after the church becomes vacant by death, or otherwiſe, a ſtranger preſents his clerk to the ſame church, in diſturbance of them.

Theſe three *aſſiſes* were inſtituted by Henry II. in the place of duels; which, till then, had obtained on theſe occaſions. See Duel.

Assise *of utrum* lies for a parſon againſt a layman, or for a layman againſt a parſon, for a land or tenement, doubtful whether it be in lay-fee, or free-alms. See Tithe.

Assise is alſo uſed, according to Lyttelton, for a jury.—This, that author ſuppoſes to be by a *metonymia effecti*, the jury being ſo called, becauſe ſummoned by virtue of the writ of *aſſiſe*.

Yet it muſt be obſerved, that the jury, ſummoned upon a writ of right, is likewiſe called the *aſſiſe*; but this may be ſaid to be καταχρηϛικως, or abuſively ſo termed.—*Aſſiſe*, in this ſignification, is divided into *magna & parva*.

Assise is farther uſed, according to Lyttelton, for an ordinance, or ſtatute, regulating the weight, ſize, or dimenſions of certain commodities.—Thus the ancient ſtatute of bread and ale, *anno* 51 Hen. III. is termed the *aſſiſe of bread and ale*, *aſſiſa panis & cereviſæ*.

Assise is further uſed for the ſcantling or quantity itſelf, preſcribed by the ſtatute.—When wheat is of ſuch or ſuch price, bread ſhall be of ſuch *aſſiſe*.

We have divers ſtatutes for fixing the *aſſiſe* of fiſh, cloths, wood, billets, faggots, and the like. Vide 34 & 35 Hen. VIII. c. 3. 9 Ann, c. 15. 10 Ann, c. 6. 19 Car. II. c. 3. 4 Jac. I. c. 2. 1 Geo. I. ſtat. 2. c. 18.

Fixing any *aſſiſe* of cloth, or preſcribing what length, breadth, weight, &c. it ſhall have, Sir Joſiah Child thinks, does more hurt than good. As the faſhions and humours of mankind are variable, to ſupply all markets at all times, we muſt have of all ſorts, cheap and light, as well as heavier and better.—Stretching with tenters is eſſential to our drapery, and the preciſe degree or quantity of it cannot without injury be preſcribed by any law; but muſt be left to the vender's or exporter's diſcretion.

Assise *of the foreſt*, is a ſtatute or condition containing orders to be obſerved in the king's foreſt.—It is called an *aſſiſe*, becauſe it ſets down and appoints a certain meaſure, rate, or order in the things it concerns.

Assise, again, is uſed for the whole proceſs in court, founded on a writ of *aſſiſe*; and ſometimes for a part of it, viz. the iſſue, or verdict of the jury.

Thus we read, that "*aſſiſes* of novel diſſeſin ſhall not "be taken but in their ſhires; and after this manner, "&c." Mag. Chart. cap. 12.—So in Merton, cap. 4. Hen. III. we meet with, "certified by *aſſiſe*, quitted by "*aſſiſe*, &c."

Assise, *continuance of*; ſee Continuance.—Juſtices of *aſsiſe*; ſee Justice.—Limitation of *aſsiſe*; ſee Limitation.—Rents of *aſsiſe*; ſee Rent.

ASSISER, or Assizer *of weights and meaſures*, is an officer who has the care and overſight of thoſe matters.

ASSISII, in *Eccleſiaſtical Writers*, denote perſons beneficed in a cathedral church, not in a rank below that of canons. The *aſsiſii* perhaps anſwered to our minor canons. They were thus called, either becauſe they were allowed an *aſſiſia* or penſion, or from *aſſiduus*, *diligent*.

ASSISOR, the ſame with Assessor.

In Scotland, *aſsiſors* are the ſame with our jurors.

ASSISTANCE; ſee Aid.

ASSISTANT is uſed for a perſon or officer appointed to attend another principal officer, for the more eaſy and regular diſcharge of his function.—Such a biſhop or prieſt had ſeven or eight *aſsiſtants*.

Assistant, in Roman Catholic countries, is particularly applied to a kind of counſellors, or controllers, added to the generals or ſuperiors of monaſteries, &c. to take care of the affairs of the community.

The general of the Jeſuits has five *aſsiſtants*, of conſummate experience, choſen by him out of all the provinces of the order, and denominated from the kingdoms or countries to which they belong, i. e. Italy, Spain, Germany, France, and Portugal.

In a like ſenſe, moſt of our trading companies have their courts of *aſsiſtants*.

Assistants are alſo thoſe condemned to *aſsiſt* in the execution of a criminal.

ASSISUS, in *Ancient Law-Writers*, denotes a thing demiſed, or farmed out for ſuch an aſſiſe, or certain rent, in money, or proviſions. Hence *terra aſsiſa* was commonly oppoſed to *terra dominica*; this laſt being held in demesne, or occupied by the lord, whereas the former was let out to tenants. Hence alſo *redditus aſsiſus* denotes the ſet or ſtanding rent.

ASSITHMENT, or Assythment, in the *Law of Scotland*, is a compenſation given for a man ſlain.

Aſsithment is the ſame with what, in the *Engliſh Law*, is called *man*-bote. See Bote.

ASSIUS *Lapis*, in *Phyſiology*; ſee Lapis *Aſſius*.

ASSOCIATE, an adjunct, partner, or member.

The word is compounded of *ad*, and *ſocius*, *companion*.

ASSOCIATION, Associatio, the act of aſſociating, or forming a ſociety or company.

Aſsociation is properly a contract or treaty of partnerſhip, whereby two or more perſons unite together, either for their mutual aſſiſtance, or for the joint carrying on of an affair; or even for a more commodious manner of life.—The cloſeſt of all *aſsociations* is that made by the band of matrimony.

Association *of ideas*, is where two or more ideas conſtantly and immediately follow or ſucceed one another in the mind, ſo that one ſhall almoſt infallibly produce the other; whether there be any natural relation between them, or not.

Where there is a real affinity or connexion in ideas, it is the excellency of the mind, to be able to collect, compare, and range them in order, in its inquiries: but where there is none, nor any cauſe to be aſſigned for their accompanying each other, but what is owing to mere accident or habit; this unnatural *aſsociation* becomes a great imperfection, and is, generally ſpeaking, a main cauſe of error, or wrong deductions in reaſoning. Thus, the idea of goblins and ſprights has really no more affinity with darkneſs than with light; and yet let a fooliſh maid inculcate theſe ideas often on the mind of a child, and raiſe them there together, it is poſſible he ſhall never be able to ſeparate them again ſo long as he lives, but darkneſs ſhall ever bring with it thoſe frightful ideas.—Let cuſtom, from the very childhood, have joined the idea of figure and ſhape to the idea of God, and what abſurdities will that mind be liable to, about the Deity?

Such wrong combinations of ideas, Mr. Locke ſhews, are a great cauſe of the irreconcileable oppoſition between the different ſects of philoſophy and religion: for we cannot imagine, that all who hold tenets different from, and ſometimes even contradictory to one another, ſhould wilfully and knowingly impoſe upon themſelves, and refuſe truth offered by plain reaſon: but ſome looſe and independent ideas are by education, cuſtom, and the conſtant din of their party, ſo coupled in their minds, that they always appear there together: theſe they can no more ſeparate in their thoughts, than if they were but one idea, and they operate as if they were ſo. This gives ſenſe to jargon, demonſtration to abſurdities, conſiſtency to nonſenſe, and is the foundation of the greateſt, and almoſt of all, the errors in the world. See Idea and Abstraction.

Aſsociation forms a principal part of Dr. Hartley's mechanical theory of the mind. He diſtinguiſhes it into ſynchronous and ſucceſſive; and aſcribes our ſimple and complex ideas to the influence of this principle or habit. Particular ſenſations reſult from previous vibrations conveyed through the nerves to the medullary ſubſtance of the brain; and theſe are ſo intimately *aſsociated* together, that any one of them, when impreſſed alone, ſhall be able to excite in the mind the ideas of all the reſt. Thus we derive the ideas of natural bodies from the *aſsociation* of the ſeveral ſenſible qualities with the names that expreſs them, and with each other. The ſight of part of a large building ſuggeſts the idea of the reſt inſtantaneouſly, by a ſynchronous *aſsociation* of the parts; and the ſound of the words, which begin a familiar ſentence, brings to remembrance the remaining parts, in order, by ſucceſſive *aſsociation*. Dr. Hartley maintains, that ſimple ideas run into complex ones by *aſsociation*; and apprehends, that by purſuing and perfecting this doctrine, we may ſome time or other be enabled to analyſe thoſe complex ideas, that are commonly called the ideas of reflection, or intellectual ideas, into their ſeveral component parts, i. e. into the ſimple ideas of ſenſation of which they conſiſt; and that this doctrine may be of conſiderable uſe in the art of logic, and in explaining the various *phænomena* of the human mind. Obſervations on Man. vol. i. paſſim. See Vibrations and Vibratiuncles.

Association, in *Law*, is a patent by the king, either of his own motion, or at the ſuit of a party plaintiff, to the juſtices of aſſiſe; to have other perſons *aſsociated* to them, in order to take the aſſiſe.

Upon this patent of *aſsociation*, the king ſends his writ to the juſtice of the aſſiſe, thereby commanding them to admit ſuch as are ſo ſent.

The *clerk of the* assise is uſually aſſociate of courſe; in other caſes ſome learned ſerjeants at law are appointed.

Association *of parliament*. In the reign of king William III. the parliament entered into a ſolemn *aſsociation* to defend his majeſty's perſon and government againſt all plots and conſpiracies: and all perſons bearing offices civil or military, were enjoined to ſubſcribe the *aſsociation* to ſtand by king William, on pain of forfeitures and penalties, &c. by ſtat. 7 and 8 W. III. c. 27.

ASSOILE, in our *Ancient Law-Books*, ſignifies to abſolve, deliver, or ſet free from an excommunication. See Absolution.

ASSONANCE, in *Rhetoric* and *Poetry*, a term uſed where the words of a phraſe, or a verſe, have the ſame ſound or termination, and yet make no proper rhyme.

Theſe are uſually vicious in Engliſh; the Romans ſometimes uſed them with elegancy: as *Militem comparavit, exercitum ordinavit, aciem luſtravit.*

The Latins call it *ſimiliter deſinens*; and the Greeks ὁμοιοτελευτον.

ASSONANT *rhymes* is a term particularly applied to a kind of verſes common among the Spaniards, where a reſemblance of ſound ſerves inſtead of a natural rhyme.

Thus, *ligera*, *cubierta*, *tierra*, *meſa*, may anſwer each other in a kind of *aſsonant* rhyme, becauſe they have each an *e* in the penultimate ſyllable, and an *a* in the laſt.

ASSRUMINA, in *Botany*, the name given by the people of Guinea to the ſhrub whoſe leaves they uſe as a cure for the long worms, which are found in their fleſh in thoſe parts of the world; they only bruiſe the leaves, and apply a large lump of the maſs to the part where the worm is, and they are eaſed at once, without the pain and hazard of drawing it out. Phil. Tranſ. N° 232.

ASSUMPSIT, in *Law*, a naked contract; or a voluntary promiſe by word of mouth, by which a man *aſsumes* and takes upon him to perform, and pay any thing to another.

This term comprehends any verbal promiſe; and is variouſly expreſſed by the civilians, according to the nature of the promiſe: ſometimes by *pactum*; ſometimes by *promiſſio*, *pollicitatio*, or *conſtitutum*.

Where a man ſells goods to another the law makes the *aſſumpſit*; and promiſes that he ſhall pay for them.

ASSUMPTION, a feaſt celebrated in the Romiſh church, in honour of the miraculous aſcent of the Holy Virgin, as they deſcribe it, body and ſoul, into heaven.

Assumption was alſo, among our *Anceſtors*, uſed for the day of the death of any ſaint: *Quia ejus anima in cœlum* aſſumitur. See Anniversary.

Assumption, in *Logic*, is the minor, or ſecond propoſition, in a categorical ſyllogiſm.

Assumption is ſometimes alſo uſed for a consequence drawn from the propoſitions whereof an argument is compoſed.

Thus we ſay, the premises are true, but the *aſsumption* is captious.

Assumptive *arms*, in *Heraldry*. See Arms.

ASSURANCE, *policy of*. See Policy.

Assurance, in *Commerce*. See Insurance.

We have ſeveral offices of *aſſurance* from fire.—As the Royal-Exchange *aſſurance*; the Sun-fire-office; the Hand-in-hand fire-office; the London *aſſurance*, &c. ſome for houſes, others for goods, and ſome for both.

We have alſo *aſſurances for life*, in virtue whereof, when the perſon aſſured dies, a ſum of money becomes payable to the perſon in whoſe behalf the policy of *aſſurance* was granted.

Assurances *on lives*.—By assuring a life is meant obtaining ſecurity for a ſum of money to be received ſhould the life drop, in conſideration of ſuch a payment made to the *aſſurer*, as is a ſufficient compenſation for the loſs and hazard to which he expoſes himſelf.—The ſum at which this compenſation ſhould be valued, depends

1. On the rate of intereſt at which money is improved: And 2. On the probability of the duration of the life to be aſſured.—If intereſt is *high*, and alſo the probability *high* of the duration of the life, the value of the *aſſurance* will be proportionably *low*. On the contrary, if the rate of intereſt is *low*, and the probability of living alſo *low*, the value of the *aſſurance* will be proportionably *high*.—In order to explain this: let 100*l*. be ſuppoſed to be aſſured on a life for a year to come; that is, let 100*l*. be ſuppoſed payable a year hence, provided a life of a given age fails in that time. Were the intereſt of money at 5 *per cent.* and the life *ſure* of failing, the value of the *aſſurance* would be the ſame with the preſent value of 100*l*. payable at the end of the year, reckoning intereſt at 5 *per cent.* that is, it would be that ſum, which being now put out to intereſt at 5 *per cent.* would produce 100*l*. at the end of the year, or 95*l*. 4*s*. 8*d*. See Annuities.

On the contrary, if it be an even chance, or the odds are equal, whether the life does or does not fail in the year, the value of the *aſſurance* will be half the former value, or 47*l*. 12*s*. 4*d*.—If the odds *againſt* its failing are *two* to *one*, that is, if it is to be expected, that ſome *one* of *three* lives, at the age of the given life, will fail in the year, the value of the *aſſurance* will be a *third* of the firſt value, reckoning the ſame intereſt; or 31*l*. 15*s*.—If the odds are 19 to 1, or if it may be expected, that ſome one out of twenty lives, at the age of the given life, will fail in a year; the value of the *aſſurance* will be a twentieth part of the firſt value, or 4*l*. 16*s*.—If the odds are 49 to 1, or only one out of fifty ſuch lives as the given life can be expected to fail in the year, the value of the *aſſurance* will be a fiftieth part of the firſt value; that is, it will be 1*l*. 18*s*.—Now the odds of 3 to 1 are, according to Dr. Halley's Table of Obſervations (ſee Mortality), the odds that a life aged 87, will not drop in a year. The odds of 19 to 1 are the odds, according to the ſame table, that a life aged 64, will not drop in a year. And the odds of 49 to 1 are the odds that a life aged 39 will not drop in a year. It follows, therefore, that the value of the *aſſurance* of 100*l*. for a year, on a life aged 87, is 31*l*. 15*s*. on a life aged 64, 4*l*. 16*s*. on a life aged 39, 1*l*. 18*s*. reckoning intereſt at 5 *per cent.* If intereſt is reckoned at 3 *per cent.* theſe values will be 32*l*. 7*s*.—4*l*. 17*s*.—1*l*. 18*s*. 10*d*.

The *aſſurances* moſt commonly practiſed are ſuch *aſſurances* as theſe on ſingle lives for ſingle years; but *private* aſſurers, and alſo ſome aſſuring *offices*, being ignorant of the principles of calculation in this caſe, it has been the cuſtom among them to pay no regard to any difference of ages, but to demand 5*l*. from all ages indiſcriminately, for the *aſſurance* of 100*l*. for one year.—Nothing can be more abſurd or inequitable; for it appears that this is *more* than the value of the *aſſurance* of a life at the age of 64; and that it is *more* than *double* the value of the *aſſurance* of a life aged 39, allowing the *aſſured* to make 5 *per cent.* of the money he advances.

When a life is aſſured for any number of years, the value may be paid either in *one ſingle preſent* payment; in conſequence of which the ſum aſſured will become payable without any farther compenſation, whenever, within the given term, the life ſhall happen to drop. Or the value may be paid in *annual payments*, to be continued till the failure of the life, ſhould that happen within the term; or, if not, till the determination of the term.

The method of finding theſe values cannot be eaſily underſtood by thoſe who are not acquainted with the doctrine of life-annuities, as it has been taught by mathematicians; but the following obſervations may be of uſe to give ſome general idea of the ſubject.

Let us ſuppoſe, that a perſon at 39 years of age wants to aſſure 100*l.* on his life for 26 years, or till he is 65 years of age; and that he chuſes to advance the proper compenſation for it in a *fixed annual* payment; the firſt is to be made immediately, and to be continued till either the term ends, or his life drops.—The value of the *aſſurance* for the *firſt* year is by what has been already ſhewn, 1*l.* 18*s.* reckoning intereſt at 5 *per cent.* The value of the *aſſurance* for the laſt year of the term, ſuppoſing him to have lived to the beginning of it, or to have completed 64, is likewiſe, by what has been already ſhewn, 4*l.* 16*s.* reckoning all along the ſame intereſt.—If, therefore, the value of the *aſſurance* for the whole 26 years is to be one conſtant ſum payable at the beginning of every year, that ſum ought, it is obvious, to be *greater* than the *firſt*, and *leſs* than the *laſt*; or a ſum, which is ſome *mean* between 1*l.* 18*s.* and 4*l.* 16*s.*—The rule for finding this mean, in all caſes, is the following.

"From the value of an annuity *certain* for the given "term, found by Table III. under the article of ANNUITIES, ſubtract the value of the life for the given "term, found in the method explained under the article "LIFE-*Annuities*, and reſerve the remainder.—Multiply the value of 1*l.* due at the end of the given "term (found by Table I. under the article *Annuities*) "by the *perpetuity* (ſee PERPETUITY); and alſo by the "*probability* (ſee MORTALITY) that the given life ſhall "fail in the given term. The *product* added to the *reſerved remainder*, and the *total* multiplied by the annual "intereſt of the ſum to be aſſured, and afterwards divided by 1*l.* increaſed by its intereſt for a year, and "alſo by the value already mentioned, with unity added, "of the life for the given term, will be the required "value of the *aſſurance* in a *fixed annual* payment, till "either the life fails, or the term ends."

EXAMPLE.

Let the term be 26 years, the life aged 39, the ſum 100*l.* and the intereſt 5 *per cent.*

SOLUTION.

The value of the life of a perſon whoſe age is 39, for 26 years, is (reckoning intereſt at 5 *per cent.* and taking Mr. De Moivre's valuation of lives 11.113. See LIFE-*Annuities*. This value ſubtracted from 14.375 (the value of an annuity certain for 26 years) (ſee Table III. under Annuities) leaves 3.262, the remainder to be *reſerved*.

The value of 1*l.* to be received at the end of 26 years, is .2812 by Table II. under the article ANNUITIES.—The probability that the life of a perſon aged 39 ſhall fail in 26 years, is, by Dr. Halley's Table of Obſervations, (ſee MORTALITY) $\frac{262}{454}$. And the *perpetuity* is 20. Theſe numbers multiplied by one another, and 3.262 added to the product, make 6.508, which multiplied by 5*l.* the annual intereſt of 100*l.* gives £32.54. This laſt ſum divided by 1.05, or 1*l.* increaſed by its intereſt for a year, gives 31*l.* And 31*l.* divided by 12.113, the value of the life for 26 years, with unity added, gives £2.56, or 2*l.* 11*s.* 2*d.* ½; which is the required value, *in fixed annual payments*, of the *aſſurance* of 100*l.* on the given life for 26 years, reckoning intereſt at 5 *per cent.*

The value of the ſame *aſſurance*, *in one preſent payment*, is, evidently, that ſum which is the value of an annuity (equal to the annual payment juſt determined) on the life for the given term. That is, it is the ſum which is the value of an annuity of 2*l.* 11*s.* 2*d.* ½ for 26 years on a life aged 39, the firſt payment of which is to be made immediately. The product, therefore, of the value of the life for 26 years, with unity added, into £2.56, is the value of the *aſſurance* in a ſingle preſent payment. It is, therefore, 31*l.* or the ſum ariſing in the foregoing operation, before the diviſion by the value of the life for the given term.

If the *aſſurance* is to be made for the whole poſſible duration of the life, the method of finding the value will be more ſimple, and the rule for this purpoſe is as follows. "From the perpetuity ſubtract the value of the given "life, and multiply the remainder by the product of the "given ſum into the intereſt of 100*l.* for a year: and "this laſt product, divided by 100*l.* increaſed by its intereſt for a year, will give the value in a *ſingle preſent payment*. And this payment divided by the value "of the life, will give the value of the *aſſurance* in *annual payments* during the continuance of the life."

EXAMPLE.

Let the age of the life be, as in the laſt example, 39; the ſum to be aſſured for its whole duration, 100*l.* and the rate of intereſt 5 *per cent.*

The intereſt of 100*l.* for a year is 5*l.*—100*l.* increaſed by this intereſt is 105*l.* and the value of the life is, according to Mr. De Moivre's (ſee LIFE-*Annuities*) valuation of lives, 11.966.—The value of the life ſubtracted from the PERPETUITY (that is, from 20) gives £8.034, which multiplied by the product of 100*l.* into 5, or by 500, gives 4017; and this, divided by 105 (or by 100*l.* increaſed by its intereſt for a year) gives £38.25, which is the value in a *ſingle payment* of the *aſſurance* of 100*l.* for the whole duration of a life aged 39, reckoning intereſt at 5 *per cent.* And this payment divided by £11.966 is £3.196, the value of the ſame *aſsurance* in *annual payments* during the continuance of the life.

REMARKS.

If the value of the *aſſurance* is deſired in annual payments, this rule ſuppoſes the *firſt* not to be made till the end of a year. If the firſt payment is to be made immediately, as was ſuppoſed in the former queſtion, the value in a ſingle payment (found as directed by the rule) muſt be divided by the value of the life *increaſed by unity*; that is, in the preſent inſtance, by £12.966, which will make the required value of the *aſſurance* £2.95, inſtead of 3.197, or 2*l.* 19*s.* inſtead of 3*l.* 3*s.* 11*d.*

The reaſon of directing that unity ſhould be added to the values of lives taken from the tables, in order to find the values of *aſſurances* in *annual payments*, beginning immediately, is that, in all the tables, the values of annuities on lives are given on the ſuppoſition that the firſt payment is not to be made till the end of a year. If, therefore, the firſt yearly payment is to be made immediately, the value muſt exceed that in the tables one year's purchaſe.

REMARK II.

The PERPETUITY means the value of the fee-ſimple of an eſtate found by dividing 100*l.* by the rate of intereſt. For example: if the rate of intereſt is 5 *per cent.* the perpetuity is 20; for 100*l.* divided by 5 gives 20.—In like manner, 25, 28.57, 33.333, may be found to be the *perpetuity*, when the rates of intereſt are 4, 3½, and 3 *per cent.*

REMARK III.

If inſtead of a *groſs ſum*, an *eſtate*, or a perpetual *annuity* is to be aſſured for the whole duration of a life, the value in a *ſingle payment*, will be "the value of the life "ſubtracted from the perpetuity, and the remainder "multiplied by the annuity, or by the rent of the eſtate." —And the value, in *annual payments beginning immediately*, will be "the ſingle payment divided by the value of the life increaſed by unity."—Univerſally. It ought to be remembered, that the *aſſurance* of an *eſtate* or *annuity* after any given life or lives, is worth as much more than the *aſſurance* of a correſponding ſum, as 100*l.* increaſed by its intereſt for a year, is greater than 100*l.*—Thus, the preſent values, *in ſingle and annual payments*, of the *aſſurance* of an eſtate of 5*l.* *per ann.* for ever, and of a 100*l.* in money, on the whole duration, or on any part of an aſſigned life, are to one another (intereſt being at 5 *per cent.*) as 105*l.* to 100*l.*—The reaſon of the difference is, that the algebraical calculations, by which theſe values are determined, ſuppoſe that the *groſs ſum*, and the firſt yearly payment of the *annuity* are to be received at the ſame time, after the extinction of the lives. It is eaſy to ſee, that this is a circumſtance which muſt make the latter of moſt value.

This ſpecimen is ſufficient to explain the general nature and principles of *aſſurances* on ſingle lives; and to teach the method of finding, in all caſes, the values of ſuch *aſſurances*. Thoſe who may wiſh to know more on this ſubject, and to ſee the mathematical demonſtrations of the rules we have here given, may conſult Dr. Price's treatiſe, entitled, Obſervations on reverſionary Payments; on the Method of calculating the Values of Aſſurances on Lives, &c. chap. 1.

Aſſurances may be made on any number of *joint* lives, or on the *longeſt* of any lives: that is, an aſſurer may bind himſelf to pay any ſums at the extinction of any *joint* lives, or the *longeſt* of any lives, or at the extinction of any one or two of any number of lives. Rules for finding the values in all ſuch caſes, as far as two lives are concerned, may be found in the treatiſe juſt referred to. There are farther *aſſurances* on ſurvivorſhips; by which is meant an obligation for the value received, to pay a given ſum or annuity, *provided* a given life ſhall ſurvive any other given life or lives. The method of finding theſe values will be given under the article SURVIVORSHIP.

All theſe different kinds of *aſſurances* are of the greateſt uſe; and the offices for making them are a particular advantage to the public. The principal of theſe offices in England are the London and the Royal Exchange *aſſurance* offices; the Amicable Society, incorporated for a perpetual *aſſurance* office; and the Society for equitable *Aſſurances* on Lives and Survivorſhips, near Black-Fryars bridge.

The two firſt of theſe offices, having chiefly in view *aſſurances* on ſhips and houſes, they do little in the way of *aſſurances* on lives; and all the buſineſs they tranſact in this way is at 5*l.* for every 100*l.* aſſured on a ſingle life for a ſingle year, without paying any regard to the ages of the lives aſſured.

The Amicable Society at Serjeant's Inn requires an annual payment of 5*l.* from every member during life, payable quarterly. The whole annual income hence ariſing is equally divided among the *nominees*, or *heirs*, of ſuch members as die every year; and this renders the dividends among the *nominees*, in different years, more or leſs, according to the number of members who have happened to die in thoſe years. But this ſociety engages that the dividends ſhall not be leſs than 150*l.* to each claimant, though they may be *more*.—None are admitted whoſe ages are *greater* than 45, or leſs than 12; nor is there any difference of contribution allowed on account of difference of age.—This ſociety has ſubſiſted ever ſince 1706, and its credit and uſefulneſs are well eſtabliſhed. Its plan, however, is liable to ſeveral objections.—Firſt, it is evident, that regulating the dividends among the *nominees*, by the number of members who die every year, is not equitable; becauſe it makes the benefit which a member is to receive to depend, not on the value of his contribution, but on a *contingency*; that is, the number of members that ſhall happen to die the ſame year with him.—Secondly, its requiring the ſame payments from all perſons under 45, is alſo not equitable; for the payment of a perſon admitted at 12, ought not to be more than *half* the payment of a perſon admitted at 45.—Thirdly, its plan is ſo narrow, as to confine its uſefulneſs too much. It can be of no ſervice to any perſon whoſe age exceeds 45. It is, likewiſe, by no means properly adapted to the circumſtances of perſons who want to make *aſſurances* on their lives for only one year, or a ſhort *term* of years. For example: the true value of the *aſſurance* of 150*l.* for five years, on the life of a perſon whoſe age is 39, may be found, by the firſt rule, to be nearly three guineas *per ann.* ſuppoſing intereſt at 3 *per cent.* and the probability of the duration of human life, as they are given in Dr. Halley's Table of Obſervations. But ſuch an *aſſurance* could not be made in this ſociety without an annual payment of 5*l.*

Neither is the plan of this ſociety at all adapted to the circumſtances of perſons who want to make *aſſurances* on particular ſurvivorſhips. For example: a perſon poſſeſſed of an eſtate or ſalary, which muſt be loſt with his life, has a perſon dependent upon him, for whom he deſires to ſecure a ſum of money payable at his death. But he deſires this only as a ſecurity againſt the danger of his dying *firſt*, and leaving a wife, or a parent, without ſupport. In theſe circumſtances he enters himſelf into this ſociety; and, by an annual payment of 5*l.* entitles his *nominee* at his death to 150*l.* In a few years, perhaps, his *nominee* happens to die; and having then loſt the advantages he had in view, he determines to forfeit his former payments, and to withdraw from the ſociety.—The right method, in this caſe, would have been to have taken from ſuch a perſon the true value of the ſum aſſured, "on the ſuppoſition of non-payment, provided "he ſhould ſurvive."—In this way, he would have choſen to contract with the ſociety; and had he done this, he would have paid for the *aſſurance* (ſuppoſing intereſt at 3 *per cent.* his age 30, the age of his *nominee* 30, and the values of lives as given by Mr. De Moivre) 3*l.* 8*s.* in annual payments, to begin immediately, and to be continued during the joint duration of his own life, and the life of his *nominee*.

None of theſe objections are applicable to the plan of the ſociety which meets at Black-Fryars Bridge, and which has juſtly ſtyled itſelf the *Equitable Society for Aſſurances on Lives and Survivorſhips*. The buſineſs tranſacted by this ſociety is ſo extenſive, and it is governed ſo entirely by calculations, founded on the beſt rules and obſervations, that it cannot but prove one of the greateſt public benefits.

It was eſtabliſhed in the year 1762, in conſequence of propoſals which had been made, and lectures recommending ſuch a deſign, which had been read by Mr. Dodſon, the author of the Mathematical Repoſitory.—It aſſures any ſums or reverſionary annuities, on any life or lives for *any number* of years, as well as for the *whole continuance* of the lives; and in any manner that may be beſt adapted to the views of the perſons aſſured: that is, either by making the aſſured ſums payable *certainly* at the failure of any given lives; or on *condition* of ſurvivorſhip; and alſo, either by taking the price of the *aſſurance* in *one preſent payment*, or in *annual payments*, during any ſingle or joint lives, or any terms, leſs than the whole poſſible duration of the lives.—Any perſons, for inſtance, who depend on incomes which muſt be loſt when they die, or who are only tenants for life in eſtates, may, if they want to borrow money, be enabled to give ſufficient ſecurity, by aſſuring ſuch ſums as they want to borrow in this ſociety, and aſſigning the policy; in conſequence of which, the lender will, during the term of the *aſſurance*, be guarded againſt all danger of loſing his principal by the death of the borrower.—In the ſame way, clergymen, counſellors, perſons holding any places of profit, traders, and others, who have families, whoſe ſubſiſtence depends on the continuance of their lives, may here be enabled to make ſome proviſion for their families after their deceaſe.—All perſons who enjoy annuities for the lives of others, may here ſecure themſelves againſt the loſs they would ſuſtain, ſhould they ſurvive the perſons on whoſe lives the annuities depend, by making *aſſurances* which ſhould entitle them to any ſums, payable on condition their ſurvivorſhip ſhould take place. Any perſon entitled to an eſtate, annuity, legacy, or office, after another perſon, provided he ſurvives, may here ſecure ſome equivalent for his family at his deceaſe, provided he does *not* ſurvive.—Huſbands may, in this ſociety, ſecure annuities for their wives, provided they ſhould leave them widows.—Parents, by aſſuring the lives of their children when infants, till they attain a given age, may ſecure for them, ſhould they live to that age, ſuch ſums as may be neceſſary to put them out to apprenticeſhips, or to make capitals or fortunes for them, with which to ſet out in buſineſs, or to marry.—Any perſons, apprehenſive of being left without ſupport in old age, when incapable of labour, may, in this ſociety, purchaſe an annuity, to commence at any future year of his life, and to continue during the remainder of his life; and he may do this at a very ſmall expence, if he is young, and willing to wait for the commencement of his annuity, till he is 55 or 60 years of age.

In ſhort, there are no kinds of *aſſurances* on lives and ſurvivorſhips, which this ſociety does not make. In doing this, it follows the rules which have been given by the beſt mathematical writers on the doctrine of *Life-Annuities* and *Reverſions*, particularly Mr. Simpſon; and, in order to gain ſuch a profit as may render it a *permanent* benefit to the public, and enable it to bear the expences of management, it takes the advantage of making its calculations at ſo low an intereſt as 3 *per cent.* and, from tables of the probabilities and values of lives in London, where (as in all great towns) the rate of human mortality is much greater than it is in common among mankind. This ſociety has lately made a particular enquiry into its own ſtate, as to *profit* and *loſs*, by all the buſineſs it has tranſacted from its firſt inſtitution. This enquiry was made in three different methods, propoſed to the directors by Dr. Price, the author of the Treatiſe on Reverſionary Payments; and the reſult has been, that it appears, that a much ſmaller proportion of the perſons aſſured have died, than *ſhould* have died, according to the tables for London, from which the calculations have been made, or even according to Dr. Halley's table for Breſlaw; that, for this reaſon, the claims have been much leſs than they *ſhould* have been; and that the ſociety has for many years been enjoying an income, ſome thouſands *per ann.* greater than it wants, and a *ſurplus ſtock* of near 40,000*l.* over and above what is neceſſary to enable it to make good all its engagements.

In theſe circumſtances, the ſociety finding itſelf well ſecured againſt future hazards, and being unwilling to take from the public an extravagant profit, have determined to reduce all the *future* payments for *aſſurances one tenth*; and alſo to return to the perſons now aſſured *one tenth* of all the payments which they have made. And there is, it ſeems, reaſon to expect that this will be only a preparation for farther reductions. Nor need the public, we are informed, be apprehenſive of their going too far in making reductions; for in conſequence of the enquiry they have lately made, and of the order into which this enquiry has thrown their accounts, they will have it in their power to determine exactly from year to year what they are able to do, and always to keep under their view a clear ſtate of their own circumſtances.

From the preceding account of this Society it is manifeſt, that its buſineſs is ſuch, that none but ſkilful mathematicians are qualified to conduct it. The intereſt of the ſociety, therefore, abſolutely requires, that it ſhould make the places of thoſe who manage its buſineſs ſo advantageous, as to induce the ableſt mathematicians to accept them; and this will render it the more neceſſary for the ſociety to take care, on any future vacancies, to pay no regard, in filling them up, to any other conſiderations than the ability and integrity of the candidates. The conſequence of granting good pay will be a multitude of ſollicitations on every vacancy, from perſons who, however unqualified, will hope for ſucceſs from their connexions, and the intereſt they are able to make; and ſhould the ſociety, in any future time, be led by ſuch cauſes to truſt its buſineſs in the hands of perſons not poſſeſſed of ſufficient ability, as *calculators* and *mathematicians*, ſuch miſtakes may be committed as may prove, in the higheſt degree, detrimental.—We have reaſon to know, that at preſent the ſociety is in no danger of this kind; and one of the great public advantages attending it, is, that it has eſtabliſhed an *office*, where not only the buſineſs we have deſcribed is tranſacted with faithfulneſs and ſkill; but where alſo all who want ſolutions of any queſtions relating to life-annuities and reverſions may apply, and be ſure of receiving juſt anſwers.

TABLE of the rates of *aſſurance* on ſingle lives in the Society for equitable Aſſurances near Black-Fryars Bridge.

SUM aſſured 100*l.*

Age	One year			Seven years at an annual payment of			For the whole life, at an annual payment of		
	£.	*s.*	*d.*	£.	*s.*	*d.*	£.	*s.*	*d.*
10	1	9	6	1	10	7	2	2	10
15	1	11	0	1	12	7	2	6	6
20	1	13	11	1	16	0	2	12	10
25	1	17	7	2	0	2	3	0	6
30	2	2	6	2	6	0	3	8	11
35	2	8	7	2	14	2	3	17	9
40	2	19	2	3	5	1	4	7	11
45	3	11	0	3	18	6	5	0	0
50	4	4	8	4	11	2	5	12	11
55	5	0	9	5	11	7	6	9	3
60	5	19	1	6	16	10	7	17	7
65	7	0	11	8	13	0	10	3	9

Theſe rates are 10 *per cent.* lower than the true values, according to the decrements of life in London, reckoning intereſt at 3 *per cent.*; but at the ſame time, for all ages under fifty, they are near a *third* higher than all the true values, according to Dr. Halley's Table of the decrements of life at Breſlaw, and Dr. Price's Tables of the decrements of life at Northampton and Norwich.—As, therefore, this ſociety has lately found that the decrements of life among its members have hitherto been lower than even thoſe given in theſe laſt Tables, it may be reaſonably expected, that they will in time reduce their rates of *aſſurance* to the true values, by theſe Tables.

ASSURANCE, *collateral.* See COLLATERAL.

ASSURGENT *leaves*, in *Botany*, denotes ſuch as are firſt bent down, and then riſe erect towards the apex.

ASSUROR, a merchant, or other perſon, who aſſures, or makes out a policy of inſurance for a ſhip, houſe, life, or the like.

Aſſurors are not anſwerable for what damages ariſe through the negligence, or other fault of the maſter or ſeamen; or even thoſe which ariſe from any vice or defect in the thing aſſured.

ASSURRITANI, or ASSURRANI, a branch of *Donatiſts*, in the middle of the fourth century. The *Aſſurritani* maintained, the Son inferior to the Father; they rebaptized their converts from the catholics, and aſſerted that the church is not compoſed of good and bad, but of the good alone.

ASSYRIAN *letters*, *litteræ Aſſyriæ*, a denomination given by ſeveral Rabbins, and Talmudiſts, to the characters of the preſent Hebrew alphabet, as ſuppoſing them to have been borrowed from the Aſſyrians during the Jewiſh captivity in Babylon. Montfaucon.

ASTAEUS, a ſpecies of the *crab* inſect.

ASTAKILLOS, a denomination given by Paracelſus to a malignant gangrenous ulcer in the legs, occaſioned by a mercurial ſalt in the blood. This is alſo called by him *araneus*, and *ulcus araneum*, the *ſpider's ulcer*.

ASTALIN, in *Ancient Writers*, the ſame with *aſtanda*.

ASTANDA, in *Antiquity*, a royal courier or meſſenger, the ſame with ANGARUS.

King Darius of Perſia is ſaid by Plutarch, in his book on the fortune of Alexander, to have formerly been an *aſtanda*.

ASTARILÆ, ASTHARITÆ, or ASTHAROTHITÆ, a name given by ſome to the Jews, who fell into the worſhip of Aſtaroth, or Aſtharoth, the goddeſs of the Sidonians, ſuppoſed the ſame with Aſtarte, or the moon.

ASTAROTH, in *Mythology*, an idol of the Philiſtines, which the Jews deſtroyed at the command of Samuel. It was alſo the name of a deity of the Sidonians, which was worſhipped by Solomon in his idolatrous days.

ASTATI, in the ninth century, the followers of one Sergius, who renewed the errors of the MANICHEES.

The word is derived from the privative *α*, and *ιςημι*, *ſto*, *to ſtand*, and ſignifies any thing unſtable and inconſtant. They prevailed much under the emperor Nicephorus; but his ſucceſſor, Michael Curopalates, curbed them with very ſevere laws.

ASTEISM, in *Rhetoric*, a genteel way of irony, or handſome way of deriding another. Such is that of Virgil:

> *Qui Bavium non odit, amet tua carmina Mævi*, &c.

ASTER, in *Botany*. See STAR-WORT.

ASTER, in *Mineralogy*, a denomination given to a ſpecies of Samian earth.

ASTER *thalaſſius*, the *ſtella marina*, or STAR-*fiſh*.

ASTER is alſo a denomination, in the *Ancient Pharmacy*, given to a kind of medicine, invented by Andromachus, againſt defluxions, and divers other pains.

ASTENA, a genus of worms of the *molluſca* order, in the Linnæan ſyſtem.

ASTERIA, in *Zoology*, a name by which ſome authors have called the *accipiter palumbarius*, or GOSHAWK.

ASTERIA is alſo the name of a gem, uſually called the cat's eye, or *oculus cati*. It has only two colours, a pale brown and a white, the brown ſeeming the ground, and the white playing about in it, as the fire colour in the opal. It is conſiderably hard, and will take a fine poliſh, but is uſually worn with its native ſhape and ſmoothneſs

It is found in the Eaſt and Weſt Indies, and in Europe. The iſland of Borneo affords ſome very fine ones, but they are uſually ſmall; they are very common in the ſands of rivers in New Spain; and in Bohemia they are not unfrequently found immerſed in the ſame maſſes of jaſper with the OPAL.

ASTERIA is alſo the name of a figured ſtone. See STAR-*ſtone*.

ASTERIA. See STAR-*fiſh*.

ASTERION, in *Aſtronomy*, one of the CANES VENATICI.

ASTERISCUS, *aſteroides buphthalmum*, in *Botany*. See Ox-*eye*.

ASTERISK, a character in form of a ſmall ſtar, ſet over any word, or ſentence, to make it the more conſpicuous, or to refer to the margin, or elſewhere, for a quotation, explanation, or the like.

The word is a diminutive of *αςηρ*, a *ſtar*.

ASTERISM, ASTERISMUS, in *Aſtronomy*, the ſame with CONSTELLATION.

The word comes from *αςηρ*, *ſtella*, *ſtar*.

ASTERN, denotes any diſtance behind a ſhip.

ASTEROPHYTON, in *Natural Hiſtory*, a name given to a kind of STAR-fiſh, which is compoſed of a great number of cylindric rays, each branching out into ſeveral others, ſo as to repreſent the branched ſtalks of a very intricate ſhrub.

ASTEROPODIUM, in *Natural Hiſtory*, the name given by authors to a kind of extraneous foſſil, of an imbricated texture, compoſed of a number of ſmall convex or concave plates, and ſerving, when entire, as a baſe, or root, to the *aſteria*, or STAR-*ſtone*.

It is very plain, that this is the remains of ſome animal body, probably of the ſtar-fiſh kind, to which the *aſteria* have alſo once belonged; but our imperfect knowledge in the animal hiſtory, has not yet aſcertained us of the particular creature; the moſt probable conjecture is, that it is the Magellanic STAR-*fiſh*, the rays of which nicely and exactly repreſent ſome of the moſt perfect *aſteropodia*.

ASTHMA, in *Medicine*, a diſeaſe of the lungs, accompanied with a ſhortneſs and difficulty of reſpiration.

An *aſthma* is a difficulty of breathing, ariſing from a diſorder of the lungs; and uſually attended with violent motions of the diaphragm, abdominal and intercoſtal muſcles, to the very *ſcapula*, and the *pinnæ* of the noſtrils; as alſo with a rattling in the throat.

If reſpiration be only thick and quick, without the other ſymptoms, it is called a *dyſpnœa*.—And if it be ſo intenſe as to occaſion a violent motion of the muſcles of the thorax, ſo that the patient cannot be tolerably eaſy, except in an erect poſture, it is called an *orthopnœa*.

The *aſthma* is uſually divided into *moiſt* and *dry*, or *manifeſt* and *occult*, or *pneumonic* and *convulſive*: the firſt is attended with an expectoration of purulent matter; the latter is without.

The true or *pneumonic aſthma* is occaſioned by an abundance of ſeroſities, or of groſs, viſcous, or purulent humours,

mours, collected in the cavities of the lungs, which ſtop up or ſtraiten the paſſages of the air, and compreſs the *bronchia.*

Aſthmas may alſo be owing to empyemas, phthiſes, polypuſes, crudities in the ſtomach, cachexies, &c.

Dr. Mead obſerves, that whatever occaſions the ambient air to enter the lungs with leſs freedom than uſual, brings on this diſeaſe. Hence it may ariſe, 1ſt. From an impediment to the action of the diaphragm, or of the intercoſtal and abdominal muſcles. 2dly, From an obſtruction to the free paſſage of the air into the *aſpera arteria*, or its ramifications, whether it ariſes from a tumour, or from viſcid humours. 3dly, The air itſelf may be a cauſe, if it be much heavier, or lighter than uſual. 4thly, The tenderneſs of the lungs may ſometimes occaſion this diſtemper, as appears from thoſe who are ſubject to a difficulty of breathing upon removing from the thick air of the town into the clear air of the country. 5thly, The difficult paſſage of the air through the lungs may be reckoned among the cauſes of difficult reſpiration. And this may happen either from the weakneſs of the heart, or the too great thickneſs of the blood.

That kind called the convulſive *aſthma* is ſuppoſed to be occaſioned by an irregular motion of the animal ſpirits; and happens when the ſpirits do not flow faſt enough, or in ſufficient quantity, into the muſcles of the breaſt, either by reaſon of an obſtruction, or of ſome other obſtacle: the neceſſary conſequence whereof is a violent and painful reſpiration, in which nature's effort ſeems to be the relieving herſelf from the load of a *plethora*, by a ſpitting of blood, though ſhe fails in the attempt. The *convulſive aſthma* reſembles the *incubus*, or night-mare, in many particulars; but it never ſeizes any body, unleſs they are awake, whereas the other uſually attacks them when between ſleep and waking; and this is a much more laſting complaint, and more frequent, in the returns of its fits than the other. The *incubus* alſo prevents reſpiration in ſo violent a degree, that the perſon can form no articulate ſound. But the *convulſive aſthma* ſuffers a ſomewhat more free reſpiration, and the uſe of the voice. The *incubus* is a diſeaſe of very little danger; the *convulſive aſthma*, on the contrary, is a very dangerous, and often fatal, diſorder. Juncker, Conſp. Med. p. 364.

Asthma *convulſive, ſigns of it.* Theſe are a terrible ſhortneſs of breath, which differs from that of the ſuffocative catarrh only in this, that it is ſomewhat leſs violent, and is not attended with the ſame ſenſation of a ſtuffing up of the breaſt: this is attended with a numbneſs of the limbs, and a general laſſitude of the whole body; there is a violent compreſſion felt in the breaſt, and about the ſhoulders, with a great palpitation of the heart. The face is red in ſome parts, and ſeems tumid, and the temporal arteries are diſtended. The bowels are uſually coſtive, and there is a dimneſs often in the eyes, and ſometimes an alienation of the mind. Theſe ſymptoms uſually come on in an evening, and laſt an hour or two. Often, however, the fits are of much longer duration, and ſometimes they obſerve regular periods, at different diſtances of time.

Asthma *convulſive, perſons ſubject to it.* Thoſe of plethoric habits are much more ſubject, than any other people, to this diſeaſe. It does not often ſeize young perſons, except in conſequence of other diſeaſes, and in that caſe it uſually is a very bad omen. It is moſt common to people of a middle age, and, with them, ſometimes returns with frequent, but leſs violent fits, for many years together; ſometimes it is more violent, and takes them off in a very little time. People often fall into this diſeaſe, from having been uſed to periodic bleedings, or cuppings, and having afterwards neglected them; thoſe who change a buſy or laborious life, for an idle or ſedentary one, alſo often fall into it; as do thoſe who have had the gout, thrown back by improper medicines. Women alſo ſometimes fall into it from ſuppreſſions or imminutions of the *menſes*; and men of hypochondriac habits, from ſuppreſſions of habitual evacuations of blood from the hæmorrhoidal veins. The cauſes of this diſeaſe are very various, and it is ſometimes an idiopathic, ſometimes a ſymptomatic, complaint; it very often attends malignant fevers, and arthritic complaints, and joins itſelf with other diſtemperatures of the breaſt.

Asthma, *convulſive, prognoſtics in it.* This, though not immediately deſtructive, is often a very dangerous complaint, and in a ſhorter or longer time, proves fatal to the patient. In middle-aged people it uſually brings on either acute fevers, or ſpitting of blood; and in old people, palſies, apoplexies, or ſuffocative catarrhs. Juncker.

The *aſthma*, again, is either *continual*, or *periodical*, and *intermitting*; which laſt returns chiefly when a ſober *regimen* is not obſerved.

The *aſthma* is found to be the moſt violent when the patient is in bed, and in a prone poſture; the contents of the lower belly, in that caſe, bearing againſt the diaphragm, ſo as to leſſen the capacity of the breaſt, and to leave the lungs leſs room to move.

Asthma, *method of treatment.* The cure of the true or pneumonic *aſthma* is by bleeding; after which emetics may be uſed; and, if the paroxyſm returns, epiſpaſtics, with glyſters inſtead of purges.—Linctuſes alſo give ſome relief, millepedes, ſpirit of gum ammoniac, with ſal ammoniac, coffee, tincture of ſulphur, &c. are alſo greatly commended in *aſthmatic* caſes.

Sir John Pringle obſerves, that coffee made freſh and ſtrong, allowing about an ounce for one diſh, and repeated every quarter or half an hour, is the beſt abater of the paroxyſms of the periodic *aſthma*, which he has ever known.

For the convulſive kind, the cure is attempted by antiepileptics, antihyſterics, antiſpaſmodics, opiates, &c.—Externally, ſpirit of wine and camphire may be rubbed on the breaſt and ſhoulders, eſpecially where the patient has been uſed to cupping, and has neglected it; rubbing the ſhoulders with a flannel, often has a good effect alſo; and fumigations may be uſed of amber, ſtorax, and maſtich, with flowers of citrine ſtœchas. When the fit is off, the patient ſhould uſe frequent waſhing the feet in warm water, and ſhould be always blooded in the foot in ſpring and fall; he ſhould alſo take gentle purges at times, and if the neglect of habitual cuppings, or ſuppreſſions of the hæmorrhoids, or, in women, of the *menſes*, have concurred, great care is to be taken to bring all back to their old ſtate again, otherwiſe no radical cure can be expected. Beſides, a mixture of ſpirit of hartſhorn, and tincture of ſalt of tartar, ſhould be given to promote an equal diſtribution of the blood to all parts of the body.

Bleedings in the time of the fit, though they always give relief, yet are as much to be avoided as poſſible, ſince they ſubject the patient to frequent returns, and make it always neceſſary to repeat them at the time; for as nature intends, by this *aſthma*, the relieving herſelf from a *plethora*, by a diſcharge of blood, where ſhe finds this intent anſwered by the opening a vein, ſhe will always afterwards bring on this diſeaſe, when at all moleſted by a *plethora*, and will never ſuffer it to go off but by the ſame means. In a firſt attack of this diſeaſe, bleeding is not abſolutely neceſſary, and is therefore always to be carefully avoided; but in caſes where cuſtom has made it neceſſary, it muſt be done, and a large quantity always taken away. Bleeding in the arm is found moſt ſerviceable in the time of the fit, and in the foot, by way of prevention. Vomits, in theſe caſes, are often very hurtful, and the more violent ones always dangerous, in conſideration of the ſpitting of blood, which there is always a greater or leſſer tendency to; yet, in caſes where a full meal has juſt preceded it, and where there is no immediate reaſon againſt it, a ſmall doſe of ſome gentle vomit may be properly given, after bleeding, and a glyſter. Dr. Akenſide recommends an emetic of ipecacuanha, to be uſed as ſpeedily in the fit, as attending circumſtances will admit. A ſweat very often ſucceeds the more violent fits of this diſorder, and is always obſerved to do the patient good; this is promoted by the nitrous and cinnabarine medicines. When this diſeaſe is attended with hypochondriac complaints, the *mixtura ſimplex*, well camphorated, is found of great uſe, as it diſpels the flatulencies, which, in this caſe, are joined with, and always greatly exaſperate, the diſeaſe. The volatile ſalts are to be avoided in the time of the fit, and all anodynes, if given while the bowels are in a coſtive ſtate, bring on miſchief. The giving, in this caſe, the expectorating medicines, which are ſerviceable in other *aſthmas*, is not only uſeleſs, as there is, in this caſe, nothing to be expectorated, but it is alſo dangerous. Finally, in caſes where there are hypochondriac complaints joined with this diſeaſe, the application of leeches to the hæmorrhoidal veins is attended uſually with great ſucceſs. Juncker, & Med. Tranſ. Lond. vol. i.

The method of cure in this diſtemper, ſays Dr. Mead, muſt vary with its cauſes. Blood-letting is, generally ſpeaking, uſeful in every ſpecies of it. Vomits are uſeful, if the ſtomach or lungs be loaded with tough phlegm. The body muſt be kept open with gentle cathartics. Flatulent food and drink ſhould be avoided; exerciſe uſed till wearineſs; and friction, till a ſweat is ready to break out.

Oxymel of ſquills, and ſimple cinnamon water, or garlic, are good in caſe of viſcid and tough humours. But if the fault lie in the nervous juice, the ſtrong ſmelling gums are proper, eſpecially the milk of gum ammoniac. Anodynes are very hurtful in the firſt caſe, but ſerviceable in this, if joined with volatile ſalts or ſpirits. The paregoric elixir is one of the beſt of this tribe.

As every ſpecies of this diſeaſe is attended with more or leſs efferveſcence in the blood, the bark will be found uſeful; and there have been inſtances where it has done vaſt ſervice, mixed with the cinnabar of antimony. Mead. Mon. & Pract. Med. cap. 8.

Bliſters on the back give relief during the fit; and by keeping them open as long as poſſible may prevent returns.

In general, all ales, and eſpecially that prepared of wheat, are in this diſorder to be avoided. In *aſthmatic* caſes, the moſt proper liquor is old Rheniſh wine, mixed with three or four parts of pure ſpring water, or the Seltern waters. Beſide, infuſions by way of tea, prepared of hyſſop, Paul's betony, garden-crowfoot, ground-ivy, liquorice-root, the *tragus* (ſea-grape), and the flowers of the daiſy, are highly beneficial in all *aſthmas*, from whatever cauſe they may ariſe. Such ſubſtances as are too ſweet, or prepared with ſugar or honey, are in every ſpecies of the *aſthma*, but more eſpecially thoſe of the ſerous, or hypochondriacal kind, to be carefully abſtained from. Hoffman.

ASTIPULATOR, in the Roman order, he by whoſe conſent and leave a nun takes the religious habit. Du-Cange.

ASTORCHA, in *Botany*, a name by which ſome authors call the yellow *ſtœchas*, and others the purple, commonly called the Arabian.

ASTRÆA, in *Aſtronomy*, a name which ſome give to the ſign Virgo, by others called Erigone, and ſometimes Iſis. The poets feign that Juſtice quitted heaven to reſide on earth, in the golden age; but, growing weary of the iniquities of mankind, ſhe left the earth, and returned to heaven, where ſhe commenced a conſtellation of ſtars, and from her orb ſtill looks down on the ways of men. Ovid. Met. lib. i. ver. 149.

ASTRAGAL, in *Anatomy*, a bone of the heel, having a convex head, articulated with the *tibia*, by *ginglymus*. See *Tab. Anat.* (*Oſteol.*) *fig.* 7. *a. a. fig.* 3. *n.* 25. 25.

The *aſtragalus*, called alſo *talus*, and popularly *os baliſtæ*, is the firſt bone of the *tarſus*, and the higheſt of all thoſe that belong to the foot.

This bone may be divided into two portions, one large and *poſterior*, the other ſmall and *anterior*; the firſt is, as it were, the body of the bone, the latter an *apophyſis*, though commonly called, the *anterior* portion. The body, or *poſterior* portion, has four ſides, one *ſuperior*, two lateral, and one *inferior*. The upper ſide is the largeſt; it is covered all over with a cartilage, and is cylindrically convex from before backward, with a depreſſion running through the middle of its breadth, which repreſents half a pulley, and is continuous with the two lateral cartilaginous ſides, of which the external is broader than the other. The upper ſide is articulated with the lower ſide of the *baſis* of the *tibia*, the internal lateral ſide with the inner ankle, and the external lateral ſide with the outer ankle; below the internal lateral ſide there is a great depreſſion without a cartilage, and ſeveral other inequalities. The lower ſide is likewiſe cartilaginous, and obliquely concave, for its articulation with the *os calcis*. At the very loweſt and *poſterior* part of the body of the *aſtragalus*, on the edge of the lower ſide, is a ſmall oblique ſmooth notch, or channel, for the paſſage of the tendons. The *apophyſis*, or *anterior* part of the *aſtragalus*, is diſtinguiſhed from the body, by a ſmall depreſſion on the upper part; and on the lower part by a long oblique unequal notch, very broad toward the outſide. The *anterior* ſide of this *apophyſis* is all cartilaginous, and obliquely convex, for its articulation with the *os ſcaphoides*. The lower ſide, which is likewiſe cartilaginous, is parted in two, and articulated with the *os calcis*, being diſtinguiſhed from the lower ſide of the body of the bone, by the long oblique notch already mentioned. Beſide theſe two cartilaginous ſides, there is a third below the *anterior*, towards the inner part, which, in the dried ſkeleton, touches nothing. Winſlow.

Some alſo apply the name *aſtragalus* to the *vertebræ* of the neck.—Homer, in his Odyſſey, uſes the term in this ſenſe.

ASTRAGAL, in *Architecture*, from the Greek αςραγαλος, *the bone of the heel*, is a little round member, in form of a ring, or bracelet; ſerving as an ornament at the tops and bottoms of columns.—See *Tab. Architect. fig.* 40. *lit.* E. & *fig.* 2. 24. 25. 27.

It is alſo uſed both above and below the liſtel, adjoining immediately to the ſquare or dye of the pedeſtal. It is frequently carved with hearts and olives, which the French call *pater-noſters*.

ASTRAGAL, in *Gunnery*, is a kind of ring or moulding on a piece of ordnance, at about half a foot diſtance from the mouth; ſerving as an ornament to the piece, as the former does to a column.

ASTRAGAL *tyles*. See TYLE.

ASTRAGALOIDES, in *Botany*, the *phaca* of Linnæus. See *Baſtard Milk* VETCH.

ASTRAGALOMANCY, a ſpecies of divination performed by throwing ſmall pieces, with marks correſponding to the letters of the alphabet; the accidental diſpoſition of which formed the anſwer required. This kind of divination was practiſed in a temple of Hercules, in Achaia. Hiſt. de l'Acad. Inſcrip. tom. i. p. 122.

The word is derived from αςραγαλος, and μαντεια, *divination*.

ASTRAGALOTE, in *Natural Hiſtory*, a ſpecies of foſſile *alum*, thus called, from its reſembling a *talus*, or ankle-bone; whence it is alſo denominated *talare*.

ASTRAGALUS, in *Botany*, a genus of the *diadelphia decandria* claſs, *wild liquorice*, *liquorice vetch*, or *milk vetch*. Its characters are, that it hath a butterfly-flower. The ſtandard, or *vexillum*, is upright, blunt, and reflexed on the ſides. The wings, which are oblong, are ſhorter than the ſtandard; and the heel, which is bordered, is of the ſame length with the wings. At the bottom of the flower is ſituated a taper germen, which afterward becomes a pod having two cells, with a row of kidney-ſhaped ſeeds in each. Miller enumerates twenty ſpecies. The root of this plant, drank in wine, ſtops a looſeneſs, and provokes urine. Dried to a powder, it is, with good effect, ſprinkled on old ulcers, and ſtops bleeding. Lemery.

According to ſome, it is good to increaſe the milk in wet-nurſes.

ASTRAL, ſomething belonging to the ſtars, or depending on the ſtars.

The word comes from *aſtrum*, of the Greek αςηρ, *ſtar*.

ASTRAL, or ſiderial year. See YEAR.

ASTRANTIA, in *Botany*. See MASTER-*Wort*.

ASTRAPÆA, in *Natural Hiſtory*, a name given by the ancients to a ſtone, ſince called, improperly, *aſtrapia*, and by ſome *aſtrapea*. The deſcription we have of it, is, that it was a blue, or blackiſh one, with white variegations, running in the form of waves and clouds in it. Some ſpecimens of the Perſian *lapis lazuli* are of this kind, but they are rare. It is probable that the ancients meant theſe, by the name, but as they were not a diſtinct ſpecies, they ought not to have confounded the ſame ſtone under two names.

ASTRARII, in *Middle Age Writers*, the ſame with *manſionarii*, thoſe who live in the houſe, or family, at the time, for inſtance, when a perſon dies. Du-Cange.

Theſe are alſo denominated *aſtro-addicti*, q. d. *tied to the hearth*.

ASTRARIUS *hæres* is uſed in our *Old Writers*, where the anceſtor, by conveyance, hath ſet his heir apparent, and his family, in a houſe, in his life-time.

Spelman carries the import of the word further, as if it denoted an heir to whom the inheritance was given by his predeceſſor in his own life, by a writing in form.

The word is formed from *aſtre*, an ancient French term for the hearth of a chimney.

ASTRICTION, *adſtrictio*, in *Medicine*, an operation intended partly to conſtringe the parts and pores of the body, when too looſe, and partly to reſtrain the courſe of the humours, when too fluid.

Aſtriction, with regard to the object, is of two ſorts; the firſt employed on the too much relaxed *ſolids*; the ſecond on the *fluids*, chiefly in hæmorrhages; intended to moderate or reſtrain the flux of the blood through the cuſtomary paſſages, as the noſe, *menſes*, *lochia*, and the like; and ſometimes alſo to ſtop extraordinary and unuſual hæmorrhages, ariſing from violent cauſes.

ASTRICTIOR *toga*. See TOGA.

ASTRICUS *lapis*, in *Natural Hiſtory*, a kind of figured ſtone, broken or cut from the *enaſtros*, after the ſame manner as the *trochitæ* from the *entrochi*.

ASTRILD, in *Ornithology*, a ſpecies of the LOXIA.

ASTRINGENS *crocus martis*. See CROCUS.

ASTRINGENTS, in *Medicine*, binding remedies; or ſuch as have the power of contracting the parts, and diminiſhing the pores thereof.

Aſtringents chiefly act either by the aſperity of their particles, whereby they corrugate the membranes, and make them draw up cloſer; or by thickening the fluids, whereby they cannot run off ſo faſt as before.

Hence, *aſtringents* are of the claſs of ſtrengtheners, or corroborants; the nature and operation whereof, ſee under the article STRENGTHENER.

Aſtringents naturally ſtand oppoſed to *laxatives*. They only differ from what are called *ſtyptics*, in degree of efficacy.

Among ſimples, mint, red roſes, nettles, ſanicle, barberries, quinces, pomgranates, ſloes, cinnamon, blood-ſtone, alum, chalk, boles, coral, &c. are the principal *aſtringents*.

Aſtringent medicines are to be avoided in all inflammatory caſes, for they diſturb nature in the effort ſhe is making to relieve herſelf from a congeſtion of blood in the part; and prevent that free paſſage which the blood ought to have, and which alone can make a cure, or break through the obſtruction that is the real diſeaſe.

Mr. Petit concludes, from a great many experiments he made in covering pieces of fleſh with the different ſorts of *aſtringents* employed in hæmorrhages, that ſome act only as abſorbents; ſuch are earthy ſubſtances, moſt of the *aſtringent* plants, ſome gums, reſins, and animal ſubſtances. Other *aſtringents* abſorb, and, at the ſame time, their ſaline and ſulphureous particles, inſinuating themſelves into the fleſh, preſerve it from corruption. Vitriol and alum, which are acknowledged to be among the ſtrongeſt *aſtringents*, appeared, by his experiments, to abſorb moſt humidity. Mem. Acad. Scienc. an. 1732. *Aſtringents* are beſt adminiſtered in ſmall doſes, with a large quantity of ſome proper liquid. Extracts made from *aſtringent* vegetables do not keep long. Dr. Percival, in his Medical Eſſays and Experiments, obſerves, that *aſtringents*, acid and vegetables, neutralize each other; that vegetable acids leſſen their aſtriction externally; but that mineral acids increaſe it both internally and externally. Vegetable *aſtringents* are the moſt powerful, as medicines; and of theſe one of the ſtrongeſt is galls.

From the infuſions of certain *aſtringent* vegetables, mixed with green vitriol, commonly called copperas, is produced a deep black liquor, of moſt extenſive uſe for dying and ſtaining black; to woollen and ſilk it gives a permanent colour, although from linen, and other vegetable bodies, this blackneſs is diſcharged by waſhing. Of ſuch *aſtringent* vegetables, the principal are, the excreſcences from the OAK, called GALLS, proceeding from the juices of the tree, iſſuing through ſmall wounds made by certain inſects, not found in this climate. Other kinds of excreſcences are found upon our oaks, occaſioned, perhaps, by inſects of another kind. There are many other vegetable ſubſtances that have a like effect in different degrees; all, in general, that are auſtere, *aſtringent*, or corrugating to the taſte, inſomuch, that turning a ſolution of vitriol black, is looked upon as a ſure teſt of *aſtringency* in vegetables. This power, by which they produce this BLACKNESS, and their *aſtringency*, or that quality by which they contract animal fibres, and by which they contribute to the TANNING of leather, ſeem to depend upon one and the ſame principle, and to be proportional to one another. This *aſtringent* and colouring matter is diſſolved and extracted from galls, acorns, the leaves, the bark, and wood of the oak; from the leaves, ſmall branches, and flowery cluſters of the ſumach-tree, balauſtine-flowers, pomegranate-peel, alder-bark, biſtort-root, &c. both by water and ſpirit of wine, and it does not exhale in the evaporation of liquors by heat. There are differences in the *phænomena* produced by different *aſtringents*. Commercium Phil. Techn. p. 344, p. 382, and p. 418.

See Neumann's chemical hiſtory of *aſtringent* vegetables, his account of their antiſeptic nature, of the methods of extracting their *aſtringency*, of their ſtriking colours with chalybeate vitriol, of their uſe in tanning, of their giving ſome durable dyes, and of their fixing others, in Dr. Lewis's edition of Neumann's Works, with his own additional obſervations. 4to. an. 1759. p. 362, *&* *ſeq.*

ASTROBOLISM, the ſame with *ſphacelus*; though properly applied to plants which are deſtroyed in the dog-days, as if blaſted by that ſtar.

The word is derived from αϛηρ, *ſtar*, and βαλλω, *I ſtrike.*

ASTRODICTICUM, an aſtronomical inſtrument invented by M. Weighelius, by means of which many perſons ſhall be able at the ſame time to behold the ſame ſtar.

ASTROGNOSIA, from αϛηρ, *ſtar*, and γινωσκω, *I know*; the art of knowing the fixed ſtars, their names, ranks, ſituations in the conſtellations, and the like.

ASTROITES, *lapis* ASTROITES, ASTROCHITES, or ASTERIA. See STAR-*ſtone.*

ASTROLABE, ASTROLABIUM, was originally uſed for a ſyſtem or aſſemblage of the ſeveral circles of the ſphere, in their proper order and ſituation with reſpect to each other.

The ancient *aſtrolabes* appear to have been much the ſame with our armillary ſpheres.

The firſt and moſt celebrated of this kind was that of Hipparchus, which he made at Alexandria, the capital of Egypt, and lodged in a ſecure place, where it ſerved for divers aſtronomical operations.—Ptolemy made the ſame uſe of it; but as the inſtrument had ſeveral inconvenieneies, he contrived to change its figure, though perfectly natural, and agreeable to the doctrine of the ſphere; and to reduce the whole *aſtrolabe* upon a plane ſurface, to which he gave the denomination of the PLANISPHERE.—Hence

ASTROLABE is uſed among the moderns for a PLANISPHERE; or a ſtereographic projection of the circles of the ſphere upon the plane of ſome great circle thereof.

The uſual planes of projection are that of the equinoctial, the eye being ſuppoſed in the pole of the world; that of the meridian, the eye being ſuppoſed in the point of interſection of the equinoctial and horizon; and that of the horizon.

Stoffler, Gemma Friſius, and Clavius, have treated at large of the *aſtrolabe.*—For a farther account of the nature and kinds hereof, ſee PLANISPHERE.

ASTROLABE, or *Sea* ASTROLABE, more particularly denotes an inſtrument chiefly uſed for taking the altitude of the pole, the ſun, or ſtars, at ſea.

The word is formed from αϛηρ, *ſtar*, and λαμϐανω, *capio, I take.*—The Arabs call it in their tongue, *aſtharlab*; a word formed by corruption from the common Greek name.

The common *aſtrolabe*, repreſented *Tab. Navigation, fig.* 22. conſiſts of a large braſs ring, about fifteen inches in diameter, whoſe limb, or a convenient part thereof, is divided into degrees and minutes; fitted with a moveable index, or label, which turns upon the centre, and carries two ſights.—At the zenith is a ring A, to hang it by in time of obſervation.

To uſe the *aſtrolabe*, turn it ſo to the ſun, as that the rays may paſs freely through both the ſights F and G; in which caſe the edge of the label cuts the altitude in the divided limb.

The *aſtrolabe*, though now grown into diſuſe, is at leaſt equal to any of the other inſtruments uſed for taking the altitude at ſea; eſpecially between the tropics, when the ſun comes near the zenith.—There are a great many other uſes of the *aſtrolabe*; whereof Clavius, Henrion, &c. have written entire volumes.

ASTROLOGICAL *fate.* See FATE.

ASTROLOGY, the art of foretelling future events, from the aſpects, poſitions, and influences of the heavenly bodies.

The word is compounded of αϛηρ, *ſtar*, and λογος, *diſcourſe*; whence, in the literal ſenſe of the term, *aſtrology* ſhould ſignify no more than the *doctrine* or *ſcience of the ſtars*; which we read was its original acceptation, and made the ancient *aſtrology*; though, in courſe of time, an alteration has ariſen; that which the ancients called *aſtrology*, being afterwards termed ASTRONOMY.

Aſtrology may be divided into two branches, *natural* and *judiciary.*

To the former belongs the predicting of natural effects; as, the changes of weather, winds, ſtorms, hurricanes, thunder, floods, earthquakes, &c.

This art properly belongs to PHYSIOLOGY, or *natural philoſophy*; and is only to be deduced, *à poſteriori*, from *phænomena* and obſervations.

Its foundation and merits the reader may gather from what we have ſaid under AIR, ATMOSPHERE, and WEATHER.

For this *aſtrology*, Mr. Boyle makes an apology in his Hiſtory of the Air.

ASTROLOGY, *judiciary*, or *judicial*, which is what we commonly call ſimple *aſtrology*, is that which pretends to foretel moral events; i. e. ſuch as have a dependence on the free will and agency of man; as if they were directed by the ſtars. This art, which owed its origin to the practices of knavery on credulity, is now univerſally exploded by the intelligent part of mankind.

The profeſſors of this kind of *aſtrology* maintain, "That the
" heavens are one great volume or book, wherein God has
" written the hiſtory of the world; and in which every
" man may read his own fortune, and the tranſactions of
" his time.—The art, ſay they, had its riſe from the ſame
" hands as *aſtronomy* itſelf: while the ancient Aſſyrians,
" whoſe ſerene unclouded ſky favoured their celeſtial
" obſervations, were intent on tracing the paths and pe-
" riods of the heavenly bodies, they diſcovered a con-
" ſtant, ſettled relation of analogy, between them and
" things below; and hence were led to conclude theſe
" to be the *Parcæ*, the Deſtinies, ſo much talked of,
" which preſide at our births, and diſpoſe of our future
" fate.

" The laws therefore of this relation being aſcertained,
" by a ſeries of obſervations, and the ſhare each planet
" has therein; by knowing the preciſe time of any per-
" ſon's nativity, they were enabled, from their know-
" ledge in aſtronomy, to erect a ſcheme or horoſcope of
" the ſituation of the planets, at that point of time; and
" hence, by conſidering their degrees of power and in-
" fluence, and how each was either ſtrengthened or tem-
" pered by ſome other, to compute what muſt be the re-
" ſult thereof."

Thus the *aſtrologers.*—But the chief province now remaining to the modern profeſſors, is the making of calendars or almanacks.

Judicial *aſtrology* is commonly ſaid to have been invented in Chaldæa, and thence tranſmitted to the Egyptians, Greeks, and Romans; though ſome will have it of Egyptian origin, and aſcribe the invention to Cham. But it is to the Arabs that we owe it. At Rome the people were ſo infatuated with it, that the *aſtrologers*, or, as they were then called, the *mathematicians*, maintained their ground in ſpite of all the edicts of the emperors to expel them out of the city. See GENETHLIACI.

Add, that the Bramins, who introduced and practiſed this art among the Indians, have hereby made themſelves the arbiters of good and evil hours, which gives them great authority: they are conſulted as oracles; and they have taken care never to ſell their anſwers but at good rates.

The ſame ſuperſtition has prevailed in more modern ages and nations. The French hiſtorians remark, that, in the time of queen Catharine de Medicis, *aſtrology* was in ſo much vogue, that the moſt inconſiderable thing was not to be done without conſulting the ſtars. And in the reigns of king Henry III. and IV. of France, the predictions of *aſtrologers* were the common theme of the court converſation.

This predominant humour in that court was well rallied by Barclay, in his Argenis, lib. ii. on occaſion of an *aſtrologer*, who had undertaken to inſtruct king Henry in the event of a war then threatened by the faction of the Guiſes.

ASTROLUS, in *Natural Hiſtory*, a name given by authors to a white and ſplendid ſtone, ſmall in ſize, and of a roundiſh figure, reſembling the eyes of fiſhes.

ASTROMETEOROLOGIA, the art of foretelling the weather, and its changes, from the aſpects and configurations of the moon and planets.

This makes a ſpecies of *aſtrology*, diſtinguiſhed by ſome under the denomination of *meteorological aſtrology*.

ASTRONIUM, in *Botany*, a genus of the *dioecia pentandria* claſs; the calyx of which has five leaves, and the corolla five petals.

ASTRONOMICAL, ſomething that relates to *aſtronomy*.

ASTRONOMICAL *Calendar*, *Characters*, *Column*, *Horizon*, *Hours*, *Month*, *Quadrant*, *Ring-Dial*, *Sector*, *Tables*, *Teleſcope*, *Time*, *Year*. See the ſeveral ſubſtantives.

ASTRONOMICAL *Obſervations*. See COELESTIAL *Obſervations*.

The *aſtronomical* obſervations of the ancients, among which thoſe of Hipparchus make a principal figure, are carefully preſerved by Ptolemy in his Almageſt.

In the year 880, Albategni, a Saracen, applied himſelf to the making of obſervations: in 1457, Regiomontanus undertook the province at Norimberg; and his diſciples, J. Wernerus, and Ber. Waltherus, continued the ſame from 1475 to 1504. Their obſervations were publiſhed together in 1544.—In 1509, Copernicus, and after him the landgrave of Heſſe, with his aſſiſtants Rothmannus and Byrgius, obſerved; and after them Tycho, at Uraniburgh, from 1582 to 1601.—All the obſervations hitherto rehearſed, together with Tycho's *apparatus* of inſtruments, are contained in the Hiſtoria Cœleſtis, publiſhed in 1672, by order of the emperor Ferdinand.—Soon after, Hevelius, with a ſtill more magnificent and better contrived apparatus of inſtruments, deſcribed in his Machina Cœleſtis, began a courſe of obſervations. It is objected to him, that he only uſed plain ſights, and could never be brought to take the advantage of teleſcopic ones; which occaſioned Dr. Hook to write animadverſions on Hevelius's inſtruments, printed in 1674, wherein he too raſhly deſpiſes them, on account of their inaccuracy: but Dr. Halley, who at the inſtance of the Royal Society went over to Dantzick in the year 1679, to inſpect his inſtruments, approved of their juſtneſs, as well as of the obſervations made with them. See SIGHTS.

Jer. Horrox, and Will. Crabtree, two of our own countrymen, are famous for their obſervations from the years 1635 to 1645.—They were followed by Flamſteed, Caſſini the father and ſon, Halley, de la Hire, Roemer, and Kirchius.—See farther under OBSERVATORY, CATALOGUE, &c.

ASTRONOMICAL *place* of a ſtar or planet, is its longitude, or place in the ecliptic, reckoned from the beginning of Aries, *in conſequentia*, or according to the natural order of the ſigns.

ASTRONOMICALS, a name uſed by ſome writers for ſexageſimal fractions; on account of their uſe in *aſtronomical* calculations.

ASTRONOMICUS *Radius*. See RADIUS.

ASTRONOMY, ASTRONOMIA, the doctrine of the heavens, and their *phænomena*.

The word is compounded of αςηρ, *ſtar*; and νομος, *law*, *rule*. *Aſtronomy* is properly a mixed mathematical ſcience, whereby we become acquainted with the celeſtial bodies, their magnitudes, motions, diſtances, periods, eclipſes, &c. Some underſtand the word *aſtronomy* in a more extenſive ſenſe, including under it the theory of the univerſe, and the primary laws of nature: in which ſenſe it rather ſeems a branch of phyſics than of mathematics.

The heavens may be conſidered two ways; either as they appear to the naked ſenſe, or as they are diſcovered by the underſtanding; and hence *aſtronomy* is divided into two branches, SPHERICAL and THEORICAL.

The invention of *aſtronomy* has been variouſly aſſigned; and ſeveral perſons, ſeveral nations, and ſeveral ages, have laid claim to it.—From the accounts given us by the ancient hiſtorians, it appears that kings were the firſt inventors and cultivators of it: thus, Belus, king of Aſſyria; Atlas, king of Mauritania; and Uranus, king of the country ſituate on the ſhore of the Atlantic ocean, are ſeverally recorded, as the perſons to whom the world owes this noble ſcience; to whom we may add, Fohi, Taut, and Zoroaſter, as ſome of the moſt ancient of all the *aſtronomers*, whoſe names are recorded.

This, at leaſt, is pretty evident, that it was known to thoſe nations long before it came into Greece: agreeably to which Plato tells us, it was a Barbarian who firſt obſerved the heavenly motions; to which he was led by the clearneſs of the weather in the ſummer ſeaſon; as in Egypt and Syria, where the ſtars are conſtantly ſeen, there being no rain or clouds to interrupt the proſpect. And the want of this clearneſs of atmoſphere the ſame author lays down as the reaſon why the Greeks came ſo late to the knowledge of *aſtronomy*.

The generality of writers fix the origin of *aſtronomy* and aſtrology in Chaldæa; and accordingly among the ancients we find the word *Chaldæan* frequently uſed for *aſtronomer*.—Some chooſe, however, to attribute the invention to the ancient Hebrews; and ſome, even to the firſt men; building on the authority of Joſephus, and what he mentions about Seth's pillars.

It may be worth noting, though there are no hiſtorical facts to ſupport it, that Rudbeck, in his *Atlantica*, maintains *aſtronomy* to have been invented by the Swedes: his reaſons are, the great diverſity in the length of the days in that country, which muſt naturally lead the people to conclude the earth round, and that they lived near one of its extremes.

By Porphyry's account, *aſtronomy* muſt have been of a very ancient ſtanding in the Eaſt; for he tells us, that when Babylon was taken by Alexander, there were brought thence celeſtial obſervations for the ſpace of 1903 years, which therefore muſt have commenced within 115 years after the flood, or within fifteen years after the building of Babel.—Epigenes, according to Pliny, affirmed that the Babylonians had obſervations of 720 years, engraven on bricks.—Achilles Tatius aſcribes the invention of *aſtronomy* to the Egyptians; and adds, that their knowledge therein was engraven on columns, and by that means tranſmitted to poſterity.

M. Bailly, in his elaborate Hiſtoire de l' Aſtronomie Ancienne, &c. endeavours to trace the origin of *aſtronomy* among the Chaldæans, Egyptians, Perſians, Indians, and Chineſe, to a very early period. He maintains, that it was cultivated in Egypt and Chaldæa 2800 years before the Chriſtian æra; in Perſia, 3209; in India, 3101; and in China, 2952 years before this æra: he alſo apprehends, that *aſtronomy* had been ſtudied long before this diſtant period, and that we are only to date its revival from thence.

From the Egyptians, *aſtronomy* is commonly ſuppoſed to have paſſed to the Greeks: Laertius tells us, that Thales, firſt, about the ninetieth Olympiad, and after him Eudoxus and Pythagoras, travelled into Egypt, to be inſtructed in this ſcience; and that this laſt, in particular, living in a cloſe community with the Egyptian prieſts for ſeven years, and being initiated into their religion, was inſtructed in the true ſyſtem of the univerſe; which he afterwards taught in Greece and Italy.—He was the firſt, among the Europeans, who taught that the earth and planets turn round the ſun, which ſtands immoveable in the centre: that the diurnal motion of the ſun and fixed ſtars is not real, but apparent, ariſing from the earth's motion round its own axis, &c.—Diogenes Laertius ſays, that Pythagoras taught that the world was round, containing the earth in the middle of it; and that Philolaus firſt maintained, that the earth moved in a circle.

Yet Vitruvius repreſents the introduction of *aſtronomy* into Greece, ſomewhat differently: maintaining, that Beroſus, a Babylonian, brought it thither immediately from Babylon itſelf; and opened an *aſtronomical* ſchool in the iſland of Cos. Pliny, lib. vii. cap. 37. adds, that, in conſideration of his wonderful predictions, the Athenians erected him a ſtatue in the *gymnaſium*, with a gilded tongue.—If this Beroſus be the ſame with the author of the Chaldee hiſtories, he muſt have been before Alexander.

After Pythagoras, *aſtronomy* ſunk into neglect; moſt of the celeſtial obſervations brought from Babylon were loſt; and it was but a very ſmall number that Ptolemy, in his time, was able to retrieve. However, ſome few of his followers continued to cultivate *aſtronomy*; among whom were Philolaus and Ariſtarchus Samius; the latter of whom expreſly affirms, that the fixed ſtars and the ſun remain immoveable, and that the earth is carried in a circle round the ſun, placed in the middle of its courſe. Nor is there any ſatisfactory evidence, though many claims have been ſet up, that the true ſyſtem was underſtood or propoſed before his time. Archimed. Aren. ed. Oxon. 1676.

At length, thoſe patrons of learning, the Ptolemies, kings of Egypt, founding an academy of *aſtronomy* at Alexandria, there aroſe ſeveral eminent *aſtronomers* from it; particularly Hipparchus, who, according to Pliny, undertook what would have been a great work even for a god to atchieve, viz. to number the ſtars, and leave the heavens as an inheritance to poſterity: he foretold the eclipſes both of the ſun and moon for 600 years; and on his obſervations is founded that noble work of Ptolemy, intitled Μεγαλη Συνταξις.

The Saracens, on their conqueſt of Egypt, got a tincture of *aſtronomy*, which they carried with them out of Africa into Spain; and by this means, *aſtronomy*, after a long exile, was at length introduced afreſh into Europe.

From this time, *aſtronomy* began to improve very conſiderably, being cultivated by the greateſt geniuſes, and patronized by the greateſt princes.—Alphonſus, king of Caſtile, enriched it with thoſe tables which ſtill bear his name. See TABLE.

Copernicus re-eſtabliſhed the ancient Pythagorean ſyſtem; and Tycho Brahe publiſhed a catalogue of 770 fixed ſtars, from his own obſervations.

Kepler, from Tycho's labours, ſoon after diſcovered the true theory of the world, and the phyſical laws by which the heavenly bodies move.

Galileo firſt introduced teleſcopes into *aſtronomy*, and by their means diſcovered the ſatellites of Jupiter; the various phaſes of Saturn, the mountains of the moon, the ſpots in the ſun, and its revolution about its axis. See SATELLITE, and TELESCOPE.

Add, that Hevelius, from his own curious obſervations, furniſhed a catalogue of fixed ſtars, much more complete than Tycho's. Huygens and Caſſini diſcovered the ſatellites of Saturn, and his ring. And Gaſſendus, Horrox, Bullialdus, Ward, Ricciolus, Gaſcoign, &c. each contributed very conſiderably to the improvement of *aſtronomy*.

The immortal Newton firſt demonſtrated, from phyſical conſiderations, the great law that regulates all the heavenly motions, ſets bounds to the planets' orbs, and determines their greateſt excurſions from the ſun, and their neareſt approaches to it. It was he firſt taught the world whence aroſe that conſtant and regular proportion obſerved by both primary and ſecondary planets, in their circulation round their central bodies; and their diſtances compared with their periods. He has alſo given us a new theory of the moon, which accurately anſwers all her inequalities, and accounts for them from the laws of gravity and mechaniſm. See NEWTONIAN, and ATTRACTION.

Dr. Halley obliged the world with the *aſtronomy* of comets, and with a catalogue of the ſtars in the ſouthern hemiſphere; and was a very great benefactor to *aſtronomy*, by his obſervations: to which may be added, that he printed a new ſet of aſtronomical tables, more accurate than any before publiſhed.

Mr. Flamſteed upwards of forty years watched the motions of the ſtars; and has given us a great number of curious obſervations of the ſun, moon, and planets; beſides a noble catalogue of 3000 fixed ſtars; which is more than double the number in that of Hevelius.—Nothing ſeemed wanting to *aſtronomy*, but an univerſal and complete theory of the celeſtial *phænomena*, explained according to their true motions, and phyſical cauſes, which has been performed by Dr. Gregory.

ASTRONOMY is ſometimes divided, with reſpect to its different ſtates, into *new* and *old*.

ASTRONOMY, *ancient*, is ſuch as the art ſtood under Ptolemy, and his followers; with all the *apparatus* of ſolid orbs, epicycles, excentrics, deferents, trepidations, &c.

The ancient *aſtronomy* is delivered by Claud. Ptolemy, who died A. D. 147, in his Μεγαλη Συνταξις; tranſlated, in 827, into Arabic; and by G. Trapezuntius into Latin. An epitome of it, for the uſe of learners, was made by Purbachius, and his ſcholar Regiomontanus, in 1550, containing the whole doctrine of the heavenly motions, their magnitudes, eclipſes, &c.—On the model hereof, Albategni, the Arab, compiled another work, on the knowledge of the ſtars, publiſhed in Latin in 1575.

ASTRONOMY, *new*, is ſuch as the art has been ſince Copernicus; by whom thoſe fictitious machines were thrown out; and the conſtitution of the heavens reduced to more ſimple, natural, and certain principles.

The modern *aſtronomy* is delivered by Copernicus, in his ſix books of Celeſtial Revolutions, publiſhed in the year 1566, wherein, by retrieving Pythagoras's and Philolaus's *dogma* of the motion of the earth, he laid the foundation of a juſter ſyſtem: in Kepler's Commentaries of the Motions of Mars, publiſhed in 1609, wherein, in lieu of the circular orbits admitted by all former aſtronomers, he propoſed the elliptic theory; which, in his epitome of the Copernican *aſtronomy*, publiſhed in 1635, he applied to all the planets: in Iſh. Bullialdus's Aſtronomia Philolaica, publiſhed in 1645, wherein he endeavoured to amend Kepler's theory, and render the calculus more exact and geometrical: ſome errors committed by Bullialdus were pointed out by Dr. Seth Ward, in his Inquiry into the Philolaic Aſtronomy, Inquiſitio in Aſtronomiæ Philolaicæ Fundamenta, publiſhed in 1653, and corrected by himſelf in his Foundations of the Philolaic Aſtronomy more clearly explained, in 1657: in Ward's Aſtronomia Geometrica, publiſhed in 1656, wherein a geometrical method is propoſed of computing the planets motions; though not conſiſtent with the true laws of their motions eſtabliſhed by Kepler. The ſame was propoſed the year following by the count de Pagan. The truth is, Kepler himſelf does not ſeem to have been ignorant of it; but he rather choſe to ſet it aſide, as finding it contrary to nature: in Newton's Aſtronomia Britannica, publiſhed in 1657, and Street's Aſtronomia Carolina, in 1661, both upon Ward's hypotheſis: in Vin. Wing's Aſtronomia Britannica, publiſhed in 1669, wherein, proceeding on Bullialdus's principles, he gives juſt examples of all the precepts in practical *aſtronomy*, well accommodated to the capacity of learners.

In Ricciolus's Almageſtum Novum, publiſhed in 1651, we have the ſeveral hypotheſes of all the aſtronomers, ancient as well as modern.—And in Dr. Gregory's Elementa Aſtronomiæ Phyſicæ & Geometricæ, in 1702, the whole modern aſtronomy, as founded on the diſcoveries of Copernicus, Kepler, and Sir Iſaac Newton.—The *Marrow* of the old *aſtronomy* is given by Tacquet; and of the new *aſtronomy* by Whiſton, in his Prælectiones Aſtronomicæ, in 1707. For novices in the art, Mercator's Inſtitutiones Aſtronomicæ, publiſhed in 1676, which contains the whole doctrine, both according to the ancients and moderns; and Dr. Keill's Introductio ad veram Aſtronomiam, in 1718, which only takes in the modern are the beſt calculated: to which might be added, Long's, and Ferguſon's Aſtronomy, of more modern date.

ASTROPECTEN, in *Natural Hiſtory*, a name given by ſome authors, to a ſpecies of STAR-*fiſh*, compoſed of a body, or central *nucleus*, furrowed in the manner of the ſhells of the common ſcallop, and parting into five principal rays, from each of which there iſſue ſeveral tranſverſe proceſſes, covered with a hairy down.

ASTROPODIA; ſee ASTERIA, STAR-*ſtone*.

ASTROSCOPE, ASTROSCOPIUM, a kind of aſtronomical inſtrument, compoſed of two cones, on whoſe ſurface the conſtellations, with their ſtars, are delineated, by means whereof the ſtars may eaſily be known.

The *aſtroſcope* is the invention of Wil. Schukhard, formerly profeſſor of mathematics at Tubingen, who publiſhed a treatiſe expreſly on it, in 1698.

ASTROSCOPIA, from αϛηρ, *ſtar*, and σκοπεω, *I conſider*; the art of obſerving, and examining the ſtars, by means of teleſcopes, in order to diſcover their nature and properties.

Huygens improved this art conſiderably, in his Aſtroſcopia Compendiaria Tubi Optici molimine liberata; where he ſhews how to manage the largeſt glaſſes without help of a tube. See TELESCOPE.

ASTROTHEMATA, in *Aſtrology*, the places or poſitions of the ſtars in a theme of the heavens. Vital. Lex. Math.

ASTROTHESIA, from αϛηρ, and τιθημι, *I place*; is uſed by ſome for a conſtellation, or image in the heavens, compoſed of ſeveral ſtars.

ASTRUM, or ASTRON, a conſtellation, or aſſemblage of ſtars. In which ſenſe it is diſtinguiſhed from *aſter*, which denotes a ſingle ſtar.

Some apply the term in a more particular ſenſe, to the Great Dog, or rather to the great bright ſtar in his mouth. Vital.

ASTURIS, in *Zoology*, a name by which ſome authors have called the *accipiter* PALUMBARIUS, or GOSHAWK. Ray.

ASTYNOMI; ſee AGORANOMUS.

ASYLUM, a ſanctuary, or place of refuge, where a criminal who ſhelters himſelf is deemed inviolable, and not to be touched by any officer of juſtice.

The word is compounded of the privative particle α, and συλαω, *I hurt*; becauſe no perſon could be taken out of an *aſylum* without SACRILEGE.

The firſt *aſylum* was eſtabliſhed at Athens, by the deſcendants of Hercules, to ſhelter themſelves from the fury of his enemies.

The temples, altars, ſtatues, and tombs of heroes, were, anciently, the ordinary retreat of thoſe who found themſelves aggrieved by the rigour of the laws, or oppreſſed by the violence of tyrants: but temples were held the moſt ſacred and inviolable refuge. It was ſuppoſed, that the gods took upon them to puniſh the criminal who thus threw himſelf upon them; and that it would be a great impiety in man to take vengeance out of the hands of the immortals.

The Iſraelites had their cities of refuge, which were of God's own appointment; where the guilty, who had not committed any deliberate crime, found ſafety and protection. As to the heathens, they allowed refuge and impunity, even to the vileſt and moſt flagrant offenders, ſome out of ſuperſtition, and others for the ſake of peopling their cities; and it was by this means, and with ſuch inhabitants, that Thebes, Athens, and Rome, were firſt ſtocked. We even read of *aſylums* at Lyons and Vienne among the ancient Gauls; and there are ſome cities in Germany which ſtill preſerve the ancient right of *aſylum*.

Hence, on the medals of ſeveral ancient cities, particularly in Syria, we meet with the inſcription, ΑΣΥΛΟΙ, to which is added, ΙΕΡΑΙ. This quality of *aſylum* was given them, according to M. Spanheim, in regard to their temples, and of the gods revered by them.

The ſame qualities have alſo been given to deities: thus Diana of Epheſus is called *ασυλος*. Add, that the camp formed by Romulus and Remus was called *aſylum*, and afterwards became a city, in which was a temple erected to the god Aſylæus, Θεος Ασυλαιος.

The emperors Honorius and Theodoſius granting the like immunities to churches, the biſhops and monks laid hold of a certain tract or territory, without which they fixed the bounds of the ſecular juriſdiction: and ſo well did they manage their privileges, that convents, in a little time, became next akin to fortreſſes; where the moſt glaring villains were in ſafety, and braved the power of the magiſtrate.

Theſe privileges, at length, were extended not only to the churches and church-yards, but alſo to the biſhops houſes, whence the criminal could not be removed without a legal aſſurance of life, and an entire remiſſion of the crime. The reaſon of the extenſion was, that they might not be obliged to live altogether in the churches, &c. where ſeveral of the occaſions of life could not be decently performed.

But, at length, theſe *aſyla*, or ſanctuaries, were alſo ſtripped of moſt of their immunities, becauſe they ſerved to make guilt and libertinage more bold and daring. In England, particularly, they were entirely aboliſhed. See SANCTUARY.

ASYLUM, in the *Hiſtory of Inſects*. See GAD-*fly*.

ASYMMETRY, a want of proportion, or correſpondence between the parts of a thing. See SYMMETRY.

The word is derived from the privative *α*, *συν*, *with*, and *μετρον*, *meaſure*, q. d. *without meaſure*.

In *Mathematics*, the term is particularly uſed for what we more uſually call *incommenſurability*; which is when between two quantities there is no common meaſure: as between the ſide, and diagonal of a ſquare. In numbers, ſurd roots, as $\sqrt{2}$, &c. are incommenſurable to rational numbers.

ASYMPTOTE, in *Geometry*, a line which continually approaches nearer and nearer to another; yet will never meet with it, though indefinitely prolonged. See LINE.

The word is compounded of the privative *α*, *συν*, *with*, and *πτοω*, from *πιπτω*, *I fall*; q. d. *incoincident*, or which never meet. Some Latin authors call theſe lines *intactæ*.

Bertinus enumerates divers ſorts of *aſymptotes*; ſome ſtraight, others curve; ſome concave, others convex, &c. and further, propoſes an inſtrument for deſcribing them. Though, in ſtrictneſs, the term *aſymptotes* ſeems appropriated to right lines.

ASYMPTOTES, then, are properly right lines, which approach nearer and nearer to ſome curve, of which they are ſaid to be the *aſymptotes*; but which, though they and their curve were indefinitely continued, would never meet.

Aſymptotes may be conceived as tangents to their curves at an infinite diſtance.

Two curves are alſo ſaid to be *aſymptotical*, when they thus continually approach, without a poſſibility of meeting.

Thus two parabolas, whoſe axes are in the ſame right line, are *aſymptotical* to one another.

Of curves of the ſecond kind, that is, the conic ſections, only the hyperbola has *aſymptotes*, which are two in number, long ago demonſtrated by Apollonius Pergæus.

All curves of the third kind have at leaſt one *aſymptote*; but they may have three; and all curves of the fourth kind may have four *aſymptotes*.

The conchoid, ciſſoid, and logarithmic curve, though not reputed geometrical curves, have each alſo one *aſymptote*.

The nature of *aſymptotes* will be eaſily conceived in the inſtance of the *aſymptote* of a conchoid. Suppoſe MMAM, &c. (*Tab. Analyſis, fig.* 1.) be a part of a conchoid, C its pole, and the right line BD, ſo drawn that the parts QM, EA, OM, &c. of right lines drawn from the pole C, are equal to each other; then will the line BD be an *aſymptote* of the curve: becauſe the perpendicular MI, &c. is ſhorter than MO, and MR than MQ, &c. ſo that the two lines continually approach; yet the points M, &c. and R, &c. can never coincide, ſince there is ſtill a portion of a line to keep them aſunder; which portion of a line is infinitely diviſible, and conſequently muſt be diminiſhed infinitely before it becomes nothing.

ASYMPTOTES *of the* **HYPERBOLA** are thus deſcribed. Suppoſe a right line DE (*Tab. Conics, fig.* 20.) drawn through the vertex A of the hyperbola, parallel to the ordinate M*m*, and equal to the conjugate axis, viz. the part DA, or AE to the ſemi-axis: then, two right lines drawn from the centre C of the hyperbola, through the points D and E, viz. the right lines CF and CG, are *aſymptotes* of the curve.

If the hyperbola GMR (*fig.* 12. N° 2.) be of any kind whoſe nature with regard to the curve, and its *aſymptote*, is expreſſed by this general equation, $x^m y^n = a^{m+n}$; and the right line PM be drawn any where parallel to the *aſymptote* CS, and the parallelogram PCOM, be completed: this parallelogram is to the hyperbolic ſpace PMGB, contained under the determinate line PM, the curve of the hyperbola GM indefinitely continued towards G, and the part PB of the *aſymptote* indefinitely continued the ſame way, as $m-n$ is to n: and ſo if m be greater than n, the ſaid ſpace is ſquareable; but when $m=n$, as it will be in the common hyperbola, the ratio of the foregoing parallelogram to that ſpace is as 0 to 1; that is, the ſpace is infinitely greater than the parallelogram, and ſo cannot be obtained: and when m is leſs than n, the parallelogram will be to the ſpace as a negative number to a poſitive one, and the ſaid ſpace is ſquareable.

ASYMPTOTE *of a logarithmic curve.* If MS (*fig.* 33.) be the logarithmic curve, PR an *aſymptote*, PT the ſubtangent, and MP an ordinate; then will the indeterminate ſpace $RPMS = PM \times PT$; and the ſolid, generated by the rotation of this curve about the *aſymptote* VP, will be half of a cylinder whoſe altitude is equal to the length of the ſubtangent, and the ſemidiameter of the baſe equal to the ordinate QV.

ASYMPTOTES, by ſome, are diſtinguiſhed into various orders.

An *aſymptote* is ſaid to be of the *firſt order*, when it coincides with the baſe of the curvilinear figure: of the *ſecond order*, when it is a right line parallel to the baſe: of the *third order*, when it is a right line oblique to the baſe: of the *fourth order*, when it is a common parabola, that has its axis perpendicular to the baſe: and, in general, of the *order* $r+2$, when it is a parabola, the ordinate of which is always as a power of the baſe, whoſe exponent is r.

The *aſymptote* is oblique to the baſe, when the ratio of the firſt fluxion of the ordinate to the fluxion of the baſe, approaches to an aſſignable ratio, as its limit; but it is parallel to the baſe, or coincides with it, when this limit is not aſſignable.

The determination of the *aſymptotes* of curves, is a curious part of the higher geometry. Mr. de Fontenelle has given ſeveral theorems relating to this ſubject, in his Geometrie de l'Infini. But this matter is treated of with greater accuracy by Mr. Maclaurin, in his Fluxions, book i. chap. 10. where he has been careful to avoid the modern paradoxes concerning infinites and infiniteſimals.

The areas bounded by curves, and their *aſymptotes*, though indefinitely extended, ſometimes have limits to which they may approach, ſo as to differ leſs from thoſe limits, than by any given quantity. This happens in hyperbolas of all kinds, except the firſt, or Apollonian. The ſame is alſo true of the area, compriſed between the logarithmic curve and its *aſymptote*. See LOGARITHMIC *curve*. Thoſe who do not ſcruple to ſuppoſe the curve and its *aſymptote* to be infinitely produced, ſay, that the infinitely extended area becomes equal to its limit.

The *aſymptotical* area in the common or Apollonian hyperbola, and in many other curves, has no limit; and it is uſual to ſay, theſe areas are infinitely great; by which, however, no more is meant, than that the curve, and its *aſymptote*, may be extended, till the ſpace comprehended between them exceeds any given magnitude. Some authors, and Dr. Wallis among the reſt, have talked of ſome of theſe areas, as if they were more than infinite. This happened from an analogy they imagined between poſitive, nothing, and negative, and what is finite, infinite, and more than infinite. See HYPERBOLA.

Solids generated by hyperbolic areas, revolving about their *aſymptotes*, have ſometimes alſo their limits; and ſometimes they may be produced, till they exceed any given ſolid. See Art. 307, 309, of the above mentioned author.

When a curve, and its *aſymptote*, are ſuppoſed to be produced infinitely, and the area, compriſed between them, to revolve about the *aſymptote*, the ſurface generated will be finite, or infinite, according as the area of the generating figure is finite or infinite.

For the *aſymptotes* of curves, deſcribed by the interſections of right lines revolving about given poles, ſee Mr. Maclaurin's Fluxions, art. 313. ſeq.

Asymptote, *parabolic*; ſee Parabolic *aſymptote*.

ASYMPTOTIC *ſpaces*; ſee Hyperbola.

ASYNDETON, a figure in *Grammar*, implying a defect, or want of conjunctions in a ſentence.

The word is derived from the privative α, and συνδεω, *colligo, I bind together*.

As, in the inſtance, *veni, vidi, vici, I came, I ſaw, I conquered*; where the copulative *et, and*, is omitted: or in that of Cicero concerning Catiline, *abiit, exceſſit, evaſit, erupit*: or in that verſe of Virgil,

Ferte citi flammas, date vela impellite remos.

Aſyndeton ſtands oppoſed to *polyſyndeton*, where the copulatives are multiplied.

ATABULUS, in *Phyſiology*, a kind of wind in Apulia, of a dry pinching quality, and very noxious in its effects.

The ancient naturaliſts ſpeak of the *atabulus* in terms of horror, on account of the ravage it made among the fruits of the earth, which it ſcorched, or withered up.

ATAIR; ſee Alcair.

ATAMASCO *lily*, in *Botany*; ſee Amaryllis.

ATANTA, in *Botany*, a name given by the people of Guinea to a kind of *ſumach*, called, by Petiver, RHUS *Guineenſe trifoliatum ſerratum ſcabium*, from its being trifoliate, and having rough and ſerrated leaves. This ſomewhat reſembles the hoary trifoliate African *ſumach* of Plukenet; but it differs in this, that its leaves are edged with prickles, whereas thoſe of Plukenet's kind are only deeply ſinuated. The people of Guinea are very fond of this, for its medicinal virtues; they give it as a reſtorative, boiled in water. Phil. Tranſ. Nº 232.

ATARAXY, a term much uſed by the *Sceptics*, and *Stoics*, to denote that calmneſs, and tranquillity of mind, and that firmneſs of judgment, which ſets us free from any agitations or emotions ariſing from ſelf-opinion, and the knowledge we imagine ourſelves poſſeſſed of.

The word is compounded of αταρ, *but*, and ταξις, *order*.

In this *ataraxy*, they ſuppoſed the ſovereign good, or higheſt bliſs in this life to conſiſt.

ATAXY, a want of order or regularity.

The word is compounded of the privative α, and ταξις, *order*.

Ataxia is chiefly uſed in *Medicine*, where the order of the critical days, or other *phænomena* of a diſeaſe, are inverted.

The phyſicians have frequent recourſe to an *ataxy*, or irregularity of the ſpirits, when at a loſs to account for any diſorder in the body. The ſpirits, Dr. Drake obſerves, being always at hand, are forced to bear the blame of a thouſand things they are innocent of.

ATCHE, in *Commerce*, a ſmall ſilver coin, current in the ſtates of the Grand Seignor, equal to about a third part of the Engliſh penny.

The *atche* is the ſmalleſt coin uſed in Turky; where there is no copper money current, except in the province of Babylon.

Some call the *atche* the little *aſper*: it is ſtamped like the *para*, with Arabic characters. Three or four *atches* are commonly given in exchange for the *para*.

ATCHIEVEMENT, in *Heraldry*, the coat of arms of any perſon, or family, duly marſhalled, with its external ornaments, or ſupporters, helmet, wreath, creſt, and motto.

The word is formed of the French, *achevement, finiſhing, conſummation, perfection*.

Such are thoſe uſually hung out on the fronts of houſes after the death of ſome conſiderable perſon, now corruptly called *hatchments*.

ATEGAR, a weapon among the Saxons, which ſeems to have been a hand-dart. The word comes from the Saxon *aëton, to fling*, or *throw*, and *gar, a weapon*.

ATELLANÆ, in *Antiquity*, a kind of comic and ſatiric pieces, preſented on the Roman theatre; ſomewhat leſs ludicrous than the farces on the Engliſh ſtage, and yet leſs grave and ſerious than the Greek and Latin comedies and tragedies.

The *Atellanæ*, or *fabulæ Atellanæ* of the Romans, anſwered to the *ſatyræ* among the Greeks.

They were thus called from *Atella*, a city of Tuſcany, where they were firſt repreſented; and from whence, on account of their mirth and humour, they were introduced into Rome. But they became at length ſo licentious, and impudent, that the ſenate was obliged to ſuppreſs them.

ATELEIA, denotes an exemption from tribute, taxes, or other burdens.

Ατελεια λειτυργηματων, is particularly uſed, in ſome *Ancient Laws*, for an exemption from offices, granted the Egyptian clergy by Conſtantius.

ATH, Atha, or Athe, among our Anglo-Saxon anceſtors, ſignifies an *oath*, eſpecially that taken by way of purgation.

In this ſenſe we meet with breaking of *ath*, privilege of *ath, atha*, and *ordela*.

ATHAMADULET, or Athemadaulet, the prime, or chief miniſter in the Perſian empire.

The *athamadulet* is much the ſame with the grand viſier in Turky; excepting that he has not the command of the army, which the viſier has.

The *athamadulet* is great chancellor of the kingdom, preſident of the council, ſuperintendant of the finances; and has the charge of all foreign affairs. He is in effect viceroy, or adminiſtrator of the kingdom: he iſſues the king's mandates, or orders, in this ſtyle, *Bende derga ali il alia etmadaulet*, that is, *I, who am the ſupport of the power, the creature of this port, the higheſt of all ports, &c.*

ATHAMANTA, in *Botany*; ſee Spignel.

ATHANASIA, among the *Ancient Phyſicians*, an epithet given to a kind of antidotes, ſuppoſed to have the power of prolonging life, even to immortality.

In the Auguſtan diſpenſatory, we ſtill find a medicine under the appellation of *athanaſia magna*, commended againſt dyſenteries and hæmorrhages.

Athanasia, in *Botany*, is uſed by ſome authors for TANZY.

ATHANASIAN *Creed*. See Creed, Trinity, and Trinitarians.

ATHANATI, an order of ſoldiers among the ancient Perſians.

The word is Greek, and ſignifies *immortal*; being compounded of the privative α, and ϑανατος, *death*.

The *athanati* were a body of cavalry, conſiſting of ten thouſand men, always complete, becauſe, when any one of them died, another was immediately put into his place.—It was for this reaſon that they were called *athanati* by the Greeks, by the Latins *immortales*.

ATHANOR, in *Chemiſtry*, a large immoveable furnace, built of brick and earth, and covered with a tower at the top; proper to maintain a temperate and equal degree of heat, for a conſiderable time.

The word *athanor* is borrowed from the Arabs, who call an oven *tanneron*, from the Hebrew תנור, *tannour, an oven, or furnace*: whence, with the additional particle *al*, אלתנור, *altannour*, &c.—Others chooſe to derive the name from αθανατος, *immortal*, becauſe of its durable fire.

The heat of the *athanor* is increaſed or diminiſhed by opening or ſhutting a regiſter. It is made to communicate its heat by tubes, or apertures, at the ſide of the hearth, or fire-place, to ſeveral adjacent veſſels; by which means different operations are carried on at the ſame time.

The *athanor* is alſo called *piger Henricus, ſlow Harry*; becauſe chiefly uſed in the ſlower operations; and becauſe, when once filled with coals, it keeps burning a long time; whence the Greeks call it ακηδης, q. d. *giving no trouble*, as it does not need to be continually attended.—It is alſo called the *philoſophical furnace*, or *furnace of arcana*; ſometimes *uterus chymicus*, or *ſpagiricus*, and, popularly, the *tower furnace, furnus turritus*.

The *lamp* FURNACE, which is a true *athanor*, may be ſucceſsfully uſed in operations which do not require much heat.

ATHEIST, a perſon who does not believe the exiſtence of a God, nor a Providence; and who has no religion, true, or falſe.

The word is derived from the privative α, and Θεος, *God*.

In general, a man is ſaid to be an *atheiſt*, who owns no being ſuperior to nature, that is, to men, and the other ſenſible beings in the world.

In this ſenſe, Spinoſa may be ſaid to be an *atheiſt*; and it is an impropriety to rank him, as the learned commonly do, among *deiſts*; ſince he allows of no other God beſide nature, or the univerſe, of which mankind makes a part; and there is no *atheiſt* but allows of the exiſtence of the world, and of his own exiſtence in particular.

Plato diſtinguiſhes three kinds of *atheiſts*.—Some, who deny, abſolutely, that there are any gods; others, who allow the exiſtence of gods, but maintain that they do not concern themſelves with human affairs, and ſo deny a Providence; and others, who believe there are gods, but think they are eaſily appeaſed, and that they may remit the greateſt crimes for the ſmalleſt ſupplication.

Some diſtinguiſh *ſpeculative atheiſts*, or thoſe who are ſo from principle, and theory—from *practical atheiſts*, whoſe wicked lives lead them to believe, or rather to wiſh, that there were no God.

Cicero repreſents it as a probable opinion, that they who apply themſelves to the ſtudy of *philoſophy* believe there are no gods.—This muſt, doubtleſs, be meant of the *academic philoſophy*, to which Cicero himſelf was attached, and which doubted of every thing: on the contrary, the *Newtonian philoſophers* are continually recurring to a Deity, whom they always find at the end of their chain of natural cauſes. Some foreigners have even charged them with making too much uſe of the notion of a God in *philoſophy*, contrary to the rule of Horace:

Nec Deus interſit, niſi dignus vindice nodus.

Among us, the philoſophers have been the principal advocates for the exiſtence of a Deity. Witneſs the writings of Sir Iſaac Newton, Boyle, Ray, Cheyne, Nieuwentyt, &c. To which may be added divers others, who, though of the clergy (as was alſo Ray), yet have diſtinguiſhed themſelves by their philoſophical pieces, in behalf of the exiſtence of a God; e. gr. Derham, Bentley, Whiſton, Samuel and John Clarke, Fenelon, &c. So true is that ſaying of Lord Bacon, that though a ſmattering of philoſophy may lead a man into *atheiſm*, a deep draught will certainly bring him back again to the belief of a God and Providence.

ATHELING, among our Saxon anceſtors, was a title of honour properly belonging to the heir apparent, or preſumptive to the crown.

The word is formed from the Saxon *ætheling*, of *æthel*, *noble*.—It is ſometimes alſo written *adeling*, *edling*, *ethling*, and *etheling*.

King Edward the Confeſſor, being without iſſue, and intending to make Edgar, to whom he was great uncle by the mother's ſide, his heir, firſt gave him the honourable appellation of *Atheling*.

Antiquaries obſerve, that it was frequent among the Saxons to annex the word *ling* or *ing* to a Chriſtian name, to denote the ſon, or younger; as *Edmundling*, for the ſon of Edmund; *Edgaring*, for the ſon of Edgar: on which footing ſome have thought *Atheling* might primarily import the ſon of a nobleman, or prince.—But, in reality, *Atheling*, when applied to the heir of the crown, ſeems rather to denote a perſon endowed with noble qualities, than the ſon of a nobleman, and correſponds to the *nobilis Cæſar* among the Romans.

ATHENA, in the *Ancient Phyſic*, a plaſter, or liniment, commended againſt wounds of the head and nerves, of which we find deſcriptions given by Oribaſius, Ælius, and Ægineta.

ATHENÆA, a feaſt of the ancient Greeks, held in honour of Minerva, who was called Αθηνη.

Theſe were afterwards called PANATHENÆA.

ATHENÆUM, in *Antiquity*, a public place wherein the profeſſors of the liberal arts held their aſſemblies, the rhetoricians declaimed, and the poets rehearſed their verſes.

The word is derived from *Athens*, a learned city, where many of theſe aſſemblies were held; or from the name of Pallas, Αθηνη, *goddeſs of Science*; intimating, that *Athenæum* was a place conſecrated to Pallas, or ſet apart for the exerciſes over which ſhe preſides.

The *Athenæa* were built in form of amphitheatres; and were all encompaſſed with ſeats, which Sidonius calls *cunei*.

The three moſt celebrated *Athenæa* were thoſe at Athens, at Rome, and at Lyons; the ſecond of which, according to Aurelius Victor, was built by the emperor Adrian.

ATHENATORIUM, among *Chemiſts*, a thick glaſs cover, placed on a cucurbit, having a ſlender umbo, or prominent part, which enters like a ſtopple, within the neck of the cucurbit.

ATHENIPPUM, in the *Ancient Phyſic*, a collyrium, commended againſt divers diſeaſes of the eyes; thus denominated from its inventor Athenippus.

Its deſcription is given by Scribonius Largus, and by Gorræus after him.

Galen mentions another *athenippum*, of a different compoſition, by which it appears, this was a denomination common to ſeveral collyriums.

ATHERINA, in *Ichthyology*, a name given by Rondeletius, and ſome other authors, to the *hepſetus*, or *anguella*, a ſmall fiſh, common on the ſhores of the Mediterranean; but by Bellonius appropriated to a fiſh of a different genus. It is of the order of *abdominales* in the Linnæan arrangement, and comprehends two ſpecies, viz. the *hepſetus* and *menidia*; the latter of which is found in the freſh waters of Carolina, and is called by Garden, *ſilver-fiſh*.

ATHEROMA, in *Medicine*, a kind of tumour, of a pappy conſiſtence, without pain, or diſcolouring the ſkin.

The *atheroma* is contained in a *cyſtis*, or membranous bag; and does not give way when touched with the finger, nor retain any dent after preſſure.

The *atheroma* is thus called from αθηρα, a kind of pap, or pulp, which the matter of this tumour reſembles.—It is near akin to the *meliceres* and *ſteatoma*; and is cured, like them, by ſection.

ATHLETÆ, in *Antiquity*, perſons of ſtrength and agility, diſciplined to perform in the public games.

The word is formed from αθλος, *certamen*, *combat*; whence alſo αθλον, *the prize*, or *reward* adjudged the victor.

Under *athletæ* were comprehended wreſtlers, boxers, runners, leapers, throwers of the diſk, and thoſe practiſed in other exerciſes, exhibited in the Olympic, Pythian, and other ſolemn ſports; for the conquerors in which, there were eſtabliſhed prizes.

From the five uſual exerciſes, the *athletæ* were alſo denominated πενταθλοι, and by the Latins *quinquertiones*; at leaſt ſuch as profeſſed them all.

ATHLETIC *crown*; ſee CROWN.

ATHLETIC *habit*, denotes a ſtrong hale conſtitution of body, which was the object the *athletæ* aimed at, and to which their diet correſponded.

ATHLETIC *weight*; ſee WEIGHT.

ATHLIPTOS, in *Medicine*, from α negative, and θλιβειν, *to preſs*. *Uncompreſſed* αθλιπτος εισβολη, as Galen ſays, is an expreſſion uſed by ſome to ſignify the approach of a feveriſh paroxyſm without compreſſions.

ATHLOTHETA, in *Antiquity*, an officer appointed to ſuperintend the public games, and adjudge the prizes.

The *athlotheta* was the ſame with what was otherwiſe called *æſymneta*, *brabeuta*, *agonarcha*, *agonotheta*, &c.

ATHNACH, the name of one of the principal of the Hebrew ACCENTS, which ſerves not only to regulate the voice, but to diſtinguiſh the numbers of a ſentence, whence its name *athnach*, i. e. *reſpiratio*: on this account it is called *king* and *pauſe*, and anſwers to our colon, and ſometimes to a note of interrogation: it is marked under a letter thus (‸).

ATHWART, in *Navigation*, is ſynonymous with acroſs the line of the courſe.

ATHWART *the fore-foot*, is a phraſe that denotes the flight of a cannon-ball from one ſhip acroſs the courſe of another, to intercept the latter, and oblige her to ſhorten ſail, that the former may come near enough to examine her.

ATHWART-*hauſe*, expreſſes the ſituation of a ſhip, when ſhe is driven by wind or tide, or any other accident, acroſs the fore-part of another.

ATHWART-*ſhips*, reaching acroſs ſhips from one ſide to the other.

ATIA; ſee ODIO *et* ATIA.

ATIBAR; thus the inhabitants of the kingdom of Gago, in Africa, call gold-duſt; from which word the Europeans, and eſpecially the French, have compoſed the word *tibir*, which alſo ſignifies gold-duſt among thoſe who trade in that commodity.

ATINGA GUACU MUCU, in *Zoology*, the name of a Braſilian bird of the ſtarling kind. It reſembles the thruſh in ſize. See *Tab. of Birds*, N° 31.

ATIZOE, in the writings of the *Ancient Naturaliſts*, a name of a ſtone uſed in the conſecration and anointing of kings. Pliny deſcribes it to have been of a lenticular figure, and of the ſize of three fingers, of a bright ſilvery colour, and of a pleaſant ſmell. He ſays it was found in India, and in ſome other places. Agricola is of opinion, it was a kind of bitumen.

ATLANTIC *Ocean*; ſee OCEAN.

ATLANTIDES, in *Aſtronomy*, a denomination given to the Pleiades, or ſeven ſtars, ſometimes alſo called *vergiliæ*. They are thus called, as being ſuppoſed by the poets to have been the daughters either of Atlas, or his brother Heſperus, who were tranſlated into heaven.

ATLANTIS, in *Antiquity*, an iſland ſpoken of by Plato, and many other writers, under ſome extraordinary circumſtances; and rendered famous by a controverſy among the moderns, concerning its place and exiſtence. The *Atlantis* took its name from Atlas, Neptune's eldeſt ſon, who, they tell us, ſucceeded his father in the government of it.

The moſt diſtinct account of this celebrated country is given us in Plato's Timæus and Critias; which amounts, in a few words, to what follows. "The *Atlantis* was a large iſland in the Weſtern ocean, ſituate before, or oppoſite to, the ſtreights of Gades. Out of this iſland there was an eaſy paſſage into ſome others, which lay near a large continent, exceeding all Europe and Aſia. Neptune ſettled in this iſland, which he diſtributed among his ten ſons: to the youngeſt fell the extremity of the iſland called *Gadir*, which in the language of the country ſignifies *fertile*, or *abundant in ſheep*. The deſcendants of Neptune reigned here from father to ſon, for a great number of generations, in the order of primogeniture, during the ſpace of 9000 years. They alſo poſſeſſed ſeveral other iſlands; and paſſing into Europe and Africa, ſubdued all Lybia as far as Egypt, and all Europe to Aſia Minor. At length the iſland ſunk under water; and, for a long time afterwards, the ſea thereabouts was full of flats and ſhelves."

The learned Rudbeck, profeſſor in the univerſity of Upſal, in an expreſs treatiſe, intitled, Atlantica, ſive Manheim, maintains, very ſtrenuouſly, that Plato's *Atlantis* is Sweden and Norway; and attributes to his country, whatever the ancients have ſaid of their *Atlantis*, or *Atlantic* iſland.—Others will have America to be the *Atlantis*; and hence infer, that the new world was not unknown to the ancients: but what Plato ſays, does by no means ſupport this ſuppoſition. America ſhould rather ſeem to be the vaſt continent beyond the *Atlantis*, and the other iſlands mentioned by Plato.

Kircher, in his Mundus Subterraneus; and Beckman, in his Hiſtory of Iſlands, chap. 5. advance the moſt probable opinion.—The *Atlantis*, according to them, was a large iſland which extended from the Canaries to the Azores; and theſe iſlands are the remains thereof not ſwallowed up by the ſea.

Atlantis, *New*, is the name of a fictitious, philoſophical commonwealth, of which a deſcription has been given by lord Bacon.

The *New Atlantis* is ſuppoſed to be an iſland in the South-ſea, to which the author was driven, in a voyage from Peru to Japan. The compoſition is an ingenious fable, formed after the manner of the Utopia of Sir Thomas More, or Campanella's City of the Sun. Its chief deſign is to exhibit a model or deſcription of a college, inſtituted for the interpretation of nature, and the production of great and marvellous works, for the benefit of men, under the name of Solomon's houſe, or the college of the ſix days work. Thus much, at leaſt, is finiſhed; and with great beauty and magnificence. The author propoſed alſo a frame of laws, or of the beſt ſtate or mould of a commonwealth. But this part is not executed. Bac. Works, tom. iii. p. 235.

ATLAS, in *Geography*, a celebrated mountain in Africa, which is ſo high, that it ſeems to bear the heavens. Hence the fable, in which *Atlas*, the king of this country, is ſaid to bear the heavens on his ſhoulders: thus he is repreſented in the famous ſtatue at the Farneſe palace at Rome.

Atlas, in *Architecture*, is a name given to thoſe figures, or half-figures of men, ſometimes uſed inſtead of columns, or pilaſters; to ſupport any member of architecture, as a balcony, or the like.

Theſe are otherwiſe called TELAMONES.

Atlas, in *Anatomy*, the name of the firſt *vertebra* of the neck, which ſupports the head. See *Tab. Anat. (Oſteol.) fig.* 6.

The *atlas* has no ſpinal *apophyſes*; becauſe the motions of the head do not turn on this *vertebra*, but on the ſecond. As it is obliged to turn about as often as the head moves round, had there been any ſpinal *apophyſes*, it would have incommoded the motion of the muſcles in the extenſion of the head.—It is alſo of a finer and firmer texture than the other *vertebræ*; and differs farther from them, in that thoſe receive at one end, and are received at the other; whereas this receives at both extremes; for two eminences of the *occiput* are inſerted within its two upper cavities, which makes its articulation with the head: and, at the ſame time, two other eminences of the ſecond *vertebra* are received within its two lower cavities, by means of which they are articulated together.

Atlas is alſo a title given to books of univerſal geography, containing maps of the known parts of the world; as if they were viewed from the top of that celebrated mountain, which the ancients eſteemed the higheſt in the world; or rather on account of their holding the whole world like *Atlas*.

Atlas, in *Commerce*, a ſilk ſattin manufactured in the Eaſt Indies.

It muſt be owned that the manufacture of theſe ſilks is wonderful, eſpecially of the flowered *atlaſſes*; in which the gold and ſilk are worked together in ſuch a manner, as no workman in Europe can imitate: yet they are far from having that fine gloſs and luſtre, which the French know how to give their ſilks.

In the Chineſe manufactures of this ſort, they gild paper on one ſide with leaf gold, then cut it into long ſlips, and weave it into their ſilks; which makes them with very little coſt look very rich and fine. The ſame long ſlips are twiſted or turned about ſilk threads ſo artificially, as to look finer than gold thread, though it be of no great value.

Atlas, a ſpecies of beetle.

ATMOSPHERE, an appendage of our earth; conſiſting of a thin, fluid, elaſtic ſubſtance, called *air*, which ſurrounds the terraqueous globe to a conſiderable height, gravitates towards its centre, on its ſurface, is carried along with it round the ſun, and partakes of all its motions both annual and diurnal.

By *atmoſphere* is uſually underſtood the whole maſs, or aſſemblage of ambient air: though, among ſome of the more accurate writers, the *atmoſphere* is reſtrained to that part of the air next the earth, which receives vapours and exhalations, and refracts the rays of light.

The farther or higher ſpaces, though perhaps not wholly deſtitute of air, are ſuppoſed to be poſſeſſed by a finer ſubſtance called *ether*, and are hence called *etherial regions*.

The word is formed of ατμος, *vapour*, and σφαιρα, *a ſphere*. See Ether and Heavens. And for the nature, conſtitution, properties, and different ſtates and uſes of the *atmoſphere*, ſee the article Air.

A late eminent author conſiders the *atmoſphere* as a large chemical veſſel, wherein the matter of all the kinds of ſublunary bodies is copiouſly floating; and thus expoſed to the continual action of that immence ſurface the ſun; whence proceed innumerable operations, ſublimations, ſeparations, compoſitions, digeſtions, fermentations, putrefactions, &c.

We have a large apparatus of inſtruments, contrived for indicating and meaſuring the ſtate and alterations of the *atmoſphere*; as ANEMOMETERS, BAROMETERS, HYGROMETERS, MANOMETERS, THERMOMETERS, &c.

The *atmoſphere* inſinuates itſelf into all the vacuities of bodies; and thus becomes the great ſpring of moſt of the mutations here below; as GENERATION, CORRUPTION, DISSOLUTION, &c.

It is one of the great diſcoveries of the modern philoſophers, that the ſeveral motions attributed by the ancients to a *fuga vacui*, are really owing to the PRESSURE of the *atmoſphere*.

Galileo, having obſerved that there was a certain ſtandard altitude, beyond which no water could be elevated by pumping, took an occaſion from thence to call in queſtion the doctrine of the ſchools, which aſcribed the aſcent of water in pumps, to the *fuga vacui*, and in the room thereof he happily ſubſtituted the hypotheſis of the air's preſſure and gravitation. It was to him, indeed, little better than an hypotheſis, ſince it had not then thoſe confirmations from experiments, which were afterwards found out by his ſcholar Torricellius, and other ſucceeding philoſophers, particularly Mr. Boyle.

Atmosphere, *the electricity of it.* Beſide thoſe large quantities of the electric matter, with which the clouds are charged in a thunder-ſtorm, it has been obſerved, firſt by M. Monnier in 1752, and afterwards repeatedly and with peculiar attention by others, that the *atmoſphere* is ſeldom or ever wholly deſtitute of the electrical fluid; but the quantity is moſt conſiderable, and may moſt eaſily be drawn from the air, when it is in its drieſt ſtate. A perſon electrified negatively may ſatisfy himſelf of this, by extending his arm in the open air, and preſenting a long ſharp needle with its point upwards; for the electric matter collected from the remoter air will appear luminous, as it converges to the point of the needle. Mr. Canton's balls are likewiſe an excellent contrivance for the ſame purpoſe, and may be made uſe of, not only for determining the electricity of the *atmoſphere* in general, but the poſitive or negative quality of it. But there is no electrician, whoſe obſervations in this way have been conducted with greater accuracy, and farther purſued, than S. Beccaria. From him we learn, that the *atmoſphere* diſcovers no ſigns of electricity in windy and clear weather, nor in moiſt weather without rain, nor when the ſky is covered with diſtinct and black clouds with a ſlow motion; but he always obſerved a moderate, though interrupted electricity, for the moſt part of the poſitive kind, in a clear ſky when the weather was calm, and in rainy weather without lightning, a little before the rain fell, and during the continuance of it, till the rain was almoſt over. And the electricity was ſtronger, as his rods were higher, and the ſtrings which were extended and inſulated in the open air were longer. Beccaria's Eſſay on Atmoſpheric Electricity, annexed to the Engliſh tranſlation of his Artificial Elect. p. 421, &c. See LIGHTNING, RAIN, VAPOURS, &c.

ATMOSPHERE, *figure of it.* The *atmoſphere* envelops all parts of the ſurface of our globe; if therefore both the one and the other continued at reſt, and were not endowed with a diurnal motion round their axis, then the *atmoſphere* would be exactly ſpherical, according to all the laws of gravity; for all the points of the ſurface of a fluid in a ſtate of reſt, muſt be equally removed from its center. But the earth and the ambient *atmoſphere* are inveſted with a diurnal motion, which carries both the one and the other round their axis. As the different parts of the earth have a centrifugal force, the tendency of which is more conſiderable, and that of the centripetal leſs, as the parts are more remote from the axis; the figure of the *atmoſphere* muſt become an oblate ſpheroid; becauſe the parts that correſpond to the equator, are farther removed from the axis, than the parts which correſpond to the poles.

Beſides, the *figure* of the *atmoſphere* muſt repreſent a ſpheroid, becauſe the ſun ſtrikes more directly the *air* which encompaſſes the equator, and is comprehended between the two tropics, than that which pertains to the polar regions. Whence it follows, that the maſs of *air*, or part of the *atmoſphere*, adjoining to the poles, being leſs heated, cannot expand ſo much, nor reach ſo high. Nevertheleſs, as the ſame force which contributes to elevate the *air*, diminiſhes its preſſure on the ſurface of the earth, higher columns of it at or near the equator, all other circumſtances being the ſame, may be no heavier than thoſe that are lower at or near the poles.

ATMOSPHERE, *weight of it.* Organical bodies are peculiarly affected by this preſſure: to this, in part, plants owe their VEGETATION; and animals their RESPIRATION, CIRCULATION, NUTRITION, &c.

To this alſo we owe ſeveral conſiderable alterations in the animal œconomy, with regard to health, life, diſeaſe, &c. See AIR.

And hence, a calculation of the preciſe quantity of this preſſure becomes a point worthy of attention.—Our bodies, then, are equally preſſed on by the incumbent *atmoſphere*; and the weight they ſuſtain is equal to a cylinder of air, whoſe baſe is equal to the ſuperficies of our bodies.—Now, a cylinder of air of the height of the *atmoſphere*, when greateſt, is known to be equal to a cylinder of water of the ſame baſe, and 35 feet high; or a cylinder of mercury $30\frac{1}{2}$ inches, as appears from the Torricellian experiment; as alſo from the height to which water aſcends in pumps, ſyphons, &c.

Hence it follows, that every foot ſquare of the ſurface of our bodies, is preſſed by a weight of air equal to 35 cubical feet of water, or $30\frac{1}{2}$ cubical inches of mercury; and a cubical foot of water being found by experiment to weigh $62\frac{1}{2}$ pounds, the compaſs of a foot ſquare upon the ſurface of our bodies, ſuſtains a quantity of air equal to $2187\frac{1}{2}$ pounds; for $02\frac{1}{2} \times 35$ is $=2187\frac{1}{2}$: and ſo many feet ſquare as the ſurface of our bodies contains, ſo many times $2187\frac{1}{2}$ pounds does that body bear.

Hence, if a man's body contain 15 ſquare feet, which is near the truth, he will ſuſtain a weight equal to $32812\frac{1}{2}$ pounds; which is above $14\frac{1}{2}$ tons for the greateſt load, or the weight of air when it is the heavieſt.

Mr. Cotes has given us a computation of the *weight* of all the air which preſſes upon the whole ſurface of the earth. He finds this weight to be equal to that of a globe of lead of ſixty miles diameter. The computation proceeds on theſe principles: That the weight of a column of air, reaching to the top of the *atmoſphere*, is moſt commonly equal to a column of water, having the ſame baſis, and the altitude of 34 feet; that the ſemi-diameter of the earth is equal to 20,949,655 feet; and that the ſpecific gravity of water is to that of lead as 1000 to 11,325. Cotes Hydroſt. Lect. p. 112.

By an eaſy calculation, ſuppoſing a column of mercury $29\frac{1}{2}$ feet high at the mean denſity of the *atmoſphere*, and one inch thick, to weigh 15 pounds, there will be a preſſure on every ſquare foot of $144 \times 15 = 2160$ pounds: on the ſurface of a body of 15 ſquare feet, 32400lb or more than $14\frac{1}{2}$ tons. And as the earth's ſurface contains in round numbers 200,000,000 ſquare miles, and every ſquare mile 27,878,400 ſquare feet; there muſt be 5,575,680,000,000,000 ſquare feet on the earth's ſurface; which multiplied by 2160 pounds, the preſſure on a ſquare foot, gives 12,043,468,800,000,000,000 pounds for the preſſure or weight of the whole *atmoſphere*.

The difference of the weight of the air which our bodies ſuſtain at one time more than at another, is alſo very great.

The whole weight of air which preſſes upon our bodies when the mercury is higheſt in the barometer, is equal to $32812\frac{1}{2}$ pounds. Whence the difference between the greateſt and the leaſt preſſure of air upon our bodies, may be proved to be equal to $3280\frac{1}{2}$ pounds.

The difference of the air's weight, at different times, is readily meaſured by the different height to which the mercury is raiſed in the barometer; and the greateſt variation of the height of the mercury being three inches, a column of air of any aſſignable baſe equal to the weight of a cylinder of mercury of the ſame baſe, and of the altitude of three inches, will be taken off from the preſſure upon a body of an equal baſe, at ſuch times as the mercury is three inches lower in the barometer; ſo that every inch ſquare of the ſurface of our bodies is preſſed upon at one time more than another, by a weight of air equal to the weight of three cubical inches of mercury.

Now a cubical foot of water being $62\frac{1}{2}$ pounds, a cubical foot of mercury is 875 pounds = 5040000 grains; and as 5040000 grains are to a cubical foot, or 1728 cubical inches, ſo are 2916 grains to one cubical inch; therefore a maſs of mercury of a foot ſquare = 144 ſquare inches, and three inches high, muſt contain 432 cubical inches of mercury, which multiplied by 2916, the number of grains in a cubical inch of mercury, gives 1259712 grains. And this weight does a foot ſquare of the ſurface of our bodies ſuſtain at one time more than at another.

Suppoſe again the ſurface of the human body = 15 feet ſquare, then would the body ſuſtain at one time more than at another a weight $= 15 \times 1259712$ grains = 18895680 grains = 3280 pounds 6 ounces, which is near $1\frac{1}{2}$ ton.

Hence, it is ſo far from being a wonder, that we ſometimes ſuffer in our health by a change of weather, that it is the greateſt wonder we do not ſuffer oftener and more by ſuch changes.—For when we conſider, that our bodies are ſometimes preſſed upon by near a ton and a half weight more than at another, and that the variation of the additional preſſure of many pounds, is often very ſudden; it is ſurpriſing that every ſuch change does not entirely break the frame of our bodies to pieces.

In effect, the veſſels of our bodies being ſo much ſtraitened, by an increaſed preſſure, would ſtagnate the blood, and the circulation would quite ceaſe, if nature had not wiſely contrived, that, when the reſiſtance to the circulating blood is greateſt, the *impetus* by which the heart contracts ſhould be ſo too.—For, upon an increaſe of the weight of the air, the lungs will be more forcibly expanded, and thereby the blood will be more intimately broken and divided, ſo that it becomes fitter for the more fluid ſecretions, ſuch as that of the nervous fluid; by which the HEART will be more ſtrongly contracted. And the blood's motion towards the ſurface of the body being obſtructed, it will paſs in greater quantity to the brain, where the preſſure of the air is taken off by the *cranium*; upon which account alſo, more ſpirits will be ſeparated, and the heart on that account too be more enabled to carry on the CIRCULATION, through all paſſable canals; whilſt ſome others, towards the ſurface, are obſtructed.

The moſt conſiderable alteration made in the blood, upon the air's greater or leſſer preſſure on the ſurface of our bodies, is its rendering the blood more or leſs compact, and making it croud into a leſs, or expand into a greater ſpace, in the veſſels which it enters.—For the air contained in the blood always keeps itſelf *in æquilibrio* with the external air that preſſes upon our bodies; and this it does by a conſtant *niſus* to unbend itſelf, which is always proportionable to the compreſſing weight by which it was bent: ſo that if the compreſſion of weight of the circumambient air be ever ſo little abated, the air contained within the blood unfolds its ſpring, and forces the BLOOD to take up a larger ſpace than it did before.

The reaſon we are not ſenſible of this preſſure is explained in the following manner by Borellus, De Mot. nat. a grav. fac. prop. 29, &c. After ſaying that ſand, perfectly rammed in a hard veſſel, is not capable, by any means, of being penetrated or parted, not even by a wedge; and likewiſe that water, contained in a bladder compreſſed equally on all ſides, cannot yield or give way in any part; he proceeds, “ In like manner,
“ within the ſkin of an animal are contained a diverſity
“ of parts, ſome hard, as bones; others ſoft, as muſ-
“ cles, nerves, membranes, &c. others fluid, as blood,
“ fat, &c. Now it is not poſſible the bones ſhould be
“ broke or diſplaced in the body, unleſs the weight lay
“ heavier on one part than on another, as we ſome-
“ times ſee in porters. If the preſſure be ſubdivided,
“ ſo that it lie equally all around, upwards, downwards,
“ and ſideways, and no part of the ſkin be exempt

“therefrom; it is evidently impoſſible any fracture or luxation ſhould follow. The ſame may be obſerved of the muſcles and nerves; which, though ſoft, yet being compoſed of ſolid fibres, do mutually ſuſtain each other, and reſiſt the common weight. The ſame holds of blood, and the other humours; and as water does not admit any manifeſt condenſation, ſo the animal humours contained in their veſſels may ſuffer an attrition from an impulſe made in one or more particular places, but can never be forced out of their veſſels by an univerſal compreſſion.—It follows, that as none of the parts undergo either ſeparation, luxation, contuſion, or any other change of ſituation; it is impoſſible any ſenſe of pain ſhould enſue, which can only be the effect of a ſolution of continuity. This is confirmed by what we ſee in DIVERS,” &c.

The ſame is farther confirmed by Mr. Boyle; who, including a young frog in a veſſel half full of water, and intruding ſo much air as that the water might ſuſtain eight times the weight it otherwiſe would; yet the animalcule, notwithſtanding the great tenderneſs of its ſkin, did not ſeem to be at all affected thereby.

For the effects of the removal of the preſſure of the *atmoſphere*, ſee AIR-*pump*.—For the cauſe of the variations in the weight and preſſure of the *atmoſphere*, ſee BAROMETER.

ATMOSPHERE, *height of it.* The *height* of the *atmoſphere* is a point about which the modern naturaliſts have been very ſolicitous.—Had not the air an elaſtic power, but were it every where of the ſame denſity, from the ſurface of the earth to the extreme limit of the *atmoſphere*, like water, which is equally denſe at all depths; it being above obſerved, that the weight of the column of air, reaching to the top of the *atmoſphere*, is equal to the weight of the mercury contained in the barometer; and the proportion of weight likewiſe being known between equal bulks of air and mercury; it were eaſy to find the height of ſuch column, and conſequently that of the *atmoſphere* itſelf.—For a column of air, one inch high, being to an equal column of mercury as 1 to 11200; it is evident, that 11200 ſuch columns of air, that is, a column of 933 feet high, is equal in weight to one inch of mercury: and conſequently the 30 inches of mercury, ſuſtained in the barometer, require a column of air 27990 feet high; whence the height of the *atmoſphere* would only be 27990 feet, or little more than five Engliſh miles high.

But the air, by its elaſtic property, expands and contracts; and it being found by repeated experiments in England, France, and Italy, that the ſpaces it takes up, when compreſſed by different weights, are reciprocally proportional to thoſe weights themſelves; or, that the air takes up the leſs ſpace, the more it is preſſed: it follows, that the air in the upper regions of the *atmoſphere*, where the weight is ſo much leſs, muſt be much rarer than nearer the ſurface of the earth; and, conſequently, that the height of the *atmoſphere* muſt be much greater than is above aſſigned.

Mr. Cotes, in his Hydroſtatical Lectures, lect. ix. has demonſtrated, in a very familiar and intelligible manner, that, if any number of diſtances from the ſurface of the earth be taken in an arithmetical progreſſion, the denſities of the air at thoſe diſtances will be in a geometrical progreſſion. Let $xa\alpha x$ (*Tab. Pneumatics, fig.* 22.) repreſent a veſſel reaching from the ſurface of the earth $a\alpha$ to the top of the *atmoſphere* xx; and let the ſide ax be divided into inches ab, bc, cd, &c. and let the lines bk, cl, dm, &c. be drawn parallel to $a\alpha$. It is evident that the air contained between theſe parallel lines becomes rarer as we aſcend, becauſe every aſcending parallel ſucceſſively is preſſed by a leſs column of ſuperincumbent air than the next below it. Suppoſe then that the air ak is every where uniform, but denſer than the air bl, and ſo upwards. Let the air bl be reduced into a leſs ſpace by βq, ſo as to become of equal denſity with the air ak, by making the ſpace bq leſs than bl, in the proportion that the air bl is leſs denſe than the air ak. And let a ſimilar conſtruction be continued, ſo as to reduce every inch breadth of air to the ſame denſity with the air ak. The ſpaces ak, bq, cr, &c. will evidently be as the denſities of the ſeveral inches of air, ak, bl, cm, &c. and the quantity or weight of the ſuperincumbent air belonging to each of theſe ſpaces, and reaching to the top of the *atmoſphere*, will always be as the ſum of all the ſpaces ſituated above any ſpace propoſed; the quantity or weight being, by the conſtruction of the figure, as the ſpace which it poſſeſſes. Since then the denſity of the air is as the force which compreſſes it, and this force is the quantity of ſuperincumbent air, the denſities of the air between $a\alpha$ and bk, bk and cl, cl and dm, &c. are to each other as the quantities of air above $a\alpha$, bk, cl, &c. up to the extremity of the *atmoſphere*. But theſe denſities, by what we have already ſhown, are as the ſpaces ak, bq, cr, &c. and the quantities of ſuperincumbent air are as the ſpaces $xb\beta qrstvx$, $xc\gamma rstvx$, $xd\delta stvx$, &c.; therefore the ſpaces ak, bq, cr, &c. are to each other reſpectively as the ſpaces $xb\beta qrstvx$, $xc\gamma rstvx$, $xd\delta stvx$, &c. Now the former ſpaces ak, bq, cr being the differences of the latter, and mutually proportional, are, by a well-known theorem in proportion, in a geometrical progreſſion; as the diſtances ab, ac, ad are in an arithmetical progreſſion. And thus the denſities of the air belonging to every one of the inches, continued to the extremity of the *atmoſphere*, decreaſe in the ſame geometrical progreſſion; and every the leaſt variation of altitude will cauſe the ſame proportional variation of denſity in the air. As the rarity of the air is reciprocally as its denſity, we may conclude that if the diſtances from the earth increaſe in an arithmetical progreſſion, the different degrees of rarity of the air increaſe in a geometrical progreſſion. Whence it is obvious, that the diſtances are every where proportional to the logarithms of the correſponding rarities.

This law was firſt obſerved and demonſtrated by Dr. Halley, from the nature of the hyperbola; and afterwards by Dr. Gregory, by means of the logarithmic line. See Phil. Tranſ. Nº 181. or Abr. ibid. vol. ii. p. 13. and Greg. Aſtron. lib. v. prop. 3.

By this propoſition, having made two or three barometrical obſervations of the rarity of the air at two or three different heights, it is eaſy to find its rarity at any other height, or the height correſponding to any rarity; and conſequently the altitude of the whole *atmoſphere*, ſuppoſing the utmoſt degree of rarity known, beyond which the air cannot go.

Upon theſe principles the following table is calculated; ſuppoſing firſt as a mean of the obſervations at the Puy de Domme in France, and thoſe on Snowdon-hill in Wales, that at the altitude of ſeven miles, the air is four times rarer than at the ſurface of the earth.

At the altitude of		Miles above the ſurface of the earth, the air is		Times rarer than at the earth's ſurface.
	7		4	
	14		16	
	21		64	
	28		256	
	35		1024	
	42		4096	
	49		16384	
	56		65536	
	63		262144	
	70		1048576	
	77		4194304	
	84		16777216	
	91		67108864	
	98		268435456	
	105		1073741824	
	112		4294967296	
	119		17179869184	
	126		68719476736	
	133		274877906944	
	140		1099511627776	

It might be eaſily ſhewn, by purſuing the calculation in this table, that a cubic inch of the air we breathe would be ſo much rarified at the altitude of 500 miles, that it would fill a ſphere equal in diameter to the orbit of Saturn.

But it is to be obſerved, that theſe computations of the rarity of the *atmoſphere*, at different heights, are founded on this principle, that the denſity of the air is every where proportionable to the ſuperincumbent weight. And this rule holds true only upon the ſuppoſition, that the heat is uniform, at different diſtances from the earth; for if the air be hotter in one part than in another, the air will be more rarified in the hotter part, than it will be in the cooler, although preſſed by the ſame weight, or at the ſame altitude above the earth's ſurface.

It muſt not be here omitted, that ſome obſervations made by Caſſini, and his aſſociates, ſeem to render this method precarious.—In continuing the meridian line of the obſervatory at Paris, they meaſured the altitudes of ſeveral mountains with great accuracy; noting the height of the barometer at the top of each; and found, that the rarefactions of the air, as you aſcend from the level of the earth, are much greater than they ought to be, according to this proportion.

Suſpecting, therefore, the juſtneſs of the experiments, the Royal Academy made divers others, under great dilatations of air, far exceeding the rarities found on the tops of the mountains; the reſult whereof was, that they all exactly anſwered the proportion of the incumbent weights. Whence it ſhould follow, that the higher air about the tops of mountains is of a different nature, and obſerves a different law from that near the earth.

The reaſon hereof may be owing to the great quantity of groſs vapours and exhalations here, more than there; which vapours being leſs elaſtic, and not capable of ſo much rarefaction as the pure air above, the rarefactions of the pure air increaſe in a greater ratio than the weights diminiſh.—M. Fontenelle, however, from ſome experiments made by M. de la Hire, accounts for the *phænomenon* in a different manner; alledging, that the elaſtic power of air is increaſed by the admixture of humidity therewith; and conſequently, that the air near the tops of mountains, being moiſter than that below, becomes thereby more elaſtic, and rarefies in a greater ratio than naturally and in a drier ſtate it would.—But Dr. Jurin ſhews, that the experiments produced to ſupport this ſyſtem are by no means concluſive. Append. ad Varenii Geograph.

M. Bouguer likewiſe, in the Memoirs of the Royal Academy of Sciences at Paris for the year 1753, intimated his opinion, that the condenſations of the *atmoſphere* did not obſerve the ſame law at different heights; and endeavoured to account for the variation, by ſuppoſing that particles of air at different heights are poſſeſſed of unequal degrees of elaſticity. If this were the caſe, it would be impoſſible to apply the barometer to the menſuration of heights with any degree of certainty. But M. De Luc has ſhewn, by his more accurate experiments, that this pretended inequality of ſpring in the particles of air does not ſubſiſt; and that its condenſations and dilatations follow the ſame law uniformly at all heights and in all climates, excepting only the differences that are cauſed by heat, and other local circumſtances. He has alſo given a rule for the meaſurement of heights by the barometer, deduced from a greater number of experiments, and much more accurate, than any hitherto publiſhed. In order to give the reader a juſt idea of the method which he purſued in inveſtigating and applying his rule, it is neceſſary to obſerve, that the difference of the elevation of any two places, will be as the logarithm of the ratio of the denſities of the air at each; and ſince the denſity is every where as the compreſſing force, and this again as the length of the column of quickſilver ſuſtained by it in the barometer, the difference of elevation will be as the logarithm of the ratio of the altitudes of the quickſilver at the ſame time in the two different ſtations, or as the difference of the tabular logarithms of the numbers by which theſe altitudes would be expreſſed in any given meaſure. This is an obvious conſequence of the law of rarefaction already demonſtrated, waving the conſideration of the accelerative force of gravity, which may be conſidered as uniform at any diſtances ſubject to obſervation and experiment. Premiſing this theorem, M. De Luc prepared a barometer of the ſyphon kind, as beſt adapted to correct the error ariſing from the repulſion of the quickſilver by the glaſs tube, by boiling the quickſilver after it was put into the tube, and by other precautions, in order to purge it of air and moiſture; and in order to make proper allowances for the variations of the denſity of quickſilver by heat and cold, he provided two thermometers, one attached to the frame of the barometer itſelf, and the other made for being expoſed to the open air, in order to ſhew its degree of heat. That he might be able to judge of the allowance requiſite to be made for any variation of heat or cold, he heated the air in his room, in the winter ſeaſon, to as great a degree as poſſible, and noted the riſe of the barometer, owing to the diminution of its ſpecific gravity by heat; and he alſo obſerved the height of the thermometer, both before and after the room was heated. The barometer in this experiment was at 27 French inches; and he infers from it, that an increaſe of heat from freezing to that of boiling water, will raiſe the mercury in the barometer 6 lines, or $\frac{1}{54}$th part of the whole. If the barometer is higher than 27 inches, the variation will increaſe in the ſame proportion; therefore, calling the height of the barometer B, the whole riſe for an increaſe of heat from freezing to boiling water, will be $\frac{B}{54}$; and as it will be leſs for a leſs difference of heat, if the number of degrees on the thermometer between boiling and freezing water be called K, and the riſe of the thermometer from any given point be called H, the correſpondent riſe of the barometer will be $\frac{B}{54} \times \frac{H}{K}$ by the increaſe of heat from the given point by the number of degrees H. If the heat decreaſed, then H would ſignify the degrees of decreaſe in heat, and the barometer would ſink by $\frac{B}{54} \times \frac{H}{K}$. M. De Luc made the fixed temperature of heat, by means of which he reduced his obſervations of the barometer, $\frac{1}{8}$th of the interval from freezing to boiling water above the given point; and if the thermometer was higher than this degree, he ſubtracted $\frac{B}{54} \times \frac{H}{K}$; if it was lower, he added it to the obſerved altitude of the barometer; and thus obtained the exact height of the barometer, ſuch as it would have been, if the denſity of its quickſilver had been the ſame as anſwers to the fixed degree of temperature. He thus corrected the heights of his barometer, at the bottom and at the top of a hill, for the particular degree of heat indicated by the thermometer attached to the barometer at each ſtation; and theſe corrected heights he made uſe of in his ſubſequent calculations. The two altitudes of the barometer are repreſented by B and *b*, and the logarithms of theſe quantities are taken in the four firſt places of figures after the characteriſtic, or by conſidering the remaining figures as decimals; C is aſſumed to repreſent the mean height of a thermometer, expoſed to the air at the top and bottom of the hill, the freezing point being 0, and that of boiling water 80; and M. De Luc finds, by his experiments, that the height of the hill will be given in French toiſes, when C is 16¾, by ſimply taking the difference of the logarithms of the heights of the barometer, or it will be equal to log. B − log. *b*; and in any other degree of heat, it will be greater or leſs in proportion as the rarity of the air is greater or leſs than in the fixed temperature; or, greater or leſs by $\frac{1}{215}$th part of the whole for every degree of the thermometer reckoned from the fixed temperature 16¾. And therefore the height of the hill will be expreſſed in French meaſure by this *formula*,

$$\text{log. B} - \text{log. } b + \text{log. B} - \text{log. } b \times \frac{\text{C} - 16\tfrac{3}{4}}{215} = \overline{\text{log B} - \text{log. } b} \times \overline{1 + \frac{\text{C} - 16\tfrac{3}{4}}{215}}.$$

Mr. Maſkelyne and Dr. Horſley have reduced this *formula* to Engliſh meaſure, to the ſcale of Fahrenheit's thermometer, and likewiſe to thermometers of different ſcales. Dr. Horſley has evinced the agreement of M. De Luc's concluſions with the geometrical theory of the *atmoſphere* founded on the law of gravitation. The rule reſulting from the *formula* adapted to Fahrenheit's thermometer, is thus expreſſed by Mr. Maſkelyne in common language: Take the difference of the tabular logarithms of the obſerved heights of the barometer, at the two ſtations, conſidering the four firſt figures excluſive of the index as whole numbers, and the remaining figures as decimals; ſubtract or add $\frac{452}{1000}$th of the difference of the altitude of the Fahrenheit's thermometer, attached to the barometer at the two ſtations, as it was higheſt at the lower or upper ſtation; and thus you will have the height of the upper ſtation above the lower, in Engliſh fathom, nearly. This height may be corrected by the following proportion: as 449 is to the difference of the mean altitude of Fahrenheit's thermometer expoſed to the air at the two ſtations from 40°, ſo is the height of the upper ſtation found nearly to the correction, which is to be added or ſubtracted, as the mean altitude of the thermometer was higher or lower than 40°; and the ſum or difference will give the true height of the upper ſtation above the lower in Engliſh fathom: and multiplying by 6, it will be had in Engliſh feet.

The rule adapted to particular ſcales will be as follows: From or to the difference of the tabular logarithms, as in the former caſe, ſubtract or add the difference of the altitude of the thermometer of a particular ſcale, attached to the barometer, at the two ſtations, as it was higheſt at the lower or upper ſtation; the difference or ſum will give the height nearly, in Engliſh fathom: then ſay, as 1000 is to the ſum of the altitudes of the thermometer of a particular ſcale expoſed to the air at both ſtations, ſo is the height of the upper ſtation above the lower, already found, to a fourth quantity; which added or ſubtracted, as the aforeſaid ſum of the altitudes of the thermometer is poſitive or negative, will give the true height in fathom; and multiplying by 6, in Engliſh feet.

M. De Luc found that the height of the *atmoſphere*, ſuppoſing its limits where the mercury in the barometer, would ſtand only at one line, and the thermometer indicating 0 in his ſcale, 17° in that of Reaumur, and about 70° in Fahrenheit's, is 25105,450 toiſes, or 11 leagues and 3 toiſes: and in the ſame circumſtances, if the mercury in the barometer ſunk to $\frac{1}{10}$ of a line, the height of that part of the *atmoſphere* would be 35105,450 toiſes.

M. De Luc's Recherches ſur les Modifications de l' Atmoſphere, vol. ii. Phil. Tranſ. vol. lxiv. part i. Nº 20 and 30. See BAROMETER.

M. De la Hire, after Kepler, has recourſe to the more ancient method of aſcertaining the height of the *atmoſphere*; viz. from the conſideration of the CREPUSCULA.

It appears, from the obſervations of aſtronomers, of the duration of twilight, and of the magnitude of the terreſtrial ſhadow in lunar eclipſes, that the effect of the *atmoſphere* to reflect and intercept the light of the ſun, is ſenſible to the altitude of between 40 and 50 miles. So far then we may be certain that the *atmoſphere* reaches; and at that altitude we may collect, from what has been already ſaid, that the air is above 10,000 times rarer than at the ſurface of the earth. How much further the *atmoſphere* may extend, we are altogether ignorant. Cotes's Hydroſt. Lect. p. 123 and 125.

It is allowed, by aſtronomers, that when the ſun is 18° below the horizon, we begin or ceaſe to ſee the TWILIGHT: now the ray whereby we ſee it can be no other than a horizontal line, or a tangent to the earth in the place where the obſerver is; but this ray cannot come directly from the ſun, which is under the horizon; and muſt therefore be a ray reflected to us by the laſt inner and concave ſurface of the *atmoſphere*. We are to ſuppoſe that the ſun, when 18° below the horizon, emits a ray which is a tangent to the earth, and ſtrikes upon this laſt ſurface of the *atmoſphere*, and is thence reflected to our eye, being ſtill a tangent, and horizontal.—If there were no *atmoſphere*, there would be no CREPUSCULUM; and conſequently, if the *atmoſphere* were not ſo high as it is, the *crepuſculum* would begin and end when the ſun is at a leſs diſtance from the horizon than 18°, and contrarily.—Hence we gather, that the largeneſs of the arch, by which the ſun is depreſſed when the *crepuſculum* begins or ends, determines the height of the *atmoſphere*. We are to note, however, that 32′ muſt be ſubtracted from the arch of 18° for the refraction which raiſes the ſun ſo much higher than he would be; and 16′ more for the height of the upper limb of the ſun, which is ſuppoſed to ſend the ray above his centre, which is ſuppoſed to be 18° low. The remaining arch, therefore, which determines the height of the *atmoſphere*, is only 17° 12′.

Two rays, one direct, and the other reflected, but both tangents to the earth, muſt neceſſarily meet in the *atmoſphere* at the point of reflexion, and comprehend an arch between them of 17° 12′, whereof they are tangents.—Hence it follows, from the nature of the circle, that a line drawn from the centre of the earth, and cutting the arch in two, will go to the point of concurrence of thoſe two rays; and as it is eaſy to find the exceſs of this line above the ſemidiameter of the earth, which is known, it is eaſy to find the height of the *atmoſphere*, which is only that exceſs.—On this principle M. De la Hire diſcovers the height of the *atmoſphere* to be 37223 fathoms, or near 17 French leagues. The ſame method was alſo made uſe of by Kepler, who only rejected it, becauſe it gave the height of the *atmoſphere* 20 times greater than he otherwiſe allowed it.

It muſt be added, that in this calculus the direct and reflected rays are ſuppoſed to be right lines; whereas, in fact, they are curves, formed by the perpetual refraction the rays undergo in paſſing through a ſeries of different denſities of air.—Computing then upon them, as two ſimilar curves, or rather as a ſingle curve, one extreme whereof is a tangent to the earth; its vertex, equally diſtant from both the extremes, determines the height of the *atmoſphere*; which, therefore, will be found ſomewhat lower than in the former caſe; the point of concurrence of two right lines, which are here only tangents to the curve, the one at one end, and the other at the other, being higher than the vertex of the curve. In this way, M. De la Hire finds the *atmoſphere* 36362 fathoms, or 16 leagues. Hiſt. de l' Acad. Roy. de Scienc. an. 1713. p. 71. See REFRACTION, &c.

The *atmoſphere* has a refractive power, which is the cauſe of many *phænomena*. Alhazen the Arabian, who lived about A. D. 1100, ſeems to have been more inquiſitive into the nature of refraction than the preceding writers. But neither Alhazen, nor his follower Vitellio, knew any thing of its juſt quantity, which was not known to any tolerable degree of exactneſs, till Tycho Brahe, with incredible diligence, ſettled it.

Neither did Tycho, nor Kepler, diſcover in what manner the rays of light were refracted by the *atmoſphere*. Tycho thought the refraction was chiefly cauſed by denſe vapours, very near the earth's ſurface. Kepler placed the cauſe wholly at the top of the *atmoſphere*, which he took to be uniformly denſe; and thence he determined its altitude to be little more than that of the higheſt mountains. But the true conſtitution of the denſity of the *atmoſphere*, deduced afterwards from the Torricellian experiment, afforded a juſter idea of theſe refractions, eſpecially after it appeared, by a repetition of M. Lowthorp's experiment, that the air's refractive power is proportionable to its denſity.

By this variation of the air's denſity, a ray of light, in paſſing through the *atmoſphere*, is continually refracted at every point, and thereby deſcribes a curve, and not a ſtraight line, as it would have done were there no *atmoſphere*, or were its denſity uniform.

This refractive power of the *atmoſphere* increaſes the altitude of the ſtars, and contracts their intervals; it alſo cauſes the ſun and moon to appear of an oval figure, when near the horizon. But it is to be obſerved, that the horizontal moon appears oval but rarely, eſpecially in the evenings of warm weather, the refractions being then ſmaller. Vid. Smith's Optics. See alſo REFRACTION.

The *atmoſphere*, or air, has alſo a reflective power; and this power is the cauſe that enlightens objects ſo uniformly on all ſides. The abſence of this power would occaſion a ſtrange alteration in the appearances of things, their ſhadows would be ſo very dark, and their ſides enlightened by the ſun ſo very bright, that, probably, we could ſee no more of them than their bright halves; ſo that, for a view of the other halves, we muſt turn them half round, or, if immoveable, muſt wait till the ſun could come round upon them. Such a pellucid unreflective *atmoſphere* would indeed have been very commodious for aſtronomical obſervations upon the courſe of the ſun and planets among the fixed ſtars, viſible by day as well as by night; but then ſuch a ſudden tranſition from darkneſs to light, and from light to darkneſs immediately, upon the riſing and ſetting of the ſun, without any twilight, and even upon turning from or to the ſun at noon-day, would have been very inconvenient and offenſive to our eyes.

Thus, though the *atmoſphere* is greatly aſſiſtant to the illumination of objects, yet it muſt alſo be obſerved, that it ſtops a great deal of light. By M. Bouguer's experiments, it ſeems that the light of the moon is frequently 2000 times weaker in the horizon, than at the altitude of 66 degrees; and that the proportion of her lights at the altitudes of 66 and 19 degrees, is about 3 to 2. The lights of the ſun muſt bear the ſame proportion to each other at thoſe heights; which M. Bouguer made choice of, as being the meridian heights of the ſun, at the ſummer and winter ſolſtices, in the latitude of Croiſic in France. Smith's Optics, Rem. 95.

It has been ſaid that a ray of light, paſſing through the *atmoſphere*, deſcribes a curve. M. De la Hire took great pains to demonſtrate, that, ſuppoſing the denſity of the *atmoſphere* proportional to its weight, this curve is a cycloid: and he ſays, that if the ray be a tangent to the *atmoſphere*, the diameter of its generating circle will be the height of the *atmoſphere*; and that this diameter increaſes, till at laſt, when the rays are perpendicular, it becomes infinite, or the circle degenerates into a right line. This reaſoning ſuppoſes that the ſurface of the *atmoſphere* is a plane; but ſince it is a curve, he obſerves that theſe cycloids become in fact epicycloids. Hermannus has detected the error of M. De la Hire, and ſhewn that this curve is infinitely extended, and has an aſymptote: and Dr. Brook Taylor obſerves, that this curve is one of the moſt intricate and perplexed that can well be propoſed. Method. Increm. p. 168, &c.

This ingenious author computes the refractive power of the air to be to the force of gravity at the ſurface of the earth, as 320 millions to 1.

F. De Lana thought he had contrived an *aeronautic* machine for navigating the *atmoſphere*: Sturmius, who examined it, declared it not to be impracticable: but Dr. Hook was of a different opinion, and detected the fallacy of the contrivance. Roger Bacon long before propoſed ſomething of the ſame kind. The great ſecret of this art, is to contrive an engine ſo far lighter than air, that it will raiſe itſelf in the *atmoſphere*, and together with itſelf, buoy up and carry men with it. The principle on which it is to be effected, is by exhauſting the air of a very thin and light, yet firm, metalline veſſel, with an air-pump.

But the hopes of ſucceſs in ſuch an enterprize will appear very ſmall, if it be conſidered, that if a globe were to be formed of braſs, of the thickneſs only of $\frac{1}{12}$ of an inch, that globe muſt be above 277 feet in diameter to ſwim in the air; and if, as De Lana ſuppoſes, the diameter of the globe were but 25 feet, the thickneſs of the metal could not exceed $\frac{1}{33}$ of an inch. Vid. Herman. Phoronom. p. 158.

ATMOSPHERE, *lunar*.—The moon was formerly thought to be ſurrounded, like the earth, with a changeable *atmoſphere*; but this is juſtly denied by modern aſtronomers, who, in watching the moon's appulſe to any ſtar her way, have found that the ſtar retains its full brightneſs till the inſtant of its being hid by the edge of the moon: whereas, if the moon were ſurrounded with an *atmoſphere*, the ſtar (ſeen through it) would appear to grow dimmer and dimmer, as the moon came nearer and nearer to it, becauſe it would be gradually ſeen through parts of her *atmoſphere* more and more denſe, as they muſt be, the nearer they are to the moon.

For the reality of the *atmoſpheres* of the other planets, ſee PLANET.

For the *atmoſpheres* of comets, and the ſun, ſee COMET, SUN, MACULÆ, and ZODIACAL *light*.

ATMOSPHERE *of ſolid* or *conſiſtent bodies*, is a kind of ſphere formed by the effluvia, or minute corpuſcles, emitted from them.

Mr. Boyle endeavours to ſhew that all bodies, even the hardeſt and moſt coherent, as gems, &c. have their *atmoſpheres*. See GEM.

ATMOSPHERE, in *Electricity*, denotes that medium which was conceived to be diffuſed over the ſurface of electrified bodies, and to conſiſt of effluvia iſſuing from them; whereby other bodies immerged in it became endued with an electricity contrary to that of the body to which the *atmoſphere* belongs. This was firſt taken notice of at a very early period in the hiſtory of this ſcience, by Otto Guericke, and afterward by the academicians *del Cimento*, who contrived to render the electric *atmoſphere* viſible, by means of ſmoke attracted by, and uniting itſelf to a piece of amber, and gently riſing from it, and vaniſhing as the amber cooled. But Dr. Franklin exhibited this electric *atmoſphere* with greater advantage, by dropping roſin on hot iron plates held under bodies electrified, from which the ſmoke aroſe and encompaſſed the bodies, giving them a very beautiful appearance. He made other obſervations on theſe *atmoſpheres*; he took notice that they and the air did not ſeem to exclude one another; that they were immoveably retained by the bodies from which they iſſued; and that the ſame body, in different circumſtances of dilatation and contraction, is capable of receiving or retaining more or leſs of the electric fluid on its ſurface. However, the theory of electrical *atmoſpheres* was not ſufficiently explained and underſtood for a conſiderable time; and the inveſtigation led to many very curious experiments and obſervations. Mr. Canton took the lead, and was followed by Dr. Franklin; Meſſ. Wilcke and Epinus proſecuted the inquiry, and completed the diſcovery. The experiments of the two former gentlemen prepared the way for the concluſion that was afterward drawn from them by the latter, though they retained the common opinion of electric *atmoſpheres*, and endeavoured to explain the *phænomena* by it. The concluſion was, that the electric fluid, when there is a redundancy of it in any body, repels the electric fluid in any other body, when they are brought within the ſphere of each other's influence, and drives it into the remote parts of the body, or quite out of it, if there be any outlet for that purpoſe. By *atmoſphere*, M. Epinus ſays, no more is to be underſtood than the ſphere of action belonging to any body, or the neighbouring air electrified by it. Sig. Beccaria concurs in the ſame opinion, that electrified bodies have no other *atmoſphere* than the electricity communicated to the neighbouring air, and which goes with the air, and not with the electrified bodies. And Mr. Canton likewiſe, having relinquiſhed the opinion that electrical *atmoſpheres* were compoſed of effluvia from excited or electrified bodies, maintained that they only reſult from an alteration in the ſtate of the electric fluid contained in, or belonging to the air ſurrounding theſe bodies to a certain diſtance; for inſtance, that excited glaſs repels the electric fluid from it, and conſequently, beyond that diſtance makes it more denſe; whereas excited wax attracts the electric fluid exiſting in the air nearer to it, making it rarer than it was before. In the courſe of experiments that were performed on this occaſion, Meſſ. Wilcke and Epinus ſucceeded in charging a plate of air, by ſuſpending large boards of wood covered with tin, with the flat ſides parallel to one another, and at ſome inches aſunder: for they found, that, upon electrifying one of the boards poſitively, the other was always negative; and a ſhock was produced by forming a communication between the upper and lower plates. Beccaria has largely conſidered the ſubject of electric *atmoſpheres*, in his Artificial Electricity, p. 179, &c. Eng. edit. Dr. Prieſtley's Hiſt. of Electricity, vol. ii. ſect. 5. See CONDUCTOR, *luminous*.

ATOCION, in *Ancient Naturaliſts*, denotes an abortive medicine, or a medicament proper to expel the *fœtus* after conception.

ATOLLENS *oculi*, in *Anatomy*, a name given by Albinus to one of his *quatuor recti muſculi oculi*. This is the muſcle called by Molinett, and others, the *ſuperbus*, and by Cowper, the *elevator oculi*.

ATOM, in *Philoſophy*, a part, or particle of matter, ſo minute as to be indiviſible.

The word is formed of the privative *α*, and τεμνω, *I divide*.

Atoms are properly the *minima naturæ*, the laſt or ultimate particles into which bodies are diviſible; and are conceived as the firſt rudiments, or component parts of all phyſical magnitude; or the pre-exiſtent and incorruptible matter whereof bodies were formed.

The notion of *atoms* ariſes hence, that matter is not diviſible *in infinitum*.

And hence the Peripatetics are led to deny the reality of *atoms*, together with that of mathematical points: an *atom*, ſay they, either has parts, or it has none: if it hath none, it is a mere mathematical point; if it hath, then do theſe parts alſo conſiſt of others, and ſo on to infinity.

But this is to recede from the genuine character of *atoms*, which are not eſteemed indiviſible, becauſe of their want of bigneſs, or parts (for all phyſical magnitude muſt have three dimenſions, length, breadth, and thickneſs; and all extenſion is diviſible); but they are indiviſible on account of their ſolidity, hardneſs, and impenetrability, which preclude all diviſion, and leave no vacancy for the admiſſion of any foreign force to ſeparate or diſunite them.

As *atoms* are the firſt matter, it is neceſſary they ſhould be indiſſolvible, in order to their being incorruptible.—Sir Iſaac Newton adds, that it is alſo required they be immutable, in order to the world's continuing in the ſame ſtate, and bodies being of the ſame nature now as formerly.

Hence the ancients were alſo led to maintain *atoms* eternal: becauſe what is immutable, muſt be eternal.

They alſo added gravity, and, in conſequence thereof, motion, to their *atoms*: and farther, obſerving that *atoms* thus falling perpendicularly, could not join or unite together; they ſuperadded a fortuitous or ſide motion, and furniſhed them with certain hooked parts, in order to enable them to catch and hang the better together.—And from a caſual or fortuitous jumble of theſe *atoms*, they ſuppoſed the whole univerſe to be formed.

ATOMICAL *philoſophy* denotes the doctrine of atoms; or a method of accounting for the origin and formation of all things, from the ſuppoſition of atoms, endued with gravity and motion.

The *atomical* philoſophy was firſt broached and taught by Moſchus, a Sidonian, ſome time before the Trojan war.—Leucippus and Democritus probably learnt it from him.—But it was moſt cultivated and improved by Epicurus; whence it became alſo denominated the *Epicurean* philoſophy.

It has been ſince retrieved by Gaſſendus, and others; and is now eſpouſed and adhered to by a great part of the philoſophical world, under the denomination of the CORPUSCULAR *philoſophy*.

ATOMOS, a ſpecies of the *crab* inſect.

ATONEMENT. See EXPIATION, LUSTRATION, PROPITIATION, and SACRIFICE.

ATONICS, in *Grammar*, words unaccented. See ACCENT.

ATONY, in *Medicine*, &c. a want of tone or TENSION; or a relaxation of the SOLIDS of a human body; occaſioning a loſs of ſtrength, faintings, &c. See FIBRE, RELAXATION, &c.

The word is compounded of the privative *α*, and τονος, *tone*; of τεινω, *tendo*, *I ſtretch*.

ATRABILARIÆ *capſulæ*. See CAPSULÆ.

ATRA BILIS, in the *Ancient Medicine*, black or aduſt bile.

Atra bilis was one of the great humours of the ancient phyſicians; whence aroſe the *atrabilary*, one of their TEMPERAMENTS; anſwering to what we call MELANCHOLY. See BILE, and HUMOUR.

The ancients, ſays Dr. Percival, ſuppoſed the *atra bilis* to be derived either from the dregs of the blood, or from yellow bile highly concocted. A celebrated modern anatomiſt thinks it is blood which, having lodged ſome time in the inteſtinal canal, has acquired blackneſs and putridity. Is it not more probable that, in general, it is no other than gall become acrid by ſtagnation in the *veſica fellea*, and rendered viſcid by the abſorption of its fluid parts? When diſcharged into the *duodenum* in this ſtate, it occaſions univerſal diſorder, till evacuated by vomiting or purging. Eſſ. vol. ii. p. 110.

ATRA *dies*, in *Antiquity*, denotes a fatal day, whereon the Romans received ſome memorable defeat.

The word literally imports a *black day*; a denomination taken from the colour, which is the emblem of death, and mourning. Whence the Thracians had a cuſtom of marking all their happy days with white ſtones, or *calculi*;

calculi; and their unhappy days with black ones, which they caſt, at the cloſe of each day, into an urn. At the perſon's death, the ſtones were taken out, and from a compariſon of the numbers of each complexion, a judgment was made of the felicity or infelicity of his courſe of life.

The *dies atræ*, or *atri*, were afterwards denominated *nefaſti*, and *poſteri*.

Such, in particular, was the day when the tribunes were defeated by the Gauls, at the river Allia, and loſt the city; alſo that whereon the battle of Cannæ was fought; and ſeveral others marked in the Roman calendar, as *atræ*, or *unfortunate*.

ATRACTYLIS, in *Botany*. See *Diſtaff* THISTLE.

ATRAGENE, the name by which the *viorna*, or *traveller's joy*, a ſmall winding ſhrub, common in hedges, is known in the ſhops. In the Linnæan ſyſtem, it is a genus of the *polyandria polygynia* claſs of plants, with a four-leaved calyx, twelve petals, and tailed ſeed.

ATRAMENTA; ſee INKS.

ATRAPHAXIS, in *Botany*; a genus of the *hexandria digynia* claſs. We have no Engliſh name for this plant. Its characters are, that the flower hath a permanent empalement; with two roundiſh ſinuated petals larger than the empalement, which are permanent. It hath ſix capillary *ſtamina*: in the center is ſituated a compreſſed germen, which afterward becomes a roundiſh compreſſed ſeed, ſhut up in the empalement. Miller mentions two ſpecies.

ATRESIA, from α and τϱαω, whence τιτϱαω, *to perforate*; in *Medicine*, imperforation, or the ſtate of thoſe perſons who want ſome natural aperture.

ATRETI, thoſe perſons, of either ſex, in whom the *anus*, or genitals, are imperforate, or cloſe, whether naturally, or occaſioned by ſome accident, or diſeaſe, as the growth of ſome fleſhy excreſcence, or a membrane which ſtops the orifice.

ATRICAPILLA, in *Zoology*, the name of a little bird, commonly known by the name of the *black-cap*, and called, by ſome other authors, *ficedula*, *ſycalis*, or *melanchoryphus*, and by the Italians *caponegro*. See MELANCHORYPHUS.

ATRICES, or ATTRICES, in *Medicine*, ſmall tubercles about the *anus*, which ſometimes diſappear, and then return again, at leaſt while in their early ſtate.

The *atrices* are ranked in the number of *condylomata*, or *fici*. Some authors alſo give the denomination *atrici* to a kind of latent wounds in the extremity of the *rectum*, which however do not *perforate* the ſame.

ATRICILLA, in *Ichthyology*, a ſpecies of the LARUS.

ATRIENSES, in *Antiquity*, a kind of ſervants, or officers, in the great families at Rome, who had the care and inſpection of the *atria*, and the things lodged therein.

Theſe are otherwiſe called *atriarii*, though ſome make a diſtinction between *atrienſes* and *atriarii*; ſuggeſting that the latter were an inferior order of ſervants, perhaps aſſiſtants of the *atrienſes*, and employed in the more ſervile offices of the *atrium*, as to attend at the door, ſweep the area, &c.

The *atrienſes* are repreſented as ſervants of authority and command over the reſt: they acted as procurators, or agents, of their maſter, in ſelling his goods, &c. To their care were committed the ſtatues and images of the maſter's anceſtors, &c. which were placed round the *atrium*; and which they carried in proceſſion at funerals, &c.

In the villas, or country-houſes, the *atrienſes* had the care of the other furniture, and utenſils, particularly thoſe of metal, which they were to keep bright from ruſt. Other things they were to hang from time to time in the ſun, to keep them dry, &c. They were cloathed in a ſhort white linen habit, to diſtinguiſh them, and prevent their loitering from home.

ATRIP, in *Nautical Language*, is applied either to the anchor or ſails. The anchor is *atrip*, when it is drawn out of the ground in a perpendicular direction, either by the cable or buoy-rope. The top-ſails are *atrip*, when they are hoiſted up to the maſt-head, or to their utmoſt extent.

ATRIPLEX, in *Botany*; ſee ORACH.

ATRIUM, in *Eccleſiaſtical Antiquity*, denotes an open place, or court, before a church, making part of what was called the *narthex*, or *ante-temple*.

The *atrium* in the ancient churches was a large area, or ſquare plat of ground, ſurrounded with a portico or cloyſter, ſituate between the porch or veſtible of the church, and the body of the church.

Some have miſtakenly confounded the *atrium* with the porch or veſtible, from which it was diſtinct; others with the *narthex*, of which it was only a part.

The *atrium* was the manſion of thoſe who were not ſuffered to enter further into the church. More particularly, it was the place where the firſt claſs of penitents ſtood, to beg the prayers of the faithful, as they went into the church.

ATRIUM is alſo uſed, in the *Canon Law*, for the cemetery, or church-yard.

In this ſenſe we find a law, prohibiting buildings to be raiſed in *atrio eccleſiæ*, except for the clergy; which the gloſſary explains thus; id eſt *in cæmeterio*, which includes the ſpace of forty paces around a large church, or thirty round a little church, or chapel.

ATROPA, in *Botany*; ſee *Deadly* NIGHTSHADE.

ATROPHY, a diſeaſe wherein the body, or ſome of its parts, do not receive the neceſſary nutriment, but dwindle or waſte inceſſantly.

The word is compounded of the privative α, and τϱεφω, *I nouriſh*; q. d. *privation of nouriſhment*.

An *atrophy* is either nervous, or the effect of evacuations.

A nervous *atrophy* or conſumption, is that which owes its original to a bad and morbid ſtate of the ſpirits; and to the weakneſs or deſtruction of the tone of the nerves; from whence an imbecillity, and an univerſal conſumption in the whole habit of the body, ultimately proceeding from a want of due aſſimilation of the nutritious juice: ſo from the beginning of the diſeaſe, there is to be found a want of appetite, and a bad digeſtion in the ſtomach, from an imperfect elaboration and volatilization of the chyle. Which ſort of *atrophy* may juſtly be reckoned one of the fatal ſymptoms of the ſcurvy.

An *atrophy* from inanition, is that which derives its original from a preternatural defect or ſubtraction of the nutritious juice, and that long and habitual; which differs according to the variety of the outlets formed in the body, either by nature or art, by which this precious liquor either has, or may run off and be waſted.

There is alſo a ſpecies of ſymptomatical conſumption, which, though it immediately proceeds from a preternatural and ill ſtate of the blood and ſpirits, yet has a mediate dependance upon ſome other preceding diſeaſe, which impreſſed that morbid diſpoſition on the ſpirits and humours.

ATROPHY, *ſigns of it*. An *atrophy* is known by a general languor both of body and mind; a depraved and unhealthy look of the face; a light and unſettled ſleep; an uncertain appetite, ſometimes voracious, ſometimes nauſeating all things, but uſually moſt deſirous of cold foods; a ſtraitneſs of the breaſt, and an uneaſineſs after eating; great internal heat, and dryneſs of the tongue. The bowels are uſually lubricous and moiſt, and throw out the food half undigeſted: in ſome caſes, however, they are obſerved to be dry and coſtive. The urine often appears to be a chylous matter: the abdomen is tumid and hard in the firſt ſtages of the diſeaſe, but afterwards it becomes more flaccid, and then on feeling it there may be ſeveral nodes and lumps perceived. The body by degrees waſtes away, and there is a continual feveriſhneſs and thirſt, and that eſpecially in the nighttime: and theſe ſymptoms often increaſe to that violence, as plainly to reſemble a hectic, and bring on an equal loſs of ſtrength and ſpirits.

Sometimes the *atrophy* ariſes from worms, and then the whole face is always pale; the noſtrils are full of a mucous matter, and ſometimes become excoriated; the appetite is voracious, and the patient feels an inſufferable reſtleſſneſs when hungry, which goes off, and generally becomes inclined to ſleep after a full meal. When this is the caſe in young ſubjects, the rickets and ſwellings about the joints uſually ſucceed the other ſymptoms, and crookedneſs of the legs, gibboſity of the back, and various diſtortions of the ſpine, follow it: theſe often put an end to the *atrophy*; but as they continue, and become laſting deformities, they are a very unhappy remedy.

ATROPHY, *perſons ſubject to atrophies*. Children, while young, are very ſubject to this diſeaſe, and often fall into it from improper food: the uſe of heavy and fæculent malt liquors, and of acids, which coagulate the milk, that uſually makes a large part of their nutriment. The ſuppreſſion of their ſweats is another frequent cauſe of *atrophies*, eſpecially when occaſioned by large draughts of cold liquors when they are hot in the night, and ſometimes by an improper uſe of aſtringents to ſtop thoſe *diarrhœas* to which they are frequently ſubject. Youths more grown up are often thrown into an *atrophy* by eating voraciouſly of crude, thick, heavy, and obſtruent diet, or from the drinking ſpirituous liquors: ſometimes from their having been injudiciouſly treated in fevers, and ſometimes from their being violently infeſted with worms in their bowels. Men in more mature age uſually fall into it after being debilitated by other illneſſes, and by the remains of the cauſes of thoſe illneſſes being left in the body; and by nothing oftener are reduced to this diſtempered ſtate, than by inordinate *hæmorrhages*. Perſons who are ſcrophulous, or have infarctions of the external glands, are alſo uſually at one time or other afflicted with this infarction of the internal ones, and few eſcape it that labour under any other violent concretions of the internal parts.

ATROPHY, *prognoſtics*. A recent *atrophy* is not difficult of cure; and even the moſt inveterate one, though ſtubborn enough, is always much leſs dangerous and difficult of cure than an hectic. The more complicated this diſeaſe is, the more difficult it always is in the cure; and it is hence that grown perſons are not ſo eaſily or ſo often cured as children, becauſe with them it is uſually complicated with many other diſorders; and, in general, that *atrophy* which is brought on by *hæmorrhages*, or by ill-treated illneſſes, is much more difficult of cure than that which ariſes from a wrong diet. And, finally, in *atrophies* ariſing from worms, when they are deſtroyed, the diſeaſe uſually ceaſes.

ATROPHY, *method of cure*. All ſymptomatical conſumptions are evidently incurable, unleſs a particular reſpect be firſt had to the diſtempers upon which they depend; but if theſe are once removed by art, this kind of conſumption ceaſes of conſequence; and therefore the cure of this conſumption is to be ſought for in the cure of thoſe diſtempers which are the cauſes of it.

The firſt thing to be done in general is, to thoroughly abſterge and cleanſe the *primæ viæ* by gentle purges, among which nothing is ſo proper as calomel, aſſiſted by ſyrup of rhubarb, or the like; and theſe purgatives are afterwards to be repeated at different intervals, during the courſe of the cure. After the firſt purges, reſolvent and attenuating medicines are to be given; and, finally, the preparations of ſteel, decoctions of *arum* and pimpernel root, with ground-ivy, are very beneficial, as is alſo the juice of ground-ivy given alone; and the reſolvent ſalts, as tartar of vitriol, nitre, and the like, with ſome of the aperient tinctures of ſteel.

An *atrophy* differs from a hectic in this, that there is in it only an infarction of the meſenteric glands, whereas in the other caſe they are generally ulcerated: and in degree the difference alſo is manifeſt, all the ſymptoms being more violent in the hectic than in the ſimple *atrophy*.

It ſhould alſo be diſtinguiſhed from leanneſs, the rickets, and that weakneſs and conſumption of children, who pine away only for want of a due ſupply from the breaſt.

Dr. Thomas Short, in his New Obſervations, Moral, Natural, Medical, &c. recommends milk and cyder in the *atrophy*.

ATTACHING, or **ATTACHMENT**, in *Law*, the taking or apprehending a perſon or thing, either by commandment, or writ.

The word is formed of the French *attacher*, *to faſten*, *tye*; and that from the corrupt Latin *attachiare*, of *attexere*, *to weave to*; or rather, as others think, from the Celtic *tach*, *a nail*; and *tacha*, *to nail*; or the Saxon *tæcan*, *to take*.

Lambard makes this difference between an *arreſt* and an *attachment*; that an *arreſt* proceeds out of an inferior court by precept only, and an *attachment* out of a higher court, either by precept, or writ; and that a precept to *arreſt* hath theſe formal words, *duci facias*, &c. and a writ of *attachment* theſe, *præcipimus tibi quod attachies talem, & habeas eum coram nobis*.

By this it appears, that he who *arreſts* carries the party *arreſted* to another higher perſon, to be diſpoſed of forthwith; whereas he that *attaches* keeps the party *attached*, and preſents him in court at the day aſſigned in the *attachment*.

There is this farther difference, that an *arreſt* lies only upon the body of a man; and an *attachment* ſometimes on his goods too: for a man may be *attached* by an hundred ſheep.

Moreover, *attachment* is a kind of proceſs by which courts of law proceed againſt their own officers and others, in caſes of contempt, &c.

ATTACHMENT *by writ* differs from *diſtreſs* in this, that an *attachment* does not reach lands, as a *diſtreſs* does; and that a *diſtreſs* does not touch the body, which an *attachment* does.—Yet the two are frequently confounded together.

In the moſt common uſe, an *attachment* is an apprehenſion of a man by his body, to bring him to anſwer the action of the plaintiff.—A *diſtreſs*, with a writ, is the taking of a man; a *diſtreſs*, without a writ, is the taking of a man's goods for ſome real cauſe; as rent, ſervice, &c.

ATTACHMENT *out of the Chancery* is had of courſe, upon an *affidavit* made that the defendant was ſerved with a *ſubpœna*, and appears not; or iſſueth upon not performing ſome order or decree.

After the return of this *attachment* by the ſheriff, *quod non eſt inventus in balliva ſua*; another *attachment*, with proclamation, iſſues: and if he appear not thereupon, a commiſſion of rebellion.

ATTACHMENT *of the Foreſt*, is one of the three courts held in the foreſt.

The loweſt court is called the court of *attachment*, or woodmote-court, the mean ſwein-mote, the higheſt, the juſtice in eyre's ſeat.

The court of *attachments* ſeems ſo called, becauſe the verderors of the foreſt have therein no other authority, but to receive the *attachments* of offenders againſt vert and veniſon taken by the foreſters, and to inrol them, that they may be preſented or puniſhed at the next juſtice-ſeat.

This *attachment* is by three means: by goods and chattels; by body, pledges, and mainprize; or by body only.—This court is held every forty days throughout the year; whence it is alſo denominated *forty days court*.

ATTACHMENT *of privilege* is, by virtue of a man's privilege, to call another to that court whereto he himſelf belongs, and in reſpect whereof he is privileged to anſwer ſome action.

ATTACHMENT, *foreign*, is an *attachment* of goods or money found within a liberty or city, to ſatisfy ſome creditor within ſuch city or liberty.

By the cuſtom of ſome places, particularly of London, a man may *attach* money or goods in the hands of a ſtranger: as, if A owes B 10*l.* and C owes A 10*l.* B may *attach* the 10*l.* in the hands of C, to ſatisfy himſelf.

ATTACHIAMENTA *bonorum*, in our *Ancient Law-books*, denotes a diſtreſs taken upon the goods or chattels of any perſon ſued for a perſonal eſtate, or debt, by the legal *attachiators* or bailiffs, as a ſecurity to anſwer the action.

ATTACHIAMENTA *de ſpinis & boſco*, ſignifies an ancient privilege granted to the other officers of foreſts, to take to their own uſe, thorns, bruſh, and windfalls, within their own precincts or liberties.

ATTACK, an attempt upon any perſon or thing; or the act of beginning a combat or diſpute.

ATTACK, in the *Military Art*, is an attempt or engagement to force a poſt, a body of troops, or the like.

We ſay to begin, to make, ſuſtain an *attack*, &c. Several authors have written of the art of *attacking* and DEFENCE.

ATTACK *of a ſiege*, is an effort made by the beſiegers with trenches, mines, galleries, &c. to make themſelves maſters of a fortreſs, in *attacking* one of its ſides. See FORTIFICATION, and SIEGE.

It is a rule always to *attack* on the weakeſt ſide; unleſs there be ſuperior reaſons for the contrary—as was the caſe at the ſiege of Liſle: in which the part where prince Eugene made his *attack*, was the ſtrongeſt in the whole place.

In ſieges there are ſometimes one, ſometimes two, or at moſt three *attacks*.—The *attacks*, where they are ſeveral, ought to have a communication.

ATTACK, *falſe*, is that which is not ſo vigorouſly proſecuted; ſerving only to make a diverſion among the beſieged, and to oblige them to divide their forces, that the true *attack* may be carried on with greater ſucceſs.

ATTACK *in flank*, is to *attack* both ſides of the baſtion.

ATTACK, *line of*; ſee LINE.

ATTAGEN, ατταγας, or ατταγην, in *Zoology*, an Aſiatic partridge, called by ſome a *francolin:* a bird which is repreſented both by Martial and Ariſtophanes, as the ſweeteſt which was dreſſed at the public feaſts. From theſe circumſtances, the *attagen* appears to be the ſame with our *gor-cock*, *moor-cock*, or *red-game*.

Trallian recommends this bird in a *phthiſis*; Galen, in nephritic complaints; and Avicenna believed it increaſed the ſeminal ſecretions.—The inſide of the gizzard of this bird is extremely fragrant when freſh killed.

The *red-game* lives chiefly on vegetables, and uſes but little exerciſe, being ſcarcely ever on the wing, unleſs to avoid danger. Hence it does not abound with highly exalted ſalts. It is a very agreeable and wholeſome food.

ATTAINDER, in *Law*, is when a man has committed felony, treaſon, or other crime, and judgment is paſſed upon him for the ſame.

The children of a perſon attainted of treaſon cannot be heirs to him, or any other anceſtor; and, if he were noble before, his poſterity are hereby degraded, and made baſe: nor can this corruption of blood be ſalved but by an act of parliament, unleſs the judgment be reverſed by a writ of error.

Our ancient laws make this difference between *attainder* and *conviction*, that a man was ſaid to be *convicted* preſently upon the verdict; but not *attainted* till it appeared he was no clerk, or being a clerk, and demanded by his ordinary, could not purge himſelf.—Add, that *attainder* is more extenſive than *conviction*; *conviction* being only by the jury, whereas *attainder* may alſo be by outlawry, confeſſion of the party, or the like.

A man is *attainted* two ways; by *appearance*, or by *proceſs*.

Attainder by appearance is either by confeſſion, by battle, or by verdict.—Confeſſion, from which *attaint* proceeds, is twofold; one at the bar before the judges, when the priſoner, upon his indictment read, owns himſelf guilty, never putting himſelf on his jury. The other is before the coroner, in ſanctuary; where he, upon his confeſſion, was in former times conſtrained to abjure the realm; which is alſo called *attainder by abjuration*.

Attainder by battle is when the party appealed by another, chooſing rather to try the truth by combat than by jury, is vanquiſhed.

Attainder by proceſs, otherwiſe called *attainder by default*, or *attainder by outlawry*, is where a party flies, or does not appear after being five times publicly called in the county-court, and at laſt, upon his default, is pronounced or returned outlawed.

Attainder by verdict, is when the priſoner at the bar, anſwering not guilty to the indictment, hath an inqueſt of life and death paſſed on him, and is by the verdict of the jury pronounced guilty.

Attainder, *bill of*, is a bill brought into parliament for *attainting*, condemning, and executing a perſon for high treaſon.

ATTAINT, Attincta, in *Law*, a writ which lies after judgment, againſt a jury that hath given a falſe verdict, contrary to the evidence, in any court of record, be the action real or perſonal, if the debt or damages exceed 40*s*.

If the verdict be found falſe, the judgment anciently was, that the jurors meadows ſhould be plowed up, their houſes broken down, their woods grubbed up, their lands and tenements forfeited to the king, their goods and chattels forfeited, their bodies be caſt into gaol, and that they ſhould become for ever infamous. But by the ſtatute 11 Hen. VII. c. 24. revived by 23 Hen. VIII. c. 3. a more moderate puniſhment was inflicted upon *attainted* jurors; viz. perpetual infamy; and if the cauſe of action were above 40*l*. value, a forfeiture of 20*l*. apiece by the jurors; or if under 40*l*. then 5*l*. a-piece; to be divided between the king and the party injured.

If it paſſed againſt him that brought the *attaint*, he ſhall be impriſoned, and grievouſly ranſomed at the king's will.—But the practice of ſetting aſide verdicts upon motion, and granting new trials, has ſo far ſuperſeded the uſe of *attaints*, that no inſtance of it occurs later than 1593.

Attaint, among *Farriers*, ſignifies a knock or hurt in a horſe's leg; proceeding either from a blow with another horſe's foot, or from an over-reach in froſty weather, when a horſe, being rough-ſhod, or having ſhoes with long calkers, ſtrikes his hinder-foot againſt his fore-leg. The farriers diſtinguiſh *upper attaints*, given by the toe of the hind-foot upon the ſinew of the fore-leg; and *nether attaints*, or over-reachers on the paſtern-joint, which are little bladders like wind-galls, coming either by a wrench, a ſtrain, an over-reach, or the like. The uſual place is in the heel or fruſh.

ATTAINTED, Attaintus, or Attinctus, in *Law*, is uſed for a perſon found guilty of ſome crime or offence, particularly of felony or treaſon, by due courſe of law.

Yet a man is ſaid to be *attainted* of perjury, *attainted* of diſſeiſin; and ſo it is uſed in French; as, *eſtre atteint, & vaincu en aucun cas*, is *to be caſt in any cauſe*.

ATTELABUS, a genus of inſects belonging to the order of *coleoptera* in the Linnæan ſyſtem.

ATTALICÆ *veſtes*, in *Antiquity*, garments made of a kind of cloth of gold.

They took the denomination from Attalus, ſurnamed Philometer, a wealthy king of Pergamus, who was the firſt, according to Pliny, who procured gold to be woven into cloth. Hiſt. Nat. lib. iii. c. 48.

ATTALUS, and Attalicus, in the *Ancient Phyſic*, epithets given to certain medicines, deſcribed by Galen, but now out of uſe.

ATTELLANÆ; ſee Atellanæ.

ATTEMPERATION, in *Rhetoric*, &c. the caſting a reſtriction, or ſoftening, on ſomething ſaid by the *formulas, Fama eſt, ut perhibent, &c.*

ATTENDANT, or Attendent, in a general ſenſe; ſee Assistant, Retinue, and Satellites.

Attendant, Attendens, in *Law*, ſignifies one that owes duty, or ſervice to another, or depends in ſome manner upon him.

Thus if there be lord meſne and tenant; and the tenant hold of the meſne by a penny; and the meſne hold over by two pence: if the meſne releaſe to the tenant all his right in the land, and the tenant die, his wife ſhall be endowed of the land, and ſhall be *attendant* to the heir, of the third part of the penny, not of the third part of the two pence; ſhe being to be endowed of the beſt poſſeſſion of her huſband.

Where the wife is endowed by the guardian, ſhe ſhall be *attendant* to the guardian, and to the heir at his full age.

ATTENTION, Attentio, a due application of the ear, or the mind, to any thing ſaid, or done, in order to acquire a knowledge thereof.

The word is compounded of *ad, to*; and *tendo, I ſtretch*.

Attention of mind is not properly an act of the underſtanding, but rather of the will, by which it calls the underſtanding from the conſideration of other objects, and directs it to the thing in hand. Nevertheleſs, our *attention* is not always voluntary: an intereſting object ſeizes, and fixes it beyond the power of controul.

Attention, in reſpect of hearing, is the ſtretching or ſtraining of the *membrana tympani*, ſo as to make it more ſuſceptible of ſounds, and better prepared to catch even a feeble agitation of the air. Or it is the adjuſting the tenſion of that membrane to the degree of loudneſs or lowneſs of the ſound to which we are attentive.

ATTENUANTS, or Attenuating *medicines*, are ſuch as ſubtilize and break the humours into finer parts; and thus diſpoſe them for motion, circulation, excretion, &c.

Attenuants ſtand oppoſed to *incraſſants*, or thickeners, medicines which condenſe, inſpiſſate, &c.

Theſe medicines are of the utmoſt importance in the practice of phyſic, as a little reflection upon their natures, qualities, and manners of operation, will eaſily convince us. To this claſs belong the roots of *arum, aſarabacca, acorus*, elecampane, and florentine *orris*; the leaves of brook-lime, ſcurvy-graſs, water-creſs, Indian creſſes, dittander, fumitory, marſh-trefoil, ſmall centaury; all the ſpecies of garlic, onion, and leek, and the wood and bark of *guaiacum*; among the ſpices, pepper, and ginger; among the ſeeds, thoſe of muſtard, ſcurvy-graſs, and creſſes; among the gums, *galbanum, ammoniacum*, myrrh, and benjamin. Among the chemical preparations, the moſt powerful *attenuants* are calomel, *æthiops*, flower of brimſtone, the fixed alcaline ſalts, the ſalts of the purging waters, vitriolated tartar, regenerated tartar, and a ſolution of crabs eyes, nitre, and *ſal ammoniac*; the volatile ſalt and urinous ſpirit of *ſal ammoniac* alſo; to which may be added, oxymel of ſquills, and the acrid tincture of antimony. Medicated ſprings alſo belong to this claſs of medicines, becauſe they, beſide their diluting and aperient natures, are alſo highly *attenuating*. Infuſions in form of tea, from the quantity of warm water they conſiſt of, are alſo very efficacious *attenuants*, and are very powerful in the diſuniting coaleſcent molecules. Of this claſs alſo are ſweet whey, and a multitude of other leſs uſed and leſs powerful medicines.

Of theſe, ſome act upon the fluid, and others upon the ſolid parts of the human body. Thoſe which act upon the fluids, by mere contact, are very few in number, being only the watery diluents, which are of ſingular efficacy in colliquating the viſcid and glutinous humours. All the other medicines mentioned as *attenuants* act only on the ſolids, by increaſing their tone, augmenting their ſtrength, heightening their contractile force, and adding to the elaſticity and ſyſtolic motion of the veſſels; by which means they preſs and impel more vigorouſly their contained fluids, and by that means divide and break them, by driving them forcibly through ſmall paſſages.

Attenuating and *inciding* medicines are of very extenſive uſe in phyſic, and come under different denominations, according to the different effects they produce. Thus, when tenacious and viſcid juices not only ſtagnate in the cavities of the veſſels, but obſtruct the minute ducts of the *viſcera* and emunctories, theſe medicines, by their *inciding* and *attenuating* quality, diſcharge the humours, and remove the obſtructions; for which reaſon they are not improperly called *aperients*; and they deſerve alſo, in theſe caſes, the names of *antiſcorbutics*, and *ſweeteners of the blood*.

Attenuants produce ſo great a variety of effects, that it is proper we ſhould be well acquainted with their ſeveral kinds, as appropriated to the ſeveral diſorders, and know which will prove moſt ſerviceable in each. The diſſolving and *attenuating* of viſcid crudities in the ſtomach and *primæ viæ*, is well anſwered by the roots of *arum, acorus*, pepper, ginger, and the like; as alſo by *ſal ammoniac*, vitriolated tartar, the fixed alcaline ſalts, and the ſimple or dulcified ſpirit of ſalt. When crude and unconcocted humours are to be evacuated by ſtool, this intention is very well anſwered by the neutral ſalts, as the ſalts of the purging waters, and the *ſal polycreſtum*, with a ſufficient quantity of a watery vehicle.

When viſcid humours, occaſioning diſorders of the breaſt, are to be *attenuated* and expectorated, the intention is moſt effectually anſwered by elecampane and orrice roots; and by *gum ammoniacum*, myrrh, or benjamin, and balſam of Peru; or by regenerated tartar, oxymel of ſquills, a ſolution of crabs eyes in diſtilled vinegar, and the ſyrups of tobacco, and the like.

When the maſs of blood is tainted by thick and tenacious *ſordes*, and the emunctories are by that means obſtructed, and the humours contaminated by a ſaline ſulphureous and ſcorbutic dyſcracy, the moſt efficacious of the *attenuants* are the horſe-radiſh, ſcurvy-graſs, water and garden creſſes, muſtard, *gum ammoniacum*, benjamin, myrrh, the oil of fixed nitre, oil of tartar *per deliquium*, ſolutions of nitre, ſpirit of *ſal ammoniac*, ſalt of wormwood with lemon-juice, and the ſalts of the medicinal waters.

When grumous or coagulated blood, occaſioned by contuſions or blows, is to be *attenuated*, and again diſſolved, the intention is admirably anſwered by the roots of Solomon's ſeal, vinegar, and crabs eyes, the regenerated tartar, and nitre prepared with antimony.

And in caſes where the lymph has acquired a preternatural thickneſs and viſcidity, eſpecially if from a venereal taint, the curative intention is moſt effectually anſwered by *guaiacum*, the acrid tincture of antimony, calomel, *æthiops* mineral, and the like; which, when ſkilfully uſed, are of ſingular efficacy in diſſolving and *attenuating* the viſcid juices impacted in the glands of the liver. Hoffman.

ATTENUATION, the act of *attenuating*; that is, of making any fluid thinner, and leſs conſiſtent, than it was before.

The word is compounded of *ad*, and *tenuis*, *thin*.

Attenuation is defined more generally by Chauvin, the dividing or ſeparating of the minute parts of any body, which before, by their mutual *nexus* or implication, formed a more continuous maſs.—Accordingly, among *Alchemiſts*, we ſometimes find the word uſed for pulverization, or the act of reducing a body into an impalpable powder, by grinding, pounding, or the like.

ATTERMINING, in our *Old Writers*, is uſed for a time, or term, granted for payment of a debt, according to Blount.

ATTESTATION, the giving teſtimony, or evidence, of the truth of any thing; eſpecially in writing.

The word is compounded of *ad*, *to*, and *teſtis*, *witneſs*.

Miracles need be well *atteſted*, to gain credit.

ATTIC, ſomething relating to Attica, or the city of Athens.—In matters of *Philology* we uſe, *Attic* ſalt, *ſales Attici*, meaning a delicate, poignant kind of wit and humour, peculiar to the Athenian writers.—*Attic* witneſs, was a witneſs incapable of corruption; ſo an *Attic* muſe was an excellent one, &c.

Attic is alſo uſed in *Architecture* for a kind of building, wherein there is no roof or covering to be ſeen; thus called becauſe uſual at Athens.

Attic, or Attic *Order*, is alſo a kind of little order, after the manner of a pedeſtal, raiſed upon another larger order; by way of crowning, or to finiſh the building.—See *Tab. Archit. fig.* 4c. (C.) which exhibits an *Attic order* with pilaſters.

An *Attic* is ſometimes alſo uſed for the conveniency of having a wardrobe, or the like; and inſtead of regular columns, has only pilaſters of a particular form; and ſometimes no pilaſters at all.

There are alſo *Attics* uſed for high altars.—The order takes its name from Athens, where it was firſt practiſed.

Attic *of a roof*, is a little ſtory or pedeſtal, either of ſtone or wood covered with lead, ſerving as a kind of parapet to a terrace, platform, or the like.

Attic *Baſe*, is a peculiar kind of baſe uſed by the *Ancient Architects*, in the Doric order; and which *Modern Architects* have given to the Doric column.

The *Attic baſe* is the ſame with Palladio's *Ionic baſe*.

The *Attic* is the moſt beautiful of all the baſes. See Base.

Attic *continued*, is that which encompaſſes the whole circumference of a building, without any interruption; following all the jets, the returns of the pavilions, &c.

Attic *interpoſed*, is that ſituate between two tall ſtories, ſometimes adorned with columns, or pilaſters.

Attic *Year*; ſee Year.

ATTILLUS, a river-fiſh, of the STURGEON-kind, called by ſome *adello*, *adano*, and *adeno*. It grows to a very large ſize, and when full-grown, caſts its ſcales, and never has any freſh ones in their place, but remains perfectly ſmooth; in which it differs from the common *ſturgeon*. But it ſeems not to differ in any eſſential point from the HUSO *Germanorum*. It is an eatable fiſh, but is greatly inferior in taſte to the *ſturgeon*. Willughby.

ATTINGA, a ſpecies of the *diodon* in the order of NANTES.

ATTIRE, in *Botany*, is uſed by ſome to denote the third part or diviſion of the flower of a plant; the other two being the *empalement*, and the *foliation*.

The *attire* is of two kinds; *ſeminiform*, and *florid*.—The *ſeminiform attire* conſiſts of two parts; chives, or *ſtamina*; and ſummits, or *apices*; one upon each *ſtamen*.

The *florid attire* is uſually called the *thrums*, as in the flowers of marigold, tanſy, &c.—Thoſe thrums are called *ſuits*, which conſiſt of two, but moſt times of three pieces.—And the outer part of the ſuit is the *floret*, whoſe body is divided at the top like a cowſlip-flower, into five parts, or diſtinct leaves.

Attire, in *Hunting*, denotes the HEAD or horns of a deer.

The *attire* of a ſtag, if perfect, conſiſts of bur, pearls, beam, gutters, antler, ſur-antler, royal, ſur-royal, and croches.—Of a buck, of the bur, beam, brow-antler, advancer, palm, and ſpellers.

ATTITUDE, in *Painting* and *Sculpture*, the poſture, or geſture, of a figure, or ſtatue; or the diſpoſition of its parts, by which we diſcover the action it is engaged in, and the very ſentiment ſuppoſed to be in the mind of the perſon repreſented.

The word comes from the Italian *attitudine*, which ſignifies *the ſame*; and that from the Latin *aptitudo*, *fitneſs*.

The repreſenting of this action and ſentiment in a ſtrong and lively manner, makes what they call a *good expreſſion*.

ATTOLLENS, in *Anatomy*, a name common to ſeveral muſcles, whoſe office or action is to raiſe the parts they belong to.

The word is compounded of the Latin *ad*, *to*, and *tollo*, *I lift*.

The *attollens*, or *attollent* muſcles, are otherwiſe called *levators* and *elevators*.

ATTMELLA; ſee Ahmella.

ATTORNARE, in the original ſenſe, ſignified to turn over money and goods, that is, to aſſign and appropriate them to certain perſons, or uſe. This is properly called *attornare rem*.

Attornare *perſonam*, denotes to depute a repreſentative, or proxy, to appear and act for another.

Thus in trials at *Common Law*, the plaintiff, or defendant, retained *attornatum ſuum poſitum in loco ſuo ad lucrandum vel perdendum*.

ATTORNATO *faciendo vel recipiendo*, in the *Common Law*, a writ to command a ſheriff, or ſteward, of a county-court, or hundred-court, to receive and admit an *attorney* to appear for the perſon that oweth ſuit of court. F. N. B. 156. Every perſon that owes ſuit to the county-court, court-baron, &c. may make an *attorney* to do his ſuit. Stat. 20 H. III. c. 10.

ATTORNEY, Atturnatus, or Attornatus, in *Law*, a perſon appointed by another to do ſomething in his ſtead; particularly to ſolicit and carry on a law-ſuit.

The word is compounded of the Latin *ad*, *to*; and the French *tourner*, *to turn*; q. d. *to turn a buſineſs over to another*.—The ancient Latin name, according to Bracton, is *reſponſalis*.

Attorneys, in *Common Law*, are much the ſame with *procurators*, *proctors*, or *ſynodics*, in the *Civil Law*.

Attorneys are properly thoſe who ſue out writs or proceſs, or commence, carry on, and defend actions, or other proceedings, in the names of other perſons, in any of the courts of common law.—They are diſtinguiſhed from *ſolicitors*, who do the like buſineſs in courts of equity; as the chancery, equity-court in the exchequer, chamber-court of the duchy, or the like.

None are to be admitted to act either as the one or the other, without having ſerved a clerkſhip of five years, taken the oath provided in that caſe, and been enrolled.—Judges of the ſaid courts of law are to examine into the capacity of the *attorneys*; and thoſe of the courts of equity, into the capacity of the *ſolicitors*. 2 G. II. c. 23.

Anciently, thoſe of authority in courts had it in their power whether or no to ſuffer men to appear or ſue by another than themſelves; as appears from Fitz. de Nat. Brev. in the writ, *Dedimus poteſtatem de atturnato faciendo*; where it appears, that men were driven to procure the king's writs, or letters patent, to appoint *attorneys* for them: but it is ſince provided by parliament, that it ſhall be lawful to appoint an *attorney* without any circuition: as appears by ſeveral ſtatutes. 20 H. III. c. 10. 6 Ed. I. c. 8. &c.

There is a great diverſity of writs in the table of the regiſter, wherein the king commands the judges to admit of *attorneys*; whereby there aroſe ſo many unſkilful *attorneys*, and ſo many miſchiefs thereby, that for reſtraining them, it was enacted, 4 H. IV. c. 18. that the judges ſhould examine them, and diſplace the unſkilful; and again, 33 H. VI. c. 7. that there ſhould be but a certain number of *attorneys* in Norfolk and Suffolk. And many ſubſequent ſtatutes have brought them under farther regulations. 3 Jac. I. c. 7. 12 G. I. c. 29. 2 G. II. c. 23. 22 G. II. c. 46. 23 G. II. c. 26.

Attorney is either *general* or *ſpecial.*

ATTORNEY-*general*, is he who is appointed to manage the affairs, or ſuits of a community; or rather, he who is appointed to conduct all the ſuits in general, whether of a community, or a particular perſon.

Such is the *attorney-general* of the king, who is the ſame as the *procurator Cæſaris* in the Roman empire. See PROCURATOR.

To him come warrants for making out patents, pardons, &c.

He is at the head of managing all law-affairs of the crown, either in criminal proſecutions, or otherwiſe; eſpecially in matters of treaſon, ſedition, &c. In all courts he pleads within the bar; but, when a privy counſellor, he cannot plead in any court, but on the king's affairs, without obtaining a privy-ſeal for ſo doing.

ATTORNEY-*ſpecial*, is he who is employed in one or more cauſes particularly ſpecified.

Attorneys are alſo diſtinguiſhed, with reſpect to the courts, into *attorneys at large*, and *attorneys ſpecial*, belonging to this or that court only.—No man can practiſe as an *attorney* in any particular court, unleſs he is admitted and ſworn an *attorney* of that court.

ATTORNEY *of the duchy court of Lancaſter*, *atturnatus curiæ ducatus Lancaſtriæ*, is the ſecond officer in that court; being there, for his ſkill in law, placed as aſſeſſor to the chancellor of the court.

ATTORNEY, *Letter of.* See LETTER.

ATTORNEY, *Warrant of.* See WARRANT.

ATTOURNMENT, or **ATTORNMENT**, in *Law*, a transferring of duty and ſervice to another lord; or an acknowledgment which a tenant makes of homage and ſervice to a new lord.

Thus, when one is tenant for life, and he in reverſion grants his right to another, it is neceſſary the tenant for life agree thereto, which is called *attournment*; and without which nothing paſſes by the grant.—If the grant be by fine, in court of record, the tenant ſhall be compelled to *attourn.* Stat. 27 H. VIII.

The words uſed in *attournment* are theſe: *I agree to the grant made to you*; or, more commonly, *I attourn to you by force of the ſame grant*; or, *I become your tenant*; *or deliver to the grantee a penny by way of attournment.* Lyttel. lib. 3.

Attournment is either by word, or by act; voluntary, or compulſory; by the writ *per quæ ſervitia*, or by diſtreſs.—It may be made to the lord himſelf, or to his ſteward, in court.

There is alſo *attournment* in deed, and *attournment* in law. *Attournment* in law is an act, which though it be not an expreſs *attournment*, yet, in intendment of law, is of equal force.

This was a large topic in our *Common Law*; but now much of this learning is out of uſe: and by a late ſtatute it is enacted, that all grants and conveyances of manors, lands, rents, reverſions, &c. by fine or otherwiſe, ſhall be good without the *attournment* of the tenants of ſuch lands, or of the particular tenant upon whoſe eſtate any ſuch reverſion, &c. ſhall be expectant or depending. But notice muſt be given of the grant to the tenant; before which he ſhall not be prejudiced by payment of any rent to the grantor, or for breach of the condition for non-payment. Stat. 4 and 5 Ann, c. 16. And *attournments* of lands, &c. made by tenants to ſtrangers, ſhall be void, and their landlord's poſſeſſion not affected thereby. Though this ſhall not extend to vacate any *attournment* made purſuant to a judgment at law, or with conſent of the landlord; or on a forfeited mortgage, &c. by 11 G. II. c. 19.

ATTRACTION, **ATTRACTIO**, or **TRACTIO**, in *Mechanics*, the act of a moving power, whereby a moveable is *drawn*, or brought nearer to the mover.

The word is compounded of *ad*, *to*, and *traho*, *I draw.*

As ACTION and RE-ACTION are always equal, and contrary; it follows, that, in all *attraction*, the mover is drawn towards the moveable, as much as the moveable towards the mover.

ATTRACTION, or **ATTRACTIVE** *force*, in the *Ancient Phyſics*, denotes a natural power ſuppoſed to be inherent in certain bodies, whereby they act on other diſtant bodies, and draw them toward themſelves.

This the Peripatetics call the *motion of attraction*; and on many occaſions, SUCTION; and produce various inſtances where they ſuppoſe it to obtain.—Thus the air, in reſpiration, is taken in, according to them, by *attraction of ſuction*; ſo is the ſmoke through a pipe of tobacco; and the milk out of the mother's breaſt: thus alſo it is, that the blood and humours riſe in a cupping-glaſs, water in a pump, and ſmoke in chimneys; ſo vapours and exhalations are attracted by the ſun, iron by the magnet, ſtraws by amber, and electrical bodies, &c. But the later philoſophers generally explode the notion of *attraction*; aſſerting, that a body cannot act where it is not; and that all motion is performed by a mere impulſion.—Accordingly, moſt of the effects which the ancients attributed to this unknown part of *attraction*, the moderns have diſcovered to be owing to more ſenſible and obvious cauſes; particularly the preſſure of the AIR. To this are owing the *phænomena* of inſpiration, ſmoaking, ſucking, cupping-glaſſes, pumps, vapours, exhalations, &c.

The power oppoſite to *attraction* is called REPULSION; which is alſo argued to have ſome place in natural things.

ATTRACTION, or **ATTRACTIVE** *power*, is more particularly uſed, in the *Newtonian Philoſophy*, for a power, or principle, whereby all bodies, and the particles of all bodies, mutually tend towards each other.—Or, more juſtly, *attraction* is the effect of ſuch power, whereby every particle of matter tends towards every other particle.

Attraction, its laws, *phænomena*, &c. form the chief ſubject of Sir Iſaac Newton's philoſophy. See NEWTONIAN *Philoſophy.*

The principle of *attraction*, in the Newtonian ſenſe of it, ſeems to have been firſt ſurmiſed by Copernicus. “As “for gravity,” ſays Copernicus, “I conſider it as no- “thing more than a certain natural appetence *(appetentia)* “that the Creator has impreſſed upon all the parts of “matter, in order to their uniting or coaleſcing into a “globular form, for their better preſervation; and it is “credible that the ſame power is alſo inherent in the “ſun and moon, and planets, that thoſe bodies may “conſtantly retain that round figure in which we be- “hold them.” De Rev. Orb. Cœleſt. lib. i. cap. 9. And Kepler calls gravity a corporeal and mutual affection between ſimilar bodies, in order to their union. Aſt. Nov. in Introd. And he pronounces more poſitively, that no bodies whatſoever were abſolutely light, but only relatively ſo; and conſequently, that all matter was ſubjected to the law of gravitation. Ibid.

The firſt in this country who adopted the notion of *attraction*, was Dr. Gilbert, in his book De Magnete; and the next was the celebrated Lord Bacon. Nov. Organ. lib. ii. aphor. 36. 45. 48. Sylv. cent. i. exp. 33. In France it was received by Fermat and Roberval; and in Italy by Galilæo and Borelli. But till Sir Iſaac Newton appeared, this principle was very imperfectly defined and applied.

It muſt be obſerved, that though this great author makes uſe of the word *attraction*, in common with the ſchool philoſophers; yet he very ſtudiouſly diſtinguiſhes between the ideas.—The ancient *attraction* was ſuppoſed a kind of quality, inherent in certain bodies themſelves; and ariſing from their particular or ſpecific forms.

The Newtonian *attraction* is a more indefinite principle; denoting, not any particular kind or manner of action, nor the phyſical cauſe of ſuch action; but only a tendency in the general, a *conatus accedendi*, to whatever cauſe, phyſical or metaphyſical, ſuch effect be owing; whether to a power inherent in the bodies themſelves, or to the impulſe of an external agent.

Accordingly, that author, in his Philoſoph. Nat. Prin. Math. notes, “that he uſes the words *attraction*, *impulſe*, “and *propenſion* to the centre, indifferently; and cautions “the reader not to imagine, that by *attraction* he expreſſes “the *modus* of the action, or the efficient cauſe thereof; “as if there were any proper powers in the centres, “which in reality are only mathematical points; or, as “if centres could attract.” Lib. i. p. 5.—So he “con- “ſiders centripetal powers as *attractions*; though, phy- “ſically ſpeaking, it were perhaps more juſt to call them “*impulſes.*” Ib. p. 147. He adds, “that what he calls “*attraction* may poſſibly be effected by impulſe, though “not a common or corporeal impulſe; or after ſome “other manner unknown to us.” Optic. p. 322.

Attraction, if conſidered as a quality ariſing from the ſpecific forms of bodies, ought, together with ſympathy, antipathy, and the whole tribe of occult qualities, to be exploded. But when we have ſet theſe aſide, there will remain innumerable *phænomena* of nature, and particularly the gravity or weight of bodies, or their tendency to a centre, which argue a principle of action ſeemingly diſtinct from impulſe; where, at leaſt, there is no ſenſible impulſion concerned. Nay, what is more, this action, in ſome reſpects, differs from all impulſion we know of; impulſe being always found to act in proportion to the ſurfaces of bodies; whereas gravity acts according to their ſolid content, and conſequently muſt ariſe from ſome cauſe that penetrates or pervades the whole ſubſtance thereof.—This unknown principle, unknown, we mean, in reſpect of its cauſe; for its *phænomena* and effects are moſt obvious, with all the ſpecies and modifications thereof, we call *attraction*; which is a general name, under which all mutual tendencies, where no phyſical impulſe appears, and which cannot, therefore, be accounted for from any known laws of nature, may be ranged.

And hence ariſe divers particular kinds of *attraction*; as, GRAVITY, MAGNETISM, ELECTRICITY, &c. which are ſo many different principles, acting by different laws; and only agreeing in this, that we do not ſee any phyſical cauſes thereof: but that, as to our ſenſes, they may really ariſe from ſome power or efficacy in ſuch bodies, whereby they are enabled to act, even upon diſtant bodies; though our reaſon abſolutely diſallows of any ſuch action.

Attraction may be divided, with reſpect to the law it obſerves, into two kinds.—1. That which extends to a ſenſible diſtance.—Such are the *attraction* of GRAVITY, found in all bodies: and the *attraction* of MAGNETISM, and ELECTRICITY, found in particular bodies.—The ſeveral laws and *phænomena* of each, ſee under their reſpective articles.

The *attraction* of GRAVITY, called alſo among mathematicians the *centripetal force*, is one of the greateſt and moſt univerſal principles in all nature. We ſee and feel it operate on bodies near the earth, and find, by obſervation, that the ſame power (i. e. a power which acts in the ſame manner, and by the ſame rules, viz. always proportionably to the quantities of matter, and as the ſquares of the diſtances reciprocally) does alſo obtain in the moon, and the other planets primary and ſecondary, as well as in the comets: and even that this is the very power whereby they are all retained in their orbits, &c. And hence, as gravity is found in all the bodies which come under our obſervation, it is eaſily inferred, by one of the ſettled rules of philoſophizing, that it obtains in all others; and as it is found to be as the quantity of matter in each body, it muſt be in every particle thereof; and hence, every particle in nature is proved to *attract* every other particle, &c. See the demonſtration hereof laid down at large, with the application of the principle to the celeſtial motions, under the articles CENTRIFUGAL, CENTRIPETAL, COMET, MOON, NEWTONIAN *Philoſophy*, PLANET, SATELLITE, SUN, &c.

From this *attraction* ariſes all the motion, and conſequently all the mutation, in the great world.—By this, heavy bodies deſcend, and light ones aſcend; by this projectiles are directed, vapours and exhalations riſe, and rains, &c. fall. By this rivers glide, the air preſſes, the ocean ſwells, &c. In effect, the motions ariſing from this principle make the ſubject of that extenſive branch of mathematics, called MECHANICS, or STATICS; with the parts or appendages thereof, HYDROSTATICS, PNEUMATICS. See MATHEMATICS, PHILOSOPHY, &c.

2. That which does not extend to ſenſible diſtances.—Such is found to obtain in the minute particles whereof bodies are compoſed, which attract each other at, or extremely near, the point of contact, with a force much ſuperior to that of gravity; but which at any diſtance from it decreaſes much faſter than the power of gravity.—This power, a late ingenious author chooſes to call the *attraction of* COHESION; as being that whereby the atoms or inſenſible particles of bodies are united into ſenſible maſſes.

This latter kind of *attraction* owns Sir Iſaac Newton for its diſcoverer; as the former does, for its improver.—The laws of motion, percuſſion, &c. in ſenſible bodies under various circumſtances, as falling, projected, &c. aſcertained by the later philoſophers, do not reach to thoſe more remote, inteſtine motions of the component particles of the ſame bodies, whereon the changes of the texture, colour, properties, &c. of bodies depend: ſo that our philoſophy, if it were only founded on the principle of gravitation, and carried ſo far as that would lead us, would neceſſarily be very deficient.

But, beſide the common laws of ſenſible maſſes, the minute parts they are compoſed of are found ſubject to ſome others, which have been but lately taken notice of, and are even yet very imperfectly known. Sir Iſaac Newton, to whoſe happy penetration we owe the hint, contents himſelf to eſtabliſh, that there are ſuch motions in the *minima naturæ*, and that they flow from certain powers or forces, not reducible to any of thoſe in the great world. —In virtue of theſe powers, he ſhews, "That the ſmall
" particles act on one another, even at a diſtance; and
" that many of the *phænomena* of nature are the reſult
" thereof. Senſible bodies, we have already obſerved,
" act on one another divers ways; and as we thus per-
" ceive the tenour and courſe of nature, it appears highly
" probable, that there may be other powers of the like
" kind; nature being very uniform and conſiſtent with
" herſelf.—Thoſe juſt mentioned reach to ſenſible diſ-
" tances, and ſo have been obſerved by vulgar eyes: but
" there may be others, which reach to ſuch ſmall diſ-
" tances as have hitherto eſcaped obſervation; and it is
" probable electricity may reach to ſuch diſtances, even
" without being excited by friction."

The great author juſt mentioned proceeds to confirm the reality of theſe ſuſpicions from a great number of *phænomena* and experiments, which plainly argue ſuch powers and actions between the particles, e. gr. of ſalts and water, oil of vitriol and water, *aqua fortis* and iron, ſpirit of vitriol and ſalt-petre. He alſo ſhews, that theſe powers, &c. are unequally ſtrong between different bodies; ſtronger, e. gr. between the particles of ſalt of tartar and thoſe of *aqua fortis*, than thoſe of ſilver; between *aqua fortis* and *lapis calaminaris*, than iron; between iron than copper, copper than ſilver, or mercury. So ſpirit of vitriol acts on water, but more on iron or copper, &c.

The other experiments which countenance the exiſtence of ſuch principle of *attraction* in the particles of matter, are innumerable; many of them the reader will find enumerated under the articles ACID, MATTER, MENSTRUUM, SALT, &c.

Theſe actions, in virtue whereof the particles of the bodies above-mentioned tend towards each other, the author calls by a general, indefinite name, *attraction*, which is equally applicable to all actions, whereby diſtant bodies tend towards one another, whether by impulſe, or by any other more latent power: and from hence he accounts for an infinity of *phænomena*, otherwiſe inexplicable, to which the principle of gravity is inadequate.—Such are COHESION, DISSOLUTION, COAGULATION, CRYSTALLIZATIGN, the ASCENT of fluids in capillary tubes, *animal* SECRETION, FLUIDITY, FIXITY, FERMENTATION, &c. See SPHERICITY, &c.

" Thus (adds our immortal author) will nature be found
" very conformable to herſelf, and very ſimple; per-
" forming all the great motions of the heavenly bodies,
" by the *attraction* of GRAVITY, which intercedes thoſe
" bodies, and almoſt all the ſmall ones of their parts, by
" ſome other attractive power diffuſed through the par-
" ticles thereof.—Without ſuch principles, there never
" would have been any motion in the world; and with-
" out the continuance thereof, motion would ſoon periſh,
" there being otherwiſe a great decreaſe or diminution
" thereof, which is only ſupplied by theſe active princi-
" ples." Optics, p. 373.

We need not ſay how unjuſt it is in the generality of foreign philoſophers, to declare againſt a principle which furniſhes ſo beautiful a view; for no other reaſon, but becauſe they cannot conceive how one body ſhould act on another at a diſtance.—It is certain, philoſophy allows of no action but what is by immediate contact and impulſion (for how can a body exert any active power there, where it does not exiſt? to ſuppoſe this of any thing, even the Supreme Being himſelf, would perhaps imply a contradiction): yet we ſee effects without ſeeing any ſuch impulſe; and where there are effects, we can eaſily infer there are cauſes, whether we ſee them or no. But a man may conſider ſuch effects, without entering into the conſideration of the cauſes; as, indeed, it ſeems the buſineſs of a philoſopher to do: for to exclude a number of *phænomena* which we do ſee, will be to leave a great chaſm in the hiſtory of nature; and to argue about actions which we do not ſee, will be to build caſtles in the air.—It follows, therefore, that the *phænomena* of *attraction* are matter of phyſical conſideration, and as ſuch intitled to a ſhare in the ſyſtem of PHYSICS; but that the cauſes thereof will only become ſo, when they become ſenſible; i. e. when they appear to be the effect of ſome other higher cauſes (for a cauſe is no otherwiſe ſeen than as itſelf is an effect, ſo that the firſt cauſe muſt from the nature of things be inviſible): we are therefore at liberty to ſuppoſe the cauſes of *attractions* what we pleaſe, without any injury to the effects.—The illuſtrious author himſelf ſeems a little irreſolute as to the cauſes, inclining, ſometimes, to attribute *gravity* to the action of an immaterial cauſe; Optics, p. 343, &c. and ſometimes to that of a material one. Ib. p. 325.

In his philoſophy, the reſearch into cauſes is the laſt thing; and never comes under conſideration till the laws and *phænomena* of the effect be ſettled; it being to theſe *phænomena* that the cauſe is to be accommodated.—The cauſe even of any, the groſſeſt, and moſt ſenſible action, is not adequately known: how impulſe or percuſſion itſelf produces its effect, i. e. how motion is communicated by body to body, confounds the deepeſt philoſophers; yet is impulſe received not only into *philoſophy*, but into *mathematics*; and accordingly the laws and *phænomena* of its effects make the greateſt part of common *mechanics*.

The other ſpecies of *attraction*, therefore, in which no impulſe is remarkable, when their *phænomena* are ſufficiently aſcertained, have the ſame title to be promoted from *phyſical* to *mathematical* conſideration; and this, without any previous inquiry into their cauſes, which our conceptions may not be proportionate to: let their cauſes be occult, as all cauſes, ſtrictly ſpeaking, are, ſo that their effects, which alone immediately concern us, be but apparent. See CAUSE.

Our noble countryman, then, far from adulterating philoſophy with any thing foreign, or metaphyſical, as many have reproached him with doing, has the glory of having thrown every thing of this kind out of his ſyſtem, and of having opened a new ſource of ſublimer *mechanics*, which, duly cultivated, might be of infinitely greater extent than all the *mechanics* yet known: it is hence alone we muſt expect to learn the manner of the changes, productions, generations, corruptions, &c. of natural things; with all that ſcene of wonders opened to us by the operations of *chemiſtry*.

Some of our own countrymen have proſecuted the diſcovery with laudable zeal: Dr. Keil, particularly, has endeavoured to deduce ſome of the laws of this new action, and applied them to ſolve divers of the more general *phænomena* of bodies, as *coheſion*, *fluidity*, *elaſticity*, *ſoftneſs*, *fermentation*, *coagulation*, &c. And Dr. Freind, ſeconding him, has made a further application of the ſame principles, to account at once for almoſt all the *phænomena* that *chemiſtry* preſents.—So that ſome philoſophers are inclined to think that the new mechanics ſhould ſeem already raiſed to a complete ſcience; and that nothing now can occur, but what we have an immediate ſolution of, from the *attractive force*.

But this ſeems a little too precipitate; a principle ſo fertile ſhould have been further explored; its particular laws, limits, &c. more induſtriouſly detected, and laid down, before we had proceeded to the application.—*Attraction*, in the groſs, is ſo complex a thing, that it may ſolve a thouſand different *phænomena* alike: the notion is but one degree more ſimple and preciſe than action itſelf; and till more of its properties are aſcertained, it were better to apply it leſs, and ſtudy it more.—It may be added, that ſome of Sir Iſaac Newton's followers have been charged with falling into that error, which he induſtriouſly avoided, viz. of conſidering *attraction* as a cauſe or active property in bodies, not merely as a *phænomenon* or effect.

As a ſpecimen of the extent of the principle, and the manner of applying it, we ſhall here ſubjoin the principal laws and conditions of it; as deduced by Sir Iſaac Newton, Dr. Keil, Dr. Freind, &c.

Theor. I. Beſides that *attractive* power whereby the planets and comets are retained in their orbits, there is another, by which the ſeveral particles whereof bodies conſiſt, attract, and are mutually attracted by, each other. This theorem, we have already obſerved, is demonſtrable from a great number of *phænomena*.—We ſhall here only mention a few eaſy and obvious ones; as, the ſpherical figure aſſumed by the drops of fluids, which can only ariſe from ſuch principle: the uniting and incorporating of two ſpherules of quickſilver into one, upon the firſt touch, or extremely near approach, of their ſurfaces: the riſing of water up the ſides of a glaſs bubble immerged therein, higher than the level of the other water, or of mercury up a ſphere of iron, or the like.

As to the juſt law of this *attraction*, it is not yet determined: only this we know in the general, that the force, in receding from the point of contact, is diminiſhed in a greater proportion than that of the duplicate ratio of the diſtances, which is the law of gravity. Becauſe, if the diminution were only in ſuch duplicate ratio, the *attraction* at any ſmall aſſignable diſtance would be nearly the ſame as at the point of contact: whereas experience teaches, that this *attraction* almoſt vaniſhes, and ceaſes to have any effect, at the ſmalleſt aſſignable diſtance.—But whether to fix on a triplicate, quadruplicate, or ſome other proportion to the increaſing diſtance, is not aſcertained by experiment.

II. The quantity of *attraction*, in all bodies, is exactly proportional to the quantity of matter in the *attracting* body; as being in reality the reſult or ſum of the united forces of the *attractions* of all thoſe ſingle particles, of which it is compoſed; or, in other words, *attraction* in all bodies is, *cæteris paribus*, as their ſolidities.

Hence, 1. At equal diſtances the *attractions* of homogeneal ſpheres will be as their magnitudes.—And,

2. At any diſtance whatever, the *attraction* is as the ſphere divided by the ſquare of the diſtance.

This law, it muſt be noted, only holds in reſpect of atoms, or the ſmalleſt conſtituent particles, ſometimes called *particles of the laſt compoſition*; and not of corpuſcles or compoſitions made up of theſe; for they may be ſo put together, as that the moſt ſolid corpuſcles may form the lighteſt particles, i. e. the unfitneſs of their ſurfaces for intimate contact may occaſion ſuch great interſtices, as will make their bulks large in proportion to their matter.

III. If a body conſiſts of particles, every one of which has an *attractive* power decreaſing in a triplicate, or more than a triplicate ratio of their diſtances; the force wherewith a particle is attracted by that body in the point of contact, or at an infinitely little diſtance from the contact, will be infinitely greater, than if that particle were placed at a given diſtance from the body.

IV. Upon the ſame ſuppoſition, if the *attractive* force, at any aſſignable diſtance, hath a finite ratio to its gravity, this force in the point of contact, or at an infinitely ſmall diſtance, will be infinitely greater than its power of gravity.

V. But if in the point of contact the *attractive* force of bodies hath a finite ratio to their gravity; this force in any aſſignable diſtance is infinitely leſs than the power of gravity; and therefore it becomes nothing.

VI. The *attractive* force of every particle of matter, in the point of contact, almoſt infinitely exceeds the power of gravity, but is not infinitely greater than that power; and therefore, in a given diſtance, the *attractive* force will vaniſh to nothing.

This *attractive* power, therefore, thus ſuperadded to matter, only extends to ſpaces extremely minute, and vaniſhes at greater diſtances; whence, the motion of the heavenly bodies, which are at a prodigious diſtance from each other, cannot be diſturbed by it, but will continually go on, as if there were no ſuch power in bodies.

Where this *attracting* power ceaſes, there, according to Sir Iſaac Newton, does a repelling power commence; or rather, the *attracting* does thenceforward become a *repelling* power.

VII. Suppoſing a corpuſcle to touch any body, the force whereby that corpuſcle is impelled, that is, the force with which it coheres to that body, will be proportionable to the quantity of contact; for the parts, farther removed from the point of contact, contribute nothing towards its COHESION.

Hence, according to the difference in the contact of particles, there will be different degrees of coheſion; but the powers of coheſion are greateſt when the touching ſurfaces are planes; in which caſe, *cæteris paribus*, the force by which one corpuſcle adheres to others will be as the parts of the touching ſurfaces.

Hence it appears why two perfectly poliſhed marbles, joined together by their plain ſurfaces, cannot be forced aſunder, but by a weight which much exceeds that of the incumbent air.

Hence alſo may be drawn a ſolution of that famous problem concerning the coheſion of the parts of matter.

VIII. The power of *attraction* in the ſmall particles increaſes, as the bulk and weight of the particles diminiſhes. For, the force only acting at or near the point of contact, the *momentum* muſt be as the quantity of contact, that is, as the denſity of the particles, and the largeneſs of their ſurfaces: but the ſurfaces of bodies increaſe or decreaſe as the ſquares, and the ſolidities, as the cubes, of the diameters. Conſequently the ſmalleſt particles, having the largeſt ſurfaces in proportion to their ſolidities, are capable of more contact, &c. Thoſe corpuſcles are moſt eaſily ſeparated from one another, whoſe contacts are the feweſt and the leaſt, as in ſpheres infinitely ſmall.

Hence we have the cauſe of FLUIDITY.

IX. The force whereby any corpuſcle is drawn to another nearly adjacent body, ſuffers no change in its quantity, let the matter of the *attracting* body be increaſed or diminiſhed; ſuppoſing the ſame denſity to remain in the body, and the diſtance of the corpuſcle to continue the ſame.

For ſince the *attractive* powers of particles are diffuſed only through the ſmalleſt ſpaces, it is manifeſt, that the remoter parts at C, D, and E (*Tab. Nat. Hiſt. fig.* 22.) contribute nothing towards *attracting* the corpuſcle A: and therefore the corpuſcle will be attracted with the ſame force towards B, whether theſe parts remain, or be taken away; or, laſtly, whether others be added to them.

Hence, particles will have different *attractive* forces, according to their different ſtructure and compoſition; thus a particle perforated will not attract ſo ſtrongly as if entire. So, again, the different figures into which a particle is formed, will occaſion a diverſity of power: thus a ſphere will attract more than a cone, cylinder, &c.

X. Suppoſe a body of ſuch a texture as that the particles of the laſt compoſition, by an external force, ſuch as a weight compreſſing them, or an impulſe given by another body, may be a little removed from their original contact, but ſo as not to acquire new ones; the particles by their *attractive* force tending to one another, will ſoon return to their original contacts.—But when the ſame contacts and poſitions of the particles which compoſe any body, return, the ſame figure of the body will alſo be reſtored; and therefore bodies which have loſt their original figures, may recover them by *attraction*.

Hence appears the cauſe of ELASTICITY.—For, where the contiguous particles of a body have by any external violence been forced from their former points of contact, to extremely ſmall diſtances; as ſoon as that force is taken off, the ſeparated particles muſt return to their former contact: by which means the body will reſume its figure, &c.

XI. But if the texture of a body be ſuch, that the particles, by an impreſſed force being removed from their contacts, come immediately into others of the ſame degree, that body cannot reſtore itſelf to its original figure. Hence we underſtand what texture that is, wherein the SOFTNESS of bodies conſiſts.

XII. The bulk of a body heavier than water may be ſo far diminiſhed, that it ſhall remain ſuſpended in water, without deſcending by its own gravity.

Hence it appears why ſaline, metallic, and other ſuch-like particles, when reduced to ſmall dimenſions, are ſuſpended in their *menſtrua*.

XIII. Greater bodies approach one another with a leſs velocity than ſmaller.—For the force with which two bodies A and B (*Tab. Nat. Hiſt. fig.* 23. N° 2.) approach, reſides only in the neareſt particles; the more remote having nothing to do therein. No greater force, therefore, will be applied to move the bodies A and B, than to move the particles *c* and *d*; but the velocities of bodies moved by the ſame force are in a reciprocal ratio of the bodies: wherefore the velocity with which the body A tends towards B is to the velocity with which the particle *c* detached from the body would tend towards the ſame B, as the particle *c* is to the body A; conſequently the velocity of the body A is much leſs than would be the velocity of the particle *c* detached from the body.

Hence it is, that the motion of large bodies is naturally ſo ſlow and languid, that an ambient fluid, and other circumjacent bodies, generally retard them; whilſt the leſſer go on more briſkly, and produce a greater number of effects; ſo much greater is the *attractive* energy in ſmaller bodies than in the larger.—Hence again appears the reaſon of that chemical axiom: *ſalts do not act till they are diſſolved.*

XIV. If a corpuſcle placed in a fluid be equally attracted every way by the circumambient particles, no motion of the corpuſcle will enſue.—But if it be attracted by ſome particles more than others, it will tend to that part where the attraction is greateſt; and the motion produced will correſpond to the inequality of the *attraction*; viz. the greater the inequality, the greater the motion, and *vice verſa.*

XV. Corpuſcles floating in a fluid, and attracting each other more than the particles of the fluid that lie between them, will force away the particles of the fluid, and ruſh to one another with a force equal to that by which their mutual *attraction* exceeds that of the particles of the fluid.

XVI. If a body be immerged in a fluid whoſe parts more ſtrongly attract the particles of the body than they do one another; and if there be a number of pores or interſtices in the body pervious to the particles of the fluid; the fluid will immediately diffuſe itſelf through thoſe pores. And if the connexion of the parts of the body be not ſo ſtrong, but that it may be overcome by the force of the particles ruſhing within it; there will be a diſſolution of the body.

Hence, for a *menſtruum* to be able to diſſolve any given body, there are three things required. 1. That the parts of the body attract the particles of the *menſtruum* more ſtrongly than theſe attract each other. 2. That the body have pores or interſtices open and pervious to the particles of the *menſtruum.* 3. That the coheſion of the particles, which conſtitute the body, be not ſtrong enough to reſiſt the irruption of the particles of the MENSTRUUM.

XVII. SALTS are bodies endued with a great attractive force, though among them be interſperſed many interſtices, which lie open to the particles of water; theſe are therefore ſtrongly attracted by thoſe ſaline particles, ſo that they forcibly ruſh into them, ſeparate their contacts, and diſſolve the contexture of the ſalts.

XVIII. If the corpuſcles be more attracted by the particles of the fluid than by each other, they will recede from each other, and be diffuſed through the whole fluid.

Thus, if a little ſalt be diſſolved in a deal of water, the particles of the ſalt, though ſpecifically heavier than water, will evenly diffuſe themſelves through the whole water, ſo as to make it as ſaline at top as bottom.—Does not this imply, that the parts of the ſalt have a *centrifugal*, or *repulſive* force, by which they fly from one another; or rather, that they attract the water more ſtrongly than they do one another? For as all things aſcend in water, which are leſs attracted than water by the gravity of the earth, ſo all the particles of ſalt floating in water, which are leſs attracted by any particle of ſalt than water is, muſt recede from the particle, and give way to the more attracted water. Newt. Opt. p. 363.

XIX. Corpuſcles, or little bodies, ſwimming in a fluid, and tending towards each other; if they be ſuppoſed elaſtic, will fly back again after their congreſs, till, ſtriking on other corpuſcles, they be again reflected towards the firſt; whence will ariſe innnmerable other conflicts with other corpuſcles, and a continued ſeries of percuſſions and reboundings.—But, by the *attractive* power, the velocity of ſuch corpuſcles will be continually increaſed; ſo that the *inteſtine* MOTION of the parts will at length become evident to ſenſe.

Add, that in proportion as the corpuſcles *attract* each other with a greater or leſs force, and as their elaſticity is in a greater or leſs degree, their motions will be different, and become ſenſible at various times, and in various degrees.

XX. If corpuſcles that *attract* each other happen mutually to touch, there will not ariſe any motion, becauſe they cannot come nearer. If they be placed at a very little diſtance from each other, a motion will ariſe; but if further removed, the force wherewith they *attract* each other will not exceed that wherewith they *attract* the particles of the intermediate fluid; and therefore no motion will be produced.

On theſe principles depend all the *phænomena* of *fermentation* and EBULLITION.

Hence appears the reaſon why oil of vitriol, when a little water is poured on it, works, and grows hot: for the ſaline corpuſcles are a little disjointed from their mutual contact, by the infuſed water; whence, as they *attract* each other more ſtrongly than they do the particles of water, and as they are not equally *attracted* on every ſide, there muſt of neceſſity ariſe a motion.

Hence alſo appears the reaſon of that uncommon ebullition, occaſioned by adding ſteel-filings to the aforeſaid mixture. For the particles of ſteel are extremely elaſtic; whence there muſt ariſe a very ſtrong reflexion.

Hence alſo we ſee the reaſon why ſome *menſtrua* act more ſtrongly, and diſſolve bodies ſooner, when diluted with water.

XXI. If corpuſcles mutually *attracting* each another have no elaſtic power, they will not be reflected back from each other; but will form a *congeries*, or little maſſes; whence a COAGULUM will ariſe.

If the gravity of the particles thus amaſſed exceed the gravity of the fluid, a PRECIPITATION will ſucceed.—Precipitation may alſo ariſe from an increaſe or diminution of the gravity of the *menſtruum* wherein the corpuſcles are immerged.

XXII. If corpuſcles ſwimming in a fluid, and mutually *attracting* each other, have ſuch a figure, as that in ſome given parts they have a greater *attractive* power than in others, and their contact greater in thoſe parts than in others; thoſe corpuſcles will unite into bodies with given figures; and thence will ariſe CRYSTALLIZATION.

XXIII. Particles immerged in a fluid moved with a ſwift or ſlow progreſſive motion, will attract each other in the ſame manner as if the fluid were at reſt; but if all the parts of the fluid do not move equally, the *attractions* will be diſturbed.

Hence it is, that many ſalts will not *cryſtallize*, till the water wherein they are diſſolved is cold.

XXIV. If between two particles of a fluid there happen to be a corpuſcle whoſe two oppoſite ſides have a ſtrong *attractive* power, that intermediate corpuſcle will agglutinate or faſten the particles of the fluid to itſelf.—And ſeveral ſuch corpuſcles diffuſed through the fluid will fix all its particles into a firm body; and the fluid will be frozen, or reduced into ice.

XXV. By the ſame principle of *attraction* and *repulſion*, moſt of the *phænomena* of ELECTRICITY may be accounted for.

It will in ſome degree appear in the courſe of this work, under the various articles referred to, or comprized in it, how far the principles, contained in theſe ſeveral theorems, are well founded; where they will properly apply to the explication of the *phænomena* of nature, and how far any of them are confirmed and illuſtrated by later obſervations and diſcoveries.

ATTRACTION, *center of.* See CENTER.

ATTRACTION *of mountains.* According to the Newtonian theory of *attraction*, this principle pervades the minuteſt particles of matter, and the combined action of all the parts of the earth, forms the *attraction* of the whole. For the ſame reaſon, therefore, that a heavy body tends downwards in a perpendicular to the earth's ſurface, conſidered as ſmooth and even, it muſt be *attracted* towards the centre of a neighbouring mountain, by a force proportional to the quantity of matter contained in it; and the effect of this *attraction*, or the accelerative force produced by it, muſt depend on the nearneſs or diſtance of the mountain from the gravitating body, becauſe this force increaſes as the ſquares of the diſtances decreaſe. Upon theſe principles it is obvious, that the plumb-line of a quadrant, or of any other aſtronomical inſtrument, muſt be deflected from its proper ſituation, by a ſmall quantity, towards the mountain, and the apparent altitudes and zenith diſtances of the ſtars, taken with the inſtrument, be altered accordingly: e. g. if the zenith diſtance of a ſtar on the meridian were obſerved at two ſtations under the ſame meridian, one on the ſouth ſide of a mountain, the other on the north; and the plumb-line of the inſtrument were *attracted* out of its vertical poſition by the mountain, the ſtar muſt appear too much to the north, by the obſervation at the ſouthern ſtation, and too much to the ſouth by that at the northern ſtation; and conſequently the difference of the latitudes of the two ſtations reſulting from theſe obſervations would be greater than it really is. If then the true difference of their latitudes be determined by meaſuring the diſtance between the two ſtations on the ground, the exceſs of the difference found by the obſervations of the ſtar above that found by this meaſurement, muſt have been produced by the *attraction* of the mountain; and the half of it will be the effect of ſuch *attraction* on the plumb-line at each obſervation, provided that the mountain attracts equally on both ſides.

The firſt hint for determining the quantity of this *attraction* was ſuggeſted by Sir Iſaac Newton in his Treatiſe of the Syſtem of the World; and the firſt experiment for this purpoſe was conducted by M. Bouguer, and M. de la Condamine, in the year 1738. Whilſt they were employed in meaſuring three degrees of the meridian, near Quito in Peru, they endeavoured to aſcertain the effect of the *attraction* of Chimboraco, a mountain in that neighbourhood, which, by a rough computation, they ſuppoſed to be equal to about the 2000th part of the *attraction* of the whole earth. By obſerving the altitudes of fixed ſtars at two ſtations, one on the ſouth ſide of the mountain, and the other on the weſt, they found the quantity of 7½″ in favour of the *attraction* of the mountain by a mean of their obſervations; whereas the plumb-line, according to the theory, ſhould have declined from the true vertical line 1′ 43″. However, though the general reſult is favourable to the Newtonian doctrine, the experiment was performed under ſo many diſadvantages, as not to afford the ſatisfaction which was to be wiſhed. And M. Bouguer terminates his account of their obſervations, with expreſſing his wiſhes, that the experiment might be repeated under more favourable circumſtances either in France or in England. Figure de la Terre.

Nothing was afterwards done, till Mr. Maſkelyne, the aſtronomer royal, made a propoſal to the Royal Society for this purpoſe in the year 1772; and in 1774 he was deputed to make the trial, accompanied with proper aſſiſtants, and furniſhed with the moſt accurate inſtruments. He made choice of the mountain Schehallien, in Scotland, for the ſcene of his operations; the direction of which is nearly from eaſt to weſt, its mean height above the ſurrounding valley about 2000 feet, and its higheſt part above the level of the ſea 3550 feet. Two ſtations for obſervations were ſelected, one on the north, and the other on the ſouth ſide of the mountain. Every circumſtance that could contribute to the accuracy of the experiment was regarded; and from obſervations of ten ſtars near the zenith, Mr. Maſkelyne found the apparent difference of the altitudes of the two ſtations to be 54″,6; and from a meaſurement by triangles, formed from two baſes on different ſides of the mountain, he found the diſtance of their parallels to be 4364 feet, which, in the latitude of Schehallien, viz. 56° 40′, anſwer to an arch of the meridian of 43″, leſs by 11″,6 than that found by the ſector. Its half, therefore, or 5″,8, is the mean effect of the *attraction* of the mountain. From this experiment, conducted with great aſſiduity and accuracy, and terminated to the eſtabliſhment of the Newtonian theory, Mr. Maſkelyne infers, that the mountain Schehallien exerts a ſenſible *attraction*; and therefore that every mountain, and every particle of the earth, is endued with the ſame property, in proportion to its quantity of matter. The law of the variation of this force in the inverſe ratio of the ſquares of the diſtances is likewiſe confirmed by it; for if the force of the *attraction* of the hill had been only to that of the earth, as the matter in the hill to that of the earth, and had not been greatly increaſed by the near approach to its centre, the *attraction* muſt have been wholly inſenſible. And he infers alſo, that the mean denſity of the earth is at leaſt double of that at the ſurface, and conſequently, that the denſity of the internal parts of the earth is much greater than that of thoſe near the ſurface; and the whole quantity of matter in the earth will be at leaſt twice as great as if it were compoſed of matter of the ſame denſity with that at the ſurface; and therefore that the hypotheſis of thoſe naturaliſts, who ſuppoſe the earth to be only a great hollow ſhell of matter, is groundleſs. And finally, that the ſenſible deflections in the plumb-lines of aſtronomical inſtruments, by the denſity of the ſuperficial parts of the earth, muſt cauſe apparent inequalities in the menſurations of degrees in the meridian. He candidly acknowledges, after all, that a ſingle experiment is not ſufficient to aſcertain a matter of ſuch importance, and recommends other experiments of a ſimilar kind to be repeated in various places, and attended with different circumſtances. Schehallien may differ in its internal conſtitution from other mountains, as there is no appearance of its ever having been a volcano, which is the caſe of many others. Phil. Tranſ. vol. lxv. part 2. N° 48 and 49.

Attractive *power*, or *force*. See **Power** and **Attraction**.

The *attractive virtue* in loadſtone is communicable, by *touching*, to iron or ſteel.

ATTRACTIVES, or **Attractive** *remedies*, denote medicines which are to be externally applied, and which by their activity and warmth penetrate the pores, and mix with and rarefy any obſtructed matter, ſo as to render it fit for diſcharge, upon laying open the part by a cauſtic or inciſion.

Attrahents are the ſame with what we otherwiſe call *drawers*, *ripeners*, *maturants*, and *digeſtives*.

The principal ſimples belonging to this claſs are, the ſeveral kinds of fats or *adipes*, the dungs of pigeons and cows, bran, yeſt, herring, melilot, tobacco, oil, pitch, reſin, frankincenſe, &c. See each under its proper article.

In many inſtances, as the matter rarefies and grows more fluid by means of ſuch medicines, the refluent blood is apt to waſh it back into the common maſs; which ſometimes does great miſchief; or by making it take up more room upon its rarefaction, it occaſions it to diſtend more the parts in which it is contained: upon which a ſenſe of pain is excited, and thereby a greater concourſe of fluid, and conſequently an increaſe of the tumour.—So that medicines under this denomination require the moſt careful management.

ATTRIBUTE, from *attribuo*, in a general ſenſe, that which agrees to ſome perſon, or thing; or a quality, which determines ſomething to be after a certain manner.

Thus, underſtanding is an *attribute* of mind; figure, an *attribute* of body, &c.—Spinoza makes the ſoul and the body to be of the ſame ſubſtance; with this only difference, that the ſoul is to be conceived under the *attribute* of thought, and the body under that of extenſion.

Of the ſeveral *attributes* belonging to any ſubſtance, that which preſents itſelf firſt, and which the mind conceives as the foundation of all the reſt, is called its *eſſential attribute*.

Thus, extenſion is by ſome, and ſolidity by others, made the eſſential *attribute* of body or matter.

The other *attributes* are called *accidental* ones: e. gr. roundneſs in wood, or learning in a man.—Mr. Locke endeavours to prove, that thinking, which the Carteſians make the eſſential *attribute* of the mind, is only an accidental one.

Attribute, in *Logic*, is an epithet given to any ſubject; or it is any predicate thereof; or whatever may be affirmed or denied of any thing.

Every propoſition conſiſts of a ſubject, an *attribute*, and a *copula*, or conjunctive particle. See **Proposition**.

Attributes are uſually divided into *poſitive*, which give a thing ſomewhat; as when we ſay of a man, that he is *animate*: and negative; as when we ſay of a ſtone, that it is *inanimate*.

Others, again, divide them into *common*, which agree to ſeveral different things; as *animal*, which agrees both to man and brute; and *proper*, as *thought*, &c. which agrees only to ſpirit, *rationality* to man, &c.

Attributes, in *Theology*, denotes the ſeveral qualities, and perfections, which we conceive in God; and which conſtitute his proper eſſence; as juſtice, goodneſs, wiſdom, &c.

The heathen mythologiſts divided the deity into as many diſtinct beings as he has *attributes*: thus the *power* of God was called *Jupiter*; the *wrath* of God, *Juno*; the abſolute *will* of God, *Fate*, or *Deſtiny*, to which even his very power is ſubject.

Attributes, in *Painting* and *Sculpture*, are ſymbols added to figures and ſtatues, to denote their particular office and character.

Thus the *club* is an *attribute* of Hercules; the *palm* is an *attribute* of victory; the *peacock* of Juno; the *eagle* of Jupiter; the *trident* of Neptune; the *balance* of Juſtice; the *olive* of Peace, &c.

ATTRIBUTIVES, in *Grammar*, are words which are ſignificant of *attributes*; and thus include adjectives, verbs, and participles, which are *attributes* of ſubſtances, and adverbs, which denote the *attributes* only of *attributes*. Mr. Harris, who has introduced this diſtribution of words, denominates the former *attributives* of the firſt order, and the latter *attributives* of the ſecond order. Harris's Hermes.

ATTRITION, *triture*, or *friction*, expreſſes ſuch a motion of bodies againſt one another, as ſtrikes off ſome ſuperficial particles; whereby they gradually become leſs and leſs.

The word is formed of *atterere, to wear.*

The grinding and poliſhing of bodies is performed by *attrition.*

The effects of *attrition* in exciting heat, light, electricity, &c. ſee under ELECTRICITY, FIRE, HEAT, and LIGHT.

ATTRITION is alſo frequently uſed for the friction or rubbing of ſuch ſimple bodies one againſt another, as will not wear out, but will occaſion ſome particular determinations of the fluids they contain.

Thus, the various ſenſations of hunger, pain, or pleaſure, are ſaid to be occaſioned by the *attritions* of the organs formed for ſuch impreſſions.

ATTRITION, among *Divines*, denotes a ſorrow or regret for having offended God; ariſing from a ſenſe of the odiouſneſs of ſin, and the apprehenſions of puniſhment; i. e. of the loſs of heaven, and the pains of hell.

Attrition is eſteemed the loweſt degree of repentance, being a ſtep ſhort of contrition, which ſuppoſes the love of God an ingredient or motive of our ſorrow and repentance. See CONTRITION.

ATTROW, in *Botany*, a name given by the people of Guinea to a plant which they uſe in caſes of ſwellings, boiling the leaves in water, and uſing the decoction by way of a fomentation.

It is a ſpecies of KALI, and is called by Petiver *kali Guineenſee foliis polygoni, floribus verticilli in modum diſpoſitis*, from its leaves reſembling the common knot-graſs, and its flowers growing in rundles round the ſtalks. Phil. Tranſ. N° 232.

ATTRUMMAPHOC, in *Botany*, a name given by the people of Guinea to a ſhrub which they uſe in medicine; they boil it in water, and give the decoction in the venereal diſeaſe. The juice of it, when freſh preſſed out, is alſo uſed, ſnuffed up the noſtrils, to promote ſneezing, and cure ſeveral diſorders of the head and eyes. Phil. Tranſ. N° 232.

It is a ſpecies of COLUTEA, called by Petiver COLUTEA *lanuginoſa floribus parvis ſiliquis piloſis deorſum tendentibus*; and Dr. Herman calls it an *aſtragalus*.

ATTURNATO *faciendo vel recipiendo*; ſee ATTORNATO, &c.

ATYPOS, from α, *negative*, and τυπος, *form* or *tenor*, *erratic*, or *irregular*, a word uſed by the old writers in medicine, for ſuch diſeaſes as did not obſerve any regularity in their periods.

Others have alſo uſed the ſame word in a very different ſenſe, namely, for deformities and irregularities in the limbs; and others, for perſons, who from ſome defects in the organs of ſpeech, cannot articulate certain particular ſounds.

AVA AVA, a plant ſo called by the inhabitants of Otaheite, in the South Sea, from the leaves of which they expreſs an intoxicating juice. It is drank very freely by the chiefs, and other conſiderable perſons, who vie with each other in drinking the greateſt number of draughts, each draught being about a pint; but it is carefully kept from their women. Hawkeſworth's Voyages, vol. ii. p. 200.

AVANIA, in the *Turkiſh Legiſlature*, a fine for crimes, and on deaths, paid to the governor of the place. In the places where ſeveral nations live together under a Turkiſh governor, he takes this profitable method of puniſhing all crimes among the Chriſtians, or Jews, unleſs it be the murder of a Turk. Pocock's Eg. vol. ii. part 2. p. 30.

AVANT, a French prepoſition, ſignifying *before*, or any priority either in reſpect of time, or place; ſometimes uſed, in compoſition, in our language, but more uſually contracted, and wrote *vaunt*, or *vant*, or even VAN.

AVANT *foſſe*, &c. See VAN *foſſe*.

AVANT *guard*, &c. See *Van* GUARD, &c.

AVANTE, among the *Old Writers* in *Phyſic*, a name given to a diſeaſe, ſeeming, from their accounts of it, the ſame we call HYPOCHONDRIASM.

AVANTURINE, in *Natural Hiſtory*, a yellowiſh ſtone full of ſparkles, reſembling gold, very common in France. An artificial imitation of it is made by mixing ſparkles of copper with glaſs, whilſt it is in fuſion, which is uſed by enamellers, and to ſprinkle as ſand upon writings.

AVARAMO TEMO, in *Botany*, the name of a ſiliquoſe tree, which grows in the Braſils. The bark is externally of a cineritious, and internally of a deep red colour; and is the only part of the plant uſed by the ſkilful for medicinal purpoſes; though the ſame aſtringent qualities are by ſome applied to the leaves; for the bark, which is of a bitter taſte, whether reduced to a powder, or boiled and uſed by way of fomentation, happily cures inveterate and obſtinate ulcers, and, as it is ſaid, has been found to cure cancers themſelves, by means of its remarkably cleanſing and drying nature.

Beſide theſe purpoſes, it is alſo made choice of on account of its effectually aſtringent quality, for baths deſigned to ſtrengthen and invigorate the muſcular parts of the body, when weakened, or too much relaxed. Ray ſays it is much uſed by courtezans for contracting the *pudenda*.

AVARIA, in the Turkiſh and Perſian dominions, a ſum of money exacted from the Chriſtians or Europeans, to be quit of ſome falſe accuſation framed on purpoſe.

AVAST, a term frequently uſed on board a ſhip, ſignifying to ſtop, hold, or ſtay.

The word is formed of the Italian *voſta*, or *baſta*, *it is enough, it ſuffices*.

AVAUNCHERS, among *Hunters*, the ſecond branches of a hart's horn.

AUBAINE, in the French *Cuſtoms*, a right veſted in the king, of being heir to a foreigner, who dies within his dominions.

The word is formed of *aubain*, a *foreigner*; which Menage derives further from the Latin, *alibi natus*; Cujas, from *advena*, which is the name foreigners bear in the capitularies of Charlemagne; Du-Cange, from *Albanus*, a Scot, or Iriſhman; becauſe theſe were anciently much given to travelling and living abroad.

The king of France, by the right of *aubaine*, claims the inheritance of all foreigners in his dominions; excluſive of all other lords, and even of any teſtament the deceaſed could make. An embaſſador, though not naturalized, is not ſubject to the right of *aubaine*. The Swiſs, Savoyards, Scots, and Portugueſe, are alſo exempted from the *aubaine*, as being reputed natives and regnicoles.

AUBIER, anciently AUBOUR. Thus the French call that ſoft and whitiſh ſubſtance, which lies all round the tree between the bark and the ſolid wood; and for which we have no particular name in Engliſh. Mr. Barkley thinks it performs the office of veins. It may be conſidered as a third bark, and ſo ſome call it, whoſe fibres are leſs cloſe or compact than thoſe of the former; and is properly the lard or fat of the tree. It hardens by means of the juice that diſcharges itſelf there, and of the ſap which flows in it, ſo that it becomes by little and little, as it were, imperceptibly a part of the woody ſubſtance of the tree; that is to ſay, it is converted into ſolid wood. There are few trees but have ſome of that *aubier*, or whitiſh ſubſtance, which is more or leſs thick, according to the ſituation in which the trees happen to be planted; for the more they are expoſed to the hot rays of the ſun, the leſs of that ſubſtance will be found in them. In the oak it is ſeldom above an inch, or an inch and a half thick. It has been obſerved that when a tree is cut down, or dies in the ground, the *aubier* remains always of the ſame conſiſtency, without ever being turned into ſolid wood.

That ſubſtance is liable to rot; and therefore merchants, who cauſe timber to be ſquared, ought to be very careful that as little *aubier* be left upon it as poſſible.

AUBIN, in *Horſemanſhip*, a kind of broken gait, or pace, between an amble and a gallop; reputed a defect in a horſe.

AUCTIO, AUCTION; this was originally a kind of ſale, among the ancient Romans, performed by the public crier *ſub haſta*, that is, under a ſpear ſtuck up on that occaſion, and by ſome magiſtrate, who made good the ſale by delivery of the goods.

This was termed *auctio*, q. d. *increaſe*; becauſe, according to Sigonius, the goods were ſold to him, *qui plurimum rem augeret*, who would bid moſt for them.

AUCTION *by inch of candle*. See CANDLE.

AUCTORATI, in Roman *Antiquity*, an appellation given to ſuch as entered the liſt as gladiators, and who received wages; or who hired themſelves, for money, to perform in the games, or ſpectacles.

The *auctorati* degraded themſelves by the act; and became ſervile and infamous.

AUCTORATI *milites* alſo denoted ſoldiers bound by oath, and the receipt of wages, to ſerve in war.

In this ſenſe *auctorati* ſtand oppoſed to *exauctorati*, who were diſbanded.

The ſtipend they received for their ſervice, was denominated *auctoramentum*.

AUCTORITAS *ſenatus*, in the Roman *Antiquity*. See SENATUS *auctoritas*.

AUDIANISM, the ſyſtem or ſentiments of Audius, and his followers; particularly as to the belief of the human figure of the deity. See ANTHROPOMORPHITES.

AUDIENCE, in a general ſenſe. See HEARING.

The word is formed from *audire, to hear*.

Audience is alſo uſed for the ceremonies practiſed in courts, at the admiſſion of embaſſadors, and public miniſters, to a hearing.

Such an embaſſador ſent to demand *audience*; took his *audience* of leave to depart, &c.

In England, *audience* is given to embaſſadors in the preſence chamber; to envoys and reſidents, in a gallery, cloſet, or any place, where the king happens to be.

At their admiſſion, the way, in all courts, is to make three bows; after which they cover, and ſit down, the king firſt covering, and ſitting down, and giving them the ſign to put on their hats.—When the king cares not to have them be covered and ſit, he continues uncovered himſelf, and ſtanding all the while; which is taken as a ſlight and an affront.—After the firſt *audience*, it does not look well to be too haſty in demanding another.

At Conſtantinople, miniſters uſually have *audience* of the prime vizir; in his abſence the *caimacan* admits them to *audience*.

Audience is alſo the name of a court of juſtice, eſtabliſhed by the Spaniards in America; anſwering in effect to the parliaments of France.

They judge without appeal, and have each a certain diſtrict, which ordinarily takes in ſeveral provinces, called alſo *audiences*, from the names of the tribunal to which they belong.

Hence Sanſon divides Spain into as many of theſe *audiences* as there are of thoſe tribunals.—New Spain comprehends three *audiences*, thoſe of Guadalajara, Mexico, and Guatimala.

Audience is alſo the name of one of the eccleſiaſtical courts in England, which is held where-ever the archbiſhop calls a cauſe to his own hearing.

The two archbiſhops have their courts of *audience*. That of the archbiſhop of Canterbury is under the direction of the dean of the arches, who is official of the *audience*, and keeps his court in the hall of Doctors Commons.

The court of *audience* is chiefly concerned in differences ariſing upon elections, conſecrations, inſtitutions, marriages, &c.

Audiences, *chamber of*. See Chamber.

AUDIENDO *&* *terminando*, a writ, or rather commiſſion, directed to certain perſons, when an inſurrection or great miſdemeanour is committed in any place, for the appeaſing and puniſhment thereof.

AUDIENTS, or Auditores, in *Church Hiſtory*, an order of *catechumens*; conſiſting of thoſe who were newly inſtructed in the myſteries of the Chriſtian religion, and not yet admitted to baptiſm.

AUDIT, a regular hearing and examining of an account, by officers appointed for that purpoſe. See Auditor.

AUDITA *querela*, a writ which lies againſt him, who has taken a ſtatute-merchant, or a recognizance in the nature of a ſtatute-ſtaple, or a judgment, or a recognizance of another; and has aſked, or obtained, execution of the ſame from the mayor and bailiffs, before whom it was entered; at the complaint of the party, who entered the ſame, upon ſuggeſtion of ſome juſt cauſe why execution ſhould not be granted; as a releaſe, or other exception.

To writs of execution the defendant cannot plead; ſo that if there be any matter ſince the judgment to diſcharge him of the execution, he is to have *audita querela*: upon which the juſtices ſhall hear the complaint, and do right; and *audita querela* cannot be brought on a releaſe, until judgment is entered of record. 1 Mod. 111.

This writ is granted by the lord chancellor, upon view of the exception ſuggeſted, to the judges of either bench, willing them to grant ſummons to the ſheriff of the county where the creditor is, for his appearance at a certain day before them.

But the indulgence now ſhewn by the courts in granting a ſummary relief upon motion, in caſes of evident oppreſſion, has almoſt rendered uſeleſs this writ, and driven it quite out of practice.

AUDITIONALIS *ſcholaſticus*, in *Middle Age Writers*, is uſed for an advocate who pleads cauſes for his clients in audiences. Du-Cange.

AUDITOR, a hearer, one who liſtens or attends to any thing.

Auditors, in *Church Hiſtory*. See Audients.

The *auditors* formed one branch of the Manichean ſect, which was divided into *elect* and *auditors*; correſponding, according to ſome writers, to *clergy* and *laity*; and according to others, to the *faithful* and *catechumens* among the catholics. By the Manichean rule, a different courſe of life was preſcribed to the *elect* from that of the *auditors*. The latter might eat fleſh, drink wine, bathe, marry, traffic, poſſeſs eſtates, bear magiſtracy, and the like; all which things were forbidden to the *elect*. The *auditors* were obliged to maintain the *elect*, and kneeled down to aſk their bleſſing. Beauſobre obſerves, that the *elect* were eccleſiaſtics, and in general ſuch as made profeſſion of obſerving certain counſels, called evangelic; ſuch as the clergy and monks; and they were called the *perfect* by Theodoret. The *auditors* were the laity, and ſo denominated, becauſe they heard in the church, whilſt others taught and inſtructed.

Auditor is alſo uſed for ſeveral officers, appointed to *audit*, to hear accounts, pleadings, &c.

Anciently the word *auditor* was alſo uſed for a *judge*, and even for an *inquiſitor*, appointed by judges to examine, and find out the truth of ſome matter in conteſt. *Notaries* are alſo frequently called *auditores*.

Auditor, in our *Law*, is an officer of the king, or ſome other great perſon, who yearly, by examining the accounts of under officers accountable, makes up a general book, with the difference between the receipts and charge, and their allowances or *allocations*.

Auditors *of the revenue*, or *of the exchequer*, are officers who take the accounts of thoſe who collect the revenues, taxes, &c. raiſed by parliament; as alſo of the ſheriffs, eſcheators, collectors, tenants, and cuſtomers; and ſet them down, and perfect them.

Auditors *of the preſt*, or *impreſt*, are officers in the exchequer, who take and make up the great accounts of Ireland, Berwick, the mint, cuſtoms, ward-robe, firſt-fruits, naval and military expences, and of all moneys impreſſed to any man for the king's ſervice.

Auditor *of the receipts* is an officer of the exchequer, who files the tellers bills, and makes an entry of them, and gives the lord-treaſurer a certificate of the money received the week before; who preſents the eſtimate or balance to the king.

He makes debentures to every teller, before they receive any money, and takes their accounts. He keeps the black book of receipts, and the treaſurer's key of the treaſury (where the ancient leagues of the realm, and many records of the king's bench, and common-pleas, are repoſited); and ſees every teller's money locked up in the new treaſury.

There are alſo *auditors* of the firſt fruits; of the principality of Wales; of the duchy of Cornwall, &c. See First-*fruits*, &c.

Auditor *of the rota*, the apoſtolic chamber, the chatelet, &c. See Rota, Chamber, &c.

Auditors, *conventual*, *collegiate*, &c. were officers formerly appointed among the religious, to examine and paſs the accounts of the houſe.

AUDITORY, in an adjective ſenſe, ſomething belonging to the ſenſe of hearing.

Auditory, Audience, is alſo a collective name, denoting an aſſembly of perſons, hearing or attending to a perſon who ſpeaks in public.

Auditory is alſo uſed for the ſeat or bench where a magiſtrate, or judge, hears cauſes.

At Rome, the ſeveral magiſtrates had *auditories*, or ſeats of juſtice, according to their dignity.—Thoſe of the ſuperior officers were called *tribunals*; thoſe of the inferior, *ſubſellia*.

The *pedanei* had their benches or *auditories* in the portico of the imperial palace.—Thoſe of the Hebrews, at the gates of cities.—The judges appointed by the ancient lords diſtributed juſtice under an elm, which was uſually planted before the manor-houſe, and ſerved them for an *auditory*.

Auditory, Auditorium, in the *Ancient Churches*, was that part of the church where the *audientes* ſtood to hear, and be inſtructed.

The *auditorium* was that part now called *navis eccleſiæ*. See Nave.

In the primitive times, the church was ſo ſtrict in keeping the people together in that place, that the perſon who went from thence in ſermon-time was ordered by the council of Carthage to be excommunicated.

Auditorius, *meatus*, or Auditory paſſage, in *Anatomy*, called alſo *aurium alveare*, on account of the *cerumen* collected in it. See Meatus *auditorius*.

Auditory *nerves*, in *Anatomy*, a pair of nerves ariſing from the *medulla oblongata*, and diſtributed, the one to the ear, the other to the tongue, eye, &c. See *Tab. Anat.* (*Oſteol.*) *fig.* 5. *lit. pp.*

The ſoft and ſpongy branch of the *auditory nerve*, being diffuſed through the labyrinth and *tympanum* of the ear, is the immediate organ of the ſenſe of hearing.

The *auditory nerves* make the ſeventh conjugation, according to the way of reckoning of the moderns; and the fifth, according to the ancients.

Anatomiſts obſerve a ſingular mark of the wiſdom and contrivance of the Creator, in the *auditory nerves* being thus diſpatched to different parts; an admirable and uſeful conſent being hereby eſtabliſhed between them.—Hence it is, that moſt animals, upon hearing any uncouth ſound, found, are ſound to erect their ears, and prepare them to catch it; to open their eyes; to ſtand upon the watch; and to be ready with the mouth to call out, or teſtify their danger: accordingly moſt animals, when ſurpriſed or terrified, ſhriek or cry out, &c.

Dr. Willis (*Anat. Cerebr.* cap. 17.) obſerves a further uſe of this nervous communication between the ear and the mouth; which is, that the voice may correſpond with the hearing, and be a kind of echo thereof; that what is heard with one of the two nerves, may be readily expreſſed with the voice, by the help of the other.

AVELLANA, in *Botany*. See CORYLUS and HAZLE-*nut*.

AVELLANA *purgatrix*, in the *Materia Medica*, the fruit of a ſpecies of RICINUS. See CATAPUTIA and BEN.

AVELLANDA, in *Botany*, a name given by the Spaniards to the roots of the TARSI, or ſweet CYPERUS. Theſe are eſculent, and of a very delicious taſte; they ſeem to have had the name from their likeneſs to the *avellana nux*, or hazel-nut. Garcias, and ſome others, have thought that the CURCAS of Malabar was the ſame with the *avellanda* of Europe. But this does not ſeem to be the caſe; for the *curcas* is a fruit probably the ſame with the fruit BEL, deſcribed by the Arabians; and though of the ſame ſize and ſhape with the *avellanda*, has a hard coat like the common filbert. The *curcas* of Egypt is indeed a root, but it is very different from theſe, being as long and as thick as a man's arm.

AVELLANE, or *croſs* AVELLANE, in *Heraldry*, a form of croſs, which reſembles four filberds in their huſks or caſes, joined together at the great end. See CROSS.

Hence its name; a filberd in Latin being *nux avellana*.—Syl. Morgan ſays, it is this croſs which enſigns the mound of authority, or the ſovereign's globe.

AVE-MARIA, or AVE-MARY, the angel Gabriel's ſalutations of the Virgin, at his bringing her the tidings of the incarnation; thus called, as beginning with theſe words, *Ave*, *Maria*, q. d. *Hail*, *Mary*.

The *ave-mary* is a prayer or *formula* of devotion very uſual in the Romiſh church. It was added to their prayers by order of pope John XXII. in the fourteenth century.—Their chaplets and roſaries are divided into ſo many *ave-marys*, and ſo many *pater-noſters*; and hence the beads themſelves, which indicate them, are alſo called *aves*, or *ave-marys*.

AVENA, in *Botany*. See OAT.

AVENS, in *Botany*. See HERB-*bennet*.

AVENAGE, in *Law*, a certain quantity of oats, paid to a landlord, in lieu of ſome other duties; or, as a rent, from the tenant.

The word is formed of the Latin, *avena*, *oats*.

AVENOR, an officer under the maſter of the horſe; who, by order or warrant from him, ſwears in all the officers belonging to the royal ſtables. See MASTER *of the horſe*.

The *avenor* alſo makes up the accounts of the ſtables, and iſſues debentures for paying the officers and ſervants.

In a ſtat. Car. II. we find the *avenor* mentioned, as an officer who provides oats for the ſtables.—In the Rot. Parl. Edw. III. we alſo read of *avenor* of the queen, of the prince, &c.

AVENTURÆ, in our *Ancient Writers*, ſignify TOURNAMENTS, or military exerciſes on horſeback.

AVENTURE, or rather ADVENTURE, in our *Law Books*, a miſchance, cauſing the death of a man, without felony; as, when he is ſuddenly drowned, or burnt by an accident or miſchance, falling into the water or fire. See MISAVENTURE, and CHANCE-MEDLEY.

AVENUE, in *Fortification*, an opening or inlet into a fort, baſtion, or the like place, or the paſſes and ways to and from it. See FORT and BASTION.

The word is formed of *avenir*, or *advenir*, *to arrive at*.

AVENUE, in *Gardening*, is a walk planted on each ſide with trees, and leading to ſome place.

All *avenues*, Mortimer ſays, ſhould lead to the front of an houſe, garden-gate, highway-gate, or wood, and terminate in a proſpect.—In an *avenue* to an houſe, whatever the length of the walk is, it ought to be as wide as the whole breadth of the front; and if wider it is ſo much the better: and *avenues* to woods and proſpects ought not to be leſs than ſixty feet wide.

The trees moſt proper for *avenues* with us, are the Engliſh elm, the lime, the horſe-cheſnut, the common cheſnut, the beech, and the *abele*. The Engliſh elm will do in all grounds, except ſuch as are very wet and ſhallow; and this is preferred to all other trees, becauſe it will bear cutting, heading, or lopping in any manner, better than moſt others. The rough or ſmooth Dutch elm is approved by ſome, becauſe of its quick growth; this is a tree which will bear removing very well; it is alſo green almoſt as ſoon as any plant whatever in ſpring, and continues ſo as long as any, and it makes an incomparable hedge, and is preferable to all other trees for lofty eſpaliers. The lime is valued for its regular growth, and fine ſhade: the horſe-cheſnut is proper for all places that are not too much expoſed to rough winds. The common cheſnut will do very well in a good ſoil, and riſes to a conſiderable height, when planted ſomewhat cloſe, though when it ſtands ſingle, it is rather inclined to ſpread than to grow tall. The beech is a beautiful tree, and naturally grows well with us in its wild ſtate, but it is leſs to be choſen for *avenues* than the before-mentioned, becauſe it does not bear tranſplanting well, but is very ſubject to miſcarry. Laſtly, the *abele* is fit for any ſoil, and is the quickeſt grower of any foreſt tree. It ſeldom fails in tranſplanting, and ſucceeds very well in wet ſoils, in which the others are apt to fail. The oak is but little uſed for *avenues*, becauſe of its ſlow growth.

The old method of planting *avenues* was with regular rows of trees, and this has been always kept to till of late; but we have now a much more magnificent way of planting *avenues*; this is by ſetting the trees in clumps, or platoons, making the opening much wider than before, and placing the clumps of trees at about three hundred feet diſtance from one another. In each of theſe clumps there ſhould be planted either ſeven or nine trees; but it is to be obſerved, that this is only to be practiſed where the *avenue* is to be of ſome conſiderable length, for in ſhort walks this will not appear ſo ſightly as ſingle rows of trees. The *avenues* made by clumps are fitteſt of all for parks. The trees in each clump ſhould be planted about thirty feet aſunder, and a trench ſhould be thrown up round the whole clump, to prevent the deer from coming to the trees to bark them.

AVER-*land*, in our *Old Writers*, ſeems to have been ſuch lands as the tenants did plough and manure, *cum averiis ſuis*, for the proper uſe of a monaſtery, or the lords of the ſoil.

AVERA, in *Doomſday-Book*, denotes a day's work of a ploughman, or other labourer, which the king's tenants in his demeſne lands were obliged to pay the ſheriff.

AVERAGE, in *Agriculture*, a term uſed by the farmers in many parts of England, for the breaking of corn-fields, eddiſh, or roughings.

In this ſenſe, it may be derived from *haver*, an Engliſh name for oats, or from *aveira*, *beaſts*, being as much as feeding for cattle or paſturage. Ray.

AVERAGE, AVERAGIUM, in *Law*, that duty or ſervice which the tenant is to pay the king, or other lord, by his beaſts and carriages.

The word is derived from the baſe Latin *averia*, *cattle* or *goods*; or the French *œuvre*, *work*.

AVERAGE, or AVERIDGE, in *Navigation* and *Commerce*, is uſed to denote the damage which happens to ſhips and their cargoes, from the time of their loading and ſailing, till their return and unlading. It is divided into three kinds. 1. The ſimple *average*, which conſiſts in the extraordinary expences incurred for the ſhip, ſuch as the loſs of anchors, maſts, and rigging, by common accidents at ſea; or for the merchandiſe; ſuch as the damages which they have ſuſtained by ſtorms, capture, ſhipwreck, wet, or rotting; all which muſt be defrayed by the thing that ſuffered the damage. 2. The large and common *average*, being expences incurred, and damage ſuſtained, for the common ſecurity, both of the merchandiſe and ſhip, which are to be borne by the ſhip and cargo: ſuch are ranſom-money, goods thrown overboard, expences of unlading, or entering into a river or harbour, and the proviſions and hire of the ſailors, when the ſhip is detained by embargo. 3. The ſmall *averages*, which are charges of towing and piloting the ſhip, one third of which muſt be charged to the ſhip, and two thirds to the cargo.

AVERAGE is more particularly uſed for the quota or proportion which each merchant or proprietor in the ſhip or loading is adjudged, upon a reaſonable eſtimation, to contribute to a common *average*.

Such ſum ſhall be divided among the ſeveral claimers, by way of *average*, in proportion to their reſpective intereſts and demands. 10 A. cap. 17.

AVERAGE is alſo a ſmall duty, which thoſe merchants who ſend goods in another man's ſhip pay to the maſter thereof, for his care of them, over and above the freight.

Hence, in bills of lading it is expreſſed.—Paying ſo much freight for the ſaid goods, with *primage* and *average* accuſtomed.

AVER-CORN, in *Ancient Writings*, ſuch corn as by cuſtom is brought by the tenant's carriages, to the lord's granary.

AVERDUPOIS *pound*. See POUND.

AVERDUPOIS *weight*. See WEIGHT.

AVERIA, in our *Law Books*, properly ſignify oxen or horſes uſed for the plough; but, in a general ſenſe, any cattle.

When mention is made of one beaſt, they ſay, *quidam equus*, *vel quidam bos*: when of two or more, they do not ſay, *equi* or *boves*, but *averia*.

AVERIA, *replegiare de* AVERIIS. See REPLEGIARE.

AVERIIS *captis in Withernam*, a writ for the taking of cattle to his uſe, who hath cattle unlawfully diſtrained by another, and driven out of the county where they were taken, ſo that they cannot be replevied by the ſheriff. Reg. Orig. 82. If the cattle are put into any ſtrong place in the ſame county, the ſheriff may take the *poſſe comitatus*, and break into it, to make the replevin. But when they are driven out of the county, he hath no authority to purſue them.

AVERMENT, in *Law*, uſually ſignifies an offer of the defendant to make good or juſtify an exception, pleaded in abatement or bar of the plaintiff's action.

The word alſo ſometimes ſignifies the act, as well as the offer, of juſtifying the exception.

Averment is two-fold, *general* and *particular*.

AVERMENT, *general*, is the concluſion of every plea to the writ, or in bar of replications, or other pleadings (for counts, or avowries in nature of counts, need not to be *averred*) containing matter affirmative; and ought to be with theſe words, *hoc paratus eſt verificare*.

AVERMENT, *particular*, is, when the life of a tenant for life, or tenant in tail, is *averred*, &c.—An *averment* contains as well the matter as the form thereof.

AVERNI, among the *Ancient Naturaliſts*, certain lakes, grottoes, and other places, which infect the air with poiſonous ſteams or vapours; called alſo *mephites*.

The word is formed of the privative α, and ορνις, *bird*; as intimating that birds could not fly over them, but dropped down dead. *Avernus*, q. d. *aornus*, *locus ſine avibus*.

Averni are ſaid to be frequent in Hungary, on account of the abundance of mines therein.

The Grotta del Cani, in Italy, is a famous one.

But the moſt celebrated *avernus* was, a lake near Baiæ, in Campania, by the modern Italians called Lago di Tripergola.—The fumes it emitted are repreſented by the ancients as being of ſo malignant a nature, that birds could not fly over it, but ſunk down dead; which ſome later writers have choſen to attribute to this, that the ſulphureous effluvia hereof not being of conſiſtence to ſuſtain the birds, they dropped by their own weight. This circumſtance, joined with the great depth of the lake, occaſioned the ancients to take it for the gate or entrance of hell; and accordingly Virgil makes Æneas deſcend this way into the infernal regions.—Vibius Sequeſter ſays, there is no bottom to be found of it. See HELL.

Next to the Baiæ, ſays Strabo, lies the Lucrine bay; and within it the lake *Avernus*; which is a deep, darkſome lake, with a narrow entry from the outer bay: it is ſurrounded with ſteep banks, that hang threatening over it, and is only acceſſible by the narrow paſſage, through which you ſail in. Theſe banks were anciently quite overgrown with a wild wood, impenetrable by a human foot. Its gloomy ſhade impreſſed an awful ſuperſtition upon the minds of the beholders; whence it was reputed the ſeat of the Cimmerians, who dwelt in perpetual night. Whoever ſailed hither, firſt did ſacrifice; and endeavoured to propitiate the infernal powers, with the aſſiſtance of ſome prieſts, who attended upon the place, and directed the myſtic performance. Within, a fountain of pure water broke out juſt over the ſea; but no creature ever taſted of it, believing it to be a vein of the river Styx: ſomewhere near this fountain was the oracle; and the hot waters, frequent in theſe parts, made them think they were branches of the burning Phlegethon.

AVERPENNY, q. d. AVERAGE-PENNY, money contributed towards the king's averages; or money given to be freed thereof. See AVERAGE.

AVERRHOA, in *Botany*, the name of a genus of plants, of the *decandria pentagynia* claſs, the characters of which are theſe: the perianthium is ſmall, erect, and compoſed of five leaves. The flower is compoſed of five lanceolated petals, which ſtand erect on the lower part, and are expanded at the top. The ſtamina are ten ſetaceous filaments, half of which are of the length of the flower, and the other half ſhorter; theſe ſtand alternately together, and are terminated by roundiſh *apices*, or *antheræ*. The germen of the piſtil is oblong, and faintly pentangular; the ſtyles are five in number, and are ſetaceous and erect; and the ſtigmata are ſimple. The fruit is a turbinated pomum, obtuſely pentangular, having five cells, and in each of them ſeveral ſeeds of an angular form, ſeparated by membranes.

AVERRHOISTS, a ſect of peripatetic philoſophers, who appeared in Italy ſome time before the reſtoration of learning, and attacked the natural immortality of the ſoul.

They took their denomination from Averrhoes, a celebrated interpreter of Ariſtotle, born at Cordova in Spain, in the twelfth century, from whom they borrowed their diſtinguiſhing doctrine. The founder of this ſect, Averrhoes, is ſometimes called the Commentator, by way of eminence, as being ſuppoſed to have entered beſt of all the commentators into the ſentiments of the philoſopher; inſomuch that ſome have pretended the ſoul of Ariſtotle had migrated into the body of Averrhoes.

AVERRUNCIATION, from *averrunco*, *I prune*, in *Agriculture*, the act of cutting or lopping off the ſuperfluous branches of trees. See PRUNING.

AVERRUNCI, from *averrunco*, *I avert*, in *Antiquity*, an order of deities among the Romans, whoſe peculiar office was to avert dangers and evils.

The Egyptians had alſo their *dii averrunci*, or *apotropæi*, who were pictured in a menacing poſture, and ſometimes with whips in their hands.—Iſis was a divinity of this kind; as is ſhewn by Kircher. See Oedip. Ægypt. t. iii. p. 487.

AVERSION, abhorrence, diſlike. See ANTIPATHY.

The word is compounded of *a*, *from*; and *vertere*, *to turn*.

AVERSIONE *vænire*, or *locare*, in *Writers of the Civil Law*, ſeems to denote the ſelling, or letting things in the lump, without fixing particular prices for each piece.

AVERTI, in *Horſemanſhip*, is applied to a regular ſtep or motion enjoined in the leſſons.

In this ſenſe they ſay, *pas averti*, ſometimes *pas ecouté*, and *pas d'ecole*, which all denote the ſame.

The word is mere French, and ſignifies *adviſed*.

AVERY, a place where oats, or provender, are kept for the king's horſes. See AVERIA.

AUGES, in *Aſtronomy*, two points in a planet's orbit, otherwiſe called *apſides*. See APSIS.

One of the *auges* is particularly denominated the *apogee*, the other *perigee*.

AUGITES, among *Ancient Naturaliſts*, a kind of gem, of a pale green colour, inferior in value to the topaz.

It is uſually ſuppoſed the ſame with the *callais* or *calais*, though this was diſputed even in Pliny's time.

AUGMENT, in the Greek *Grammar*, an accident of certain tenſes; being either the prefixing of a ſyllable, or an increaſe of the quantity of the initial vowels. There are two kinds of *augments*.—*Temporale*, or *of a letter*; when a ſhort vowel is changed into a long one; or a diphthong into another longer one: thus called, becauſe the time of its pronunciation is now lengthened.

Augmentum ſyllabicum, or *of a ſyllable*, is when a letter, viz. ε, is added at the beginning of the word; ſo that the number of ſyllables is increaſed.

AUGMENTS, in *Mathematics*. See FLUXIONS and MOMENTS.

AUGMENTATION, in a general ſenſe, the act of *augmenting*; that is, of adding or joining ſomething to another, to render it larger, or more conſiderable.

The governors of the bounty of queen Anne, for the *augmentation of the maintenance of the poor clergy*, by virtue of the ſeveral acts of parliament, made for that purpoſe, are empowered to augment all livings not exceeding 50*l.* *per annum*; and the number of livings following were certified to be capable of *augmentation*.

1071	Livings not exceeding 10*l.* *per annum*, which may be augmented (with the bounty alone) ſix times each, purſuant to the preſent rules of the governors, which will make 6426 *augmentations*.	6426
1467	Livings above 10*l.* and not exceeding 20*l.* *per annum*, may be augmented four times each, which will make 5868 *augmentations*.	5868
1126	Livings above 20*l.* and not exceeding 30*l.* *per annum*, may be augmented three times each, which will make 3378 *augmentations*.	3378
1049	Livings above 30*l.* and not exceeding 40*l.* *per annum*, may be augmented twice each, which will make 2098 *augmentations*.	2098
884	Livings above 40*l.* and not exceeding 50*l.* *per annum*, may be each once augmented, which will make 884 *augmentations*.	884
5597	Total number of *augmentations*, which muſt be made (by the bounty alone) before the livings already certified will exceed 50*l.* *per annum*.	18654

Computing the clear amount of the bounty to make 55 *augmentations* yearly, it will be 339 years, from the year 1714, (which was the firſt year in which any livings were augmented) before all the ſmall livings above certified can exceed 50*l.* *per annum*; and if it be computed, that one half of ſuch *augmentations* may be made in conjunction with other benefactors (which is very improbable) it will require 226 years before all the livings above certified will exceed 50*l.* *per annum*.

AUGMENTATION is alſo uſed for the *augment*, i. e. for the additament, or the thing added. Such a miniſter petitioned the king for an *augmentation* of ſalary, wages, &c.

Augmentation, *court of.* See Court, &c.

Augmentations, in *Heraldry*, are additional charges to a coat armour frequently given as particular marks of honour, and generally borne, either on an eſcutcheon, or a canton.—Such are the arms of Ulſter, borne by all the baronets of England.

AUGRE, or **Awgre**, a carpenter's and joiner's inſtrument, ſerving to bore large, round holes.

The *augre* conſiſts of a wooden *handle*, and an iron *blade*, terminated at bottom with a ſteel *bit*.

AUGSBURG *confeſſion*. See Augustan.

AUGUR, in *Antiquity*, a miniſter of religion among the Romans, appointed to take *auguries* or preſages concerning futurity from birds, beaſts, and the appearances of the heavens.

The word is by ſome derived from *avis*, *bird*, and *garritus*, *chattering*; whence the original office of the *augurs* is ſuppoſed to have been to obſerve, and take indications from, the noiſe, calling, ſinging, chirping, and chattering, of birds. Agreeably to which, *augur* is commonly diſtinguiſhed from AUSPEX, as the latter was ſuppoſed employed in obſerving the flight of birds.—Pezron derives it from the Celtic *au*, *liver*, and *gur*, *man*; ſo that according to him an *augur* was properly a perſon who inſpected the entrails, and divined by means of the liver. On which principle, *augur* would have been the ſame with ARUSPICES.

The *augurs* made a college or community, which at firſt conſiſted of three perſons (one for each tribe); then of four (when Servius Tullius increaſed the tribes to that number); then of nine (four of them patricians, and five plebeians): laſtly, Sylla made the number fifteen.—Cato was of the college of *augurs*.

They bore an *augural* ſtaff, or wand, called *lituus*, as the enſign of their office and authority. No affair of moment could be reſolved on, without firſt conſulting them; and their advice, be it what it would, was, by a decree of the ſenate, appointed to be exactly and religiouſly obſerved.

AUGURAL, ſomething relating to the AUGURS.

The *augural* inſtruments are repreſented on ſeveral ancient medals. Evelyn on Medals, chap. ii.

Augural *ſupper*, *cæna auguralis*, that given by a prieſt on his firſt admiſſion into the order, called alſo by Varro *adjicialis*. De Re Ruſtic. lib. iii. cap. 6.

Augural *books*, *libri augurales*, thoſe wherein the diſcipline and rules of *augury* were laid down. Cic. de Divin. lib. i. cap. 33.

AUGURALE, the place in a camp where the general took *auſpicia*. This anſwered to the *auguratorium* in the city.

Augurale is alſo uſed, in Seneca, for the enſign or badge of an *augur*, as the *lituus*. De Tranquil. cap. xii.

AUGURATORIUM, a building on the Palatine mount, where public *auguries* were taken.

This is alſo called *auguraculum*, and *arx*.

AUGURY, the diſcipline of the *augurs*, or the practice of conſulting the gods, and learning their will, by divers kinds of omens.

The obſervation of *auguries* is very ancient, as having been prohibited by Moſes in Leviticus.—The cup put in Benjamin's ſack, in Egypt, is ſaid to have been that uſed by Joſeph to take *auguries* by.

Augury, in its more general ſignification, compriſes all the different kinds of divination; which Varro diſtinguiſhes into four ſpecies of *augury*, according to the four elements.—*Pyromancy*, or *augury* by fire; *aëromancy*, or *augury* by the air; *hydromancy*, or *augury* by the water; and *geomancy*, or *augury* by the earth.

The particular branches are, *alectoromancy*, *anthropomancy*, *belomancy*, *catoptromancy*, *capnomancy*, *gaſtromancy*, *geomancy*, *aruſpicina*, *libanomancy*, *lecanomancy*, *necromancy*, &c. See each deſcribed under its proper article.

AUGUST, **Augustus**, in a general ſenſe, ſomething majeſtick, venerable, or ſacred.

The title *Auguſtus* was firſt given by the Roman ſenate to Octavius, after his being confirmed by them in the ſovereign power.—It was conceived as expreſſing ſomething divine, or elevated above the pitch of mankind, being derived from the verb *augeo*, *I increaſe*, *tanquam ſupra humanam ſortem auctus*.

The ſucceſſors of Octavius aſſumed the ſame quality; ſo that thenceforward EMPEROR and *Auguſtus* were the ſame thing: they became ſynonymous terms.

The preſumptive heir of the empire, or he who was deſtined to ſucceed to the dignity, was firſt created Cæſar; which was a ſtep neceſſary to arrive at that of *Auguſtus* or emperor.—Yet F. Pagi maintains the reverſe; viz. that it was neceſſary to be *Auguſtus* previouſly to the being Cæsar.

The EMPRESSES alſo took the quality of *Auguſtæ*; and even ſome ladies of the imperial family, who had never been wives of emperors, but mothers or daughters.

On medals and coins, ſome of the ancient kings of France are alſo found with the appellation *Auguſti*; particularly Childebert, Clothaire, and Clovis: add, that the wife of this laſt, Chrotechilda, is alſo called by Herric, in his book of the miracles of St. Germain, indifferently, either *Auguſta*, or *queen*.

August, in reſpect of *Chronology*, denotes the eighth month of the Julian year.

This was called in the ancient Roman calendar, *ſextilis*, as being the ſixth from March, from which the Romans began their computation. The emperor Auguſtus changed the name, and gave it his own; not that it was the month in which he was born, but becauſe it had been fortunate to him, by ſeveral victories which he had gained in it.

Our Saxon anceſtors called it *Weod-monath*, that is, *weedmonth*, on account of the plenty of weeds in this ſeaſon. Spelman.

This month is eſteemed one of the richeſt in the whole year, becauſe of the harveſt of the ſeveral ſorts of grain which is produced in that ſeaſon. Hence is to be derived the French proverb, *a man has made his Auguſt*; which proverb is much uſed among merchants to ſignify that a man has been ſucceſsful in trade, and got an eſtate.

August is alſo uſed, in *Middle Age Writers*, for a power, or licence, of going out of a city in harveſt-time to reap, &c. Du-Cange.

AUGUSTA, *Hiſtoria*, is the hiſtory of the Roman emperors from the time of Adrian to Carinus, that is, from the year of our Lord 157, to 285, compoſed by ſix Latin writers, Æl. Spartianus, Julius Capitolinus, Æl. Lampridius, Vulcatius Gallicanus, Trebellius Pollio, and Flavius Vopiſcus. Fabr. Bibl. Lat. cap. 6.

AUGUSTALES, or *Sodales* Augustales, or *Flamines* Augustales, were the prieſts of Auguſtus, appointed after the deification of that emperor by Tiberius, to perform the ſervice of the new god.

AUGUSTALIA, in *Antiquity*, a feaſt inſtituted in honour of the emperor Auguſtus.

This feſtival was firſt eſtabliſhed in the year of Rome 835, being the fourth after he had ended all his wars, and ſettled the affairs of Sicily, Greece, Aſia, Syria, and the Parthians. The day whereon he made his entry into Rome, being the 4th of the ides of October, was appointed to be kept a feaſt; and was called *Auguſtalis*.

Augustalia was alſo a name given to the games celebrated in honour of the ſame prince, on the 4th of the ides of October.

AUGUSTALIS, or *Præfectus* Augustalis, a Roman magiſtrate who was appointed to govern Egypt, with a power much like that of a proconſul in other provinces.

AUGUSTAN, relating to Auguſtus, or Auguſta.

Augustan *æra*. See Actian.

Augustan *confeſſion* denotes a celebrated confeſſion of faith, drawn up by Luther and Melancthon, on behalf of themſelves, and other ancient reformers, and preſented in 1530 to the emperor Charles V. at the diet of Auguſta or Augſburgh, in the name of the evangelic body. This *confeſſion* contains twenty-eight chapters, of which the greateſt part is employed in repreſenting, with perſpicuity and truth, the religious opinions of the proteſtants, and the reſt in pointing out the errors and abuſes that occaſioned their ſeparation from the church of Rome.

AUGUSTATICUM, in *Middle Age Writers*, denotes a largeſs, or donative, of an emperor, to the people, or ſoldiery.

AUGUSTEUM *marmor*, in the *Natural Hiſtory of the Ancients*, a name given to the common green and white marble, ſo frequent in uſe with us for tables, &c. and called by our artificers Egyptian marble.

AUGUSTINE, **Augustinus**, of Janſenius, is a celebrated treatiſe of that author, biſhop of Ypres, intituled, Cornelii Janſenii, Epiſcopi Iprenſis, Auguſtinus, in three volumes, folio, printed at Louvain in 1640; the firſt tome whereof contains a diſcourſe againſt *Pelagianiſm*; and the ſecond, divers treatiſes of reaſon; the uſe of authority in theological matters; the ſtate of innocence; fall of nature by ſin; grace, &c.—From theſe ſeveral treatiſes were collected the five famous propoſitions, enumerated under the article Jansenism.

AUGUSTINS, or **Augustinians**, an order of religious; thus called from St. Auguſtin, whoſe rule they obſerve.

The *Auguſtins*, popularly alſo called *Auſtin friers*, were originally hermits, whom pope Alexander IV. firſt congregated into one body, under their general Lanfranc, in 1256.

Soon after their inſtitution, this order was brought into England, where they had about thirty-two houſes at the time of their ſuppreſſion.

The *Auguſtins* are clothed in black, and make one of the four orders of mendicants.

From theſe aroſe a reform, under the denomination of *bare-foot Auguſtins*, or *Minorites*, or *Friers minor*.

There are alſo canons regular of St. *Auguſtin*, who are clothed in white, excepting their cope, which is black.

At Paris they are known under the denomination of, *religious of* GENEVIEVE; that abbey being the chief of the order.

There are alſo nuns and canoneſſes, who obſerve the rules of St. Auguſtin.

AUGUSTINIANS are alſo thoſe divines who maintain, on the authority of St. Auguſtin, that GRACE is effectual from its nature, abſolutely and morally, and not relatively and gradually. See EFFICACIOUS.

They are divided into rigid and relaxed.

AU-GUY-L'AN-NEUF, or AUGILLANNEUF. See MISLETO.

AVIARY, a houſe or apartment kept for the keeping, feeding, and propagating of birds.

The word is formed of *avis*, *bird*.

AVICENNIA, in *Botany*, a genus of the *didynamia angioſpermia* claſs, the calyx of which is divided into five ſegments, the corolla is bilabiate, the capſule is coriaceous and rhomboidal, containing a ſingle ſeed.

AVIGNON-*berry*, called alſo *French berry*, is the fruit of a ſhrub by ſome authors called LYCIUM; growing plentifully near Avignon, and in other parts of France.

The berry is ſomewhat leſs than a pea; its colour is green, approaching towards a yellow; and it is of an aſtringent and bitter taſte.—It is much uſed by the dyers, who ſtain a yellow colour with it; and by the painters, who alſo make a fine golden yellow of it. See BOX-*thorn*.

AVIS, *bird*, in *Zoology*. See BIRD.

AVIS *Indica*. See APUS.

AVIS *longa*, a name given by Nieremberg to the *hoitlallotl* of the Americans, a bird very remarkable for the ſwiftneſs of its running.

AVIS *nivea*, a name under which Nieremberg has deſcribed an American bird, of the ſize of a thruſh, brown and black on the back, and yellow under the belly; it imitates the human voice, and is called, by the natives, CEOAN.

AVIS *pennipulchra*, the name of an American bird, deſcribed by Nieremberg, and called by the Indians *quetzaltototl*. It is of the ſize of a pigeon, and is all over its body of the more beautiful colours of the peacock. There are, beſide this ſpecies, three or four others. Mr. Ray has, however, ranged all theſe under the number of birds, the accounts of which he is either dubious about, or ſuſpicious of the truth of.

AVIS *ſcica*. See HOACTLI.

AVIS *tropicorum*, the name of a bird, commonly called alſo, in Engliſh, the TROPIC *bird*, of the ſize of the common duck.

It is only found about the *tropics*, and thence has its name. See *Tab. of Birds*, Nº 52.

AVIS *venti*, the bird of the wind. See HEATOTOTL.

AVIS *Paradiſi*. See PARADISE.

AVIS, *knights d'Avis*, an order of knighthood in Portugal, eſtabliſhed about the year 1162.

When the city of Evora was taken from the Moors, in the reign of the firſt king of Portugal, it was garriſoned by ſeveral perſons who aſſumed the title of knights of St. Mary of Evora, which was ſoon after changed for that of *knights d'Avis*, which the king gave them, and whither they removed from Evora. The badge of the order is a green croſs flory, and they obſerve the rule of St. Benedict.

AVISO, an advice, piece of intelligence, or advertiſement, to notify ſome event or matter worthy of knowledge.

The word is Italian, *adviſo*; and is chiefly uſed in matters of commerce.

AUK, in *Zoology*, a name given by ſome to a bird called the ALKA in Latin, and more commonly known among us by the name of the RAZOR-BILL, a web-footed fowl, wanting the hinder toe.

AUL. See AWL.

AULA, in our *Ancient Law Books*, ſignifies a court baron. —*Aula ibidem tenta quarto die Auguſt.* &c.

Aula eccleſiæ is ſometimes uſed for what we now call *navis eccleſiæ*. See NAVE.

AULA *regia*, or *regis*, a court eſtabliſhed by William the Conqueror in his own hall, compoſed of the king's great officers of ſtate, who reſided in his palace, and were uſually attendant on his perſon. This court was regulated by the article which forms the eleventh chapter of Magna Charta, and eſtabliſhed in Weſtminſter-hall, where it hath ever ſince continued. See COURT *of King's Bench*.

AULETES, αυλητης, in *Antiquity*, denotes a flute-player. One of the Ptolemies, kings of Egypt, father of Cleopatra, bore the ſurname, or denomination, of *auletes*.

AULIC, AULICA, an act which a young divine maintains in ſome foreign univerſities, upon the admiſſion of a new doctor of divinity.

It is ſo called from the Latin, *aula*, a *hall*; it being in the hall of the univerſity that this act is uſually held.

The perſon who preſides at the diſputation, is the ſame that is to take the doctor's cap.

AULIC, AULICUS, is alſo an appellation, given to certain officers of the emperor, who compoſe a ſuperior court or council, which has an univerſal juriſdiction, and without appeal, over all the ſubjects of the empire, in all proceſſes entered therein.

We ſay, *aulic* council, the *aulic* court or chamber, *aulic* counſellor, &c.

The *aulic* council is eſtabliſhed by the emperor, who nominates the officers; but the elector of Mentz has a right of viſiting it.—It is compoſed of a preſident, who is a catholic; a vice-chancellor, preſented by the elector of Mentz, and of eighteen aſſeſſors, or counſellors, nine whereof are proteſtants, and nine Romaniſts.

They are divided into two benches, one whereof is taken up by nobles, and the other by lawyers.—They hold their aſſemblies in the preſence of the emperor; and for that reaſon are called *juſtitium imperatoris*, the *emperor's juſtice*: and *aulic council*, becauſe theirs follows the emperor's court, *aula*, and has its reſidence in the place where he is.—This court claſhes a little with the imperial chamber of Spires; in that they are preventive of each other; it not being allowed to remove any cauſe from the one to the other.

Nor can the emperor himſelf hinder or ſuſpend the deciſions of either court; much leſs call any cauſe before himſelf, which has been once before them, without the conſent of the ſtates of the empire. Yet, in ſome caſes, the ſame council forbears making any peremptory concluſion, without the emperor's participation; and only decrees thus, *Fiat votum ad Cæſarem*; that is, make a report hereof to the emperor in his privy-council.

AULNEGER, or ALNAGER. See ALNAGER.

AULO, a Grecian long meaſure. See MEASURE.

AULOS, in *Zoology*, a name by which ſeveral of the ancient writers have called the SOLEN, or RAZOR-*fiſh*.

AUMONE, or ALMS. See ALMS.

AUNCEL-*weight*, *quaſi Handſal-weight*, an ancient kind of balance, conſiſting of ſcales hanging on hooks faſtened at each end of a beam or ſtaff, which a man lifts up on his hand or fore-finger, and ſo diſcovers the equality or difference between the weight and the thing weighed.

There being great deceits practiſed in theſe weights, they were prohibited by ſeveral ſtatutes; and the even balance alone commanded.

The word is ſtill uſed in ſome parts of England, to ſignify meat ſold by poiſing in the hand, without putting it into the ſcales.

AUNCESTOR. *Aſſiſe of Mort d'*AUNCESTOR. See ASSISE.

AUNCESTRAL *homage*. See HOMAGE.

AUNE, in *Commerce*, a long MEASURE, uſed in France, and other countries; of different lengths in different places. See ELL.

AVOCADO, a name given to a ſpecies of bay. See BAY-*tree*.

AVOCATORIA, a mandate of the emperor of Germany, directed to ſome prince or ſubject of the empire, to ſtop his unlawful proceedings in any cauſe brought by way of appeal before him.

AVOIDANCE, in *Law*, has two ſignifications: the one when a benefice becomes void of an incumbent; the other, when we ſay in pleadings in chancery, confeſſed or *avoided*, traverſed or denied, &c. See VOIDANCE.

AVOIRDUPOIS, or AVERDUPOIS *weight*, a kind of weight uſed in England; the pound whereof contains ſixteen ounces. See WEIGHT.

The proportion of a pound *avoirdupois* to a pound *troy*, is as 17 to 14; or the *avoirdupois* pound contains 7000 grains, and the *troy* pound 5760.

All the larger and coarſer commodities are weighed by *avoirdupois* weight; as groceries, cheeſe, wool, lead, hops, &c.

AVOSETTA, in *Ornithology*. See RECURNIROSTRA.

AVOWEE, ADVOCATUS. See ADVOWEE, and ADVOCATE.

The *avowee* is he to whom the right of advowſon of any church belongs, ſo that he may preſent thereto in his own name: he is thus called by way of diſtinction from thoſe who ſometimes preſent in another man's name, as a guardian, who preſents in the name of his ward; as alſo from thoſe who only have the lands whereto an advowſon belongs for term of life or years, by intruſion or diſſeiſin.

AVOWRY, in *Law*, is where one takes a diſtreſs for rent, or other thing; and the other ſues replevin. In which caſe the taker ſhall juſtify, in his plea, for what cauſe he took it; and if he took it in his own right, he is to ſhew it, and ſo *avow* the taking; which is called his *avowry*. If he took it in the right of another, when he has ſhewed the cauſe, he is to make conuſance of the taking, as being a bailiff or ſervant to him in whoſe right he did it.

AU-PIS-ALLER, a French phraſe, ſometimes uſed among Engliſh writers, ſignifying, *at the worſt*.

AURA, among *Phyſiologiſts*, an airy EXHALATION or VAPOUR.

The word is derived from the Greek *αυρα*, *gale.*

Aura, in *Chemiſtry*, a certain fine and pure ſpirit, found in every animal or vegetable body; but ſo ſubtle, as only to be perceptible by its ſmell and taſte, or other effects, not found in any other but that body. This *aura* exhibits the proper character of the body, and is lodged in the oil of the body, to prevent its being diſſipated and thrown off; and hence it is that all the ancient alchemiſts ſay ſpirit reſides in ſulphur. Boerhaave Ch. p. 168.

Aura, in *Ornithology*, a ſpecies of VULTUR.

Auræ, in *Mythology*, a name given by the Romans to the nymphs of the air. They are moſtly to be found in the ancient paintings of cielings; where they are repreſented as light and airy; generally with long robes, and flying veils, of ſome lively colour or other, and fluttering about in the rare and pleaſing element aſſigned to them. They are ſportive and happy in themſelves, and well-wiſhers to mankind.

AURANTIUM, in *Botany*. See ORANGE-*tree*.

AURANTIUS *piſcis*, in *Ichthyology*, a name given by Nieremberg to the DORADO, or dolphin, a ſpecies of the CORYPHÆNA, diſtinguiſhed from the others by its forked tail.

Auraria *functio*, *penſio*, or *præſtatio*, a tax or tribute to be paid in gold.

The collector hereof was denominated *ſuſceptor aurarius*, or *chryſypodectes*.

AURATA, in *Zoology*. See GILT-*head*.

AURATUS *eques*. See EQUES.

AUREA *Alexandrina*, in *Pharmacy*, a kind of opiate, or antidote, compoſed of a great number of ingredients, which was in great fame among the ancient writers.

It is called *aurea*, from the gold (*aurum*) which is an ingredient in its compoſition; and *Alexandrina*, as having been firſt invented by a phyſician named Alexander.—It is reputed a good preſervative againſt the colic and apoplexy.

AURELIA, in *Natural Hiſtory*, the name of that ſtate, otherwiſe called chryſalis, in which butterflies, and ſeveral other animals, paſs the time between their caterpillar or other creeping ſtate, and their winged one.

In this ſtate no creatures afford ſo beautiful a variety as the butter-fly kinds; and they all paſs through this middle ſtate, without one exception.

The figure of the *aurelia* or chryſalis, generally, approaches to that of a cone, or at leaſt the hinder part of it is of this ſhape; and the creature, while in this ſtate, ſeems to have neither legs nor wings, nor has any power of walking. It ſeems, indeed, to have hardly ſo much as life. It takes no nouriſhment in this ſtate, nor has it any organs for taking any; and indeed its poſterior part is all that ſeems animated, this having a power of giving itſelf ſome motions. The external covering of the chryſalis is cartilaginous, and conſiderably large, and is uſually ſmooth and gloſſy; but ſome few of them have a few hairs, ſome are alſo as hairy as the caterpillars from which they are produced, and others are rough, or, as it were, chagreened all over.

In all of theſe there may be diſtinguiſhed two ſides; the one of which is the back, the other the belly of the animal; and on the anterior part of the latter, there may always be diſtinguiſhed certain little elevations running in ridges, and reſembling the fillets wound about mummies. The part whence theſe have their origin, is eſteemed the head of the animal; the other ſide or back is ſmooth, and is of a rounded figure in moſt of the chryſaliſes; but ſome have ridges on the anterior part and ſides of this part; and theſe uſually terminate in a point, and make an angular appearance on the chryſalis.

From this difference is drawn the firſt general diſtinction of theſe bodies. They are by this divided into two claſſes; the round and the angular kinds. The firſt kind are by the French naturaliſts called alſo *feves*, from the common cuſtom of calling the *chryſalis* of the ſilk worm, which is round, by this name.

There is ſomething more regular in this diſtinction alſo than might be at firſt conceived; for the diviſion is continued from the fly-ſtate: the rounded chryſaliſes being almoſt all produced by the *phalenæ* or moths; and the angular ones by the *papilios*, or day-flies. There are ſeveral ſubordinate diſtinctions of theſe kinds, but in general they are leſs different from one another than the caterpillars from whence they are produced.

The head of thoſe of the firſt claſs uſually terminates itſelf by two angular parts, which ſtand ſeparate one from the other, and reſemble a pair of horns. On the back, eminences and marks are diſcovered, which imagination may form into eyes, noſe, chin, and other parts of the human face.

There are a great variety, and a great deal of beauty in the figures and arrangement of the eminences and ſpots on the other parts of the body of the chryſalis of different kinds. It is a general obſervation, that thoſe chryſaliſes which are terminated by a ſingle horn, afford day-butterflies of the kind of thoſe which have buttoned *antennæ*, and whoſe wings, in a ſtate of reſt, cover the under part of the body, and which uſe all their ſix legs in walking, thoſe of many other kinds uſing only four of them. Thoſe chryſaliſes, which are terminated by two angular bodies, and which are covered with a great number of ſpines, and have the figure of a human face on their back in the greateſt perfection, afford butterflies of the day-kind, and of that claſs, the characters of which are, their walking on four legs, and uſing the other two, that is, the anterior part, in the manner of arms or hands. The chryſaliſes, which have two angular bodies on their heads, but ſhorter than thoſe of the preceding, and whoſe back ſhews but a faint ſketch of the human face, and which have fewer ſpines, and thoſe leſs ſharp, always turn into that ſort of butterfly, the upper wings of which are divided into ſegments, one of which is ſo long as to repreſent a tail, and whoſe under-wings are folded over the upper part of the back. A careful obſervation will eſtabliſh many more rules of this kind, which are not ſo perfect as to be free from all exceptions, yet are of great uſe, as they teach us in general what ſort of fly we are to expect from the chryſalis, of which we know not the caterpillar, and therefore can only judge from appearances.

Theſe are the principal differences of the angular chryſaliſes; the round ones alſo have their different marks not leſs regular than thoſe.

The greater number of the round chryſaliſes have the hinder part of their body of the figure of a cone; but the upper end, which ought to be its circular plane baſe, is uſually bent and rounded into a ſort of knee: this is uſually called the head of the chryſalis; but there are alſo ſome of this kind, the head of which is terminated by a nearly plane ſurface: ſome of the creeping ten-legged caterpillars give chryſaliſes of this kind, which have each of them two eminences that ſeem to bring them towards the angular kind.

Among the angular chryſaliſes there are ſome whoſe colours ſeem as worthy our obſervation as the ſhapes of the others. Many of them appear ſuperbly clothed in gold. Theſe elegant ſpecies have obtained the name of chryſalis and *aurelia*, which are derived from Greek and Latin words, ſignifying gold; and from theſe all other bodies of the ſame kind have been called by the ſame names, though leſs or not at all entitled to them. As ſome kinds are thus gilded all over, ſo others are ornamented with this gay appearance in a more ſparing manner, having only a few ſpots of it in different places on their back and belly. Some ſpecies alſo have ſilver in the place of gold, either extending itſelf all over them, or forming ſome particular ſpots upon their back and belly. Theſe obvious marks, however, are not to be depended upon as certain characters of diſtinction, for accidents in the formation of the chryſalis may alter them; and thoſe which naturally would have been gilded all over, may be ſometimes only ſo in part, and either theſe or the others may by accidents be ſo formed as to ſhew nothing of this kind at all, but be only of a duſky brown. Thoſe, however, which have neither ſilver nor gold to recommend them to your eyes, do not want other colours, and thoſe beautifully variegated. Some of them are all over of an elegant green, as is the chryſalis of the fennel-caterpillar; others of an elegant yellow, and ſome of a bright greeniſh tinge, variegated with ſpots of a ſhining black; we have a very beautiful inſtance of this laſt kind in the chryſalis of the elegant cabbage-caterpillar. The general colour of the chryſalis of the common butterflies, however, is brown.

Some alſo are of a fine deep black, and of theſe many are ſo ſmooth and gloſſy, that they are equal to the fineſt Indian japan. The common caterpillar of the fig-tree gives an inſtance of one of theſe beautiful gloſſy ones; the caterpillar of the vine affords another of theſe fine black chryſaliſes.

The rounded chryſaliſes do not afford any thing of that variety of colouring ſo remarkably beautiful in the angular ones; they are uſually of a duſky yellow, in different ſhades, and are often variouſly ſpotted with black: but theſe, as well as all other chryſaliſes, before they arrive at their fixed colour, paſs through ſeveral other temporary ones, ſome being of a different colour when firſt produced from the caterpillar, from what they are a few days afterwards; and ſome varying ſo greatly, though only in degree, as not to be diſtinguiſhable, by the moſt converſant eye, from what they were when firſt produced. The green rough caterpillar of the cabbage has a chryſalis which is green at firſt, and from that gradually goes through all the ſhades of green to a faint yellow, which is its laſting colour; and one of the oak caterpillars yields a chryſalis beautifully ſpotted with red at its firſt appearance, but theſe ſpots change to brown for their fixed colour:

lour: the third day from their formation uſually fixes their laſting colours; and if they are obſerved to turn black in any part after this time, it is a ſign that they are dead or dying.

The ſeveral ſpecies of inſects, as a fly, ſpider, and an ant, do not differ more evidently from one another, in regard to appearance, than do a caterpillar, its chryſalis, and a butterfly produced from it; yet it is certain that theſe are all the product of the ſame individual egg; and nothing is more certain than that the creature which was for a while a caterpillar, is, after a certain time, a chryſalis, and then a butterfly. Theſe great changes produced in ſo ſudden a manner, ſeem like the *metamorphoſes* recorded in the fables of the ancients; and indeed it is very probable that thoſe fables firſt took their origin from ſuch changes.

The parts being diſtinguiſhable in the chryſalis, we eaſily find the difference of the ſpecies or claſs of the fly that is to proceed from it. The naked eye ſhews whether it be one of thoſe that have, or of thoſe that have not a trunk, and the aſſiſtance of a microſcope ſhews the *antennæ* ſo diſtinctly, that we are able to diſcern whether it belongs to the day or night claſs; and often to what genus, if not the very ſpecies: nay, in the plumoſe horned kinds, we may ſee by the *antennæ* whether a male or female *phalena* is to be produced from the chryſalis, the horns of the female being in this ſtate evidently narrower, and appearing leſs elevated above the common ſurface of the body, than thoſe of the male.

All theſe parts of the chryſalis, however, though ſeen very diſtinctly, are laid cloſe to one another, and ſeem to form only one maſs; each of them is covered with its own peculiar membrane in this ſtate, and all are ſurrounded together by a common one, and it is only through theſe that we ſee them, or rather we ſee on theſe the figures of all the parts moulded within, and therefore it requires attention to diſtinguiſh them. The chryſalis is ſoft when firſt produced, and is wetted on the front with a viſcous liquor; its ſkin, though very tender at firſt, dries and hardens by degrees; but this viſcous liquor, which ſurrounds the wings, legs, &c. hardens almoſt immediately, and in conſequence faſtens all thoſe limbs, &c. into a maſs, which were before looſe from one another; this liquor as it hardens loſes its tranſparence, and becomes brown; ſo that it is only while it is yet moiſt that theſe parts are to be ſeen diſtinct.

It is evident from the whole, that the chryſalis is no other than a butterfly, the parts of which are hid under certain membranes, which faſten them together, and when the limbs are arrived at their due ſtrength they become able to break through theſe membranes, and then expand and arrange themſelves in their proper order.

The firſt *metamorphoſis* therefore differs in nothing from the ſecond, except that the butterfly comes from the body of the caterpillar in a weak ſtate, with limbs unable to perform their offices; whereas it comes from the chryſalis perfect.

M. Reamur has given us many curious obſervations on the ſtructure and uſes of the ſeveral coverings that attend the varieties of the caterpillar kind in this ſtate.

The creatures in general remain wholly immoveable in this ſtate, and ſeem to have no buſineſs in it, but a patient attendance on the time when they are to become butterflies; and this is a change that can happen to them only as their parts, before extremely ſoft and weak, are capable of hardening and becoming firm by degrees, by the tranſpiration of that abundant humidity which before kept them ſoft; and this is proved by an experiment of M. Reaumur, who incloſing ſome chryſaliſes in a glaſs tube, found, after ſome time, a ſmall quantity of water at the bottom of it, which could have come there no other way but from the bottom of the incloſed animal.

This tranſpiration depends greatly on the temperature of the air: it is augmented by heat, and diminiſhed by cold; but it has alſo its peculiarities in regard to the ſeveral ſpecies of butterfly to which the chryſalis belongs.

According to theſe obſervations, the time of the duration of the animal in the chryſalis ſtate muſt be in different ſpecies very different; and there is indeed this wide difference in the extremes, that ſome ſpecies remain only eight days in this ſtate, and others eight months.

We know that the caterpillar changes its ſkin four or five times during its living in that ſtate; and that all theſe ſkins are at firſt produced with it from the egg, lying cloſely over one another. It parts with or throws off all theſe one by one, as the butterfly, which is the real animal all this time within, grows more and more perfect in the ſeveral firſt changes. When it throws off one, it appears in another ſkin of exactly the ſame form; but at its final change from this appearance, that is, when it throws off the laſt ſkin, as the creature within is now arrived at ſuch a degree of perfection as to need no farther taking of nouriſhment, there is no farther need of teeth, or any other of the parts of a caterpillar. The creature in this laſt change proceeds in the very ſame manner as in all the former, the ſkin opening at the back, and the animal making its way out in this ſhape. If a caterpillar, when about to throw off this laſt ſkin, be thrown into ſpirits of wine, and left there for a few days, the membranes within will harden, and the creature may be afterwards carefully opened, and the chryſalis taken out, in which the form of the tender butterfly may be traced in all its lineaments, and its eyes, legs, &c. evidently ſeen. It is not neceſſary however to ſeize upon this exact time for proving the exiſtence of the chryſalis or butterfly in the caterpillar; for if one of theſe animals be thrown into ſpirit of wine, or into vinegar, ſome days before that time, and left there for the fleſh to harden, it may afterwards be diſſected, and all the lineaments of the butterfly traced out in it; the wings, legs, *antennæ*, &c. being as evident here, and as large as in the chryſalis. Reaumur's Hiſt. Inſect. vol. i. p. 2. 28.

It is very plain from this, that the change of the caterpillar into a chryſalis is not the work of a moment, but is carrying on for a long time before, even from the very hatching of the creature from the egg. The parts of the butterfly are not however diſpoſed in exactly the ſame manner while in the body of the caterpillar, as when left naked in the form of the chryſalis; for the wings are proportionably longer and narrower, being wound up into the form of a cord, and the *antennæ* are rolled up on the head; the trunk alſo is twiſted up, and laid upon the head; but this in a very different manner from what it is in the perfect animal, and very different from that which it lies in within the chryſalis; ſo that the firſt formation of the butterfly in the caterpillar by time arrives at a proper change of the diſpoſition of its parts, in order to its being a chryſalis. The very eggs, hereafter to be depoſited by the butterfly, are alſo to be found not only in the chryſalis, but in the caterpillar itſelf, arranged in their natural, regular order. They are indeed in this ſtate very ſmall and pellucid; but after the change into the chryſalis, they have their proper colour.

As ſoon as the ſeveral parts of the butterfly therefore are arrived at a ſtate proper for being expoſed to the more open air, they are thrown out from the body of the caterpillar, ſurrounded only with their membranes; and as ſoon as they are arrived after this at a proper degree of ſtrength and ſolidity, they labour to break through theſe thinner coverings, and to appear in their proper and natural form. The time of their duration in this ſtate of chryſalis is very uncertain, ſome remaining in it only a few days, others ſeveral months, and ſome almoſt a year in appearance. But there is a fallacy in this, that many are not aware of. It is natural to think, that as ſoon as the creature has incloſed itſelf in its ſhell, be that of what matter it will, it undergoes the change into the chryſalis ſtate. And this is the caſe with the generality; yet there are ſome which are eight or nine months in the ſhell before they become chryſaliſes, ſo that their duration in the real chryſalis ſtate is much ſhorter than it naturally appears to be. M. Reaumur carefully watched the auriculated caterpillar of the oak into its ſeveral changes, and particularly from its chryſalis, which is of this laſt kind, into the fly; and has given an account of the method of this, as an inſtance of the general courſe of nature in theſe operations.

The membranes which envelope the creature in this chryſalis ſtate are at firſt tough and firm, and immediately touch the ſeveral parts of the incloſed animal; but by degrees, as theſe parts harden, they become covered, ſome with hairs, and others with ſcales. Theſe, as they continue to grow, by degrees fall off the ſeveral particular membranes which cover the parts on which they are placed, to a greater diſtance, and by degrees wholly looſen them from the limbs. This is one reaſon of thoſe membranes drying and becoming brittle.

The middle of the upper part of the CORCELET is uſually marked with a line, which runs in a longitudinal direction; and this part is always more elevated than the reſt, even in the conic kinds, which are no otherwiſe angular. This line is in ſome very bold and plain, in others it is ſo faint as not to be diſtinguiſhable without glaſſes; but it is always in the midſt of that line that the ſhell begins to open. The motion of the head of the butterfly backwards firſt occaſions this crack, and a few repetitions of the ſame motions open it the whole length of the line.

The clearing itſelf however entirely is a work of more time in this caſe, than is the paſſing of the chryſalis out of the body of the caterpillar. In that caſe there is a crack ſufficiently large in the ſkin of the back, and the whole chryſalis being looſe comes out at once. But in this caſe every particular limb, and part of the body, has its ſeparate caſe; and though theſe are almoſt inconceivably thin and tender, yet it is neceſſary that every part be drawn out of them before it appear naked to the open air. As ſoon as all this is effected, and the animal is at full liberty, it either continues ſome time upon the remains of its covering, or creeps a little way diſtant from it, and there reſts. The wings are what we principally admire in this creature. Theſe are at this time ſo extremely folded up, and placed in ſo narrow a compaſs, that the creature ſeems to have none at all; but they by degrees expand and unfold themſelves, and, finally, in a quarter of an hour, or half an hour at the utmoſt, they appear at their full ſize, and in all their beauty. The manner of this ſudden unfolding of the wings is this: the ſmall figure they make when the creature firſt comes out of its membranes, does not prevent the obſerving that they are at that time conſiderably thick. This is owing to its being a large wing folded up in the niceſt manner, and with folds ſo arranged, as to be by no means ſenſible to the eye, for the wing is never ſeen to unfold; but when obſerved in the moſt accurate manner, ſeems to grow under the eye to this extent. When the creature is firſt produced from the ſhell, it is every where moiſt and tender; even its wings have no ſtrength or ſtiffneſs till they extend themſelves; but they then dry by degrees, and with the other parts become rigid and firm. But if any accident prevents the wings from expanding at their proper time, that is, as ſoon as the creature is out of its ſhell, they never afterwards are able to extend themſelves, but the creature continues to wear them in their contracted and wholly uſeleſs ſtate; and very often when the wings are in part extended before ſuch an accident happens, it ſtops them in a partial extenſion, and the creature muſt be contented to paſs its whole life with them in that manner.

M. Reaumur has proved that heat and cold make great differences in the time of hatching of the butterfly from the chryſalis ſtate: and this he particularly tried with great accuracy and attention, by putting them in veſſels in warm rooms, and in ice-houſes; and it ſeemed wholly owing to the haſtening or retarding the evaporation of the abundant humidity of the animal in the chryſalis ſtate, that it ſooner or later appeared in the butterfly form. He varniſhed over ſome chryſaliſes, in order to try what would be the effect of thus wholly preventing their tranſpiration; and the conſequence was, that the butterfly came forth from theſe two months later than their natural time. Thus was the duration of the animal in this ſtate lengthened, that is, its exiſtence was lengthened, but that without any advantage to the creature, ſince it was in the time of its ſtate of inaction, and probably of inſenſibility.

Though this was of no conſequence, M. Reaumur deduces from it a hint that ſeems to be of ſome uſe. He obſerves that hen's eggs, of which we make ſo many uſes, and eat in ſo many forms, are properly a ſort of chryſalis of the animal; their germ, after they are impregnated by the cock, containing the young animal alive, and waiting only a due degree of warmth to be hatched and appear in its own form. Eggs tranſpire, notwithſtanding the hardneſs of their ſhells; and when they have been long kept, there is a void found near one of their ends, between the ſhell and the internal membrane; this is a mark of their being ſtale, and is the effect of an evaporation of part of their humidity: and the ſame varniſh which had been uſed to the chryſaliſes, being tried on eggs, was found to preſerve them for two years, as freſh as if laid but the ſame day, and ſuch as the niceſt palate could not diſtinguiſh from thoſe that were ſo. See Eggs.

It is not yet known how much farther this uſeful ſpeculation might be carried, and whether it might not be of great uſe even to human life, to invent ſomething that ſhould act in the manner of this varniſh, by being rubbed over the body, as the *athletæ* did of old, and the ſavages of the Weſt Indies do at this time, without knowing why. But to return to the inſects which are the ſubjects of this article: their third ſtate, that in which they are winged, is always very ſhort, and ſeems deſtined for no other action but the propagation of the ſpecies. See Generation, and Papilio.

AURELIANA, in *Botany*, a name given by ſome to a ſpecies of *panax*. See Ginseng.

AUREOLA, the crown of glory, given by painters and ſtatuaries to ſaints, martyrs, and confeſſors, as a mark of the victory which they have obtained.

F. Sirmond ſays, this cuſtom was borrowed from the heathens, who uſed to encompaſs the heads of their deities with ſuch rays.

AUREUS, the Roman gold coin, equivalent to 25 denarii, or 100 *ſeſterces*. Suet. in Oth. c. iv. Tacit. Hiſt. lib. i. Beverin. de Ponder. p. 33, ſeq.

In *Modern* and *Middle Age Writers*, it is called *ſolidus*, or *ſolidus aureus*.

The *aureus*, according to Arbuthnot, generally weighed double the denarius: whence it muſt have been worth, according to the firſt proportion of coinage mentioned by Pliny, 1 *l.* 4 *s.* 3 *d* ¼ ſterling.—According to the proportion that now obtains among us, 1 *l.* 0 *s.* 9 *d.* Plin. lib. xxxiii. c. 3. Arbuth. Tab. 25.—Ainſworth, however, makes the *aurei (denarii)* of the higher empire, weigh only five penny-weights; and under the lower empire, little more than half ſo much.

The weight of the *aureus* was gradually diminiſhed by the emperors. The conſular *aureus* weighed at a mean 126 troy grains, 40 of them being contained in the Roman pound: the imperial *aureus*, being 45 to the pound, weighed 112 grains; and the *ſolidus*, being 72 to the pound, weighed 70 grains. Phil. Tranſ. vol. lxi. part ii. art. 42. See Coin, and Denarius.

AURICHALCUM; ſee Orichalcum.

AURICLE, Auricula, in *Anatomy*, the external ear; or that part of the ear which is prominent from the head. The word is a diminutive of *auris*, *ear*; q. d. *little ear*.

For the ſtructure and variety of the *auricle*, with the ſeveral parts thereof, their names, &c. ſee Ear.

Auricle is alſo applied to two appendages of the heart; being two muſcular caps, covering the two ventricles thereof; thus called from the reſemblance they bear to the external ear.

They move regularly, like the heart, only in an inverted order; their *ſyſtole* correſponding to the *diaſtole* of the heart, and *vice verſa*. See *Tab. Anat. (Splanch.) fig.* 12. *lit. d.* See alſo farther of their ſtructure and office under the article Heart.

AURICULA, or Auricula *urſi*, in *Botany*, bear's *ear*, a ſpecies of primula in the Linnæan ſyſtem. To enumerate the varieties of this plant, would be almoſt endleſs and impoſſible; for every year produces vaſt quantities of new flowers, differing in ſhape, ſize, and colour: in the leaves of theſe plants alſo, there is as great a variety, ſo that the ſkilful floriſt is often capable of diſtinguiſhing the particular ſorts thereby.

But as it ſeldom happens that ſuch of theſe flowers as are at one time in great eſteem, continue to be regarded a few years after (there being ſtill finer or larger flowers produced from ſeeds, which are what the floriſts chiefly ſeek after) it would be needleſs to mention any of them. Suffice it therefore to give the characters of a good *auricula*. 1. The ſtem of the flower ſhould be lofty and ſtrong. 2. The footſtalk of the ſingle flower ſhould be ſhort, that the umbel may be regular and cloſe. 3. The pipe or neck of each flower ſhould be ſhort, and the flowers large, and regularly ſpread; being no ways inclinable to cup. 4. The colours ſhould be very bright and well mixed. 5. The eye of the flower ſhould be large, round, and of a good white or yellow: and the tube or neck not too wide.

All the flowers of this kind that want any of the above mentioned properties, are now rejected by every good floriſt: for as the varieties every year increaſe from ſeeds, ſo the bad ones are turned out to make room for better.

The time for ſowing the ſeed is commonly in Auguſt; but if it be ſown before Chriſtmas, it will be time enough. The beſt ſoil for it is a good light freſh ſandy mould, mixed with very rotten neat's dung, or very rotten dung from the bottom of an old hot-bed.

The manner of propagating theſe flowers when obtained, is from off-ſets or ſlips, taken from the old roots in April, when the flowers are in bloom. Thoſe plants which have ſtrong ſingle heads, always produce the largeſt cluſters of flowers; therefore the curious floriſts pull off the off-ſets, as ſoon as it can be done with ſafety to the plant, to encourage them to flower the ſtronger.

Theſe are the rules for propagating theſe plants; but in order to have them flower in perfection, the following rules muſt alſo be obſerved.

1. The plants muſt be preſerved from too much wet in winter, and muſt have free air, and not too much ſun. 2. In the beginning of February, if the weather be mild, the earth in your *auricula*-pots muſt be taken off as far as may be, without diſturbing the roots, and new freſh earth laid in its place. 3. The pots muſt be covered with matting in the night, to defend them from froſts while the plants are budding. 4. When the ſtalk begins to be long, they muſt be defended from haſty rains, yet not kept too much under cover, which draws up the ſtalk too long, and makes it weak; and they muſt be watered frequently, a little at a time, and none of the wet muſt be ſuffered to fall on the plant. Laſtly, when the flowers begin to open, the pots ſhould be removed to a ſtage of ſhelves, one over another, placed under cover, open to the morning-ſun, but ſheltered from the mid-day's ſun. Here they may remain till their flowers are paſt, and then they muſt be ſet out to have the benefit of the rains and free air, for the ripening of the ſeed, which muſt be ſaved carefully, and ſpread on papers, and laid to dry. Miller.

Though this herb is ſeldom kept in the ſhops, it nevertheleſs ſtands recommended as a vulnerary, and as ſuch is found of ſervice, both for internal and external purpoſes. Mixed with ointments and plaſters, it is reckoned good in ruptures. Four or ſix ſpoonfuls of the water, in which it has been boiled, taken every morning, is ſaid to cure coughs and ulcers of the lungs. The juice of its flowers removes ſpots of the face, and beautifies the ſkin; and with the ſame intention ſome diſtil a water from it. James.

Auricula, in *Zoology*; ſee **Earwig**.

Auricula *Judæ*, or *Jew's ear*, a kind of *fungus*, or muſhroom, ſomewhat reſembling, in figure, a human ear.

It grows on old elder-trees, the tree on which, as ſome pretend, Judas hanged himſelf; and hence, they think, the name is derived.

This *fungus* ſteeped in water, and applied to the eyes, is ſaid to free them of inflammations: but its chief uſe is under the form of a gargle in decoctions, againſt inflammations of the throat, or ſwelling of the tonſils.

AURICULÆ *Alvearium*; ſee **Alvearium**.

Auriculæ *primus muſculus*, in *Anatomy*, the name given by Fallopius to one of the muſcles of the head, called by Albinus the *attollens auriculam*, and by Winſlow the superior *auriculæ*.

Auriculæ *ſecundus muſculus*, in *Anatomy*, a name given by Fallopius, and others, to the muſcles of the ears, called, by Albinus, *retrahentes auriculam*. Theſe are three in number, and ſo like one another, that they are eaſily miſtaken for one. Riolanus calls them the *proprii auris externæ*.

Auriculam *Retrahens*; ſee **Retrahens**.

AURICULAR, ſomething that relates to the ears.

Thus we ſay, an *auricular* witneſs, *auritus teſtis, a witneſs by hearſay*.

Auricular *Confeſſion*, is that made in the ear, privately.

Auricular *Medicines*, are ſuch as are ſuited to the cure of the diſtempers of the ear.

AURICULARIS *Abductor*; ſee **Abductor**.

The finger next the little finger is alſo called *auricularis*, by the Greeks ωτιτης, becauſe uſed in picking the ear.

AURICULATED *Leaf*, in *Botany*, is a leaf which has a lobe on each ſide towards the baſe.

AURIFLAMMA, in the *French Hiſtory*, properly denotes a flag, or ſtandard, belonging to the abbey of St. Dennis, ſuſpended over the tomb of that ſaint, which the religious, on occaſion of any war in defence of their lands, or rights, took down, with great ceremony, and gave it to their protector, or advocate, to be borne at the head of their forces. Du-Cange.

Auriflamma is alſo ſometimes uſed to denote the chief flag, or ſtandard, in any army.

AURIGA, in *Aſtronomy*, the *Waggoner*; a conſtellation of ſtars in the northern hemiſphere: whoſe ſtars, in Ptolemy's catalogue, are 14; in Tycho's, 27; in Hevelius's, 40; in the Britannic catalogue, 66: the names, ſituations, longitudes, latitudes, magnitudes, &c. whereof are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude. North.			Magnitude.
			°	′	″	°	′	″	
Preced. over the north. foot.	f	♊	11	22	22	14	52	35	5
Mid. and ſouth. over the foot.	g		11	49	45	14	01	47	5.6
In the heel of the north. foot.	ι		12	19	33	10	24	53	4
Laſt of three over the foot.	ω		13	18	41	15	04	00	5
			13	41	47	16	32	23	6
5.									
			13	44	35	16	48	06	6
In the preced. cubit.	ε		14	31	10	20	54	24	4
Againſt the hand, preced. Hœdus.	ζ		14	18	58	18	10	10	4
			16	20	04	28	33	29	6.5
Subſeq. Hœdus.	η		15	06	52	18	15	14	4
10.									
South of three in the loins.	μ		16	15	16	15	23	18	5
			17	32	35	23	15	08	6
Bright one of the fore-ſhoulder, Capella.	α		17	31	41	22	51	48	1
			16	10	50	9	33	56	6
Middle one in the loins.	λ		17	28	54	16	58	39	5
15.									
Nebuloſæ againſt the hips. South			16	49	17	10	13	20	6
Middle			16	53	04	10	35	41	7.6
Northern ones in the ſame. Preced.			17	07	16	10	48	4	8
Subſeq.			17	15	23	10	45	2	6
North. of three in the loins.	φ		18	10	58	18	34	23	6
20.									
Subſeq. in the hip.	σ		18	26	48	14	07	31	5.6
			17	39	8	5	42	51	6
Bright one in the ſouth. foot.	γ		18	13	56	5	21	33	2
In the fore-thigh.	φ		18	53	40	11	10	50	5.6
In the fore-knee.	χ		19	50	20	8	50	43	5.6
25.									
			21	02	46	7	05	24	6
In the neck.	ο		23	09	55	26	22	39	6
			23	26	40	16	04	34	7
Preced. in the hind arm.	τ		23	30	14	15	43	41	5
North. in the head.	ξ		24	50	05	32	13	32	7.6
30.									
In the hind-thigh.	υ		23	50	38	13	50	33	6
Subſeq. in the hind-arm.	ν		23	57	35	15	41	07	5
South of two in the head.	δ		25	36	23	30	49	02	4
Brighter one in the hind-ſhoulder.	β		25	35	31	21	28	21	2
A leſſer one contiguous to that.	π		25	40	12	22	27	52	6
35.									
			25	52	25	24	25	21	6
In the wriſt of the hinder-hand.	θ		25	36	45	13	44	19	4
			26	19	09	19	31	48	6.7
			26	40	06	19	31	14	6.7
Inform. following the eaſtern arm.		♊	27	00	05	15	00	59	6
40.									
			27	48	43	25	15	32	6
			28	59	02	22	59	32	6
			29	05	52	22	56	34	6
Inform. under the hind-knee.	κ		29	02	43	6	04	47	4.5
			29	27	23	30	02	57	6
45.									
		♋	0	12	40	25	54	20	5
			1	17	50	23	20	54	6
			1	52	17	7	09	30	6
Al. of Gemini 22d.			3	28	15	4	46	26	5.6
			3	30	23	19	16	34	5.6
50.									
			3	26	46	16	10	35	5.6
			3	26	25	16	40	44	5
Al. of Gemini 25th.			4	16	29	5	46	56	6
Al. of Gemini 27th.			4	24	48	5	04	33	6
			3	55	0	21	21	22	5
55.									
			4	29	14	20	26	32	4
			4	18	57	25	40	00	6
			5	38	34	18	45	08	4.5
			6	21	56	15	52	47	6
Inform. behind Auriga towards Gemini, and the hither feet of Urſa major.			6	26	15	15	28	07	6
60.									
			6	35	28	15	31	22	6
			7	40	23	15	11	33	6.7
			10	02	53	16	43	35	4.5
			11	06	34	18	26	35	5
			12	30	02	14	28	11	5
			12	20	53	18	24	21	5

AURIGRAPHUS, from *aurum, gold*, and γραφω, *I write*; in *Middle Age writers*, a copiſt, or calligrapher, who wrote in gold letters.

AURIPIGMENTUM, called alſo **orpiment**.

AURIS, the ear. See **Ear**.

Aurium *abſciſſio*, cutting off the ears, was a puniſhment inflicted, by the Saxon laws, on thoſe who robbed churches; and, afterwards, on every thief; and, at length, on divers other criminals.

Auris *aſini*, *aſs's ears*, a name given, by *Naturaliſts*, to a ſpecies of ſea-ſhell, ſuppoſed to reſemble the ear of an aſs. See **Murex**.

Auris *marina*. See **Ear-***ſhell*.

Auris *porci*, *hog's ear*, in *Natural Hiſtory*, a name given by authors to a ſea-ſhell, a ſpecies of the **murex** kind.

Auris *elevator*; ſee **Elevator**.—*Auris externus*; ſee **Externus**.—*Auris obliquus*; ſee **Obliquus**.—*Auris tinnitus*; ſee **Tinnitus**.

AURISCALPIUM, an inſtrument wherewith to pick and cleanſe the ear from wax; and ſerving alſo for ſome other operations relating to diſorders of that part.

The word is compounded of *auris, ear*, and *ſcalpo, I ſcratch*, or *prick*.

AURORA, the morning twilight; or that faint light which begins to appear in a morning, when the ſun is within eighteen degrees of the horizon.

The poets have perſoniſied, and even made it a goddeſs; repreſenting her with a chariot, roſy fingers, &c.

Accordingly *Aurora* is the daughter of Titan and Terra.

Aurora *Borealis*, or **Aurora** *Septentrionalis*, the northern dawn, or light, is an extraordinary **meteor**, or luminous appearance, ſhewing itſelf in the night-time, in the northern part of the heavens.

It is uſually of a reddiſh colour, inclining to yellow, and ſends out frequent coruſcations of pale light, which ſeem to riſe from the horizon in a pyramidal undulating form, and ſhoot, with great velocity, up to the zenith.

The *Aurora borealis* appears moſt commonly in form of an arch; chiefly in the ſpring and autumn; after a dry year.—The arch is partly bright, partly dark; but generally

rally tranſparent. And the matter of which it conſiſts is alſo found to have no effect on the rays of light which paſs through it. Dr. Hamilton obſerves, that he could plainly diſcern the ſmalleſt ſpeck in the Pleiades through the denſity of thoſe clouds which formed part of the *Aurora borealis* in 1763, without the leaſt diminution of its ſplendour, or increaſe of twinkling. Phil. Eſſays, Eſſ. iii. p. 106.

Sometimes it produces an *iris.*—M. Godin judges, that moſt of the extraordinary meteors and appearances in the ſkies, related as prodigies by hiſtorians, e. gr. battles, and the like, may be probably enough reduced to the claſs of AURORÆ *boreales.* Vid. Hiſt. Acad. R. Scienc. an. 1762. p. 405.

This kind of METEOR never appears near the equator, and was ſo rare in England, that none are recorded in our annals ſince that remarkable one, November 14, 1574, till the ſurpriſing *Aurora borealis*, March 6, 1716, which appeared for three nights ſucceſſively, but by far more ſtrongly on the firſt.—Indeed, in the years 1707, and 1708, five ſmall ones were obſerved in little more than eighteen months.

Hence it ſhould ſeem, that the air, or earth, or both, are not at all times diſpoſed to produce this *phænomenon*, for though it is poſſible it may happen in the day-time, in bright moon-ſhine, or in cloudy weather, and ſo paſs unobſerved; yet that it ſhould appear ſo frequent at ſome times, and ſo ſeldom at others, cannot well this way be accounted for.—That in March 1716, was viſible to the weſt of Ireland, and the confines of Ruſſia, and to the eaſt of Poland; extending at leaſt near 30° of longitude, and from about the 50th degree in latitude, over almoſt all the north of Europe; and in all places at the ſame time, it exhibited the like wondrous appearances.

Many attempts have been made to aſſign the cauſe of this *phænomenon.*—Dr. Halley imagines the watery vapours, or *effluvia*, rarified exceedingly by ſubterraneous fire, and tinged with ſulphureous ſtreams, which many naturaliſts have ſuppoſed to be the cauſe of earthquakes, may alſo be the cauſe of this appearance: or that it is produced by a kind of ſubtile matter, freely pervading the pores of the earth, and which, entering into it nearer the ſouthern pole, paſſes out again with ſome force, into the *æther* at the ſame diſtance from the northern; the obliquity of its direction being proportioned to its diſtance from the pole. This ſubtile matter, by becoming ſome way or other more denſe, or having its velocity increaſed, may be capable of producing a ſmall degree of light, after the manner of *effluvia* from electric bodies, which, by a ſtrong and quick friction, emit light in the dark: to which ſort of light this ſeems to have a great affinity. Phil. Tranſ. N° 347.—See Mr. Cotes's deſcription of this *phænomenon*, and method of explaining it, by ſtreams emitted from the heterogeneous and fermenting vapours of the atmoſphere, in Smith's Optics, p. 69, &c. or Phil. Tranſ. abr. vol. vi. part ii.

The celebrated M. de Mairan, in an expreſs treatiſe on the *Aurora borealis*, publiſhed in 1731, aſſigns its cauſe to be the ZODIACAL *light*, which, according to him, is no other than the ſun's atmoſphere: this light happening, on ſome occaſions, to meet the upper parts of our air, on the ſide of the limits where univerſal gravity begins to act more forcibly towards the earth than towards the ſun, falls into our atmoſphere, to a greater or leſs depth, as its ſpecific gravity is greater or leſs, compared with the air through which it paſſes. Vid. Tract. Phyſ. & Hiſt. del Aurore Boreal. Suite des Mem. del Acad. R. des Scienc. ann. 1731. p. 3. ſeq.—There is an abſtract of Mr. Mairan's Phyſical and Hiſtorical Treatiſe of the *Aurora borealis*, in the Phil. Tranſ. N° 433. or Abridg. vol. viii. p. 540.

Mr. Euler thinks the cauſe of the *Aurora borealis* not owing to the zodiacal light, as Mr. de Mairan ſuppoſes; but to particles of our atmoſphere, driven beyond its limits by the impulſe of the light of the ſun. On this ſuppoſition, he endeavours to account for the *phænomena* obſerved concerning this light. He ſuppoſes the zodiacal light, and the tails of comets, to be owing to a ſimilar cauſe. See TAIL *of comets*, and ZODIACAL *light*.

This light ſometimes appears remarkably red, as it happened Dec. 5, 1737, of which we have very full accounts from divers parts of Europe, in the Phil. Tranſ. N° 459. ſect. 7. p. 583—606.

Ever ſince the identity of lightning, and of the electric matter, has been aſcertained, philoſophers have been naturally led to ſeek the explication of aerial meteors in the principles of electricity; and there is now no doubt but moſt of them, and eſpecially the *Aurora borealis*, are electrical *phænomena.* Beſide the more obvious and known appearances which conſtitute a reſemblance between this meteor and the electric matter whereby lightning is produced, it has been obſerved, that the *Aurora* occaſions a very ſenſible fluctuation in the magnetic needle; and that, when it has extended lower than uſual into the atmoſphere, the flaſhes have been attended with various ſounds of rumbling and hiſſing, taken notice of both by Sig. Beccaria and M. Meſſier. Mr. Canton, ſoon after he had obtained electricity from the clouds, offered a conjecture, that the *Aurora borealis* is occaſioned by the daſhing of electric fire from poſitive towards negative clouds at a great diſtance, through the upper part of the atmoſphere where the reſiſtance is leaſt. And he ſuppoſes, that the *Aurora*, which happens at the time when the magnetic needle is diſturbed by the heat of the earth, is the electricity of the heated air above it; and this appears chiefly in the northern regions, as the alteration in the heat of the air in thoſe parts will be the greateſt: nor is this hypotheſis improbable, when it is conſidered, that electricity is the cauſe of thunder and lightning; that it has been extracted from the air at the time of an *Aurora borealis*; that the inhabitants of the northern countries obſerve it to be remarkably ſtrong, when a ſudden thaw ſucceeds very ſevere cold weather; and that the *tourmalin* is known to emit and abſorb the electric fluid only by the increaſe or diminution of its heat. Poſitive and negative electricity in the air, with a proper quantity of moiſture to ſerve as a conductor, will account for this and other meteors, ſometimes ſeen in a ſerene ſky. Mr. Canton has ſince contrived to exhibit this meteor by means of the *torricellian* vacuum, in a glaſs tube about three feet long, and ſealed hermetically. When one end of the tube is held in the hand, and the other applied to the conductor, the whole tube will be illuminated from end to end; and will continue luminous without interruption for a conſiderable time, after it has been removed from the conductor. If, after this, it be drawn through the hand either way, the light will be uncommonly intenſe, and without the leaſt interruption from one hand to the other, even to its whole length. And though a great part of the electricity is diſcharged by this operation, it will ſtill flaſh at intervals, when held only at one extremity, and kept quite ſtill; but if it be graſped by the other hand at the ſame time in a different place, ſtrong flaſhes of light will hardly ever fail to dart from one end to the other, and theſe will continue twenty-four hours and longer, without any freſh excitation. An arched double barometer of a conſiderable height is an improvement of this contrivance, for exhibiting the appearance of an *Aurora borealis*, by means of the electric fire. Signior Beccaria, who has purſued his obſervations on atmoſpherical electricity farther than any of his aſſociates in theſe inquiries, conjectures that there is a conſtant and regular circulation of the electric fluid from north to ſouth; and he thinks, that the *Aurora borealis* may be this electric matter performing its circulation in ſuch a ſtate of the atmoſphere as renders it viſible, or approaching nearer to the earth than uſual. Dr. Franklin ſuppoſes, that the electrical fire diſcharged into the polar regions from many leagues of vaporiſed air raiſed from the ocean between the tropics, accounts for the *Aurora borealis*; and that it appears firſt, where it is firſt in motion, i. e. in the moſt northern part, and the appearance proceeds ſouthward, though the fire really moves northward. Franklin's Exper. and Obſ. 1769. p. 49. Phil. Tranſ. vol. xlviii. part i. p. 358. part ii. p. 784. Ib. vol. li. part i. p. 403. Lettere dell' Ellettriciſmo, p. 269; or Prieſtley's Hiſt. of Electricity, vol. i. See alſo an ingenious ſolution of this *phænomenon*, on the ſame principles, by Dr. Hamilton, Phil. Eſſays, Eſſ. iii.

We read of an *Aurora Auſtralis*, a kind of light ſeen in the ſky, towards the ſouth, ſomewhat reſembling thoſe often ſeen towards the north. See Phil. Tranſ. N° 461. ſect. 23, 24, and 25. and vol. liv. N° 53.

AURORA *ſurgens*, a phraſe uſed by *Alchemiſts*, to expreſs the multiplicative virtue of the philoſophers ſtone.

AURUM, in *Natural Hiſtory*, denotes gold. See GOLD.

The word is chiefly uſed among us as applied to certain chemical preparations, whereof gold is the baſis, or principal ingredient.—Such are the *aurum potabile*, *aurum fulminans*, &c.

AURUM *fulminans* is a preparation of gold; thus called, becauſe when caſt in the fire, it produces a violent noiſe, like thunder. It conſiſts of gold diſſolved in *aqua regia*, and precipitated by oil of tartar *per deliquium*, or volatile ſpirit of *ſal ammoniac*. The powder being waſhed in warm water, and dried to the conſiſtence of a paſte, is afterwards formed into little grains of the bigneſs of hemp-ſeed.

It is inflammable, not only by fire, but alſo by a gentle warmth; and gives a report much louder than that of gun-powder.

Its effect is commonly ſaid to be principally downwards; in oppoſition to gunpowder, which is chiefly upwards: but this rather ſeems a vulgar error.

A ſcruple of this powder acts more forcibly than half a pound of gunpowder: a ſingle grain laid on the point of a knife, and lighted at a candle, goes off with a greater noiſe than a muſquet.—It is ſaid to conſume even to the very laſt atom.—Dr. Black attributes the increaſe of weight, and alſo the exploſive property of this powder, to adhering fixable air.

This is a very dangerous preparation, and ſhould be uſed with great caution.

AURUM *moſaicum*, *muſicum*, or *muſivum*, a preparation in *Pharmacy*; thus called from its golden colour and appearance. It is made of mercury, tin, *ſal ammoniac*, and flowers of ſulphur; by grinding, mixing, and then ſetting them three hours in a ſand-heat.—The dirty ſublimate being taken off, the *aurum moſaicum* is found at the bottom of the matraſs, as the *reſiduum*.

It is recommended in moſt chronical and nervous caſes; and particularly convulſions of children.—Its doſe is from four grains to a ſcruple.

Aurum moſaicum is tin ſublimated by means of mercury, which receives its golden colour merely by the degree of heat proper for the operation. No other metal is ſublimated in this manner, except zinc, which may be ſubſtituted in place of the tin, and which led M. Homberg to ſay, that zinc contains tin.

Aurum moſaicum weighs about one-twelfth more than the tin originally employed. It is uſed as a pigment, and for mixing with glaſs, to imitate the ſpangles of the LAPIS *lazuli*; for which laſt purpoſe, ſhining *talc* is alſo made uſe of.—The *aurum moſaicum* is alſo called *aurum muſivum*.—See ſome very curious experiments to ſhew the nature of this preparation, in the Phil. Tranſ. vol. lxvi. 1771. N° 15. where the curious may find various recipes for making it, and a deſcription of the cheapeſt apparatus.

AURUM *potabile*, or *tincture of gold*; a medicine formerly in great requeſt, but at preſent rarely if ever uſed. It is prepared by mixing eſſential oil of roſemary with a ſolution of gold in *aqua regia*; and after ſhaking the veſſel, the gold will be retained in the oil, ſwimming on the top. This oil is ſeparated by inclination, and afterward digeſted for a month, in highly-rectified ſpirit of wine.

But after all, this is not a genuine tincture of gold; being only the gold divided into very ſmall parts by the *ſpiculæ* of the *aqua regia*, ſwimming in the oil of roſemary. Nor can there be any radical tincture of gold, which may not, by evaporating the oil, be reduced to a powder; and the powder, by melting, reduced into gold. The virtues of this tincture are entirely owing to the oil of roſemary.

The very name of *potable gold* impoſes on a great many people, and gives an opportunity to empirics to cheat them with impunity; for they draw tinctures from ſome ingredients whoſe colours come near to that of gold, and ſell them at an exorbitant rate, under the title of *aurum potabile*. This ſort of deceit is what generally ſucceeds beſt; for patients are prepoſſeſſed in favour of ſuch medicines as coſt much, carry great names, and have a ſpecious appearance. It often happens that theſe tinctures, which go by the name of *aurum potabile*, produce ſome good effects, becauſe they can make them with ſuch ſpirituous *menſtrua*, as comfort the heart, and expel ill humours by perſpiration: then the effect is extolled for a miracle, and attributed to the imaginary gold.

AURUM *reginæ*; ſee QUEEN-*gold*.

AURUM *ſophiſticum*, *mimic gold*, a chemical preparation, made as follows: take fine diſtilled verdigreaſe eight ounces, crude Alexandrian tutty four ounces, borax twelve ounces, ſalt-petre one ounce and a half; pulverize and mix them all together, tempering them with oil to the conſiſtence of a plaſter; then put a German crucible into a wind-furnace, heat it red-hot, and putting your maſs into it, let it be covered, and the furnace filled with coals over the crucible. When the maſs is melted, let it cool of itſelf, then break the crucible, and you will find at the bottom a fine *regulus*, like gold, weighing about four ounces, which being malleable, may be wrought into any form.

AURUM *vegetabile*, a name given to SAFFRON.

AUSCULTARE, in *Ancient Cuſtoms*.—Becauſe the reading of prayers with a graceful tone, or accent, makes ſome impreſſion on the hearers; there was anciently a perſon appointed, in monaſteries, to hear the monks read and ſing, who inſtructed them how to perform, before they were admitted to read or chant publicly in the church, or before the people.—This was called *auſcultare*, q. d. *to hear*, or *liſten*.

AUSPEX, a name originally given to thoſe who were afterwards denominated AUGURS.

In which ſenſe, the word is ſuppoſed to be formed from *avis*, *bird*, and *inſpicere*, *to inſpect*; *auſpices*, q. d. *aviſpices*.

Some will therefore have *auſpices* properly to denote thoſe who foretold future events from the ſight of birds.

AUSPICIUM, AUSPICY, the ſame with AUGURY.

Servius, indeed, diſtinguiſhes between *auſpicy* and *augury*; making *auſpicy* comprehend the conſideration of all things; *augury* only of certain things: he adds, that the former was allowed a man any where abroad, whereas the latter might only be performed in his native place. And it is certain, that conſuls, generals, and others, who took omens out of Rome, were properly ſaid *auſpicari*: nevertheleſs, cuſtom appears to have over-ruled this diſtinction.

AUSTERE, implies a rough aſtringent taſte; ſuch as that of vitriol, alum, &c.

The word comes from αυϛηρος, which ſignifies the ſame.

Auſtere things differ from *acerb*, or ſour ones, in that they conſtringe the mouth and tongue ſomewhat leſs, and are devoid of acidity.

AUSTERITY, AUSTERENESS *of taſte*, that which denominates a ſapid body AUSTERE.

AUSTERITY, among *Moral Writers*, ſometimes denotes *rigour* in the inflicting of puniſhments.

We ſay, *auſterity* of manners; the *auſterities* of the monaſtic life. The *auſterity* of the Roman cenſors kept the people in their duty. The greateſt *auſterity* of the Carthuſians is perpetual ſolitude.

AUSTIN-*Friers*; ſee HERMITS.

AUSTRAL, AUSTRALIS, the ſame with *ſouthern*.

The word is derived from *auſter*, *ſouth wind*.

Thus *auſtral ſigns* are the ſix laſt SIGNS of the zodiac; ſo called, becauſe they are on the ſouth ſide of the equinoctial.

AUSTRALIS *Corona*; ſee CORONA *Auſtralis*.

AUSTRALIS *Piſcis*, is a conſtellation of the ſouthern hemiſphere, not viſible in our latitude; whoſe ſtars, in Ptolemy's catalogue, are 18; and in the Britannic catalogue, 24: the longitudes and latitudes, &c. of which are as follow:

Situation of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
		♒	4	5	10	14	37	12	5
			4	55	26	14	58	20	6
			7	56	28	10	55	40	6
			7	35	20	15	36	7	4·5
			9	56	0	15	22	36	6
5.									
			9	57	40	18	15	14	6
			11	12	10	17	43	27	6
			13	26	18	11	12	5	4·5
In the northern fin.	ι		12	54	28	18	17	15	4
	θ		14	19	30	16	21	18	4
10.									
			17	57	48	14	21	20	6
	η		17	55	20	15	13	40	5
			18	8	10	16	51	45	6
In the ſouthern fin.	μ		17	45	56	20	2	0	4
			18	16	36	19	45	20	5.6
15.									
In the belly.	λ		21	3	20	15	40	40	4·5
In the ſouthern part of the head.	β		22	49	50	21	18	30	3
In the gill.	ι		26	58	40	17	14	18	3.4
			26	22	50	19	30	50	5
			28	45	50	16	0	10	6
20.									
			28	13	16	20	26	36	6
In the head.	γ		26	58	26	23	36	10	5
	δ		27	50	15	23	36	7	5
In the mouth.	α		29	29	0	21	4	56	1

AUSTRIACA SYDERA, a name given by Maupertuis to the ſpots in the ſun, as ſuppoſing them to be ſmall ſtars between the ſun and us.

AUSTRO AFRICUS, the ſouth-ſouth-weſt point, or wind.

AUSTROMANCY, AUSTROMANTIA, properly denotes ſoothſaying, or a vain method of predicting futurity, from obſervations of the winds.

AUSTURCUS, and OSTURCUS, a GOSHAWK; from whence we uſually call a falconer, who keeps that kind of hawks, an *oſtringer*. In ancient deeds, there has been reſerved as a rent to the lord, *unum auſturcum*.

AUTER *droit*, in *Law*, is where perſons ſue, or are ſued, in another's right; as executors, adminiſtrators, &c.

AUTER *vie*; a perſon who holds an eſtate by the life of another, is uſually called tenant *per auter vie*. Lytt. ſect. 56.

AUTERFOITS *acquit*, in *Law*, a plea by a criminal, that he was heretofore *acquitted* of the ſame treaſon or felony. For one ſhall not be brought in danger of his life, for the ſame offence, more than once. 3 Inſt. 213. But by ſtat. 3 Hen. VII. c. 1. this plea ſhall be no bar to the proſecution of any *appeal*.

Auterfoits *attaint*, a plea of former attainder, which is a good plea in bar, whether it be for the ſame or any other felony, under ſome exceptions; ſo that this plea is never good, but when a ſecond trial would be quite ſuperfluous.

Auterfoits *convict*, a plea upon a former conviction for the ſame identical crime, though no judgment was, or ever will be given: and this is a good plea in bar to an indictment.

AUTHENTIC, ſomething of received authority. It alſo ſignifies ſomething ſolemn, and celebrated; clothed in all its formalities; and atteſted by proper perſons to whom credit has been regularly given.

AUTHENTICATING, the puniſhing an adultreſs, by public whipping, and ſhutting her up in a convent for two years; after which, if the huſband be not willing to take her back, ſhe is ſhaven, veiled, and ſhut up for life.

It is thus called, as being the puniſhment preſcribed in the *authentics*.

If the huſband die within the two years, ſhe ſeems to have a right to petition the court for her liberty: at leaſt, another man, willing to marry her, may petition, and probably obtain it.

AUTHENTICS, Authenticæ, in the *Civil Law*, is a name given to the Novels of Juſtinian. See Novel.

The reaſon of the denomination is not well known.—Alciat will have it to have been firſt given them by Accurſius. The Novels were originally compoſed in Greek, and afterwards tranſlated into Latin by the patrician Julian, who alſo reduced them into fewer words, and leſs compaſs. And in the time of Bulgarus, there was a ſecond verſion made, more exact and literal, though not quite ſo elegant as the former.

This tranſlation, ſays the author juſt cited, being preferred by Accurſius, he called it *authentica*, by way of preference to that of Julian, as being more conformable to the original. They are hereby diſtinguiſhed from ſome other publications of later imperial conſtitutions, which are not regarded as of much authority.

AUTHOR, Auctor, properly denotes one who created or produced any thing; and is applied, by way of eminence, to the firſt cauſe; viz. God.

The word is formed of αυτος, *ipſe*; or rather from the Latin participle *auctus*, of *augeo*, *I increaſe*.

We ſay, the *Author* of nature; *Author* of the univerſe, &c.

The term *author* is ſometimes uſed in the ſame ſenſe with *inſtitutor* or *inventor*.—Polydore Virgil has wrote eight books of the *authors* or *inventors* of things, &c. See Invention.—Pythagoras is held the *author* of the *dogma* of *metempſychoſis*.

Author, in matters of *Literature*, denotes a perſon who has wrote or compoſed ſome book or writing.

We ſay, the ſacred *authors*; anonymous *authors*; ancient and modern *authors*; the Latin *authors* pillaged the Greeks, &c.—An original *author*, is he who firſt treated of any point or ſubject; who did not follow any other perſon, imitate any model either in the matter or the manner of what he has wrote. See Original.

AUTHORITY, Auctoritas, in a general ſenſe, denotes a right or power to command, and make one's ſelf obeyed.

In this ſenſe we ſay, the ſupreme or ſovereign *authority*; abſolute or deſpotic *authority*; the royal *authority*; the epiſcopal *authority*; the *authority* of the church, of a father, &c. The *authority* of Scripture, of a creed, confeſſion, or the like.

Authority is alſo uſed for the teſtimony of an author or writing.

The word is alſo particularly underſtood of an apophthegm, or ſentence of ſome great or eminent perſon, quoted in a diſcourſe, either by way of proof, or embelliſhment.

Authority alſo includes rules, laws, canons, decrees, deciſions, &c. alleged in confirmation of a matter in diſpute.

Paſſages quoted from Ariſtotle were of great *authority* in the ſchools: texts of Scripture are of deciſive *authority*.

Authorities make a ſpecies of arguments called by rhetoricians *inartificial* or *extrinſic arguments*.

For the uſe and effect of *authorities*, ſee Evidence, Faith, Prejudice, Probability, Reason, Revelation, &c.

Authority, in *Law*, is a power to do ſomething, conveyed by word or writing; as alſo by writ, warrant, commiſſion, letter of attorney, &c. and ſometimes by law.

Authority, or **Authorities**, likewiſe denote the treatiſes of ancient authors, ſuch as Glanvil, Bracton, Britton, the author of the book Fleta, Lyttelton, Fitzherbert, Coke, and others, which are cited as *authority*; and furniſh evidence that caſes have formerly happened in which particular points were determined, which are now become ſettled and firſt principles.

AUTO *da fé*. See Act *of Faith*.

AUTOCABDALI, in *Antiquity*, an order of muſicians, who wore an ivy crown, or garland.

Scaliger ſeems to rank them in the number of *mimi*.

AUTOCEPHALUS, a perſon who is his own ruler or maſter, and who has no other over him.

The word is compounded of αυτος, *ipſe*, and κεφαλη, *caput*, *head*.

This denomination was given, by the Greeks, to certain archbiſhops, who were exempted from the juriſdiction of patriarchs.—Such was the archbiſhop of Cyprus, by a general decree of the council of Epheſus, which freed him from the juriſdiction of the patriarch of Antioch.

There were ſeveral other biſhops in the Eaſt, who were *autocephali*; and in the Weſt, thoſe of Ravenna pretended to the ſame right.—The ſixth council, canon 39, ſays, that the *autocephali* have the ſame authority with patriarchs; but this is not to be underſtood in the full latitude of the words; but only as intimating, that the *autocephali* have the ſame authority over their biſhops that patriarchs had over their archbiſhops: in which ſenſe, only, they are equal to patriarchs.

AUTOCHTHONES, from αυτος, *ipſe*, and χθων, *terra*; an appellation aſſumed by ſome nations, importing, that they ſprung, or were produced, from the ſame ſoil which they ſtill inhabited.

In this ſenſe, *autochthones* amounts to the ſame with *aborigines*.

In this ſenſe it was that the Greeks, and eſpecially the Athenians, pretended to be *autochthones*, and, as a badge thereof, wore a golden graſshopper woven in their hair, an inſect ſuppoſed to have the ſame origin.

AUTOCRATOR, from αυτος, and κρατος, *power*; a perſon veſted with an abſolute independent power, by which he is rendered unaccountable to any other for his actions.

The power of the Athenian generals, or commanders, was uſually limited; ſo that, at the expiration of their office, they were liable to render an account of their adminiſtration. But, on ſome extraordinary occaſions, they were exempted from this reſtraint, and ſent with a full and uncontroulable authority: in which caſe, they were ſtyled αυτοκρατορες.

The ſame people alſo applied the name to ſome of their ambaſſadors, who were veſted with a full power of determining matters according to their own diſcretion, and reſembled our *plenipotentiaries*.

Autocrator was alſo a title given to the Roman emperors, firſt to Julius, and afterwards to his ſucceſſors, like that of Cæſar, or Auguſtus.

AUTODIDACTUS, from αυτος, and διδασκω, *I teach*; a perſon ſelf-taught.

It is uſed in divers ſenſes, ſometimes to denote a perſon who received his knowledge immediately from heaven, without any help or ſtudy. In which ſenſe the word occurs in Homer, and Clemens Alexandrinus.—Sometimes for him who acquires his knowledge without either inſtruction by word of mouth, or reading of books. Such were the inventors of ſciences and laws.—Sometimes, and that moſt uſually, for him who arrives at learning by the uſe of books alone, without the aſſiſtance of any maſter, or inſtruction *vivâ voce*.

AUTOGLYPHUS *lapis*, a ſtone, mentioned by Plutarch and ſome other of the ancients, as having naturally impreſſed on it the figure of Cybele. It is ſaid to have been found in Sagaris, a river of Perſia. Doubtleſs, if any ſuch ſtone ever exiſted, the prieſts had got it made to deceive the people.

AUTOGRAPHUM, the very hand-writing of any perſon; or the original of a treatiſe, or diſcourſe.—The word is uſed in oppoſition to a *copy*.

The word is formed of αυτος, and γραφω, *ſcribo*.

AUTOLITHOTOMUS, he who cuts himſelf for the ſtone. See Lithotomy.

Of this we have a very extraordinary inſtance given by Reiſelius, in the Ephemerides of the Academy Naturæ Curioſorum, an. 3. obſ. 190.

AUTOMATON, or **Automatum**, a ſelf-moving engine; or a machine which has the principle of motion within itſelf.

The word is compounded of αυτος, *ipſe*, and μαομαι, *I am excited*, or *ready*; whence αυτοματος, *ſpontaneous*.

Such were Archytas's flying dove, mentioned by Aulus Gellius, Noct. At. lib. x. c. 12. and Regiomontanus's wooden eagle, which, as hiſtorians relate, flew forth from the city, met the emperor, ſaluted him, and returned;

ed; as alſo his iron fly, which, at a feaſt, flew out of his hands, and, taking a round, returned thither again. Hakew. Apol. c. x. ſect. 1.

Among *automata* are alſo reckoned all mechanical engines which go by ſprings, weights, &c. included within them: ſuch are clocks, watches, &c. Vid. Bapt. Port. Mag. Nat. c. 19. Scalig. Subtil. 326.

AUTONOMIA, from αυτος, *ſelf*, and νομος, *law*; a power of living, or being governed by our own laws and magiſtrates. The liberty of the cities which lived under the faith and protection of the Romans, conſiſted in their *autonomia*, i. e. they were allowed to make their own laws, and elect their own magiſtrates; by whom juſtice was to be adminiſtered, and not by Roman preſidents or judges, as was done in other places, which were not indulged the *autonomia*.

AUTOPHOSPHORUS, is, by ſome, uſed to denote *phoſphorus*, on account of its kindling as it were of itſelf.

AUTOPRACTI, from αυτος, and πραττω, *I exact*; in the *Civil Law*; thoſe indulged this privilege, that they ſhould not be ſummoned or compelled to pay taxes, or tributes, by the collectors, but ſhould be left to their own free will. Du-Cange.

Of this number were men of diſtinguiſhed dignity, and thoſe eminent for their probity and honour.

AUTOPSY, ocular inſpection; or the ſeeing a thing with one's own eyes.

The word is compounded of αυτος, *one's ſelf*, and οψις, *ſight*.

AUTOPYROS, from αυτος, and πυρος, *wheat*; in the *Ancient Diet*, an epithet given to a ſpecies of bread, wherein the whole ſubſtance of the wheat was retained, without retrenching any part of the bran.

Galen deſcribes it otherwiſe, viz. as bread where only the coarſer bran was taken out.—And thus, it was a medium between the fineſt bread, called *ſimilagineus*, and the coarſeſt, called *furfuraceus*.

This was alſo called *autopyrites*, and *ſyncomiſtus*.

AUTOUR, in *Natural Hiſtory*, a ſort of bark which reſembles cinnamon, but is paler and thicker; it is of the colour of a broken nutmeg, and full of ſpangles. It comes from the Levant, and is an ingredient in the carmine dye.

AUTUMN, the third ſeaſon of the year; being that wherein the harveſt, and the fruits of the ſummer, are gathered. *Autumn* begins on the day when the ſun's meridian diſtance from the zenith, being on the decreaſe, is a mean between the greateſt and the leaſt; which in theſe countries is ſuppoſed to happen when the ſun enters Libra. Its end coincides with the beginning of *Winter*.

Divers nations have computed the years by *Autumns*; the Engliſh Saxons, by *Winters*.—Tacitus tells us, the ancient Germans were acquainted with all the other ſeaſons of the year, but had no notion of *Autumn*.

Autumn has always been reputed an unhealthy ſeaſon. Tertullian calls it *tentator valetudinum*; and the ſatiriſt ſpeaks of it in the ſame light.

Autumnus Libitinæ quæſtus acerbæ.

Autumn, in *Alchymy*, the time or ſeaſon when the operation of the philoſophers ſtone is brought to maturity and perfection.

AUTUMNAL, ſomething peculiar to *Autumn*.

Autumnal *point*, is one of the equinoctial points; being that from which the ſun begins to deſcend towards the ſouth pole.

Autumnal *equinox*, is the time when the ſun enters the *Autumnal point*. See Equinox.

Autumnal *flowers*. See Flower.

Autumnal *ſigns*, are thoſe through which the ſun paſſes during the ſeaſon of AUTUMN; Libra, Scorpio, and Sagittarius.

AUVERNAS, a very deep-coloured heady wine, made of black raiſins ſo called, which comes from Orleans. It is not fit to drink before it is above a year old; but if kept two or three years, it becomes excellent.

AUX, in *Aſtronomy*; ſee Auges.

Some uſe *aux* to denote the arch of the ecliptic, intercepted between the firſt point of Aries, and the point wherein the ſun, or a planet, is at its greateſt diſtance from the earth. Wolf. Lex. Math. p. 222.

AUXESIS, in *Mythology*, a goddeſs worſhipped by the inhabitants of Egina, and mentioned by Herodotus and Pauſanias.

Auxesis, αυξησις, *increaſe*; in *Rhetoric*, a figure whereby any thing is magnified too much. See Amplification, and Increment.

AUXILIARY, Auxiliaris, any thing that is helping or aſſiſting to another.

We ſay, *auxiliary* books; a prince is ſaid to truſt more to his own ſoldiers than to *auxiliary* troops, &c.

Auxiliary *verbs*, in *Grammar*, are ſuch as help to aſcertain or limit the ſenſe of others; that is, are prefixed to them to form or denote their moods or tenſes.

Such, in Engliſh, are *have*, *am*, or *be*; in French, *eſtre*, and *avoir*; in Italian, *ho*, and *ſono*, &c.—The *auxiliary am* ſupplies the want of PASSIVES in our language.

All the modern languages we know of, make uſe of *auxiliary verbs*.—The reaſon is, that the verbs thereof do not change their terminations or endings, as thoſe of the Latin and Greek, to denote the different tenſes or times of being, doing, or ſuffering; nor the different moods or manners of their ſignifying: ſo that, to ſupply this defect, recourſe is had to different *auxiliary verbs*.

Beſides the perfect *auxiliary verbs*, we have ſeveral defective ones; as *do*, *will*, *ſhall*, *may*, *can*, and *have*; which, by changing their terminations, ſave the neceſſity of changing thoſe of the verbs they are added to.—Thus, inſtead of *ego uro*, *tu uris*, *ille urit*, *&c.* we ſay, I *do* burn, thou *doſt* burn, he *doth* burn, &c.

AUXILIUM, in *Law*; ſee Aid.

Auxilium *curiæ*, ſignifies an order of court, for the ſummoning of one party at the ſuit of another.

Auxilium *ad filium militem faciendum, vel filiam maritandam*, was a writ directed to the ſheriff of every county, where the king or other lord had any tenants, to levy of them reaſonable aid, towards the knighting his eldeſt ſon, or the marriage of his eldeſt daughter.

AUXO, in *Mythology*, the name of one of two GRACES worſhipped by the Athenians. See Hegemone.

AUXY; the French give the name of *auxy* wool to that which is ſpun in the neighbourhood of Abbeville, by thoſe workmen who are called *houpiers*. It is a very fine and beautiful wool, which is commonly uſed to make the fineſt ſtockings.

AWAIT, in our old *Statutes*, is uſed to ſignify what we now call *waylaying*, or lying in *wait*, to execute ſome miſchief. In ſtat. 13 R. II. c. 1. it is ordained, that no charter of pardon ſhall be allowed before any juſtice, for the death of any man ſlain by *await*, or malice prepenſed, &c.

AWARD, in *Law*, the judgment of ſome perſon who is neither aſſigned by law, nor appointed by the judge, for ending a matter in controverſy; but is choſen by the parties themſelves that are at variance.

AWEIGH; ſee Atrip.

AWK; ſee Auk.

AWL, or Aul, a ſhoemaker's implement, wherewith holes are bored in leather, to facilitate the ſtitching or ſewing the ſame.—The *blade* of the *awl* is uſually a little flat, and bending; and the point ground to an acute angle.

AWME, or Aume, a Dutch MEASURE of capacity for liquids; containing eight *ſteckans*, or twenty *verges*, or *verteels*; anſwering to what in England is called a TIERCE, or one-ſixth of a *ton* of France, or one-ſeventh of an Engliſh *ton*. Arbuth. Tab. 33.

AWN, in *Botany*, Arista; the beard growing out of the huſk of corn or graſs. It is ſometimes uſed to ſignify a ſharp point terminating a leaf.

AWNING, on board a ſhip, is when a ſail, a tarpaulin, or the like, is hung over any part of the ſhip, above the decks, to keep off the ſun, rain, or wind.

In the long-boat they make an *awning*, by bringing the ſail over the yard and ſtay, and booming it out with the boat-hook.

AX, a carpenter's inſtrument, ſerving to hew wood.—The *ax* differs from the joiner's hatchet, in that it is made larger, and heavier, as ſerving to hew large ſtuff; and its edge tapering into the middle of its blade.—It is furniſhed with a long handle or helve, as being to be uſed with both hands.

AXAMENTA, in *Antiquity*, a denomination given to the verſes, or ſongs, of the *ſalii*, which they ſung in honour of all men.

The word is formed, according to ſome, from *axare*, q. d. *nominare*. Others will have the *carmina ſaliaria* to have been denominated *axamenta*, on account of their being written in *axibus*, or on wooden tables.

The *axamenta* were not compoſed, as ſome have aſſerted, but only ſung by the *ſalii*. The author of them was Numa Pompilius; and, as the ſtyle might not be altered, they grew in time ſo obſcure, that the *ſalii* themſelves did not underſtand them. Varro ſays they were ſeven hundred years old. Quint. Inſt. Or. lib. i. c. 11.

Axamenta, or Assamenta, in *Ancient Muſic*, hymns or ſongs performed wholly with human voices.

AXILLA, or Ala, in *Anatomy*, the cavity under the upper-part of the arm; commonly called the ARM-*pit*.

The word is a diminutive of *axis*, q. d. *little axis*.

Abſceſſes in the *axillæ* are uſually dangerous, on account of the many blood-veſſels, lymphatics, nerves, &c. thereabout, which form ſeveral large PLEXUS.—By the ancient laws, criminals were to be hanged by the *axillæ*, if they were under the age of puberty.

Axilla, in *Botany*, is the ſpace comprehended between the ſtems of plants and their leaves.

Hence we ſay, thoſe flowers grow in the *axillæ* of the leaves; i. e. at the baſe of the leaves, or juſt within the angle of their pedicles.

AXILLARY, in *Anatomy*, ſomething that belongs to the *axillæ*, or lies near them.

AXILLARY *artery*, is a ramification of the trunk of the ſubclavian artery; which, paſſing under the arm-pits, changes its name, and is called *axillary*.

AXILLARY *vein*, is one of the ſubclavian veins; which, paſſing under the arm-pits, divides itſelf into ſeveral branches; *ſuperior, inferior, external, internal*, &c. which are ſpread over the arm.—See *Tab. Anat. (Angeiol.) fig.* 6. *lit. m.*

AXILLARY *nerve*, called alſo the *auricular nerve*, ariſes from the laſt two cervical pairs; runs in the hollow of the *axilla*, behind the head of the *os humeri*, between the *muſculus teres major & minor, &c.*

The ſecond *vertebra* of the back is ſometimes alſo called the *axillary vertebra*; becauſe it is neareſt to the arm-pits.

AXILLARY *glands*; ſee HIRCUS, and GLANDS.

AXILLARY *leaves*, in *Botany*, expreſs ſuch as grow out of the angles formed by the branches and the ſtem.

AXINOMANCY, AXINOMANTIA, from αξινη, *ſecuris*, and μαντεια, *divinatio*; an ancient ſpecies of divination, or a method of foretelling future events by means of an ax or hatchet.

This art was in conſiderable repute among the ancients; and was performed, according to ſome, by laying an agate-ſtone on a red-hot hatchet; and alſo by fixing a hatchet on a round ſtake, ſo as to be exactly poiſed; then the names of thoſe that were ſuſpected were repeated, and he at whoſe name the hatchet moved was pronounced guilty.

AXIOM, AXIOMA, from ἀξιοω, *I am worthy*; a ſelf-evident truth; or a propoſition whoſe truth every perſon receives at firſt ſight.

Thus, that the whole is greater than a part; that a thing cannot be and not be at the ſame time; and that from nothing, nothing can ariſe, are *axioms*.

By *axioms*, called alſo *maxims*, are underſtood all common notions of the mind, whoſe evidence is ſo clear and forcible, that a man cannot deny them without renouncing common ſenſe, and natural reaſon.

The rule of *axioms* is this, that whatever propoſition expreſſes the immediate clear compariſon of two ideas without the help of a third, is an *axiom*.—On the other hand, a truth which does not ariſe from an immediate compariſon of two ideas, is no *axiom*.

Axioms in effect, ſtrictly ſpeaking, are no other than identic propoſitions.—Thus, to ſay that all right angles are equal to each other, is as much as to ſay, all right angles are right angles: ſuch equality being implied in the very definition, or the very name.

Lord Bacon propoſes a new ſcience, to conſiſt of general *axioms* under the denomination of *philoſophia prima*.

For the reaſon of the evidence of *axioms*, it may be obſerved, that knowledge being only the perception of the agreement or diſagreement of ideas; where that agreement or diſagreement is perceived immediately by itſelf, without the intervention or help of any other ideas, there our knowledge is ſelf-evident: which being ſo, not only thoſe uſually allowed for *axioms* or *maxims*, but an infinite number of other propoſitions, partake equally with them in this ſelf-evidence. Thus, that a circle is a circle, or that blue is not red, are as ſelf-evident propoſitions, as thoſe general ones, what is, is; and it is impoſſible for the ſame thing to be, and not to be. Nor can the conſideration of theſe propoſitions add any thing to the evidence or certainty of our knowledge of them. As to the agreement or diſagreement of co-exiſtence, the mind has an immediate perception of this but in very few. And therefore in this ſort we have very little intuitive knowledge; though in ſome few propoſitions we have. Two bodies cannot be in the ſame place, is a ſelf-evident propoſition: the idea of fitting a place equal to the contents of its ſuperficies, being annexed to our idea of body.

As to the relations of modes, *Mathematicians* have framed many *axioms* concerning that one relation of equality: as, that equals being taken from equals, the remainders will be equal, &c. which, however received for *axioms*, yet have not a clearer ſelf-evidence than theſe, that one and one are equal to two; that if from the five fingers of one hand you take two, and from the five fingers of the other hand two, the remaining numbers will be equal. As to real exiſtence, ſince that has no connexion with any other of our ideas, but that of ourſelves, and of a firſt being; we have not ſo much as a demonſtrative, much leſs a ſelf-evident knowledge, concerning the real EXISTENCE of other beings.

For the influence of *axioms* or general maxims on the other parts of our knowledge; the rules eſtabliſhed in the ſchools, that all reaſonings are *ex præcognitis & præconceſſis*, ſeem to lay the foundation of all other knowledge in theſe maxims, and to ſuppoſe them to be *præcognita*; which implies two things, viz. that theſe *axioms* are thoſe truths firſt known to the mind; and that on them the other parts of our knowledge depend.—But, firſt, that theſe *axioms* are not the truths firſt known to the mind, is evident from experience: for who knows not, that a child perceives that a ſtranger is not its mother, long before he knows it impoſſible for the ſame thing to be and not to be? And how many truths are there about numbers, which the mind is perfectly acquainted with, and fully convinced of, before it ever thought on thoſe general maxims? Hence it follows, that theſe magnified *axioms* are not the principles and foundations of all our other knowledge; for if there be a great many other truths as ſelf-evident as they, and a great many that we know before them, it is impoſſible that they ſhould be the principles from which we deduce all other truths.—Thus, that one and two are equal to three, is as evident, and eaſier known, than that the whole is equal to all its parts.—Nor, after the knowledge of this *axiom*, do we know that one and two are equal to three, better or more certainly than we did before. For if there be any odds in theſe ideas, the ideas of whole and parts are more obſcure, or at leaſt more difficult to be ſettled in the mind, than thoſe of one, two, or three. Either, therefore, all knowledge does not depend on *præcognita*, or general maxims, called *principles*; or elſe ſuch as theſe, that one and one are two, that two and two are four, &c. and a great part of numeration, are *axioms*. To theſe if we add all the ſelf-evident propoſitions that may be made about all our diſtinct ideas, principles will be almoſt infinite; and a great many innate principles many men never come to know all their lives.

General maxims, or *axioms*, then, may be of uſe in diſputes, to ſtop the mouths of wranglers; but they are of little in the diſcovery of unknown truths. Several general maxims are no more than bare verbal propoſitions, and teach us nothing but the reſpect and import of names one to another; as the whole is equal to all its parts: what real truth doth this teach us more, than what the ſignification of the word *totum*, or *whole*, does of itſelf import? If rightly conſidered, we may ſay, that where our ideas are clear and diſtinct, there is little or no uſe at all of maxims, to prove the agreement or diſagreement of any of them. He that needs any proof to make him certain, and give his aſſent to this propoſition, that two are equal to two, or that white is not black; will alſo have need of a proof to make him admit, that what is, is; or, that it is impoſſible for the ſame thing to be and not to be. But as maxims are of little uſe, where we have clear and diſtinct ideas; ſo they are of dangerous uſe, where our ideas are confuſed, and where we uſe words that are not annexed to clear and diſtinct ideas. Locke.

AXIOM is alſo an eſtabliſhed principle in ſome art or ſcience. Thus, it is an *axiom* in *Phyſics*, that nature does nothing in vain; that effects are proportional to their cauſes, &c. So it is an *axiom* in *Geometry*, that things equal to the ſame third are alſo equal to one another; that if to equal things you add equals, the ſums will be equal, &c. It is an *axiom* in *Optics*, that the angle of incidence is equal to the angle of reflection, &c. It is an *axiom* in *Medicine*, &c. that there is no ſincere acid in the human body, &c.

In this ſenſe, the general laws of motion are called *axioms*; as, that all motion is rectilinear, that action and reaction are equal, &c.

Theſe particular *axioms*, it may be obſerved, do not immediately ariſe from any firſt notions or ideas, but are deduced from certain hypotheſes: this is particularly obſervable in phyſical matters, wherein, as ſeveral experiments contribute to make one hypotheſis, ſo ſeveral hypotheſes contribute to one *axiom*.

AXIOM, in *Rhetoric*, is uſed by Hermogenes to denote grandeur, dignity, and ſublimity of ſtyle.

AXIOS, a form of acclamation, anciently uſed by the people in the election of biſhops. When they were all unanimous, they cried out αξιος, *he is worthy*, or αναξιος, *unworthy*.

AXIOSIS, in *Rhetoric*, denotes the third part of an exordium; ſometimes alſo called αποδοσις, and containing ſome new propoſition more nearly relating to the matter in hand, than the προτασις.

Thus in Cicero's oration *pro Milone*, the *protaſis* is, *Non poſſum non timere, judices, viſa hâc nova judicii forma*; the κατασκευη, *Nec enim ea corona conſeſſus veſter cinctus eſt, qua ſolebat*; the αξιωσις, *Sed me recreat Pompei conſilium, cujus ſapientiæ non fuerit, quem ſententiis judicum tradidit, telis militum dedere*; the baſis, βασις, *Quamobrem adeſte animis judices, & timorem, ſi quem habetis, deponite.*

AXIS properly ſignifies a line, or a long piece of iron or wood paſſing through the centre of a ſphere, which is moveable upon the ſame.

In this ſenſe we ſay, the *axis* of a ſphere, or globe; the *axis*, or *axle*-tree of a wheel, &c.

There is now a ſort of improved iron *axle*-trees made for coaches and chaiſes, which will go in all roads, wider or narrower. Some ſcrew to the end, after the French manner.

Axis, in *Anatomy*, is the ſecond *vertebra* of the neck, reckoning from the ſkull.—See *Tab. Anat.* (*Oſteol.*) *fig.* 9. It is thus called by reaſon the firſt *vertebra*, with the head, move thereon, as on an *axis*. See CARDO.

Axis, *ſpiral*, in *Architecture*, is the *axis* of a twiſted column, drawn ſpirally, in order to trace the circumvolutions without. See COLUMN, *twiſted*.

Axis *of the world*, in *Aſtronomy*.—The *axis* of the world is an imaginary right line, which is conceived to paſs through the centre of the earth, and terminating at each end in the ſurface of the mundane ſphere.

About this line as an *axis*, the ſphere, in the Ptolemaic ſyſtem, is ſuppoſed daily to revolve.

This *axis* is repreſented by the line PQ, *Tab. Aſtron. fig.* 52.—The two extreme points hereof, in the ſurface of the ſphere, viz. P and Q, are called its *poles*.

Axis *of the earth*, is a right line, upon which the earth performs its diurnal rotation, from weſt to eaſt.

Such is the line PQ, *Tab. Geog. fig.* 7.—The two extreme points hereof are alſo called *poles*.

The *axis* of the earth is a part of the *axis* of the world.—It always remains parallel to itſelf, and at right angles with the EQUATOR. See ANGLE, INCLINATION, and PARALLELISM.

Axis *of a planet*, is a line drawn through the centre thereof, about which the planet revolves.

The ſun, moon, and all the planets, except Mercury and Saturn, are known, by obſervation, to move about their ſeveral *axes*; and the like motion is eaſily inferred of thoſe two.

Axis *of the* HORIZON, the EQUATOR, ECLIPTIC, ZODIAC, &c. are right lines drawn through the centres of thoſe circles, perpendicular to their planes. See CIRCLE.

Axis, in *Botany*, a taper column placed in the centre of ſome flowers, or katkins, about which the other parts are diſpoſed.

Axis, in *Geometry*.—*Axis* of rotation, or circumvolution, is an imaginary right line, about which any plane figure is conceived to revolve, in order to generate a ſolid.

Thus, a ſphere is conceived to be formed by the rotation of a ſemicircle about its diameter or *axis*, and a right cone by that of a right-angled triangle about its perpendicular leg, which is here its *axis*.

Axis *of a circle* or *ſphere*, is a line paſſing through the centre of the circle or ſphere, and terminating at each end, in the circumference thereof.

The *axis* of a circle, &c. is otherwiſe called the *diameter* thereof. Such is the line AE, *Tab. Geom. fig.* 27.

Axis is yet more generally uſed for a right line proceeding from the vertex of a figure to the middle of the baſe thereof.

Axis *of a cylinder*, is properly that quieſcent right line, about which the parallelogram turns, by whoſe revolution the cylinder is formed.

Though, both in right and oblique cylinders, the right line joining the centres of the oppoſite baſes is alſo called the *axis of the cylinder*.

Axis *of a cone*, is the right line, or ſide, upon which the right-angled triangle forming the cone makes its motion. Hence it follows, that only a right cone can properly have an *axis*; becauſe an oblique one cannot be generated by any motion of a plane figure about a right line at reſt.

But becauſe the *axis* of a right cone is a right line drawn from the centre of its baſe to the vertex; in analogy hereto, the writers of conics do likewiſe call the like line, drawn from the centre of the baſe of an oblique cone to the vertex, the *axis* thereof.

Axis *of a conic ſection*, is a right line paſſing through the middle of the figure, and cutting all the ordinates at right angles, and into two equal parts.

Thus if AP, *Tab. Conics*, *fig.* 31. be drawn perpendicularly to FF, ſo as to divide the ſection into two equal parts; it is called the *axis of the ſection*.

Axis, *tranſverſe*, called alſo the *firſt* or *principal* **Axis** of an *ellipſis*, is the *axis* AP, laſt defined: being thus called in contradiſtinction to the *conjugate* or *ſecondary axis*.

The *tranſverſe axis* in the *ellipſis* is the longeſt; and in the *hyperbola* it cuts the curve in the points A and P, *fig.* 32.

Axis, *conjugate*, or *ſecond* **Axis** *of the ellipſis*, is the line FF, *fig.* 31. drawn through the centre of the figure C, parallel to the ordinate MN, and perpendicularly to the tranſverſe *axis* AP; being terminated at each extreme by the curve.

The *conjugate* is the ſhorter of the two *axes* of an *ellipſis*; and is not only found in the *ellipſis*, but in the *hyperbola*.

Axis, *conjugate*, or *ſecond* **Axis** *of an hyperbola*, is the right line FE, *fig.* 32. drawn through the centre parallel to the ordinates MN, MN, perpendicularly to the tranſverſe *axis* AP.—The *axis* of a *parabola* is of an indeterminate length; that is, is infinite.—The *axis* of the *ellipſis* is determinate.—The *parabola* has only one *axis*; the *ellipſis* and *hyperbola* have two.

Axis *of a magnet*, or *magnetical* **Axis**, is a line paſſing through the middle of a magnet, lengthwiſe; in ſuch manner, as that however the magnet be divided, provided the diviſion be made according to a plane, wherein ſuch line is found, the load-ſtone will be made into two load-ſtones.

The extremes of ſuch lines are called the *poles* of the ſtone.

Axis, in *Mechanics*.—The *axis* of a balance is the line upon which it moves or turns.

Axis *of oſcillation* is a right line parallel to the horizon, paſſing through the centre, about which a PENDULUM vibrates.

Axis *in peritrochio*, or *wheel* and *axle*, is one of the five mechanical powers, or ſimple machines; contrived chiefly for the raiſing of weights to a conſiderable height. It conſiſts of a circle, repreſented AB (*Tab. Mechanics*, *fig.* 44.), concentric with the baſe of a cylinder, and moveable together with it, about its *axis* EF.—This cylinder is called the *axis*; and the circle, the PERITROCHIUM; and the *radii*, or ſpokes, which are ſometimes fitted immediately into the cylinder, without any circle, the *ſcytalæ*.—Round the *axis* winds a rope, whereby the weights, &c. are to be raiſed.

The *axis in peritrochio* takes place in the motion of every machine, where a circle may be conceived deſcribed about a fixed *axis*, concentric to the plane of a cylinder, about which it is placed; as in CRANE-wheels, MILL-wheels, CAPSTANS, &c.

Axis *in peritrochio, the doctrine of it*.—1. If the power, applied to the *axis in peritrochio*, in the direction AL, *fig.* 7. perpendicular to the periphery of the wheel, or to the *ſcytala* or ſpoke, be to a weight G, as the *radius* of the *axis* CE is to the *radius* of the wheel CA, or the length of the ſpoke; the power will juſt ſuſtain the weight, i. e. the weight and the power will be *in æquilibrio*.

2. If a power, applied in F, pull down the wheel, according to the line of direction FD, which is oblique to the *radius* of the wheel, though parallel to the perpendicular direction; it will have the ſame proportion to a power which acts according to the perpendicular direction AL, which the whole ſine has to the ſine of the angle of direction DFC.

Hence, ſince the diſtance of the power in A is the *radius* CA; the angle of direction DFC being given, the diſtance DC is eaſily found.

3. Powers applied to the wheel in ſeveral points, F and K, according to the directions FD and KI, parallel to the perpendicular one AL, are to each other as the diſtances from the centre of motion CD and CI, reciprocally.

Hence, as the diſtance from the centre of motion increaſes, the power decreaſes; *&* *vice verſa*.—Hence alſo, ſince the *radius* AC is the greateſt diſtance, and agrees to the power acting according to the line of direction; the perpendicular power will be the ſmalleſt of all thoſe able to ſuſtain the weight G, according to the ſeveral lines of direction.

4. If a power acting according to the perpendicular AL, raiſe the weight G, the ſpace paſſed through by the power will be to the ſpace paſſed through by the weight, as the weight to the power.

For, in each revolution of the wheel, the power paſſes through its whole periphery; and in the ſame time the weight is raiſed a ſpace equal to the periphery of the *axis*: the ſpace of the power, therefore, is to the ſpace of the weight, as the periphery of the wheel to that of the *axis*: but the power is to the weight, as the *radius* of the *axis* to that of the wheel. Therefore, &c.

5. A power, and a weight, being given, to conſtruct an AXIS *in peritrochio*, whereby it ſhall be ſuſtained and raiſed: Let the *radius* of the *axis* be big enough to ſupport the weight without breaking. Then, as the power is to the weight, ſo make the *radius* of the wheel, or the length of the ſpoke, to the *radius* of the *axis*.

Hence, if the power be but a ſmall part of the weight, the *radius* of the wheel muſt be vaſtly great.—E. gr. Suppoſe the weight 3000, and the power 50, the *radius* of the wheel will be to that of the *axis* as 60 to 1.

This inconvenience is provided againſt by increaſing the number of wheels and *axes*; and making one turn round another, by means of teeth or pinions.

Axis *of a veſſel*, is that quieſcent right line paſſing through the middle thereof, perpendicularly to its baſe, and equally diſtant from its ſides.

Axis, in *Optics*.—*Optic axis*, or *viſual axis*, is a ray paſſing through the centre of the eye; or it is that ray, which, proceeding through the middle of the luminous cone, falls perpendicularly on the cryſtalline humour, and conſequently paſſes through the centre of the eye.

Axis, *common*, or *mean*, is a right line drawn from the point of concourſe of the two optic nerves, through the middle of the right line, which joins the extremity of the ſame optic nerves.

Axis *of a lens*, or *glaſs*, is a right line paſſing along the *axis* of that ſolid, whereof the *lens* is a ſegment.

Thus, a ſpherical convex *lens* being a ſegment of ſome ſphere, the *axis* of the *lens* is the ſame with the *axis* of the ſphere; or it is a right line paſſing through the centre thereof.

Or, the *axis* of a glaſs, is a right line joining the middle points of the two oppoſite ſurfaces of the glaſs.

Axis *of incidence*, in *Dioptrics*, is a right line drawn through the point of INCIDENCE, perpendicularly to the refracting ſurface.—Such is the line DB, *Tab. Optics*, *fig*. 56.

Axis *of refraction*, is a right line continued from the point of incidence or refraction, perpendicularly to the refracting ſurface, along the further medium. Such is the line BE.

Or, it is that made by the incident ray, perpendicularly prolonged on the ſide of the ſecond medium.

Axis, in *Zoology*, the name of a very remarkable animal, of the deer kind in all reſpects, except that neither the male nor female have horns; the tail is conſiderably long, and the whole ſhape and make extremely like thoſe of the fallow deer. The female is ſmaller than the male, and both are of a reddiſh tawney colour, variegated with ſpots of white; the belly is white. The voice is much more loud and ſhrill than that of the deer. It is very plain that this creature is neither of the red nor fallow deer kind, whence Bellonius, who ſaw it at Cairo in Egypt, was induced to call it the AXIS. Ray.

AXLE-*tree*; ſee Axis.

AXOLOTI, in *Ichthyology*, a ſingular fiſh found in the lake of Mexico. It has four feet like the lizard, no ſcales, a matrix like a woman, and the menſtrual flux. It has the taſte of an eel.

AXUNGIA, a kind of fat, the hardeſt and drieſt of any in the bodies of animals.

The word is ſuppoſed to be formed *ab axe rotarum quæ unguntur*, from its being uſed as the greaſe of wheels.

The Latins diſtinguiſh fat into *pinguedo*, and *adeps* or *ſevum*; which laſt, when old, is particularly called *axungia:* but many of our modern writers confound them.

Phyſicians make uſe of the *axungia* of the gooſe, the dog, the viper, and ſome others, eſpecially that of man, which is held by ſome to be of extraordinary ſervice in the drawing and ripening of tumours, &c.

Axungia *of glaſs*, called alſo the *gall*, and *ſalt of glaſs*, is a ſcum taken from the top of the matter of glaſs before it be thoroughly vitrified. It is uſed in cleanſing the teeth, and by farriers for clearing the eyes of horſes.

Axungia *lunæ*, an affected name given by the German chemiſts to the *terra* GOLTBERGENSIS, from their imagining that it contains ſome particles of ſilver, and owes to them its virtues in medicine.

Axungia *ſolis*, is uſed for the TERRA *Sileſiaca*, and ſaid to be good againſt the plague, peſtilential fevers, &c. Boyle.

AXYRIS, in *Botany*, a genus of the *monoecia triandria* claſs of plants. The calyx of the male flowers is a perianthium, compoſed of four patent, obtuſe leaves, divided into three ſegments, without a corolla. In the female flowers the calyx is compoſed of five obtuſe, concave, connivent, and permanent leaves, with the two exterior ones ſhorter than the reſt, without a corolla or pericarpium. The ſeed is ſingle, oblong, compreſſed, obtuſe, and contained in the cup.

AYEL, Fr. in *Law*, a writ which lies where the grandfather was ſeiſed in his demeſne the day he died, a ſtranger enters the ſame day, and diſpoſſeſſes the heir.

AYENIA, in *Botany*, a genus of the *gynandria pentandria* claſs, with a five-leaved calyx; the petals form a ſtar with long ſhoots, under which are five *antheræ*; the capſule has five cells.

AYGULA, in *Zoology*, a ſpecies of ape.

AYRY, or Aery of HAWKS, a neſt or company of *hawks:* ſo called from the old French word *aire*, which ſignifies the ſame.

AYSIAMENTA, or Ayziamenta. See Easement.

AZAB, in the *Military Orders of the Turks*, ſignifies a particular body of the ſoldiery taken in, or added firſt to the *janizaries*, but now become a ſeparate body from them.

The word, in the Oriental languages, ſignifies an unmarried perſon, and the original order of theſe was, that they ſhould be ſingle men.

The *azabs* in Egypt have been great rivals to the *janizaries*, and ſometimes they have got the better. Their inſtitution and officers are the ſame with thoſe of the *janizaries*; but with this difference, that from *oda-baſhees* they are made *ſerbajees*, and from that office *caias*, and come into the *divan*. On the contrary, among the *janizaries*, when any one is made a *ſerbajee*, it is laying him aſide, and he is no farther advanced. Pococke's Egypt.

AZABE-Kaberi, from *kaber*, *ſepulchre*, and *azab*, *torment*; denotes a temporary puniſhment, which, as the Mahometans ſay, the wicked muſt ſuffer after death. Their crimes are hereby expiated, and Mahomet opens the gate of paradiſe to all who believe in him.

AZALEA, in *Botany*, a genus of the *pentandria monogynia* claſs; American upright honey-ſuckle. The characters are, that it hath a coloured empalement, which is permanent, cut into five acute parts at the top: that the flower is funnel-ſhaped, having a long naked tube, cut into five parts; the two upper ſegments being reflexed backward, the two ſides bent inward, and the lower one turned downward: that it hath five ſlender *ſtamina* of unequal lengths, with a round *germen*, which afterward becomes a roundiſh *capſula*, having five cells filled with roundiſh ſmall ſeeds. There are two ſpecies, which grow naturally on moſt grounds in North America.

AZAMOGLANS; ſee Agemoglans.

AZAPES; ſee Asappes.

AZARECAH, a ſect of heretical muſſulmen, who acknowlege no puniſhment, temporal or ſpiritual.

AZAROLA; ſee Service-*tree*.

AZARUM, a ſmall, dry, blackiſh, ſtringy, medicinal root, much uſed in France as a ſpecific for the farcy in horſes.

The *azarum*, called alſo *nardus ſylveſtris*, grows in the Levant, Canada, and about Lyons in France. The firſt is reputed the beſt. It is given in powder, from the quantity of an ounce to two.

AZAZEL, in *Jewiſh Antiquity*. See Scape-goat.

AZED, in the *Materia Medica*, a name given by the Arabian writers to a kind of camphor, which they make the third in value, placing it after the *alcanſuri* and *abriagi*. The firſt of theſe was the fineſt of all the kinds of camphor, and was collected tolerably pure from the tree, as it grew in Canſur, the place whence it was named. The *abriagi* was the ſame camphor, rendered yet more pure by ſublimation: this was a diſcovery of one of the kings of that country, and the camphor was named from him. The third kind, or *azed*, was the ſame with what we now receive from the Indies, under the name of crude or rough camphor. The word *azed* ſignifies only large, and was uſed to expreſs the camphor formed into ſuch large cakes, as it is alſo at this time. Avicenna ſays this camphor was groſs, of a duſky colour, and much leſs bright and pellucid than the other kinds.

AZEDARACH, in *Botany*; ſee Bead-*tree*.

AZELFOGE, in *Aſtronomy*, a fixed ſtar of the ſecond magnitude, in the SWAN's *tail*.

AZIMUTH, in *Aſtronomy*. The *azimuth* of the ſun, or a ſtar, is an arch of the HORIZON, comprehended between the meridian of the place, and any given vertical, in which the ſun or ſtar is.

The word is pure Arabic, which ſignifies the ſame thing.

The *azimuth* is the complement of the eaſtern or weſtern amplitude to a quadrant.

The *azimuth* is found trigonometrically, by this proportion; as *radius* is to the tangent of the latitude, ſo is the tangent of the ſun's altitude to the coſine of the *azimuth* from the ſouth, at the time of the equinox. To find the *azimuth* by the globe, ſee Globe.

Azimuth, *magnetical*, is an arch of the horizon contained between the ſun's *azimuth* circle, and the magnetical meridian; or it is the apparent diſtance of the ſun from the north or ſouth point of the compaſs.

It is found, by obſerving the ſun with an *azimuth* compaſs, when he is about 10 or 15 degrees high, either in the forenoon or afternoon.

Azimuth *compaſs*, is an inſtrument uſed at ſea for finding the ſun's magnetical *azimuth*.

The deſcription and uſe of the *azimuth compaſs*, ſee under *Azimuth* Compass.

Azimuth *dial*, is a DIAL whoſe ſtyle or *gnomon* is at right angles to the plane of the HORIZON.

Azimuths, called alſo *vertical circles*, are great circles interſecting each other in the zenith and nadir, and cutting the horizon at right angles in all the points thereof. The HORIZON being divided into 360°, there are uſually reckoned 360 *azimuths*. Theſe *azimuths* are repreſented by the rhumbs on common ſea-charts.

On the globe theſe circles are repreſented by the quadrant of altitude, when ſcrewed in the zenith.

On theſe *azimuths* is reckoned the height of the ſtars, and the ſun, when he is not in the meridian; that is, the *azimuths* ſhew what diſtance theſe are from the HORIZON.

AZOGA *ſhips*, are thoſe Spaniſh ſhips commonly called the *quickſilver ſhips*, from their carrying quickſilver to the Spaniſh Weſt Indies, in order to extract the ſilver out of the mines in Peru and Mexico. But it is a great miſtake to imagine that theſe ſhips are abſolutely laden with quickſilver only; for though, ſtrictly ſpeaking, they are to carry no goods unleſs on the king of Spain's account, they are generally full laden, notwithſtanding this regulation,

lation, by reaſon that the merchants procure ſpecial licences of the king to load, upon paying a conſideration for ſuch licences.

AZONI, in *Mythology*, a term anciently applied to ſuch of the gods as were not the private divinities of any particular country or people; but were acknowledged as gods in every country, and worſhipped by every nation. See God.

The word is derived from the privative α, and ζωνη, *zone, country*.

Theſe *azoni* were a degree above the viſible and ſenſible gods, which were called *zonæi*; who inhabited ſome particular part of the world, and never ſtirred out of the diſtrict or zone that was aſſigned them. Such in Egypt were Seraphis, Oſiris, and Bacchus; and in Greece, the Sun, Mars, the Moon, and Pluto. They were called by the Romans *dii communes*.

AZOOPHAGUS, from α, ζωον, *animal*, and φαγω, *I eat*; in *Natural Hiſtory*, a term uſed by authors to expreſs ſuch inſects or animals as feed on herbs, never eating the fleſh of any living creature.

AZOTH, among the *Ancient Chemiſts*, ſignified the firſt matter of metals; or the mercury of a metal, more particularly that which they call the *mercury of the philoſophers*, which they pretend to draw from all ſorts of metallic bodies.

Paracelſus's *azoth*, which he boaſted of as an univerſal remedy, is pretended to have been a preparation of gold, ſilver, and mercury: a quantity of this he is ſaid to have always carried with him in the pommel of his ſword.

Azoth is alſo a name given by ſome to the *philoſophers ſtone*. When the Arabs began to cultivate the ſtudy of chemiſtry, the metaphorical and hieroglyphical manner of writing, which obtained among them, ſeems to have given riſe to a practice of calling the means made uſe of for bringing metals to perfection, by the name of medicines, and imperfect metals by the name of ſick men, and gold by that of a ſound and lively perſon. From hence the ignorant fall into the error of ſuppoſing, that theſe were to be underſtood in a literal ſenſe, eſpecially upon finding the impurities of the baſer metals called by the name of leproſies, the moſt incurable of all diſeaſes; and hence roſe that opinion, which has ſince ſpread itſelf far and wide, that the imperfect metals might be turned into gold, and the bodies of ſick men into ſound ones, by the ſame preparation. To this preparation they gave the name *azoth*, or the *philoſophers ſtone*, and to its poſſeſſors the name of adepts. Boerhaave's Chem.

AZURE, the blue colour of the ſky.

Azure, in *Heraldry*, ſignifies the blue colour in the coats of arms of all perſons under the degree of a baron.

In the eſcutcheons of noblemen, blue is called *ſapphire*; and in thoſe of ſovereign princes, *Jupiter*.—In engraving it is repreſented by ſtrokes, or hatches drawn horizontally, as repreſented in *Tab. Heraldry, fig.* 3.

The French prefer this colour to all others, becauſe the field of the arms of their kings is *azure*.

Azure is alſo uſed for a mineral colour, better known by the name of *ultramarine*: this is prepared from the lapis *lazuli*.

In propriety, however, *azure* ſhould rather denote a bright blue colour, made from the *lapis Armenus*; by our painters more uſually called Lambert's *blue*.

Azure is alſo generally applied to the blue glaſs made from the earth of cobalt, and vitrifiable matters. This glaſs, which is called smalt when in maſſes, is called *azure* only when it is reduced to a fine powder. Several kinds of *azure* are diſtinguiſhed according to its degree of beauty, by the names of *fine azure*, *powdered azure*, and *azure of four fires*. In general, the greater the intenſity of colour, and the fineneſs of powder, the more beautiful and dear it is.

Azure is employed to colour starch; hence it has alſo been called *ſtarch*-blue.

It is uſed for painting with colours, and for a blue enamel. See Zaffre.

AZURIUM, a hard chemical maſs, produced from two parts of mercury, a third part of ſulphur, and a fourth of sal *ammoniac*.

AZYGOS, in *Anatomy*, a vein ariſing out of the *cava*, otherwiſe called vena *ſine pari*, becauſe ſingle, whence its name. See *Tab. Anat.* (*Splanch.*) *fig.* 12. *litt. hh.* and alſo ſee Vein.

The vena *azygos* is the third branch of the aſcending trunk of the *cava*.—It deſcends through the right ſide of the cavity of the *thorax*, and at its arrival at the eighth or ninth *vertebra* begins to keep the middle, and ſends forth on each ſide intercoſtal branches to the interſtices of the eight lower ribs; and there is divided into two branches, the larger of which is inſerted ſometimes into the *cava*, but oftener into the *emulgent*; the other enters the *cava*, commonly a little below the *emulgent*; but is ſeldom joined to the *emulgent* itſelf.

Morgagni gives this name to a muſcle of the palate, which is uſually called staphylinus.

AZYMITES, they who communicate in bread not leavened, or fermented. See Azymus.

This appellation is given by Cerularius, to thoſe of the Latin church, upon his excommunicating them in the eleventh century. Du-Cange.

The Armenians and Maronites do alſo make uſe of *azymus*, or unleavened bread, in their office; on which account ſome Greeks call them *azymites*.

AZYMUS, ſomething not fermented, or that is made without leaven.

The word is compoſed of the privative α, and ζυμη, *ferment*.

The term *azymus* is much uſed in the diſputes betwixt thoſe of the Greek, and Romiſh church; the latter of whom contend, that the bread in the maſs ought to be *azymus, unleavened*, in imitation of the paſchal bread of the Jews, and of our Saviour, who inſtituted the ſacrament on the day of the paſſover; and the former ſtrenuouſly maintaining the contrary, from tradition, and the conſtant uſage of the church.

This diſpute was not the occaſion of the rupture between the Greek and Latin churches; Photius having broken with the popes 200 years before: though it is urged that before the time of Photius, A. D. 866, *azymus* was uſed in the Romiſh church; and that it was more generally uſed through the Weſt, for which the authority of Alcuin, who died in 794, is alleged.

St. Thomas, in 4 Sent. diſt. 2. q. 11. art. 2. quæſtiunc. 3. relates, that during the firſt ages of the church, none but unleavened bread was uſed in the euchariſt, till ſuch time as the Ebionites aroſe, who held, that all the obſervances preſcribed by Moſes, were ſtill in force: upon which, both the eaſtern and weſtern churches took to the uſe of leavened bread; and, after the extinction of that hereſy, the weſtern church returned to the *azymus*; the eaſtern pertinaciouſly adhering to the former uſage.

This account is controverted by father Sirmond, in a diſſertation on the ſubject; wherein he ſhews, that the Latins had conſtantly communicated in leavened bread, till the tenth century. And cardinal Bona, Rerum Liturgic. c. 23. p. 185, greatly diſtruſts what St. Thomas alleges.—In the council of Florence it was decreed, that the point lay at the diſcretion of the church; and that either leavened or unleavened bread might be uſed: the weſtern church has preferred the latter.

AZZALUM, in the *Ancient Phyſiology*, a ſpecies of iron, reputed the moſt excellent of all, ſuppoſed to have been brought from India, whence it was called *Indicum*, but, in reality, according to ſome, brought from China. Plin. Hiſt. Nat. lib. xxxiv. c. 14.

B.

B, The ſecond letter of our alphabet, and of moſt others.

This obſervation fails in the ancient Iriſh alphabet; where B is the firſt, and A the ſeventeenth; and in the Abyſſinian, where A is the thirteenth.

B is the firſt conſonant, and firſt mute, and in its pronunciation is ſuppoſed to reſemble the bleating of a ſheep; upon which account Pierius tells us, in his Hieroglyphics, that the Egyptians repreſented the ſound of this letter by the figure of that animal.

B is alſo one of thoſe letters which the Eaſtern grammarians call *labial*, becauſe the principal organs employed in its pronunciation are the lips. It has a near affinity with the other *labials* P and V, and is often uſed for P, both by the Armenians, and other Orientals; as in *Betrus* for *Petrus*, *apſens* for *abſens*, &c. and by the Romans for V, as in *amabit* for *amavit*, *berna* for *verna*, &c. whence aroſe that joſt of Aurelian on the emperor Bonoſus, *Non ut vivat natus eſt, ſed ut bibat.* See V.

B requires an entire cloſure and preſſure of the lips, and is pronounced by forcing them open with a ſtrong breath. This letter alſo, if it paſs through the noſe, becomes an M; as appears in thoſe who have the noſtrils ſtopt by a cold, or otherwiſe, when they endeavour to pronounce the letter M; for inſtance, *many men*, is by ſuch a one ſounded, *bany ben.* See M.

With the ancients, B ſtood for 300, as appears by this verſe:

> *Et* B *trecentum per ſe retinere videtur.*

When a line was drawn above it, $\overline{B}$, it ſtood for 3000: and with a kind of accent below it, for 200; but among the Greeks, as well as Hebrews, this letter ſignified only 2.

B F. in the preface to the Decrees, or Senatus-conſulta of the old Romans, ſignified *bonum factum.* It is often found on medals, to mark the epocha or year.

Plutarch obſerves, that the Macedonians changed Φ into B, and pronounced *Bilip*, *Beronice*, &c. for *Philip*, *Pheronice*, &c. and that thoſe of Delphos uſed B, inſtead of Π; as βαθειν for παθειν, βικρον for πικρον, &c. See P.—The modern Greeks call the *beta*, *vita.*

The Latins ſaid *ſuppono*, *oppono*, for *ſubpono*, *obpono*, and pronounced *optinuit*, though they wrote *obtinuit*, as Quintilian has obſerved.—They alſo uſed B for F or PH: thus, in an ancient inſcription, mentioned by Gruter, OBRENDARIO is uſed for OFRENDARIO. See F, &c.

In *Muſic*, b is uſed to denote a flat, or the lowering of a ſound by a ſemi-tone minor. Thus A^{b} or ^{b}A is the flat of A, or the ſemi-tone minor below A.

B, b, *quadro* or ♮, in the ſcale of muſical notes, ſignifies the ſound which is a tone above A, and a ſemi-tone below C.

In the works of the muſicians of former ages, we often meet with the mark ♮ alone, to ſignify the ſame ſound as b♮. The letter B, among them, ſignified what we now call B flat: but among modern muſicians, B is more commonly uſed for the ſound which is a tone above A; and to denote B flat, or the ſemi-tone major above A, B^{b} or ^{b}B is uſed.

B is alſo uſed as an abbreviation of *baſſo* or *baſs.* Hence, B. C. ſtands for *baſſo continuo*, or the *thorough baſs.*

B, in the chemical alphabet, denotes *mercury*, according to Raymond Lully.

B on ſome French coins denotes, that they were ſtruck at Rouen.

B is alſo uſed as a contraction for *Bachelor*; as B. A. *Bachelor of Arts*; B. LL. and B. D.

BAAL, in *Antiquity*, the ſupreme Being among the Phœnicians.

The deſcendants of Ham firſt worſhipped the ſun under this title, which they afterwards aſcribed to the patriarch who was the head of their line; making the ſun only an emblem of his influence and power. See DÆMON.

BAALIM, in *Antiquity*, inferior deities among the Phœnicians. See DÆMON.

BAALTIS, a goddeſs among the Phœnicians. Some ſuppoſe that ſhe was the ſame with the Diana of the Greeks.

BAAL-BERITH, in *Ancient Mythology*, derived from *baal*, *ſovereign*, and *berith*, *covenant*; a deity acknowledged under this title by the Carthaginians and Phœnicians in their alliances.

BAAL-GAD, BAGAD, or **BEGAD**, in *Ancient Mythology*, an idol of the Syrians, whoſe name was compoſed of *baal*, *lord*, and *gad*, *chance* or *fortune*; the god of chance or fortune. After the god of *thunder*, the god of *chance* was one of the firſt worſhipped by mankind. See Phil. Tranſ. vol. lvi. N° 2. an. 1766.

BAANITES, the followers of Baanes, who adopted and diſſeminated the Manichean notions in the ninth century, about the year 810.

BAARAS, BAHARAS, or **BACHARAS**, an extraordinary kind of root, ſaid to grow on mount Lebanon, in a valley called *Baaras* (whence the name), near the city Macheron.

By the account which Joſephus gives of it, it ſeems to be a ſort of vegetable phoſphorus; for he repreſents it as of a flame colour, emitting rays of light in the night, and diſappearing by day.

BAAT, in the language of the Siameſe, anſwering to *tical* in that of the Chineſe, denotes a weight and coin current in thoſe kingdoms. It weighs about half an ounce.

BABBLING, among *Hunters*, is when the hounds are too buſy after they have found a good ſcent.

BABOON, in *Zoology*, a large kind of ape, common in the Eaſt and Weſt Indies. The head is large, and the mouth in a particular manner furniſhed with whiſkers: the face is naked, but the back part of the head hairy. It has a very ſhort tail, and is of a dark olive colour. See PAPIO, and SIMIA.

BABYLONIAN, BABYLONIC, or **BABYLONISH** *epocha*, *gemara*, *hours*, &c. See EPOCHA, GEMARA, HOUR, &c.

The *Babylonian* monarchy, hiſtory, &c. is the ſame with what is otherwiſe denominated the *Chaldean*, or *Aſſyrian*, &c.

In *Ancient Writers*, we find frequent mention of *Babylonica texta*, a rich ſort of weavings, or hangings, denominated from the city *Babylon*, where the practice of interweaving divers colours in their hangings firſt obtained. Plin. Hiſt. Nat. lib. viii. c. 48.

Hence alſo *Babylonic* garments, *Babylonic* ſkins, *Babylonic* carpets, houſings, &c.

Babylonica ſolana, coverings laid over couches, &c. painted with gold, purple, and other colours.

BABYLONIAN, *Babylonius*, is alſo uſed in ſome *Ancient Writers* for an aſtrologer, or any thing related to aſtrology.

Hence *Babylonia cura*, the art of caſting nativities; and *numeri Babylonii*, the computations of aſtrologers. Hor. lib. i. od. 12.

BABYLONICS, in *Literary Hiſtory*, a fragment of the ancient hiſtory of the world, ending at 267 years before Chriſt; and compoſed by Beroſus or Beroſſus, a prieſt of Babylon, about the time of Alexander. Stanley Hiſt. Phil.

The *Babylonics* were very conſonant with Scripture, as Joſephus and the ancient Chriſtian chronologers aſſure us; whence the author is uſually ſuppoſed to have conſulted the Jewiſh writings. There now remain only a few imperfect extracts, preſerved chiefly by

Joſephus and Syncellus. They were forged by Annius of Viterbo. Fabr. Bib. Græc.

BABYROUSSA, in *Zoology*, the name of an animal, called by ſome *porcus Indicus*, or the Indian hog. It is of the ſize and ſhape of a ſtag. Its head and tail reſemble thoſe of a boar; and its legs and feet, the goat's. But beſides all theſe ſingularities, there is another thing in which it differs from all the other known animals, which is, that it has four *dentes exerti*, or long and crooked tuſks, two of which ariſe from the lower jaw, and the other two from the upper, making their way through the fleſh. Some have choſe to call them horns, but they are certainly more properly diſtinguiſhed by the name of teeth, as they have each their *alveolus*, from which they grow juſt in the manner of teeth, and are of the ſubſtance of ivory, not of horn. The creature is found in the iſland of Borneo.

This animal is a ſpecies of the SUS in the Linnæan ſyſtem.

BAC, in *Navigation*, is uſed for a PRAAM, or ferry-boat. The word is French.

Bac, in *Brewing*; ſee Back.

BACANTIBI, in *Eccleſiaſtical Antiquity*, wandering clerks, who ſtrolled from church to church. Bingham.

The word ſeems formed by corruption from *vacantivi*.

BACCÆ *Bermudienſes*, in the *Materia Medica*, the name of the fruit or berries of the *ſapindus*, or *ſoapberry-tree*.

BACCALARIA, in *Middle Age Writers*, denotes a kind of country-farms, conſiſting of ſeveral manſes. Du-Cange.

Baccalaria *dominicaria*, or *indominicata*, was more particularly uſed for a farm belonging to the lord, and kept in his own hands.

BACCHÆ, in *Antiquity*, the prieſteſſes of Bacchus, who celebrated the *orgia*, or myſteries of that god.

The word was alſo uſed for the ivy crowns or garlands worn by the prieſts of Bacchus, in offering ſacrifices to him.

BACCHANALIA, a religious feaſt, in honour of Bacchus, celebrated with much ſolemnity among the ancients, particularly the Athenians, who even computed their years thereby, till the commencement of the Olympiads.

The *bacchanalia* are ſometimes alſo called *orgia*, from the Greek οργη, *fury*; on account of the madneſs and enthuſiaſm wherewith the people appeared to be poſſeſſed at the time of their celebration.

They were held in autumn, and took their riſe from Egypt; whence, according to Diodorus, they were brought into Greece by Melampus.

The form and diſpoſition of the ſolemnity depended, at Athens, on the archon, and was, at firſt, exceeding ſimple; but, by degrees, it became incumbered with a number of ridiculous ceremonies, and attended with much diſſoluteneſs and debauchery; inſomuch that the Romans, who grew aſhamed of them, ſuppreſſed them by a *ſenatus-conſultum* throughout all Italy.

The women had a great ſhare in the ſolemnity, which is ſaid to have been inſtituted on their account: for a great number of them attending Bacchus to the conqueſt of the Indies, and carrying in their hands the *thyrſus*, i. e. a *little lance*, covered with ivy and vine-leaves, ſinging his victories and triumphs wherever they went; the ceremony was kept up after Bacchus's deification under the title of *bacchanalia*, and the women were inſtalled prieſteſſes thereof, under that of *bacchæ*, or *bacchantes*.

Theſe prieſteſſes, at the time of the feaſt, ran through the ſtreets, and over the mountains, covered with tygers ſkins, their hair diſhevelled, their thyrſus in one hand, and torches in the other, howling, and ſhrieking, Ευοι Σαϐοι, ευοι Βακχε, or Ιω Ιακχε, or Ιω Βακχε.

Men and women met promiſcuouſly at the feaſt, all perfectly naked, except only for the vine-leaves, and cluſters of grapes, which bound their heads and hips; here they danced and jumped tumultuouſly, and, with ſtrange geſticulations, ſung hymns to Bacchus, till, being weary and giddy, they tumbled down.

Bacchanalia, *bacchanals*, is alſo a name given to pictures, or *baſſo relievos*, whereon the feaſt is repreſented, conſiſting chiefly of dancings, nudities, and the like.

There are antique *bacchanals* ſtill ſeen on ſeveral ancient friezes. The *bacchanals* painted by Pouſin are excellent.

Some writers call the Romiſh CARNAVAL, the *Chriſtian bacchanalia*.

BACCHARACH *wine*, a name of a particular kind of wine, by ſome eſteemed a kind of Rheniſh; but Portzius, who has written expreſly on the ſubject, obſerves, that it differs from all the common Rheniſh wine, in colour, odour, taſte, and virtue.

BACCHARIS, in *Botany*, ploughman's ſpikenard; a genus of the Linnæan *ſyngeneſia polygamia ſuperflua* claſs. Its characters are, that the flower is compoſed of many hermaphrodite and female florets, which are included in one common cylindrical ſcaly empalement: that the hermaphrodite flowers are funnel-ſhaped, and have five ſlender *ſtamina* with an oval *germen*, which afterward becomes a ſingle ſhort ſeed crowned with a long down: that the female flowers have no *ſtamina*, but in other reſpects are the ſame. There are two ſorts, which grow naturally in North and South America.

Though this plant is but ſeldom uſed, yet ſome account it a good vulnerary, and uſeful in bruiſes, contuſions, ruptures, and inward wounds, pains in the ſide, and difficulty of breathing.

Baccharis was alſo the name of a ſweet ointment among the ancients, ſo called perhaps from this herb's being a principal ingredient in it.

BACCHI, in *Mechanics*, a kind of ancient machines, in form of goats, uſed by Jupiter in his wars againſt the giants.

Rudbeck deſcribes two kinds of *bacchi*, one made like the battering-ram, wherewith Jupiter demoliſhed the enemies fortifications; the other contrived to caſt fire out of, from whence the Greeks are conjectured to have framed their idea of *chimera*.

BACCHIC, ſomething relating to the ceremonies of Bacchus.

The celebrated *intaglio*, called Michael Angelo's ring, is a repreſentation of a *bacchic* feaſt.

Bacchic *ſong*, is ſometimes uſed for a *chanſon à boire*, or compoſition to inſpire jollity. But in a more proper ſenſe, it is reſtrained to a dithyrambic ode, or hymn.

Bacchica, in *Botany*, is uſed for ivy, HEDERA.

BACCHIUS, in the *Latin Poetry*, a kind of foot, conſiſting of three ſyllables; whereof the firſt is ſhort, and the two latter long; as *ĕgēſtās*.

The *bacchius* is the reverſe of a dactyl, and takes its name from that of Bacchus, becauſe frequently uſed in the hymns compoſed in his honour. It was alſo called among the ancients, *œnotrius*, *tripodius*, *ſaltans*; and by the Greeks, παριαμϐος.

BACCHUS, in *Mythology*, the name of two gods among the ancients: that in Egypt, the ſon of Ammon, and the ſame with Oſiris; and that of Thebes, the ſon of Jupiter, and Semele. The latter is the god of wine; and is repreſented under the figure of a jolly beardleſs youth, crowned with ivy and wine leaves; a ſpear wrapped with the ſame, in one hand; and with grapes, or a cup, in the other. See Bacchanalia.

Bacchus, in *Zoology*, a name given by ſome to the MYXON, a fiſh of the mullet-kind, remarkable for the red colour of its lips, and the extremity of the covering of the gills. See Mugil.

BACCIFEROUS *Plants*, are ſuch as bear berries, i. e. fruit, covered with a thin membrane, wherein is contained a pulp, which grows ſoft and moiſt when ripe, and incloſes the ſeed within its ſubſtance.

The *bacciferous* trees Mr. Ray divides into four kinds, 1. Such as bear a caliculate, or naked berry; the flower and *calix* both falling off together, and leaving the berry bare, as the ſaſſafras-tree, &c.

2. Such as have a naked monopyreneous fruit, that is, containing in it only one ſeed; as the *arbutus*, the *terebinthus*, *lentiſcus*, &c.

3. Such as have a naked, but a polypereneous fruit, that is, containing two or more kernels or ſeeds within it; as the *jaſminum*, *liguſtrum*, &c.

4. Such as have their fruit compoſed of many *acini*, or round ſoft balls, ſet cloſe together, like a bunch of grapes; as the *uva marina*, the *rubus vulgaris*, *rubus Idæus*, and the *rubus minor fructu cœruleo*.

BACCINIUM, or **Baccina**, a baſon or veſſel to hold water to waſh the hands.—The holding the baſon, or waiting at the baſon, on the day of the king's coronation, was an ancient tenure in ſerjeantry. Lib. Rub. Scaccar. f. 137.

BACCOFOE, in *Botany*, the name of a fruit very common in Guinea. It is like the banana, except that it is whiter, thicker, and ſhorter. The taſte and ſmell are both very agreeable; and ſome pretend, that on cutting it through tranſverſely, there is the figure of a crucifix on each ſide of it. Phil. Tranſ. N° 108.

BACHELOR, or **Batchelor**, **Baccalarius**, in *Middle Age Writers*, was a denomination given to thoſe who had attained to knighthood, but were not rich enough, or had not a ſufficient number of vaſſals to have their banner carried before them in battle; or, if they were of the order of bannerets, were not yet of age to diſplay their own banner; but obliged to march to war under the banner of another.

Camden and others define *bachelor*, a perſon of a middle degree, between a knight and an eſquire; of leſs age and ſtanding than the former, but ſuperior to the latter.

Others will have *bachelor* to have been a common name for all degrees between a mere gentleman and a baron.—Thus we find the lord admiral, when he was neither an earl, nor baron, denominated a *bachelor*.—"Ant it is to "weet, that when the admiral rideth to aſſemble a ſhippe "of war, or other, for the buſineſs and affairs of the

" realm, if he be a *bachelor*, he ſhall take for his day-
" wages four ſhillings ſterling; if he be an earl, or baron,
" he ſhall take wages after his eſtate and degree."

Bachelor was more peculiarly a title given to a young cavalier, who made his firſt campaign, and received the military girdle accordingly.

Bachelor was alſo a denomination given to him who had overcome another in a tournament, the firſt time he ever engaged.

Bachelors, *Knights*, were anciently ſo called, *quaſi bas chevaliers*, as being the loweſt order of knights, and inferior bannerets, &c.

At preſent theſe are called *equites aurati*, from the gilt ſpurs that are put on them at the time of their creation.—The dignity was at firſt confined to the military men, but afterwards was conferred on men of the long robe.

The ceremony is exceedingly ſimple; the candidate kneeling down, the king touches him lightly with a naked ſword, and ſays, *Sois chevalier, au nom de Dieu*; and afterwards, *Avance, chevalier*.

Bachelor is alſo uſed, in a college-ſenſe, to denote a perſon poſſeſſed of the *baccalaureate*, which is the firſt degree in the liberal arts, or ſciences.

The degree of *bachelor* was firſt introduced in the thirteenth century, by pope Gregory IX. but it remains ſtill unknown in Italy. At Oxford, before a perſon is intitled to the degree of *bachelor of arts*, he muſt have ſtudied there four years; three years more to become *maſter of arts*; and ſeven more to commence *bachelor of divinity*.

At Cambridge, to commence *bachelor of arts*, he muſt have been admitted near four years; and above three years more before he commence *maſter*; and ſeven more ſtill to become *bachelor of divinity*. He may commence *bachelor of law* after having ſtudied it ſix years.

At Paris, to paſs *bachelor in theology*, a perſon muſt have ſtudied two years in philoſophy and three years in theology, and held two acts of examination in the Sorbonne.—*Bachelors in the canon law* are admitted after two years ſtudy in the ſame, and ſuſtaining an act according to the forms.

A *bachelor of phyſic* muſt have ſtudied two years in medicine, after having been four years maſter of arts in the univerſity, and have ſtood an examination; after which he is inveſted with the fur, in order to be licenſed.

In the univerſity of Paris, before the foundation of divinity-profeſſorſhips, thoſe who had ſtudied divinity ſix years were admitted to go through their courſe, whence they were called *baccalarii curſores*; and as there were two courſes, the firſt employed in explaining the Bible, during three ſucceſſive years; the ſecond, in explaining the maſter of the ſentences for one year; thoſe who were in their Bible-courſe, were called *baccalarii Biblici*; and thoſe arrived at the ſentences, *baccalarii ſententiarii*. And, laſtly, thoſe who had gone through both, were denominated *baccalarii formati*, or *formed bachelors*.

At preſent, *formed bachelor* denotes a perſon who has taken the degree regularly after the due courſe of ſtudy and exerciſes, required by the ſtatutes; by way of oppoſition to a *current bachelor*, who is admitted in the way of grace, or by diploma.

We alſo find mention of *bachelors of the church*, *baccalarii eccleſiæ*.—The biſhop with his canons and *baccalarii*, *cum conſilio & conſenſu omnium canonicorum ſuorum & baccalariorum*.

There is ſcarce any word whoſe origin is more controverted among the critics, than that of *bachelor*, *baccalarius*, or *baccalaureus*: the two different acceptations of the word, literary and military, above recited, have each of them their advocates, who aſſert each to be the primitive ſenſe, and derive the word accordingly.

Among thoſe who hold the military *bachelor* to be the more ancient, are Cujas, who derives the word from *buccellarius*, a kind of cavalry, anciently in great eſteem. Du-Cange deduces it from *baccalaria*, a kind of fees, or farms, conſiſting of ſeveral pieces of ground, each whereof contained 12 acres, or as much as two oxen would plow; the poſſeſſors of which *baccalaria* were called *bachelors*.

Caſeneuve, and Altaſerra, derive *bachelor* from *baculus*, or *bacillus*, a ſtaff, becauſe the young cavaliers exerciſed themſelves in fighting with ſtaves. Martinius derives it from *baccalaureus*, i. e. *baccâ laureâ donatus*, in alluſion to the ancient cuſtom of crowning poets with laurel, *baccis lauri*, as was the caſe with Petrarch at Rome in 1341. Alciat and Vives are of the ſame opinion: nor is this etymology improbable.

Bachelors, in the livery companies in London, are thoſe not yet admitted to the livery.

Theſe companies generally conſiſt of a maſter, two wardens, the livery, and the *bachelors*, who are yet but in expectation of dignity in the company, and have their function only in attendance on the maſter and wardens: they are alſo called yeomen.

Bachelor is alſo a name given in the ſix companies of merchants at Paris to the elders, and ſuch as having ſerved the offices, have a right to be called by the maſters and wardens to be preſent with them, and aſſiſt them in ſome of their functions, particularly in what relates to the *chef-d'oeuvres*, or maſter-pieces of ſuch as are candidates for being admitted maſters.

Bachelor is alſo particularly uſed for a man not married, or who is yet in a ſtate of celibacy.

The Roman cenſors frequently impoſed fines on old *bachelors*. Dion Halicarnaſſeus mentions an old conſtitution, by which all perſons of full age were obliged to marry. But the moſt celebrated law of this kind was that made under Auguſtus, called the *lex Julia de maritandis ordinibus*; by which *bachelors* were made incapable of legacies or inheritances by will, unleſs from their near relations.

The Rabbins maintain, that, by the laws of Moſes, every perſon, except ſome few, are obliged in conſcience to marry at twenty years of age: this makes one of their 613 precepts. Hence thoſe maxims ſo frequent among their caſuiſts, that he who does not take the neceſſary meaſures to leave heirs behind him, is not a man, but ought to be reputed a homicide. Lycurgus was not more favourable: by his laws, *bachelors* are branded with infamy, excluded from all offices civil and military, and even from the ſhews and public ſports. At certain feaſts they were forced to appear, to be expoſed to the public deriſion, and led naked round the market-place. At one of their feaſts, the women led them in this condition to the altars, where they obliged them to make *amende honorable* to nature, accompanied with a number of blows, and laſhes with a rod at diſcretion. To complete the affront, they forced them to ſing certain ſongs compoſed in their own deriſion.

The Chriſtian religion is more indulgent to the *bachelor*-ſtate: the ancient church recommended it as preferable to, and more perfect than the matrimonial ſtate.

In the *Canon Law*, we find injunctions on *bachelors*, when arrived at puberty, either to marry or turn monks, and profeſs chaſtity in earneſt.

BACILLI, or **Baculi**, in *Medicine*, ſuch compoſitions as are made up of a cylindrical figure, like a ſtick; thus called from the Latin *baculus*, *a ſtaff*. See Lozenge.

BACK. See Dorsum.

Back-*bone*. See Spine.

Back, in the *Manege*, and among *Farriers*. A horſe's *back* ſhould be ſtraight, not hollow, which is called *ſaddle-backed*; horſes of this kind are generally light, and carry their heads high, but want in ſtrength and ſervice. A horſe with a weak *back* is apt to ſtumble.

In the French riding-ſchools, to mount a horſe *a dos*, is to mount him bare-backed, without a ſaddle.

Back, in *Brewing*, a large flat kind of tub or veſſel, wherein the wort is put to ſtand and cool before boiling.

The ingredients of beer paſs through three kinds of veſſels. They are maſhed in one, worked in another, and cooled in a third, called *backs* or *coolers*.

To gauge a brewer's Back. Moſt *backs* have their ſides ſtrait; in caſe, however, they be not, but make either an acute or obtuſe angle with the bottom, the true length and breadth muſt be carefully taken in the middle of every inch in depth; from whence the area may be found upon every tenth. For finding the area of the *back*, this rule muſt be obſerved, to multiply the length by the breadth, and divide by 282; which gives the contents in ale gallons.

To find the true dip of a Back. Becauſe *backs* are not placed level, but ſloping, for conveniency of drawing off the wort; therefore, were the dip taken in too deep a place, the ſubject would be wronged; as would the king, if it were taken in too ſhallow a part: to guard againſt which, as many dips as are thought convenient muſt be taken; theſe being added together, and divided by the number of dips, will give a mean depth. When this is done, trial being made in different parts of the *back*, until one is found which anſwers exactly to the mean depth; let a mark or notch be made at the ſide of the *back*, to point it out as the true dipping-place for the future.

The bottom of large *backs* ought to be every where equally and well ſupported, to ſecure them from warping, which elſe they will do, more and more as they grow older.

Back, in the *Diſtillery*, a veſſel in which liquor is put to be fermented.

Back *of the poſt*, in *Sea-language*. See Stern-*poſt*.

Back-*board*, in *Maritime Affairs*, of a ſemicircular figure, placed tranſverſely in the after-part of a boat, like the back of a chair, to recline againſt while ſitting in the *ſtern-ſheets*.

Back *the ſails*, to put them in a ſituation that will occaſion the ſhip to retreat or move a ſtern.

Back-*painting*, is uſed by ſome for the art of paſting of prints, and other deſigns on glaſs.

The art conſiſts chiefly in laying the print upon a piece of crown-glaſs, of ſuch a ſize as fits the print. In order to do this, the print muſt be ſoaked in clean water for forty-eight hours, if it be on very ſtrong, cloſe, and hard gummed paper; but if on a ſoft, ſpongy paper, two hours will ſometimes be ſufficient. The picture being well ſoaked, muſt be laid between four ſheets of paper, two over and two under it, that the moiſture may be drawn out of it. In the mean while, let the glaſs upon which the print is to be laid be warmed at the fire; then with a hog's-hair bruſh dipped in melted Straſburg turpentine, ſpread the turpentine ſmoothly and evenly on the glaſs. Then lay the print upon the glaſs, rubbing it gently from one end to the other, that it may lie cloſe. With the finger, rub off the paper from the back-ſide of the print, till nothing can be ſeen but the print, like a thin film left upon the glaſs, and ſet it aſide to dry. When it is dry, varniſh it over with ſome white tranſparent varniſh, that the print may be ſeen through it, which is now fit for painting.

Having prepared a variety of oil colours, which muſt be ground very fine, and tempered very ſtiff, lay ſuch colours on the tranſparent print as each particular part requires, the maſter-lines of the print guiding the pencil; and thus each colour will appear fair to the eye on the other ſide of the glaſs, and look almoſt as well as a painted piece, if it be done neatly. The chief care to be uſed in this part of the work, is that of laying the colours on thick enough, that they may be ſtruck plainly through the glaſs.

Back; *Iron* **Back** is a large plate of caſt iron, frequently adorned with figures in low relievo, intended to preſerve the ſtone-work of a chimney-back, and to reflect the heat of the fire.

BACKBEROND, or **Backberend**, in *Law Writers*, denotes a criminal caught carrying off ſomething on his back.

In this ſenſe, Bracton uſes it for a ſpecies of what the civilians call manifeſt theft, *furtum manifeſtum*.

In the *Foreſt Laws, backberond* is one of the four circumſtances, or caſes, wherein a foreſter may arreſt the body of an offender againſt vert or veniſon in the foreſt. The others are, *ſtable-ſtand*, *dog-draw*, and *bloody-hand*.

BACKING *a colt*, the operation of breaking him to the ſaddle, or bringing him to endure a rider.

To *back* a colt, they uſually take him into ploughed ground, trot him a while, to rid him of his wantonneſs; then having one to ſtay his head, and govern the chaffing rein, the maſter mounts his back, not ſuddenly, but by degrees, firſt making ſeveral offers, or half-riſings: when he bears theſe patiently, he mounts in earneſt, and ſettles in his place, cheriſhing him, &c.

Backing *Warrants*, in *Law*, denotes the ſigning of ſuch as have been iſſued by a juſtice of the peace in one county, by a juſtice of the peace in another county, which is neceſſary before they can be executed there. This practice is authoriſed by ſtatutes 23 Geo. II. c. 26. and 24 Geo. II. c. 55.

BACKS, among dealers in leather, denote the thickeſt and beſt tanned hides, uſed chiefly for ſoles of ſhoes.

Backs *of a hip*; ſee Hip.

BACK-*gammon*, a game played with dice and tables, to be learned only by obſervation and practice.

Back-*beaver*, a machine long uſed in ſeveral parts of England, particularly in Hampſhire, Wiltſhire, and Suſſex, for winnowing corn. An improved conſtruction of this machine, illuſtrated by a figure, was propoſed by Dr. Hales, in the year 1747, which, he ſays, will not only render it fit for winnowing corn ſooner and better than by any other means hitherto uſed, but alſo for clearing it of the very ſmall corn, ſeeds, blacks, ſmut-balls, &c. to ſuch perfection, as to make it proper for ſeed-corn. See Hales's Uſes of Ventilators, part ii. p. 247, &c.

Back-*nails*; ſee Nail.

Back-*ſtaff*, in *Navigation*, an inſtrument, by the French called the *Engliſh quadrant*: it was invented by Capt. Davis; and is of good uſe in taking the ſun's altitude at ſea.—It conſiſts of three vanes, A, B, and C, and of two arches (*Tab. Navigation*, *fig*. 6.). The vane at A, called the *horizon-vane*; that at B, the *ſhade-vane*; and that at C, the *ſight-vane*. The leſſer arch B is of 60 degrees, and that of C (or FG) of 30 degrees.

To uſe the **Back**-*ſtaff*. The ſhadow-vane B is ſet upon the 60 arch, to an even degree of ſome latitude, leſs by 10 or 15 degrees than you judge the complement of the ſun's altitude will be; the horizon-vane is put on at A, and the ſight-vane on the 30 arch FG: the obſerver's back being then turned to the ſun (whence the name of *back-ſtaff*, or *back quadrant*), he lifts up the inſtrument, and looks through the ſight-vane, raiſing or falling the quadrant, till the ſhadow of the upper edge of the ſhade-vane fall on the upper edge of the ſlit in the horizon-vane; and then if he can ſee the horizon through the ſaid ſlit, the obſervation is well made: but if the ſea appears inſtead of the horizon, the ſight-vane muſt be moved lower towards F: if the ſky appear, it muſt be moved upward towards G, and thus tried till it comes right: then he obſerves how many degrees and minutes are cut by that edge of the ſight-vane which anſwers to the ſight-hole, and to them adds the degrees cut by the upper edge of the ſhade-vane: the ſum is the ſun's diſtance from the zenith, or the complement of his altitude.

To find the ſun's meridian, or greateſt altitude on any day, continue the obſervation as long as the altitude is found to increaſe, which you will perceive by the appearance of the ſea, inſtead of the horizon, removing the ſight-vane lower: but when you perceive the ſky appear inſtead of the horizon, the altitude is diminiſhed; therefore, deſiſt from farther obſervation at that time, and add the degrees upon the 60 arch to the degrees and minutes upon the 30 arch, and the ſum is the zenith diſtance, or co-altitude of the ſun's upper limb.

And becauſe it is the zenith diſtance, or co-altitude of the upper limb of the ſun, not the centre that is given by the quadrant, in obſerving by the upper end of the ſhade-vane, add 16 minutes, the ſun's ſemidiameter, to that which is produced by your obſervation, and the ſum is the true zenith diſtance of the ſun's centre. If you obſerve by the lower part of the ſhadow of the ſhade-vane; then the lower limb of the ſun gives the ſhadow; and, therefore, you muſt ſubtract 16 minutes from what the inſtrument gives: but conſidering the height of the obſerver above the ſurface of the ſea, which is commonly between 16 and 20 feet, you may take 5 or 6 minutes from the 16 minutes, and make the allowance but of 10 minutes, or 12 minutes, to be added inſtead of 16 minutes.

Mr. Flamſteed contrived a glaſs *lens*, or double convex, to be placed in the middle of the ſhade-vane, which makes a ſmall bright ſpot on the ſlit of the horizon-vane, inſtead of the ſhade; which is a great improvement, if the glaſs be truly made; for, by this means, the inſtrument may be uſed in hazy weather, and a much more accurate obſervation made in clear weather than could be by the ſhadow.

Back-*ſtays of a ſhip*, are ropes belonging to the main-maſt and fore-maſt, and the maſts belonging to them, ſerving to keep them from pitching forwards, or over-board.—See *Tab. Ship. fig*. 1. *n*. 105. 63. 25.—They are divided into *breaſt-back-ſtays*, and *after-back-ſtays*.

Back-*worm*, a name given by *Sportſmen* to a diſeaſe very common to hawks, and called alſo the *filander*. The worms are lodged between the ſkin and the fleſh, and grow to a great length, ſome of them being not leſs than half a yard long. They are very troubleſome to the bird, and will at length kill it, if they be not deſtroyed in time. Their uſual place is under the ſkin of the lower part of the back, towards the rump.

There are ſeveral ſymptoms which diſcover the bird to be troubled with this diſeaſe; the principal are the ſtinking of its breath, the croaking and mourning in the night, ruffling and writhing the tail, and the ſmallneſs of the dung.

The beſt method of cure is this: ſqueeze out the juice of ſome ſtrong and well-grown wormwood, put into it as many cloves of garlic as it will conveniently cover; let the cloves be well cleaned of all ſkins, and pierced with holes; this is to ſtand a few nights, and afterwards one of the cloves is to be given, freſh taken out of the liquor every evening, for four nights together, and after a reſt of a few days, the ſame number given again, and ſo on till the diſeaſe is removed. Others give a ſcouring of waſhed aloes, muſtard-ſeed, and agaric, of each equal quantities.

BACOBA, in *Botany*, a name by which ſome authors call the banana-tree, or *muſa fructu brevieri*. Piſo.

BACON, ſwine's fleſh ſalted and dried in the chimney. Writers on this branch of œconomics give rules for the hanging, the ſalting, and curing of *bacon*, larding with *bacon*, &c.

This appears to be in general an extremely improper and unwholſome aliment, eſpecially for people who do not uſe great exerciſe; for thoſe who do, may almoſt eat any thing without injury. Swine's fleſh conſidered as an aliment is none of the beſt; and when hardened by ſalt, and dried by ſmoak, it is rendered more indigeſtible, and in conſequence of that, productive of obſtructions in a very great degree. We may add, that the fat of *bacon* frequently becomes rancid, and acrimonious, and often even excoriates the mouth and throat.

Bacon-*ſward*, denotes the thick outer ſkin taken off the lard or fat. Old hiſtorians and law writers ſpeak of the *ſervice of the bacon*, a cuſtom in the manor of Whichenovre in Staffordſhire, and priory of Dunmow in Eſſex; in the former of which places, by an ancient grant of the lord, a flitch of *bacon*, with half a quarter of wheat, was to be given to every married couple, who could ſwear, that having been married a year and a day, they would never within that time have once exchanged their mate for any other perſon on earth, however richer, fairer, or the like. But they were to bring two of their neighbours to ſwear with them, that they believed they ſwore the truth. On this the lord of another neighbouring manor, of Rudlow, was to find a horſe ſaddled, and a ſack to carry the bounty in, with drums and trumpets, as far as a day's journey out of the manor: all the tenants of the manor being ſummoned to attend, and pay ſervice to the *bacon*. Plott's Hiſt. Staff. c. x.

The *bacon of Dunmow*, firſt erected under Henry III. was on much the ſame footing; only the tenor of the oath was, that the parties had never once repented, or wiſhed themſelves unmarried again. Ib. c. x. ſect. 80.

BACTRIANUS, in *Zoology*, a ſpecies of the CAMEL.

BACTROPERATA, an ancient appellation given to philoſophers by way of contempt, denoting a man with a ſtaff and a budget.

The word is alſo written *bactropereta*. It is compounded of βακτρον, *ſtaff*, and πηρα, *bag*, or *budget*.

BACULARES, a ſect of ANABAPTISTS, ſo called, as holding it unlawful to bear a ſword, or any other arms, beſides a ſtaff.

BACULARIUS, in *Writers of the Middle Age*, an eccleſiaſtical apparitor, or verger; who carries a ſtaff, *bacculus*, in his hand, as an enſign of his office.

BACULE, in *Fortification*, a kind of portcullis, or gate, made like a pit-fall with a counterpoiſe, and ſupported by two great ſtakes. It is uſually made before the *corps de guard*, advancing near the gate.

BACULI; ſee BACILLI.

BACULI *Sti. Pauli*, or batoons of St. Paul, a kind of figured ſtones, of the ſame ſubſtance with thoſe reſembling the briſtles of ſome American *echini*, called by Dr. Plott *lapides Judaici*.

BACULOMETRY, the art of meaſuring acceſſible and inacceſſible diſtances, by the help of *baculi*, ſtaves, or rods. Schwenter has explained this art in his Geometria Practica; the rules of it are alſo laid down by Wolfius, in his Elements; Ozanam alſo gives an illuſtration of the principles of *baculometry*.

BACULOSUS *eccleſiaſticus*, in ſome *Ancient Laws*, is uſed for a biſhop or abbot, dignified with the paſtoral ſtaff, or crozier.

BACULUS *divinatorius*, or *virgula divina*, a branch of hazle-tree, of a forked figure, uſed for the diſcovery of mines, ſprings, &c. See VIRGULA *divina*.

BADGE, in *Naval Architecture*, ſignifies a ſort of ornament placed on the outſide of ſmall ſhips, very near the ſtern, containing either a window, for the convenience of the cabin, or a repreſentation of it. It is commonly decorated with marine figures, martial inſtruments, or ſuch like emblems.

BADGER, *melis*, or *taxus*, in the Linnæan ſyſtem of zoology, is a ſpecies of the *urſus*, or *bear*, with very long fore-claws.

The *badger* is called in ſome parts of England, the *brock*, the *gray*, and the *pate*. The Greeks had no name for this animal, unleſs their HYÆNA was the ſame creature.

The body of the *badger* is ſhort and thick; its neck very ſhort; and its hairs long, and very rigid, and ſtiff like hog's briſtles. Thoſe on the back are of a pale yellow near the root, brown or black in the middle, and at the extremities yellowiſh again; ſo that the creature appears, upon the whole, of a mixt colour, or what we call grey, on the back. The ſides and belly are covered with hairs, which are all over of a pale yellowiſh hue; and the legs and ſhoulders, as alſo the belly, are wholly black. It has a broad white line from the top of the head to the noſe; and on each ſide of this a very regular pyramidal black mark reaching up to the ears; and below theſe the jaws are whitiſh, ſo that the creature's face looks very oddly variegated. Its eyes are ſmall, and its ſnout wholly like a dog's. The teeth are like thoſe of a dog alſo; and the legs ſhort; its fore-feet have ſharp claws, with which it digs itſelf burrows in the earth. Its face is very like that of the fox, being broad at the top of the forehead, and ſharpening to a point at the noſe, ſo as to appear triangular in ſhape; and its cheeks are tumid, and furniſhed with ſtrong muſcles, whence it bites very hard. It feeds on inſects and ſmall animals, and on the roots of vegetables. We have them in many parts of England, particularly in the counties of Eſſex, Suſſex, and Warwickſhire.

This animal has a very ſtrong ſmell, and like the dormouſe grows fat by ſleeping. Under the tail it has a bag of ſecreted matter, which is very fœtid.

The *badger*'s ſkin is of ſome uſe in commerce. Their fat is ſold by the druggiſts, as a remedy againſt diſorders of the kidneys and the *ſciatica*; and their hair, for the making pencils for painters and gilders.

BADGER, from *bajulo*, *I carry*; a licenſed huckſter, or perſon privileged to buy corn, or other proviſions, and to carry them from one place to another to make profit of, without being reputed an ingroſſer.

In the ſtatutes he is alſo called a *kidder*, or *lader of corn*, 5 and 6 Ed. VI. c. 14. 5 El. c. 12.—We alſo read of *badgers*, or retailers of ſalt, 9 W. III. c. 6.

BADGER-*hunting*; ſee HUNTING.

BADIAGA, in the *Materia Medica*, the name of a ſort of ſpungy plant, common in the ſhops in Moſcow, and ſome other northern kingdoms.

The uſe of it is the taking away the livid marks from blows and bruiſes, which the powder of this plant is ſaid to do in a night's time.

We owe the knowledge of this medicine, and its hiſtory, to the accurate Buxbaum. He obſerves, that the plant is always found under water, and is of a very ſingular and peculiar nature.

It ſomewhat reſembles the *alcyoniums*, and ſomewhat the ſpunges, but differs greatly from both, in that it is full of ſmall round granules, reſembling ſeeds. It is of a looſe, light, and ſpungy ſtructure, and is made up of a number of fibres of an herbaceous matter, and is dry, rigid, and friable between the fingers.

This may ſerve as the generical character of the *badiaga*, of which this accurate obſerver has found three different ſpecies.—Linnæus makes it a ſpecies of ſpunge.

BADIAN, or **BADIANA**, the ſeed of the aniſe-tree that grows in China.

BADIGEON, a mixture of plaſter and free-ſtone, well ground together, and ſifted; uſed by ſtatuaries to fill up the little holes, and repair the defects in ſtones, whereof they make their ſtatues and other work.

The ſame term is alſo uſed by joiners, for ſaw-duſt mixed with ſtrong glue, wherewith they fill up the chaps, and other defects in wood, after it is wrought.

BADOUCE, in *Natural Hiſtory*, the Eaſt-Indian name of a fruit, very common in that part of the world. It is round, and of the ſize of one of our common apples; it is yellow on the outſide, and white within. It reſembles the *mangouſtan*; but its pulp is more tranſparent; its taſte is very agreeable, and has ſome reſemblance to that of our gooſeberries.

BÆCKEA, in *Botany*, a genus of the *octandria monogynia* claſs of plants; the calyx of which is a permanent perianthium, conſiſting of a ſingle funnel-ſhaped leaf, cut into five ſegments at the brim; the corolla conſiſts of five roundiſh ſpreading petals inſerted into the cup; the pericarpium is a globoſe capſule, made up of four valves, and containing four cells, in which are a few roundiſh angular ſeeds.

BÆTUS, in *Ichthyology*, a name given by Ariſtotle, and other of the ancient Greeks, to the fiſh called by the Latin writers *cottus*; particularly to that ſpecies of it which we call the *bull-head*, or the *millers-thumb*.

BÆTYLOS, or **BÆTYLION**, in *Antiquity*, a kind of ſtones worſhipped among the Greeks, Phrygians, and other nations of the Eaſt; ſuppoſed by modern naturaliſts to be the ſame with our *ceraunia*, or thunder-ſtone.

The prieſts of Cybele carried a *bætylos* on their breaſt, repreſenting the mother of the gods. But it is a miſtake to ſuppoſe, that this was the only repreſentation of the goddeſs that they carried about with them.

BAFETAS, or **BAFTAS**, a cloth made entirely of coarſe white cotton thread, which comes from the Eaſt Indies. Thoſe of Surat are the beſt.

BAG, in *Commerce*, a term uſed to ſignify different quantities of certain commodities.

A *bag* of almonds, for inſtance, is about 3 hundred weight; of aniſeeds, from 3 to 4 hundred; of pepper, from $1\frac{1}{4}$ to 3 hundred; of goats-hair, from 2 to 4 hundred; of cotton-yarn from $2\frac{1}{2}$ to $4\frac{1}{4}$, &c.

BAG, *ſaculus*, in *Medicine* and *Pharmacy*, denotes a kind of fomentation, prepared of proper ingredients, incloſed in a *bag*, to be applied externally to a part diſeaſed, for preſent relief.

Diſpenſatory writers deſcribe cordial *bags*, uſed in deliquiums; *bags* for the ſide, for the ſtomach, in weakneſſes of the ſtomach; anodyne *bags* to eaſe pain in any part.

Wines and ales are frequently medicated by putting into them *bags* full of proper ingredients.

Sweet *bags*, are compoſitions of perfumes, ſcented powders, and the like, incloſed in *bags*, to give a fragrancy to cloaths, &c.

BAG, in *Farriery*; ſee *Chewing* BALLS.

BAG, *oil*; ſee OIL.

BAG, *petty*; ſee PETTY.

BAGS, *ſand*; ſee SAND.

BAGADAT, a name by which ſome call the CARRIER pigeon, the *columba tabellaria* of Moore. This name is probably a corruption of the word Bagdat, the name of the city from whence they are ſometimes brought to Europe; being originally brought thither from Bazora.

BAGATINS, or *couriers*, a name given to the *pigeon* CARRIERS.

BAGAUDÆ, or **Bacaudæ**, an ancient faction of peaſants, or malecontents, who ravaged Gaul.

The Gauls being oppreſſed with taxes, roſe about the year of Chriſt 290, under the command of Amand and Elian; and aſſumed the name *bagaudæ*, which, according to ſome authors, ſignified, in the Gallic language, *forced rebels*; according to others, *tribute*; according to others, *robbers*; which laſt ſignification others allow the word had, but then it was only after the time of the *bagaudæ*, and doubtleſs took its riſe from them. Du-Cange.

BAGAUZE is the name which is given, in the Antilles iſlands, to the ſugar-canes, after they have paſſed through the mill. They are dried, and uſed for boiling the ſugar.

BAGGAGE is particularly uſed in the *Military Art*, for the neceſſaries, utenſils, apparel, &c. of the officers and ſoldiers. The *baggage* includes alſo women, children, ſuttlers, &c.

The *baggage* is well called by Roman writers, *impedimenta*, on account of the great trouble and expence attending it. Unleſs ſtrict diſcipline be kept, great inconveniences may ariſe from it; whence ſeveral military laws and ordinances relating to the *baggage*.

The *baggage*-waggons before a march are appointed a rendezvous, where they are marſhalled by the waggon-maſter-general, according to the rank the ſeveral regiments bear in the army. On a march, they are ſometimes ordered to follow the reſpective columns of the army, ſometimes to follow the march of the artillery, and ſometimes to make a column of themſelves. The general's *baggage* is generally firſt. If the army march from the right, the *baggage* of that wing has the van; if from the left, the *baggage* of the left has the van. Each waggon has a diſtinguiſhing flag, to ſhew to what regiment it belongs.

Packing up the **Baggage**, *vaſa colligere*, was a term among the Romans, for preparing to go to the war, or to be ready for an expedition.

The *formula* whereby the ſoldiers declared they were in readineſs, was, *vaſa conclamare.*

The Romans diſtinguiſhed two kinds of *baggage*, a *greater* and *leſs*: the *leſſer* was carried by the ſoldier on his back, and called *ſarcina*; conſiſting of the things moſt neceſſary to life, and which he could not do without. Hence *colligere ſarcinas*, packing up the *baggage*, is uſed for decamping, *caſtra movere.*

The *greater* and heavier was carried on horſes and vehicles, and called *onera.* Hence *onera vehiculorum*, *ſarcinæ hominum.* The *baggage*-horſes were denominated *ſagmentarii equi.*

The Roman ſoldiers in their marches were heavy loaden, inſomuch, that they were called by way of jeſt, *muli mariana*, and *ærumnæ.* They had four ſorts of luggage, which they never went without, viz. corn, or *buccellatum*, utenſils, *valli*, and arms.—Cicero obſerves, that they uſed to carry with them above half a month's proviſions; and we have inſtances in Livy, where they carried proviſions for a whole month. Their utenſils comprehended thoſe proper for gathering fuel, dreſſing their meat, and even for fortification, or intrenchment; and what is more, a chain for binding captives.

For arms, the foot carried a ſpear, ſhield, ſaw, baſket, *rutrum*, hatchet, *lorum*, *falx*, &c. Alſo ſtakes or pales, *valli*, for the ſudden fortifying a camp; ſometimes ſeven, or even twelve of theſe pales were carried by each man, though generally, as Polybius tells us, only three or four. On the Trajan column we ſee ſoldiers repreſented with this fardle of corn, utenſils, pales, &c. gathered into a bundle, and laid on their ſhoulders.

Thus inured to labour, they grew ſtrong, and able to undergo any fatigue in battle; the greateſt heat of which never tired them, or put them out of breath. In after-times, when diſcipline declined, this luggage was thrown on carriages, and porters ſhoulders.

The Macedonians were not leſs inured to hardſhip than the Romans: when Philip firſt formed an army, he forbid all uſe of carriages: yet with all their load, they would march in a ſummer's day, twenty miles in military rank.

BAGGING *of hops.* See **Hops.**

BAGNIO, an Italian term, ſignifying a bath: it is uſed by us for a houſe, with conveniences for bathing, ſweating, and otherwiſe cleanſing the body; and often for worſe purpoſes.

Bagnio is alſo become a general name in Turky for the priſons where their ſlaves are incloſed; it being uſual in thoſe priſons to have baths.

BAGNOLENSES, or **Bagnolians**, a ſect in the eighth century, who were thought Manichees, though they denied their errors.—They rejected the Old Teſtament, and part of the New; held the world to be eternal; and affirmed, that God did not create the ſoul when he infuſed it into the body.

They derive their name from *Bagnols*, a city in Languedoc, where they were chiefly found.

BAGOI, among the *Ancient Perſians*, were the ſame with thoſe called by the Latins, *ſpadones*, viz. a ſpecies of eunuchs, in whom the canal of the *penis* was ſo contorted by a tight *vinculum*, that they could not emit the *ſemen.*

BAGPIPE, a muſical inſtrument of the wind-kind, chiefly uſed in country places, eſpecially in the North.—It conſiſts of two principal parts; the firſt a leathern bag, which is blown up like a foot-ball, by means of a port-vent, or little tube, fitted to it, and ſtopped by a valve.

The other part conſiſts of three pipes, or flutes; the firſt called the great pipe, or drone, and the ſecond the little one, which paſs the wind only out at the bottom: the third has a reed, and is played on by compreſſing the bag under the arm, when full, and opening or ſtopping the holes, which are eight, with the fingers. The little pipe is ordinarily a foot long, that played on thirteen inches, and the port-vent ſix.

The *bagpipe* takes in the compaſs of three octaves.

This inſtrument was called by the Romans *utricularis tibia*, and the players thereon, *utricularii.* The invention of it is derived by ſome from Tubal; others aſcribe it to Pan; others to Mercury, to Faunus, to Marſyas, and to the young Sicilian ſhepherd Daphnis, who firſt compoſed paſtorals.

An anonymous French author has publiſhed a treatiſe of the *bagpipe*, *traité de la muſette*, with a new method of learning to play on it without a maſter. Fol. Par. 1672.

BAGRE, in *Ichthyology*, a ſmall bearded fiſh of the anguilliform kind, of which there are ſeveral ſpecies. It has no ſcales, but is covered over the whole body with a ſoft mucous ſkin of a ſilvery whiteneſs, and the beard, the head, and fins, are all of the ſame colour; the eyes are large, the mouth ſmall, and without teeth. It is caught in the American ſeas, and is eaten; but if any body is wounded by its thorns, it generally gives great pain, and is difficult to cure.

In the Linnæan ſyſtem, this fiſh is a ſpecies of the SILURUS.

Bagre *de Rio*, a name by which ſome call the fiſh more frequently known by the name of NHAMDIA.

BAGUETTE, in *Architecture*, a little round moulding, leſs than an aſtragal; ſometimes carved and enriched with foliages, pearls, ribbands, laurels, &c.—See *Tab. Archit. fig.* 2. and 11.

According to M. le Clerc, when the *baguette* is enriched with ornaments, it changes its name, and is called CHAPLET; and unornamented, it is a *bead.*

BAHAR, or **Barr**, a weight uſed at Ternate, Moca, in the Moluccas, Achem, and divers other parts of the Eaſt Indies.

There are two kinds, the *great*, wherewith ſpice is weighed, equal to 524lb. 9 oz. averdupois. The *little bahar* ſerves for the weighing quickſilver, vermilion, ivory, ſilk, muſk, and other precious wares, equal to 437lb. 9 oz. averdupois weight.

BAHIRA, among the *Ancient Arabs*, a name given to one of the four kinds of camels or ſheep, which for ſome reaſons of their religion, were turned out at liberty, with an ear-mark, no longer to be uſed for ſervice like other cattle.

The *bahira*, with the *ſabai*, *waſita*, and *hami*, were aboliſhed by Mahomet, as no ordinance of God.

Authors are not agreed as to the characters of the *bahira.*

BAIL, in *Law*, the ſetting at liberty one arreſted, or impriſoned upon an action either civil or criminal, under ſureties taken for his appearance at a day and place aſſigned.

It is called *bail*, becauſe hereby the party confined is *baillé*, from the Greek βαλλειν, delivered into the hands of thoſe who bind themſelves for his forthcoming: or from *bail*, uſed in the ſenſe of a guardian, into whoſe hands the party is put for ſecurity ſake.

Manwood diſtinguiſhes between *bail* and *mainpriſe* thus: he that is mainpriſed, is ſaid to be at large, and to go about at his liberty, without ward, till the time of appearance; whereas he who is let to *bail* to two or more men, is always accounted by law to be in their ward and cuſtody for the time; and they may, if they pleaſe, actually keep him in priſon.

In civil caſes every defendant is *bailable*; but in criminal matters it is otherwiſe. By the ancient common law, before and ſince the Conqueſt, all felonies were *bailable*, till murder was excepted by ſtatute. But the ſtat. Weſtm. 1. 3 Edw. I. cap. 15. takes away the power of *bailing* in treaſon, and divers inſtances of felony. And the ſtatute 1 and 2 Ph. & Mar. cap. 13. farther regulates this matter: ſo that now, no juſtices of the peace can bail, upon an accuſation of treaſon, of murder, of manſlaughter, if the priſoner be clearly the ſlayer, or an indictment be found againſt him; nor of felony, againſt thoſe who have broken priſon. Outlawed perſons, and thoſe who have abjured the realm, approvers, and perſons accuſed by them, perſons taken with the *mainour*, or in the fact of felony, perſons charged with *arſon*, and excommunicated perſons, are alſo inadmiſſible to *bail*. Thoſe who muſt be *bailed*, on offering ſufficient ſecurity, are perſons of good fame, charged with a ſuſpicion of manſlaughter, or inferior homicide; ſuch perſons, charged with petit larceny, or any felony, not before ſpecified, or with being acceſſory to any felony. Moreover, it is agreed that the court of king's bench (or any judge thereof, in time of vacation) may *bail* for any crime whatſoever, be it treaſon, murder, or any other offence, according to the circumſtances of the caſe; ſuch perſons only excepted, who are committed by either houſe of parliament during the ſeſſion, or ſuch as are committed for contempt by any of the king's ſuperior courts of juſtice.

The refuſal or delay of *bail* to perſons *bailable*, is an offence by the common law, as well as by the ſtatute Weſt. 1. 3 Edw. I. cap. 15. and the *habeas-corpus* act, 31 Car. II. cap. 2. And it is expreſly declared by ſtatute 1 W. & M. ſtat. 2. cap. 1. that exceſſive *bail* ought not to be required; though it is left with the courts to determine what *bail* is exceſſive. If the magiſtrate takes inſufficient *bail*, he is liable to be fined, if the criminal does not appear.

Bail is either *common*, or *ſpecial*.

Bail, *common*, is that given in actions of ſmall prejudice, or ſlight proof; in which caſes any nominal ſureties are taken; as John Doe, and Richard Roe: this being no other than a form of appearance.

Bail, *ſpecial*, is given in caſes of greater moment, where it is required that the ſureties be ſubſidy-men at the leaſt, and according to the value of the matter in queſtion.

It was enacted a few years ago, in compaſſion to the poor, that no perſons ſhould be held to ſpecial bail in any action brought for leſs than ten pounds.—This is obſerved as to writs iſſued out of the courts of Weſtminſter-hall.—But the marſhal's court continues to arreſt and hold to bail in actions for ſums exceeding forty ſhillings.

Bail *above*, or **Bail** *to the action*, ſucceeds the return of the writ, or the appearance of the perſon *bailed*. The perſons, who put in this *bail*, muſt be at leaſt two in number, and enter into a recognizance, whereby they do jointly and ſeverally undertake, that if the defendant be condemned in the action, he ſhall pay the coſts and condemnation, or render himſelf a priſoner, or that they will pay it for him; which recognizance is tranſmitted to the court in a ſlip of parchment, called the *bail-piece*. And, if required, the *bail* muſt juſtify themſelves by ſwearing that they are houſekeepers, and each of them worth double the ſum for which they are *bail*, after payment of all their debts.

Bail-*bond*, is a bond or obligation entered into by one or more ſureties, upon putting in *bail* to the ſheriff, inſuring the defendant's appearance at the return of the writ.

Bail *in error*, expreſſes the bail given by a perſon who brings a writ of error after verdict, or who is plaintiff in error.

Bail-*piece*. See **Bail** *above*.

Bails, *clerk of the*, is an officer belonging to the court of king's bench. He files the bail-pieces taken in that court, and attends for that purpoſe.

BAILE, or **Bale**, in the *Sea Language*.—The ſeamen call lading or caſting the water by hand out of a boat or ſhip's hold with buckets, cans, or the like, *bailing*.

When the water is thus *bailed* out, they ſay *the boat is freed*. They alſo call thoſe hoops that bear up the tilt of the boat, its *bailes*.

BAILEMENT, a term in *Law*, ſignifying the delivery of things, whether writings or goods, to another; ſometimes to be delivered back to the bailor, that is, to him who delivered them; ſometimes to the uſe of him to whom they are delivered, and ſometimes to a third perſon.

This delivery may be ſimple, as to keep for my uſe; or conditional, to be redelivered, when money is paid, &c. Upon *bailement*, or delivery of goods, theſe things are to be obſerved: if they are delivered to a man to be ſafely kept; and after, theſe goods are ſtolen from him, as he undertook to keep them ſafely, this ſhall not excuſe him; but if he undertook to keep them as his own, he ſhall be excuſed. 2 Inſt. 89. 4 Rep. 83. 1 Rol. abr. 338.

BAILIAGE is uſed for the office of a bailiff, for the place where he keeps his ſeat, and for the territory ſubject to his juriſdiction; which laſt is alſo denominated *bailiwick*.

Bailiage, *water*, or **Bailiage**, is an ancient duty received by the city of London, for all goods and merchandiſes brought into or carried out of the port.

BAILIFF, in a general ſenſe, denotes an officer appointed for the adminiſtration of juſtice within a certain diſtrict, called *bailiwick*.

The word is alſo written *baile*, *baily*, *bayly*, *baylie*, and *baillif*, in Latin *ballivus*.—It is formed from the French *baillif*, of *bail*, an old word, denoting a guardian, or governor of a youth, originally derived from the Latin *bajulus*, which ſignified the ſame.

Paſquier maintains, that *bailiffs* were originally a kind of commiſſioners, or judges delegate, ſent into the provinces to examine whether or no juſtice were well diſtributed by the counts, who were then the ordinary judges. Loyſeau, with more probability, refers the origin of *bailiffs* to the uſurpation and idleneſs of the great lords, who, having got the adminiſtration of juſtice into their own hands, and being weary of the burden, turned it over to their deputies, whom they called *bailiffs*.

Theſe *bailiffs* had at firſt the ſuperintendence of arms, of juſtice, and of the finances; but abuſing their power, they were by degrees ſtripped of it, and the greateſt part of their authority transferred to their lieutenants, who were to be men of the long robe. It is true, in France they have ſtill ſome prerogatives, as being reputed the heads of their reſpective diſtricts: in their name juſtice is adminiſtered, contracts, and other deeds paſſed, and to them is committed the command of the militia.

From theſe it was that the Engliſh *bailiffs* originally took both their name, and their office: for as the French have eight parliaments, which are ſupreme courts, whence no appeal lies, within the precincts of the ſeveral parliaments, or provinces, and in which juſtice is adminiſtered by *bailiffs*, at leaſt, by their lieutenants: ſo in England are ſeveral counties wherein juſtice was adminiſtered by a viſcount or ſheriff, who appears likewiſe to have been called *bailiff*; and his diſtrict or county, *bailiwick*. Further, the counties were again ſubdivided into hundreds; within which it is manifeſt juſtice was anciently rendered by officers called *bailiffs*. But thoſe hundred-courts are now ſwallowed up by the county-courts, certain franchiſes alone excepted, and the *bailiffs* name and office is grown into ſuch contempt, at leaſt theſe *bailiffs* of hundreds, that they are now no more than bare meſſengers, and mandatories within their liberties, to ſerve writs, and ſuch mean offices.

Bailiffs are of two kinds, *viz.* *bailiffs errant* or *itinerant*, and *bailiffs of franchiſes*.

Bailiffs *errant*, are thoſe whom the ſheriff appoints to go up and down the county to ſerve writs and warrants, ſummon county-courts, ſeſſions, aſſizes, &c. The ſheriff being anſwerable for the miſdemeanour of theſe *bailiffs*, they are uſually bound in an obligation for the due execution of their office, and thence called bound-*bailiffs*, which is vulgarly corrupted into a much more homely appellation.

Bailiffs *of franchiſes* are thoſe who are appointed by every lord within his liberty, to do ſuch offices therein, as the *bailiff* errant does at large in the county.

There are alſo *bailiffs of the foreſts*, and *bailiffs of manors*, who direct the huſbandry, fell trees, gather rents, pay quit-rents, &c.

The word *bailiff* ſtill retains ſome of its ancient ſignificancy; being applied alſo to the chief magiſtrates of ſeveral corporate towns, as Ludlow, Leominſter, &c.—And again, the government of ſome of the king's caſtles is committed to perſons called *bailiffs*; as, the *bailiff* of Dover caſtle.

We alſo meet with divers other ſpecies and denominations of *bailiffs* in theſe and the neighbouring countries; as *provincial*, *royal*, *itinerant*, and *heritable bailiffs*; *bailiffs* of France, of the empire, of boroughs, of courts baron, manors, &c.

Bailiff, *provincial*, *bailivus provincialis*, among the French, was an officer appointed to adminiſter juſtice in a certain province, or county, with an authority ſomewhat like that of our juſtice of aſſize, inſtituted by the dukes and counts in their ſeveral territories, after they had procured the inheritance of them. Theſe acted in the name, and by authority, not of the king, as juſticaries, but of the dukes, or counts, who appointed them, and whoſe deputies they were. Spelman takes them to be the ſame with what, among our Saxon anceſtors, were denominated *aldermen of counties*, and *graves* or *reves*, which afterwards became *vicecomites*, and ſheriffs.

Appeals lay from theſe to the *bailiffs* of France, *bailivi Franciæ*, who were thoſe appointed over the provinces originally belonging to the crown.

Bailiffs, *royal*, *bailivi regii*, were thoſe over provinces afterwards annexed to the crown. Something like theſe ſtill ſubſiſts in Scotland, under the title of high or heretable *bailiffs*; as thoſe of Cunningham, Carrick, and Kyle; the firſt in the families of the earls of Eglington, the ſecond of the earl of Caſſils, the third, of the earl of Loudon.

Bailiffs *of boroughs*, *bailivi burgorum*, were magiſtrates anciently in cities and towns, anſwering, in ſome meaſure, to what of later times was called *portgrave*, *mayor*, &c. Canterbury was a *bailiff* town five hundred years before it was made a mayor town. Weſtminſter, Southwark, Scarborough, &c. are ſtill governed by *bailiffs*.

Bailiffs differ in this from mayors, that the latter are always ſingle in one place, whereas there were uſually two *bailiffs* to a city, as formerly at London, and ſometimes four, as at Norwich.

Bailiff *of the empire* was anciently the vicar or regent of the empire; as appears from a letter of Henry of Flanders to pope Innocent III. wherein he ſays, the princes, barons, and knights, have elected me *bailiff of the empire*; *bailivus imperii*.

Bailiff, *water*, is an officer anciently eſtabliſhed in all port-towns, for the ſearching of ſhips; as appears from 28 Hen. VI. cap. v.

There is ſuch an officer ſtill on foot in the city of London, who ſuperviſes and ſearches all fiſh brought thither; and gathers the toll ariſing from the river of Thames.—He attends alſo on the lord-mayor in his expeditions by *water*, and hath the principal care of marſhalling the gueſts at the table.—He alſo arreſts men for debt, or other perſonal or criminal matters on the river of Thames, by warrant of his ſuperiors, &c.

BAILIWICK, Bailywick, or **Bayliwick**, the territory of a bailiff; or the place within which his juriſdiction is terminated.

BAILO, or **Balio**, a name given at Conſtantinople, to the embaſſador of Venice reſiding at the Porte; who alſo does the office of conſul of his nation.

The word is doubtleſs the remains of the word *bajulus*, which the modern Greeks and Turks have formed into *bailo*. The Venetian conſuls at Aleppo, Alexandria, Smyrna, and other parts of the Levant, are alſo denominated *bailo*.

BAIOCCO, a money in modern Rome, equivalent to a tenth part of the *julio*, or a hundredth part of the ducat.

The *baiocco* is worth about nine deniers, French money.

BAIRAM, a name given to the great annual feaſt of the Mahometans.

The word is alſo written, by ſome authors, more conformably to the oriental orthography, *beiram*. It is originally Turkiſh, and ſignifies literally, a *feaſt-day*, or *holiday*.

The Mahometans have two *bairams*, the *great*, and the *little*, which Scaliger, Erpenius, Rycaut, Hyde, Chardin, Bobovius, and other European writers, commonly interchange, giving the appellation *great* to that which the Turks call little, and *vice verſa*.

This feaſt commencing with the new moon, the Mahometans are very ſcrupulous in obſerving the time when the new moon commences; to which purpoſe, obſervers are ſent to the tops of the higheſt mountains, who, the moment they ſpy the appearance of a new moon, run to the city, and proclaim *muzodaluk, welcome news*; as it is the ſignal for beginning the feſtivity.

The ceremonies are deſcribed at large by Rycaut and Tournefort.

Bairam, *the little*, is properly that held by the pilgrims at Mecca, commencing on the tenth of Dhu Ihajia, when the victims are ſlain, and laſting three days. This is called by the Arabs, *id al adha*, that is, the feaſt of the ſacrifice, as being celebrated in memory of the ſacrifice of Abraham, whoſe ſon God redeemed with a great victim. By European writers it is called the *leſſer bairam*, as being leſs taken notice of by the generality of the people, who are not ſtruck with it, becauſe the ceremonies attending it are performed at Mecca, the only ſcene of the ſolemnity. Sale's Prel. Diſc.

The little *bairam* holds for three days, during which no work is done; but preſents paſs from one to another, with many other manifeſtations of joy. If the day after Ramadan ſhould prove ſo cloudy, as to prevent the ſight of the new moon, the *bairam* is put off to the next day, when it begins, though the moon be ſtill obſcured. When they celebrate this feaſt, after numerous ceremonies, or rather ſtrange mimicries, in their moſque, they end it with a ſolemn prayer againſt the infidels, to root out Chriſtian princes, or to arm them one againſt another, that they may have an opportunity to extend the borders of their law.

BAIT, *white*, in *Ichthyology*, a ſmall fiſh, which is caught in great plenty, during the month of July, in the river Thames, near Blackwall, and which is eſteemed very delicious. Theſe are the fry of ſome fiſh, and have been variouſly attributed to the ſhad, to the ſprat, the ſmelt, and the bleak fiſh. Pennant obſerves, that this belongs to the genus of *cyprinus*, becauſe it has only three branchioſtegous rays, and one dorſal fin; its body is compreſſed like that of the bleak; its uſual length is two inches; the under jaw is the longeſt; the irides are ſilvery, and the pupil black; the dorſal fin conſiſts of about fourteen rays; the ſide line is ſtrait; the tail forked, and the tips black. Zoology, vol. iii. p. 372.

Bait, in *Fiſhing*. *Baits* make a capital article in angling; on the choice whereof much of the ſport depends; different ſeaſons, and different game, having their appropriate *baits*. The red, or earth-worm is good for the ſmall fry moſt of the year round; and ſmall fiſh are good *baits* for pikes at all times; ſheep's blood and cheeſe are good *bait* in April; the bobs, dried waſps, and bees, are for May, brown flies for June; maggots, hornets, waſps, and bees, for July; ſnails in Auguſt; graſshoppers in September; corn, bramble-berries, and ſeeds, at the fall of the leaf; artificial paſtes are for May, June, and July, and frogs for March.

Baits are either natural or artificial.

Baits, *natural*, include all kinds of worms, as the red worm, maggot, &c. alſo frogs, graſshoppers, hornets, bees, ſnails, roaches, bleak, gudgeon, and loaches, &c.

Theſe *baits* are to be kept each ſort ſeparate, and fed with thoſe things which they like beſt.

The red worm is to be kept in rich black mould, with a little fennel chopped among it; a little ox or cow dung, newly made, is alſo a very acceptable thing to them. They may be kept in a box, with ſmall holes in it, or in a bag. Red worms, and all other ſorts, ſcour quickly, and grow very tough and bright, on putting them into a thin clout, greaſed with freſh butter, or greaſe, before they are put into moſs.

This is the beſt of all things to keep them in; but the moſs muſt be firſt very well waſhed, and the water ſqueezed dry out again. As to food, a ſpoonful of cream, dropped into the moſs once in three or four days, is better than any thing elſe. The moſs is to be changed every week, and kept in a cool place.

White large maggots are an excellent *bait* for many ſorts of fiſh, and they are to be kept on ſheep's ſuet and liver, chopped ſmall.

Frogs and graſshoppers are to be kept in wet moſs, and long graſs; and, on moiſtening this afreſh every evening, it will keep a long time. They are to have their legs and wings cut off, when they are uſed.

Live flies muſt be uſed as they are caught; but waſps, bees, hornets, and humble-bees, may be preſerved dry.

The beſt method of drying them, is putting them in an oven after the bread is drawn. Care muſt be taken that they are not ſcorched; and when they are taken out, they are to have the heads dipped in ſheep's blood. This is to be ſuffered to dry on, and then they are to be preſerved in a box. They will keep for three or four months.

Baits, *artificial*, are flies of all kinds and ſhapes, made of ſilk, feathers, and the like. The variety of which is very great; there being not only different ones for every ſeaſon and month of the year, but almoſt for every fiſh.

There are ſeveral *artificial baits*, for intoxicating of fowl, and yet without tainting or hurting the fleſh, ſo as to make it unfit to eat.

Baits, *dead*, are paſtes of divers ſorts, made of corn, cheeſe, fruits, waſps, ſheeps blood, boiled beans, &c.

Bait, *ledger*, is that which remains fixed in one certain place, while the angler may be abſent; uſed eſpecially in fiſhing for pike.

Bait, *walking*, is that which the angler attends, while he keeps moving from place to place, in queſt of the fiſh.

Baits *of hemp*, denote bundles of that plant, pulled and tied up, ready for ſteeping in water. See **Fly** and **Fishing**.

Baiting, or rather **Bating**, in *Falconry*, is when a hawk flutters with her wings, either from perch or fiſt, as if it were ſtriving to get away.

Baiting alſo denotes the act of ſmaller or weaker beaſts attacking and harraſſing greater and ſtronger ones.

In this ſenſe, we hear of the *baiting* of bulls and bears by maſtiff or bull dogs, with ſhort noſes, that they may take the better hold. Whales are *baited* by a kind of fiſh called *oriæ*, or *killers*; ten or twelve of which will attack a young whale at once, and not leave him till he is killed. Philoſoph. Tranſact. N°. 287. p. 265.

Houghton gives us the hiſtory of *bull-baiting*, a ſport-peculiar to England, and ſavouring, like ſome others, of our ancient Gothiciſm. Some of our countrymen are ſaid to be fond enough of it, to buy bulls on purpoſe, and travel with them, at great charge, to all the chief towns around. The *baiting* this animal, makes his fleſh tenderer and more digeſtible. In reality, it diſpoſes it for putrefaction, ſo that, unleſs taken in time, *baited* fleſh is ſoon loſt.

BAJULATIO, the office of a *bajulus*, or bailiff.

BAJULUS, an ancient officer in the court of the Greek emperors; whereof there were ſeveral degrees: as the grand *bajulus*, who was preceptor of the emperor, and the ſimple *bajuli*, who were ſub-preceptors.

Hence the Italians uſe the word *bajulus* of a kingdom, in the ſame ſenſe with *protector* of a kingdom among the Engliſh. The word is derived from the Latin verb *bajulare*, to carry, or bear a thing in the arms or on the ſhoulders.

Children, and eſpecially thoſe of condition, had anciently, beſide their nurſe, a woman called *gerula*, as appears from ſeveral paſſages of Tertullian; when weaned, or ready to be weaned, they had men to carry them about and take care of them, who were called *geruli*, and *bajuli*, *à gerendo & bajulando*.

Bajulus is alſo uſed by Latin writers in the ſeveral other ſenſes, wherein *bailiff* is uſed among us.

Bajulus was alſo the name of a conventual officer in the ancient monaſtries, to whom belonged the charge of gathering and diſtributing the money and legacies left for maſſes and obits; whence he was alſo denominated *bajulus obituum novorum*.

BAIZE, in *Commerce*. See **Bays**.

BAKER's *central rule*. See **Central** *rule*.

BAKING, the art of preparing bread, or of reducing meals of any kind, whether ſimple or compound, into bread.

The forms of baking among us may be reduced to two; the one for unleavened, the other for leavened bread.

The learned are in great doubt about the time when *baking* firſt became a particular profeſſion, and *bakers* were introduced. It is generally agreed they had their riſe in the Eaſt, and paſſed from Greece to Italy after the war with Pyrrhus, about the year of Rome 583. Till which time every houſewife was her own *baker:* for the word *piſtor*, which we find in Roman authors before that time, ſignified a perſon who ground or pounded the grain in a mill or mortar to prepare it for *baking*, as Varro obſerves. According to Athenæus, the Cappadocians were the moſt applauded *bakers*, after them the Lydians, then the Phœnicians.

To the foreign *bakers* brought into Rome, were added a number of freed-men, who were incorporated into a body, or, as they called it, a *college*; from which neither they nor their children were allowed to withdraw.—They held their effects in common, and could not diſpoſe of any part of them. Each bake-houſe had a *patronus*, who had the ſuperintendency thereof; and theſe *patroni* elected one out of their number each year, who had the ſuperintendence over all the reſt, and the care of the college. Out of the body of the *bakers* every now-and-then one was admitted among the ſenators.

To preſerve honour and honeſty in the college of *bakers*, they were expreſly prohibited all alliance with comedians and gladiators; each had his ſhop or bake-houſe, and they were diſtributed into fourteen regions of the city. They were excuſed from guardianſhips, and other offices, which might divert them from their employment.

By our own ſtatutes, *bakers* are declared not to be handicrafts.—No man for uſing the myſteries or ſciences of *baking*, brewing, ſurgery, or writing, ſhall be interpreted a handicraft. 22 H. VIII. cap. 13.

The *bakers* of London make the nineteenth company. They were incorporated about the year 1307, and conſiſt of a maſter, four wardens, thirty aſſiſtants, and one hundred and forty-nine on the livery, beſide the commonalty. The *bakers* of London are under the juriſdiction of the lord-mayor and aldermen.

A penalty is inflicted on *bakers* ſelling at a higher price than is ſet by the lord-mayor. See 3 Geo. II. cap. 29. and by 22 Geo. II. cap. 46. *bakers* are to ſet their marks on their bread. The aſſize of bread is regulated by ſeveral ſtatutes. See 8 Anne, cap. 18. 31 Geo. II. cap. 29. 32 Geo. II. cap. 18. 3 Geo. III. cap. 6. and 11.

The manner of *baking* at Otaheite, and in many iſlands of the South Seas, is as follows. They make fire by rubbing the end of one piece of dry wood upon the ſide of another, juſt as our carpenters whet a chiſſel; they then dig a pit in the ground about half a foot deep, and two or three yards in circumference; they pave the bottom of it with large pebble ſtones, which they lay very ſmooth and even, and then kindle a fire in it with dry leaves, and the huſks of the cocoa-nut. When the ſtones are properly heated, they take out the embers, and rake up the aſhes on every ſide, then cover the ſtones with a layer of green cocoa-nut tree leaves, and wrap up the animal that is to be dreſſed, in the leaves of the plantain. If it be a ſmall hog, or dog, they wrap them up whole; if large, they ſplit them. When placed in the pit, they cover it with hot embers, and lay upon them bread-fruit and yams wrapped up in like manner in the leaves of the plantain. Over theſe they ſpread the remainder of the embers, mixing among them ſome of the hot ſtones, with more cocoa-nut tree leaves, and then cloſe up all with earth, ſo that the heat is kept in. After a time proportioned to what is dreſſing, the oven is opened, and the meat taken out, tender, full of gravy, and, as captain Wallis thought, better in every reſpect than when it is dreſſed any other way. Having no veſſels in theſe iſlands that would bear the fire, the inhabitants of them had no idea of hot water, or its effects, and therefore always roaſted or baked their meat in the manner above related. Hawkeſworth's Account of Voyages into the Southern Hemiſphere, vol. i. p. 484.

BAKING is uſed for the expoſing a ſubſtance, incloſed in a cruſt, to the fire.

This makes an operation in pharmacy, uſed in the making of an oil of earth-worms, commended againſt arthritic, ſhooting pains. The worms, having ſtood ſome time to putrify, are covered up, together with the veſſel they are in, with a wheaten cruſt, and ſet in the oven: by which they are converted to a thick yellow oily liquor.

BAKING *porcelain*. See PORCELAIN.

BALA, in *Botany*, a name uſed by ſome authors for the *muſa*, or plantane-tree, called alſo the *banana* and *ficoides* by others.

BALAAMITES, the name of a ſect in the firſt age of Chriſtianity, of the ſame import in the Hebrew language with Nicolaitans, in the Greek. See NICOLAITANS.

BALAENA. See WHALE.

BALAM PULLI, in *Botany*, a name uſed by ſome authors for the tree whoſe fruit is the tamarind of the ſhops.

BALANCE, or BALLANCE, *libra*, one of the ſix ſimple powers in *Mechanics*, uſed principally for determining the equality, or difference of weights in heavy bodies, and conſequently their maſſes or quantities of matter.

The *balance* is of two kinds, *viz.* the *ancient* and *modern*.

The *ancient* or *Roman*, called alſo *ſtatera Romana*, or *ſteel-yard*, conſiſts of a lever or beam, moveable on a centre, and ſuſpended near one of its extremes: on one ſide the centre are applied the bodies to be weighed, and their weight is meaſured by the diviſion marked on the beam; on the other ſide is the place where a weight moveable along it keeps the *balance* in equilibrio.

The *modern balance*, now ordinarily in uſe, conſiſts of a lever or beam ſuſpended, exactly by the middle; to the extremes whereof are hung ſcales, or baſons.

In each caſe, the beam is called the *jugum*, and the two moieties thereof on each ſide the axis, the *brachia*, or *arms*; and the handle whereby it is held, *trutina*; the line on which the beam turns, or which divides its brachia, is called the *axis*; and, when conſidered with regard to the length of the brachia, is eſteemed but a point, and called the centre of the *balance*; and the places where the weights are applied, the *points of ſuſpenſion* or *application*.—That ſlender part perpendicular to the *jugum*, whereby either the *equilibrium*, or preponderancy of bodies is indicated, is called the *tongue of the balance*.

In the Roman *balance*, therefore, the weight uſed for a counterbalance is the ſame, but the points of application are various; in the common *balance*, the counterpoiſe is various, and the point of application the ſame.

The principle on which each is founded is the ſame, and may be conceived from what follows.

BALANCE, *doctrine of the*.—The beam AB (*Tab. Mechanics*, *fig*. 9.) the principal part of the *balance*, is a lever of the firſt kind, which (inſtead of reſting on a *fulcrum* at C, its centre of motion) is ſuſpended by ſomewhat faſtened to C, its centre of motion. So that the mechaniſm of the *balance* depends on the ſame theorem as that of the lever.

Hence, as the known weight is to the unknown, ſo is the diſtance of the unknown weight from the centre of motion, to the diſtance of the known weight, where the two weights will counterpoiſe each other; conſequently, the known weights ſhew the quantity of the unknown.

Or thus: the action of a weight to move a *balance* is by ſo much greater, as the point preſſed by the weight is more diſtant from the centre of the *balance*; and that action follows the proportion of the diſtance of the ſaid point from that centre. When the *balance* moves about its centre, the point B deſcribes the arch B*b* (*fig*. 10.); whilſt the point A deſcribes the arch A*a*, which is the biggeſt of the two: therefore in the motion of the *balance*, the action of the ſame weight is different, according to the point to which it is applied: hence it follows, that the proportion of the ſpace gone through by the point at A is as A*a*, and at B as B*b*, but thoſe arches are to one another, as CA, CB.

BALANCE, *varieties in the application of the*.—If the brachia of a *balance* be divided into equal parts, one ounce applied to the ninth diviſion from the centre, will equiponderate with three ounces at the third; and two ounces at the ſixth diviſion act as ſtrongly as three at the fourth, &c.

Hence it follows, that the action of a power to move a *balance* is in a *ratio* compounded of the power itſelf, and its diſtance from the centre: for that diſtance is as the ſpace gone through in the motion of the *balance*.

It may be here obſerved, that the weight equally preſſes the point of ſuſpenſion at whatever height it hangs from it, and in the ſame manner as if it was fixed at that very point: for the weight at all heights equally ſtretches the cord by which it hangs.

A *balance* is ſaid to be in *equilibrio*, when the actions of the weights upon the brachia to move the *balance*, are equal, ſo as mutually to deſtroy each other. When a *balance* is in equilibrio, the weights on each ſide are ſaid to be equiponderate: unequal weights may alſo *equiponderate*; but then the diſtances from the centre muſt be reciprocally as the weights. In which caſe, if each weight be multiplied by its diſtance, the products will be equal; which is the foundation of the ſteel-yard.

Thus in a *balance* whoſe brachia are very unequal, a ſcale hanging at the ſhorteſt, and the longeſt divided into equal parts: if ſuch a weight be applied to it, as at the firſt diviſion ſhall equiponderate with one ounce in the ſcale; and the body to be weighed be put into the ſcale, and the above-mentioned weight be moved along the longeſt *brachium*, till the *equilibrium* be found; the number of diviſions between the body and the centre ſhews the number of ounces that the body weighs, and the ſubdiviſions the parts of an ounce.

On the ſame principle alſo is founded the *deceitful balance*, which cheats by the inequality of the *brachia*: for inſtance, take two ſcales of unequal weights, in the proportion of 9 to 10, and hang one of them at the tenth diviſion of the *balance*

balance above deſcribed, and another at the ninth diviſion, ſo that there may be an *equilibrium*; if then you take any weights, which are to one another as 9 to 10, and put the firſt in the firſt ſcale, and the ſecond in the other ſcale, they will equiponderate.

Several weights hanging at ſeveral diſtances on one ſide, may equiponderate with a ſingle weight on the other ſide: to do this it is required, that the product of that weight, by its diſtance from the centre, be equal to the ſum of the products of all the other weights, each being multiplied by its diſtance from the centre.

To demonſtrate which, hang three weights of an ounce each, at the ſecond, third, and fifth diviſions from the centre, and they will equiponderate with the weight of one ſingle ounce applied to the tenth diviſion of the other *brachium*; and the weight of one ounce at the ſixth diviſion, and another of three ounces at the fourth diviſion, will equiponderate with a weight of two ounces on the other ſide at the ninth diviſion.

Several weights unequal in number, on either ſide, may equiponderate: in this caſe, if each of them be multiplied by its diſtance from the centre, the ſums of the product on either ſide will be equal; and if thoſe ſums be equal, there will be an *equilibrium*.

To prove which, hang on a weight of two ounces at the fifth diviſion, and two others, each of one ounce, at the ſecond and ſeventh; and on the other ſide hang two weights, each alſo of one ounce, at the ninth and tenth diviſions; and theſe two will equiponderate with thoſe three. A *balance* of this kind, the arms of which are equally divided, has been ſometimes called an *arithmetical balance*; becauſe the arithmetical operations of addition, ſubtraction, multiplication, diviſion, and the rule of three, may be eaſily performed by it. Graveſande Phyſices Elementa Math. vol. i. p. 50.

To the juſtneſs of a *balance* it is required, that the points of ſuſpenſion be exactly in the ſame line as the centre of the *balance*; that they be preciſely equidiſtant from that point on either ſide; that the brachia be as long as conveniently they may; that there be as little friction as poſſible in the motion of the beam and ſcales; and laſtly, that the centre of gravity of the beam be placed a little below the centre of motion.

Mr. Ludlam has contrived a *balance* of a new conſtruction for the woollen manufacturers. Their thread is made into ſkains of the ſame length; and the fineneſs of it is denominated from the number of ſkains which go to a pound; the coarſeſt being about twelve to the pound, and the fineſt near ſixty. This machine is deſigned for weighing the ſkains, in order to determine their reſpective fineneſs. It reſembles the beam of a common pair of ſcales; at one end of it is a fixed weight, called the counterpoiſe, and at the other end a hook; in ſorting, the ſkain to be examined is put upon the hook, and ſinks down more or leſs, according to its weight, till the counterpoiſe, by riſing, balances it; and then the index, or cock of the beam, points out on a graduated arch the number of ſkains of that ſort which go to the pound.

A ſcale, inſtead of the hook, might be uſed for weighing money, if the arch were properly divided for that purpoſe. See a drawing of this machine, and the explanation of the theory of it, in Phil. Tranſ. vol. lv. Nº 25, p. 205.

BALANCE *of the air*, is uſed to denote the weight of that fluid, whereby, according to its known property, it preſſes where it is leaſt reſiſted, till it be equally adjuſted in all parts.

BALANCE, *aſſay*, is a nice *balance* uſed in determining the exact weight of minute bodies. Its ſtructure is very little different from that of the common ſort; except that it is made of the beſt ſteel, and fitted for moving with the ſmalleſt weight.

BALANCE, in *Aſtronomy*. See LIBRA.

BALANCE *of a clock or watch* is that part of either, which by its motion regulates and determines the beats.—The circular part of it is called the *rim*, and its ſpindle the *verge*: there belong to it alſo two *pallets* or nuts, which play in the fangs of the crown-wheel: in pocket-watches, that ſtrong ſtud in which the lower pivot of the verge plays, and in the middle of which one pivot of the crown-wheel runs, is called the *potence*: the wrought piece which covers the *balance*, and in which the upper pivot of the *balance* plays, is the COCK: the ſmall ſpring in the new pocket-watches is called the REGULATOR.

BALANCE, *hydroſtatical*, is an inſtrument for determining the ſpecific gravities of bodies. See HYDROSTATICAL.

BALANCE, in the *Accounts of Merchants*, is, when the debtor and creditor ſides of any diſtinct account are equal. In ſuch caſe the account is ſaid to be *balanced*.

Balance of a merchant, or trader's books. This is a branch of the art of accountantſhip. In the method of keeping the books of traders, according to that excellent art of charge and diſcharge by double entry, ſuch books, if correctly kept, will always be fit for a general *balance*. For ſuch is the excellency of that method, that the books of themſelves muſt neceſſarily *balance* on the whole, though not in every diſtinct account, throughout the ledger.

BALANCE, among *Painters*. See EQUILIBRIUM.

BALANCE *of power*, in the *Political Syſtem*, originates from, and is maintained by the alliances of different nations, as their circumſtances and intereſts may require.

BALANCE *of trade* denotes an equality between the value of commodities bought of foreigners, and the value of the native productions tranſported into other nations.

It is neceſſary that this *balance* be kept in trading nations; and if it cannot be made in commodities, it muſt in ſpecie. Hereby it is, that we know whether a nation gains or loſes by foreign trade, or any branch thereof; and conſequently, whether that nation grows richer or poorer.

There are divers *methods of arriving at this knowledge.*

1. That moſt received is, by taking a ſtrict ſurvey of what proportion the value of the commodities exported bears to thoſe imported. If the exports exceed the imports, it is concluded that nation is in a gaining way, it being ſuppoſed that the overplus is imported in bullion, and ſo increaſes the treaſure of the nation.—But this method is very uncertain: by reaſon of the difficulty of obtaining a true account either of the exports or imports. (1.) Cuſtom-houſe books are no rule in this caſe; by reaſon of the running of goods, eſpecially many fine commodities of ſmall bulk, but great value: as point, lace, ribbands, ſilks, jewels, fine linens, &c. alſo wines, brandies, teas, and the like. (2.) To which add various accidents which affect the value of the ſtock either ſent out or brought in; as loſſes at ſea, markets, bankrupts, ſeizures, &c. (3.) Then, as to particular trades, there are divers countries to which the manufactures we ſend out are inconſiderable, yet the goods we import are neceſſary to the carrying on our trade in general; as the trade to Norway, &c. for timber and naval ſtores. Alſo the Eaſt India company, whoſe imports much exceed their exports; yet is their trade highly advantageous to the nation: as we ſell much of theſe imports to foreigners, and wear others, e. gr. callicoes, and ſilks, in lieu of linens and ſilks from other countries, which would coſt us dearer.

2. The ſecond method is, by obſerving the courſe of exchange, which, if generally above the intrinſic value or par of the coins of foreign countries, ſhews that we not only loſe by ſuch exchanges, but that we loſe by the general courſe of our trade.—But this method is imperfect; ſince we trade to many countries, with which there is no ſettled courſe of exchange.

3. A third way is, by obſerving the increaſe and diminution of our coin and bullion.—But this is the leaſt obvious and palpable of any; for the money ſeems to vulgar eyes moſt plentiful when there is the leaſt occaſion for it; and more ſcarce as the occaſions for employing it are more numerous and advantageous: by which means we ſeem to have moſt money when we have leaſt trade. Thus, e. gr. when the Eaſt India company have a great ſale to make, money is generally found to be ſcarce in London; becauſe the occaſion engages people to employ quantities which they had provided for that purpoſe. So, a high rate of intereſt will make money ſeem ſcarce, becauſe every man as ſoon as he can make up a ſmall ſum, employs it in the purchaſe of ſtock.

4. The fourth method (which is Sir Joſ. Child's) is derived from the increaſe, or the diminution, of our trade and ſhipping in general: for if theſe diminiſh, whatever profit particular men may make, the nation loſes; and *vice verſa*. He lays it down as an infallible rule, that in all parts of the world wherever trade is great, and continues ſo, and grows daily greater, and the ſhipping increaſes for a ſucceſſion of ages, that trade muſt be nationally profitable. Even in the caſe of a merchant, who, by driving a great trade, ruins himſelf; though he loſe, what a multitude are gainers by him? as the king, and cuſtom-houſe officers; beſides ſhipwrights, butchers, brewers, bakers, ropemakers, porters, carmen, manufacturers, mariners, &c.

BALANCE, *to*, in *Sea Language*, ſignifies to contract a ſail into a narrower compaſs, in a ſtorm, by retrenching, or folding up a part of it at one corner.

BALANCE *of the boom-main-ſail*, is performed, after all its reefs are taken in, by rolling up a ſimilar portion of the hindmoſt, or aftmoſt lower corner called the *clue*, and faſtening it ſtrongly to the boom, ſecuring it from being fretted by the cord that faſtens it.

BALANCE *of the mizen* is thus performed; the *mizen-yard* is lowered a little, a ſmall portion of the ſail is rolled up at the *peek*, or upper corner, and faſtened to the yard, about a fifth inward from the outer end, or yard-arm, towards the maſt.

BALANCE-*fiſh*, in *Zoology*, an Engliſh name for the fiſh called the *zygæna* by authors, and by ſome the *hammer-headed ſhark*, or *libella*. It is, according to the new Artedian ſyſtem, a ſpecies of the *ſqualus*, and is diſtinguiſhed, by that author, by the name of the *ſqualus*, with a very broad and tranſverſe head, reſembling a hammer.

BALANCERS, in *Natural Hiſtory*, are two ſmall oblong bodies, placed under the wings of the two-winged flies, and, in ſome meaſure, ſupplying the office of the two other wings, which thoſe of the four-winged claſs are poſſeſſed of.

BALANCIER, a machine uſed in the ſtriking of coins, medals, counters, and the like. See COINAGE.

BALANI, in *Natural Hiſtory*, the name of a genus of ſhell-fiſh, belonging to the claſs of multivalves, approaching to the ſhape of an acorn (βαλανος), and uſually growing to the ſhells of the larger ſort of ſea ſhell-fiſh: they are commonly called in Engliſh, centre ſhells. See the figure in *Table of Shells*, N° 26.

It is a very common error to miſtake the names of the multivalve ſhells, ſo far, as to confound the *balani* and *conchæ anatiferæ*, as they are called, together; though they be extremely different.

The *balani* are found affixed in cluſters to a thouſand different ſubmarine things; ſuch as the harder ſea-plants, all ſorts of teſtaceous, and cruſtaceous ſea-animals, rocks, and timber. They may be arranged under the two ſubdiſtinctions of wide and narrow-mouthed, including ſeveral ſpecies. The ſmall fiſh which nature has covered with this ſhell, is of a very admirable ſtructure. Lewenhoek acknowledges, that he never met with any animal, in which ſo many objects of wonder lay open to the naked eye as in this. It has twelve legs or arms which are crooked, and garniſhed with a great number of hairs: theſe twelve they elevate on all occaſions; and, beſide theſe, they have eight others, which are much ſmaller, and ſtand lower. Their body is, in all reſpects, like that of the *concha anatifera*. It is cartilaginous, and mucous, and of an ill taſte. The ſhell ſhapes itſelf, at the baſe, to the figure of the ſurface of whatever it grows to, and ſticks very firmly to it.

The *balanus*, in the Linnæan ſyſtem, is a ſpecies of the LEPAS.

BALANITES, in *Natural Hiſtory*, a name given by the ancients to a ſtone, ſeeming to have been one of the ſemipellucid gems. They deſcribe two ſpecies of it; the one of which was yellow, and the other green, but each having veins of a flame colour. Their deſcriptions are too ſhort for us to be able to aſcertain, what ſtones, among thoſe known at this time, they meant.

Some think the *balanites* to have been the *lapis Judaicus*, on account of its acorn-like figure and ſize. Plin. Nat. Hiſt. lib. xxxvii. cap. 10. Ed. Hardouin.

BALANUS, βαλανος, or GLANS, is ſometimes uſed by anatomiſts for the nut of the yard. Sometimes alſo the clitoris is ſo called.

BALANUS is alſo ſometimes uſed for a SUPPOSITORY.

BALANUS MYREPSICA, in the *Materia Medica*, the oily acorn. The whole nut is of a purging quality; and the dry preſſing or powder after the oil is taken out, is of a cleanſing and drying nature.

BALASS, or BALLAS, a precious ſtone, of the ruby kind; whence it is alſo denominated *ballas-ruby*.

BALATITI, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of bird, by the flight of which they divine the event of things.

BALAUSTINES, BALAUSTIA, from βαλαυςειον, in *Pharmacy*, the flowers of the wild pomegranate, or *malus punica ſylveſtris*, which are very rough to the tongue and palate, and very aſtringent; and on that account are frequently uſed in diarrhœas, and other fluxes, hernias, &c.

BALBUSARDUS, in *Zoology*, the name uſed by authors for the bird called in Engliſh the *bald-buzzard*. It is of the long-winged and hawk kind, and has been deſcribed by Aldrovandus, and ſome other authors, under the name of the *haliætus* and *morphnus*, two kinds of the eagle.

It frequents the ſhores of ponds and rivers, and ſometimes of the ſea, where it preys on fiſh. It builds on the ground among reeds, and lays three or four large white eggs, little leſs than hens eggs.

BALCONY, from the French *balcon*, in *Architecture*. *Balconies* are a kind of open galleries without the walls of buildings, contrived chiefly for the convenience of looking around, ſeeing proceſſions, cavalcades, and the like.

Where there is but one, it is uſually in the middle of the front of the edifice, and level with the firſt floor: ſometimes they are made of wood, ſometimes of caſt iron; the former ſurrounded with a rail, or balluſtrade, the latter wrought in various figures in *demi-relievo*. Some are alſo made of bar iron, faſhioned in crail-work, or flouriſhes of divers fancies.

BALCONY, in a ſhip, denotes a gallery either covered or open, made abaſt, either for ornament, or convenience of the captain's cabin.

BALDACANIFER, corruptly alſo written *balcanifer*, denotes a ſtandard-bearer; chiefly in the ancient order of knights templars.

BALDACHIN, or BALDAQUIN, a piece of architecture in form of a canopy, ſupported with columns, and ſerving as a crown or covering to an altar.

The word comes from the Italian *baldacchino*, which ſignifies the ſame.

BALDACHIN, or BALDAKIN, or BALDEKIN, popularly BAUDEKIN, in *Middle Age Writers*, denotes a rich kind of cloth, made of gold warp and ſilk woof, variouſly figured. It took the denomination from its being formerly brought into theſe countries from *Baldacio*, or Babylon.

BALDMONIE, an old Engliſh name for gentian, the root of which is uſed in medicine; ſome alſo have called the *meum*, or ſpignel, by this name.

BALDNESS, CALVITES, in *Medicine*, a falling of the hair, eſpecially of that of the ſinciput, without being able to grow again; the moiſture of the head, which ſhould feed it, being dried up by ſome diſeaſe, old age, or the immoderate uſe of powder, &c.

It differs from *alopecia*, *area*, *ophiaſis*, and *tinea*, as theſe all ariſe from ſome vice in the nutritious humour; *baldneſs*, from the defect of it. But the diſtinction is not always obſerved by modern phyſicians.

When the eye-lids ſhed their hair, it is called a *ptiloſis*.

Among the cauſes of *baldneſs*, immoderate venery is reputed one of the chief: old age uſually brings it on of courſe. Some will have the proximate cauſe of *baldneſs* to be the dryneſs of the brain, and its ſhrinking from the *cranium*; it having been obſerved, that in *bald* perſons there is always a vacuity or empty ſpace between the ſkull and the brain.

Calvus, *bald-pate*, was a frequent term of reproach among the Romans; among whom this defect was in great diſcredit. Hence divers arts to conceal it, as falſe hair, a *galericulus* contrived on purpoſe.

The later Romans, however, ſeem to have been reconciled to *baldneſs*; for we find among them a kind of officers, or ſervants, called *glabratores*, or *glabrarii*, whoſe buſineſs was to take off the hair from all parts, even from the head. In an ancient inſcription, there is mention of one Diophantus, TI. CÆSARIS. ORNATOR. GLABR. that is, *ornator glabrarius*. See ALOPECIA.

BALDWIN'S *phoſphorus*. See PHOSPHORUS.

BALE, in *Commerce*, a term denoting a quantity of merchandiſe wrapped or packed up in cloth, and corded round very tight, after having been well ſecured with hay or ſtraw, to keep it from breaking, or to preſerve it from the weather. Moſt of the merchandiſe, capable of this kind of package, that are ſent to fairs, or intended for exportation, ought to be in *bales*; and too much care cannot be taken in packing them, to ſecure them from damage.

To ſell goods in the *bale* is to ſell them in the lump, on ſhewing a ſpecimen, without unpacking, or taking off the cordage. Thus it is the Eaſt India company ſell their *bale*-goods.

BALE-*goods*, in the Eaſt India *Trade*, the bulky goods, as ſalt-petre, pepper, red-earth, tea, &c.

The *bale*-goods ſtand oppoſed to piece-goods.

BALES *of camelet*, at Smyrna, are called *tables*, on account of their flat ſquare figure.

A *bale* of cotton-yarn is from three to four hundred weight: of raw-ſilk, it is from one to four hundred; of lockram or dowlas, either three, three and a half, or four pieces, &c.

BALE *of paper* denotes a certain number of reams packed together in a bundle.

There are *bales* of more and fewer reams. Thoſe ſent from Marſeilles to Conſtantinople uſually contain twelve reams.

A *bale* or ballon of crown paper, manufactured in ſome parts of Provence, conſiſts of fourteen reams, and is ſold in the Levant for Venice paper.

BALE *of dice*, denotes a little packet, or paper, containing ſome dozens of dice for playing with.

BALENGER, BALENGARIA, in *Middle Age Writers*, a kind of veſſel of war, but what in particular ſeems not well known. Blount ſays, that by the ſtat. 28 Hen. VI. cap. 5. *balenger* ſeems to have been a kind of barge.

BALESTRA, in *Zoology*, a name by which Salvian and ſome other authors have called the fiſh more uſually known by the name of CAPRISCUS.

BALISTA. See BALLISTA.

BALISTES, in *Zoology*, a genus of the ſwimming amphibia, comprehending eight ſpecies.

BALIVIS, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to the common duck of that part of the world; this is ſomewhat ſmaller than our wild-duck, and much more beautifully coloured.

BALIVO *amovendo*, a writ to remove a bailiff from his office, for want of ſufficient land in the bailiwick.

BALKS, in *Agriculture*, are ridges or banks between two furrows, or pieces of arable land: the word is ſometimes alſo uſed for the poles or rafters over out-houſes or barns; and among bricklayers for great beams, ſuch as are uſed in making ſcaffolds.

BALKS, among *Builders*, large pieces of timber, brought from abroad in floats.

BALKS are a ſort of beams imported, from five to twelve inches ſquare.

The greater *balks* are accounted timber, if above eight inches ſquare.

In ſome parts of England, *balk*, or *bawk*, denotes the ſummer-beam of a building.

Balks, or *bawks*, alſo denote poles laid over a ſtable, or other building, for the roof.

BALKERS, in the *Fiſhery*, perſons placed on rocks, and eminences at ſea, to ſpy the herring droves, and give notice to the fiſhermen by waving boughs, what way they go, and where they may be found. 1 Stat. Jac. I. cap. 23.

BALL gives the denomination to a ſpecies of game or ſport frequent among the ancients.

The Romans had four kinds of *pilæ*, or *balls*; the firſt called *trigon*, or *trigonalis*, becauſe the three gameſters at it were placed in a triangle: theſe caught and toſſed the *ball*, taking great care not to let it fall to the ground.

The ſecond called *follis*, made of leather, blown up like our foot-balls: the largeſt ſort of theſe were ſtruck with the arm, the ſmaller with the fiſt: the former ſeem to have been diſtinguiſhed by the appellation *paganica*, as being much uſed in country villages: the fourth was the *harpaſt*, a kind of ſmall *ball*, ſo called, becauſe the gameſters endeavoured to ſnatch it from each other.

Galen has an entire treatiſe on the exerciſe of the *leſſer ball*.

Ball, *pila*, is alſo the denomination of a form of medicines. We meet with *balls* for the tooth ach; ſpitting *balls*, uſed to promote a diſcharge of ſaliva, &c.

Ball is alſo uſed in Cornwall, &c. for a tin-mine.

In this ſenſe, Godolphin's *ball* is ſaid to be the moſt famous of all the *balls* or mines in Cornwall, for quantity of metal. Phil. Tranſ. Nº 138, p. 951.

Ball is alſo uſed, in a well-known ſenſe, for an aſſembly of both ſexes, who dance to the ſound of inſtruments.

Balls, in *Architecture*, are repreſented at C, *fig*. 40. (*Tab. Archit.*) and are uſed for ſupporting attic pedeſtals.

Balls, *billiard*, are ivory-*balls* uſed in the game of billiards. Moxon deſcribes the method of turning hollow ivory *balls*, one within another. Mechan. Exerc. p. 219.

Balls, in *Brewing*. They are either *brown* or *pale*, and uſed to fine, feed, preſerve, and colour MALT-*drinks*, wines, and cyders. See the compoſition of them deſcribed under BREWING.

Balls, *chewing*, are theſe which the horſe is to keep champing or maſticating in his mouth, a conſiderable time, without ſwallowing. Theſe are chiefly uſed for loſt appetite; a thing very incidental to horſes.

They are uſually made of *aſſa-fœtida*, liver of antimony, juniper, bay-wood, and pellitory of Spain, beaten and incorporated into a maſs with verjuice. The method of adminiſtration is to wrap one of the *balls* in a linen cloth, and having a ſtring faſtened to it, make the horſe chew it two or three hours at a time.

Balls, *cryſtalline*. There are two ſorts of foſſile bodies mentioned in authors by this name, and diſtinguiſhed into the echinated, and concave.

The firſt are roundiſh nodules of ſtrong matter, covered over with points of cryſtal; and the other, flints and other ſtones, having cavities in their middles, which are lined, or cruſted over with theſe cryſtals.

Ball *of the foot of a dog*, is the prominent part of the middle of the foot, called by Latin writers of the middle age, *pelota*, which is to be taken away in EXPEDITATION. Du-Cange Gloſſ. Lat.

Balls, in *Electricity*. Mr. Canton's *balls* are two pieces of cork, or pith of elder, nicely turned in a lathe, to the ſize of a ſmall pea, and ſuſpended by fine linen threads; intended as ELECTROMETERS, and of excellent uſe to diſcover ſmall degrees of *electricity*, to obſerve the changes of it from *poſitive* to *negative*, and *vice verſa*; and to eſtimate the force of a ſhock before the diſcharge, ſo that the operator ſhall always be able to tell very nearly before the diſcharge, by knowing how high he has charged his jars, what the exploſion will be. Dr. Prieſtley's Hiſt. of Elect. 3d edit. 8vo. vol. ii. p. 101.

Balls, *fire*, are bags of canvas filled with gunpowder, ſulphur, ſalt-petre, pitch, &c. to be thrown by the ſoldiers, or out of mortars, in order to fire houſes, incommode trenches, advanced poſts, or the like.

The Greeks had divers kinds of *fire-balls*, made of wood, ſometimes a foot, or even a cubit long; their heads being armed with ſpikes of iron, beneath which were hemp, pitch, and other combuſtibles, which being ſet on fire, were caſt among the enemy.

The preparations of *fire-balls*, among the moderns, conſiſts of ſeveral operations, viz. making the bag, preparing the compoſition, tying, and laſtly dipping the *ball*.

The bags for this purpoſe are either oval or round.

The compoſition wherewith *fire-balls* are filled, is various. To ten pounds of meal gun-powder, add two of ſaltpetre, one of ſulphur, and one of colophony: or, to ſix pounds of gunpowder, add four of ſaltpetre, four of ſulphur, one of powdered glaſs, half a pound of antimony, as much camphor, an ounce of ſal ammoniac, and four of common ſalt, all pulverized. Sometimes they even fill *fire-balls* with hand granados.

For tying the *fire-balls*, they prepare two iron rings, one fitted around the aperture, where the *ball* is to be lighted, the other near its baſe. A cord is tied to theſe rings, in ſuch manner as that the ſeveral turns repreſent ſemicircles, or meridians of the ſphere, cutting the globe through the poles: over the cords, extended according to the length of the *ball*, others are tied, cutting the former at right angles, and parallel to each other, making a knot at each interſection. Laſtly, putting in a leaden bullet, the reſt of the ſpace is filled with tow or paper. Thus completed, the *fire-ball* remains to be dipped in a compoſition of melted pitch, colophony, and linſeed-oil, or oil of turpentine; after dipping, they cover it round with tow, and dip again, till it be brought to the juſt diameter required.

Balls *of fire* in the air, are meteors ſometimes ſeen paſſing over countries, and computed by philoſophers to be often, at leaſt, thirty miles high. They ſometimes burſt at that height; and though the air muſt be exceeding rare there, yet the exploſion is heard at that diſtance, and for ſeventy miles round on the ſurface of the earth, &c. Does not this look as if a rare atmoſphere, almoſt a *vacuum*, was no bad conductor of ſound? Dr. Franklin's Works, p. 437.

Balls, *glaſs*. See GLASS-*balls*.

Balls. *Zoologiſts* ſpeak of a ſort of *balls* of hair covered over with a ſmooth, ſhining coat, or ſhell, found in the ſtomachs of oxen, cows, calves, horſes, ſheep, and goats, particularly the chamois, or *rupicapra*. See ÆGAGROPILUS.

Some alſo have been found in the *uterus*, and ovaries of females. Sir Hans Sloan gives the hiſtory of a *ball* found in the inteſtines of a man, much afflicted with the colic, ſix inches in circumference, of a ſpungy ſubſtance, and which when viewed with a microſcope, appeared made up of ſmall tranſparent hairs or fibres, wrought together like the *tophus bovinus*: in the middle was a common plum-ſtone, which made, as it were, the core or *nucleus*, around which the fibrous matter had gathered *ſtratum ſuper ſtratum*. Phil. Tranſ. Nº 309. p. 2387. Sloan, in Phil. Tranſ. Nº 282. p. 1283, ſeq. See HAIR.

Others have been found with plum-ſtones, and cherry-ſtones, in the centers. Bezoars have uſually ſome ſeed for a *nucleus*. The origin and formation of theſe *balls* is conteſted. Bartholin, and after him Dr. Plott, and others, attribute them to the creatures licking themſelves, and ſwallowing the hair, which being elaborated in the *reticulum*, become compacted together much after the manner that the wool of a hat is by the hand of the workman; and lying long in the ſtomach, have a thick tough coat, ſuperinduced by the plenty of ſlime it there meets with. Plott, l. c. § 71.

The Royal Academy of Sciences at Paris ſubſtitute another origin. In diſſecting a chamois, a *ball* was found in the third ventricle, which did not ſeem compoſed of hair, but of woody fibres, as appeared from their inequality, which were neither uniform in figure nor ſize, as hairs are. Add, that the like *balls* are found in horſes, which are not animals that lick themſelves, and where of conſequence they muſt be formed of ſomething elſe than hair. Hence the generality of naturaliſts, particularly Geſner and Camerarius, take theſe *balls* to be formed of the reſidue of the plants, which the animals have eaten, the harder fibres whereof remain undigeſted. Thoſe of the *rupicapra*, in particular, are ſuppoſed to be the fibres of the plant *doronicum*, reputed by ſome a ſpecies of ACONITE. Phil. Tranſ. Nº 189, p. 373.

Balls, or **Ballets**, in *Heraldry*, make a frequent bearing in coats of arms, though never ſo called; but having according to their ſeveral colours ſeveral names; as *beſants*, when the colour is *or*; *plates* when *argent*; *hurts* when *azure*; *torteaux* when *gules*; *pomeis* when *vert*; *pellets* or *agreſſes* when *ſable*; *golpes* when *purple*; *orenges* when *tanne*; and *guzes* when *ſanguine*.

Ball, *Hero's*, *pila Heronis*, is a kind of artificial fountain, wherein the water is made to ſpout out of a hollow *ball*, or globe.

It takes the denomination from the inventor Hero of Alexandria, who has left the deſcription of it in his Spiritalia. See FOUNTAIN.

Balls, *horſe*, among *Farriers*, a kind of cordial medicines, adminiſtered in form of *balls*, ſuppoſed of great virtue for feeding and ſtrengthening ſound, as well as healing and raiſing unſound horſes.

Balls, *Markham's horſe*, are a preparation of aniſe-ſeeds, carthamus, elecampane, and other ingredients, wrought into a ſtiff paſte, and thence formed into *balls*. They are cleanſing and emollient, efficacious in colds, ſurfeits, and hard labour, and eſpecially uſeful where any of the chief *viſcera* are decayed: nothing raiſes a lean jade ſo ſoon, being partly food, partly phyſic.

BALANCERS, in *Natural Hiſtory*, are two ſmall oblong bodies, placed under the wings of the two-winged flies, and, in ſome meaſure, ſupplying the office of the two other wings, which thoſe of the four-winged claſs are poſſeſſed of.

BALANCIER, a machine uſed in the ſtriking of coins, medals, counters, and the like. See Coinage.

BALANI, in *Natural Hiſtory*, the name of a genus of ſhell-fiſh, belonging to the claſs of multivalves, approaching to the ſhape of an acorn (βαλανος), and uſually growing to the ſhells of the larger ſort of ſea ſhell-fiſh: they are commonly called in Engliſh, centre ſhells. See the figure in *Table of Shells*, N° 26.

It is a very common error to miſtake the names of the multivalve ſhells, ſo far, as to confound the *balani* and *conchæ anatiferæ*, as they are called, together; though they be extremely different.

The *balani* are found affixed in cluſters to a thouſand different ſubmarine things; ſuch as the harder ſea-plants, all ſorts of teſtaceous, and cruſtaceous ſea-animals, rocks, and timber. They may be arranged under the two ſubdiſtinctions of wide and narrow-mouthed, including ſeveral ſpecies. The ſmall fiſh which nature has covered with this ſhell, is of a very admirable ſtructure. Lewenhoek acknowledges, that he never met with any animal, in which ſo many objects of wonder lay open to the naked eye as in this. It has twelve legs or arms which are crooked, and garniſhed with a great number of hairs: theſe twelve they elevate on all occaſions; and, beſide theſe, they have eight others, which are much ſmaller, and ſtand lower. Their body is, in all reſpects, like that of the *concha anatifera*. It is cartilaginous, and mucous, and of an ill taſte. The ſhell ſhapes itſelf, at the baſe, to the figure of the ſurface of whatever it grows to, and ſticks very firmly to it.

The *balanus*, in the Linnæan ſyſtem, is a ſpecies of the LEPAS.

BALANITES, in *Natural Hiſtory*, a name given by the ancients to a ſtone, ſeeming to have been one of the ſemipellucid gems. They deſcribe two ſpecies of it; the one of which was yellow, and the other green, but each having veins of a flame colour. Their deſcriptions are too ſhort for us to be able to aſcertain, what ſtones, among thoſe known at this time, they meant.

Some think the *balanites* to have been the *lapis Judaicus*, on account of its acorn-like figure and ſize. Plin. Nat. Hiſt. lib. xxxvii. cap. 10. Ed. Hardouin.

BALANUS, βαλανος, or Glans, is ſometimes uſed by anatomiſts for the nut of the yard. Sometimes alſo the clitoris is ſo called.

Balanus is alſo ſometimes uſed for a SUPPOSITORY.

Balanus Myrepsica, in the *Materia Medica*, the oily acorn. The whole nut is of a purging quality; and the dry preſſing or powder after the oil is taken out, is of a cleanſing and drying nature.

BALASS, or Ballas, a precious ſtone, of the ruby kind; whence it is alſo denominated *ballas-ruby*.

BALATITI, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of bird, by the flight of which they divine the event of things.

BALAUSTINES, Balaustia, from βαλαυϛειον, in *Pharmacy*, the flowers of the wild pomegranate, or *malus punica ſylveſtris*, which are very rough to the tongue and palate, and very aſtringent; and on that account are frequently uſed in diarrhœas, and other fluxes, hernias, &c.

BALBUSARDUS, in *Zoology*, the name uſed by authors for the bird called in Engliſh the *bald-buzzard*. It is of the long-winged and hawk kind, and has been deſcribed by Aldrovandus, and ſome other authors, under the name of the *haliætus* and *morphnus*, two kinds of the eagle.

It frequents the ſhores of ponds and rivers, and ſometimes of the ſea, where it preys on fiſh. It builds on the ground among reeds, and lays three or four large white eggs, little leſs than hens eggs.

BALCONY, from the French *balcon*, in *Architecture*. *Balconies* are a kind of open galleries without the walls of buildings, contrived chiefly for the convenience of looking around, ſeeing proceſſions, cavalcades, and the like.

Where there is but one, it is uſually in the middle of the front of the edifice, and level with the firſt floor: ſometimes they are made of wood, ſometimes of caſt iron; the former ſurrounded with a rail, or balluſtrade, the latter wrought in various figures in *demi-relievo*. Some are alſo made of bar iron, faſhioned in crail-work, or flouriſhes of divers fancies.

Balcony, in a ſhip, denotes a gallery either covered or open, made abaft, either for ornament, or convenience of the captain's cabin.

BALDACANIFER, corruptly alſo written *balcanifer*, denotes a ſtandard-bearer; chiefly in the ancient order of knights templars.

BALDACHIN, or Baldaquin, a piece of architecture in form of a canopy, ſupported with columns, and ſerving as a crown or covering to an altar.

The word comes from the Italian *baldacchino*, which ſignifies the ſame.

Baldachin, or Baldakin, or Baldekin, popularly Baudekin, in *Middle Age Writers*, denotes a rich kind of cloth, made of gold warp and ſilk woof, variouſly figured. It took the denomination from its being formerly brought into theſe countries from *Baldacio*, or Babylon.

BALDMONIE, an old Engliſh name for gentian, the root of which is uſed in medicine; ſome alſo have called the *meum*, or ſpignel, by this name.

BALDNESS, Calvites, in *Medicine*, a falling of the hair, eſpecially of that of the ſinciput, without being able to grow again; the moiſture of the head, which ſhould feed it, being dried up by ſome diſeaſe, old age, or the immoderate uſe of powder, &c.

It differs from *alopecia*, *area*, *ophiaſis*, and *tinea*, as theſe all ariſe from ſome vice in the nutritious humour; *baldneſs*, from the defect of it. But the diſtinction is not always obſerved by modern phyſicians.

When the eye-lids ſhed their hair, it is called a *ptiloſis*.

Among the cauſes of *baldneſs*, immoderate venery is reputed one of the chief: old age uſually brings it on of courſe. Some will have the proximate cauſe of *baldneſs* to be the dryneſs of the brain, and its ſhrinking from the *cranium*; it having been obſerved, that in *bald* perſons there is always a vacuity or empty ſpace between the ſkull and the brain.

Calvus, *bald-pate*, was a frequent term of reproach among the Romans; among whom this defect was in great diſcredit. Hence divers arts to conceal it, as falſe hair, a *galericulus* contrived on purpoſe.

The later Romans, however, ſeem to have been reconciled to *baldneſs*; for we find among them a kind of officers, or ſervants, called *glabratores*, or *glabrarii*, whoſe buſineſs was to take off the hair from all parts, even from the head. In an ancient inſcription, there is mention of one Diophantus, TI. CÆSARIS. ORNATOR. GLABR. that is, *ornator glabrarius*. See Alopecia.

BALDWIN'S *phoſphorus*. See Phosphorus.

BALE, in *Commerce*, a term denoting a quantity of merchandiſe wrapped or packed up in cloth, and corded round very tight, after having been well ſecured with hay or ſtraw, to keep it from breaking, or to preſerve it from the weather. Moſt of the merchandiſe, capable of this kind of package, that are ſent to fairs, or intended for exportation, ought to be in *bales*; and too much care cannot be taken in packing them, to ſecure them from damage.

To ſell goods in the *bale* is to ſell them in the lump, on ſhewing a ſpecimen, without unpacking, or taking off the cordage. Thus it is the Eaſt India company ſell their *bale*-goods.

Bale-*goods*, in the Eaſt India *Trade*, the bulky goods, as ſaltpetre, pepper, red-earth, tea, &c.

The *bale*-goods ſtand oppoſed to piece-goods.

Bales *of camelet*, at Smyrna, are called *tables*, on account of their flat ſquare figure.

A *bale* of cotton-yarn is from three to four hundred weight: of raw-ſilk, it is from one to four hundred; of lockram or dowlas, either three, three and a half, or four pieces, &c.

Bale *of paper* denotes a certain number of reams packed together in a bundle.

There are *bales* of more and fewer reams. Thoſe ſent from Marſeilles to Conſtantinople uſually contain twelve reams.

A *bale* or ballon of crown paper, manufactured in ſome parts of Provence, conſiſts of fourteen reams, and is ſold in the Levant for Venice paper.

Bale *of dice*, denotes a little packet, or paper, containing ſome dozens of dice for playing with.

BALENGER, Balengaria, in *Middle Age Writers*, a kind of veſſel of war, but what in particular ſeems not well known. Blount ſays, that by the ſtat. 28 Hen. VI. cap. 5. *balenger* ſeems to have been a kind of barge.

BALESTRA, in *Zoology*, a name by which Salvian and ſome other authors have called the fiſh more uſually known by the name of CAPRISCUS.

BALISTA. See Ballista.

BALISTES, in *Zoology*, a genus of the ſwimming amphibia, comprehending eight ſpecies.

BALIVIS, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to the common duck of that part of the world; this is ſomewhat ſmaller than our wild-duck, and much more beautifully coloured.

BALIVO *amovendo*, a writ to remove a bailiff from his office, for want of ſufficient land in the bailiwick.

BALKS, in *Agriculture*, are ridges or banks between two furrows, or pieces of arable land: the word is ſometimes alſo uſed for the poles or rafters over out-houſes or barns; and among bricklayers for great beams, ſuch as are uſed in making ſcaffolds.

Balks, among *Builders*, large pieces of timber, brought from abroad in floats.

Balks are a ſort of beams imported, from five to twelve inches ſquare.

The greater *balks* are accounted timber, if above eight inches ſquare.

In ſome parts of England, *balk*, or *bawk*, denotes the ſummer-beam of a building.

BALKS, or *bawks*, alſo denote poles laid over a ſtable, or other building, for the roof.

BALKERS, in the *Fiſhery*, perſons placed on rocks, and eminences at ſea, to ſpy the herring droves, and give notice to the fiſhermen by waving boughs, what way they go, and where they may be found. 1 Stat. Jac. I. cap. 23.

BALL gives the denomination to a ſpecies of game or ſport frequent among the ancients.

The Romans had four kinds of *pilæ*, or *balls*; the firſt called *trigon*, or *trigonalis*, becauſe the three gameſters at it were placed in a triangle: theſe caught and toſſed the *ball*, taking great care not to let it fall to the ground.

The ſecond called *follis*, made of leather, blown up like our foot-balls: the largeſt ſort of theſe were ſtruck with the arm, the ſmaller with the fiſt: the former ſeem to have been diſtinguiſhed by the appellation *paganica*, as being much uſed in country villages: the fourth was the *harpaſt*, a kind of ſmall *ball*, ſo called, becauſe the gameſters endeavoured to ſnatch it from each other.

Galen has an entire treatiſe on the exerciſe of the *leſſer ball.*

BALL, *pila*, is alſo the denomination of a form of medicines. We meet with *balls* for the tooth ach; ſpitting *balls*, uſed to promote a diſcharge of ſaliva, &c.

BALL is alſo uſed in Cornwall, &c. for a tin-mine.

In this ſenſe, Godolphin's *ball* is ſaid to be the moſt famous of all the *balls* or mines in Cornwall, for quantity of metal. Phil. Tranſ. Nº 138, p. 951.

BALL is alſo uſed, in a well-known ſenſe, for an aſſembly of both ſexes, who dance to the ſound of inſtruments.

BALLS, in *Architecture*, are repreſented at C, *fig.* 40. (*Tab. Archit.*) and are uſed for ſupporting attic pedeſtals.

BALLS, *billiard*, are ivory-*balls* uſed in the game of billiards. Moxon deſcribes the method of turning hollow ivory *balls*, one within another. Mechan. Exerc. p. 219.

BALLS, in *Brewing*. They are either *brown* or *pale*, and uſed to fine, feed, preſerve, and colour MALT-*drinks*, wines, and cyders. See the compoſition of them deſcribed under BREWING.

BALLS, *chewing*, are theſe which the horſe is to keep champing or maſticating in his mouth, a conſiderable time, without ſwallowing. Theſe are chiefly uſed for loſt appetite; a thing very incidental to horſes.

They are uſually made of *aſſa-fœtida*, liver of antimony, juniper, bay-wood, and pellitory of Spain, beaten and incorporated into a maſs with verjuice. The method of adminiſtration is to wrap one of the *balls* in a linen cloth, and having a ſtring faſtened to it, make the horſe chew it two or three hours at a time.

BALLS, *cryſtalline*. There are two ſorts of foſſile bodies mentioned in authors by this name, and diſtinguiſhed into the echinated, and concave.

The firſt are roundiſh nodules of ſtrong matter, covered over with points of cryſtal; and the other, flints and other ſtones, having cavities in their middles, which are lined, or cruſted over with theſe cryſtals.

BALL *of the foot of a dog*, is the prominent part of the middle of the foot, called by Latin writers of the middle age, *pelota*, which is to be taken away in EXPEDITATION. Du-Cange Gloſſ. Lat.

BALLS, in *Electricity*. Mr. Canton's *balls* are two pieces of cork, or pith of elder, nicely turned in a lathe, to the ſize of a ſmall pea, and ſuſpended by fine linen threads; intended as ELECTROMETERS, and of excellent uſe to diſcover ſmall degrees of *electricity*, to obſerve the changes of it from *poſitive* to *negative*, and *vice verſa*; and to eſtimate the force of a ſhock before the diſcharge, ſo that the operator ſhall always be able to tell very nearly before the diſcharge, by knowing how high he has charged his jars, what the exploſion will be. Dr. Prieſtley's Hiſt. of Elect. 3d edit. 8vo. vol. ii. p. 101.

BALLS, *fire*, are bags of canvas filled with gunpowder, ſulphur, ſalt-petre, pitch, &c. to be thrown by the ſoldiers, or out of mortars, in order to fire houſes, incommode trenches, advanced poſts, or the like.

The Greeks had divers kinds of *fire-balls*, made of wood, ſometimes a foot, or even a cubit long; their heads being armed with ſpikes of iron, beneath which were hemp, pitch, and other combuſtibles, which being ſet on fire, were caſt among the enemy.

The preparations of *fire-balls*, among the moderns, conſiſts of ſeveral operations, viz. making the bag, preparing the compoſition, tying, and laſtly dipping the *ball*.

The bags for this purpoſe are either oval or round.

The compoſition wherewith *fire-balls* are filled, is various. To ten pounds of meal gun-powder, add two of ſaltpetre, one of ſulphur, and one of colophony: or, to ſix pounds of gunpowder, add four of ſaltpetre, four of ſulphur, one of powdered glaſs, half a pound of antimony, as much camphor, an ounce of ſal ammoniac, and four of common ſalt, all pulverized. Sometimes they even fill *fire-balls* with hand granados.

For tying the *fire-balls*, they prepare two iron rings, one fitted around the aperture, where the *ball* is to be lighted, the other near its baſe. A cord is tied to theſe rings, in ſuch manner as that the ſeveral turns repreſent ſemicircles, or meridians of the ſphere, cutting the globe through the poles: over the cords, extended according to the length of the *ball*, others are tied, cutting the former at right angles, and parallel to each other, making a knot at each interſection. Laſtly, putting in a leaden bullet, the reſt of the ſpace is filled with tow or paper. Thus completed, the *fire-ball* remains to be dipped in a compoſition of melted pitch, colophony, and linſeed-oil, or oil of turpentine; after dipping, they cover it round with tow, and dip again, till it be brought to the juſt diameter required.

BALLS *of fire* in the air, are meteors ſometimes ſeen paſſing over countries, and computed by philoſophers to be often, at leaſt, thirty miles high. They ſometimes burſt at that height; and though the air muſt be exceeding rare there, yet the exploſion is heard at that diſtance, and for ſeventy miles round on the ſurface of the earth, &c. Does not this look as if a rare atmoſphere, almoſt a *vacuum*, was no bad conductor of ſound? Dr. Franklin's Works, p. 437.

BALLS, *glaſs*. See GLASS-*balls*.

BALLS. *Zoologiſts* ſpeak of a ſort of *balls* of hair covered over with a ſmooth, ſhining coat, or ſhell, found in the ſtomachs of oxen, cows, calves, horſes, ſheep, and goats, particularly the chamois, or *rupicapra*. See ÆGAGROPILUS.

Some alſo have been found in the *uterus*, and ovaries of females. Sir Hans Sloan gives the hiſtory of a *ball* found in the inteſtines of a man, much afflicted with the colic, ſix inches in circumference, of a ſpungy ſubſtance, and which when viewed with a microſcope, appeared made up of ſmall tranſparent hairs or fibres, wrought together like the *tophus bovinus:* in the middle was a common plum-ſtone, which made, as it were, the core or *nucleus*, around which the fibrous matter had gathered *ſtratum ſuper ſtratum*. Phil. Tranſ. Nº 309. p. 2387. Sloan, in Phil. Tranſ. Nº 282. p. 1283, ſeq. See HAIR.

Others have been found with plum-ſtones, and cherry-ſtones, in the centers. Bezoars have uſually ſome ſeed for a *nucleus*. The origin and formation of theſe *balls* is conteſted. Bartholin, and after him Dr. Plott, and others, attribute them to the creatures licking themſelves, and ſwallowing the hair, which being elaborated in the *reticulum*, become compacted together much after the manner that the wool of a hat is by the hand of the workman; and lying long in the ſtomach, have a thick tough coat, ſuperinduced by the plenty of ſlime it there meets with. Plott, l. c. § 71.

The Royal Academy of Sciences at Paris ſubſtitute another origin. In diſſecting a chamois, a *ball* was found in the third ventricle, which did not ſeem compoſed of hair, but of woody fibres, as appeared from their inequality, which were neither uniform in figure nor ſize, as hairs are. Add, that the like *balls* are found in horſes, which are not animals that lick themſelves, and where of conſequence they muſt be formed of ſomething elſe than hair. Hence the generality of naturaliſts, particularly Geſner and Camerarius, take theſe *balls* to be formed of the reſidue of the plants, which the animals have eaten, the harder fibres whereof remain undigeſted. Thoſe of the *rupicapra*, in particular, are ſuppoſed to be the fibres of the plant *doronicum*, reputed by ſome a ſpecies of ACONITE. Phil. Tranſ. Nº 189, p. 373.

BALLS, or BALLETS, in *Heraldry*, make a frequent bearing in coats of arms, though never ſo called; but having according to their ſeveral colours ſeveral names; as *beſants*, when the colour is *or*; *plates* when *argent*; *hurts* when *azure*; *torteaux* when *gules*; *pomeis* when *vert*; *pellets* or *agreſſes* when *ſable*; *golpes* when *purple*; *orenges* when *tanne*; and *guzes* when *ſanguine*.

BALL, *Hero's*, *pila Heronis*, is a kind of artificial fountain, wherein the water is made to ſpout out of a hollow *ball*, or globe.

It takes the denomination from the inventor Hero of Alexandria, who has left the deſcription of it in his Spiritalia. See FOUNTAIN.

BALLS, *horſe*, among *Farriers*, a kind of cordial medicines, adminiſtered in form of *balls*, ſuppoſed of great virtue for feeding and ſtrengthening ſound, as well as healing and raiſing unſound horſes.

BALLS, *Markham's horſe*, are a preparation of aniſe-ſeeds, carthamus, elecampane, and other ingredients, wrought into a ſtiff paſte, and thence formed into *balls*. They are cleanſing and emollient, efficacious in colds, ſurfeits, and hard labour, and eſpecially uſeful where any of the chief *viſcera* are decayed: nothing raiſes a lean jade ſo ſoon, being partly food, partly phyſic.

Balls, *land*, thoſe which being thrown out of a mortar, fall to the ground, burn and burſt there. The ingredients are much the ſame as in the water *balls*, only the ſpecific gravity is not attended to.

Balls, *light*, are ſuch as diffuſe an intenſe light around; or they are *balls* which being caſt out of a mortar, or the hand, burn for ſome time and illuminate the adjacent parts.

Thoſe for the hand are made of ground powder, ſalt-petre, brimſtone, camphor, and borax, all ſprinkled with oil, and mouldered into a maſs with ſuet, common and Greek pitch, to the ſize of an ordinary granado: this is wrapped up in tow, with a ſheet of ſtrong paper over it. To fire it, a hole is made into it with a bodkin, into which is put ſome priming, that will burn ſlow. Its uſe is to be caſt into any works that are to be diſcovered in the night time.

For the *larger light balls*, or thoſe to be thrown to a greater diſtance, they are prepared by melting equal quantities of ſulphur, turpentine, and pitch; and by dipping in this compoſition an earthen, or ſtone *ball*, of a diameter much leſs than that of the mortar out of which the fire-*ball* is to be caſt: then rolling it in gun-powder, and covering it round with gauſe, the dipping is repeated till it comes to fit the cavity of the mortar: laſtly, it is ſprinkled around with gun-powder. This being once kindled, will ſtrongly illuminate all round the place where it is thrown, and give opportunity for examining the ſtate and condition thereof.

Balls, *martial*, in *Chemiſtry*, a mixture of filings of iron, and cream of tartar, formed into a ſolid conſiſtence, and the form of a ball, uſed to impregnate water, or other liquids, with iron, diſſolved by the tartareous acid.

They are of the ſame nature as the TINCTURE *of Mars tartariſed*; and therefore theſe preparations may be ſubſtituted for each other.

To make *martial balls*, take one part of filings of iron, and two parts of powdered cream of tartar; mix them well together, and put them into an earthen or iron veſſel with ſome water; ſtir the mixture from time to time, till it becomes almoſt dry; add more water, and ſtir it as before, till it acquires, when nearly dry, ſomewhat of the conſiſtence and tenacity of ſoftened roſin; then it is rolled into the form of a *ball*, generally kept tied up in a rag, and when it is uſed, infuſed into water, till it gives ſome colour to that liquid. Mac. Chem. Dict. Eng. Ed.

Balls, *mercurial*, in *Chemiſtry*, an amalgam of mercury and tin, ſufficiently ſolid to be moulded, and to preſerve a given form.

To make *mercurial balls*, add mercury to melted tin, and pour the fluid maſs into a round and hollow mould.

Theſe *balls* are uſed to purify water in which they are boiled; for which purpoſe travellers often carry ſome along with them. Macquer.

Ball, in the *Military* and *Pyrotechnical Arts*, is a compoſition of divers ingredients, generally of the combuſtible kinds, ſerving to burn and deſtroy, give light, ſmoak, ſtench, or the like.

In this ſenſe, we read of fire-*balls*, light-*balls*, ſmoak-*balls*, ſtink-*balls*, ſky-*balls*, water-*balls*, land-*balls*, &c.

Balls are likewiſe uſed for all ſorts of fire-arms; thoſe for cannon are made of iron, and thoſe for muſquets, &c. of lead.

Ball *of a pendulum*, the weight at the bottom. In ſhorter pendulums, this is called the *bob*.

Ball, among *Printers*, a kind of wooden tunnel ſtuffed with wool, contained in a cover of ſheep's ſkin, which is nailed to the wood; with which the ink is applied on the forms, to be wrought off.

The preſſman holding one of theſe balls in either hand, firſt daubs them on the ink-block, then working them on each other, he applies them afterwards on the forms, which retain the ink neceſſary to make an impreſſion.

Ball, *puff*. See Lycoperdon.

Balls *of ſilk-worms and ſpiders* are little caſes or cones woven of ſilk, wherein thoſe inſects depoſit their eggs. See Silk. Spiders are extremely tender of their *balls*, which they carry about with them, adhering to the papillæ about their *anus*. Grew ſpeaks of *balls* or bags of a ſpecies of ſilk-worms in Virginia, as big as hens eggs, and containing each four *aureliæ*. Phil. Tranſ. N° 362, p. 1037.

Balls, *ſky*, thoſe caſt on high out of mortars, and which, when arrived at their height, burſt like rockets, and afford a ſpectacle of decoration. *Sky-balls* are made of a wooden ſhell, filled with various compoſitions, particularly that of the ſtars of rockets.

Theſe are ſometimes intermixed with crackers, and other combuſtibles, making rains of fire, &c.

Balls, *ſmoak*, or *dark*, thoſe which fill the air with ſmoak, and thus darken a place, to prevent diſcoveries. To prepare a darkening *ball*, make an oval, or ſpherical bag; melt roſin over the coals, and add an equal part of ſaltpetre not purified, alſo of ſulphur, and a fifth part of charcoal. The whole being well incorporated, put in tow firſt ſhred, and fill the bag with this compoſition, and dip it after the ſame manner as a fire-*ball*.

Ball-*ſoap*. See Soap.

Ball *and ſocket*, a machine contrived to give an inſtrument full play, and motion every way.

It conſiſts of a *ball* or ſphere of braſs, fitted within a concave ſemi-globe, ſo as to be moveable every way, both horizontally, vertically, and obliquely. It is carried by an endleſs ſcrew, and is principally uſed for the managing of ſurveying inſtruments; to which it is a very neceſſary appendage.

The ancient *balls* and *ſockets* had two concaves, or channels, the one for the horizontal, the other for the vertical direction.

Balls, *ſtink*, thoſe which yield a great ſtench where fired, to annoy the enemy.

Their preparation is thus: melt ten pounds of pitch, ſix of roſin, twenty of ſaltpetre, eight of gun-powder, and four of colophony; to theſe add two of charcoal, ſix of horſe-hoofs cut ſmall, three of *aſſa fœtida*, one of ſtinking ſaracen, and any other offenſive ingredients. Then proceed as in making *ſmoak* and *fire-balls*.

Ball, *tennis*, is a little globe, made and covered with cloth, or leather, uſed in playing at the game of tennis.

Balls, *treacle*, ſometimes alſo called in a more eſpecial manner, *cordial balls*, are made of juniper-berries, beaten, boiled, preſſed, and ſtrained; then the liquor boiled up a ſecond time to the conſiſtence of broth, and mixed with the cordial powder known among farriers, made of aniſe, fennel, liquorice, &c. adding to the whole ſome of the grains of kermes powdered. The maſs being made into *balls*, is commended againſt diſorders of the ſtomach, breaſt, wind, &c. and is by ſome called the treacle of the Germans.

Balls, *vegetable*, in *Natural Hiſtory* and *Botany*, a very particular kind of plant of a deep green colour, of an irregularly ſpherical ſhape, hollow within, and of different ſizes, from an inch and a half to three inches in diameter. It probably belongs to the CONFERVA genus, in the claſs of moſſes; though Mr. Ray has ranged a ſimilar plant under the genus of ALCYONIUM. See Coral. Phil. Tranſ. vol. xlvii. art. 83, an. 1752.

Ball-*vein*, in *Mineralogy*, a name given by the miners in Suſſex to a ſort of iron ore, common there, and wrought to conſiderable advantage. It yields not any great quantity of metal, but what it has runs freely in the fire; it is uſually found in looſe maſſes, not in form of ſtrata, and is often covered with one or more cruſts. It generally contains ſome ſparkling particles, and is uſually of a circular form, in the perfect maſſes; thickeſt in the middle, and gradually thinner as it approaches the ſides. The ores of Suſſex in general are poor, but they require very little trouble in the working; ſo that a conſiderable profit is annually made from them.

Balls, *water*, thoſe which ſwim, and burn a conſiderable time in the water, and at length burſt therein.

Theſe are made in a wooden ſhell, the cavity of which is filled with a compoſition of refined ſaltpetre, ſulphur, ſawduſt boiled in water of ſaltpetre, and dried; to which ſometimes other ingredients are added, as iron filings, Greek pitch, amber duſt, glaſs powdered, and camphor. The ingredients are to be ground and mixed up, and moiſtened with linſeed-oil, nut-oil, olive-oil, hempſeed-oil, or petrol. At the bottom is placed an iron coffin, filled with whole gun-powder, that the *ball* may at laſt burſt with a great noiſe; and laſtly, the *ball* is, by the addition of lead, or otherwiſe, made of the ſame ſpecific gravity with water.

Balls, *wool*. See Wool.

BALLAD, or **Ballet**, a popular ſong, containing the recital of ſome action, adventure, or intrigue.

The French confine their *ballads* to ſtricter terms. A *ballad*, according to Richelet, is a ſong conſiſting of three ſtrophes, or ſtanzas, of eight verſes each, beſides a half ſtrophe; the whole in rhime, of two, three, or four verſes, with a burthen repeated at the end of each ſtrophe, as well as of the half ſtrophe.

In the old Engliſh verſion of the Bible, the book of Canticles is entitled the *ballet* of *ballets*; which has given ſcandal to ſome Romiſh writers, as countenancing the opinion of thoſe who hold that book a *ballet* of love, or a recital of the amours between Solomon and his concubine, as Caſtalio and ſome others have conceived it to be.

Some have ſuggeſted, that a collection of *ballads* is neceſſary to a miniſter, in order to learn the temper and inclinations of a people, which are here frequently uttered with great ſimplicity. The great Cecil, chief miniſter to queen Elizabeth, is ſaid to have made a moſt ample collection of *ballads*, on this account.

A very ingenious political writer, Mr. Fletcher of Saltoun, ſays, that if he could but make the *ballads* of a nation, he would care very little who made the *religion* of it. There is a very curious Collection of old Engliſh and Scottiſh Ballads, publiſhed in 3 vols. 8vo. by Dr. Percy; in which, and in a diſſertation prefixed to Aikin's Collection of Songs, &c. the curious in this way may find abundance of entertainment and information concerning old *ballads*, and ballad-makers.

BALLAST, in *Navigation*, any heavy matter uſed to ſink a veſſel to its proper depth in water, or to give it a juſt weight and counterpoiſe, and enable it to bear ſail upright, without overturning.

The word comes from the Flemiſh *belaſt*, formed of *be*, and *laſt* or *leſt*. The French call it ſimply *leſt*. In the Mediterranean, *quartelage*. In Latin writers of the lower age it is denominated *laſtagium*.

The ordinary *ballaſt* is ſand or ſtones, ſtowed in the bottom, or hold, next the falſe keel of a veſſel: ſometimes, lead, corn, or other heavy goods, ſerve for *ballaſt*.—The *ballaſt* is ſometimes one half, ſometimes a third, and ſometimes a fourth part of the burden of the veſſel. Flat veſſels require the moſt *ballaſt*.—Ships are ſaid to be in *ballaſt*, when they have no other loading.

Maſters of veſſels are obliged to declare the quantity of *ballaſt* they bear, and to unload it at certain places. They are prohibited unloading their *ballaſt* in havens, roads, &c. the neglect of which has ruined many excellent ports. See 19 Geo. II. cap. 22.

That *ballaſt* is beſt which is heavieſt, lies cloſeſt and faſteſt, and drieſt, both for the ſhip, bearing a ſail, ſtowing of goods, health of the company, and ſaving of caſks and other goods. If a ſhip have too much *ballaſt*, ſhe will draw too much water; if too little, ſhe will bear no ſail.

Ballast, *to trench the*, denotes, to divide the *ballaſt* into two ſeveral parts, or more, in the ſhip's hold, commonly done to find a leak in the bottom of the ſhip, or to undock her.

Ballast, *the*, *ſhoots*, that is, runs over from the one ſide to the other. Hence it is that corn, and all kinds of grain, is dangerous lading, for that is apt to *ſhoot*. To prevent which, they make *poucles*, that is, bulk-heads of boards, to keep it up faſt, that it may not run from ſide to ſide, as the ſhip heels upon a tack.

BALLASTAGE. See Lastage.

BALLATOONS, large, heavy luggage-boats, carrying goods by the river from Aſtracan and the Caſpian ſea to Moſcow. Theſe will carry from a hundred to two hundred tun; and have from a hundred to a hundred and ten, or twenty men employed to row, and tow them along.

BALLERUS, in *Ichthyology*, a name given by ſome authors to a ſpecies of freſh water fiſh of the leather-mouthed kind, which appears to be the ſame with the carcassius, or, as authors call it, the *carcaſſii tertium genus*.

Ballerus is alſo a name given by Ariſtotle to that ſpecies of *cyprinus* called *blicca* and *pleyſta*, and *pallerus*, by the modern writers.

BALLET, or Balet, Baletto, a kind of dramatic poem, repreſenting ſome fabulous action or ſubject, divided into ſeveral entries; wherein ſeveral perſons appear, and recite things under the name of ſome deity, or other illuſtrious character.

Ballet, from *βαλλειν*, *to caſt*, is more particularly uſed for a kind of comic dance, conſiſting of a ſeries of ſeveral airs of different kinds of movements, which together repreſent ſome ſubject or action.

F. Meneſtrier has a treatiſe expreſs on ancient and modern *ballets*, according to the rules of the ſtage; wherein he explains the nature of dancing according to Ariſtotle and the ancients.

Ballet, in Engliſh *Poetry*, &c. See Ballad.

BALLIAGE, a ſmall duty paid to the city of London, by aliens, and even denizens, for certain commodities exported by them; which they claim by their charter, dated the 5th of September, in the ſixteenth of Charles II. confirmed by the twentieth rule of the Book of Rates; and by 2 W. and M. cap. 8.

BALLISTA, a military engine in uſe among the ancients, ſomewhat like our croſs-bow, though much larger, and more forcible; it was uſed in the beſieging of cities, to throw in ſtones, or ſometimes darts and javelins.

The word is alſo frequently written, leſs conſiſtently with its etymon, *baliſta*, ſometimes *baliſtra*. It is formed from the Greek *βαλλειν*, *jacere*, being chiefly uſed in caſting of darts and arrows, in which it differed from the catapulta, which was uſed only for caſting ſtones; in other reſpects they were alike, and were each bent in the ſame manner.

Marcellinus deſcribes the *balliſta* thus; a round iron cylinder is faſtened between two planks, from which reaches a hollow ſquare beam placed croſs-wiſe, faſtened with cords, to which are added ſcrews; at one end of this ſtands the engineer, who puts a wooden ſhaft with a big head, into the cavity of the beam; this done, two men bend the engine, by drawing ſome wheels: when the top of the head is drawn to the utmoſt end of the cords, the ſhaft is driven out of the *balliſta*, &c.

The generality of authors confound the *balliſta* with the *catapulta*, attributing to the one what belongs to the other. According to Vitruvius, the *balliſta* was made after divers manners, though all uſed to the ſame purpoſe: one ſort was framed with levers and bars; another with pullies; another with a crane; and others with a toothed wheel.

The *balliſta* is ranked by the ancients in the ſling kind, and its ſtructure and effect reduced to the principles of the ſling; whence it is called by Hero, and others, *funda* and *fundibulus*. Guntherus calls it *Balearica machina*, as a ſling peculiar to the Balearic iſlands.

Perrault, in his notes on Vitruvius, gives a new contrivance of a like engine for throwing bombs without gunpowder.

Ballista, in *Practical Geometry*, the geometrical croſs, called alſo *Jacob's ſtaff*. See Cross-*ſtaff*.

Ballista, or *Os* Ballistæ, is a denomination given by ſome anatomiſts to the firſt bone of the *tarſus*, otherwiſe called *talus* and *aſtragalus*.

BALLISTARII, or Ballistrarii, in *Antiquity*, ſlingers in the ancient armies, or ſoldiers who fought with the *balliſtæ*.

There were two kinds of *balliſtarii milites*; the former caſt ſtones, and other miſſive weapons, with the hand, called *manuballiſtarii*; ſometimes ſimply, *manuballiſtæ*. The latter called *carroballiſtarii*; ſometimes only *carroballiſtæ*, made uſe of a machine. Some ſpeak of a third kind, called *arcuballiſtarii*; but theſe are better reduced to the ſecond.

The *balliſtarii* were ſcarce heard of before the age of Conſtantine.

Ballistarius is alſo uſed, in *Middle Age Writers*, for a croſs-bowman, or *arbaletier*.

BALLISTES, in *Ichthyology*. See Balistes.

BALLISTEUM, or Ballistæa, in *Antiquity*, a military ſong or dance uſed on occaſions of victory.

The *balliſtea* were a kind of popular ballads, compoſed by poets of the lower claſs, without much regard to the laws of metre.

BALLISTICA, Ballistics, is uſed for the art of throwing heavy bodies. F. Merſennus has publiſhed a treatiſe on the projection of bodies, under this title.

BALLOON, or Ballon, in *Chemiſtry*, denotes a large round ſhort-necked matraſs, or veſſel, uſed in chemiſtry, to receive what is diſtilled or drawn off by means of fire. They are generally round like hollow ſpheres, or like foot-balls, called in French *balons*, whence they derive their name. When chemiſts have occaſion to drill holes in their *balloons*, or glaſs veſſels, the operation is beſt performed by a copper drill and emery; a ſteel inſtrument makes vibrations which are apt to break the glaſs.

Balloon is alſo uſed, in *Architecture*, for a round ball, or globe, placed on the top of a pillar, or the like, by way of acroter, or crowning. That on the top of St. Peter's at Rome is of braſs ſuſtained by an iron arming within; and, being at the height of ſixty-ſeven fathoms, is above eight feet in diameter.

Balloon alſo denotes a kind of game ſomething reſembling tennis.

The *balloon* is played in the open field, with a great round ball of double leather blown up with wind, and thus driven to and fro with the ſtrength of a man's arm, fortified with a brace of wood.

Balloon, or Baloen, is more particularly uſed among *Voyagers*, for the ſtate barges of Siam.

The *balloons* are a kind of brigantine, managed with oars, of very odd figures, as ſerpents, ſea-horſes, &c. but by their ſharpneſs and number of oars, of incredible ſwiftneſs. The *balloons* are ſaid to be made of a ſingle piece of timber, of uncommon length; they are raiſed high, and much decorated with carving at head and ſtern: ſome are gilt over, and carry an hundred and twenty, or even an hundred and fifty rowers on each ſide. The oars are either plated over with ſilver, or gilt, or radiated with gold; and the dome or canopy in the middle, where the company is placed, is ornamented with ſome rich ſtuff, and furniſhed with a baluſtrade of ivory, or other coſtly matter, enriched with gilding. The edges of the *balloon* juſt touch the water, but the extremities riſe with a ſweep to a great height. Some are adorned with a variety of figures, made of pieces of mother of pearl inlaid: the richer ſort, inſtead of a dome, carry a kind of ſteeple in the middle; ſo that conſidering the ſlenderneſs of the veſſel, which is uſually an hundred, or an hundred and twenty feet long, and ſcarce ſix broad, the height of the two ends, and of the ſteeple, with the load of decorations, it is a wonder they are not overſet.

BALLOTADES, in the *Manege*, the leaps of a horſe between the pillars, or upon a ſtreight line; ſo that when his forefeet are in the air, he only ſhews his hind ſhoes, without yerking out.

A horſe naturally takes to *ballotades*, after putting him on caprioles; when the fire and mettle of the caprioles is over, he falls of courſe to *ballotades*, and then to CROUPADES, unleſs a poinſon in a hard hand make him yerk out, and continue the air of CAPRIOLES.

BALLOTE, in *Botany*. See *Black* HOREHOUND.

BALLOTING, a method of voting at elections, &c. by means of little balls, which are uſually of different colours, by the French called *ballotes*; which are put into a box privately.

BALLUSTER, or BALLISTER, a ſmall kind of column or pillar, whereof BALLUSTRADES are formed.

The word is French, *baluſtre*, which ſignifies the ſame; formed from the Latin *baluſtrum* or *baluſtrium*, a place among the ancients where the baths were railed in.

Balluſters are of divers forms, as well as matters, according to different occaſions, and different orders of architecture.

BALLUSTER of the Ionic capital, denotes the lateral part of the volute, anſwering to what Vitruvius calls *pulvinata*, on account of its reſemblance to a pillow.

BALLUSTRADE, in *Architecture*, an aſſemblage of one or more rows of balluſters, high enough to reſt the elbow on, fixed upon a terrace, or the top of a building, by way of ſecurity; ſometimes alſo to make a ſeparation between one part and another, as thoſe around altars, fonts, &c. See *Tab. Archit. fig.* 40 (G).

BALM, or BALSAM. See BALSAM.

BALM. See BAUM.

BALM *of ſulphur*. See SULPHUR.

BALMING. See EMBALMING.

BALNEARII *ſervi*, in *Antiquity*, ſervants or attendants belonging to the baths.

Some were appointed to heat them, called *fornicatores*; others were denominated *capſarii*, who kept the cloaths of thoſe that went into them; others *aliptæ*, whoſe care it was to pull off the hair; others *unctuarii*, who anointed and perfumed the body.

BALNEARIUS *fur*, in *Antiquity*, a kind of thief who practiſed ſtealing the cloaths of perſons in the baths; ſometimes alſo called *fur balnearum*.

The crime of thoſe thieves was a kind of ſacrilege; for the hot baths were ſacred: hence they were more ſeverely puniſhed than common thieves, who ſtole out of private houſes. The latter were acquitted with paying double the value of the thing ſtolen; whereas the former were puniſhed with death.

BALNEUM, is a word much uſed by chemiſts, generally ſignifying a veſſel filled with ſome matter, as ſand, water, or the like, in which another is placed that requires a more gentle heat than the naked fire.

BALNEUM *fœni*, a hay bath, is when a body is laid to digeſt in moiſt hay, whoſe heat is likewiſe directed by the application of water.

BALNEUM *Mariæ* is by ſome ſo called, as being ſuppoſed to have been firſt invented by the bleſſed Virgin; but by others, with more propriety, it is called *balneum maris*, or ſea-bath, in regard the veſſel here floats as it were in a ſea. Here the cucurbit is placed in hot water, which warms the matter contained, and diſpoſes it for riſing, or exhalation. A ſand-heat is ſometimes alſo called *balneum ſiccum*, or *arenoſum*. See BATH.

BALNEUM *minerale*, or mineral bath, is uſed by ſome chemiſts for *aqua regia*.

BALNEUM *roris*, or *roritum*, is a furnace where the cucurbit, or diſtilling veſſel, is only ſuſpended over the vapour of water, and not in contact with the water itſelf.

This is alſo denominated *balneum vaporarium*, or a *vapor-bath*.

BALNEUM *ventris equini*, or a horſe-dung bath, is when a body is laid to digeſt in horſe-dung, the heat whereof is managed by the affuſion of hot water.

BALONICH, in the *Materia Medica* of the ancients, a name given by Avicenna, Averrhoes, and others, to a kind of camphor, which they deſcribe as coarſe, brown, and of leſs value than the other ſorts. This is probably the ſame with our rough camphor, as brought over to us from the Eaſt Indies.

BALSAM, BALSAMUM, properly denotes an oily, reſinous, and odorous ſubſtance, ouſing from inciſions in certain plants; of ſovereign virtue in the cure of wounds, and divers other diſorders. They are liquid, but ſomewhat thick, and flow ſpontaneouſly from certain trees. If pure *balſam* be dropped on a woollen cloth, it may be waſhed off without leaving the leaſt ſtain, but adulterated *balſam* ſticks to the place. Pure *balſam* coagulates with milk, but adulterated *balſam* will not. True *balſam* dropped into water diſcovers its genuineneſs by ſpreading on the ſurface, imparting its taſte and ſmell; it is ſo thick, that the groſs parts at the top may be taken off with a needle. Theſe are called natural *balſams*, to diſtinguiſh them from compoſitions of the ſame name.

Balſams are only RESINS in their liquid ſtat which, when combined with any conſiderable proportion of gum, are called *gummy* RESINS. They are ſoluble in vinous ſpirits and oils, not acted upon by water, not volatile in the heat of boiling water, fuſible in a ſmall degree of heat, and readily inflammable on the contact of any flaming or ignited body.

Balſams by yolk of eggs are rendered ſoluble in water; more elegantly ſtill by ſugar; and moſt elegantly, as eſſential oils alſo are by the intervention of gums and mucilages; the ſolutions thus procured are moſt permanent. Gum is the medium employed by nature herſelf to unite the reſinous and balſamic with the watery juices of vegetables.

Of themſelves they have no ſmell; but they often retain, or have preſerved in them induſtriouſly, a part of the odorous principle, and are nevertheleſs looked upon as pure RESINS.

They derive both their liquidity and ſmell from a greater or leſs quantity of eſſential oil, which they contain, and which may be extracted by diſtillation.

Balſams may even be conſidered as true *eſſential* OILS, which have loſt ſome of their odoriferous principle, and of their fineſt and moſt volatile part. When they are deprived of their remaining part of volatile oil, their *reſidua* exactly reſemble thoſe which remain after the rectification of *eſſential* OILS. Theſe *reſidua* are true RESINS, from the analyſis of which the ſame principles are obtained, as from *natural reſins*, which are themſelves nothing elſe but *balſams* exhauſted by time, or by the action of the air, and of the ſun, of all their odoriferous and volatile parts. Neumann. Lewis. Macquer.

Balſamic medicines are of a nature ſomewhat hot and acrid. Under this denomination come what we commonly call cephalic, nervous, apoplectic, and antiparalytic medicines; as alſo ſpirituous cordials, and other ſubſtances of ſimilar natures and properties. But of all the medicines belonging to the *balſamic* claſs, the moſt noted and efficacious are aloes wood, together with its reſin and eſſence; yellow ſanders with its eſſence, reduced to a liquid *balſam*; ambergris; liquid amber; balm of Gilead; amber; benzoin; ſtorax, with its reſin; the ladaniferous ſhrub, with its reſin; the *balſams* of Peru, and Tolu; *balſam* of Caſour; and that called the red American *balſam*; the true Peruvian bark; the bitter *coſtus*; Indian bark; cinnamon; cloves; cardamoms; cubebs; mace; nutmegs; ſavory; thyme; rue; mother of thyme; lavender; our *origanum*, and that of Crete; marjoram; our own, and Turkiſh baum; Roman chamomile; Syrian herb maſtich; baſil; ſouthernwood; ſpikenard; camel's hay; bay, and myrtle leaves; together with the genuine fragrant and unadulterated oils diſtilled from them. The compound *balſamics* are, the apoplectic *balſam* of Crollius; the *balſamum cellenſe*; that of Scherzerus, and the liquid *balſam* of life; ſpirit of Peruvian *balſam*; ſpirit of amber and maſtich; the apoplectic water of Sennertus; the *aqua Anhaltina*; true eſſence of amber, and volatile oily ſpirits, impregnated with oil of cinnamon, mace, and cedar.

Balſams are of great ſervice in medicine and ſurgery. To uſe them, they are uſually liquified with ſpirit of wine, or oil, and ſometimes mixed up with the yolk of an egg. They are to be uſed cautiouſly and in moderate doſes by young people, and patients of choleric and delicate conſtitutions, as alſo in caſes where the body abounds with blood and humours.

Balſamics labour under this defect, that they muſt make a vaſt progreſs in moſt inſtances, before they can arrive at the intended ſcene of action; by which means they not only come ſlowly, and in ſmall quantities, but much altered, and variouſly modified, by the action of the blood-veſſels, and the intermixture of its humours.

In the intentions where *balſamics* are chiefly given, the ſeat of the diſorder is generally in the *viſcera*; where a medicine can only arrive by the common conveyance of the blood; and how long, from its being taken into the ſtomach, muſt ſuch a medicine be, and how many alterations muſt it undergo in the divers parts of the body it paſſes through, before it comes to the place deſired? Though the lungs are, by their ſituation, ſo near the ſtomach, a medicine cannot arrive there, till it has taken its courſe through the lacteals, paſſed all the meanders of the meſentery, gone up with the chyle into the ſubclavian vein, and there entered the blood: and, after all, it has only the chance of coming to the part in ſuch a quantity, as, with regard to the whole medicine which entered the blood, bears the ſame proportion, as the blood in the pulmonary artery bears to all the blood in the other arteries.

Hence nothing is to be expected from *balſamics*, in a ſhort time, or a few days: they muſt be repeated, and followed, till the animal juices are ſufficiently charged therewith, to afford a continual ſupply.

Add, that *balſamics* generally load and clog the ſtomach; and hence, have often bad effects. This conſideration led the biſhop of Cloyne to prefer tar-water to all other *balſamics*.

Balsam, or *balm of Gilead*, is in the greateſt eſteem, though there are ſome who hold that of Peru equal to it in virtue. It is drawn by inciſion from a tree of the ſame name growing in Egypt and Judea, but chiefly in Arabia Felix, and which is held ſo precious, that it makes part of the ſpecial revenue of the grand ſignior, without whoſe permiſſion none are allowed to be planted or cultivated. See Dr. Lewis's Mater. Medic. p. 422.

Its ſmell is agreeable, and very briſk: its taſte bitter, ſharp, and aſtringent; it eaſily diſſolves in the mouth, and leaves no ſtain on woollen cloth.

At preſent there are three ways of obtaining it, and according to theſe there are three kinds of the *balſam*. The firſt kind is that obtained from the natural cracks, or wounds, made in the bark, as by the ancients, which is the beſt and moſt precious kind. But there is ſo little procured this way, that it ſcarcely ſupplies the ſeraglio, and the great officers; and hardly a drop of it is ever ſent out of the country. The ſecond kind is called by ſome the Conſtantinople balſam; this alſo rarely comes to us, unleſs in ſmall quantities preſented by the great men of the Porte, and is prepared by boiling. They fill large veſſels with the young twigs and leaves of the *balſam* ſhrub; and adding a large quantity of water they boil them gently. During the boiling there riſes to the ſurface of the liquor an oily and balſamic matter, which they ſkim off, and preſerve for uſe. After all this fine matter is raiſed, they increaſe the fire, and a large quantity of ſomewhat thicker balſam riſes more like turpentine; this they alſo ſeparate, and preſerve by itſelf; and this is principally what is brought into Europe.

It is unqueſtionably a very noble detergent and balſamic; is of the ſame uſe with *capivi* in gonorrhœas, and is excellent in ulcers of the kidnies and bladder. It is by ſome eſteemed a cure for conſumptions; and though it does not abſolutely deſerve that title, yet with proper management it may do great ſervice in them. Externally it has been always deſervedly famous for curing wounds of all kinds; where the wound is indeed a ſimple ſolution of continuity, and there is no bruiſe with it, the cures with *balſams* of this kind are very ſudden.

For internal uſe it may be either given in boluſſes, or dropped on ſugar; or finally diſſolved, by means of the yolk of an egg, into emulſions.

There is likewiſe a *balſam* of Mecca, which is a dry, white gum, reſembling white copperas, eſpecially when old. It is brought from Mecca, by the returns of the caravans of pilgrims and Mahometan merchants, who travel thither out of devotion to the birth-place of their prophet. It has all the virtues of the *balm* of Gilead, or Judea; and is probably the ſame, only hardened, and its colour altered.

Balsam, *Luccatellus's*, is compoſed of oil, two parts, and turpentine and wax, each one part; the red ſanders only contributing to its colour and ſmell.

Balsam *of Peru* is of three kinds; or rather, it is one and the ſame *balſam*, having three ſeveral names, viz. *balſam of inciſion*, which is a white glutinous reſin, ouſing at an inciſion in the tree, and afterwards thickened and hardened. This is excellent for green wounds, and much reſembles the opobalſamum, excepting in ſmell, which diſtinguiſhes it.—*Dry balſam*, which is diſtilled from the tips of branches cut off, to which are faſtened little veſſels to receive the liquor, which at firſt is like milk, but reddens by being expoſed to the ſun. Its chief uſe is in the compoſition of the lac virginale, which is made much better with this, than with ſtyrax or benzoin.—Laſtly, the *balſam of lotion*, which is blackiſh, and is drawn from the bark, roots, and leaves of the tree, minced and boiled together. This is uſed in wounds like the white *balſam*; and, on account of its excellent ſmell, by the perfumers.

The virtues of this *balſam* as a cordial, pectoral, and diuretic, are very great. It is given with ſucceſs from four to eight drops for a doſe in conſumptions, aſthmas, nephritic complaints, obſtructions of the *viſcera*, and ſuppreſſions of the *menſes*. It has alſo externally all the virtues of the balm of Gilead, and conſolidates wounds in the ſame remarkable manner. It is beſt taken dropped on ſugar; the yolk of an egg will indeed diſſolve it, and it may that way be made into an emulſion, but it is more acrid in that form than when taken ſingly. It is often made an ingredient in boluſſes and electaries; and is in ſome of the officinal compoſitions.

Balsam *of Copabu*, or *Copaiba*, vulgarly *Capivi*, comes from Braſil, in earthen bottles. There are two ſorts, the one bright and thin, the other thick; the firſt white of a reſinous ſmell; the other a little more on the yellow: both are admirable for wounds; the Jews uſe this *balſam* after circumciſion to ſtop the blood.

Many of the Americans call all odoriferous reſins, and ſweet-ſcented gums, *copal*; and the word *iba*, or *iva*, is the name for a tree; by which the etymology of *copaiva* eaſily appears.

It is a great cleanſer of the urinary paſſages; on which account it obtains much in gonorrhœas, and all obſtructions and ulcerations in thoſe parts. It is efficacious in the *fluor albus*, and in gleets. It is alſo reputed a powerful balſamic, and, as ſuch, uſed in many diſtempers of the breaſt.

But its heat and acrimony render it hurtful in inflammatory caſes, *phthiſes*, diſorders of the kidneys, &c.

The *balſam of Copaiba* is frequently adulterated with oil of ſweet almonds, and oil of turpentine; the near reſemblance it bears to this laſt, has occaſioned them to be ſometimes confounded. They may be diſtinguiſhed by the conſiſtence as well as by colour; turpentine being thicker, and of a vitreous caſt, but the *balſam* whiter, and more inclining to a yellow: add, that it is more odorous, as well as ſharper and bitterer to the taſte.

Beſide the common uſes of this *balſam*, the art of the modern chemiſts has found a new and very profitable one, that is, the debaſing and adulterating the dearer eſſential oils with it, as the ſmell in its oil is much ſweeter than that of turpentine or deal-wood.

This *balſam* yields a very large proportion of eſſential oil, by diſtillation with water, even to the quantity of five or ſix ounces from a pound; and the chemiſts who know this, adulterate their oils, either by mixing them with the oil of *Copaiba*, or more artfully, by putting a proper quantity of this *balſam* with the ingredients into the ſtill, and ſo drawing off the oil of both mixed intimately together. There ſeems no eaſy way of detecting this fraud; the nice uſe of a hydroſtatical balance indeed would do it; and it is worth obſerving whether the oils thus adulterated will not, on long keeping, diſcharge the ink of their written label, as the eſſential oils, adulterated with the oil of turpentine, are known to do, on account of the acid vapour which continually exhales from that oil. See Copaiba.

Balsam *of Tolu* is at firſt a liquid reſin, which, as it grows old, becomes of the colour and conſiſtence of Flanders glue. It comes by inciſion from ſome trees growing in New Spain; where the inhabitants receive it in little veſſels of black wax: in taſte and ſmell it reſembles balm of Gilead; as it grows old, it takes the conſiſtence of a dry *balſam*. It is an excellent balſamic and reſtorative; and good in all decays, eſpecially of the lungs. It ſoftens and thickens the blood, and cures catarrhs, and coughs, from tickling defluxions, &c. Its healing virtues extend even to the ſeminal parts, where it is good in old gleets, &c. There is a ſyrup of it in the ſhops; but the beſt form of adminiſtering it is in pills, or in a ſolution in ſome ſpirituous *menſtruum*.

It takes its denomination from a place called Tolu, ſituated between Carthagena and Nombre de Dios.

Balsam, *Hungarian*, *balſamum*, is a ſpecies of oil, or liquid reſin, oozing from a coniferous tree growing on the Carpathian mountains, to which the Hungarians attribute many virtues. Vid. Ephem. Acad. N. C. Cent. 7. Obſ. 2. p. 4.

The virtues of this *balſam*, internally taken, or externally applied, are ſaid to be very great, and not inferior to thoſe of the *oriental balſam*. But whether either deſerve the commendation beſtowed on them, and how far they excel the common turpentine, is a queſtion which muſt be left to impartial practitioners.

Balsam *of liquid amber*, is a clear reddiſh reſin, produced by a tree in New Spain, called by the natives *oſoſol*; in ſome degree reſembling ambergris in ſmell, whence its name. This *balſam* is liquid; in which ſtate it is called *oil of liquid amber*, and when old, *balſam of liquid amber*; it comes from both the Spains, in barrels, but the genuine is very rare among us.

Balsam, *new*, reſembles *balſam* of Tolu in ſmell and colour, and is procured in the manner of oil of bays, from a red fruit in the iſland of St. Domingo. It is found excellent for wounds and ulcers; eſpecially for fiſtulas *in ano*.

Balsam is alſo applied to a mineral ſubſtance, of a fragrant, healing quality; extracted from a kind of ſtones diſcovered in a mine near Bergamo in Italy. Vid. Phil. Tranſ. N° 79. p. 3059; or Abridg. vol. ii. p. 460.

This is more peculiarly called, by way of diſtinction, the *mineral balſam*.

The diſcoverer was Sig. Caſtagna. Its chief uſe is in diſorders of the *uterus*; on which account it is in great eſteem among the Genoeſe, to reſtore women after labour. Some have alſo found it of great benefit in the phthiſis.—Phil. Tranſ. N° 127. p. 674.

Balsam is alſo applied to certain factitious ſubſtances, made by chemiſts and apothecaries, chiefly of balſamic and healing ingredients, in imitation of the native *balſams*.

Theſe are called, by way of diſtinction, *factitious*, or *artificial balſams*.

We have two different compoſitions of *balſams*, in imitation of the true, or Egyptian *balſam*; one by Matthiolus, the other by Euricus Cordus. Pomet has alſo given a method of imitating many of the native *balſams*.

Balsams, *artificial*, are, by ſome, divided into ſimple and compound; to the claſs of *ſimple* belong the rectified oils of wax, turpentine, linſeed, *hypericum*, roſes, *ſolanum*, and *triſoliatum odoratum*; to which Boerhaave adds freſh butter.

Balsams, *compound*, are numerous; the diſpenſatory writers furniſh a great number of forms, as magiſterial, chalybeat, paralytic, nephritic, and polychreſt *balſams*; red, green, Spaniſh, and Samaritan *balſams*; *balſams* of *arceus*, of amber, of pitch, &c.

Beſides theſe, chemiſts and alchemiſts ſpeak of *balſams of antimony*, *of life*, &c. See ſome remarks on the uſe of *balſams* in the cure of *conſumptions*. Lond. Med. Obſerv. &c. vol. iv. p. 231. by Dr Fothergill, who is of opinion that all medicines poſſeſſed of heating, ſtimilating qualities, are in general improper in the treatment of this diſorder.

Balsam *of antimony*, a famous medicine deſcribed by Baſil Valentine in his *Currus antimonii triumphalis*. This author has related many incredible things in its praiſe; but Kirkring, in his commentaries on that work, declares, that all he has ſaid of it, is ſhort of its real praiſe; and that, in particular, cancers were to be cured by it; himſelf having, as he informs us, performed a perfect cure on a breaſt condemned to be cut off, by anointing it with this *balſam*, and giving the common internals.

Balsam *of life*. The firſt medicine known by this pompous name, was the preparation of antimony, ſo highly extolled by Baſil Valentine, and, after him, by Kerkring. Theſe gentlemen are very cautious of giving the proceſſes for this and the like medicines, in intelligible terms; but they acknowledge, that it contains all the virtues of antimony, and all that can be done by the ſpagyric art.

The famous Frederick Hoffman ſpeaks of a *balſam of life*, of his own invention, to which he aſcribes great virtues; but we know not if he ever publiſhed the proceſs for making it. That given in the Straſburg and Ratiſbon Diſpenſatories, under the name of *Balſamum vitæ Hoffmanni*, is taken from the notes on Poterius, and is not the ſame with that *balſam*, which the late learned Fred. Hoffman prepared in his own houſe.

Balsam is alſo applied to certain preparations of ſpirit of wine, with balſamic and aromatic ſpices, fragrant reſins, and the like. Theſe are otherwiſe called elixirs. Among theſe, the *elixir balſamicum Hoffmani*, otherwiſe called his *balſamum vitæ*, is famous; but its preparation ſeems not known.

Balsams, *odoriferous*, are a fragrant kind of unguents, generally of a thick conſiſtence, compoſed of ſome fatty, denſe juice, joined with ſome diſtilled oils of divers kinds. Theſe are alſo called *ſweet-ſcented*, or *apoplectic balſams*.

Theſe *balſams* are prepared as rich perfumes, to raiſe the languid ſpirits; and the nobleſt and richeſt of the eſſential oils ſhould therefore be uſed in them. The oils principally directed by Boerhaave to this purpoſe, are thoſe of balm, *calamus aromaticus*, cinnamon, cedar, citron, cloves, jaſmin, lavender, white lilies, marjoram, mace, nutmeg, *origanum*, oranges, both thoſe of China and Seville, roſes, *rhodium*, and yellow ſanders; to which may be added, the natural balſams of Peru and Gilead; theſe two being ſpontaneouſly fragrant without diſtillation.

Balsams, *diſtilled*, are only etherial oils diſſolved in ſpirit of wine.

Balsams, *unguentareous*, are, properly, unguents compoſed of divers reſins, gums, and oils, fuſed into one maſs with ſpirit of wine, oil of turpentine, or the like; intended to cleanſe, preſerve from putrefaction, heal, mitigate, reſolve, &c.

Balsam is alſo uſed, in *Pharmacy*, as the name of one of the forms of medicines; of a conſiſtence ſomewhat greater than that of oil, but leſs than that of an unguent.

Balsamum *ſamech*, of Paracelſus, is a ſalt of tartar dulcified, by diſtilling ſpirit of wine from it, till the ſalt be ſufficiently ſaturated with its ſulphur, and till it ſuffer the liquor to be drawn off, as ſtrong as when it was poured on.

Balsam *of ſulphur* is a ſolution of the flowers of ſulphur in ſome oil: it is made by boiling the two together over a ſoft fire the ſpace of an hour, or till the ſulphur be totally incorporated with the oil into a red balſam.

The *balſams* of *ſulphur* are named from the particular oils which enter into their compoſition. Thus if it be made with the eſſential oil of turpentine, it is called *terebinthinated* balſam of ſulphur; if made with the eſſential oil of aniſeed, it is called the balſam of ſulphur with oil of aniſeed; theſe are the two moſt in uſe. When it is made with the oil of nuts, it is called *Rulland's balſam* of *ſulphur*. It is recommended both for external and internal uſes, as being warm and mollifying in caſes of wounds, ſanious ulcers, fiſtulas, &c. and curative even of ulcers of the lungs.

Helmont, its inventor, extols it for all diſeaſes of the breaſt; yet Boerhaave rejects all internal uſe of it, as too hot, and acrimonious. Bartholin alſo obſerves, that it ſometimes cauſes a cardialgy.

Balsam *of Saturn* is a ſalt, or ſugar of lead, diſſolved in oil or ſpirit of turpentine, juniper, or the like, digeſted, till the matter hath acquired a red tincture. This is found to reſiſt the putrefaction of humours, and is good to cleanſe and cicatrize ulcers.

Balsam, or **Balm**, among *Alchemiſts*, ſometimes denotes the ſpirit of common ſalt extracted in a particular manner. The preparation is thus: they diſſolve the ſalt, and place its diſſolution, well clarified, in horſe dung, to putrefy, for the ſpace of two or three months, and then diſtil it ſtrongly with a ſand heat; upon which there ariſes a precious unctuoſity, wherein things the moſt corruptible being ſteeped, are ſaid to remain entire, eternally.

It is ſaid, that it was by this means ſome of the ancients preſerved dead bodies entire, without reducing them to mummy; and particularly that of the woman mentioned by Volaterranus to be found in a *mauſoleum* near Albano, in the time of pope Alexander VI. which was by his order thrown ſecretly into the Tiber, to prevent idolatry; ſhe being found as freſh as when alive, though ſhe had been dead 1300 years.

We read of a *balſam* of this kind, called

Balsam, *dead*, a liquor prepared of myrrh and aloes, diſſolved in ſpirit of wine, chiefly uſed for drying and abſorbing the humours of dead bodies.

Balsam *of the philoſophers*, *balſamum philoſophorum*, is one of thoſe ænigmatical terms, whereby they expreſs *aurum potabile*.

Balsam is alſo ſometimes uſed, in *Eccleſiaſtical Writers*, for the ſacred chryſm.

This is otherwiſe denominated *balſamelæum*.

Balsamum *traumaticum*, *vulnerary balſam*, a form of medicine preſcribed in the London Diſpenſatory, intended to ſupply the place of the tincture, commonly called the Friar's *balſam*, ſo famous for curing freſh wounds. It is made thus: take of benjamin three ounces, ſtrained borax two ounces, balſam of Tolu one ounce, ſuccotorine aloes half an ounce, rectified ſpirit of wine a quart; digeſt them together, till as much as may be of the gums are diſſolved, and then ſtrain off the ſpirit.

Balsam *apple*, *male*, *momordica*, in *Botany*, a genus of the *monoecia ſyngeneſia* claſs. Its characters are theſe: it hath male and female flowers upon the ſame plant; and the male flowers have an open concave empalement of one leaf. It has three ſhort awl-ſhaped ſtamina, which are compreſſed in a body, and have a reflexed line containing the *farina*. The female flowers have the ſame empalement and petal as the male, but ſit upon the germen; theſe have three ſhort filaments, without ſummits. The germen ſupports one taper trifid, crowned by three oblong, gibbous ſtigmas, and afterwards turns to an oblong fruit, opening with an elaſticity, having three membranaceous cells filled with compreſſed ſeeds. There are four ſpecies, one of which is known by the name of the wild, or ſpurting cucumber, from its caſting out its ſeeds, together with the viſcid juice in which they are lodged, with a violent force, if touched when ripe; and from hence it has ſometimes obtained the name of *noli me tangere*, or *touch me not*.

This plant grows naturally in ſome of the warm parts of Europe; but in England it is cultivated in gardens for the fruit, which is uſed in medicine, or rather the *fæcula* of the juice of the fruit, which is the *elaterium* of the ſhops.

Balsam-*tree*. See Turpentine-*tree*.

BALSAMATION, **Balsamatio**, is uſed by ſome writers, for the art or act of embalming dead bodies.

Dr. Hook ſpeaks of an univerſal *balſamation*, or method of preſerving all kinds of bodies from corruption, invented by Dr. Elſhot. See Preservation.

BALSAMELÆON, in the *Materia Medica*, a name given by ſome authors to the balm of Gilead, or true *balſamum Judaicum*.

BALSAMIC, a term in phyſic, ſignifying that property in a medicine, whereby it is rendered ſoft, gently attenuating, and ſomewhat agglutinant; and is often applied to things healing or vulnerary.

In this ſenſe, phyſicians ſpeak of the *balſamic* virtues of iron: hence alſo the denomination, *balſamic ſtyptic*, given to Dr. Eaton's liquor. Mem. Acad. Scienc. 1713. p. 247. Phil. Tranſ. N° 283. p. 110.

Balsamics are medicines endowed with a balſamic, that is, a reſtoring, healing, and cleanſing power.

The chief remedies in the claſs of *balſamics*, are the native balſams, which give the denomination to all the reſt.

Balsamics are divided into emollients, reſtoratives, vulneraries, and detergents.

Balsamics, again, are either internal or external; hot and acrid, or mild and temperate. The acrimonious kind are dangerous internally, and not to be given without the greateſt caution, where there is any diſpoſition to inflammation or fever; as in *phthiſes*, vomicas, gonorrhœas, urinous diſorders, ſtone, *cephalæa*, &c.

BALSAMINA *ſcandens*, a name given to the large-fruited white briony of Ceylon.

BALSAMINE, *female*, BALSAMINA, or *balſam*, in *Botany*, the name given by Tournefort to a genus of plants, called by Linnæus *impatiens*, and belonging to the claſs of *ſyngeneſia monogamia*; the characters of which are theſe: the flower has a two-leaved ſmall empalement; it hath five petals, which are unequal, and ſhaped like a lip-flower. It hath a *nectarium* at the bottom of the flower, ſhaped like a hood or cowl, which is oblique to the mouth, riſing on the outſide, whoſe baſe ends in a tail or ſpur, and five ſhort ſtamina, which are incurved. In the bottom is ſituated an oval, ſharp-pointed germen, which afterward becomes a *capſula* with one cell, opening with an elaſticity in five valves, which twiſt ſpirally, and contain ſeveral roundiſh ſeeds fixed to a column. There are three *ſpecies*.

The varieties of this plant, kept in the gardens, are all raiſed from ſeeds ſown on hot-beds in the ſpring, and afterwards planted out into pots and borders; though there are two or three of the hardier kinds, as the common white, red, and purple kinds, which will come up in common ground, without any artificial heat, and will be ſtronger, and flower better ſo, than if raiſed on hot-beds. But the fine double large kind, or immortal eagle-flower, as it is called, requires to be ſet on a freſh hot-bed, after it has been raiſed on one, in order to bring it forward; elſe it does not get into flower till late in the year, and will not ripen its ſeeds. There are two kinds of this beautiful ſpecies; one brought from the Weſt Indies, known by the name of the *cock's ſpur*: this produces large and ſtrong plants, but flowers very late. The other is from China, and is what is moſt commonly called the *immortal eagle-flower*, and is one of the fineſt annual plants we have, producing very large double flowers, and continuing a long time in flower, if ſheltered from violent winds and rain. This produces ſeeds very well with us; but theſe are apt to degenerate, after a few years, into ſingle flowers.

When the young plants are raiſed in a hot-bed, and are to be planted out into pots, ſuch are always to be preferred as have ſtalks finely ſpotted with red; for theſe always produce red and double flowers. Miller.

BALSAMITA, a name given by ſome to a ſpecies of TANZY.

BALTAGI, among the Turks, porters, and hewers of wood, in the court of the grand ſignior; who alſo mount on horſeback, when the emperor rides out. Part of them alſo, who, for that purpoſe, muſt be caſtrated, keep watch at the gates of the firſt and ſecond courts of the ſeraglio. Theſe laſt are called *capigi*, and their commander *capigi paſcha*.

BALTHEUS *Orionis*, *belt of Orion*, in *Aſtronomy*, a part of the conſtellation of ORION, conſiſting of three bright ſtars of the ſecond magnitude, placed nearly in a right line in Orion's girdle.

BAMBELE, in *Zoology*. See RUTILUS.

BAMBO, in *Commerce*, an Eaſt Indian meaſure, containing five Engliſh pints.

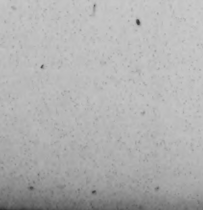
BAMBOE, in *Natural Hiſtory*. See ARUNDO.

The Indian *bamboe* is the largeſt kind of cane that is known. It is of an extraordinary height and bigneſs, when it bears no bloſſom: each cane is often, toward the bottom, of the ſize of a man's thigh, decreaſing gradually to the top, where it bears a bloſſom or flower like our reeds in their proper ſeaſon. The *bamboe* grows in all the maritime countries in the Eaſt Indies.

With theſe canes of *bamboe* the Indians build their houſes, and make all ſorts of furniture in a very ingenious manner. The wood of theſe canes is ſo hard and ſtrong, that they ſerve very well to make piles for ſupporting their little houſes built over rivers, which have a gentle courſe. They alſo make with this wood all ſorts of utenſils for their kitchens and tables. They ſerve to make the ſticks, or poles, with which the ſlaves carry thoſe ſorts of litters called *palanquins*, which are ſo common in all the Eaſt. They likewiſe make of them a kind of pails, in which the water keeps extremely cool. The ſmall ſhoots of them ſerve to make walking canes.

A decoction is made of the leaves, of uſe for diſperſing coagulated blood; and of the pithy part in the middle they alſo make a medicine againſt the ſtrangury.

BAMBOO *habit*, a Chineſe invention, by which a perſon, who cannot ſwim, may eaſily keep himſelf above water. Four *bamboos*, two before, and two behind their bodies, are placed horizontally, and project about twenty-eight inches. They are croſſed on each ſide by two others, and the whole properly ſecured, leaving a ſpace for their body, it is put over their heads, and tied ſecure in two minutes. Its ſhape as here repreſented.



BAN, a ſort of ſmooth fine muſlin, which the Engliſh import from the Eaſt Indies. The piece is a yard broad, and runs about twenty yards and a half.

BAN and **BANS**. See BANN and BANNS.

BAN, *Arriere*. See ARRIERE.

BANANA, a name uſed by many authors for the MUSA, or plantain tree, of the common kind; but more frequently, with us, underſtood to mean another ſpecies of the ſame genus, which the Portugueſe call *pacoeira*, and we, particularly, the *banana* tree.

The difference between the two is this; the *muſa* has a green ſtalk, and a long, crooked, angular fruit, reſembling a crooked cucumber; the *banana*, a ſpotted ſtalk, and a round fruit.

The fruit of this tree is ſaid to be nouriſhing, to excite urine, and to be a provocative to venery.

The abbé Poyart deſcribes two trees under the name of *bananas*, which he met with in Africa. The one, which is rather a plant than a tree, riſes to the height of between twelve and fifteen feet, on a ſtalk or trunk of eight or ten inches in diameter. The fruit ſhoots forth from the trunk in a cluſter, containing between one and two hundred *bananas*, each an inch thick, and eight or nine inches in length. As ſoon as one cluſter is produced the plant dies, and ſeveral new plants ſpring up in the room of the old one. The trunk of the tree is encompaſſed with ſeveral ſprigs, of the rind of which the negroes make cords. The leaves of this plant are ſeven or eight feet long, and twenty inches broad; as ſtrong as parchment, and are uſed for umbrellas, and other purpoſes. The other tree is the fig-*bananas*, or fig-tree of Adam, and differs from the former only in the nature and qualities of its fruit. The produce of the former is a kind of bread, which is dry and mealy; that of the latter a delicious fruit, which is ſoft and moiſt. Hiſtoire de Loango, &c. vol. i. 1776. Paris.

BANC, BANCUS, or BANK, in *Law*, denotes a ſeat, or bench of judgment. See COURT.

BANCI, *jus*, or the privilege of having a bench, was anciently only allowed to the king's judges, *qui ſummam adminiſtrant juſtitiam*. Inferior courts, as courts-baron, hundred courts, &c. were not allowed that prerogative; and even at this day the hundred-court at Freibridge in Norfolk, is held under an oak at Gey-wood; and that of Woolfry, in Herefordſhire, under an oak, near Aſhton in that county, called Hundred-oak.

BAND, in a general ſenſe, ſome ſmall, narrow ligament, wherewith a thing is tied, or faſtened.

We ſay, a *ſtay-band*, a *brow-band*, a *hat-band*, &c.

BAND, in *Architecture*, denotes any flat, low member, or moulding.

This amounts to the ſame with what is otherwiſe called *face*, from the Latin *faſcia*, which Vitruvius uſes for the ſame thing, and ſometimes *fillet*, *plinth*, &c.

BANDS *of columns*, properly denote a kind of emboſſments ſurrounding the ſhafts of ruſtic columns, at certain diſtances, by way of decoration.

Theſe are ſometimes plain, ſometimes picked or vermiculated, and ſometimes carved with decorations of low relievo, which are different in every different *band*.

Columns enriched with theſe *bands*, are ſometimes called *banded columns*.

BAND, in *Surgery*, denotes a fillet, ſwath, or piece of linen cloth, wherewith either to cover or ſurround certain parts, that ſtand in need of aſſiſtance.

Bands are the ſame with what are otherwiſe called *rollers*.

A *band*, or *roller*, when applied, becomes a BANDAGE.

BAND, *bandum*, is uſed, in *Middle Age Writers*, for a flag or banner.

BAND alſo gives the denomination to a military order in Spain, inſtituted by Alphonſus XI. king of Caſtile, in the year 1332.

It takes its name from the *banda*, *band*, or red ribband, which comes acroſs over the right ſhoulder, and under the left arm, of the knight.

This order is for none but the younger ſons of nobles; the eldeſt ſons of grandees are excluded; and, before admittance, it is requiſite to have ſerved at leaſt ten years, either in the army, or at court. They are bound to take up arms for the catholic faith againſt the infidels.

The king himſelf is grand maſter of the order.

BAND *of ſoldiers*, ſo many as fight under the ſame flag, or enſign.

Thus Romulus called thoſe who fought under the ſame manipule (a handful of hay being then uſed for a flag) *manipulus militum*.

Formerly *bands* eſpecially denoted bodies of foot; and the French ſtill call their infantry *bandes Françoiſes*.

BAND *of penſioners*, is ſtill retained, to denote a company of gentlemen, who receive a yearly allowance of 100*l.* for attending the king on ſolemn occaſions.

BANDS, *trained*. See TRAINED-*bands*.

BAND, in matters of artillery, denotes a hoop of iron uſed about the carriage of a gun.

Such are the nave *bands*, which are iron hoops binding the nave at both ends.

Bands *of a ſaddle*, denote two flat narrow pieces of iron, nailed on each ſide the bows of the ſaddle, to retain thoſe bows in the ſituation which makes the fo m of a ſaddle.

Band, *to put a bow in the*, is to nail down the two ends of each *band* to each ſide of the bow.

Beſides the two great *bands*, the fore-bow has a ſmall one, called the *wither-band*, and the hinder-bow another to ſtrengthen it.

BANDAGE, in *Surgery*, the application of a band, ſwath, roller, or fillet, to a part of the body; or the act of rolling, or tying a ſwath or band, round a part affected, and the parts adjacent, with compreſſes, plaſters, and the like.

Of *bandages* there are two ſorts; whereof one ſort are remedies of themſelves.—The other, being intended only to keep the medicaments on the part, are called more particularly *contentive bandages.*

Bandages are a very neceſſary part of the *apparatus* in dreſſing and binding up of wounds. They are not only of greater ſervice than compreſſes and plaſters, in ſecuring the other dreſſings, but are alſo of excellent uſe in reſtraining dangerous hæmorrhages, and in joining fractured or diſlocated bones.

Almoſt all *bandages*, uſed in dreſſing of wounds, ulcers, or fractured or diſlocated bones, ſhould be made of clean linen cloth, ſoftened by wearing, but ſtrong.

They are to be made of a proper length and breadth for the occaſion; and, that they may be ſtrong, examine the courſe of the threads, and tear the cloth lengthways. Darns, ſeams, and large hems in the cloth, are, as much as poſſible, to be avoided, that no inconvenience may be brought on by the roughneſs and irregularity of the roller.

There are different ſorts of *bandages*, for different uſes. Some are common; others are proper. Theſe laſt are only to be applied to particular parts; the others may be applied to any.

Bandages may be diſtinguiſhed alſo into *ſimple* and *compound*; the *ſimple* are thoſe which are formed of one entire piece of linen; the *compound*, of ſeveral pieces, ſewed together in different manners.

The moſt ſimple of all *bandages*, is that uſually not rolled up, but left looſe, and uſed in phlebotomy.

The next to this, is that called the *ſingle-headed bandage*, which is rolled up at one end only. Next to that, the *double-headed bandage*, or that rolled up at both ends.

After theſe come thoſe *bandages*, which are made out of one piece of linen, but are divided at both ends, almoſt as far as the middle; theſe are uſually called, by the ſurgeons, *four-headed bandages*.

Another ſort is ſomewhat ſhorter, and narrower, than the laſt deſcribed, and is divided at one end, and perforated at the other. It is uſually employed in dreſſings to the *penis*, or to one of the fingers.

Another kind is, from its uſe, called the *uniting bandage*; it is a double-headed *bandage*, divided about the middle, and ſerves to unite wounds that are made lengthways, without calling for the future.

There is alſo another *bandage*, provided with an opening in the middle, through which the head may eaſily paſs; the extreme parts of the *bandage* hanging, one over the breaſt, the other over the back. The chief uſe of this *bandage* conſiſts in this, that, in dreſſing wounds of the *thorax* or *abdomen*, it is capable of ſupporting another *bandage*, ſomething wider, made of a cloth four or ſix times doubled, and bound round the breaſt or belly.

There remains ſtill to be conſidered, a compound *bandage*, made of two pieces of cloth, almoſt in form of the letter T. The upper part of this is to be brought round the belly, and faſtened by a knot; but the lower part paſſes under the body, between the thighs, and, being brought up again, is faſtened to the upper part upon the back. This *bandage* plainly appears to be deſigned for the ſecurity of ſuch dreſſings, as ſhall be thought proper to be applied to the *anus*, or parts of generation. Some, from the inventor, call this *Heliodorus's bandage*. Others, from its ſhape, denominate it the T *bandage*; and, from the diviſion that is frequently made in the lower part of it, it is ſometimes called the double T.

As to *bandages* for the head, notwithſtanding that ſurgeons have formerly invented different kinds of them, for every wound that could be inflicted on that part, yet there is but one form that ſeems neceſſary: and this alone will anſwer all the ends that can be propoſed from this kind of application. It is made in the following manner: take a handkerchief, napkin, or any ſquare piece of linen; double it up in a triangular form, and apply it as we frequently do in hot weather, when we lay aſide the uſual coverings of the head.

But there is another method of *bandage* in uſe, called *creeping bandages*, and, in the French ſchools, *rampants*. Theſe creeping, or, as we ſometimes call them, *ſerpentine bandages*, are uſed to ſecure cataplaſms, or compreſſes, upon a diſeaſed part.

The place of beginning and ending theſe *bandages* is alſo to be determined. When the arm is to be dreſſed, the beginning is formed by two or three circular windings on the wriſt, aſcending, by looſe ſpires, up to the cubit, or ſhoulder, as the nature of the caſe ſhall require. But when the beginning is to be on the foot, it is to be formed by three or four circular windings of the *bandage* round the *tarſus*, and *metatarſus*; then proceeding, in a ſerpentine courſe, up to the knee; or, if the caſe requires it, up to the head of the thigh, and then, as it ſometimes happens, deſcending again.

We ſhould not omit to mention, that the beginning of the *bandage* is ſometimes applied to the diſeaſed part, as in ſeveral kinds of fractures; ſometimes near it, above it, or below it; and ſometimes at a great diſtance from it, according to the diſpoſition of the wound. On the contrary, the extremity of the *bandage* is ſcarce ever faſtened on the diſeaſed part, but rather on a ſound one, to avoid giving pain.

Beſides the double and four-headed *bandages*, ſurgeons ſometimes make uſe of the *eighteen-headed bandage*. Its figure may be learnt from Heiſter's Surgery, Tab. IX. *fig.* 4.

Bandage, *knotted*, a *bandage* for the head, called *knotted*, from its many croſſings on the temples; and *ſtellar*, or *ſolar*, from its direction in radii. It is a very uſeful *bandage*, when the temporal artery is divided, either in *arteriotomy*, or by an accidental wound, and hardly ever failing of ſucceſs in ſuppreſſing the hæmorrhage. For the application, vid. Heiſt. Surg. p. 3. c. 2. § 7.

Bandage, *incarnative*, is the ſame as the *uniting bandage*. Vid. Heiſter's Surgery. p. 3. c. 2.

Bandage-*depart*, the ſame as DISCRIMEN.

Bandages, *expulſive*, or ſuch as are uſed to reduce, and prevent the enlargement of tumours. They are frequently applied with this intention, to ſwelled legs, and alſo to diſcharge the offenſive matter in *fiſtulæ* and ſinuous ulcers. Vid. Heiſter's Surgery.

Bandage, *retentive*, is proper for the neck, as it ſerves to keep on the dreſſings, and topical remedies, applied to the neck after bleeding, &c. This *bandage* is generally compoſed of two ſimple bands, one of which is about a Paris ell, and the other an ell and a half in length; the firſt being of a thumb's breadth, and the laſt of three fingers. As to the application, vid. Heiſter's Surgery.

Bandage *for Tracheotomy.* Vid. Heiſter's Surgery, p. 3. c. 3.

Bandage, *Arnaud's*, is a *bandage* contrived by Mr. Arnaud of Paris, for *fiſtulæ* and abſceſſes of the *anus*, and is, by Garengeot, highly commended. But Heiſter thinks, that the common T *bandage* has the ſame advantages, provided the ſcapulary be made ſtrong.

Few of the common *bandages* are capable of reſtraining a profuſe hæmorrhage, after cutting for the *fiſtula* of the *anus*, or for the ſtone. What Heiſter has contrived for this purpoſe, may be ſeen in his Surgery, p. 3. c. 5.

Beſides Heiſter, there are many other writers on *bandages*. That author, in his introduction, § 28. mentions Galen, tranſlated by Vido Vidius, with figures; Verduc on *bandages*, in French; and Solingen: but he thinks the beſt writers of all, are Le Clerc, in his *Appareil commode*, and Baſſius, in High Dutch. For other *bandages*, as the *ſpica*, *ſcapulary*, &c. ſee them in their alphabetical places.

There is a diſſertation on the manner of ſtopping blood in hæmorrhages, with the deſcription of a machine, or bandage, for conſolidating veſſels after amputations, by compreſſion only, by M. Petit, in the Mem. of the A. D. S. an. 1751. p. 85. See alſo obſervations on a new *bandage*, by Helvetius, and on a compreſſive *bandage* for the cure of the lachrymal tumour. Ibid. an. 1742. Hiſt. 153, and an. 1745, p. 152.

BANDALEER, or **Bandeleer**, a large leathern belt, thrown over the right ſhoulder, and hanging down under the left arm; worn by the ancient muſqueteers both for the ſuſtaining of their fire-arms, and for the carriage of their muſquet-charges; which being put up in little wooden caſes, coated with leather, were hung, to the number of twelve, to each *bandaleer*.

The word is originally French, *bandoüillre*, formed apparently from *bandoalier*, a kind of banditti particularly infeſting the Pyreneans; who were formerly diſtinguiſhed by this piece of furniture; and were themſelves ſo denominated, *quaſi ban de voliers*, a *knot of robbers*.

The French ſoldiery ſtill retain the *bandaleer*; their horſe, their muſqueteers, and common guards, wearing it indifferently; excepting for ſome difference in its garniture.

BANDELET, or **Bandlet**, in *Architecture*, any little band, or flat moulding, encompaſſing a column, like a ring; as that which crowns the Doric architrave. See *Tab. Archit. fig.* 25. N° I *and* II.

It is alſo called *tænia*, which Vitruvius uſes for the ſame thing; ſometimes *fillet diadema*, &c.

It is ſometimes uſed for the three parts which compoſe the architrave, called, by Vitruvius, *faſciæ*; and which are ſometimes alſo denominated *bands*, or *plat-bands*.

BANDERET, the name appropriated to the commanders of the militia of the canton of Bern.

BANDEROLL, a little flag in form of a guidon, extended more in length than breadth, uſed to be hung out on the maſts of veſſels, &c.

BANDITTI, from the Italian *bandito*, perſons proſcribed, or, as we call it, outlawed; ſometimes denominated *banniti*, or *foris-banniti*.

BANDITTI, or BANDITI, is alſo a denomination given to highwaymen, or robbers, who infeſt the roads in troops, eſpecially in Italy and France.

The term is alſo applied to a ſort of freebooters, who pillage in the iſlands of the Archipelago.

BANDOLEERS, from the French *bandouliers*, in the *Military Art*, denote ſmall wooden caſes covered with leather; each of which contains a ſufficient charge of powder for a muſket.

BANDORE, the name of a muſical inſtrument with ſtrings, reſembling a lute, and ſaid to be invented in the fourth year of queen Elizabeth, by John Roſe, a citizen of London. See a figure of it in Hawkins's Hiſtory of Muſic, vol. iii. p. 345.

BANDY-*legs*, from the French *bander*, *to bend*, a diſtortion of the legs, when they turn either inward or outward, on either ſide; ariſing from ſome defect in the birth, or imprudence in the nurſe, endeavouring to make a child ſtand or walk before his legs were ſtrong enough to ſuſtain the weight of his body.

Beſide the uſe of emollients, it is proper to apply a kind of ſtrong boots proportioned to the limbs.

BANE-*berry*. See HERB *Chriſtopher*.

BANGLE-*ears*, an imperfection in a horſe's ears, remedied in the following manner: Place his ears in ſuch a ſituation as they are wanted to ſtand; bind them with two ſmall boards, ſo faſt as not to ſtir; and then clip away the empty wrinkled ſkin cloſe by the head.

BANGUE, a ſpecies of opiate, in great uſe throughout the Eaſt, for drowning cares, and inſpiring joy.

This, by the Perſians, is called *beng*; by the Arabs, *eſrar*, corruptly *aſſeral*, and *aſſarth*; by the Turks, *bengitic*, and vulgarly *maſtack*; by the European naturaliſts, *bangue*, or *bange*. The Indians, ſays Acoſta, eat the ſeed and leaves to increaſe their vigour, and to excite an appetite to their food. The nobles, and chief military officers, when they are diſpoſed to forget their toil, and to ſleep in perfect eaſe and ſecurity, take of the powder of the ſeed and leaves, as much as they think ſufficient; and thereto add an *arcea*, or green Indian hazel-nut; with as much opium as they think fit, and eat them all together with ſugar. If they deſire to be entertained with variety of ſcenes, and images of things in their ſleep, they add ſome of the choiceſt camphor, cloves, nutmegs, and mace. If they have a mind to be merry, witty, and to indulge their amours, they add ambergris and muſk, and make them all into an electary with ſugar. It is by many affirmed, that the ſeed and leaves promote luſt; whence, ſays J. Bauhine, it appears, that this herb has no affinity with hemp, though it be very much like it; ſince hemp, according to Dioſcorides, is of a hot and dry nature, and extinguiſhes amorous deſires.

Ray, from whom this account is taken, ſays, he learned from Sir Hans Sloane that it is a different plant from hemp. It grows in Indoſtan, and other parts of the Eaſt Indies, where it is principally in uſe.

Bangue, in reality, is a *ſuccedaneum* to wine, and obtains in thoſe countries where Mahometaniſm is eſtabliſhed; which prohibiting the uſe of that liquor abſolutely, the poor muſſulmen are forced to have recourſe to *ſuccedanea*, to rouſe their ſpirits. The principal are *opium*, and this *bangue*.

BANIAN-*days*, in *Marine Language*, is a cant term among ſailors, to ſignify thoſe days on which they have no fleſh meat. It ſeems to be derived from the practice of the people mentioned in the following article.

BANIANS, a religious ſect in the country of the Moguls, who believe a *metempſychoſis*, and will therefore eat no living creature, nor even kill noxious animals, but endeavour to releaſe them, if they ſee them in the hands of others.

The *Banians* are ſaid to be ſo fearful of having communication with other nations, that they break their cups, if one of a different religion hath drank out of them, or even touched them; and empty the water out of a pond where he has waſhed himſelf. It is added, that if they happen to touch one another, they muſt waſh and purify themſelves before they eat, or enter their own houſes. They carry, hanging at their necks, a ſtone called *tamberan*, as big as an egg, and perforated in the middle, through which run three ſtrings: this ſtone, they ſay, repreſents their great god, and upon this account they have great reſpect ſhewn them by all the Indians.

The proper *Banians* are called, in the SHASTER, or book of their law, by the name of *ſhuddery*, under which are comprehended all who live after the manner of merchants, or that deal and tranſact for others, as brokers; excluſive of the mechanics, or artificers, who make another caſt, called *wyſe*. Theſe *Banians* have no peculiar ſect or religion, unleſs it be, that two of the eight general precepts given by the legiſlator, Bremaw, to the Indian nation, are, on account of the profeſſion of the *Banians*, ſuppoſed more immediately to relate to them, viz. thoſe which enjoin veracity in their words and dealings, and avoiding all practices of circumvention in buying and ſelling.

The *Banians* and the Chineſe are the greateſt traders in the Indies, to whom muſt alſo be added the Jews and Armenians, who are greatly diſperſed over thoſe parts. But the moſt conſiderable trade is carried on by the *Banians*, in the whole peninſula on this ſide the Ganges. They are extremely ſkilful and cunning in commerce. Moſt of them follow brokerage, and moſt of the brokers of the Engliſh, Dutch, and French companies, are of that nation. For the reſt, they are very honeſt, and have almoſt conſtantly in their hands the ſtock and caſh of thoſe companies.

They are likewiſe bankers; and there are few places in the Eaſt Indies, for which they cannot furniſh bills of exchange. They have alſo a ſort of ſtanding caſh or bank, where perſons may depoſit their money, and take it out again whenever they pleaſe.

Their form of contract in buying and ſelling, is remarkable; being done in the profoundeſt ſilence, only by touching each other's fingers: the buyer looſening his *pamerin*, or girdle, ſpreads it on his knee; and both he and the ſeller having their hands underneath, by the intercourſe of the fingers, mark the price of pounds, ſhillings, &c. demanded, offered, and at length agreed on. When the ſeller takes the buyer's whole hand, it denotes a thouſand, and, as many times as he ſqueezes it, as many thouſand pagods, or roupees, according to the ſpecies in queſtion, are demanded: when he only takes the five fingers, it denotes five hundred, and when only one, one hundred: taking only half a finger, to the ſecond joint, denotes fifty: the ſmall end of the finger, to the firſt joint, ſtands for ten. See CEURAWATH.

BANILLIA, in the *Materia Medica*, a name uſed by ſome for the *vanillia*, or vanilloes, uſed in making the ſcented chocolate.

BANISHMENT, EXILE, among us, is of two kinds: the one voluntary, and upon oath; the other by compulſion, for ſome offence or crime.

The former, properly called *abjuration*, is now ceaſed; the latter is chiefly enjoined by judgment of parliament. Yet outlawing and tranſportation may alſo be conſidered as ſpecies of exile.

By Magna Charta, none ſhall be outlawed or baniſhed his country, but by lawful judgment of his peers, or according to the law of the land. 9 Hen. III. cap. 29. And by the common law no perſon ſhall be baniſhed, but by authority of parliament; or in caſe of ABJURATION for felony, &c. But this is taken away by ſtatute, 3 Inſt. 115. Stat. 21 Jac. I. cap. 28.

BANISTERIA, in *Botany*, a genus of plants belonging to the *decandria trigynia* claſs of Linnæus; the characters of which are theſe. The flower hath five petals, which are ſhaped like thoſe of the papilionaceous tribe, but ſpread open; having in ſome ſpecies one, in others two, and in ſome ſeveral nectarious glands, with ten ſhort ſtamina. There are in ſome ſpecies three, and in others but one germen, which afterward become ſo many winged fruit, like thoſe of the maple; each containing a ſingle ſeed. There are only ſix known ſpecies of this genus.

Theſe plants are all of them natives of warm countries, and therefore cannot be preſerved in England, unleſs in a bark ſtove.

BANK, in *Commerce*, is a denomination given to certain ſocieties, or communities, who take on them the charge of the money of private perſons, to improve it, or to keep it ſecure.

The word *bank*, in this ſenſe, comes from the Italian *banca*, formed of the Spaniſh *banco*, a bench whereon the ancient money-changers ſat in the public markets; or, as others think, a table whereon they told their money: for the Spaniſh *banco* ſignifies a table, as well as a bench; as among the Greeks the word τραπεζα ſignified a *bench*, as well as a *table*; whence the word τραπεζιτης for a *bencher*.

It cannot be doubted but that the beginning of traffic was by exchanging one commodity for another, as men could beſt ſuit each other's occaſions. But the neceſſities of men being ſo various and different, in reſpect of the quantity and quality of requiſites, money was inſtituted as the moſt convenient medium for commerce; whereby people might procure whatſoever they ſtood in need of, in quantities according to their exigencies.

This changed the term of bartering into that of buying and ſelling; yet all trading at length reſults into a general barter. For he who ſells any thing to receive money for it, purchaſes what he requires with the ſame money. Money then becoming the principal engine for circulating the bulk of commerce, its application to trade is proper to be conſidered.

Money is uſed in the minuter kinds of dealings, as retailing, &c. when it is commuted for all kinds of labour, and to furniſh the neceſſary proviſions for daily uſe. This requires its being divided into the ſmalleſt denominations of the pieces, as into ſhillings and pence: ſo that this way of dealing is not capable of being tranſacted by bills and aſſignments.

Money is alſo employed in the more extenſive and wholeſale way of trade, wherein large ſums are negociated; and this occaſions frequent payments from one tradeſman to another. In which payments, although ſtrictly ſpeaking ready caſh be required, as often as contracts are made, yet as commerce in general conſiſts in the mutual dealings and tranſactions of many traders, it may often ſo fall out, by means of interchangeable debts and credits, that divers traders may ſatiſfy each other's occaſions, without making any payments in ſpecie, by transferring their debts to each other.

But when ſuch mutual conveniences do not occur, traders uſually receive their money in ſpecie, and ſo pay it from one to the other. Yet this way of payment is attended with many inconveniences; as, the trouble in counting the money, hazard in ſecuring it from the attempts of robbers, and loſs from truſting it with unfaithful ſervants: for the prevention of all which, cities of large commerce have very naturally introduced the uſe of *banks*.

A *bank* then may be properly defined a common repoſitory, where many perſons agree to keep their caſh, to be always ready at their call, or direction.

There are ſeveral of theſe *banks* eſtabliſhed in the ſeveral principal trading cities in Europe; as in Venice, Genoa, London, Amſterdam, Hamburg, Paris, &c. But of all others, that of Venice is the moſt conſiderable, as being the moſt ancient, and that whereon the others are modelled.

Bank is alſo applied, in a more particular manner, to ſocieties inſtituted for lending money on pledges. Of theſe there are ſeveral in Holland, particularly at Amſterdam, where it is called the *bank van leening*, or *bank of loan*. Private perſons are here furniſhed with money, on the depoſit of effects as a ſecurity, and on payment of a certain intereſt regulated by the burgo-maſters. This *bank* is otherwiſe called the *Lombard-huis*, or *Lombard-houſe*, or, ſimply, *Lombard*; which is the name it is moſt commonly known by, in moſt of the towns in Holland.

Bank, or Banco, *of Venice*, commonly called *banco del guiro*, was eſtabliſhed in the middle of the twelfth century, and is properly a board of public credit and intereſt; or a general and perpetual purſe for all merchants and traders; eſtabliſhed by a ſolemn edict of the commonwealth, which enacts, that all payments of wholeſale merchandize, and letters of exchange, ſhall be in *banco*, or *bank* notes; and that all debtors and creditors ſhall be obliged, the one to carry their money to the *bank*, the other to receive their payments at *banco*; ſo that payments are performed by a ſimple transfer from the one to the other: he who was before creditor on the *bank* books, becoming debtor as ſoon as he has reſigned his right to another, who is entered down as creditor in his place; ſo that the parties only change name, without any effective payment being made. Indeed there are ſometimes actual payments made, eſpecially in matters of retail, and when foreigners are diſpoſed to have ready money to carry off in ſpecie; or when particular traders chooſe to have a ſtock by them to negociate in bills of exchange, &c. The neceſſity of theſe effective payments has given occaſion to the opening a fund of ready money; which is found ſo far from diminiſhing the ſtock, that this liberty of withdrawing money at pleaſure rather augments it. By means of this *bank*, the republic, without incroaching on the freedom of commerce, or without paying any intereſt, is miſtreſs of 5,000,000 ducats, to which the capital of the *bank* is limited, to be in readineſs on any preſſing occaſion; the republic being ſecurity for the capital.

Bank *of England* was firſt eſtabliſhed in the year 1694, partly for the convenience of commerce, and partly alſo for the emolument of the proprietors. The ſcheme was projected by Mr. W. Paterſon, a merchant, and debated for a long while in the privy-council, till at length, by an act of 5 and 6 William and Mary, cap. 20. it was enacted, that their majeſties might grant a commiſſion to take particular ſubſcriptions for 1,200,000*l.* of any perſons, natives or foreigners, whom their majeſties were hereby empowered to incorporate, with a yearly allowance of 100,000*l.* viz. 96,000*l.* or 8 *per cent.* for intereſt till redeemed, and 4000*l.* to be allowed the intended *bank* for management. The corporation was to have the name of the governor and company of the *bank* of England; their ſaid fund to be redeemable upon a year's notice, after the firſt of Auguſt, 1705, and payment of the principal, and then the corporation to ceaſe. The company was enabled by this act to purchaſe lands, &c. unlimitedly, and to enjoy the other uſual powers of corporations; their ſtock was to be transferrable. They were reſtricted from borrowing more than 1,200,000*l.* except on parliament funds, and from trading in any merchandiſe, except in bills of exchange, and in bullion, and in the ſale of ſuch goods as were the produce of lands purchaſed by the corporation: and all bills obligatory under the ſeal of the ſaid corporation, were made aſſignable by indorſement. The charter of incorporation was executed July 27, 1694; which directs, that there be a governor, deputy-governor, and twenty-four directors; and ſpecifies the qualifications of voters and of directors, together with other regulations, which have been farther amended and enlarged by ſubſequent ſtatutes.

The buſineſs of the *bank* is, for the moſt part, that of dealing in bullion of gold and ſilver, diſcounting bills, advancing money to the public on the credit of acts of parliament, circulating their own notes, &c. and exchequer bills for the government; beſide the management of thoſe funds which are immediately under its care, and which conſtitute a principal part of the *national* Debt.

Bank, *agents of*. See Agent.

Bank *bills*. See Bill.

Bank, *days in*. See Day.

Bank *of France* was firſt projected by Mr. Law, a native of Scotland, with a view of paying off the public debts of France, by drawing its creditors into the newly projected Miſſiſſippi and India companies, and erected in the year 1716. It was taken into the king's hands in 1718, and denominated the *Royal Bank*; and by its union with both the companies above mentioned, formed a bubble, which occaſioned great confuſion and diſtreſs in the year 1720.

Bank, *million*, derives its name from king William's *million* lottery in the year 1695; the proprietors agreed in partnerſhip to purchaſe tickets in this lottery. They afterwards purchaſed many reverſions of the 14 *per cent.* annuities, and admitted many proprietors of annuities to purchaſe their joint ſtock, which amounted, and ſtill amounts, to 500,000*l.* They are a partnerſhip by deed enrolled in chancery, in the year 1721. They divided 5 *per cent.* till Lady-day, 1728, when they reduced their annual dividend to 4 *per cent.* and it was again raiſed to 5 *per cent.* which is ſtill continued.

Bank *of Scotland* was erected by act of parliament in 1695. Its capital ſtock is 101,000*l.* ſterling.

Bank, *royal, of Scotland*, was incorporated by charter of king George I. in the year 1727. Its capital is 151,000*l.* ſterling; and the public revenues of Scotland are paid into this *bank*.

Bank, or Bench, in *Law*. See Banc.

Bank, *foot*. See Banquette, and Footbank.

Bank, in *Natural Hiſtory*, denotes an elevation of the ground, or bottom of the ſea, ſo as ſometimes to ſurmount the ſurface of the water, or, at leaſt, to leave the water ſo ſhallow, as uſually not to allow a veſſel to remain afloat over it.

In this ſenſe, *bank* amounts to much the ſame with flat, ſhoal, &c.

There are *banks* of ſand, and others of ſtone, called alſo ſhelves, or rocks. In the north ſea, they alſo ſpeak of *banks* of ice, which are large pieces of that matter floating. Vapours at ſea occaſion ſometimes ſuch a *deceptio viſûs*, that mariners imagine they ſee land, with trees, &c. They call ſuch deceptions fog-banks. See a remarkable deception of this kind related in Dr. Hawkeſworth's Account of the Voyages to the Southern Hemiſphere, vol. i. p. 10.

A long narrow *bank* is ſometimes called a *rib*.

The *bank* abſolutely ſo called, or the *main bank*, or *great bank*, denotes that of Newfoundland, the ſcene of the cod-fiſhery.

It is called the *great bank*, not only by reaſon of its vaſt extent, being, according to the Engliſh computation, two hundred miles long, and, according to the French, one hundred leagues, or three hundred miles; but alſo on account of ſeveral leſſer *banks* near it, where cod are alſo caught. Theſe laſt the French call *banquezeaux*.

This is one of thoſe *banks* which have water enough to float a ſhip, and which, on this account, are not dangerous.

Banks are uſually diſtinguiſhed by a buoy, poſt, or the like. On charts, ſand-*banks* are uſually marked by little dots, and *banks* of ſtone by croſſes. The colours of the buoys are alſo varied accordingly; ſand-*banks* being denoted by light-coloured buoys, and rocks by black ones.

In large rivers, as the Elbe, &c. ſand-*banks*, by high tides and inundations, are liable to change places; care is therefore taken to ſhift the buoys from time to time, to ſhew the true channel of the river.

An exact knowledge of the *banks*, their extent, and the depth of water on them, makes the moſt eſſential part of the ſcience of a pilot, and a maſter of a ſhip: if the veſſel be large, and draw much water, great attention will be neceſſary to keep clear of the *banks*: on the contrary, if it be ſmall, the ſame *banks* afford a ſure *aſylum*, where it may brave the largeſt and ſtouteſt veſſels, which dare not follow it here. By means of this barrier, many a ſmall craft has eſcaped its enemy.

BANK, in veſſels which go with oars, is uſed for the bench where the rowers are ſeated; popularly called, by our ſeamen, the *thaught*.

In this ſenſe, we read of *banks* of gallies, of galeaſſes, of galliotes, of brigantines, and the like.

The Venetian gondolas have no *banks*; for the watermen row ſtanding.

The common gallies have twenty-five *banks*, that is, twenty-five on each ſide, in all fifty *banks*, with one oar to each *bank*, and four or five men to each oar. The galeaſſes have thirty-two *banks* on a ſide, and ſix or ſeven rowers to a *bank*.

BANK alſo denotes an elevation of earth, ſtones, ſtakes, or other materials, in form of a wall, or cauſeway, to ſtop the waters, and prevent inundations.

Theſe, on other occaſions, are denominated *dams*, and *ſea-walls*, &c. and by the ancients, *aggeres*: thoſe on the coaſts of Holland are more particularly denominated *dykes*. The beſt *bank* in the opinion of Dr. Hales is that contrived by Dr. Wark of Scotland. A quantity of furze is fixed to the bottom of the channel of ſuch a breadth as is proportioned to the force which it is to reſiſt. The ſand, or ſlime, will ſoon ſettle in the furze; and when this is covered, another bed of furze is to be laid on as before, and ſo on, till the *bank* is raiſed to a ſufficient height.

BANK is alſo uſed, in ſeveral games, for the ſtock or fund of him who undertakes the game.

BANK *at baſſet*, a ſum of money laid down by the *tailleur*, before the gameſters, to anſwer all the winning cards that ſhall turn up in his courſe of dealing. Yet it is to be obſerved, that what the *bankers* gain *per cent.* of all the money adventured at pharo, is greater than at baſſet; it being two pounds nineteen ſhillings and ten pence *per cent.* in the firſt, and but fifteen ſhillings and three pence in the ſecond. Vid. De Moiv. Doctr. Chanc. p. 93.

BANKER, in *Commerce*. The hiſtory of private *banks* is as follows. The royal mint in the tower of London had for ſome years before the year 1640, been made uſe of as a kind of *bank*, or depoſit, for merchants to lodge their caſh in. But king Charles the firſt having in that year made free with their money, the mint loſt its credit. After this, the merchants and traders of London generally truſted their caſh with their ſervants, until the breaking out of the civil war, when it was very cuſtomary for their apprentices and clerks to leave their maſters, and go into the army. Whereupon in ſuch unſettled times, merchants not daring longer to confide in their apprentices, began firſt, about the year 1645, to lodge their neceſſary caſh in goldſmith's hands, both to receive and pay for them; until which time the whole and proper buſineſs of London goldſmiths was, to buy and ſell plate, and foreign coins of gold and ſilver, to melt and cull them, to coin ſome at the mint, and with the reſt to ſupply the refiners, plate-makers, and merchants, as they found the price to vary. This account of the matter we have from a ſcarce and moſt curious ſmall pamphlet, publiſhed in 1676, intitled, the Myſtery of the new-faſhioned Goldſmiths, or Bankers diſcovered, in only eight quarto pages.

Bankers on their firſt eſtabliſhment allowed to thoſe who entruſted their money in their hands a moderate intereſt for the ſame, and hereby their buſineſs was very conſiderably increaſed, and roſe to great reputation in the year 1667, when the Dutch burnt our ſhips at Chatham; but this event cauſed a *run* on the *bankers*, which hurt their credit; and in the year 1672 king Charles II. ſhut up the exchequer, and ſeized the money which the *bankers* had lent him at 8 *per cent.* intereſt, the whole ſum amounting to 1,328,526*l.* The king was afterwards neceſſitated to pay 6 *per cent.* intereſt for this debt out of his hereditary exciſe, but the principal was never paid. However, the parliament of 12 William, cap. 12. provided for a large arrear of intereſt, and ſettled an intereſt of 3 *per cent.* for the future. The debt was hereby made redeemable, on paying one moiety of the principal ſum, viz. 664,263*l.* farther confirmed by an act of 2 and 3 Anne, cap. 15. which moiety now became the proper debt of the public; and being reduced from 6 to 5 *per cent.* in 1717, was finally ſubſcribed into the South-ſea capital ſtock in the year 1720.

Bankers now allow no intereſt; and by inveſting a certain proportion of it in the funds, or laying it out on other ſufficient ſecurity, and trafficking with it in the ſtocks, in diſcounts, &c. reap very conſiderable advantage from it; and by negociating bills, &c. on the part of their creditors, greatly contribute to the convenience and diſpatch of buſineſs.

In Italy the employment of a *banker*, eſpecially in republics, does not derogate from nobility; and hence it is, that moſt of the cadets, or younger ſons of perſons of condition, undertake it for the ſupport of their family.

The ancient *bankers* were called *argentarii*, and *nummularii*. Their chief buſineſs was to put out the money of private perſons to intereſt: they had their boards and benches for this purpoſe, in all the markets and public places, where they took in the money from ſome, to lend it to others.

The Romans had two kinds of *bankers*, though their office was much more extenſive than that of the *bankers* among us; theirs being that of public officers, in whom were united the functions of a broker, agent, *banker*, and notary; managing the exchange, taking in money, aſſiſting in buying and ſelling, and drawing the writing, neceſſary on all theſe occaſions.

BANKERS *in the court of Rome*, are perſons authorized, excluſive of all others, to ſolicit and procure, by their correſpondents at Rome, all bulls, diſpenſations, and other acts diſpatched at the papal datary, or in the legateſhip of Avignon: they are diſperſed in all the cities of France, where there is a parliament, or a preſidial; and were erected into a regular, and hereditary office, by an edict in 1673.

They owe their origin to the Guelphs, who took ſhelter at Avignon, and in other cities within the obedience of the pope, in the time of the civil wars of Italy. The favour they were in with the pontiffs, for having eſpouſed the papal cauſe, occaſioned their being employed in procuring expeditions of the court of Rome. But the heavy extortions they practiſed towards their clients, ſoon rendered them odious, and occaſioned ſeveral denominations of reproach, as, *coarcini*, *caturcini*, *caurſini*, *corſini*, &c. from the city Cahors, the native place of pope John XXII. in whoſe pontificate they were in their higheſt power.

BANKER, in *Bricklaying*, a piece of timber whereon they cut the bricks.

The *banker* is ſix feet long, or more, according to the number of men to work at it, and nine or ten inches ſquare: it is to be laid on two peers of timber, three feet high from the floor they ſtand on.

BANKER, in *Sea Language*, ſignifies a veſſel employed in the cod-fiſhery, on the banks of Newfoundland.

BANKING, the making of *banks* to oppoſe the force of the ſea, rivers, or the like, and ſecure the land from being overflowed thereby.

With reſpect to the water which is to be kept out, this is called *banking*; with reſpect to the land, which is hereby to be defended, *imbanking*.

BANKING, in a ſalt-work, the raiſing a fence againſt the ſea, whereby its waters may be kept out, excepting ſo much as is neceſſary for the preparation of the ſalt.

BANKRUPT, a dealer, who having gotten other mens goods, or money, in his hands, abſconds to defraud his creditors; or being ſo reduced and involved, that he can conduct his buſineſs no longer, is deſirous of being legally diſcharged from farther demands and trouble.

The word is formed of the ancient Latin *bancus*, a *bench*, or *table*, and *ruptus*, *broken*.

Bank, we have elſewhere obſerved, originally ſignified a *bench*, which the firſt bankers had in the public places, in markets, fairs, &c. on which they told their money, wrote their bills of exchange, &c. Hence, when a banker failed, they broke his bank, to advertiſe the public, that the perſon to whom the bank belonged, was no longer in a condition to continue his buſineſs. As this practice was very frequent in Italy, it is ſaid, the term *bankrupt* is derived from the Italian *banco rotto*, *broken bench*.

Cowel rather chuſes to deduce the word from the French *banque*, *table*, and *route*, *veſtigium*, *trace*, by a metaphor from the ſign left in the ground, of a table once faſtened to it, and now gone. On this principle he traces the origin of *bankrupts* from the ancient Roman *menſarii*, or *argentarii*, who had their *tabernæ* or *menſæ* in certain public places; and who, when they fled, or made off with the money, that had been truſted to them, left only the ſign or ſhadow of their former ſtation behind them.

And it is obſervable, that the title of the firſt Engliſh ſtatute concerning this offence, 34 Hen. VIII. cap. 4. "againſt ſuch perſons as do make *bankrupt*," is a literal tranſlation of the French idiom, *qui ſont banque route*.

By ſtat. 1 Jac. I. cap. 15. a *bankrupt* is thus deſcribed. All and every perſon who ſhall uſe the trade of merchandiſe by way of bargaining, exchange, bartering, or otherwiſe in groſs, or by ſeeking his or her living by buying and ſelling, who ſhall depart his houſe, or abſent himſelf, or ſuffer himſelf to be arreſted for any debt, or other thing, not grown due for money delivered, wares ſold, or other good conſideration; or ſhall ſuffer himſelf to be outlawed, or go to priſon, or fraudulently procure himſelf to be arreſted, or his money or goods attached; or make any fraudulent conveyance of his lands, goods, or chattels, whereby his creditors may be defeated in the recovery of their juſt debts; or being arreſted for debt, ſhall lie in priſon ſix months or more, upon ſuch arreſt or detention, ſhall be adjudged a *bankrupt*.

There are ſeveral ſubſequent ſtatutes relating to *bankrupts*, viz. 21 Jac. I. cap. 19.—4 Anne, cap. 17.—5 Anne, cap. 22.—7 Geo. I. cap. 31.—5 Geo. II. cap. 30.

In ſome places *bankrupts* are condemned to wear a green cap; at Lucca, an orange cap.

BANKRUPTCY, the failure, abſconding, and relinquiſhing of traffick in a merchant, a banker, or any other trader.

The French make this difference between a *bankruptcy* and a *failure*; that the firſt is ſuppoſed voluntary and fradulent, and the latter conſtrained and neceſſary, by means of accidents, &c.

A failing, breaking, or ſtopping of payment, diminiſhes the merchant's credit; but does not note him with infamy, as *bankruptcy* often does.

When a merchant, &c. fails to appear at the exchange, &c. without apparent reaſon, it is called *a failing of preſence*; the *bankruptcy* becomes open from the day he abſconds, or when the ſeal is affixed to his effects.

BANKRUPTCY, *commiſſion of*. See COMMISSION.

BANLEUGA, or BANNILEUGA, or BANLIEUE, in *Middle Age Writers*, the territory within which the juriſdiction of municipal magiſtrates, or ordinary judges of a city, town, or the like, are confined.

It is thus called, becauſe within this tract, they may make their proclamations, prohibitions, and other acts of juſtice and policy, compriſed under the name of BAN, or BANNUM.

BANN, or BAN, BANNUM, or BANNUS, in the *Feudal Law*, a ſolemn proclamation, or publication of any thing.

The origin of the word is uncertain: ſome deduce it from the Britiſh *ban*, *clamour*, *noiſe*; others from the Saxon *pan*, a thing ſpread; whence *ban*, and *band*, uſed for a flag.

Bracton mentions *bannus regis*, for a proclamation of ſilence anciently made by the court, before the encounter of the champions in a combat.

BANN is alſo uſed for a ſolemn convocation of the nobility of a province, to attend the king in his army, conformably to their ſeveral tenures.

Bann, in this ſenſe, differs from *rear-bann*; as the former reſpects thoſe who hold mediately of him. But the words are now confounded; and *bann*, and *rear-bann*, denote a ſummons to all the feudal tenants, mediate and immediate, to go to war in the king's ſervice.

BANN alſo denotes the aſſembly, or body of nobility and gentry thus convocated.

In this ſenſe, they ſay, the *bann* and *rear-bann* is long in getting into the field; the *bann* and *rear-bann* was aſſembled, &c.

The French nobility appear to have ſerved the king, in the way of *bann* and *rear-bann*, from the beginning of the monarchy; though the uſage was not regularly ſettled, till the time of the inveſtiture of feuds.

BANN is more particularly uſed to denote a proſcription or baniſhment, for a crime proved; becauſe anciently publiſhed by ſound of trumpet; or, as Voſſius thinks, becauſe thoſe who did not appear at the abovementioned ſummons, were puniſhed by proſcription.

Hence, *to put a prince under the* bann *of the empire*, is to declare him diveſted of all his dignities.

The ſentence only denotes an interdict of all intercourſe, and offices of humanity, with the offender; the form of which ſeems taken from that of the Romans, who baniſhed perſons, by forbidding them the uſe of fire and water.

Sometimes alſo cities are put under the imperial *bann*; that is, ſtripped of their rights and privileges.

BANN alſo denotes a pecuniary mulct, or penalty, laid on a delinquent for offending againſt a *bann*.

BANNS *of marriage*, are certain ſolemn notices of matrimonial contracts made in the pariſh-church, before the marriage; that if there be any objections to either party as to prior engagements, &c. there may be an opportunity of making them. The publication of *banns* (popularly called *aſking in the church*) was intended as an expedient to prevent clandeſtine marriages: but a licence or diſpenſation is now eaſily procured, ſo that their uſe is defeated.—By the laws of the church, *banns* are to be publiſhed thrice, on three diſtant days, in the places where the parties live, on pain of nullity of marriage; and excommunications are threatened againſt thoſe, who knowing impediments conceal them. But ſee 26 Geo. II. cap. 33.

The uſe of matrimonial *banns* is ſaid to have been firſt introduced in the Gallican church, though ſomething like it obtained even in the primitive times; and it is this Tertullian is ſuppoſed to mean by *trinundina promulgatio*.

BANN is alſo uſed for a ſolemn *anathema*, or excommunication, attended with curſes, &c.

In this ſenſe, we read of *papal banns*, &c.

BANN *of God*, *bannus Dei*, or the judgment of God. Spelman takes it for excommunication.

BANN is alſo uſed for a prohibition.

In which ſenſe, the *bann* of harveſt, of vintage, &c. in the French cuſtoms, imports a prohibition to reap, or gather the grapes, without leave of the lord.

The former is now taken away, and the peaſant may reap his corn when he pleaſes; but the latter ſtill remains, perſons not being allowed to open the vintage, till publication is made by the officers of the place for that purpoſe.

BANN-*vin*, in the French *Cuſtoms*, a privilege enjoyed by lords, of ſelling the wine of their own growth, during a certain time, excluſive of all other perſons within the compaſs of their fees or lordſhips.

The ſame right, in ſome places, extends alſo to other liquors; and even to hogs, cows, and other animals.

BANNALIS *mola*, or *bannal-mill*, a kind of feudal ſervice, whereby the tenants of a certain diſtrict are obliged to carry their corn to be ground at a certain mill, and to be baked at a certain oven, for the benefit of the lord.

BANNER properly denotes a ſquare flag, faſtened like a cornet to a lance.

Menage derives the word from the Latin *bandum*, a *band*, or *flag*; and ſuppoſes *banniere* to have been firſt written for *bandiere*; which is confirmed by this, that we meet with the word *banderia*, uſed, in the ſame ſenſe, by Latin writers of the barbarous age.

A *banner* differed from a *penon*, or *guidon*, which had a long tail, or train; the cutting off which, in the ceremony of creating a BANNERET, converted it into a *banner*.

Moſt of the ancient lords are repreſented, on their ſeals, with *banners* in their hand; in which guiſe they entered the liſts in tournaments.

Arms **BANNER**-*wiſe*, or *en banniere*, are thoſe borne ſquare; ſtill uſed in Bretagne, to denote families deſcended from BANNERETS. Favyn ſuppoſes the uſage to have been brought thither from England.

It was reputed more honourable for a perſon to bear his arms in a *banner*, than in an *eſcutcheon*.

BANNER is alſo uſed to denote the flag under which all the tenants of the ſame fief were to muſter themſelves, when their ſervice was required in the army.

BANNER is alſo uſed for the chief flag, or ſtandard of a prince, lord, baron, or the like.

BANNER, *the*, *of France*, was the largeſt and richeſt of all the flags borne by the ancient kings, in their great military expeditions. St. Martin's cap was in uſe ſix hundred years, as the *banner* of France: it was made of taffety, painted with the image of that ſaint, and laid one or two days on his tomb, to prepare it for uſe. This was ſucceeded by the famous AURIFLAMMA, or ORIFLAMME. Though ſome make a difference between the *banner* of France and the *oriflamme*; making it the diſtinguiſhing character of the former, to be hung out at the window, wherever the king was; whereas the latter was only uſed in extraordinary wars.

About the year 1100 was introduced a more pompous *apparatus*; the mode of which was borrowed from Italy; the *banner* royal was faſtened to the top of a maſt, or ſome tall tree planted on a ſcaffold, borne on a chariot drawn by oxen, covered with velvet houſings, decorated with devices, or cyphers, of the reigning prince. At the foot of the tree was a prieſt, who ſaid maſs early every morning. Ten knights mounted guard on the ſcaffold, night and day, and as many trumpets, at the foot of the tree, never ceaſed flouriſhing, to animate the troops. This cumberſome machine, the mode of which was brought from Italy, continued in uſe about an hundred and thirty years. Its poſt was in the center of the army. And here it was the chief feats were performed, to carry off and defend the royal *banner*: for there was no victory without it; nor was an army reputed vanquiſhed, till they had loſt this *banner*.

BANNER is alſo uſed, in *Middle Age Writers*, for any flag or enſign.

But the word is out of uſe in this ſenſe, except in ſpeaking of former times, or foreign nations. In the Levant they ſtill ſay, the Engliſh *banner*, the Venetian *banner*, &c. The French alſo retain the denomination *banner*, in ſpeaking of eccleſiaſtical proceſſions; where the people, bearing each a croſs, march under a *banner*, repreſenting the church militant; to denote themſelves ſoldiers of the church.

BANNERS *of the Romans*. See SIGNA.

BANNERETS, an ancient order of knights, or feudal lords, who, poſſeſſing ſeveral large fees, led their vaſſals to battle, under their own flag, or banner, when ſummoned thereto by the king.

The word ſeems formed from *banner*, a ſquare flag, or from *band*, which anciently alſo denoted a flag.—*Bannerets* are alſo called in ancient writers, *milites vexilliferi*, and *vexillarii*, *bannerarii*, *bannarii*, *banderiſii*, &c.

Anciently there were two kinds of knights, *great* and *little*; the firſt whereof were called BANNERETS, the ſecond BACHELORS; the firſt compoſed the upper; the ſecond, the middle nobility.

The *banneret* was a dignitary allowed to march under his own flag, whereas the *bachelarius eques* followed that of another.

To be qualified for a *banneret*, one muſt be a gentleman of family, and muſt have a power to raiſe a certain number of armed men; with eſtate enough to ſubſiſt at leaſt twenty-eight or thirty men. This muſt have been very conſiderable in thoſe days, becauſe each man, beſides his ſervant, had two horſemen to wait on him, armed, the one with a croſs-bow, the other with a bow and hatchet.

As he was not allowed to be a baron who had not above thirteen knights-fees, ſo he was not admitted to be a *banneret*, if he had leſs than ten.

Banneret, according to Spelman, was a middle order between a baron, and a ſimple knight; called ſometimes alſo *vexillarius minor*, to diſtinguiſh him from the greater, that is, from the baron, to whom alone properly belonged the *jus vexilli*, or privilege of the ſquare flag.

Hence the *banneret* was alſo called *bannerettus*, *quaſi baro minor*, a word frequently uſed by Engliſh writers in the ſame ſenſe, as *banneret* was by the French; though neither of them occur before the time of Edward II.

Some will have *bannerets* to have originally been perſons who had ſome portion of a barony aſſigned them; and enjoyed it under the title of *baro proximus*, and that with the ſame prerogatives as the baron himſelf.

Some again find the origin of *bannerets* in France; others in Brittany; others in England. Theſe laſt attribute the inſtitution of *bannerets* to Conan, lieutenant of Maximus, who commanded the Roman legions in England under the empire of Gratian, in 383. This general, ſay they, revolting, divided England into forty cantons, and in theſe cantons diſtributed forty knights, to whom he gave a power of aſſembling on occaſion, under their ſeveral banners, as many of the effective men as were found in their reſpective diſtricts: whence they are called *bannerets*.

However this be, it appears from Froiſſart, &c. that anciently ſuch of the military men as were rich enough to raiſe and ſubſiſt a company of armed men, and had a right to do ſo, were called *bannerets*. Not, however, that theſe qualifications rendered them knights, but only *bannerets*; the appellation of knight being only added thereto, becauſe they were ſimple knights before.

Bannerets were ſecond to none, but knights of the garter; they were reputed the next degree below the nobility; and were allowed to bear arms with ſupporters, which none elſe may, under the degree of a baron. In France, it is ſaid, the dignity was hereditary; but in England it died with the perſon that gained it. The order dwindled on the inſtitution of *baronets* by king James I. and at length became extinct. The laſt perſon created *banneret* was Sir John Smith, made ſo after Edghill-fight, for reſcuing the ſtandard of king Charles I.

The form of the *banneret's* creation was this: on a day of battle, the candidate preſented his flag to the king or general, who, cutting off the train, or ſkirt thereof, and making it a ſquare, returned it again, the proper banner of *bannerets*; who are hence ſometimes called *knights of the ſquare flag*.

There ſeems to have been *bannerets* created, either in a different manner, or by others than the ſovereign; ſince king James, in the patent of baronets, gives them precedence to all knights *bannerets*, except ſuch as are created by the king himſelf in the field; which implies, either that there are ſome of this order created out of the field, or by inferior perſons.

BANNERET is alſo the name of an officer, or magiſtrate of Rome, towards the cloſe of the fourteenth century.

The people of that city, and throughout the territory of the church, during the diſputes of the antipopes, had formed a kind of republican government; where the whole power was lodged in the hands of a magiſtrate, called ſenator, and twelve heads of quarters, called *bannerets*, by reaſon of the banners which each raiſed in his diſtrict.

BANNIMUS, q. d. *we baniſh*, from the obſolete *bannio*, the form of expulſion of any member from the univerſity of Oxford, by affixing the ſentence up in ſome public place, as a denunciation or promulgation of it.

BANNOCK, in *Food*, is an oat-cake kneaded only with water, and baked in the embers. Theſe are common in Lancaſhire, and ſome other counties.

BANNUS, or BANUS, a title anciently given to the governor or viceroy of Croatia, Dalmatia, and Sclavonia.

BANNUS *epiſcopalis*, was a mulct paid to the biſhop by thoſe guilty of ſacrilege, and other crimes.

BANNUM *capitis*, was a mulct paid in cattle.

BANOY, the name given, by the people of the Philippine iſlands, to a kind of hawk, ſomewhat larger than our ſparrow-hawk, and of a yellowiſh colour on the back and wings, and white under the belly. It is the moſt common of all the kinds of hawk in that part of the world, and is a very voracious animal.

BANQUET, in the *Manege*, denotes that ſmall part of the branch of a bridle under the eye; which, being rounded like a ſmall rod, gathers and joins the extremities of the bit to the branch, in ſuch a manner, that the *banquet* is not ſeen, but covered by the cap, or that part of the bit next the branch.

BANQUET-*line*, is an imaginary line drawn by the bit-makers along the *banquet*, in forging a bit, and prolonged upwards and downwards, to adjuſt the deſigned force or weakneſs of the branch, in order to make it ſtiff, or eaſy. For the branch will be hard and ſtrong, if the ſevil-hole be on the outſide of the *banquet*, with reſpect to the neck; and it will be weak, and eaſy, if the ſevil-hole be on the inſide of the line, taking the center from the neck.

BANQUETING-*room*, or *houſe*. See XENIA, SALOON, &c.

The ancient Romans ſupped in the *atrium*, or veſtibule, of their houſes; but, in after-times, magnificent ſaloons, or *banqueting-rooms*, were built, for the more commodious and ſplendid entertainment of their gueſts. Lucullus had ſeveral of theſe, each diſtinguiſhed by the name of ſome god; and there was a particular rate of expence appropriated to each. Plutarch relates with what magnificence he entertained Cicero and Pompey, who went with deſign to ſurprize him, by telling only a ſlave who waited, that the cloth ſhould be laid in the Apollo. The emperor Claudius, among others, had a ſplendid *banqueting-room*, named Mercury. But every thing of this kind was outdone by the luſtre of that celebrated *banqueting-houſe* of Nero, called *domus aurea*; which, by the circular motion of its partitions, and cielings, imitated the revolution of the heavens, and repreſented the different ſeaſons of the year, which changed at every ſervice, and ſhowered down flowers, eſſences, and perfumes, on the gueſts. Heliogabulus, neverthelefs, is ſaid to have improved as much upon Nero, as the latter had done on Lucullus. Senec. Ep. 90.

BANQUETTE, in *Fortification*, is a little foot-bank, or an elevation of earth forming a path which runs along the inſide of a parapet; by which the muſqueteers get up, to diſcover the counterſcarp, or to fire on the enemies in the moat, or in the covert-way.

The *banquette* is generally between two and three feet high, and three feet broad, and four feet and a half lower than the parapet, having two or three ſteps to mount it by.—Where the parapet is very high, they make a double *banquette* one over the other.

BANSTICKLE, in *Ichthyology*, a name given by us to the GASTEROSTEUS.

The *banſtickle* is otherwiſe called *prickle-bag*, or *prickle-back*.

BANTAM-*work*, a kind of Indian painting, and carving on wood, reſembling Japan work, only more gay, and decorated with a great variety of gaudy colours.

Bantam-work is of leſs value among connoiſſeurs, though ſometimes preferred, by the unſkilful, to the true Japan work. Formerly it was in greater uſe, and eſteem, than at preſent; and the imitation of it much practiſed by our japanners.

There are two ſorts of *Bantam*, as well as of Japan work; as, in the latter, ſome are flat, lying even with the black, and others high, or emboſſed; ſo, in *Bantam-work*, ſome is flat, and others in-cut, or carved into the wood, as we find in many large ſcreens; with this difference, that the Japan artiſts work chiefly in gold and other metals, and the *Bantam* generally in colours, with a ſmall ſprinkling of gold here and there.

For the flat *Bantam-work*, it is done in colours, mixed with gum-water, proper for the thing deſigned to be imitated. For the carved, or in-cut kind, the method of performing it is thus deſcribed by an ingenious artiſt. 1. The wood is to be primed with whiting and ſize, ſo often till the primer lie near a quarter of an inch thick; then it is to be water-plained, i. e. rubbed with a fine wet cloth, and, ſome time after, bruſhed very ſmooth, the blacks laid on, varniſhed up with a good body, and poliſhed well, though with a gentle hand. This done, the deſign is to be traced out with vermilion, and gum-water, exactly in the manner wherein it is intended to be cut; the figures, trees, buildings, &c. in their due proportions. Then the graver is applied, with other tools of proper ſhapes, differing according to the workman's fancy. With theſe he cuts deep or ſhallow, as is found convenient, but never deeper than the whiting lies; the wood being never to feel the edge of the inſtrument. Lines, or parts of the black, are ſtill to be left, for the draperies and other out-lines, and for the diſtinction of one thing from another; the rule being to cut where the white is, and leave the black untouched. The carving being finiſhed, they then uſe the pencil, with which the colours are laid into the cut-work. After this, the gold is to be laid in thoſe places which the deſign requires; for which purpoſe, a ſtrong, thick gum-arabic water is taken, and laid with a pencil on the work; and, while this remains wet, leaf-gold is cut with a ſharp ſmooth-edged knife, in little pieces, ſhaped to the bigneſs and figure of the places where they are to be laid. Theſe being taken up with a little cotton, they dab them with the ſame cloſe to the gum-water, which affords a rich luſtre. The work thus finiſhed, they clear up the black with oil, taking care not to touch the colours. The European workmen, in lieu of leaf-gold, ordinarily uſe braſs-duſt, which is leſs bright and beautiful. Park. Treat. of Japan.

BAOBAB, in *Natural Hiſtory*, the name of an African fruit deſcribed by Proſper Alpinus. It is of the ſize of a lemon, but it reſembles a gourd, and contains ſeveral black ſeeds, whoſe extremities are a little crooked. Its ſubſtance alſo much reſembles that of the gourd; and, when firſt pulled off, is moiſt, red, and of a grateful acid taſte. The people of Æthiopia, where it is plentiful, are very fond of it, in the ſcorching heats of ſummer; and the richer ſort add ſugar to it, to correct its acidity. It is a great cooler, and very agreeably quenches thirſt; and has alſo ſome medicinal uſe, as it is good in contagious and peſtilential fevers. The people of Cairo, where the freſh fruit is not to be had, uſe its pulp dried and powdered; and it is ſo uſed at Senegal in peſtilential fevers, the dyſentery, and bloody flux. The doſe is a drachm, taken either in common water, or in an infuſion of the plantain.

The *baobab* tree has been lately very minutely and accurately deſcribed by Mr. Adanſon, in the Memoirs of the Academy of Sciences at Paris. It is found at Senegal in Africa; and its bulk is ſo enormous, that it has more the appearance of a foreſt than of a ſingle tree. Its trunk, which ſeldom exceeds twelve feet in height, meaſures between ſeventy and eighty feet in circumference, and is crowned with a number of branches, remarkable for their thickneſs and their length, which is from fifty to ſixty feet. They moſtly ſhoot out in an horizontal direction, and give to the trunk the appearance of an hemiſphere from ſixty to ſeventy feet high, and about a hundred and forty feet in diameter. The bark is an inch thick, of an aſh-coloured grey, greaſy to the touch, bright and very ſmooth; the outſide is covered with a varniſh, and the inſide is green, ſpeckled with red; the wood is white and ſoft; the leaves are oval, pointed at the end, and about five inches long, and two and a half broad: ſeven of theſe are generally attached to one pedicle. The tree produces flowers much larger than any hitherto known; the calyx of the flower conſiſts only of one piece, the lower part of which forms a ſhort tube, which ſpreads into the ſhape of a ſaucer, having its edge divided into five equal parts of a triangular figure. The petals are five in number, of the ſame length with the calyx. From the ſame center, and within the petal, riſes a cone, which ſpreads into about ſeven hundred filaments, each having a ſmall ſubſtance in form of a kidney at the end of it, the convex part of which opens into two cells, which ſhed a duſt, conſiſting of ſmall white tranſparent particles. The piſtil riſes from the center of the calyx, and conſiſts of an ovary, a ſtylus, and ſeveral ſtigmata, in number from ten to fourteen. The ovary becomes a very conſiderable fruit. The tree flowers in July, and the fruit ripens in October and November. The bark and leaves are dried, and powdered by the negroes of Senegal, and uſed like pepper and ſalt. M. Adanſon uſed it as a preſervative from the epidemic fever of the country, and found it of great benefit in promoting perſpiration, and attempering the exceſſive heat of the blood. The woody bark of the fruit, and the fruit itſelf, ſupply the negroes with an excellent ſoap, which they prepare by drawing a lye from the aſhes, and boiling it with palm-oil that begins to be rancid. The decaying trunks are hollowed out into burying places for perſons moſt eſteemed by the negroes; ſuch as poets, muſicians, and buffoons; and their bodies ſhut up in theſe trunks become perfectly dry, without rotting, and form a kind of mummies, without the help of embalment. The African *baobab* has been ſometimes confounded with the American CALABASH.

BAPHE, in the *Writings of the Ancients*, a word uſed to expreſs that fine red colour, with which they uſed to illuminate the capital letters in manuſcripts, at the beginning of chapters. It is alſo called, by ſome, *encauſtum ſacrum*, and, by others, *coccus* and *cinnabaris*. It was a very elegant colour, and is ſaid to have been prepared of the purple colour taken from the *murex*, and ſome other ingredients. It was called *encauſtum*, from its reſembling very much the fine bright red uſed in enamels.

BAPTÆ, in *Antiquity*, an effeminate, voluptuous kind of prieſts at Athens, belonging to the goddeſs Cotyttus; thus called, from their ſtated dippings and waſhings, by way of purification. It ſeems, they were to be made very clean and pure, that they might wallow, and defile themſelves, with the leſs reſerve; for their rites were performed in the night, and conſiſted chiefly of laſcivious dances.

Eupolis having compoſed a comedy to expoſe them, entitled Βαπτος, they threw him into the ſea, to be revenged; and the ſame fate is alſo ſaid to have befallen Cratinus, another Athenian poet, who had written a comedy againſt the *baptæ*, under the ſame title.

Others deduce the denomination *baptæ*, from the practice of dying and painting their bodies, eſpecially their eyebrows, and officiating at the ſervice of their deity, with the parade and demureneſs of women. Juvenal deſcribes them in this light. Sat. ii. ver. 91.

BAPTES, in *Natural Hiſtory*, a name given by the ancients to a foſſile ſubſtance uſed in medicine; they have left us but very ſhort deſcriptions of it. Pliny only tells us, that it was ſoft, and of an agreeable ſmell. Hence Agricola judges, that it was probably one of the bitumens.

BAPTISECULA, in *Botany*, a name given by ſome authors to the blue corn-flower, called the CYANUS, or blue-bottle.

BAPTISM, in *Theology*; formed from the Greek βαπτιζω, of βαπτω, *I dip* or *plunge*, a rite or ceremony by which perſons are initiated into the profeſſion of the Chriſtian religion.

The Jews practiſed a ceremony, which they called *baptiſm*, after circumciſion, on their proſelytes, long before the coming of Jeſus Chriſt.—In the primitive times this ceremony was performed by immerſion, as it is to this day in the oriental churches, according to the original ſignification of the word. The practice of the weſtern churches is, to ſprinkle the water on the head or face of the perſon to be baptized, except in the church of Milan, in whoſe ritual it is ordered, that the head of the infant be plunged three times into the water; the miniſter at the ſame time pronouncing the words "*I baptize thee in the name of the Father, the Son, and the Holy Ghoſt*;" importing that by this ceremony the perſon baptized is received among the profeſſors of that religion, which God, the Father of all, revealed to mankind by the miniſtry of his Son, and confirmed by the miracles of his Spirit.—A triple immerſion was firſt uſed, and continued for a long time: this was to ſignify either the three days that our Saviour lay in the grave, or the three perſons in the Trinity. But it was afterwards laid aſide, becauſe the Arians uſed it: it was then thought proper to plunge but once.—Some are of opinion, that ſprinkling in *baptiſm* was begun in cold countries. It was introduced into England about the beginning of the ninth century. At the council of Celchyth, in 816, it was ordered, that the prieſt ſhould not only ſprinkle the holy water upon the head of the infant, but likewiſe plunge it in the baſon.—There are abundance of ceremonies delivered by eccleſiaſtical writers, as uſed in *baptiſm*, which are now diſuſed; as the giving milk and honey to the baptized, in the Eaſt; wine and milk in the Weſt, &c.

The quakers diſallow the perpetuity of *baptiſm* in the Chriſtian church. See QUAKERS.

It was alſo wholly rejected by the Valentinians, Manichees, Paulicians, and many other ſects.

Several of the Socinians have maintained, that *baptiſm* was only to be uſed by thoſe who are converted to Chriſtianity from a different profeſſion; and that though the children of ſuch proſelytes were to be baptized with their parents, all who deſcended from them were to be conſidered as baptized in them; and they urge the practice of proſelyte *baptiſm* among the Jews in ſupport of this opinion.

Theological authors diſtinguiſh three kinds of *baptiſm*; 1. *Water baptiſm*, which is that above mentioned. 2. *Baptiſm of fire*, which is the perfect love of God, joined with an earneſt deſire to be baptiſed; called alſo the *baptiſm of the Holy Ghoſt*: on occaſion this may ſupply the place of *water baptiſm*. 3. *Baptiſm of blood*; which is the martyrdom of a catechumen.

Baptiſm, in the primitive times, was only adminiſtered at Eaſter and Whitſuntide, except in caſes of neceſſity. The catechumens were not forward in coming to *baptiſm*: St. Ambroſe was not baptiſed before he was elected biſhop of Milan; and ſome of the fathers not till the time of their death. Some deferred it out of a tender conſcience; and others out of too much attachment to the world; it being the prevailing opinion of the primitive times, that *baptiſm*, whenever conferred, waſhed away all antecedent ſtains and ſins. Divers of the fathers rallied this ſuperſtitious delicacy to ſuch a degree, that they introduced a different extreme; the ridiculous zeal of ſome people carrying them to baptize even the dead, by proxy.

The opinion of the neceſſity of *baptiſm* in order to ſalvation, is grounded on thoſe two ſayings of our Saviour: *He that believeth, and is baptiſed, ſhall be ſaved*; and, *Except a man be born of water, and of the ſpirit, he cannot enter into the kingdom of God*.

Mr. Dodwell maintains, that the ordinance of *baptiſm*, if adminiſtered by perſons duly ordained, conveys an immortaliſing ſpirit; whereas perſons dying unbaptiſed are not immortal. See PÆDO-BAPTIST.

BAPTISM *of the dead*, a cuſtom which anciently prevailed among ſome people in Africa, of giving *baptiſm to the dead*. The third council of Carthage ſpeaks of it, as a thing that ignorant Chriſtians were fond of. Gregory Nazianzen alſo takes notice of the ſame ſuperſtitious opinion prevailing among ſome who delayed to be baptiſed. In his addreſs to this kind of men, he aſks, whether they ſtaid to be baptiſed after death? Philaſtrius alſo notes it as the general error of the Montaniſts or Cataphrygians, that they baptiſed men after death.

The practice ſeems to be grounded on a vain opinion, that when men had neglected to receive *baptiſm* in their life-time, ſome compenſation might be made for this default, by receiving it after death.

Baptism *of the dead*, was alſo a ſort of vicarious *baptiſm*, formerly in uſe, where a perſon dying without *baptiſm*, another was baptiſed in his ſtead; a practice founded on 1 Cor. xv. 29. concerning the ſenſe of which paſſage critics have been much divided. Several catholics underſtand it of the baptiſm of tears, penance, and prayers, which the living undergo for the dead, and allege it as the proof of the belief of purgatory in the apoſtle's days. See Heinſius's Exerc. ad Nov. Teſt. lib. vii. cap. 13.

Baptism, *Lay*, ſeems to have been allowed in the rubric of the Engliſh liturgy, till the time of king James I. though there were great diſputes among the biſhops at the Hampton-court conference, whether the words of the liturgy imported ſuch allowance or not. The biſhop of Worceſter allowed them to be doubtful; but that the contrary practice of the church, which cenſured women for conferring *baptiſm*, ſhewed, that the compilers of the book did not intend them as a permiſſion: they had indeed propounded them ambiguouſly, becauſe otherwiſe, perhaps, the book would not have paſſed the parliament. The archbiſhop of Canterbury inſiſted, that the adminiſtration of private *baptiſm* by women and laymen, was not allowed in the practice of the church, but, on the contrary, cenſured by the biſhops in their viſitations. He even added, that the words of the liturgy do not infer any ſuch meaning. To which king James excepted; urging and preſſing the words of the book, that they could not but intend a permiſſion of women, and private perſons to baptize.

At preſent, the Engliſh divines condemn it as invalid; and Burnet, biſhop of Sarum, was ſeverely handled by ſome of them, for aſſerting, that faith in the Trinity gives every man a right to baptize. Collins's Diſc. on Free-Think. p. 73.

Baptism, *Clinic*. See **Clinic**.

Baptism is alſo applied, abuſively, to certain ceremonies uſed in giving names to many inanimate things.

Baptism, in *Sea-Language*, is a ceremony in long voyages aboard merchant-ſhips; practiſed both on perſons and veſſels which paſs the tropic, or line, for the firſt time.

That of veſſels is ſimple, and conſiſts only in the waſhing them throughout with ſea-water: that of paſſengers is ludicrous: but neither the one nor the other is done without making the crew drunk; the ſeamen, on chriſtening the ſhip, pretending to a right of cutting off the beak-head, unleſs redeemed by the maſter or captain.

Baptism *of bells*; ſee **Bell**.

BAPTISMAL *font*; ſee **Baptistery**.

Baptismal *preſents* are in uſe in Germany, made by the ſponſors to the infant, conſiſting of money, plate, or even ſometimes fiefs of lands; which, by the laws of the country, are to be kept for the child till of age, the parents having only the truſt, not the right of diſpoſing of them.

An anonymous author has publiſhed a diſcourſe expreſs on this occaſion, entitled, De Pecunia Luſtrica.

Baptismal *vow*, or *covenant*, a profeſſion of obedience to the laws of Chriſt, which perſons, in the ancient church, made before baptiſm.

It was made by turning to the Eaſt, but for what myſtical reaſons it is not well agreed.

BAPTISTERY, in *Eccleſiaſtical Writers*, a place or edifice where water is preſerved for perſons to be baptiſed in.

Anciently, in the churches which baptiſed by immerſion, the *baptiſtery* was a kind of pond where the catechumens were plunged; though in many places the next river ſerved for a *baptiſtery*, which was the caſe in the time of Juſtin Martyr, and of Tertullian. And the *baptiſteries* continued ſeparate from the church till the ſixth century.

In after-times, the *baptiſtery* was a little building adjoining to the church, purpoſely appointed for the adminiſtration of this ceremony.

There were ſeveral fonts and altars in each *baptiſtery*, becauſe then they baptiſed a number at once, all of whom received the euchariſt immediately after.

At firſt, theſe *baptiſteries* were only in the great cities, where biſhops reſided, who alone had the right of baptiſing; but they afterwards allowed pariſhes to have fonts, for the more commodious adminiſtration of baptiſm. This right was confined to pariſhes alone; and if any monaſteries were found with baptiſmal fonts, it was becauſe they had baptiſmal churches in another place: though the biſhops ſometimes granted them to monks, upon condition that they would have a ſecular prieſt along with them to take care of the people; but they afterwards found means to throw off the prieſt, and make themſelves maſters of the church, and attach it, with its baptiſmal fonts, to their own monaſtery.

Baptistery is alſo uſed for a baptiſmal or parochial church.

Baptistery is alſo uſed, by the *Armenians*, for the feaſt of Epiphany, when the anniverſary of Chriſt's baptiſm is celebrated.

Baptistery is alſo uſed for a church-book, wherein the prayers and ceremonies of baptiſm were particularly deſcribed. Some take the *baptiſterium* to have contained the order of all the ſacraments, except the euchariſt.

BAPTISTS, in *Eccleſiaſtical Hiſtory*, from βαπτιζω, *I baptize*; a denomination of Chriſtians, diſtinguiſhed from other Chriſtians by their particular opinions reſpecting the mode and the ſubjects of baptiſm.

Inſtead of adminiſtering the ordinance by ſprinkling or pouring water, they maintain that it ought to be adminiſtered only by immerſion. Such, they inſiſt, is the meaning of the word βαπτιζω; ſo that a command to baptize is a command to immerſe. Thus it was underſtood by thoſe who firſt adminiſtered it. John the Baptiſt, and the apoſtles of Chriſt, adminiſtered it in Jordan and other rivers, and places where there was much water. Both the adminiſtrators and the ſubjects are deſcribed as going down into, and coming up again out of the water. And the baptiſed are ſaid to be buried in baptiſm, and to be raiſed again: which language could not, they ſay, be properly adopted on ſuppoſition of the ordinance's being adminiſtered in any other manner than by immerſion. Thus alſo, they affirm, it was in general adminiſtered in the primitive church. Thus it is now adminiſtered in the Ruſſian and Greek church: and thus it is, at this day, directed to be adminiſtered in the church of England, to all who are thought capable of ſubmitting to it in this manner.

With regard to the ſubjects of baptiſm, the *baptiſts* ſay, that this ordinance ought not to be adminiſtered to children or infants at all, nor to grown up perſons in general; but to adults only of a certain character and deſcription. Our Saviour's commiſſion to his apoſtles, by which Chriſtian baptiſm was inſtituted, is to go and teach all nations, baptiſing them: that is, ſay they, not to baptize all they meet with; but firſt to inſtruct them—to teach all nations, or to preach the goſpel to every creature—and whoever receives it, him to baptize in the name of the Father, and of the Son, and of the Holy Ghoſt. To ſuch perſons, and to ſuch only, baptiſm appears to have been adminiſtered by the apoſtles, and the immediate diſciples of Chriſt. They are deſcribed as repenting of their ſins, as believing in Chriſt, and as having gladly received the word. Without theſe qualifications, Peter acquaints thoſe who were converted by his ſermon, that he could not have admitted them to baptiſm. Philip holds the ſame language in his diſcourſe with the eunuch. And Paul treats Lydia, the jailor, and others, in the ſame manner. Without theſe qualifications, Chriſtians in general think it wrong to admit perſons to the Lord's ſupper; and, for the ſame reaſons, without theſe qualifications, at leaſt a profeſſion of them, the *baptiſts* think it wrong to admit any to baptiſm. Wherefore they withhold it, not only from the impenitently vicious and profane, and from infidels who have no faith, but alſo from infants and children, who have no knowledge, and are incapable of every action civil and religious. They further inſiſt, that all poſitive inſtitutions depend entirely upon the will and declaration of the inſtitutor; and that therefore reaſoning by analogy from previous abrogated rites is to be rejected, and the expreſs commands of Chriſt reſpecting the mode and ſubjects of baptiſm, ought to be our only rule.

The *baptiſts* in England form one of the three denominations of Proteſtant Diſſenters. They ſeparate from the eſtabliſhment for the ſame reaſons as their brethren of the other denominations do, with whom they are united; and from additional motives derived from their particular tenets reſpecting baptiſm. The conſtitution of their churches, and their modes of worſhip, are congregational or independent: in the exerciſes of which they are protected, in common with other diſſenters, by the act of toleration. Before this act, they were liable to pains and penalties as nonconformiſts, and often for their peculiar ſentiments as *baptiſts*. A proclamation was iſſued out againſt them, and ſome of them were burnt in Smithfield in 1538. They bore a conſiderable ſhare in the perſecutions of the laſt, and of the preceding centuries; and, as it ſhould ſeem, in thoſe of ſome centuries before; for there were ſeveral among the Lollards and the followers of Wickliff, who diſapproved of infant-baptiſm. There were many of this perſuaſion among the proteſtants and reformers abroad. In Holland, Germany, and the North, they went by the names of **Anabaptists** and **Mennonites**; and, in Piedmont and the South, they were found among the **Albigenses** and **Waldenses**. See the Hiſtories of the Reformation, and the above articles in this Dictionary.

The *baptiſts* ſubſiſt under two denominations, viz. the *Particular* or Calviniſtical, and the *General* or Arminian. The former is by far the moſt numerous. Some of both denominations allow of mixed communion, others diſallow it: and ſome of them obſerve the ſeventh day of the week as the ſabbath, apprehending the law that enjoined it, not to have been repealed by Chriſt or his apoſtles. But a difference of opinion reſpecting theſe and other matters, is not peculiar to the *baptiſts*: it is common to all Chriſtians, and to all bodies of men who think and judge for themſelves. See PÆDOBAPTISTS, under which article an account will be given of the principal arguments in favour of infant baptiſm.

BAR, in *Architecture*, a long ſlender piece of wood or iron, uſed to keep things cloſe and faſt together.

In this ſenſe, we ſpeak of *bars* of windows, of doors, and the like.

BARS *of iron* are made of the metal of the ſows and pigs, as they come from the furnaces.

Theſe paſs through two forges, called the *finery* and the *chaufery*; where, undergoing five ſeveral heats, they are formed into bars. Phil. Tranſ. N° 138. p. 954. See IRON and FORGE.

BAR, in a court of juſtice, denotes an incloſure made with a ſtrong partition of timber, three or four feet high, where the counſel are placed to plead cauſes.

This the French call *barre d' audience*, and in ſome places *auditoire*. It anſwers to what, among the Romans, was denominated *cauſidica*.

It is called *bar*, becauſe incloſed with a barrier, called alſo in Latin writers *cancelli* and *caulæ*, by a metaphor taken from ſheep-folds.

The denomination BAR is alſo given to the benches, where the lawyers or advocates are ſeated.—The appellation aroſe hence, that anciently there was a *bar*, or barrier, to ſeparate the counſellors and pleaders from the attorneys and others.

Hence our lawyers who are called to the *bar*, or licenſed to plead, in other countries called *licentiati*, are termed *barriſters*.

BAR, or BARRE, BARRA, in *Common Law*, denotes a peremptory exception againſt a demand or plaint.

The author of the Terms of the Law defines *bar*, a plea brought by the defendant in an action, whereby the action of the plaintiff is deſtroyed for ever.—But the modern writers extend the uſe of the word farther, dividing *bars* into *perpetual* and *temporary*.

BAR, *perpetual*, is that which overthrows the action for ever.

BAR, *temporary*, or *bar pro tempore*, is that which is allowed good for the preſent, but may fail, or be ſet aſide hereafter.

BAR, in *Geography*, is uſed for a heap of ſand or mud, or a chain of rocks, which block up the mouth of a river, or port, ſo that there is no entrance except at high water.

The *bar* of Siam is a remarkable bank of mud, gathered in the mouth of the river, which allows not above thirteen feet of water, when the tide is higheſt.

BAR *of a port*, in *Marine Fortification*; ſee BOOM.

BARS, in the *Manege*, denote the ridges or upper part of the gums, between the tuſhes and grinders of a horſe; the under and outward ſides retaining the name *gums*.

The *bars* ſhould be ſharp-ridged and lean; for ſince all the ſubjection a horſe ſuffers, proceeds from thoſe parts, if they have not thoſe qualities, they will be very little, or not at all ſenſible; ſo that the horſe can never have a good mouth; for if the *bars* be flat, round, and inſenſible, the bit will not have its effect; and conſequently, ſuch a horſe can be no more governed by his bridle, than if one took hold of his tail.

To BAR or *ſtrike a vein*, among *Farriers*, an operation performed on the veins of a horſe's legs, or other parts of his body, in order to ſtop the courſe, and leſſen the quantity of malignant humours prevailing there.

It is thus performed: the farrier opens the ſkin, after diſengaging the vein, ties it above and below, and then ſtrikes between the two ligatures.

BARS, in *Muſic*, denote ſtrokes drawn perpendicularly acroſs the lines of a piece of muſic, including between each two, a certain quantity or meaſure of time, which is various as the time is triple or common.

The uſe of *bars* in muſic is a modern invention. They cannot be traced higher than the year 1574, and ſeem not to have been in general uſe till the year 1653; ſo that probably this improvement is owing to Mr. Henry Lawes, who publiſhed his Airs and Dialogues in that year.

In common time, between each two *bars*, is included the meaſure of four crotchets; in triple time, three crotchets. Their principal uſe is, to regulate the beating, or meaſure of the muſical time in a concert. See TIME.

BAR, BARR, or BARRE, in *Heraldry*, denotes an ordinary nearly reſembling the FESS; from which it only differs by its narrowneſs, and by this, that the *bar* may be placed in any part of the field, whereas the *feſs* is confined to a ſingle place.

The *bar* itſelf has its diminutives, which are the *cloſet* and *barrulet*.

The *bar* of legitimate cadets proceeds from right to left; that of baſtards from left to right.

BAR-*gemel*, denotes a double *bar*, or where the *bars* are placed in couples, at a ſmall diſtance, and more than two in the field, in even number.

BAR, among *Printers*, denotes a piece of iron with a wooden handle, whereby the ſcrew of the preſs is turned in printing.

BAR-*maſter*, in *Mining*, he who keeps the gage, or diſh, to meaſure all miners ore; he, or his ſervant, being always to be preſent when it is meaſured.

BAR-*ſhot*; ſee SHOT.

BARACK, or BARRACK, BARAQUE, a hut, or little lodge for ſoldiers in a camp.

The word comes from the Spaniſh *barracas*, little cabins, which fiſhermen make on the ſea-ſhore.

Thoſe for the horſe were formerly called *baracks*, and thoſe for the foot *huts*; but *barack* is now uſed indifferently for both.

Baracks are generally made by fixing four forked poles in the ground, and laying four others acroſs them; afterwards they build up the walls with ſods, wattles, or what the place affords; and the top is planked, thatched, or covered with turf, as they have convenience.

When the army is in winter quarters, the ſoldiers uſually build *baracks*; in the ſummer they are content with their tents.

BARACKS is alſo more generally applied to buildings to lodge ſoldiers in fortified towns, or others. Thus we ſay the *baracks* of the Savoy, of Dublin, &c.

Baracks, when damp, are greatly prejudicial to the health of the ſoldiers lodged in them; occaſioning dyſenteries, intermitting fevers, coughs, rheumatic pains, &c. For which reaſon quarter-maſters ought to be careful in examining every *barack*, offered by the magiſtrates of a place; rejecting all ground-floors in houſes that have either been uninhabited, or have any ſigns of moiſture.

BARALIPTON, a term in *Logic*, denoting the firſt indirect MODE of the firſt FIGURE of ſyllogiſms.

A ſyllogiſm in *baralipton* is, when the two firſt propoſitions thereof are univerſal affirmatives, and the third a particular affirmative; the middle term being the ſubject of the firſt, and the attribute of the ſecond.—For example:

BA *Every evil ought to be feared:*
RA *Every violent paſſion is an evil:*
LIP *Therefore ſomething that ought to be feared is a violent paſſion.*

See letters A and I, and SYLLOGISM.

BARALLOTS, BARALOTTI, the name of a ſect at Bologna in Italy, who had all things in common, even their wives and children.—They gave, it is ſaid, into all manner of debauchery, and were alſo termed *compliers*.

BARANGI, officers among the Greeks of the lower empire, whoſe buſineſs it was to keep the keys of the city-gates where the emperor reſided.

Codinus ſays, *barangi* were thoſe who ſtood guard at the door of the emperor's bed-chamber and dining-room.

Condinus and Curopalata obſerve, that the name is Engliſh, formed from *bar*, *to ſhut*; and that the *barangi* were Engliſhmen, by country; Anglo-Danes, who, being driven out of England, were received into the ſervice of the emperor of Conſtantinople, and made guards or protectors of his perſon. Whence they are called in Latin, by Cujaccius, *protectores*; by others, *ſecurigeri*, as being armed with a battle-ax, *ſecuris*. Codinus adds, that they ſtill ſpoke the Engliſh tongue. Anna Comnena ſays, the *barangi* came from the iſland Thule; by which is, doubtleſs, meant our iſland. Yet Nicetas makes them Germans; a miſtake eaſy to be made at that diſtance, conſidering the relation the Anglo-Saxons bore to Germany.

There were *barangi* as early as the emperor Michael Paphlagonius, in the year 1035, as appears from Cedrenus; but they were then only common ſoldiers, not a life-guard.

Their commander was called ακολουθος, as importing a perſon who always followed the emperor.

BARA-*picklet*, bread made of fine flour kneaded with barm, which makes it very light and ſpongy: *bara* being the Welch for bread.

BARATHRUM, from βαραθρον, ſignifying the ſame, among the *Ancient Athenians*, a deep pit into which condemned criminals were caſt headlong.

The *barathrum* was a dark noiſome hole, having ſharp ſpikes at the top, to prevent any eſcape, and others at the bottom, to pierce and lacerate the offender.

From its depth and capaciouſneſs, the name came to be uſed proverbially for a miſer, or a glutton, always craving.

In which ſenſe, the word *barathro* is uſed among the Latin poets.

BARATHRUM is alſo uſed, in *Phyſiology*, to denote certain baleful caverns, inacceſſible on account of their fetid, or poiſonous fumes.

Theſe amount to the ſame with what others call *foſſæ charoniæ*.

BARATRY, or BARETRY, in *Law*, ſignifies the moving and maintaining ſuits in diſturbance of the peace; and the taking and detaining houſes, lands, &c. by falſe inventions. The word *baratterre* in French ſignifies *miſdemeanor, fraud, deceit*: it is derived from the old word *barat*,

barat, which ſignifies any impoſition; whence alſo they ſaid *baratter, to impoſe on any one.* 8 Rep. 31.

Baratry, in a *Marine Senſe*, is the maſter of a ſhip, or the mariners cheating the owners or inſurers, whether it be done by running away with the ſhip, ſinking her, deſerting her, or embezzling the cargo.

Baratry of mariners is ſo epidemical on ſhip-board, that it it is rare if the maſter, be his induſtry ever ſo great, can prevent it, by reaſon of the encouragement one knaviſh ſailor gives another; yet the law, in ſuch caſes, imputes the offences of the mariners to the negligence of the maſter, and from him the merchant is to ſeek for remedy for all goods or merchandize loſt, embezzled, or otherwiſe damnified.

By the French ordonnances, inſurers are not obliged to make good the loſs or damage accruing to a veſſel, or its lading, by the fault of the maſter or crew, unleſs, by the forms of the policy, they be made accountable for the *baratry* of the patron. A maſter who, without neceſſity, takes up money on the body, proviſion, or tackling of a ſhip, or ſells the effects on board, or, in his account of average, ſets down fictitious expences, ſhall pay the value, be declared unworthy of being maſter, and baniſhed the port where he ordinarily reſided. In ſome caſes, he is alſo ſubject to corporal puniſhment, and even to death, where it appears he willingly threw away the ſhip.

Baratry is alſo uſed for bribery or corruption in a judge, giving a falſe ſentence for money.

Baratry is alſo uſed, in *Middle Age Writers*, for fraud or deceit in making of contracts, ſales, or the like.

BARB is uſed for the *Barbary pigeon*, called alſo by Moore the *columba Numidica*.

This is but a ſmall pigeon, and has a very ſhort beak like a bulfinch, with a ſmall water, and a naked circle of tuberoſe red fleſh round the eyes; the *iris* of the eye is of a pearl-colour, and the broader and redder this circle round them is, the more the pigeon is valued; but this is always narrow while they are young, and does not arrive at its full breadth till they are four years old. Some of this ſpecies have a tuft of feathers behind their head, and others not. The red circle round their eyes grows pale and whitiſh, if they become ſick; but always recovers its redneſs as they grow well: their proper colour is black, or dun. There are likewiſe pyed ones; but they are of a mixed breed, and not ſo valuable.

BARBA *Aron*, in *Botany*, a name given by ſome authors to the common great houſe-leek.

Barba *Capræ*, in *Botany*; ſee Spiræa.

Of this genus Mr. Tournefort allows only one ſpecies, the common *barba capræ*, or, as it is called by ſome, *drymopogon*.

Barba *Jovis*, in *Botany*, the name of a ſpecies of *anthyllis*. See Lady's *finger*.

BARBACAN, or Barbican, properly denotes an outer defence, or fortification to a city, or caſtle; uſed eſpecially as a fence to the gates, or walls.

In which ſenſe, *barbacan* amounts to the ſame with what is otherwiſe called, *antemurale, promurale, murus exterior*, or *outer wall*.

Barbacan is alſo uſed for a fort at the entrance of a bridge, or in the outlet of a city, having a double wall with towers. Such is that at one end of the wooden bridge at Rouen, which is ſtill called by ſome *Barbacana*.

Barbacan is alſo uſed for an aperture in the walls of a city, through which to fire with muſquets on the enemy. See Embrasure.

Barbacan, in *Architecture*, denotes a long narrow canal, or opening, left in the walls for water to come in and go out at, when edifices are raiſed in places liable to be overflowed; or to drain off the water from a terrace, or the like.

BARBADOES *cherry*; ſee Cherry.

Barbadoes *flower-fence, poinciana*, in *Botany*, a genus of the *decandria monogynia* claſs. Its characters are theſe: the empalement of the flower is compoſed of five oblong concave leaves, which fall off. The flower has five unequal petals, four of them nearly equal and roundiſh, but the fifth larger, deformed and indented. It hath ten long, briſtly, riſing ſtigmas, terminated by oblong ſummits; and an awl-ſhaped declining *germen*, which ſits upon the ſtyle, and is crowned by an acute ſtigma. The *germen* afterward becomes an oblong compreſſed pod, with ſeveral tranſverſe partitions, in each of which is lodged a ſingle flattiſh ſeed.

This plant grows naturally in both Indies. It is planted in hedges, to divide the lands in Barbadoes, from whence it had the title of *flower-fence*; it is alſo called Spaniſh *carnation* by ſome of the inhabitants of the Britiſh iſlands.

Theſe plants muſt conſtantly remain in the bark-ſtove, where in warm weather they ſhould have a large ſhare of air; but they muſt not be expoſed to cold; if damp ſeizes their top, it very often kills the plants, or at leaſt occaſions the loſs of their heads. With proper management, they will grow much taller here than they uſually do in Barbadoes, but their ſtems will not be larger than a man's finger, which is occaſioned by their being drawn up by the glaſſes of the ſtove.

Barbadoes *tar, Petroleum Barbadenſe*, is a bitumen of a reddiſh black colour, and thick conſiſtence, approaching to that of common tar. It is found in ſeveral of the American iſlands, and particularly in *Barbadoes*; where it is greatly eſteemed as a ſudorific, in diſorders of the breaſt, and as an external diſcutient and anti-paralytic. It is leſs inflammable than the other petrolea, and leaves on being burnt a conſiderable quantity of aſhes. The oil obtained from it in diſtillation, and a balſam prepared by boiling it with one fourth its weight of flowers of ſulphur, are directed by the London college to be kept in the ſhops. Lewis's Mat. Med.

BARBARA, in *Logic*, the firſt mode of the firſt figure of ſyllogiſms.

A ſyllogiſm in *barbara*, is that whereof all the propoſitions are univerſal and affirmative; the middle term being the ſubject in the firſt propoſition, and attribute or predicate in the ſecond.—For example:

BAR *Whoever ſuffers a man to ſtarve, whom he ought to ſuſtain, is a murderer:*
BA *Whoever is rich, and refuſes to give alms, ſuffers thoſe to ſtarve, whom he ought to ſuſtain:*
RA *Therefore, whoever is rich, and refuſes to give alms, is a murderer.*

BARBARIAN, a name given by the ancient Greeks to all thoſe who were not of their own country, or who did not ſpeak the Greek language.—In which ſenſe the word ſignified with them, no more than *foreigner*, and did not carry that odium with it as it does now.

Strabo derives the word βαρϐαρος from βαρϐαριζειν, *balbutire*, becauſe foreigners coming to Athens uſed to ſtammer, or ſpeak coarſely: others derive it from βαρϐαρ, a word that foreigners frequently ſtumbled on, which yet had no meaning.

BARBARICARII, in *Antiquity*, a kind of artiſts, who, with threads of divers colours, expreſſed the figures of men, animals, and other things; or, as others deſcribe them, thoſe whoſe buſineſs was to gild, and decorate ſhields and helmets with gold and ſilver.

The *barbaricarii* were ſo called, becauſe they learned this kind of painting from the Phrygians, who were particularly denominated *barbarians*, in regard of their oppoſition to the Greeks; though the name is ſometimes alſo written *branbaricarri*.

Barbaricarii ſeem alſo to have been uſed for ſoldiers or officers, who wore maſks and vizards, thus adorned with gold and ſilver.

BARBARICUM, in *Ancient Writers*, is uſed for a military ſhout, raiſed by the ſoldiers on point of engagement.

This is called *barbaricum* from the barbarians, in whoſe armies this method of ſhouting much obtained.

The ſame appellation was given to a war, or expedition, undertaken againſt the barbarians.—*Quouſque ad ipſum tempus quo barbaricum extortum eſt inter nos & vos.*

Barbaricum was alſo uſed for an armoury, or magazine, wherein the Greek emperors kept the ſpoils, and donaries, taken from the barbarians in the time of war or peace.

Barbaricum is alſo an appellation given by the modern Greeks to rhubarb.

It is thus called from the *Sinus Barbaricus*, by the way of which this root was firſt brought to them.

BARBARISM, in *Grammar*, denotes an offence againſt the purity of ſtyle or language.

A *barbariſm* differs, according to Iſidore, from a *barbarous term*, as the former, for inſtance, is Latin, though corrupt or miſuſed; whereas the latter, which this writer calls *barbarologia*, is a word merely foreign, intruded into Latin ſpeech.

In general, under *barbariſms* are comprehended things written, ſpoken, declined, or conjugated wrong; or uſed in a wrong quantity, or in an unuſual ſenſe; as when a word is uſed which is foreign to the language, and not received by the better and purer ſort of writers therein. Such are *liper* for *liber*, *ſyllăba* for *ſyllāba*, *patri* for *patris*, *lexi* for *legi*, *bannus* for *proſcriptio*, &c.

Barbariſm is often charged, with great juſtice, on modern writers in the learned languages. The Latin books of late ages are full of Angliciſms, Galliciſms, Germaniciſms, &c. according to the country of the author. But what ſhall we ſay to Caſp. Scioppius, who accuſes Cicero himſelf of *barbariſms* in his own language?

There are great diſputes among critics concerning *barbariſms* in the New Teſtament.

Divers pious perſons are ſtartled at the apprehenſion of any thing like a *barbariſm* in the inſpired books, as ſuppoſing it an objection to the inſpiration of them; yet this does not hinder but many of the Jews, after Abarbanel and others, ſtill maintain *barbariſms* in the Old Teſtament; in which they are ſeconded by M. Simon, Le Clerc, and others. Divers of the prophets are ſaid to have been unacquainted with the language they wrote in, particularly Jeremiah.

BARBARISM, *barbaries*, is alſo uſed for that rudeneſs of mind, wherein the underſtanding is neither furniſhed with uſeful principles, nor the will with good inclinations.

BARBAROUS, in a general ſenſe, ſomething that partakes of the quality of BARBARISM.

In this ſenſe we ſay a *barbarous* nation, age, writer, word, or the like.

Barbarous Latin words are innumerable; the ſchoolmen are full of them: the chemiſts, phyſicians, lawyers, can ſcarce write intelligibly without them. Du-Cange has given two large volumes in folio of *barbarous* Latin words, and as many of *barbarous* Greek words.

The modern or vulgar Greek is ſometimes called *barbarous* Greek, *barbaro-Greca*, or *Greco-barbara-lingua*. Langius has publiſhed Philologia Barbaro-Greca, Gramatica Barbaro-Greca, or Gloſſarium Barbaro-Grecum.

BARBATED *leaf*, in *Botany*, is a leaf terminated by a bunch of ſtrong hairs.

BARBATINA, or SEMEN *contra*, a ſeed which is efficacious in extirpating worms from the human body, to which children are chiefly liable: it comes from Perſia, and from the borders of Muſcovy.

This ſeed, to be good, ought to be plump, of an agreeable ſcent, and very green: ſpecial care muſt be taken that it be not dyed green, and that the ſeed of ſouthern-wood be not ſold inſtead of it.

BARBATULA, in *Ichthyology*, a ſpecies of the COBITIS.

BARBATUS *Piſcis*, in *Ichthyology*, a name given by Salvian, and ſome others, to the SILURUS, called in Engliſh, the *ſheat-fiſh*; the *glanus* of Pliny, and the ancients. This Artedi deſcribes under the name of the *ſilurus* with four *cirri*, or beards, at the mouth. By this it is diſtinguiſhed from the fiſh called the *lake*, or *alkuſſa*, which, though a genuine ſpecies of *ſilurus*, has only one beard.

BARBE, or BARB, in *Commerce*, a kind of horſe brought from Barbary, much eſteemed for its beauty, vigour, and ſwiftneſs.

Barbs are uſually of a ſlender make, and their legs far apart. It is a maxim, that *barbs* grow ripe, but never old; becauſe they retain their vigour to the laſt, which makes them prized for ſtallions: their mettle, according to the duke of Newcaſtle, never ceaſes but with their lives. It is ſaid, they were anciently wild, and ran at large in the deſarts of Arabia; and that it was in the time of the Cheq Iſhmael, that they firſt began to tame them. It is ſaid, there are *barbs* in Africa, that will outrun oſtriches: ſuch are ordinarily ſold, according to Dapper, for 1000 ducats, or 100 camels. They are fed very ſparingly, Dapper ſays with camel's milk. It is added, that in Barbary they preſerve the genealogy of their *barbs*, with as much care as the Europeans do thoſe of their noble families; and that to ſell them, they always produce their titles of nobility.

The race of horſes is much degenerated in Numidia; the Arabs having been diſcouraged from keeping it up, by the Turkiſh officers, who were ſure to be maſters of them. At preſent, the Tingitanians, and Egyptians, have the reputation of preſerving the beſt breed, both for ſize and beauty.

The ſmalleſt of theſe laſt are uſually ſixteen hands high, and all of them ſhaped, according to their phraſe, like the antelope.

The *good* qualities of a Barbary horſe (beſides the ſuppoſed one of never lying down, and of ſtanding ſtill when the rider drops his bridle) are to have a long walk, and to ſtop ſhort, if required, in a full career.

The *barb* is very lazy and negligent in all his motions; he will ſtumble in walking upon the ſmootheſt ground; his trot is like that of a cow, and his gallop very low, and very eaſy to himſelf: this ſort of horſe is, however, for the moſt part, ſinewy, nervous, and excellently winded; he is therefore good for a courſe, if not over-weighted.

The *mountain barbs* are accounted the beſt, becauſe they are the largeſt and ſtrongeſt: they belong to the Allarbes, who value themſelves much upon them, and are as fond of them as other nations are; for which reaſon it is not eaſy to get at any of them. The common *barbs* are not uncommon among our people of faſhion. They may uſually be bought in Provence and Languedoc in France, at a moderate price, and many of the Engliſh have them from thence.

Barbs, among us, fall ſhort of that ſwiftneſs attributed to them in their native country. This may be accounted for, partly from the ſmallneſs and lightneſs of their riders, and partly from their not being loaded with heavy ſaddles and bridles, as in Europe, nor even with ſhoes. An Arab ſaddle is only a cloth girt round, with a pair of light ſtirrups, and a ſort of pummel to ſuſtain them.

Baſtard-BARBS, thoſe deſcending from the Engliſh mares, covered by *barb*-ſtallions, are, by experience, conſtantly found both better ſhaped and fitter for the ſaddle, and ſtronger for ſervice than their ſires. Phil. Tranſ. Nº 105.

BARBE, or BARBET, in the *Military Art*.—*To fire en* BARBE, is to fire the cannon over the parapet, inſtead of through the embraſures; in which caſe the parapet muſt not be more than three feet and a half high.

BARBE, or BARDE, is alſo an old term for the armour of the horſes of the ancient knights, and ſoldiers, who were accoutred at all points.

Della Cruſca ſays, the *barde* is an armour of iron or leather, wherewith the neck, breaſt, and ſhoulders of the horſe are covered.

BARBED, in *Heraldry*, is underſtood of a cock, when his comb and wattles are of a different colour from the reſt of the body. In which caſe, he is ſaid to be *barbed and creſted*.

A Croſs BARBED, *croix barbée*, is that whoſe extremities are faſhioned like the barb of an iron ſpear, or inſtruments uſed for ſtriking fiſh, &c.

BARBEL, in *Ichthyology*; ſee BARBUS.

BARBELICOTÆ, an ancient ſect of Gnoſtics, ſpoke of by Theodoret. The doctrine of the *Barbelicotæ* was, that one of the Æons, poſſeſſed of immortality, had commerce with a virgin ſpirit named *Barbeloth*, who demanded of him, firſt preſcience, then incorruptibility, and laſtly eternal life; all which were granted to her: that being one day in a gayer humour than ordinary, ſhe conceived, and afterwards brought forth light, which being perfected by the unction of the ſpirit, was called *Chriſt*: the child Chriſt deſired to have underſtanding, νȣν, and obtained it: after which, underſtanding, reaſon, incorruptibility, and Chriſt, united together; and from their union aroſe autogenes, αυτογενης. To theſe fables they add divers others. They were alſo denominated *Barbarians*.

BARBERRY-*tree*, *berberis*, or the *pipperidge-buſh*, in *Botany*, a genus of plants, belonging to the claſs of *hexandria monogynia*, the characters of which are theſe: the flower hath a coloured empalement, compoſed of ſix concave leaves; the flower is of ſix leaves, which are roundiſh and concave. It hath two coloured nectariums, faſtened to the baſe of each petal; and ſix *ſtamina*, with two ſummits faſtened on each ſide their *apex*. The *germen* is cylindrical, and afterward becomes an obtuſe cylindrical umbilicated berry, having a puncture and one cell, incloſing two cylindrical ſeeds. There are three ſpecies; the common *barberry*; the Canada *barberry*, with very broad leaves; and the *barberry* with a ſingle flower on each foot-ſtalk.

The common *barberry*-buſh grows naturally in the hedges in many parts of England, but is alſo cultivated in gardens for its fruit, which is pickled and uſed for garniſhing diſhes. The flowers come out from the wings of the leaves, in ſmall ramoſe bunches, like thoſe of the currant-buſh, which are yellow; theſe are ſucceeded by oval fruit, which are firſt green, but when ripe turn to a fine red colour. The flowers appear in May, and the fruit ripens in September.

The box-leaved ſort is at preſent very rare in England, and while young the plants are ſomewhat tender, ſo have frequently been killed by ſevere froſt. This never riſes higher than four or five feet in England.

The *barberry* is a ſhrub, whoſe berries, as well as bark, are of medicinal uſe; known alſo by the name of *oxyacantha Galeni*.

Its berry is red, and oblong, of an agreeable, cooling, aſtringent taſte, chiefly uſed in the way of conſerve; under which form it quenches thirſt, ſtrengthens the ſtomach, and is good againſt diarrhœas and dyſenteries. We alſo read of ſyrup, eſſential ſalt, and lozenges, made of the juice of the *barberry*.

The bark, on the contrary, is opening and deterſive; and, though rarely found in diſpenſatory compoſitions, is much uſed in common preſcriptions, as well as in medicated ales, againſt the jaundice, and other diſtempers from obſtructions and foulneſſes of the *viſcera*.

The only officinal preparation from this tree, is the conſerve of the fruit.

BARBET, in *Natural Hiſtory*, a name given by M. Reaumur, and other of the French writers, to a peculiar ſpecies of the worms which feed on the *pucerons*.

This worm is more particularly called *barbet blanc*, as alſo *heriſſon blanc*, or *white hedgehog*, from its being covered with oblong white tufts of filaments, which ſtand in the manner of the quills of a hedgehog or porcupine.

This creature is of the ſize of a ſmall fly without its wings; but this tufted covering ſo much increaſes the bigneſs, that it appears of the ſize of a fly of the largeſt kind.

The *barbet* lives about a fortnight in that form, and then becomes a chryſalis; from which, after a month, there comes out a ſmall beetle, of the ſize of our cow-lady, but of a flatter figure, and, in general, of a duſky brown colour.

BARBICAN; ſee BARBACAN.

BARBICANAGE, *barbicanagium*, in our *Old Writers*, money given for the maintenance of a *barbican*, or watch-tower; or a tribute towards repairing or building a bulwark.

BARBILLONS, in the *Natural Hiſtory of Inſects*, are certain bodies, uſually two in number, placed under the creature's head, and moveable at pleaſure, ſomewhat reſembling hands or fingers placed on a ſhort or broken arm.

The word is a diminutive of the French *barbe*, *beard*.

BARBING is ſometimes uſed in *Ancient Statutes* for ſheering. Cloth is not to be exported till it be *barbed*, rowed, and ſhorn. 3 Hen. VII. c. 11.

BARBITOS, or BARBITON, an ancient inſtrument of muſic, mounted with three, others ſay ſeven ſtrings, much uſed by Sappho and Alcæus; whence it is alſo denominated *Leſboum*.

The *barbitos* is ſaid to have differed from the lyre and *cithara*; but wherein the preciſe difference lay, does not appear. Strabo makes it the ſame with the *ſambuca*. It is repreſented as yielding a grave, deep ſound, and, on that account, peculiarly fitted for Doric compoſitions. Anacreon is ſaid to be the inventor of the *barbiton*.

BARBLE, or BARBEL, in *Ichthyology*; ſee BARBUS.

BARBLES, in the *Manege*, knots of ſuperfluous fleſh growing in the channels of a horſe's mouth; that is, in the intervals, which ſeparate the bars, and obſtruct his eating.

Theſe are alſo called *barbes*; and obtain in black cattle as well as horſes.

For the cure, they caſt the beaſt, take out his tongue, and clip off the *barbles* with a pair of ſciſſars, or cut them with a ſharp knife; others chooſe to burn them off with a hot iron.

BARBONI, in *Zoology*, a name given by many to the MULLUS BARBATUS, a fiſh greatly eſteemed at table, and caught in the Mediterranean, and ſome other ſeas.

BARBOTINE, a ſeed, otherwiſe called *ſemen ſantonicum*, and *ſemen contra vermes*, in Engliſh, WORMSEED.

BARBULÆ, in *Botany*, a name given by Pliny to the SEMI-FLOSCULI.

BARBUS, in *Ichthyology*, the fiſh called in Engliſh the *barbel*, and by ſome writers in natural hiſtory, *muſtus fluviatilis*, a ſpecies of the CYPRINUS.

The *barbel* is a fiſh commonly known, and ſo called, on account of the barb or beard under its noſe, or chaps. It is of the leather-mouthed kind.

This is but a moderately well-taſted fiſh. The male is eſteemed better than the female; but neither of them is very much valued. The worſt ſeaſon for them is April. They uſually ſwim together in great ſhoals, and love to be among weeds, where there is a hard, gravelly bottom. In ſummer they frequent the ſtrongeſt and ſwifteſt currents of the water; as deep bridges, weirs, and the like places, and are apt to get in among the piles, weeds, and other ſhelter; but in winter, they retire into the deepeſt and ſtilleſt waters.

The time for taking this fiſh is very early in the morning, or late in the evening: the place ſhould be baited with chopped worms ſome time before; and no bait is ſo good for the hook as the ſpawn of the ſalmon, or ſome other fiſh: in defect of theſe, lob-worms will do; but they muſt be very clean and nice, and the hook carefully covered, otherwiſe he will not touch them. Old cheeſe ſteeped in honey is alſo a very fine bait. The beſt ſeaſon for angling for this fiſh is from May to Auguſt.

BARBYLA, in *Botany*, a name by which Theocritus, and other of the early writers, have called the common damaſk prune.

BARCALAO, a Spaniſh word, which the French pronounce *baccala*, or *baccaliau*. By this laſt name the Baſques moſt commonly call the fiſh which we ſtyle cod; and thoſe people call alſo the iſland which we call Newfoundland, the iſle of *Baccaliau* (*Cod iſland*), becauſe of the great plenty of cod catched there. There is, however, a league to the weſt of that large iſland, another ſmall one, which is more particularly called *Baccaliau*.

BARCALON, an appellation given to the chief miniſter of the emperor of Siam, to whom belongs the care of trade both within the kingdom and out of it, the ſuperintendency of the royal magazines, the receipt of the revenues, and the management of foreign affairs.

BARCA-LONGA, a large Spaniſh fiſhing-boat, navigated with lug-ſails, and having two or three maſts. Theſe are very common in the Mediterranean.

BARCES, or BERCHES, were formerly a kind of ſhip-guns, not unlike ſakers, only ſhorter, thicker in metal, and wider bored.

BARCONE, a ſhort broad veſſel, of a middle ſize, uſed in the Mediterranean ſea for the carriage of corn, wood, ſalt, and other proviſions, from one place to another.

BARD is uſed, in the *Culinary Art*, for a broad ſlice of bacon uſed to cover fowls before they are roaſted, baked, or otherwiſe dreſſed.

BARDANA, in *Botany*; ſee BURDOCK.

BARDARIOTÆ, in *Antiquity*, were a kind of ancient guard attending the Greek emperors, armed with rods, wherewith they kept off the people from crouding too near the prince, when on horſeback.

Their captain, or commander, was denominated *primivergius*.

The word was probably formed from the *bardæ* or houſings on their horſes.

BARDED, in *Heraldry*, is uſed in ſpeaking of a horſe that is capariſoned.

He bears ſable, a *cavalier d'or*, the horſe *barded*, argent.

BARDELLE, in the *Manege*, denotes a ſaddle made in form of a great ſaddle, but only of cloth ſtuffed with ſtraw, and tied tight down with packthread, without either leather, wood, or iron. *Bardelles* are not uſed in France; but in Italy they trot their colts with ſuch ſaddles; and thoſe who ride them are called *cavalcadours*, or *ſcozone*.

BARDE; ſee BARBE.

BARDESANISTS, a ſect thus denominated from their leader, Bardeſanes, a Syrian of Edeſſa, in Meſopotamia, in the ſecond century.

He adopted the oriental philoſophy concerning the two principles; maintaining, that the ſupreme God is free from all evil and imperfection, and that he created the world and its inhabitants pure and incorrupt: that in proceſs of time the prince of darkneſs, who is the fountain of all evil and miſery, enticed men to ſin; in conſequence of which, the ſupreme God permitted them to be diveſted of thoſe ethereal bodies with which he had endued them, and to fall into ſluggliſh and groſs bodies formed by the evil principle: and that Jeſus deſcended from heaven, cloathed not with a real but aerial body, in order to recover mankind from that body of corruption which they now carry about them; and that he will raiſe the obedient to manſions of felicity, cloathed with aerial vehicles, or celeſtial bodies.

Strunzius has given the hiſtory of the *Bardeſaniſts*.

BARDS, BARDI, ancient poets among the Gauls and Britons, who deſcribed and ſung in verſe, the brave actions of the great men of their nation; with deſign to inculcate and recommend virtue, and even ſometimes to put an end to the difference between armies at the point of engagement.

Bochart derives the word from *parat*, *to ſing*. Camden agrees with Feſtus, that *bardus* originally ſignifies *a ſinger*: and adds, that the word is pure Britiſh. Others derive the word from *Bardus*, a druid, the ſon of Dryis, and the fifth king of the Celtæ.

The *bards* differed from the *druids*, in that the latter were prieſts and teachers of the nation, but the former only poets and writers.

Larrey, Bodin, and Paſquier, indeed will have the *bards* to have been prieſts, as well as philoſophers: and Cluverius, orators too: but without much foundation in antiquity.—Strabo divides the ſects of philoſophers among the Gauls and Britons into three, viz. the druids, *bards*, and evates. The *bards*, adds he, are the ſingers and poets; the evates, the prieſts and natural philoſophers; and the druids, to natural philoſophy add alſo the moral. Hornius however reduces them to two ſects, viz. *bards*, and druids; others to one, and make a druid a general name, comprehending all the others. Cluverius will have it, that there were *bards* alſo among the ancient Germans; becauſe Tacitus makes mention of their ſongs and poems, which contained their hiſtory.

Almoſt all hiſtory, Celtic and Chaldæan, as well as Greek and Roman, had its foundation in poetry. Whether we ſhall find the rules of their proſody to agree with thoſe laid down by captain Middleton in his Hardometh, or Art of Welch Poetry, we know not: but how methodically they ordered their *tybwyths* or tribes, Sylas, Taylor, and Rowland have at large informed us.

It was cuſtomary to ſing theſe compoſitions in the preſence of their nobles, and at their chief feſtivals and ſolemnities.

Among the ancient Britiſh *bards*, the moſt celebrated is the great Merlyn, whoſe true name, according to Lhuyd, is *Merdhyn*. The genealogical ſonnets of the Iriſh *bards* are ſtill the chief foundations of the ancient hiſtory of Ireland. In the Highlands of Scotland there are conſiderable remains of many of the compoſitions of their old *bards* ſtill preſerved. But the moſt genuine entire and valuable remains of the works of the ancient *bards*, and perhaps the nobleſt ſpecimen of uncultivated genius, are the poems of Oſſian the ſon of Fingal, a king of the Highlands of Scotland, who flouriſhed in the ſecond or third century; lately collected by Mr. Macpherſon, and by him tranſlated from the Erſe or Galic language into Engliſh.

BARE, in a general ſenſe, ſignifies not covered. Hence we ſay *bare*-headed, *bare*-footed, &c.

The Roman women, in times of public diſtreſs and mourning, went *bare*-headed, with their hair looſe.

Among both Greeks, Romans, and Barbarians, we find a feaſt called *nudipedalia*, at which perſons were to attend *bare*-footed.

The Abyſſinians never enter their churches but *bare*-footed; not on account of Moſes, who was commanded to put off his ſhoes on mount Sinai, but in reverence of the place; as is alſo done by them in entering the palaces of kings and great men.

Sagittarius has a diſſertation expreſs on thoſe who went *bare*-footed among the ancients, De Nudipedalibus Veterum; wherein he treats of ſuch as went *bare*-footed in journies or otherwiſe, either out of choice, or neceſſity: alſo of *bare*-footed religious, of mourners and penitents, who went *bare*-footed; and, laſtly, of the *leviri*.

Bare, in reſpect of *Manufacture*. A cloth is ſaid to be *bare* or naked, when the nap is too ſhort, as having been ſhorn too near, or not being ſufficiently covered with wool by the teazel.

Bare is alſo uſed for a ſort of bowling-ground, not covered with green ſwarth.

Bare-*foot* **Carmelites**, and *Auguſtines*, are religious of the order of St. Carmel and St. Auguſtin, who go without ſhoes, like the capuchins.

There are alſo *bare*-foot fathers of mercy. Formerly there were *bare*-foot Dominicans, and *bare*-foot nuns of the order of St. Auguſtin.

Bare-*footed Trinitarians*; ſee TRINITARIAN.

Bare-*pump*; ſee PUMP.

BAR-FEE, a fee of 20 pence, which every perſon acquitted of felony pays the gaoler.

BARGAIN, a CONTRACT either for the ſale, purchaſe, or exchange of a thing.

The word is formed from the French *barguigner*, *to barter*, or *haggle*.

He that ſells is the *bargainor*, and he that buys the *bargainee*.

Bargain *and Sale*, in *Law*, is properly a CONTRACT made of manors, lands, and other things, transferring the property thereof from the *bargainor* to the *bargainee*, for a conſideration in money.

It is a good contract for land, and the fee paſſes, though it be not ſaid in the deed, to have and to hold to him and his heirs, and though there be no livery and ſeſin given by the *vendor*, ſo it be by deed indented, ſealed, and inrolled, either in the county where the land lies, or in one of the king's courts of record at Weſtminſter, within ſix months after the date of the deed.

This manner of conveying lands was created and eſtabliſhed by the 27 Hen. VIII. cap. 10. which executes all uſes raiſed; and as this introduced a more ſecret way of conveying than was known to the policy of the common law, therefore the inrolment of the deed of *bargain and ſale* was made neceſſary by the 16th chapter of that ſtatute.

Bargains, in *Commerce*, are of divers kinds: *verbal*, thoſe made only by word of mouth, and giving earneſt; *written*, thoſe where the terms are entered in form on paper, &c.

At Amſterdam they diſtinguiſh three kinds of *bargains*.

Bargains, *conditional*, for goods which the ſeller has not yet in his poſſeſſion; but which he knows have been bought for him by his correſpondents abroad, and which he obliges himſelf to deliver to the buyer, on their arrival, at the price and the conditions agreed on.

Bargain, *firm*, that wherein the ſeller obliges himſelf to deliver to the buyer a certain quantity of goods, at the price and in the time agreed on.

Bargains, *optional*, thoſe wherein a dealer obliges himſelf, in conſideration of a *premium* received in hand, either to deliver or take a certain quantity of goods at a fixed price, and within a time limited; but with a liberty, nevertheleſs, of not delivering, or not receiving them, if they think proper, upon forfeiture of their *premium*.

Bargains, *forehand*, are thoſe wherein goods are bought or ſold in order, to be delivered at a certain time afterwards, ſome part of the price being advanced.

BARGE, a kind of ſtate, or pleaſure-boat, or large luggage-boat, uſed chiefly in the navigation of rivers, which lead to great cities.

Barges are of various kinds, and acquire various names, according to the variety of their uſes and ſtructures: as,

A company's barge,	*A Severn trow*,
A row barge,	*A Ware barge*,
A royal barge,	*A light horſeman*,
A ſand barge,	*A Weſt-country barge*.

A *barge* differs from a bark, as being ſmaller, and uſed only on rivers; whereas the latter goes out to ſea.

There are alſo *barges* belonging to men of war, ſerving to carry generals, admirals, and chief commanders.

Barge-*courſe* is uſed by workmen, to ſignify a part of the tiling, which projects over the gable of a building, and is made up with mortar.

Barge, in *Zoology*, a name uſed by ſome authors for the *godwit*, or, as it is called in ſome places, the *ſtone-plover*, the ÆGOCEPHALUS.

BARGH, is uſed in ſome places of England for a ſteep horſe-way up a hill.

It ſeems to come from the German *bargh*, *a hill*.

Bargh-*maſter*, **Barmer**, or **Bar**-*maſter*, in the *Royal Mines*, the ſteward or judge of the BARGHMOTE.

The word is formed of the German *berg-meiſter*, q. d. *maſter of the mines*.

The *bar-maſter* is to keep two great courts of barmote yearly, and every week a ſmall one, as occaſion requires.

BARGHMOTE, or **Barmote**, a court which takes cognizance of cauſes and diſputes between miners.

Some ſuppoſe it thus called from a *bar*, at which the ſuitors appear; others, with more probability, derive the word from the German *berg*, *a mine*.

By the cuſtom of the mines, no perſon is to ſue any miner for ore-debt, or for ore, or for any ground in variance, but only in the court of *barmote*, on penalty of forfeiting the debt, and paying the charges at law.

BARILLARIUS, an ancient officer in monaſteries and great houſeholds, who had the care of the caſks and veſſels of wine, &c. in the cellars.

BARILLIA, or **Bariglia**, in the *Glaſs Trade*, a ſort of pot-aſhes imported from Spain, inferior in goodneſs to that of the Levant, called *polverine* when looſe, ſmall, and in powder, and *rochetta* when in hard, rocky lumps.

The frit made of theſe makes fine and clear cryſtal glaſs, eſpecially that from the *rochetta*, or the *polverine* in lumps; but the *barillia* of Spain, though it be uſually fatter, yet makes not a glaſs ſo white, but uſually inclining a little to a bluiſh colour.

BARING *of trees*, in *Agriculture*; ſee ABLAQUEATION.

BARITONO, in *Muſic*, denotes a voice of low pitch, between a tenor and baſs.

BARK, the exterior part of trees, ſerving them for a ſkin, or covering.

In *Writers of the Laſt Age*, this is ſometimes alſo called *baſt*. Vid. 15 Car. II. c. 2.

The *bark* of trees in general is of a ſpongy texture; and, by many little fibres which paſs through the capillary tubes, whereof the wood conſiſts, it communicates with the pith; ſo that the proper nutriment of the tree, being imbibed by the roots, and carried up through the fine arterial veſſels of the tree by the warmth of the ſoil, &c. to the top of the plant, is uſually ſuppoſed to be there condenſed by the cold air, and in that form returns by its own gravity down the veſſels, which do the office of veins, lying between the wood and inner *bark*; leaving as it paſſes by, ſuch parts of its juice as the texture of the *bark* will receive, and requires for its ſupport. See CIRCULATION *of ſap*.

That ſoft whitiſh rind or ſubſtance between the inner *bark* and the WOOD, which Mr. Bradley thinks to do the office of veins, ſome account a third *bark*, only differing from the others in that its fibres are cloſer; it is this contains the liquid ſap, gums, &c. found in plants in the ſpring and ſummer months. It hardens by little and little, by means of the ſap it tranſmits, and is converted imperceptibly into the woody part of the tree. There are few trees without it; yet it is ſtill found in leſs quantity as the tree is more expoſed to the ſun: that of the oak is ordinarily about an inch thick. It is here that the corruption of trees generally begins: whence thoſe who fell and cut out trees, ought always to take care to leave as little of it on as poſſible.

The *bark* of roots is ſometimes yellow, as in dock; ſometimes red, as in biſtort; but ofteneſt white. It is derived from the ſeed itſelf, being only the extenſion of the *parenchyma* of the radicle. It is variouſly ſized, being ſometimes very thin, as in the Jeruſalem artichoak, and in moſt trees. Sometimes it is thicker, and makes the greater part of the ſubſtance of the root, as in aſparagus and dandelion. In beet-root, the *bark* ſcarce exceeds a good thick ſkin; whereas in a carrot, it is half the ſemi-diameter of the root, being in ſome places above an inch over. This too is found common to the generality of roots, that their *barks* are proportionably thicker at bottom than at top.

The inner part of the *bark*, we have obſerved, annually lignifies, or turns to wood: the *bark* of a tree is found each year to divide and diſtribute itſelf two contrary ways: the outer part gives towards the ſkin, till it becomes ſkin itſelf, and at length falls off, like the ſcales or dandriff of our body, or the *exuviæ* of ſerpents; while the inmoſt portion is yearly diſtributed and added to the wood.

The *bark* is found truly continuous to the body of a tree, as the ſkin of our body is to the fleſh; contrary to the common opinion, which imports, that the *bark* only ſurrounds the tree, as a ſcabbard does a ſword, or a glove the hand; which ſeems confirmed by the eaſy ſlipping of the *bark* of willow, and moſt other trees, when full of ſap, from the wood. Their continuity is effected by means of the *parenchyma*, which is one entire body, running from the *bark* into the wood, and thus uniting both together. The reaſon why the *bark* ſlips ſo eaſily from the wood is, that moſt of the parenchymous parts are young veſſels, formed every year ſucceſſively between the wood and the *bark*, and are much in the condition of the tender veſſels or fibres of the embryos in a womb, or egg; a thouſand of which are broke with the ſmalleſt force.

That trees only live by the aſcent of the ſap in or between the *bark* and the wood, and that if a circle be drawn round any tree (except, perhaps, aſh) by inciſion to the timber, how thin ſoever the knife be, provided no part of the thickneſs of the *bark* remain uncut, the tree will die from that part upwards, has been the ſtanding doctrine of naturaliſts of all ages, and is delivered for fact by Pliny, and others. Dr. Plott aſſerts this to be a popular error, from the inſtance of a large old elm in Magdalen-college grove, quite diſbarked around, at moſt places two feet, at ſome four feet, from the ground, which yet grew and flouriſhed many years, as well as any tree in the grove. Beſides, it was entirely without pith, being hollow within as a drum: and the ſame is confirmed from the hiſtory of the elm in the Thuilleries, related by M. Parent, which lived, and put out leaves, though entirely ſtripped of *bark* from top to bottom. Add, that the plane and cork trees diveſt themſelves yearly of all their old *bark*, and acquire a new one, as ſnakes do their ſkins: and in the change from one to the other, it is evidently not by the *bark* that they are nouriſhed. Some infer from hence, that the *bark* never feeds the WOOD. Dr. Plott is more reſerved in his concluſion, arguing only, that hence it ſeems to follow, that there muſt be other veſſels, beſides the ſap-veſſels of the *bark*, capable of the office of conveying ſap. It is probable, when the ordinary conveyance fails, ſome of the woody part, which had all once been ſap-veſſels, reſumes its ancient office; or, as the author laſt mentioned conjectures, they ſtill ſo far retain their office of conveying ſap, as to keep a tree alive, though not to augment it; which may, perhaps, be one different uſe of thoſe ſap-veſſels in the wood from thoſe in the *bark*, the former being ſufficient for the continuation of a tree, and the latter ſerving only for its augmentation. Plin. Hiſt. Nat. lib. xvii. c. 24. Phil. Tranſ. N° 43. Hiſt. Acad. Scien. 1709, and 1711. Plott's Nat. Hiſt. Oxf. c. vi. § 65.

Mr. Brotherton has given ſome new experiments, which ſeem to decide the controverſy, and ſhew, that the *bark* is not the vehicle of vegetation: he hacked a crab-tree round with a hatchet, ſo as, beſides cutting off the *bark*, to cut pretty deep into the wood, for the breadth of about four inches; yet the ſame year it was obſerved to increaſe very conſiderably in thickneſs above the ſaid hacking, and to ſhoot in length of wood about one foot: the next year it alſo grew conſiderably, and ſhot in length five inches: the third year it died to the very root. The like was found in another tree, part of whoſe *bark* was eat off by the canker: the lower part ſtood without increaſe, and by degrees the wood rotted: the upper part increaſed to the third year, and then died alſo.

The ſame author found, that, in the branches of Scotch fir, the joints above the rings *barked*, would grow much bigger in three years, than in five if the rings were not cut off. A ring of *bark* three inches broad being cut off a Scotch fir, near the bottom of the ſtem, below the uppermoſt knot or joint, was found to grow and ſhoot out at its top half a yard, and all the parts above the ring to increaſe in thickneſs the ſame year, much more than they would have done, had not the ſection been made; but all the part of the ſtem between the ring and the next knot below it, grew not at all: the part below the ring next under that, increaſed ſomewhat, though leſs than it would have done, if the *bark* had not been cut off. The ſecond year the increaſe was alſo conſiderable; but the third it died. Phil. Tranſ. N° 187.

M. Magnol mentions an olive-tree, from which a circular ring of *bark* being cut away, the tree that year bore, above the place of inciſion, double the quantity of flowers and fruit which it uſed to bear. Mr. Reneaume relates a fact near a-kin to this. In the country about Aix and Marſeilles, when an olive-tree grows old, and almoſt ready for felling, they have a method of making it firſt yield all the fruit which it is capable of producing, by cutting a circular ring of *bark*, an inch broad, from one of its young branches, and in its place putting an equal ring of *bark* taken from the branch of a young bearing olive-tree; the effect of this engraftment is, that the branches of the old tree bear plentifully the enſuing year, and thoſe of the young one die away. Hiſt. Acad. Sc. 1711.

From the whole, Mr. Brotherton concludes, that the ſap, moſt of it, if not all, aſcends in the veſſels of the woody part, and not by the *bark*, nor between the *bark* and the wood. Phil. Tranſ. N° 187. p. 312.

Mr. Lewenhoeck, on the other hand, has given ſeveral experiments and obſervations with the microſcope to ſhew, that the *bark* of trees is produced from the wood, and not the wood from the *bark*. Philoſ. Tranſact. N° 202.

It is very remarkable, that trees ſtripped in the time of the ſap, and ſuffered to die, afford timber heavier, more uniformly denſe, ſtronger, and fitter for ſervice, than if the tree had been cut down in its healthy ſtate. Something of a like nature has been obſerved by Vitruvius and Evelyn. Mem. Acad. Scienc. 1738.

As animals are furniſhed with a *panniculus adipoſus*, uſually replete with fat, which inveſts and covers all the fleſhy parts, and ſcreens them from external cold, plants are encompaſſed with a *bark* replete with fatty juices, by means whereof the cold is kept out, and, in winter-time, the *ſpiculæ* of ice prevented from fixing and freezing the juices in the veſſels: whence it is, that ſome ſort of trees remain ever-green the year round; becauſe their *barks* contain more oil than can be ſpent and exhaled by the ſun, &c. Ray's Wiſd. of God, &c. part i. p. 103.

Boerhaave mentions eight different ſpecies of juices lodged in the *bark*, viz. the watery ſap or chyle, an oil, balm, pitch, reſin, colophony, gum, and gummous reſin.

The *bark* has its peculiar diſeaſes, and is infected with inſects peculiar to it. Moſs is a diſeaſe of the *bark*. Wounds of the *bark* often prove mortal. See CANKER.

Of the *bark* of willows and linden-trees is ordinarily made a kind of ropes. The Siameſe make their cordage of the *bark* of the cocoa-tree, which is alſo the caſe in moſt of the Aſiatic and African nations. In reality, flax and hemp, with all their toughneſs, are only the ſap-veſſels, or ligneous fibres of the *bark* of thoſe plants.

There are a great many kinds of *barks* in uſe in the ſeveral arts: ſome in *Medicine*, as the QUINQUINA, or JESUIT'*s* *bark*, *macer*, *chacarilla*, &c. others in *Dying*, as the *bark* of the alder; others in *Spicery*, as CINNAMON, *caſſia lignea*, &c. the *bark* of oak in *Tanning*; others on other occaſions, as *cork*; that of a kind of birch is uſed by the Indians for canoes capable of holding twenty-four perſons.

The ancients wrote their books on *barks*, eſpecially thoſe of the aſh, and *tilia* or lime-tree; not on the exterior or outer *bark*, but on the inner and finer, called *philyra*; which is of ſo durable a texture, that there are manuſcripts on it, ſtill extant, a thouſand years old.

In the Eaſt Indies they manufacture the *bark* of a certain tree into a kind of ſtuff or cloth. It is ſpun and dreſſed much after the manner of hemp. The long filaments ſeparated from it, upon beating and ſteeping it in water, compoſe a thread, of a middle kind between ſilk and common thread; neither ſo ſoft nor bright as ſilk, nor ſo hard or flat as hemp. See Neumann's Works, p. 428, note.

Some of theſe ſtuffs are pure *bark*, and are called pinaſſes, biambonnes, &c. In others they mix ſilk with the *bark*, and call them ginghams and nillas: the fountalungees too are part ſilk, part *bark*, and are only diſtinguiſhed by being ſtriped.

Bark alſo makes a good manure, eſpecially that of oak, which is rich in ſalt; but the better ſort is reſerved for tanning.

BARK, *Indian*, *Thuris cortex*, a medicinal *bark*, brought from the Eaſt, rolled up like cinnamon, of a ruſty colour, a warm aromatic, bitter taſte, and pleaſant ſmell; ſometimes uſed in fumigation againſt fits of the mother.

BARK-*mills*; ſee MILL.

BARK, *grafting in*; ſee ENGRAFTING.

BARK, in *Navigation*, denotes a little veſſel for the ſea, uſually with pointed or triangular ſails, in number two, or three at the moſt.

The word is derived by ſome from the Latin *barca*; Fournier, from *Barce*, a city in Africa; and Toletanus, from *Barcelona*.

Some authors uſe the word *bark* for any veſſel that has no maſts.—Of *barks*, there are various kinds: as,

A bilander,
A ſaik,
A ſettee,
A ſkuit,
A ſnaul,
A ſnouke.

BARK, *armed*, a kind of fire-ſhip filled with ſoldiers, uſed both for making ſallies, and to attack galleries, and bar the paſſage over them.

BARK, *long*, is a ſmall veſſel without deck, longer and lower than the common *barks*, being ſharp afore, and commonly going both with ſails and oars. It is built after the manner of a ſloop, and in many places is called a *double ſloop*.

Barks, *water*, are little veſſels uſed in Holland for the carriage of freſh-water to places where it is wanting, as well as for the fetching ſea-water to make ſalt of. They have a deck, and are filled with water up to the deck.

Bark-*binding*, a diſtemper incident to trees, cured by ſlitting the *bark*, or cutting it along the grain, viz. in apple-trees by cutting ſtrait down.

Bark-*galling*, is when trees are galled by thorns, or by being bound to ſtakes, &c. It is cured by clay laid on the galled place, and bound on with hay.

BARKARY denotes a tan-houſe, or place to keep *bark* in, eſpecially for tanners.

It is otherwiſe called a *heath-houſe* in old writers.

BARKING *of trees*, is the peeling off or ſtripping the bark from the wood.

The month of May is the ſeaſon for *barking of trees*, becauſe then the ſap looſens the bark from the wood; which it is very hard to effect in any other time, unleſs the ſeaſon be very wet; heat and dryneſs being always oppoſite thereto.

Maliciouſly *barking* of apple-trees, or other fruit-trees, is made felony by 37 Hen. VIII. c. 6.

By the French laws, all dealers are forbid to *bark* their wood while growing, on the penalty of 500 livres.

This law was the reſult of ignorance; it being now found, that *barking* of trees, and letting them die, increaſes the force of timber.

Barking is alſo a name given to the cry of dogs and foxes.

The term is alſo applied to certain quaint noiſes made by ſick perſons in ſome diſeaſes.

In cynic ſpaſms, and epileptic fits, the patient ſometimes ſnarls, howls, and *barks*, with all the notes of a dog. But it is in the *hydrophobia*, that *barking* has been ofteneſt obſerved: perſons ſeized with this, are apt to rave, bite, ſnarl, and make a harſh noiſe in their throats, which is called *barking*.—Vid. Phil. Tranſ. N° 280. N° 323. N° 207. and N° 242.

BARLAAMITES, in *Church Hiſtory*, the followers of a Calabrian monk, afterwards biſhop of Emont, the great opponent of Greg. Palama and the Heſychaſtæ. Fabr. Bib. Græc.

The *Barlaamites* are the ſame with thoſe otherwiſe denominated *Acindynites*.

BARLERIA, in *Botany*, a genus of plants, of the *didynamia angioſpermia* claſs; called by the inhabitants of Jamaica, *ſnap-dragon*. The characters are, that the flower is nearly of the lip-kind, of one leaf, funnel-ſhaped, and divided into five parts at the top: that it hath four ſlender *ſtamina*, two ſhort, and two longer: that an oval *germen* is placed in the centre, which afterward becomes an oblong membranaceous veſſel, with two cells, which is very elaſtic, containing two roundiſh compreſſed ſeeds. There are four ſpecies.

BARLEY, in *Botany*, a gramineous, frumentaceous herb, whoſe ſeeds are of the larger ſort, being covered with a huſk, growing in a ſpike, and the grains bearded.

Barley, through neglect and poverty, is ſaid to degenerate into oats and darnel. Dr. Plott ſpeaks of *barley* and rye growing in the ſame ear alternately.

The principal uſe of *barley* among us is for making beer, in order to which it is firſt malted.

Barley has alſo its medicinal virtues, in which it reſembles oats: the wort of malt is an excellent antiſcorbutic.

All the ſorts of *barley* are ſown in the ſpring of the year, in dry weather; in ſome very dry light land, it is ſown early in March, but in ſtrong clayey ſoils, it is not ſown till April, and ſometimes not until the beginning of May; but when it is ſown ſo late, if the ſeaſon doth not prove favourable, it is very late in autumn before it is fit to mow; unleſs it be the rath ripe ſort, which is often ripe in nine weeks from the time of ſowing. Some have ſteeped the ſeed, before it is ſown.

Some people ſow *barley* upon land where wheat grew the former year; but where this is practiſed, the ground ſhould be plowed the beginning of October in a dry time, laying it in ſmall ridges, that the froſt may mellow it the better; which will improve the land greatly: and if it can be ploughed again in January, or the beginning of February, it will break and prepare the ground better. In March it ſhould be ploughed again deeper, and be laid even where it is not very wet: but in ſtrong wet land the ground ſhould be laid in round lands, and the furrows be made deep to receive the wet. When this is finiſhed, the common method is to ſow the *barley*-ſeed with a broad caſt at two ſowings, the firſt being harrowed in once, the ſecond is harrowed until the ſeed be buried. The common allowance of ſeed, is four buſhels to an acre.

After the *barley* is ſown and harrowed in, the ground ſhould be rolled after the firſt ſhower of rain, to break the clods and lay the earth ſmooth; which will render it better to mow the *barley*, and alſo cauſe the earth to lie cloſer to the roots of the corn, which will be of great ſervice to it in dry weather.

Where *barley* is ſown upon new broken up land, the uſual method is to plough up the land in March, and let it lie fallow until June, at which time it is ploughed again, and ſown with turneps, which are eaten by ſheep in winter, by whoſe dung the land is greatly improved; and then in March following the ground is ploughed again, and ſown with *barley* as before.

There are many people who ſow clover with their *barley*; and ſome have ſown lucern with it; but neither of theſe methods is to be commended: for where there is a good crop of *barley*, the clover or lucern will be ſo weak as not to pay for ſtanding. The better way is to ſow the *barley* alone, and then the land will be at liberty for any other crop when the *barley* is taken off the ground. The clover has been ſometimes ſown a month after the *barley*, and found to anſwer very well.

When the *barley* has been up three weeks or a month, it will be a very good method to roll it with a heavy roller, which will preſs the earth cloſe to the roots, and keep the ſun from penetrating the ground in dry ſeaſons: and this rolling it before it ſtalks, will cauſe it to ſend out a greater number of ſtalks; ſo that if the plants ſhould be thin, this will cauſe them to ſpread ſo as to fill the ground, and likewiſe ſtrengthen the ſtalks.

The time for cutting of *barley*, is when the red colour of the ears is off, when the ſtraw turns yellow, and when the ears begin to hang down. In the north of England they always reap their *barley*, and make it up into ſheaves, as is practiſed here for wheat; by which method they do not loſe near ſo much corn, and it is alſo more convenient for ſtacking; but this method cannot be ſo well practiſed where there are many weeds among the corn, which is too frequently the caſe in the rich lands near London, eſpecially in moiſt ſeaſons. Therefore when this is the caſe, the *barley* muſt lie on the ſwarth until the weeds are dead: but as it is apt to ſprout in wet weather, it muſt be ſhook up and turned every fair day after rain to prevent it. When it is carried it ſhould be thoroughly dry, for if it be ſtacked wet, it will turn muſty; and if too green, it is ſubject to burn in the mow.

The common produce of *barley* is two and a half, or three quarters, on an acre; but a much greater produce is ſometimes found.

Pearl **Barley**, and *French* **Barley**; theſe are *barley* freed of the huſk by a mill; the diſtinction between the two being, that the *pearl barley* is reduced to the ſize of ſmall ſhot, all but the very heart of the grain being ground away.

Barley-*water* is a decoction of either of theſe, reputed ſoft and lubricating, of frequent uſe in phyſic.

This well-known decoction is a very uſeful drink in many diſorders; and is recommended, with nitre, by ſome authors of reputation, in ſlow fevers.

There is a diſſertation of Hoffman's *De cura avenacea*.

Barley-*corn* is uſed to denote a long meaſure, containing in length the third part of an inch, and in breadth the eighth.

The French carpenters alſo uſe *barley-corn*, *grain d'orge*, as equivalent to the line, or the twelfth part of an inch.

Barley-*corn*, *grain d'orge*, is alſo uſed, in *Building*, for a little cavity between the mouldings of joiners work, ſerving to ſeparate or keep them aſunder; thus called becauſe made with a kind of plane of the ſame name.

Barley-*ſugar*; ſee Sugar.

BARM, otherwiſe called Yeast; the head or workings produced by the fermentation of ale or beer. It is the froth that forms on the ſurface of beer or wine of grains during their fermentation; which, mixed with dough, raiſes it more quickly and better than LEAVEN, and makes the lighteſt bread.

BARMINE denotes ſuch mine or ore, as is adjudged at a court of BARGHMOTE.

BARN, in *Huſbandry*, a covered place or houſe, with air-holes in the ſides, for laying up any ſort of grain, hay, or ſtraw.

BARNABITES, an order of religious, thus called from the church of St. Barnabas at Milan, where they were firſt eſtabliſhed; and not, as ſome have imagined, becauſe St. Barnabas was their patron: in reality, St. Paul is the patron of the *Barnabites*.

The *Barnabites* are regular prieſts of the congregation of St. Paul. Their habit is black, and the ſame with what they wore when firſt eſtabliſhed, in 1533, by the expreſs bulls of pope Clement VII. and afterwards confirmed by Paul III. Their office is to inſtruct, catechize, and ſerve in miſſions.

BARNACLE, in *Natural Hiſtory*, a bird of the gooſe kind, frequent in the Weſtern iſles of Scotland; concerning whoſe origin and ſpecies many fables have been advanced.

The word is alſo written *bernacle*, agreeably to its ſuppoſed etymon, from the Saxon *bearn, a child.*

Several authors have repreſented the *barnacle* as the produce of a marine animal, or ſhell-fiſh: but the latter naturaliſts, on better grounds, refer it to the natural manner of generation of the feathered kind; making it a real gooſe, produced like others *ab ovo.* See a deſcription and draught of it in Sir Rob. Sibbald's Nat. Hiſt. Scot.

The *barnacle* is the ſame with what is otherwiſe called the *Soland gooſe*, in Latin *anſer Scoticus*; ſome will have it the ſame with the French *macreuſe*, or *macrout*; and others with the *diable de mer*, but erroneouſly: Dr. Robinſon aſſigns the difference, making the *barnacle* to be of the gooſe, the *macreuſe* of the duck, and the *diable de mer* of the moor-hen kind.—The ſame author ſhews, that the *macreuſe* is no other than the *ſcoter*, or *anas niger minor*, deſcribed by Mr. Ray and Mr. Willoughby; contrary to the opinion of M. Cattier, who took it for the greater *coot* of Bellonius; and alſo of others, who miſtook it for the *puffin* of the Scillies, and iſle of Man; and of others, with whom it paſſed for a ſort of *columbus* or *doucker*. See Ray Syn. Meth. Avium, p. 141.

BARNACLE is alſo a name given to a kind of ſhell-fiſh, which is found cleaving to the bottoms and ſides of ſhips in certain ſeas; ſometimes alſo to the fins and tails of whales, and the like.

In this ſenſe, *barnacle* is the ſame with what is called by ſailors *clam*; by naturaliſts, *concha anatifera.*

There are divers ſpecies of ſhell-fiſhes included under the denomination *barnacles*: ſome reduce them to two, viz. the *balanus* and *pinna marina.*

See an account of ſeveral rare ſpecies of *barnacles*, by John Ellis, Eſq. Phil. Tranſ. vol. l. part ii. N° 113.

BARNACLES, in *Farriery*, alſo denote an inſtrument which farriers apply to horſes noſes, when they will not ſtand quietly to be ſhod, blooded, dreſſed, or the like. They are alſo called *horſe-twitchers*, or *brakes.*

Barnacles differ from pinchers, as the latter have handles whereby to hold them; whereas the former are faſtened to the noſe with a lace or cord.

There is another meaner ſort of *barnacles*, uſed in defect of the former, called *roller barnacles*, or *wood-twitchers*, which are only two rollers of wood bound together, with the horſe's noſe between them.

BARNFIARD, in *Zoology*, the name of a bird uſually ſeen at ſea, and looked on as a foreteller of bad weather. It is about the ſize of a ſparrow, its neck and back are black, and its breaſt and belly grey; its feet are red, and its bill black, and ſomewhat broad. It ſkims very nimbly along the ſurface of the water.

BAROCO, in *Logic*, denotes the fourth mode of the ſecond figure of ſyllogiſms.

A ſyllogiſm in *baroco* has the firſt propoſition univerſal and affirmative, but the ſecond and third particular and negative; and the middle term, the attribute in the two firſt.—For example:

BA	*Every virtue is attended with diſcretion:*
RO	*Some kinds of zeal are not attended with diſcretion:*
CO	*Therefore ſome kinds of zeal are not virtues.*
BAR	*Nullus homo non eſt bipes:*
OC	*Non omne animal eſt bipes:*
O	*Non omne animal eſt homo.*

BAROMETER, a machine for meaſuring the weight of the atmoſphere, and the variations therein, in order chiefly to determine the changes of weather, and the heights of mountains, &c. to which uſe it was firſt applied by M. Paſcal, in leſs than four years after the invention of it.

The word is compounded of βαρος, *weight*, and μετρον, *meaſure.*

The *barometer* is frequently confounded with the *baroſcope*, though ſomewhat improperly; the latter, in ſtrictneſs, being a machine that barely ſhews an alteration in the weight of the atmoſphere: but it is one thing to know that the air is heavier at one time than another, and another to meaſure how much that difference is; which is the buſineſs of the *barometer.*

The *barometer* is founded on the Torricellian experiment, as it is called from its inventor Torricelli, in 1643: which is no more than a glaſs tube filled with mercury, hermetically ſealed at one end; the other open, and immerged in a baſon of ſtagnant mercury. Now, as the weight of the atmoſphere diminiſhes, the mercury in the tube will here deſcend; on the contrary, as it increaſes, the mercury will again aſcend: the column of mercury ſuſpended in the tube being always equal to the weight of the incumbent atmoſphere.

BAROMETER, *common, the conſtruction of it.*—A glaſs tube AB (*Tab. Pneumatics, fig.* 1.) hermetically ſealed in A, having its diameter about one tenth of an inch, and its length, at leaſt, thirty-one inches, is filled with mercury ſo juſtly, as not to have any air over it, nor any bubbles adhering to the ſides of the tube; which is beſt done by means of a glaſs funnel, with a capillary tube. If a ſmall bubble of air be moved backwards and forwards in the tube, it will help to clear the mercury, which will appear, when pure, like a poliſhed rod of ſteel. The orifice of the tube, filled after this manner, ſo as to overflow, is then cloſely preſſed by the finger, ſo as to exclude any air between it and the mercury, and thus immerged in a veſſel, of a convenient diameter, ſo, however, as not to touch the bottom: at the diſtance of twenty-eight inches from the ſurface of the mercury, are fixed two plates, CE, and DF, divided into three inches, and theſe again ſubdivided into any number of ſmaller parts. Laſtly, the tube is incloſed in a wooden frame, to prevent its being broken; the baſon, though open to the air, ſecured from duſt; and the *barometer* is complete.

As the common *barometer* is the beſt, and moſt to be depended upon in accurate obſervations, it may be proper to add ſome directions for preparing it; they are collected from the publications of Muſchenbroek, Deſaguliers, and De Luc on this ſubject. It appears from many experiments, that the mercury ſtands higher in tubes of a larger, than in thoſe of a narrower bore; and therefore when obſervations are made with different *barometers*, ſome regard ſhould be paid to the difference of their diameters; and it would be deſirable to have them conſtructed of tubes of the ſame diameter. The bore of the tube ſhould be large, in order to prevent the effects of the attraction of coheſion; not leſs than one fourth of an inch; but if they are one third of an inch diameter, they are better. If a ciſtern be uſed as a reſervoir for the ſtagnant mercury, it ſhould be large in proportion to the diameter of the tube, at leaſt ten times greater. The tube ſhould be preſerved free from duſt till it is uſed; and for this purpoſe it may be hermetically ſealed at both ends, and one end may be opened with a file, when it is filled. If this precaution has not been obſerved, the inſide ſhould be well cleaned, by waſhing it with alcohol highly rectified, and rubbing it with a little piſton of ſhammy leather faſtened to a wire. The mercury ſhould be pure; and may be purged of its air, by previouſly boiling it in a glazed earthen pipkin covered cloſe; and when the tube has been uniformly heated and rendered electrical by rubbing it, the hot mercury ſhould be poured into it in a regular current, through a glaſs funnel with a long capillary tube, ſo that the air may not have room to paſs between the parts of the quickſilver. M. De Luc directs, as Mr. Orme had practiſed many years ago in the conſtruction of his improved *diagonal barometers*, that the mercury ſhould be boiled in the tube, as the moſt effectual method of purging it of its air and moiſture. The proceſs is briefly this: he chuſes a tube of $2\frac{1}{2}$ lines or 3 lines bore, and not exceeding half a line in thickneſs; he fills it with mercury within two inches of the top, and holds it with the ſealed end loweſt in an inclined poſition over a chafing-diſh of burning charcoal, preſenting firſt the ſealed end to the fire, and moving it obliquely over the chafing-diſh. As the mercury is heated, the air-bubbles appear like ſo many ſtuds on the inner ſurface of the tube, and gradually running into one another, aſcend towards the higher part of the tube, and at length eſcape. The mercury is hereby freed from all the heterogeneous particles contained in it, together with their ſurrounding atmoſpheres, and the air which lines the inſide of the tube, which cannot be eaſily expelled in any other way, is diſcharged; when this laſt mentioned ſtratum of air is thus expelled, the tube may be afterwards emptied, and filled even with cold mercury, and will be found nearly as free from air as before. The mercury in the tubes thus prepared by a determinate quantity of heat, will riſe higher than in thoſe of the common ſort, and the *barometers* will more nearly correſpond with each other; whereas there will be a difference of ſix or eight lines in the aſcent of the mercury in common *barometers.*

Barometers of this kind roſe uniformly in a heated room; whilſt the mercury in thoſe that had been prepared in the common way deſcended, and in different proportions. When the room cooled, the former deſcended uniformly, and correſponded with each other; the latter roſe with the ſame irregularity with which they had before deſcended, nor were they found, at the cloſe of the experiment, to ſtand at the ſame relative heights as they did at the beginning of it. The reaſon of which is obvious, from the effects of heat on the air remaining in unequal quantities in the tubes in the one caſe, and on the purer mercury in the other.

M. De Luc has alſo contrived to eſtimate the effects of heat on the quickſilver in the *barometer*, when it is uſed for accurate obſervations, by means of a thermometer; the ſcale of which is divided in ſuch a manner as to indicate, with little labour of calculation, the correction to be made on account of heat. As an increaſe of heat that is ſufficient to raiſe the mercury in the thermometer from the freezing to the boiling point, will lengthen the column of mercury in the *barometer* ſix lines, he divides each line in the ſcale of the *barometer* into four parts, each of which may be eaſily ſubdivided into four leſſer parts, or ſixteenths of a line. The ſcale of the thermometer marking the interval between the freezing and boiling points, and anſwering to the ſix lines of the *barometer*, is divided into ninety-ſix equal parts; each of which will correſpond to the ſixteenth of a line in the motion of the mercury in the *barometer* dilated by heat. M. De Luc prepared two *barometers* with their reſpective thermometers graduated in the manner above explained; he placed one pair in the cellar of one houſe, and the other pair in the upper room of another houſe in a lower ſituation, ſo as to be exactly on a level with the cellar; he found that the thermometer in the room roſe nine degrees, and the barometer $\frac{9}{16}$ of a line higher than thoſe in the cellar; whence he ſhews, that, without allowing for the effect of heat, the difference in the heights of theſe two *barometers* would have indicated a difference of about 45 feet in the heights of theſe two places, though they were exactly on the ſame level. See ATMOSPHERE.

M. Prins, an artiſt in Holland, has made an improvement in the reſervoir of the ſimple *barometer*, by means of which, the mercury contained in it is conſtantly kept at the ſame level; but the conſtruction is difficult, and therefore it has not been generally adopted. De Luc's Recherches, &c. vol. i. p. 35.

The *barometer* has been rendered more convenient for carriage, and leſs expenſive, by bending the lower end of the tube in form of a ſyphon, and leaving the mercury in the recurved part open to the preſſure of the atmoſphere: and *barometers* of this conſtruction are preferred by M. De Luc, as being the moſt favourable for indicating the real weight of the atmoſphere, and correſponding invariably with each other. But he acknowledges, that this is not ſo convenient for a ſtationary *barometer*, and for the common purpoſes of a weather-glaſs. The ſcale is hereby diminiſhed one half, and therefore this part was afterwards made conſiderably larger in diameter than the tube, ſo that the variations in the tube might be attended with no ſenſible variations in this part.

Many attempts have been made to render the changes in the *barometer* more ſenſible, and ſo to meaſure the atmoſphere more accurately; which has given riſe to a great number of *barometers* of different ſtructures.—Hence the *wheel barometer*, *diagonal barometer*, *horizontal barometer*, *pendant barometer*, &c.

Des Cartes ſuggeſted the firſt method of increaſing the ſenſibility of the *barometer*, though he did not live to execute it. He propoſed a tube AB (*fig.* 2.) about twenty-ſeven inches long, terminating in a cylindric veſſel CD; one half of which veſſel, connected above with a long tube of a very ſmall bore, ſealed at top, and exhauſted of its air, was to be filled with water extending up into the ſmall tube; the other part of the veſſel, and the lower part of the tube, were to be filled with mercury. Whenever the mercury roſe in the cylinder, it would force up a proportional quantity of water into the narrow tube, where it would have a conſiderably larger range than that of the mercury in the cylinder: neglecting the weight or preſſure of the water, the motion of the water and of the mercury would be in the inverſe ratio of the ſquares of the diameters of the veſſels containing them. But the water preſſes on the mercury according to its height; and therefore if the whole range of the mercury in the cylinder, or in a common *barometer*, were ſuppoſed to be two inches, the ſpecific gravity of water to that of mercury as 1 to 14, and the difference between the diameters of the cylinder and tube a *maximum* or infinite, then the entire ſcale of variation in this inſtrument would be twenty-eight inches; or the extent of this ſcale would be to that of the common *barometer* in the inverſe ratio of the ſpecific gravity of water to that of mercury. It is evident that, in practice, it would be ſomewhat leſs than twenty-eight inches. Huygens conſtructed a *barometer* of this kind. But here, though the column ſuſpended was larger, and conſequently the variation greater, yet the air impriſoned in the water getting looſe by degrees, filled the void ſpace in the top, and ſo ruined the machine.

Huygens then bethought himſelf of placing the mercury at top, and the water at bottom, in the manner following: ADG (*fig.* 3.) is a bent tube hermetically ſealed in A, and open in G; the cylindric veſſels BC and FE are equal, and about twenty-nine inches apart; the diameter of the tube is about a line, that of each veſſel fifteen lines, and the depth of the veſſels is about ten; the tube is filled with mercury (the common *barometer* ſtanding about twenty-nine inches) which will be ſuſpended between the middle of the veſſel FE, and that of the veſſel BC; the remaining ſpace to A, being void both of mercury and air; laſtly, common water, tinged with a ſixth part of *aqua regis* to prevent its freezing, is poured into the tube FG, till it riſes a foot above the mercury in DF.

When the mercury riſing above the level of that contained in FE, through the tube AD, becomes a balance to the weight of the atmoſphere; as the atmoſphere increaſes, the column of mercury will increaſe, conſequently the water will deſcend; as the atmoſphere again grows lighter, the column of mercury will deſcend, and the water aſcend. This *barometer* therefore, which is nearly the ſame with that of Dr. Hook, will diſcover much minuter alterations in the air than the common one: for, inſtead of two inches, the fluid will here vary two feet; and by enlarging the diameters of the cylinders, that variation may be ſtill increaſed: but it has this inconvenience, that the water will evaporate, and ſo render the alterations precarious; though the evaporation be, in ſome meaſure, prevented by a drop of oil of ſweet almonds ſwimming at top: the column of water will likewiſe be ſenſibly affected by heat and cold.—On account of theſe and ſuch defects, others have had recourſe to a

BAROMETER, *horizontal*, or *rectangular*, ABCD (*fig.* 4.), the tube whereof is bent in form of a ſquare BCD; at top of its perpendicular leg it is joined to a veſſel or ciſtern AB; and its variations accounted on the horizontal leg CD.

Now here the interval, or ſpace of variation, may be made of any extent at pleaſure, and ſo the minuteſt change in the air become ſenſible. For the diameter of the tube CD being given, it is eaſy to find the diameter of the veſſel AB, ſo as that the ſcale of deſcent in the tube DC ſhall have any given proportion to the ſcale of aſcent in the veſſel AB; the rule being, that the diameter of the veſſel is to that of the tube in a ſubduplicate reciprocal ratio of their ſcales.

The diameters then of CD and AB being given, together with the ſcale of aſcent of the mercury in the veſſel, the ſcale of mercury in the tube is found thus: as the ſquare of the diameter of the tube is to the ſquare of the diameter of the veſſel, ſo, reciprocally, is the ſcale of mercury in the veſſel, to the ſcale of mercury in the tube.

Caſſini was the firſt inventor of this kind of *barometer*, though the ſame conſtruction had been thought of, and firſt publiſhed by M. J. Bernouilli, in the year 1710.

This and the preceding contrivance of Huygens are founded on a theorem in hydroſtatics; viz. that fluids, having the ſame baſe, gravitate according to their perpendicular altitude, not according to the quantity of their matter; whence the ſame weight of the atmoſphere ſupports the quickſilver that fills the tube ACD, and the ciſtern B, as would ſupport the mercury in the tube alone.

This laſt, however, with its excellencies, has great defects: for, by reaſon of the attraction between the parts of the glaſs and of the mercury (which Dr. Jurin has ſhewn to be conſiderable), with the length of the ſcale (conſequently the quantity of motion), and the attrition againſt its ſides, eſpecially in ſudden riſes and deſcents, the mercury breaks, ſome parts of it are left behind, and the equability of its riſe and fall ruined.—Some therefore prefer the

BAROMETER, *diagonal*, of Sir Samuel Moreland, where the ſpace of variation is conſiderably larger than in the common one, and yet the riſe and fall more regular than in the others.—Its foundation is this; that in a Torricellian tube BC (*fig.* 5.) inclined at any angle to the horizon, the cylinder of mercury equivalent to the weight of the atmoſphere, is to a cylinder of mercury equivalent to the ſame in a vertical tube, as the length of the tube BC to the perpendicular height DC.

Hence, if the height DC be ſubtriple, ſubquadruple, &c. of the length of the tube, the changes in the diagonal *barometer* will be triple or quadruple, &c. of the changes in the common *barometer*. This *barometer* will ſcarce allow its tube to be inclined to the horizon at a leſs angle than 45°, without undergoing the inconveniency of the horizontal one.

Mr. Orme, in order to obviate ſome of the objections to which the *diagonal* conſtruction of the *barometer* is liable, purified the quickſilver from its droſs and earthy particles by diſtillation; and when the tube was filled with a certain quantity of mercury, diſcharged the remaining air by an intenſe heat ſufficient to make the mercury boil; and he continued this operation for four hours. In the proceſs, an innumerable quantity of ſmall particles were emitted, and when no more bubbles roſe in the tube, the mercury appeared extremely bright, but ſunk lower in the tube than when it was firſt put in, by two inches. Phil. Tranſ. abr. vol. viii. p. 455.

Barometer, *wheel*. This was a contrivance of Dr. Hook, in 1668, to make the alterations in the air more ſenſible; the foundation of this is the *common vertical barometer*, with the addition of a couple of weights A and B (*fig.* 5.) hanging in a pulley, the one of them playing at liberty in the air, the other reſting on the ſurface of the mercury in the tube, and riſing and falling with it.

Thus is the motion of the mercury communicated, by means of the pulley, to an index which turns round a graduated circle; and thus the three inches of vertical aſcent are here improved to five, or ſix, or more, at pleaſure.

But the friction of the parts, in the pulley and index, is ſo conſiderable, that unleſs the machine be made with a great deal of accuracy, it does not anſwer.

An inſtrument of this kind, with conſiderable improvements, has been conſtructed by Mr. Fitzgerald, F. R. S. It is furniſhed with two pulleys that move on friction-wheels; each of which turns an index on the centre of a graduated circle. The ſmaller circle is four inches in diameter, and divided into three equal parts, each of which is again ſubdivided decimally; and the changes correſponding to the riſe or fall of the mercury from 28 to 31 inches, are marked on the margin of it, as they are on the ſcales of common *barometers*. The larger circle is divided into 300 equal parts; and being about 30 inches in circumference, the index belonging to it will mark diſtinctly the 600th part of an inch in the riſe or fall of the mercury. On the centre of this circle two regiſters are fixed, which are placed along the index when the inſtrument is adjuſted; one of them is carried round with the index, and left behind on its return; ſo that their diſtance will determine the limits of the variation from one obſervation to another. Phil. Tranſ. vol. lii. part i. N° 29. Ibid. vol. lx. N° 10.

Barometer, *pendant*, invented by M. Amontons, in 1695, is a machine rather pretty and curious, than uſeful. It conſiſts of a conical tube, placed vertically, its upper and ſmaller extreme hermetically ſealed; it has no veſſel or ciſtern, its conical figure ſupplying that defect: for when filled, like the reſt, there will be as much mercury ſuſtained as is equivalent to the weight of the atmoſphere; and as that varies, the ſame mercury takes up a different part of the tube, and ſo becomes of a different weight.

Thus, when the weight of the atmoſphere is increaſed, the mercury is driven up into a narrower part of the tube; by which means its column is lengthened, and, for the reaſon juſt given, its weight increaſed. Again, the atmoſphere decreaſing, the mercury ſinks into a wider part of the tube; by which means its column is again ſhortened, and its preſſure accordingly weakened. Thus, the ſame mercury is ſtill a balance to the atmoſphere under all its variations.

The inconvenience in this *barometer* is, that to prevent the mercury and air from changing places, the bore of the tube muſt be very ſmall; which ſmallneſs of the bore renders the friction ſo ſenſible, as to impede its playing.

Barometer, *marine*, is likewiſe a contrivance of Dr. Hook, in 1700, to be uſed at ſea, where the motion of the waves renders the others impracticable. It is nothing more than a double thermometer, or a couple of tubes half filled with ſpirit of wine; the one hermetically ſealed at both ends, with a quantity of common air incloſed; the other ſealed at one end, and open at the other.

Now the air, we know, is able to act on the ſpirit of wine, and raiſe it, two ways; the one by its gravity, as in the Torricellian tube; the other by its heat, as in the thermometer. If then the two tubes be graduated, ſo as to agree with each other at the time when the air is incloſed, it will eaſily follow, that, wherever the two agree afterwards, the preſſure of the atmoſphere is the ſame, as at the time when the air was incloſed. If in the thermometer open to the air the liquor ſtand higher, conſidering withal how much the other is riſen or fallen from the other cauſe of heat or cold, the air is heavier; on the contrary, when it is lower, compared with the other, the air is lighter than at the time when the inſtrument was graduated.

Here the ſpaces anſwering to an inch of mercury will be greater or leſs, according to the quantity of the air incloſed, and the ſmallneſs of the tubes; and they may be increaſed, almoſt, in any proportion.

But it muſt be remembered, that the denſity and rarity of the air, on which this machine is founded, do not only depend on the weight of the atmoſphere, but alſo on the action of heat and cold.—This, therefore, can never be a juſt *barometer*; but may properly enough be called a *manoſcope*, or inſtrument to ſhew the denſity of the air. See Manometer.

Nevertheleſs, the inſtrument is ſaid to be of good uſe in giving notice of all bad weather at ſea, as alſo of veerable winds, and of the neighbourhood of ice. Phil. Tranſ. N° 429. p. 133.

Mr. Nairne, an ingenious artiſt in London, conſtructed a *marine barometer* for Capt. Phipps, in his voyage to the north pole; the upper part of which was a glaſs tube about three tenths of an inch in diameter, and four inches long, to which another glaſs tube was joined with a bore about ^{1} th of an inch in diameter. Theſe two glaſs tubes formed the tube of this *barometer*, which was filled with mercury, and inverted into a ciſtern of the ſame. The inſtrument was fixed in gimmals, and kept in a perpendicular poſition by a weight faſtened to the bottom of it, and was not liable to the inconvenience attending the common *barometer* at ſea. Voyage to the North Pole, p. 123.

M. Paſſement, another ingenious artiſt at Paris, accommodates the *barometer* to nautical uſes, by twiſting the middle part of the common *barometer* into a ſpiral conſiſting of two revolutions; by this contrivance, the impulſes which the mercury receives from the motions of the ſhip, are deſtroyed by being tranſmitted in contrary directions. De Luc's Recherches, &c. vol. i. p. 34.

Barometer, *ſtatical*, or **Baroscope**, uſed by Mr. Boyle, Otto de Gueric, &c. is fallacious, and liable to be acted on by a double cauſe: it conſiſts of a large glaſs bubble, balanced by a braſs weight, in a nice pair of ſcales: for theſe two bodies being of equal gravity, but unequal bulk, if the medium in which they equiponderate be changed, there will follow a change of their weight; ſo that if the air grows heavier, the greater body, being lighter in ſpecie, will loſe more of its weight than the leſſer and more compact; but if the medium grow lighter, then the bigger body will outweigh the leſs. See Collect. Acad. P. Etr. tom. ii. p. 41.

The moſt accurate *barometer* yet invented, ſeems to be that of Mr. Caſwell; the ſtructure whereof he deſcribes as follows: Suppoſe ABCD (*fig.* 6.) a bucket of water, wherein is the *barometer xrezyosm*, conſiſting of a body *xrsm*, and a tube *ezyo*. The body and tube are both concave cylinders, communicating with each other, made of tin, or rather glaſs. The bottom of the tube, *z*, *y*, has a lead weight to ſink it, ſo that the top of the body may juſt ſwim even with the ſurface of the water, by the addition of ſome grain weights at the top. The water, when the inſtrument is forced with its mouth downwards, gets up into the tube to the height *yo*. There is added on the top a ſmall concave cylinder, which we call the *pipe*, to diſtinguiſh it from the other at bottom, which we call the *tube*: this pipe is to ſuſtain the inſtrument from ſinking to the bottom, *md* is a wire, *m*S and *de* two threads oblique to the ſurface of the water, performing the office of diagonals. Now, while the inſtrument ſinks more or leſs, by the alteration of the gravity of the air; there, where the ſurface of the water cuts the thread, is formed a ſmall bubble, which aſcends up the thread, as the mercury of the common *barometer* aſcends, and *vice verſa*.

This inſtrument, as appears from a calculation which the author gives, ſhews the alterations in the air more accurately than the common *barometer*, by no leſs than 1200 times. He obſerves, that the bubble is ſeldom known to ſtand ſtill a minute; that a ſmall blaſt of wind, that cannot be heard in a chamber, will make it ſink ſenſibly; and that a cloud always makes it deſcend, &c.

Mr. Rowning has contrived a compound *barometer*, in which the ſcale of variation ſhall bear any proportion to that of the common one. ABC (*Tab.* II. *Pneumatics*, *fig.* 1.) is a compound tube hermetically ſealed at A, and open at C; empty from A to D, filled with mercury from thence to B, and from thence to E with water. It appears from the nature of a ſyphon, that if H, B, G be in the ſame horizontal line, the column of mercury DH will be in equilibrio with the column of water GE, and a column of air of the ſame baſe, and will therefore vary with the ſum of the variations of theſe. He has ſubjoined a calculation, whence it appears, that if the tubes AF and FC are of an equal bore, the variation in this is leſs than that of the common *barometer* in the proportion of 7 to 13; but if the diameter of AF be that of FC as 5 to 1, the variations will be to thoſe in the common *barometer* as 175 to 1; but if the proportion of the diameters be greater, the variations will be infinite in reſpect to thoſe of the common *barometer*. Rowning's Nat. Phil. part ii. diſſ. 4.

Whilſt ſome have endeavoured to enlarge the variations of the *barometer*, others have endeavoured to make it more convenient, by reducing the length of the tube. M. Amontons, in 1688, firſt propoſed this alteration in the ſtructure of *barometers*, by joining ſeveral tubes to one another, alternately filled with mercury and with air, or ſome other fluid; and the number of theſe tubes may be increaſed at pleaſure: but the contrivance is more ingenious than uſeful.

M. Mairan's reduced *barometer*, which is only three inches long, ſerves the purpoſe of a *manometer* in diſcovering the dilatations of the air in the receiver of an air-pump; and inſtruments of this kind are now generally applied to this uſe. See Air-*pump*.

Barometer, *portable*, is ſo contrived, that it may be carried from one place to another without being diſordered. The tube is tied up in a leathern bag not quite full of mercury; which being preſſed by the air, forces the mercury into the tube, and keeps it ſuſpended at its proper height. This bag is commonly incloſed in a box, through the bottom of which paſſes a ſcrew: by means of this ſcrew, the mercury may be forced up to the top of the tube, and prevented from breaking the tube by daſhing againſt the top of it when the inſtrument is removed from one ſtation to another. A contrivance of this ſort we are indebted for to Mr. Patrick. But the *portable barometer* has received various improvements ſince: however, the moſt complete of this kind is deſcribed, together with the apparatus belonging to it, the method of conſtruction and uſe, and the advantages attending it, by M. De Luc, and illuſtrated by drawings, in his Recherches, &c. vol. ii. p. 5, &c.

Barometer, *phænomena of.*—The *phænomena* of the *barometer* are various; the cauſes aſſigned for them, by ſeveral authors, are widely different; nor is its uſe, in predicting the weather, yet perfectly aſcertained.

On the top of Snowdon-hill, 1240 yards high, Dr. Halley found the mercury to be lower, by three inches eight tenths, than at the foot thereof; whence it appears, that at every 30 yards the mercury ſinks one tenth of an inch. Mr. Derham, from ſome experiments he made at the top and bottom of the Monument, allows 32 yards perpendicular aſcent to a fall of the mercury of one tenth of an inch: whence we have not only a foundation for determining the height of the atmoſphere; which, on this foundation (were it equally denſe every where), would not be found more than 5 miles and one tenth; but alſo a very accurate method of meaſuring the height of mountains. Thus, if on the ſurface of the earth the mercury be at 30 inches, at 1000 feet high it would be at 28.91 inches; at 2000 feet, 27.86; at 3000, 26.85; at 4000, 25.87; at 5000, 24.93; at 1 mile, 24.67; at 2 miles, 20.29; at 5 miles, 11.28; at 10 miles, 4.24; at 15 miles, 1.60; at 20 miles, 0.95; at 30 miles, 0.08; at 40 miles, 0.012: though, it muſt be obſerved, this is on a ſuppoſition that the Atmosphere is equally heavy every where.

Dr. Nettleton made ſeveral experiments in the neighbourhood of Halifax, in order to aſcertain the elevations anſwering to given heights of the *barometer*. The following table ſhews the reſult:

	Height.	Altitude of ☿. Bottom.	Top.	Difference for $\frac{1}{10}$ of an inch.	
Tower of Halifax,	102 -	29.78 -	29.66 -	0.12 -	85
Coal mine,	140 -	29.48 -	29.32 -	0.16 -	87
Another ditto,	236 -	29.50 -	29.23 -	0.27 -	87
A ſmall hill,	312 -	29.81 -	29.45 -	0.36 -	86
Halifax hill,	507 -	30.00 -	29.45 -	0.55 -	91

Whence by the theorem, demonſtrated under the article Atmosphere, viz. that the elevations are as the logarithms of the height of the mercury reciprocally; ſuppoſing 30 inches the ſtandard altitude, and 85 feet the elevation, correſponding to one tenth of an inch, he made the following proportion: as the logarithm of $\frac{1}{29.9}$ is to 85, ſo is the logarithm of $\frac{1}{29.5}$ to the elevation which will make the mercury to fall half an inch; and ſo for any other. In this way he computed the following tables:

A TABLE ſhewing the Number of Feet aſcending, required to make the Mercury fall to any given Height in the Tube from 30 to 26 Inches. As alſo the Number of Feet deſcending, required to make the Mercury riſe from 30 to 31 Inches.

Inches. Dec.	Feet. Dec.	Inches. Dec.	Feet. Dec.
31.0	834.79	28.4	1395.32
30.9	752.53	28.3	1485.13
30.8	670.01	28.2	1575.26
30.7	587.21	28.1	1665.70
30.6	504.15	28.0	1756.47
30.5	420.82	27.9	1847.55
30.4	337.21	27.8	1938.97
30.3	253.32	27.7	2030.72
30.2	169.10	27.6	2122.80
30.1	84.72	27.5	2215.21
30.0	00.00	27.4	2307.95
29.9	85.00	27.3	2401.02
29.8	170.29	27.2	2494.44
29.7	255.87	27.1	2588.20
29.6	341.73	27.0	2682.33
29.5	427.89	26.9	2776.80
29.4	514.34	26.8	2871.62
29.3	601.08	26.7	2966.79
29.2	688.11	26.6	3062.32
29.1	775.44	26.5	3158.21
29.0	863.08	26.4	3254.46
28.9	951.01	26.3	3351.07
28.8	1039.25	26.2	3448.05
28.7	1127.80	26.1	3545.41
28.6	1216.66	26.0	3643.14
28.5	1305.83		

A TABLE ſhewing the Number of Feet required to make the Mercury fall one tenth of an Inch from any given Height in the Tube, from 31 to 26 Inches.

Inches. Dec.	Feet. Dec.	Inches. Dec.	Feet. Dec.
31.0	82.26	28.5	89.49
30.9	82.53	28.4	89.81
30.8	82.79	28.3	90.13
30.7	83.06	28.2	90.45
30.6	83.33	28.1	90.76
30.5	83.61	28.0	91.09
30.4	83.89	27.9	91.42
30.3	84.16	27.8	91.75
30.2	84.44	27.7	92.08
30.1	84.72	27.6	92.41
30.0	85. 0	27.5	92.74
29.9	85.29	27.4	93.07
29.8	85.58	27.3	93.41
29.7	85.86	27.2	93.76
29.6	86.16	27.1	94.12
29.5	86.45	27.0	94.47
29.4	86.74	26.9	94.82
29.3	87.03	26.8	95.17
29.2	87.33	26.7	95.53
29.1	87.63	26.6	95.89
29.0	87.93	26.5	96.25
28.9	88.24	26.4	96.61
28.8	88.55	26.3	96.98
28.7	88.86	26.2	97.36
28.6	89.17	26.1	97.73
		26.0	98.10

M. De Luc has given an hiſtorical and critical detail of the various attempts that have been made at different times for applying the motion of the mercury in the *barometer* to the meaſurement of acceſſible heights, beginning with the firſt trials propoſed by Paſcal and Des Cartes, and concluding with the more accurate experiments of M. Bouguer, and the other French academicians in Peru. He has added a table, exhibiting, in French meaſure, the heights of the atmoſphere correſponding to thoſe of the mercury in the *barometer*, calculated on the principles and rules of Mariotte, Halley, Maraldi, Scheuchzer, J. Caſſini, D. Bernouilli, Horrebow, and Bouguer, from 28 inches, the height obſerved by the French academicians on the ſea-ſhore of Peru, to 15 inches 10 lines, the height of the mercury obſerved by M. De la Condamine on the top of Coraçon, one of the Cordeliere mountains. The height of this hill above the level of the ſea was found, by geometrical meaſure, to be 14820 feet. The *barometrical* height, deduced from the principles of Mariotte, is 12087 feet 2 inches; from a rule afterwards propoſed by him, 13167 feet 4 inches; from Halley's rule, 14486 feet 1 inch; from Maraldi's, 19491 feet; from the principles of J. Scheuchzer, 12386 feet 5 inches; from the rule of J. Caſſini, 16090 feet; from the hypotheſis of D. Bernouilli, 16905 feet 3 inches; from Horrebow's rule, 14334 feet 4 inches; and from Bouguer's, 14359 feet 11 inches. De Luc's Recherches, &c. vol. i. p. 184.

The greateſt height the mercury has been known to ſtand at in the *barometer*, at London, is 30 inches three eighths, its leaſt 28 inches; its greateſt height, at the obſervatory of Paris, has been found 28 inches four tenths, and its leaſt 26 inches four tenths of the Paris foot, which exceeds the London foot by $\frac{8}{144}$: with theſe obſervations agree others, made at Hall, in Saxony, by Wolfius. At Algiers it riſes to 30 inches two tenths or three tenths, with a northerly wind, though attended with the greateſt rains and tempeſts. Shaw's Trav. p. 218.

It is true, there is an experiment wherein the height of the mercury is found ſurpriſingly to exceed theſe numbers; mercury perfectly purged being ſuſpended in a tube, in the Torricellian way, at the height of 75 feet; though by the leaſt ſhake it falls down to the ordinary height. See an account of this *phænomenon* under the word Torricellian.

The *phænomena* of the *barometer*, Mr. Boyle obſerves, are ſo very precarious, that it is exceedingly difficult to form any general, certain rules about the riſe and fall thereof. Even that which ſeems to hold moſt univerſally, viz. that, when high winds blow, the mercury is the lower, ſometimes fails.

Dr. Halley gives us the following obſervations: that in calm weather, when the air is inclined to rain, the mercury is commonly low; in ſerene good ſettled weather, high.

That on great winds, though unaccompanied with rain, the mercury is the loweſt of all, with regard to the point of the compaſs the wind blows on. That, *cæteris paribus*, the greateſt heights of the mercury are on eaſterly and north-eaſterly winds. That after great ſtorms of wind, when the mercury has been low, it riſes again very faſt.

That in calm froſty weather it ſtands high.

That the more northerly places find greater alterations than the more ſouthern: and that within the tropics, and near them, there is little or no variation of the height of the mercury at all.

For inſtance, at Naples it hardly ever exceeds an inch; whereas, at Upminſter it is 2.5 inches, at Peterſburgh 3.31. Phil. Tranſ. N° 434. p. 407.

Dr. Beal, who adopted the opinion of M. Paſcal, obſerves, that, *cæteris paribus*, the mercury is higher in cold weather than in warm; and, uſually, in the morning and evening higher than at mid-day.

That, in ſettled and fair weather, the mercury is higher than either a little before or after, or in the rain; and that it generally deſcends lower after rain than it was before it. And he aſcribes theſe effects to the vapours with which the air is charged in the former caſe, and which are diſperſed by the falling rain in the latter. If it chance to riſe higher after rain, it is generally followed by a ſettled ſerenity.

That there are frequently great changes in the air, without any perceptible alteration in the *barometer*.

For the uſe of BAROMETERS, an ingenious author obſerves, that, by their means, we may regain the knowledge which ſtill reſides in brutes, and which we forfeited by not continuing in the open air, as they generally do; and, by our intemperance, corrupting the *craſis* of our organs of ſenſe.

The following are Mr. Patrick's obſervations on the riſing and falling of the mercury: they are very juſt, and are to be accounted for on the ſame principles with thoſe of Dr. Halley.

1. The riſing of the mercury preſages in general, fair weather; and its falling, foul weather; as rain, ſnow, high winds, and ſtorms.
2. In very hot weather, the falling of the mercury indicates thunder.
3. In winter, the riſing preſages froſt; and in froſty weather, if the mercury falls three or four diviſions, there will certainly follow a thaw: but in a continued froſt, if the mercury riſes, it will certainly ſnow.
4. When foul weather happens ſoon after the falling of the mercury, expect but little of it: and on the contrary, expect but little fair weather, when it proves fair ſhortly after the mercury has riſen.
5. In foul weather, when the mercury riſes much and high, and ſo continues for two or three days before the foul weather is quite over, then expect a continuance of fair weather to follow.
6. In fair weather, when the mercury falls much and low, and thus continues for two or three days before the rain comes; then expect a great deal of wet, and probably high winds.
7. The unſettled motion of the mercury, denotes uncertain and changeable weather.
8. You are not ſo ſtrictly to obſerve the words engraved on the plates (though for the moſt part it will agree with them), as the mercury's riſing and falling; for if it ſtands at much rain, and then riſes up to changeable, it preſages fair weather, although not to continue ſo long as it would have done, if the mercury were higher: and ſo on the contrary, if the mercury ſtood at fair, and falls to changeable, it preſages foul weather, though not ſo much of it, as if it had ſunk down lower.

From theſe obſervations it appears, that it is not ſo much the height of the mercury in the tube, that indicates the weather, as the motion of it up and down: wherefore, in order to paſs a right judgment of what weather is to be expected, we ought to know whether the mercury is exactly riſing or falling, to which end the following rules are of uſe:

1. If the ſurface of the mercury is convex, ſtanding higher in the middle of the tube than at the ſides, it is generally a ſign that the mercury is then riſing.
2. If the ſurface of the mercury is concave, or hollow in the middle, it is ſinking. And,
3. If it is plain or level, or rather if it is a little convex, the mercury is ſtationary; for mercury being put into a glaſs tube, eſpecially a ſmall one, will naturally have its ſurface a little convex; becauſe the particles of mercury attract each other more forcibly than they are attracted by glaſs. Farther,
4. If the glaſs be ſmall, ſhake the tube; and if the air be grown heavier, the mercury will riſe about half the tenth of an inch higher than it ſtood before; if it is grown lighter, it will ſink ſo much. This proceeds from the mercury ſticking to the ſides of the tube, which prevents the free motion of it, until it is diſengaged by the ſhock. Therefore, when an obſervation is to be made by ſuch a tube, it ought always to be ſhaken firſt; for ſometimes the mercury will not vary of its own accord, until the weather it ought to have indicated be preſent.

Cauſe of the phænomena of the BAROMETER.—Thoſe, which have been enumerated, are the chief *phænomena* of the *barometer*; to account for which, the *hypotheſes* that have been framed are almoſt infinite. Indeed, as the weight of the atmoſphere is generally allowed to be the foundation of the *barometer*, ſo is it generally granted, that the alterations in the weight of the air are the occaſions of thoſe in the *barometer*; and yet even this does not obtain univerſally. Dr. Liſter, for inſtance, accounts for the changes of the *barometer* from the alterations of heat and cold. This, he ſays, he has often obſerved, that in ſtorms, &c. when the mercury is at the loweſt, it breaks, and emits ſmall particles, which he calls a kind of *fretting*; and argues, that in all times of its deſcent, it is more or leſs on the fret. In this diſorder, he thinks, its parts are contracted, and brought cloſer together; and, for that reaſon, deſcend: beſides, in the fretting they let go little particles of air, before incloſed in them; and theſe riſing into the top of the tube, the mercury muſt ſink, both from the column's being ſhortened by their eſcape, and by their lying upon it. Mercury, therefore, he adds, riſes either in very hot or very cold weather, between the tropics, &c. as being then in its natural ſtate; and, again, in the intermediate degrees of heat and cold it falls, as being contracted, and, as it were, convulſed, and drawn together. Phil. Tranſ. N° 165.—But his account, however ingenious, yet comes far ſhort of accounting for the *phænomena*; nay, in ſome reſpects, it contradicts them.

The changes in the weight of the atmoſphere, therefore, muſt be laid down as the cauſe of thoſe in the *barometer*; but then, for the cauſe of that cauſe, or whence thoſe alterations ariſe in the atmoſphere, will be no eaſy matter to determine; there being, perhaps, no one principle in nature that will account for ſuch a variety of appearances, and thoſe too ſo irregular. It is probable, the winds, as driven this or that way, have a great ſhare in them; ſome ſhare too, vapours and exhalations, riſing from the earth, may have; ſome, the changes in the air of the neighbouring regions; and ſome, the flux and reflux occaſioned in the air by the moon, though this is too inconſiderable to be regarded, as it is not perceptible by the niceſt *barometer*.

Dr. Halley thinks the winds and exhalations ſufficient; and on this ground, gives us a very probable *rationale* of the *barometer*. The ſubſtance of what may be ſaid on that head, is as follows:

1ſt, then, The winds muſt neceſſarily alter the weight of the air in any particular country; and that, either by bringing together and accumulating a greater quantity of air, and ſo loading the atmoſphere of any place; which will be the caſe, as often as two winds blow at the ſame time, from oppoſite points towards the ſame point: or by ſweeping away a part of the air, and removing ſome of the load, and thus giving room for the atmoſphere to expand itſelf; which will be the caſe, when two winds blow at the ſame time, and from the ſame point, oppoſite ways: or, laſtly, by cutting off the perpendicular preſſure of the atmoſphere; which happens, as often as any ſingle wind blows briſkly any way; it being found, by experiment, that a ſtrong blaſt of wind, even made by art, will render the atmoſphere lighter; and accordingly, the mercury, in a tube under which it paſſes, as well as in another at a diſtance from it, will ſubſide conſiderably. See Phil. Tranſ. N° 292.

2dly, The cold nitrous particles, and even air itſelf condenſed in the northern parts, and driven elſewhere, muſt load the atmoſphere, and increaſe its preſſure.

3dly, Heavy dry exhalations from the earth, muſt increaſe the weight of the atmoſphere, and heighten its elaſtic force, as we find the ſpecific gravity of menſtruums increaſed by diſſolved ſalts, and metals.

4thly, The air being rendered heavier from theſe and the like cauſes, is thereby the more able to ſupport the vapours; which being likewiſe intimately mixed with it, and ſwimming every where equably through it, make the weather ſerene and fair: again, the air being made lighter, from the contrary cauſes, it becomes unable to ſupport the vapours wherewith it is replete; theſe, therefore, precipitating, are gathered into clouds; and thoſe, in their progreſs, coaleſce into drops of rain.

Theſe things obſerved, it appears pretty evident, that the ſame cauſes which increaſe the weight of the air, and make it more able to ſupport the mercury in the *barometer*, do likewiſe occaſion a ſerene ſky, and a dry ſeaſon; and the ſame cauſes which render the air lighter, and leſs able to ſupport the mercury, do likewiſe generate clouds and rain.

Hence, 1ſt. When the air is lighteſt, and the mercury in the *barometer* is loweſt, the clouds are very low, and move ſwiftly; and when, after rain, the clouds break, and a calm ſky again ſhines forth, being purged of the vapours, it appears exceedingly bright and tranſparent, and affords an eaſy proſpect of remote objects.

2dly, When the air is heavier, and the mercury ſtands higher in the tube, the weather is calm, though ſomewhat leſs clear, by reaſon the vapours are diſperſed every where equally; if any clouds now appear, they are very high, and move ſlowly; and when the air is heavieſt of all, the earth is frequently found enveloped in pretty thick clouds, which appear to be formed out of the groſſer exhalations, and which the air is then able to ſuſtain, though a lighter atmoſphere could not.

3dly, Hence it is, that with us the mercury ſtands higheſt in the coldeſt ſeaſons, and when the wind blows from the north or north-eaſt corner: for, in that caſe, there are two winds blowing towards us at the ſame time, and from oppoſite corners; there being a conſtant weſt wind found in the Atlantic ocean, at the latitude correſponding to ours. To which we may add, that in a north wind, the cold condenſed air of the northern parts is brought hither.

4thly, Hence, in the northern regions, the variation of the mercury is more ſenſible than in the ſouthern ones; the winds being found both more ſtrong, more frequent, more various, and more oppoſite to each other in the former, than the latter.

Laſtly, Hence it is, that between the tropics, the variation of the mercury is ſcarce ſenſible; the winds there being extremely gentle, and uſually blowing the ſame way.

But this account, however well adapted to many of the particular caſes of the *barometer*, ſeems to come ſhort of ſome of the principal and moſt obvious ones; and is, beſides, liable to ſeveral objections.

For, 1ſt. If the wind were the ſole agent in effecting theſe alterations, we ſhould have no alterations without a ſenſible wind, nor any wind without ſome alteration of the mercury; both which are contrary to experience.

2dly, If two winds be ſuppoſed blowing from the ſame place, viz. London, oppoſite ways, viz. N. E. and S. W. there will be two others, blowing from oppoſite points, viz. N. W. and S. E. to the ſame place; which two laſt will balance the firſt, and bring as much air towards the point, as the others ſwept from it. Or thus, in proportion as the air is carried off N. E. and S. W. the adjacent air will croud in from the other points, and form a couple of new currents in the direction N. W. and S. E. to fill up the vacancy, and reſtore the equilibrium. This is a neceſſary conſequence from the laws of fluids.

3dly, If the wind were the ſole agent, the alterations in the height of the mercury would only be relative, or topical; there would be ſtill the ſame quantity ſupported at ſeveral places taken collectively: thus, what a tube at London loſt, another at Paris, or at Piſa, or at Zurich, &c. would at the ſame time gain. But we find the very contrary true in fact; for, from all the obſervations hitherto made, the *barometers* in ſeveral parts of the globe riſe and fall together; ſo that it muſt be ſome alteration in the abſolute weight of the atmoſphere, that accounts for the riſe and fall of the mercury.

Laſtly, ſetting aſide all objections, theſe popular phænomena, the mercury's fall before, and riſe after rain, ſeem to be inexplicable on the ground of this hypotheſis: for, ſuppoſe two contrary winds ſweeping the air from over London, we know that few, if any, of the winds reach above a mile high; all, therefore, they can do, will be to cut off a certain part of the column of air over London: if the conſequence of this be the fall of the mercury, yet there is no apparent reaſon for the rain's following it. The vapours indeed may be let lower, but it will only be till they come into an air of the ſame ſpecific gravity with themſelves; and there they will ſtick as before.

M. Leibnitz endeavours to ſupply the defects of this hypotheſis with a new one of his own. He aſſerts, that a body immerſed in a fluid only weighs with that fluid while it is ſuſtained thereby; ſo that when it ceaſes to be ſuſtained, i. e. when let fall, its weight ceaſes to make a part of that of the fluid, which by this means become lighter. Thus, adds he, the watery vapours, while ſuſtained in the air, increaſe its weight; but, when let fall, they ceaſe to weigh along with it. Thus the weight of the air is diminiſhed; and thus the mercury falls, and rain enſues.

But M. Leibnitz's principle, notwithſtanding the experiment he brings to confirm it, is falſe, as has been evidently made appear by a counter experiment of D. Deſaguliers. For a body, whether ſpecifically equal, or lighter, or heavier, than a fluid, while it is immerged in it, whether it be at reſt, or in motion, adds to the fluid a weight equivalent to that of an equal bulk of the fluid; as follows from that law in hydroſtatics, that fluids gravitate according to their perpendicular altitudes.—However, were M. Leibnitz's principle true, yet it is defective; and that in the ſame reſpect with Dr. Halley's; nor would it account for the phænomena more than the other. For, ſuppoſing the vapours by being condenſed, to be put in a motion downwards, and ſo ceaſing to gravitate with the atmoſphere; they will therefore fall, till they reach a part of the atmoſphere of the ſame ſpecific gravity with themſelves; and there they will hang as before. If the mercury fall, it will only be during the time of that deſcent; for theſe once fixed, the former gravity is retrieved; or, were it not retrieved, yet no rain would ſucceed the fall of the mercury.

If it might be allowed to add any thing after ſuch great men, it ſhould be as follows.—Suppoſe any number of watery veſicles floating in any part of the atmoſphere, over any determinate portion of the globe; for inſtance, over AB, *fig.* 21. if the upper veſicles be condenſed by the cold of the ſuperior regions, their ſpecific gravity will be increaſed, and they will deſcend; the horizontal claſs 1, v. gr. to 2, 2 to 3, &c. where meeting with other veſicles, not yet precipitated, they will coaleſce, or run into larger veſicles, by the known laws of attraction. Or, if we rather chooſe to have the wind act, let it drive either horizontally, or obliquely: in the former caſe, the veſicles, claſs 8. will be driven againſt 9; thoſe againſt 10, &c. or the oblique claſs A 7, driven againſt 5, 8 againſt 4, &c. by which means, likewiſe, will the particles coaleſce, and form new and larger veſicles, as before; ſo that their number, which before was, ſuppoſe a million, will now be reduced, v. gr. to an hundred thouſand.

But by the ſame coalition whereby their number is diminiſhed, their ſpecific gravity, if we may ſo call it, is increaſed, i. e. they come to have more matter in the ſame ſpace, or under an equal ſurface; as may be eaſily proved from principles of geometry: for in augmenting the maſs of any homogeneous body, the increaſe of ſurface does not keep pace with that of the ſolidity; but that of the former is as the ſquare of the diameter, and that of the latter as the cube of the ſame.

But ſince the ſame quantity of matter is now in a leſs ſpace, or under leſs dimenſions, it will loſe leſs of its weight by the reſiſtance of the medium. This is evident: for a body immerſed in a fluid loſes nothing of its weight but by the friction of its parts againſt thoſe of the fluid; but the friction is evidently as the ſurface; therefore, when the ſurface is leſſened, the reſiſtance muſt be ſo too. Conſequently, the veſicles, whoſe gravity before the coalition was equal to the reſiſtance of the medium, now that reſiſtance is diminiſhed, will deſcend; and that with a velocity in the ratio of the increaſe of the maſs to the increaſe of the ſurface.

In their deſcent, as they arrive at denſer parts of the atmoſphere, v. gr. at 4, 5, &c. their maſs and ſurface again will be increaſed by new coalitions; and thus, by conſtant freſh acceſſions, more than equal to the conſtant reſiſtances, they will be enabled to purſue their journey through all the ſtages of the air, till they reach the earth; their maſſes exceedingly magnified, and in the form of rain.

Now that the vapours are got down, let us conſider how the *barometer* muſt have been affected during their paſſage. Before any of the veſicles began to ſubſide, either from the action of the cold, or of the wind, they all floated in the portion of the atmoſphere ABCD, and all gravitated towards the centre E. Here now, each reſpectively reſiding in a part of the medium of the ſame ſpecific gravity with itſelf, will loſe as much of its weight, as is equal to that of a part of the medium of the ſame bulk with itſelf, i. e. each will loſe all its weight. But, then, whatever weight each loſes, it communicates to the medium, which now preſſes on the ſurface of the earth AB, with its own weight, and that of the veſicles, conjointly. Suppoſe, then, this united preſſure keeps up the mercury in the *barometer* at thirty inches: by the coalition of the veſicles from the cauſes aforeſaid, their ſurfaces, and conſequently their friction, are leſſened; therefore they will communicate leſs of their weight to the air, i. e. leſs than the whole; and conſequently they will deſcend with the exceſs, i. e. with a velocity equal to the remainder, as before obſerved. Now, as the veſicles can act no otherwiſe on the ſurface of the earth AB, but by the mediation of the interjacent air, in proportion as their action on the medium is leſs, their action on the earth will be leſs It is alſo evident, that the ſurface of the earth AB muſt be now leſs preſſed than before; and that in proportion as the veſicles reſerve more of their weight uncommunicated to the medium, to promote their own deſcent, i. e. in proportion to the velocity of the falling veſicles; which is, again, in proportion to their bulks. Thus, as the veſicles deſcend, the bulks continually increaſing, the friction, and therefore the preſſure on the earth, and, laſtly, the height of the mercury, will continually decreaſe, during the whole time of the fall.—Hence we ſee, both why the veſicles, when once beginning to fall, perſevere; why the mercury begins to fall at the ſame time; and why it continues and ceaſes to fall together with them; which were the great *deſiderata* in the philoſophy of the *barometer*.

There is one objection that evidently lies againſt this theory, viz. that the veſicles being put in motion, and ſtriking againſt the particles of the *medium* and one another with ſome moment, will meet with a conſiderable reſiſtance from the *vis inertiæ* thereof; by which means their deſcent will be retarded, and the preſſure of the atmoſphere retrieved; the impetus of the moving veſicles being ſuppoſed to compenſate for their loſs of ſurface. Thus a heavy body ſuſtained in a fluid by a hair, and moved up and down therein, preſſes more on the bottom, than when held at reſt; which additional preſſure will be the greater, as the velocity of the falling veſicles is greater; a greater impulſe being required to break through the *vis inertiæ* of the contiguous particles in a leſs time than in a larger.

But we have both reaſon and experiment againſt this objection; for the velocity of the veſicles, in theſe circumſtances, muſt neceſſarily be very ſmall, and their impulſe inconſiderable; beſides, the *vis inertiæ* of the air muſt be exceedingly weak, by reaſon of its extreme ſubtilty; and it muſt be a very improper vehicle to convey an impulſe to a diſtance, by reaſon of its elaſticity; we alſo find, that a piece of lead, which is a ponderous body, falling with great moment, gravitates conſiderably leſs, in its deſcent through water, which is a groſs unelaſtic medium, than when ſuſtained at reſt therein: in which the ſeveral experiments of Reaumur, Ramazzini, and Deſaguliers, all agree.

M. de Luc ſuppoſes, that the changes obſerved in the weight of the atmoſphere are principally produced by the preſence or abſence of vapours floating in it. Others have attributed the effect to vapours, but have given a different explication of it. It is his opinion, that vapours diminiſh the ſpecific gravity, and conſequently the abſolute weight of thoſe columns of the atmoſphere into which they are received, which, notwithſtanding this admixture, remain of an equal height with the adjoining columns that conſiſt of pure or dry air. He afterwards more largely explains and vindicates this theory, and applies it to the ſolution of the principal phænomena of the *barometer*, connected with, or produced by the varying denſity and weight of the atmoſphere.

See a ſummary of the numerous hypotheſes that have been framed for explaining the variations of the *barometer*, by Paſcal, Beal, Wallis, Garcin, Garden, Liſter, Halley, Garſten, de la Hire, Mariotte, Le Cat, Woodward, Leibnitz, de Mairan, Hamberger, D. Bernouilli, and Muſchenbroek, in M. de Luc's Recherches ſur les Modifications de l'Atmoſphere, vol. i. chap. 3. See on the ſubject of this article, both volumes of that excellent work, *paſſim*.

BAROMETRICAL *obſervations*, make a branch or ſpecies of thoſe called meteorological obſervations.

Modern philoſophers ſpeak much of the importance of *barometrical* obſervations. Dr. Wallis, Dr. Beal, Cruquius, de la Hire, and others, have publiſhed collections of *barometrical* obſervations, made at Oxford, Leyden, Delft, Paris, Zurich, in China, &c. Phil. Tranſ. Nº 55. Nº 249. Nº 256. Nº 381, &c.

Dr. Jurin has publiſhed an invitatory paper, for making *barometrical* obſervations by joint conſent. Phil. Tranſ. Nº 379, p. 423.

Barometrical *phoſphorus*. See Phosphorus.

BARON, a perſon who holds a barony.

Baron is a term whoſe origin and primary import is much conteſted. Some will have it originally denote a *man*, *ανηϱ*; ſome a *hero*, or *valiant man*; ſome a *libertinus*, or *freeman*; ſome a *great* or *rich man*; ſome a *vaſſal* or *liegeman*.—Menage derives it from the Latin *baro*, which we find uſed in the pure age of that language for *vir*, a *ſtout* or *valiant man*; whence, according to this author, it was, that thoſe placed next the king in battles were called *barones*, as being the braveſt men in the army; and as princes frequently rewarded the bravery and fidelity of thoſe about them with fees, the word came to be uſed for any noble perſon who holds a fee immediately of the king.—Iſidore, and after him Camden, take the word, in its original ſenſe, to ſignify a *mercenary ſoldier*. Meſſieurs of the Port Royal derive it from βαϱος, *weight*, or *authority*. Cicero uſes the word *baro* for a ſtupid, brutal man; and the old Germans make mention of *buffetting a baron*, i. e. a *villain*; as the Italians ſtill uſe the word *barone*, to ſignify a *beggar*.—M. De Marca derives *baron* from the German *bar*, *man*, or *freeman*; others derive it from the old Gauliſh, Celtic, and Hebrew languages: but the moſt probable opinion is, that it comes from the Spaniſh *varo*, a *ſtout*, *noble perſon*; whence wives come to call their huſbands, and princes their tenants, *barons*. In the Salic law, as well as the laws of the Lombards, the word *baron* ſignifies a *man* in the general; and the old gloſſary of Philomenes tranſlates *baron* by *ανηϱ*, *man*.

Baron is more particularly uſed, among us, for a lord, or peer of the loweſt claſs; or a degree of nobility next below that of a viſcount, and above that of a knight, or a baronet.

Barons are lords of parliament, and peers of the realm, and enjoy all the privileges of ſuch.—They are not girt with a ſword at their creation, nor had they any Coronets till the reign of king Charles II. who gave them a circle of gold with ſix pearls ſet cloſe to the rim.

In ancient records, the word *barons* included all the nobility of England, becauſe regularly all noblemen were *barons*, though they had alſo a higher dignity.—And therefore the charter of king Edward I. which is an expoſition of what relates to *barons* in *Magna Charta*, concludes, *teſtibus archiepiſcopis, epiſcopis, baronibus*, &c. And the great council of the nobility, when they conſiſted, beſides earls and *barons*, of dukes, marquiſes, &c. were comprehended under the name *de la councel de baronage*.

Barons *by ancient tenure* were thoſe who held by certain territories of the king, who ſtill reſerved the tenure in chief to himſelf. We alſo read of *barons by temporal tenure*; who are ſuch as hold honours, caſtles, manors, as heads of their *barony*, that is, by grand ſergeanty; by which tenure they were anciently ſummoned to parliament. But at preſent a *baron* by tenure is no lord of parliament, till he be called thither by writ.

The *barons* by tenure, after the Conqueſt, were divided into *majores* and *minores*, and were ſummoned accordingly to parliament; the *majores*, or greater *barons*, by immediate writ from the king; the *minores*, or leſſer *barons*, by general writ from the high ſheriff, at the king's command.

The ancients diſtinguiſhed the greater *barons* from the leſs, by attributing high, and even ſovereign juriſdiction, to the former, and only inferior juriſdiction over ſmaller matters to the latter.

Barons *of the exchequer* are judges, four in number, one of whom is called the chief *baron*, and the other three puiſne *barons*, to whom the adminiſtration of juſtice is committed in cauſes between the king and his ſubjects, touching matters belonging to the exchequer, and the king's revenue. They are called *barons*, becauſe *barons* of the realm were uſed to be employed in that office.

Their office is alſo to look to the accompts of the king; to which end they have auditors under them; as well as to decide cauſes relating to the revenue, brought by any means into the exchequer: ſo that, of late, they have been conſtantly perſons learned in the law; whereas formerly they were *majores & diſcretiores in regno, ſive de clero eſſent, ſive de curia*. See Court *of Exchequer*.

Barons *of the cinque ports*, are members of the houſe of commons elected by the five ports, two for each port. See Cinq *Ports*.

Thoſe who have been mayors of Corfe-caſtle in Dorſetſhire, are alſo denominated *barons*.—As were formerly, likewiſe, the chief citizens of London.

Baron is alſo uſed for the huſband, in relation to the wife; which two, in law, are called *baron* and *feme*. See Husband and Wife.

Baron *and feme*, in *Heraldry*, is when the coats of arms of a man and his wife are borne *per pale* in the ſame eſcutcheon; the man's being always on the *dexter* ſide, and the woman's on the *ſiniſter*.—But here the wife is ſuppoſed not an heireſs; for then her coat muſt be borne by the huſband on an in-eſcutcheon, or eſcutcheon of pretence.

Baron, *court*. See Court.

Baron, *prender de*. See Prender.

BARONET, among *Modern Writers*, denotes a dignity, or degree of honour, next beneath a baron, and above a knight; having precedency of all knights, excepting thoſe of the *garter*.

The dignity of *baronet* is given by patent, and is the loweſt degree of honour that is hereditary. The order was founded by king James I. at the ſuggeſtion of Sir Robert Cotton, in 1611, when two hundred *baronets* were created at once; to which number, by the patent, they were always to be reſtrained. Though, it is ſaid, there are now four times that number.

They had ſeveral conſiderable privileges given them, with an *habendum* to them and their heirs male. They were allowed to charge their coat with the arms of Ulſter, which are, in a field argent, a hand gules; and that upon condition of their defending the province of Ulſter, in Ireland, againſt the rebels, who then harraſſed it extremely: to which end, they were each to raiſe and keep up thirty ſoldiers, at their own expence, for three years together; or to pay into the exchequer a ſum ſufficient to do it; which, at 8*d.* *per* day *per* head, was 1095*l.*

Baronets take place according to the dates of their patents; by the terms of which no honour is to be erected between *barons* and *baronets*.

The title *Sir* is granted them by a peculiar clauſe in their patents, though they be not dubbed knights.—But both a *baronet*, and his eldeſt ſon, being of full age, may claim knighthood.

BARONIÆ *caput*. See Caput.

BARONY, **Baronia**, or **Baronagium**, the lordſhip, or fee of a baron, either temporal or ſpiritual.

In which ſenſe *barony* amounts to the ſame with what is otherwiſe called *honour*.

A *barony* may be conſidered as a lordſhip held by ſome ſervice in chief of the king, coinciding with what is otherwiſe called *grand ſergeanty*.

Baronies, in their firſt creation, moved from the king himſelf, the chief lord of the whole realm, and could be holden immediately of no other lord. For example: the king enfeoffed a man of a great ſeigneurie in land; to hold to the perſon enfeoffed and his heirs, of the king and his heirs, by baronial ſervice, to wit by the ſervice of twenty, forty, ſixty knights, or of ſuch other number of knights, either more or fewer, as the king by his enfeoffment limited or appointed.—In the ages next after the Conqueſt, when a great lord was enſeoffed by the king of a large ſeigneurie, ſuch ſeigneurie was called a *barony*; but, more commonly, an *honour*: as, the *honour* of Glouceſter, the *honour* of Walingford, the *honour* of Lancaſter, the *honour* of Richmond, and the like. There were in England certain *honours*, which were often called by Norman or other foreign names; that is to ſay, ſometimes by the Engliſh, and ſometimes by the foreign name. This happened when the ſame perſon was lord of an *honour* in Normandy, or ſome other foreign country, and alſo of an *honour* in England. For example: William de Forz, de Force, or de Fortibus, was lord of the *honour* of Albemarle in Normandy: he was alſo lord of two *honours* in England, to wit, the *honour* of Holderneſs, and the *honour* of Skipton in Cravene. Theſe *honours* in England were ſometimes called by the Norman name, the *honour* of Albemarle, or the honour of the earl of Albemarle. In like manner, the earl of Britannie was lord of the *honour* of Britannie in France, and alſo of the *honour* of Richmond in England: the *honour* of Richmond was ſometimes called by the foreign name, the *honour* of Britannie, or the *honour* of the earl of Britannie. This ſerveth to explain the terms, *honour* of Albemarle in England, *honor Albemarliæ*, or *comitis Albemarliæ in Anglia*; *honor Britanniæ*, or *comitis Britanniæ in Anglia*, the *honour* of Britannie, or the earl of Britannie in England. Not that Albemarle or Britannie were in England, but that the ſame perſon reſpectively was lord of each of the ſaid *honours* abroad, and of each of the ſaid *honours* in England.

The *baronies* belonging to biſhops are by ſome called *regalia*, as being held ſolely on the king's liberality. Theſe do not conſiſt in one *barony* alone, but in many; for, *tot erant baroniæ, quot majora prædia*.

A *barony*, according to Bracton, is a right indiviſible: wherefore, if an inheritance be to be divided among co-parceners, though ſome capital meſſuages may be divided, yet, if the capital meſſuage be the head of a county, or *barony*, it may not be parcelled; and the reaſon is, leſt by this diviſion, many of the rights of counties and *baronies*, by degrees, come to nothing, to the prejudice of the realm; which is ſaid to be compoſed of counties and *baronies*.

BAROPTIS, or **Baroptinus Lapis**, a name given by the ancient naturaliſts to a ſpecies of ſtone, ſuppoſed to have wonderful virtues againſt venomous bites, externally applied. Pliny has left us but a very ſhort deſcription of it: he ſays, it was black in colour, but variegated with large ſpots of red and white.

BAROSCOPE, a machine contrived to ſhew the alterations in the weight of the atmoſphere. See Barometer.

The word is derived from βαρος, *onus*, and σκοπεω, *video*.

BARQUETTE, or **Barchetta**, in the Mediterranean, denotes a leſſer ſort of barks, uſed for the ſervice of gallies, much as boats and ſhallops are for other ſhips, as to fetch proviſions, water, carry perſons aſhore, and the like.

BARR. See Bar.

Barr, **Barra**, or **Barro**, in *Commerce*, denotes a Portugueſe long meaſure, uſed in the menſuration of cloths, ſtuffs, and the like; ſix whereof are equivalent to ten *cavidos* or *cabidos*; each *cavido* equal to $\frac{4}{7}$ of a Paris ell.

Barra, *the Spaniſh*, is the ſame with the yard of Seville.

Barr *of Valentia* is equal to $\frac{10}{13}$ of the Paris ell.

Barr *of Caſtile* is equal to $\frac{5}{7}$ of the Paris ell.

Barr *of Arragon* is equal to $\frac{2}{3}$ of the Paris ell. Savar. Dict. Com. p. 273.

Barr is alſo uſed by the Portugueſe in the Eaſt Indies for a weight, more frequently called bahar.

Barr-*dice*, a ſpecies of falſe dice, ſo formed, as that they will not eaſily lie on certain ſides, or turn up certain points. *Barr-dice* ſtand oppoſed to flat dice, which come up on certain points oftener than they ſhould do.

BARRACKS. See Baracks.

BARRACOL, in *Ichthyology*, a name given by Artedi, from the Venetians, to expreſs the ſpecies of ray-fiſh, called by Bellonius and Geſner *miraletus*, and by others *raya oculata lævis*.

The ſpecific name of Artedi carries in it a much better character of the fiſh; he calls it the ray, with a ſmooth back and belly, and with the eyes ſurrounded with a ſeries of ſpines, and three other rows of them on the tail.

BARRAGAN, or **Barracan**, in *Commerce*, a kind of ſtuff belonging to the claſs of camblets, only of a grain much coarſer than the reſt, manufactured in divers parts of France and Flanders, chiefly at Abbeville, Amiens, Rouen, and Liſle, and now in England.

The word is barbarous Latin, formed, as ſome ſuppoſe, from *barra*, q. d. *barrarum formam referens*. Du-Cange.

The chief uſe of *barragans*, called alſo by the French *bouracans*, is for ſurtouts, or upper garments againſt the rain, being, when good, of ſo cloſe a grain, that the water will not ſoke through, but only run upon them.

For the woof, its thread is ſingle, twiſted, and fine ſpun; that of the warp is double or triple, i. e. compoſed of two or three threads well twiſted together. The uſual matter it is made of, is wool; though there are ſome made at Rouen, where the warp is hemp, and the woof wool. Some *barragans*, again, are made of wool, dyed before it comes to the loom; others are woven white, and dyed afterwards, red, black, blue, brown, &c. They are not fulled, but only boiled two or three times in fair water, when they come from the loom; then calendered to make them ſmooth and even; and laſtly made into rolls, called pieces of *barragan*.

BARRATI, *barred*, an appellation given to the Carmelites, after they were obliged to lay aſide the white cap, and wear cowls ſtriped black and white.

BARRATRY is uſed for bribery or corruption in a judge, giving a falſe ſentence for money.

Barratry is alſo uſed, in *Middle Age Writers*, for fraud or deceit in making of contracts, ſales, or the like. See Baratry.

BARRE. See Bar.

BARREL, an oblong veſſel, of a ſpheroidal, or rather a cylindroidal figure, uſed for the holding divers ſorts of goods, both liquid and dry.

Barrels are of divers uſes in artillery, as for powder, ſmall-ſhot, flint, ſulphur, ſalt-petre, roſin, pitch, quick-match, and many other things.

Barrels filled with earth, ſerve to make a parapet to cover the men, like gabions and canvaſs bags.

Barrels, *fire*, are caſks of divers capacities, filled with bombs, grenados, fire-pots, mixed with great quantities of tow ſoaked in petrol, turpentine, pitch, &c. uſed by the beſieged to defend breaches. Theſe are ſometimes alſo called *thundering barrels*, being to be rolled down on the enemy on their entering the breach.

Barrel is alſo uſed for a certain quantity, or weight of ſeveral merchandizes; which is various as the commodities vary.

The Engliſh *barrel*, wine meaſure, contains the eighth part of a tun, the fourth part of a pipe, and the moiety of a hogſhead, that is, thirty-one gallons and a half; of beer it contains thirty-ſix gallons; and of ale thirty-two gallons.

The *barrel* of beer, vinegar, or liquor preparing for vinegar, is to contain 34 gallons, according to the ſtandard of the ale quart. 10 and 11 W. III. cap. 21.

The *barrel* of herrings is to contain 32 gallons, wine meaſure; being about 28 gallons, old ſtandard: uſually amounting to about 1000 full herrings, 13 Eliz. cap. 11.

The *barrel* of ſalmon is to contain 42 gallons, 5 G. cap. 18.—And the *barrel* of eels, the ſame, 22 Ed. IV. cap. 2.

The *barrel* of ſoap is to contain 256 pounds, 10 A. cap. 19.

The *barrel* or *barrille* of Florence is a liquid meaſure containing 20 fiaſques, flaſks, or one third of a ſtar or ſtaio.

The *barrel*, *barique* of Paris, contains 210 pints, or 26 ſeptiers and an half; four bariques make three muids, or one tun.

Barrel, in *Anatomy*, denotes a pretty large cavity ſituated behind the drum of the ear, lined with a membrane, in which there are ſeveral veins and arteries. It is ſaid to be full of a purulent matter in children; and, in its cavity, there are four ſmall bones, viz. the *malleolus*, the *incus*, the *ſtapes*, and the *os orbiculare*.

Barrel *of a clock* is a cylindrical part, about which the ſtring is wound, anſwering to what in watches is properly called the *fuſee*.

Barrel *of a jack* is the cylindrical part whereon the line is wound.

Barrel *of a pump* is the wooden tube, which makes the body of the engine, and wherein the piſton moves.

BARRELLING, the art of putting up certain commodities in caſks or barrels.

Gun-powder for the land-ſervice is often *barrelled* double, the barrel it is put in being incloſed in another barrel, partly to prevent the powder catching moiſture in the ſubterraneous places it is kept in, and partly to enable it the better to bear the motion and jolting of carriages, when it is to be conveyed to another place.

Barrelling *of herrings* imports the cutting off their heads, as they are thrown into the buſs, and afterwards pulling out the guts, ſalting them, and putting them up in barrels.

There are two ſorts of *barrelled herrings*; one wherein they are laid orderly, layer over layer, called by ſome *packed herrings*; the other wherein they are thrown at random, called *herring in wrack*.

The difference ariſes thus: as faſt as the fiſhermen catch the herrings, they throw them on the deck of the veſſel; where having gutted and ſalted them, they throw them at random into the barrel, to be carried home: this is the herring *in wrack*.

When arrived aſhore, they take the fiſh out of theſe barrels, caſt them into a tub, and ſalting them anew, range them handſomely in their barrels again, laying ſalt over them, to preſerve them: this is the *packed herrings*. And in this ſtate it is they are uſually ſold.

BARREN *ground*, that which being ſowed, produces no crop, or, at moſt, ſo ſlender a crop, that it will not defray the charge of its tillage.

BARREN *money* is uſed, in the *Civil Law*, for that which is not put out to intereſt.

BARREN *corn*, the name given to a diſtemper in corn by M. Aimen, who firſt obſerved it. It is moſt common in wheat and rye; the ears of which are long, lean, and white; in ſome the ſtamina are dry, tranſparent, and horned; the female organs are ſmall, whiter, and leſs velvetty than in healthy ears; in others the filaments are ſmaller, the apices are void of farina, and the ſtigmata badly unfolded.

It is owing either to the too ſudden growth of the corn; to froſt, or to hot gleams of ſun-ſhine after hard ſhowers; and ſometimes, though very rarely, to inſects. Count Ginnani imputes this diſeaſe of corn to the faultineſs of the ſoil; and he recommends particular attention to the amendment of it, by ſuch means as are beſt ſuitable to its nature; and he alſo directs to change the ſeed every year.

BARREN *ſprings*, a name given by huſbandmen to thoſe whoſe waters are injurious to land. Such are moſt of thoſe that flow from coal-mines, or through beds of ſulphureous minerals.

BARRENNESS. See STERILITY.

BARRENWORT, EPIMEDIUM, in *Botany*, a genus of the *tetandria monogynia* claſs. Its characters are theſe. The flower hath a three-leaved empalement, which falls off; it hath four obtuſe petals, and four nectariums, which are cup-ſhaped, and as large as the petals; with four ſtamina, and an oblong germen, which afterward becomes an oblong pod, with one cell, incloſing many oblong ſeeds.

The root and leaves are the parts uſed in medicine. The leaves triturated, and made into a cataplaſm with oil, and ſo applied to the breaſts, prevent their farther growth; the root cauſes barrenneſs. The leaves triturated, and drank to the quantity of five drams, in urine, for five days together, after the menſtrual purgation, Dioſcorides ſays, effectually prevents conception.

BARRICADE, or BARRICADO, a military term for a fence, or retrenchment, haſtily made with veſſels, or baſkets of earth, carts, trees, paliſades, or the like, to preſerve an army from the enemy's ſhot, or aſſault.

The moſt uſual matter of *barricades* is pales, or ſtakes, which are croſſed with battoons, and ſhod with iron at the feet: uſually ſet up in paſſages, or breaches, to keep back as well the horſe as foot.

BARRICADE, in the *Marine*, is a ſtrong wooden rail, ſupported by pillars, and extending, as a fence, acroſs the foremoſt part of the quarter-deck. In ſhips of war, the intervals between the pillars are commonly filled with cork, junks of old cable, or plaited cordage. About a foot above the rail, there extends a double rope-netting, ſupported by cranes of iron; and between the two parts of the netting are ſtuffed hammocks, filled with the ſeamen's bedding, to intercept ſmall ſhot fired by ſwivel guns and muſkets, in time of battle.

BARRIER, a kind of fence made at a paſſage, retrenchment, gate, &c. to ſtop up the entry thereof. See DEFENCE.

It is uſually made of great ſtakes, about four or five feet high, placed at the diſtance of eight or ten feet from one another, with overthwart rafters; ſerving to ſtop either horſe or foot that would ruſh in.—In the middle is a moveable bar of wood, which opens and ſhuts at pleaſure.

BARRIERS has been likewiſe uſed to ſignify a martial exerciſe of men, armed, and fighting together with ſhort ſwords, within certain rails, or bars, whereby they were incloſed from the ſpectators.

BARRIERS, or BARRIERES. Thus they call in the chief cities of France, and particularly at Paris, the places where the cuſtom-houſes are eſtabliſhed; and where the officers receive the duties of importation, according to the tariff ſettled by the king's council. They are called *barriers*, becauſe the paſſages through which the carriages and merchandiſes liable to pay duties are to paſs, are ſhut up with a wooden bar, which turns upon a hinge, and is opened and ſhut at the will of the cuſtom-houſe officers.

There are at Paris ſixty of thoſe *barriers*, all placed at the entrance of the ſuburbs.

BARRING *a vein*, an operation performed by farriers on the veins of horſes legs, and of other parts, in order to ſtop the courſe, and leſſen the quantity, of the malignant humours which prevail there.

It is done by opening the ſkin above the part, and, after diſengaging it, and tying it both above and below, ſtriking between the two ligatures.

When horſes have got traverſe mules, or kibed heels, and rat-tails, or arreſts in the hinder legs, it is common to BARR *a vein*.

BARRISTER, a perſon qualified and impowered to plead, and defend the cauſes of clients in the courts of juſtice.

The word is formed from *bar*, *barra*, a name given the place where they ſtand to plead.

Barriſters, in the Engliſh law, amount to the ſame with *licentiates*, and *advocates*, in other countries and courts, where the civil, &c. laws obtain.

Anciently they were denominated among us, *apprentices of the law*, *apprenticii juris*; now uſually *counſellors at law*.

They ſeem to have been firſt appointed by an ordinance of king Edward I. in parliament, in the twentieth year of his reign.

To paſs *barriſters* they were formerly obliged to ſtudy eight years, now only ſeven, and ſometimes fewer. The exerciſe required was twelve grand moots, performed in the inns of chancery in time of the grand readings, and twenty-four petty moots at the inns of chancery in term-time, before the readers of the reſpective inns of chancery.

Barriſters, according to Forteſcue, might be called to the ſtate and degree of *ſerjeants*, when they were of ſixteen years ſtanding.

Utter barriſters, according to ſome, are pleaders without the bar; they are thus called to diſtinguiſh them from benchers, or thoſe who have been readers, who are admitted to plead within the bar; hence called *inner barriſters*, 5 El. cap. 1.

BARRITUS, in *Antiquity*, a military ſhout, raiſed by the Roman ſoldiers at the firſt charge on the enemy.

BARROW, in the Engliſh *Topography*, denotes a large hillock or mount of earth raiſed or caſt up by art; ſuppoſed to have been one of the Roman *tumuli*, or ſepulchres.

Dr. Plott takes notice of two ſorts of *barrows* in Oxfordſhire; one placed on the military ways, the other in the fields, meadows, woods, &c.

The former were doubtleſs of Roman erection; the latter more probably erected by the Britons or Danes.

Some of theſe *barrows* appear rude and erected only of earth; others are more regular, trenched round; ſome with two or three circumvallations, and ſurmounted with monumental ſtones. Plott's Nat. Hiſt. Oxford. chap. 10. § 48.

They are to be met with in ſeveral parts of England: thoſe in Wiltſhire are well known. We have an examination of the *barrows* in Cornwall by Dr. Williams, in the Phil. Tranſ. N° 458. from whoſe obſervations we find, that theſe *barrows* are compoſed of foreign or adventitious earth, that is, ſuch as does not riſe on the place, but is fetched from ſome diſtance.

It has been thought, that theſe *barrows* were erected for ſepulchres; and this conjecture ſeems well confirmed by the urn found in one of them. This urn is made of burnt or calcined earth, very hard, and very black in the inſide: it has four ſmall handles, and in it were found ſeven quarts of burnt bones and aſhes.

That it was the ancient practice to burn the dead, is well known; and from theſe *barrows* it appears, how the nations, that practiſed this way of burial, expreſſed their regard for the dead. It was by erecting over their aſhes theſe *barrows*, or *tumuli*, compoſed of earth and ſtone brought from diſtant places; and the *barrow* was generally in proportion to the greatneſs, rank, and power of the deceaſed perſon. Each ſoldier or friend might bring ſome of the earth or ſtones from diſtant places where they lived, and thus compoſe the *tumulus*. Many paſſages might be quoted from ancient authors to this purpoſe. Phil. Tranſ. loc. cit.

See an account of the numerous *tumuli*, or *barrows*, diſcovered in the ſouthern part of Siberia, in the Archæologia, vol. ii.

BARROWS, in the *Salt Works*, are caſes made with flat cleft wickers, in the ſhape almoſt of a ſugar-loaf, with the bottom uppermoſt, wherein the ſalt is put, as it corns, and ſet to drain. Phil. Tranſ. N° 53. p. 1065. Hought. Collect. N° 211. p. 81.

BARROWISTS, in *Eccleſiaſtical Hiſtory*. See BROWNISTS.

BARRULET, in *Heraldry*, is the half of the cloſet, or the quarter of the bar.

BARRY, in *Heraldry*.—When an eſcutcheon is divided barways into an even number of partitions, and conſiſts of two or more tinctures, interchangeably diſpoſed, it is expreſſed in blazon, by the word *barry*, and the number of pieces is to be ſpecified.—E. gr. *barry* of ſo many pieces.

If the diviſions be odd, the field muſt be firſt named, and the number of bars expreſſed.

BARRY-BENDY is when an eſcutcheon is divided evenly both bar and bend-ways, by lines drawn tranſverſe and diagonal, interchangeably varying the tinctures of which it conſiſts.—Thus, he bears *barry-bendy, or* and *ſable*.—See *Tab. Herald. fig.* 4.

BARRY-PILY is when a coat is divided, as repreſented in *Tab. Herald. fig.* 5. which is blazoned, *barry-pily* of eight pieces.

BARRY, *counter*. See COUNTER.

BARSANIANI, in *Church Hiſtory*, a ſect who held all the errors of the Severians and Theodoſians.

BARSE, in *Ichthyology*, an Engliſh name for the common *pearch*, PERCA, a well known freſh-water fiſh. It is alſo the name now in uſe for the ſame fiſh in the Saxon language, and is one of the many Saxon words we have yet retained.

BARTERING, the act of trucking or EXCHANGING one commodity for another of like value.

The word comes from the Spaniſh *baratar, to deceive*, or *circumvent* in bargaining; perhaps becauſe thoſe who deal this way uſually endeavour to over-reach one another.

This is alſo called *bartry*, 13 Eliz. cap. 7.

In order to ſolve all queſtions that occur under this article, find the value of that commodity, the quantity of which is given, and then find how much of the other commodity will amount to that ſum at the rate propoſed.

BARTHOLOMEW's *Hoſpital*. See HOSPITAL.

BARTON, in Devonſhire, and the weſt of England, is uſed for the demeſne-lands of a manor. Alſo for the manor-houſe.—And, in ſome places, for out-houſes, fold-yards, &c.

BARTRAMIA, in *Botany*, a genus of the *decandria monogynia* claſs of plants; the calyx of which is a perianthium, cut into five parts; the corolla conſiſts of five wedge-ſhaped petals; the fruit is globular, and the ſeeds are four in number, convex on one ſide, and angular on the other.

BARTSIA, in *Botany*, the name of a genus of plants of the *didynamia angioſpermia* claſs, which ſeems of a middle nature between the *euphraſia*, *pedicularis*, and *rhinanthus*. The characters are theſe: the perianthium conſiſts of one leaf, and is tubular and permanent: it is bifid at the extremity, and the ſegments are emarginated, and are coloured at the points. The flower conſiſts of one petal, and is of the ringent kind: the upper lip is erect, narrow, undivided, and longer than the cup: the ſtamina are four ſetaceous filaments of the length of the upper lip of the flower; but two of them are ſhorter than the others: the antheræ are oblong, and ſtand cloſe together, under the top of the upper lip of the flower: the germen of the piſtil is oval; the ſtyle is capillary, and longer than the ſtamina; and the ſtigma is obtuſe and nutant: the fruit is an oval capſule, of a compreſſed ſhape, and pointed; is compoſed of two valves, and divided by a membrane into two cells within; the ſeeds are numerous, and ſmall.

BARULES, in *Church Hiſtory*, a ſect which maintained that the Son of God had only a phantom of a body; that ſouls were created before the world, and that they lived all at one time.

BARUTH, an Indian meaſure, containing ſeventeen gantans; it ought to weigh about three pounds and a half, avoirdupois.

BARYPYCNI, βαρυπυκνοι, in the *Ancient Muſic*, was a name given to ſuch chords as formed the graveſt notes of the ſeveral SPISSA. There were five *barypycni* in the ſcale. See PYCNI.

BARYTONUM, from βαρυς, *grave*, and τονος, *accent*, in the Greek *Grammar*, denotes a verb, which having no accent marked on the laſt ſyllable, a grave accent is to be underſtood.

In the Italian muſic, *barytono* anſwers to our common pitch of baſs.

BAS-*relief*. See BASSO-*relievo*.

BASAAL, in *Botany*, the name of an Indian tree growing about Cochin. Ray's Hiſt.

BASALT, *artificial*, or *black porcelain*, a compoſition, having nearly the ſame properties with the natural *baſalt*, invented by Meſſrs. Wedgwood and Bentley, and applied to various purpoſes in their manufactures.

BASALTES, a kind of ſtone, deſcribed by the ancient naturaliſts, as of the hardneſs and colour of iron.

Pliny, and others after him, write the word *baſaltes*. Salmaſius corrects it, *baſalites*. Its ſpecific gravity is to that of water, as 3000 or upwards to 1000.

The largeſt block of this ſtone that ever was ſeen, Pliny ſays, was placed by Veſpaſian in the temple of Peace: in it was repreſented the figure of Nilus, with ſixteen children playing about it, denoting ſo many cubits of its riſe: he adds, that the ſtatue of Memnon, in the temple of Serapis, at Thebes, which reſounded at the riſing of the ſun, was alſo made of this ſtone. How this miraculous kind of reſonance was cauſed ſeems indicated by Juvenal, Sat. xv. ver. 5.

> —*Dimidio magicæ reſonant ubi Memnone chordæ*—

Moſt of the antique Egyptian figures remaining, are alſo apparently of the ſame ſtone.

Some of the ancients call it *lapis Lydius*, from Lydia, the place where it was found in moſt abundance; and among the moderns it is denominated the TOUCH-STONE, as being uſed for the trial of gold and ſilver.

It is hard, heavy, cloſe, black, and reſiſts the file; and had its name from *baſal, iron*; or βασαλιζω, *diligenter examino*.—Dalechampius ſays, there are ſtones of the ſame kind near Gallon in Normandy; others are brought from Ethiopia and Germany.—The Giants Cauſeway in Ireland is compoſed of the *baſaltes*.

The deſcriptions the ancients have agreed to give of the *baſaltes*, as carefully collected by De Boet, give us a very juſt and accurate deſcription of the Giants Cauſeway, though that author has never ſeen or heard of it, the appearance of this marble in all parts of the world being the ſame, and theſe accounts plainly evincing, that the immenſe pile of the *baſaltes* in Ireland is no miracle, nor work of art, but, perhaps, the nobleſt collection of that body which the world has to ſhew.

The origin and formation of this marble has much puzzled the world; but we may conſider, that many of the known foſſile bodies have a property, like ſalts, of arranging themſelves into different figures at the time of their firſt coaleſcence into a maſs. This is from the ſame laws in nature with that of ſalts; and we are well aſſured by daily experience, that cryſtal and ſpar, according to this natural determination, ever form regularly angular figures, when all the proper accidents have concurred to their concretion. The moſt common figures of cryſtals are the hexangular columns; and thoſe of ſpar, either trigonal columns, or parallelopipeds. The combinations and mixtures of theſe, in different degrees, may naturally produce mixt figures, according to theſe degrees; and a third ſubſtance, though in itſelf not diſpoſed by nature to aſſume or arrange itſelf into any particular figure, if mixed with theſe, may be able to ſpread, extend, and inlarge the figures they concrete into, or otherwiſe alter them.

This ſubſtance has been referred by d'Acoſta, and others, in imitation of the ancients, to the genus of marbles; though differing from them in many eſſential qualities. The *baſaltes* is vitreous, analogous in ſubſtance to the horny ſtones. It reſiſts aqua fortis, and the chiſſel, and only yields to a violent fire, and the engraver's wheel. When wrought in this manner it acquires the poliſh of the ancient *baſaltes*; named by the Italians *marmo paragone*. M. Deſmauſt, having accurately examined the *baſaltes*, which are found in great quantities at Auvergne, attributes their origin to the matter of volcanoes refrigerated from fuſion; and he was naturally led to this hypotheſis, by diſcovering that they were placed on beds of *lavas*, and *ſcoriæ*, cloſe to the opening of an extinguiſhed volcano. M. Raſpe has adopted this hypotheſis, and confirmed it by his own obſervations on the *baſalt* hills, in the neighbourhood of Caſſel, and in other places; this ſubſtance being generally found near the lavas of volcanoes; and the whole iſland of Sicily, chiefly on the ſide of mount Ætna, abounding with it. This opinion is farther ſupported by the vitreous ſubſtance of theſe ſtones; the want of marine bodies, and from the circumſtance attending ſome melted metals, which, when hardened, appear in cryſtallizations, not unlike thoſe of watery congelations. Hiſt. de l'Acad. Roy. des Sciences, at Paris, for 1771. Phil. Tranſ. vol. lxi. N° 54. Ferber's Travels through Italy, tranſlated by Mr. Raſpe, 1778.

BASANITES, in *Natural Hiſtory*, a name given by many authors to the TOUCHSTONE, uſed for trying gold, &c. Pliny ſpeaks of a *baſanites* which yielded a bloody juice, and was good againſt diſeaſes of the liver.

BASANUS, in *Natural Hiſtory*. See TOUCHSTONE.

BASARUCO, in *Commerce*, a ſmall baſe coin in the Eaſt Indies, being made only of very bad tin. Of this coin there are two ſorts, good and bad; the value of the baſe ſort is $\frac{1}{6}$ lower than that of the good. Three *baſarucos* are equal to two *rees* of Portugal.

BASCANIA, in *Antiquity*, ridiculous or groteſque figures hung up by the ancient ſmiths before their furnaces, to divert envy.

BASE, BASIS, in *Architecture*, denotes the lower part of a column, or pedeſtal.

The *baſe* is alſo ſometimes called *ſpira*, from *ſpiræ*, the folds of a ſerpent laid at reſt, which makes a figure not unlike it.—See *Tab. Archit. fig.* 24. 25. 26. 27. 28.

BASE *of a column* is that part between the ſhaft and the pedeſtal, if there be any pedeſtal; or, if there be none, between the ſhaft and the plinth, or zocle.

The *baſe* is ſuppoſed to be the foot of the column; or, as ſome will have it, it is that to a column, which a ſhoe is to a man.—The members, or ornaments whereof it is compoſed, are ſuppoſed, by ſome, to have been originally intended to repreſent the iron circles wherewith the feet of trees and poſts, which ſupported the ancient houſes, were girt, in order to ſtrengthen them.

The *baſe* is different in the different orders.—The

Base, *Tuſcan*, is the moſt ſimple of all others; conſiſting only of a ſingle tore beſides the plinth.—See *Tab. Archit. fig.* 24.

Base, *Doric*, has an aſtragal more than the Tuſcan; though that was introduced by the moderns. See *fig.* 25.

Base, *Ionic*, has a large tore over two ſlender ſcotias, ſeparated by two aſtragals; though in the moſt ancient monuments of this order there are no *baſes* at all; which the architects are at a loſs to account for. See *fig.* 26.

Base, *Corinthian*, has two tores, two ſcotias, and a fillet.—See *fig.* 27.

Base, *Compoſite*, has an aſtragal leſs than the Corinthian. See *fig.* 28. See the meaſures of the parts of the *baſe* in theſe ſeveral orders, under Column.

Base, *Attic*, or *Atticurgic*, ſo called, becauſe firſt uſed by the Athenians, has two tores, and a ſcotia.

Base *rudentée*, is that which has its tores cut like cables.

Base, in *Fortification*, denotes the external ſide of the polygon; or that imaginary line which is drawn from the flanked angle of a baſtion to that which is oppoſite thereto.

Base, in *Gunnery*. See Cannon.

Base, *line of the*. See Line.

Base *of a figure*, in *Geometry*, denotes the loweſt part of its perimeter.

In which ſenſe, the *baſe* ſtands oppoſed to the *vertex*, which denotes the higheſt part.

Base *of a triangle*, any ſide thereof is occaſionally ſo called; though properly it is the loweſt ſide, or that which lies parallel to the horizon.

Thus, the line AB is the *baſe* of the triangle ABC, *Tab. Geom. fig.* 68. Not, but on other occaſions, the lines AC, or BC in the triangle, may be made the *baſe*.

In a rectangled triangle, the *baſe* is properly that ſide oppoſite to the right angle, i. e. the hypothenuſe.

Base *of a ſolid figure* is its loweſt ſide, or that whereon it ſtands.

Thus, the circular plane DFE is the *baſe* of the cylinder ABDE. *Tab. Geom. fig.* 56.

Base *of a conic ſection* is a right line in the hyperbola and parabola, formed by the common interſection of the ſecant plane, and the *baſe* of the cone.

Base, *altern*. See Altern.

Base, *diſtinct*, in *Optics*. See Distinct.

Base *of the heart*, in *Anatomy*, denotes the broader or upper part of that viſcus, to the ſides of which the two auricles are affixed.—See *Tab. Anat.* (*Splanch.*) *fig.* 12. *litt. aa, and cc.*

This is ſometimes alſo called the vertex or head, κεφαλη; in oppoſition to which, is the leſſer or narrower part, called *apex*, or *mucro*, the point or tip of the heart.

Some alſo give the denomination *baſe*, to the root of the *os hyoides*.

Base, or Basis, in *Chemiſtry*, any body which is diſſolved by another body, which it receives and fixes, and with which it forms a compound, may be called the *baſis* of that compound. Thus, for example, the *baſes* of neutral ſalts are the alkaline, earthy, and metallic matters, which are ſaturated by the ſeveral acids, and form with them theſe neutral ſalts. It is proper for the conveniency of chemical language to retain this manner of expreſſion; but theſe *baſes* muſt not be conſidered as inactive, and only yielding to the action of the acids which they fix, and to which they give a body and conſiſtence. In every combination and ſolution, the ſeveral bodies which unite are equally active, their action being reciprocal. They diſſolve each other; ſo that it is as proper to ſay (as Mr. Gellert obſerves) that a metal or an earth diſſolves an acid, as that an acid diſſolves a metal or an earth; though this latter mode of expreſſion is moſt common. Probably the diſſolving power which the more weighty and fixed bodies have, is really much ſtronger than that of bodies leſs weighty and fixed. It certainly is ſo, if the tendency to unite be only the effect of the general attraction, or the gravitation of all particles of matter to each other. See Combination and Solution.

Basis, in *Pharmacy*, is that ingredient on which moſt ſtreſs is laid, for effecting the purpoſe of any compound medicine.

Base, in *Muſic*. See Bass.

Base, in *Law*.—*Baſe eſtate* is that eſtate which baſe tenants have in their lands.

Base *fee* denotes a tenure in fee at the will of the lord. By which it ſtands diſtinguiſhed from ſocage, or free tenure. See Fee.

Base *court* is any court not of record.—Such, e. gr. is the court-baron.

Base *tenure*, *baſſa tenura*, denotes holding by villenage, or other cuſtomary ſervice; as diſtinguiſhed from the higher tenures in capite, or by military ſervice.

Base *rocket*, in *Botany*, reseda. See Rocket.

Base *knights*, *bas chevaliers*, denote the inferior order of knights, as diſtinguiſhed from barons and bannerets, who were the chief or ſuperior knights.

Base *point*, in *Heraldry*. See Point and Escutcheon.

Base *ring of a cannon* is the great ring next behind the touch-hole.

BASELS, Baselli, in our *Old Writers*, a kind of coin aboliſhed by king Henry II. 1158.

BASELLA, in *Botany*, climbing nightſhade, from Malabar, a genus of the *pentandria trigynia* claſs. The characters are theſe: the flower hath no empalement; it is ſhaped like a pitcher, cloſed toward the brim. It hath five ſtamina faſtened to the petal; the globular germen, which is ſituated in the center, ſupports three ſlender ſtyles, crowned by oblong ſtigma. The petal of the flower remains, and encloſes a roundiſh fleſhy berry, including one round ſeed. There are two ſpecies.

From the berries of the firſt ſort, a beautiful colour is drawn; but when uſed for painting, it did not laſt, but changed to a pale colour; it is probable, however, that ſome method might be found to fix it, as it is ſaid that the juice of theſe berries is uſed for ſtaining calicoes in India.

Basella, is ſometimes uſed for the *cuſcuta*, or dodder.

BASEMENT, in *Architecture*, a continued baſe, extended a conſiderable length, as around a houſe, a room, or other piece of building.

This is alſo called, by ancient architects, *ſtereobata*; by the French, *embaſement*, or *ſoubaſement*; ſometimes *ſocle continu*, when it is without either baſe or cornice.

BASHARIANS, a ſect of Mahometans, being a branch or ſubdiviſion of the *Motazalites*.

The *Baſharians* are thoſe who maintain the tenets of Baſhar Ebn Motamer, a principal man among the *Motazalites*, who varied, in ſome points, from the general tenets of the ſect, as extending man's free agency to a great length, even to the making him independent. He aſſerted, that God is not always obliged to do that which is beſt; for that, if he pleaſed, he could make all men true believers. Accordingly he taught, that God might doom an infant to eternal puniſhment; but taught at the ſame time, that he would be unjuſt in ſo doing. Vid. Sale's Prelim. Diſc. to Koran.

BASHAW, Pascha, or Pacha, a Turkiſh governor of a province, city, or other diſtrict.

We ſay, the *baſhaw* of Babylon, the *baſhaw* of Anatolia, the *baſhaw* of Bender, &c.

All Egypt is, on the part of the grand ſeignior, governed by a *baſhaw*, who has in reality but little power; but ſeems principally to be meant for the means of communicating to his divan of *beys*, and to the divans of the ſeveral military *ogiacs*, that is, their bodies, the orders of the grand ſeignior, and to ſee that they be executed by the proper officers.

If he farms the country of the grand ſeignior, the fines that are paid, when any life drops upon the lands, belong to him; for originally all the lands of Egypt belonged to the grand ſeignior; and the Porte ſtill looks on them as its own: but the grand ſeignior's power being now loſt, they all go to the next heir; who muſt, however, be inveſted by the *baſhaw*, and is glad to compound for a ſmall ſum.

The nature of the *baſhaw's* office requires him to be ever attempting means to cut off ſuch as are too aſpiring, or engaged in deſigns that may be any way prejudicial to the Porte. This often occaſions his own depoſition; but he is unconcerned about that, as his perſon is always ſacred; and his loſing this poſt is only a ſtep to higher preferment.

Baſhaws include *beglerbegs*, and ſometimes *ſangiacbegs*; though a diſtinction is ſometimes made, and the name *baſhaw* is appropriated to the middle ſort, or ſuch as have two enſigns or horſe-tails carried before them.—Thoſe who have the honour of three tails, are called *beglerbegs*; and thoſe who have only one, *ſangiacbegs*.

The appellation *baſhaw* is alſo given by way of courteſy at Conſtantinople, to the lords about the grand ſeignior's court, the officers in the army, and almoſt every perſon of any figure.

A *baſhaw* is made with the ſolemnity of carrying a flag or banner before him, accompanied with muſic and ſongs, by the *mirialem*, an officer on purpoſe for the inveſtiture of *baſhaws*.

Baſhaw, uſed abſolutely, denotes the prime vizier; the reſt of the denomination being diſtinguiſhed by the addition of the province, city, or the like, which they have the command of; as the *baſhaw* of Egypt, of Paleſtine, &c. The *baſhaws* are the emperor's ſpunges. We find loud complaints among Chriſtians of their avarice and extortions. As they buy their governments, every thing is venal with them.

When glutted with wealth, the emperor frequently makes them a preſent of a bow-ſtring, and becomes heir to all their ſpoil. Tourn. Voyag. tom. i. & ii.

There are alſo *ſub-baſhaws*, or deputy-governors under the firſt. Phil. Tranſ. N° 218.

Bashaw, *captain*, is the title of the Turkiſh high-admiral.

BASIA *ultima*. See Ultima.

BASIATRAHAGI, in *Botany*, a name uſed by ſome for the common *polygonum*, or knot-graſs.

BASIL, among *Joiners*, denotes the angle to which the edge of an iron tool is ground.

To work on ſoft wood they uſually make their *baſil* 12 degrees, for hard wood 18; it being obſerved, that the more acute or thin the *baſil* is, the better and ſmoother it cuts; and the more obtuſe, the ſtronger and fitter it is for ſervice.

Basil, *order of St.* is the moſt ancient of all the religious orders; it takes its name from St. Baſil, biſhop of Cæſarea, in Cappadocia, about the middle of the fourth century; who is ſuppoſed to have been the author of the rules obſerved by this order, though ſome diſpute it.—The order of St. *Baſil* was anciently very famous in the Eaſt.

The order of St. *Baſil* ſtill continues in Greece. The habit of the monks is black, and plain, conſiſting of a long caſſock, and a great gown with large ſleeves: on their head they wear a hood, which reaches to the ſhoulders: they wear no linen; ſleep without ſheets, in ſtraw; eat no fleſh; faſt often; and till the ground with their own hands.

This order was introduced in the Weſt in 1057, and was reformed in 1579, by pope Gregory XIII. who united the religious of this order in Italy, Spain, and Sicily, into one congregation; of which the monaſtery of St. Saviour at Meſſina is the chief, and enjoys pre-eminence over the reſt. Each community has its particular rule, beſides the rule of St. *Baſil*, which is very general, and preſcribes little more than the common duties of a Chriſtian life.

Basil, in *Botany*, *ocymum*, a genus of the *didynamia gymnoſpermia* claſs of plants, the characters of which are theſe: The empalement of the flower is ſhort, permanent, of one leaf, divided into two lips. The flower is of the lip kind, of one petal inverted; the riſing lip is broad, and cut into four obtuſe equal parts; the reflexed lip is long, narrow, and ſawed. It hath four ſtamina on the lower lip, which are reflexed; two of which are a little longer than the other, terminated by half-moon-ſhaped ſummits; the germen is divided into four parts, which afterward become four naked ſeeds encloſed in the empalement. There are ſeven ſpecies.

Baſil, though it has a fragrant, and, to moſt, a pleaſant ſmell, is but little uſed in phyſic. The ancients condemned the inward uſe of it, as hurtful to the ſight. Schroder ſays it cleanſes the lungs of phlegm, and provokes the menſes. It is an ingredient in the *aqua bryoniæ compoſita*, or hyſteric water.

Basil, *field*. See Clinopodium.

Basil, *American field*. See Monarda.

Basil, *Syrian field*; *Ziziphora*, in *Botany*, a genus of the *diandria monogynia* claſs. The characters are theſe: the flower hath a long, rough, cylindrical empalement, which is ſlightly cut into five parts at the brim; and the flower is of the labiated kind, having a long cylindrical tube. The upper lip is oval, reflexed, and entire; and the under lip, or beard, is divided into three equal ſegments. It has two ſpreading ſtamina, terminated by oblong ſummits, and a quadrifid germen, ſupporting a briſtly ſtyle, crowned by a ſharp-pointed inflexed ſtigma. The germen turns to four oblong ſeeds, which ripen in the empalement. There are three ſpecies.

Basil, *ſtone, and wild*. See Thymus.

BASILARE *os*, in *Anatomy*, a barbarous denomination given to the *os* sphenoides, on account of its being ſituated at the bottom or *baſis* of the ſkull; or becauſe a great part of the brain reſts hereon, as on its *baſis*.

BASILEUS, βασιλευς, a title aſſumed by the emperors of Conſtantinople, excluſive of all other princes, to whom they gave the title *rex*, *king*.

The ſame quality was afterwards given by them to the kings of Bulgaria, and to Charlemagne, from the ſucceſſors of which laſt they endeavoured to wreſt it back again.

The title *baſileus* has been ſince aſſumed by other kings, particularly the kings of England, *Ego Edgar totius Angliæ baſileus confirmavi*.

Hence alſo the queen of England was intitled *Baſilea* and *Baſiliſſa*.

Basileus, in *Zoology*, a name by which ſeveral of the old authors called the *regulus criſtatus*, or golden crowned wren.

BASILIANS. See Bogomili.

BASILIC, or **Basilica**, in the *Ancient Architecture*, denotes a kind of public hall, or court of judicature, where the princes or magiſtrates ſat to adminiſter juſtice. See *fig.* 40. *Tab. Architect.* The figure is drawn to introduce ſeveral rules and decorations, which could not be ſo well explained as by repreſenting them in their proper order, and exhibiting their uſe, and the manner in which they may be applied.

The word is originally Greek, βασιλικη, q. d. *royal houſe*, or *palace*.

The *baſilics* conſiſted of a great hall, with ailes, porticos, tribunes, and tribunals. With us Weſtminſter-hall is properly a *baſilic*; but architects have taken the liberty to extend its meaning farther; and *baſilic* is now uſed as a name for any ſpacious building, as hall, church, &c. When applied to a church, it conveys the idea of great magnificence.

The bankers too had one part of the *baſilicæ* allotted for their reſidence. The ſcholars alſo went thither to make their declamations, according to the teſtimony of Quinctilian.

The Roman *baſilicæ* were covered, by which they were diſtinguiſhed from the *fora*, which were public places open to the air.

In after-times the denomination *baſilica* was alſo given to other buildings of public uſe, as town-houſes, exchanges, burſes, and the like.

The firſt *baſilica* was built at Rome by Cato the elder; whence it was called *Porcia*; the ſecond was called *Opimia*; the third was that of Paulus, built with a great expence, and with much magnificence, whence it was called by ſome *regia Pauli*: another was built by Julius Cæſar, called *baſilica Julia*; of which Vitruvius tells us he had the direction.

There were others alſo, to the number of eighteen or twenty. The *baſilica Julia* not only ſerved for the hearing of cauſes, but for the reception and audience of foreign ambaſſadors. It was ſupported by an hundred marble pillars in four rows, and enriched with decorations of gold and precious ſtones. In it were thirteen tribunals or judgment ſeats, where the prætors ſat to diſpatch cauſes.

Basilic, **Basilica**, is alſo uſed, in *Eccleſiaſtical Writers*, for a church.

In which ſenſe, this name frequently occurs in St. Ambroſe, St. Auſtin, St. Jerom, Sidonius Apollinaris, and other writers of the fourth and fifth centuries.

M. Perrault ſays, that *baſilics* differed from *temples*, in that the columns of temples were without-ſide, and thoſe of *baſilics* within.

Some will have the ancient churches to have been called *baſilicæ*, becauſe generally built in the faſhion of the Roman halls, called by that name: others, becauſe divers churches were formed of thoſe halls. In reality, on the converſion of Conſtantine, many of the ancient *baſilicæ* were given to the church, and turned to another uſe, viz. for Chriſtian aſſemblies to meet in, as may be collected from that paſſage in Auſonius, where ſpeaking to the emperor Gratian, he tells him, the *baſilicæ*, which heretofore were wont to be filled with men of buſineſs, were now thronged with votaries praying for his ſafety. By which he muſt needs mean, that the Roman halls or courts were turned into Chriſtian churches: and hence, we conceive, the name *baſilicæ* came to be a general name for churches in after-ages.

Basilic is chiefly applied, in modern times, to churches of royal foundation; as thoſe of St. John de Lateran, and St. Peter of the Vatican at Rome, founded by the emperor Conſtantine.

Basilic appears alſo to have been given in later ages to churches before conſecration.

Basilics were alſo little chapels built by the ancient Franks over the tombs of their great men, ſo called, as reſembling the figure of the ſacred *baſilicæ* or churches.

Perſons of inferior condition had only *tumbæ*, or *porticuli*, erected over them. By an article in the Salic law, he that robbed a *tumba* or *porticulus*, was to be fined fifteen *ſolidi*; but he that robbed a *baſilica* thirty *ſolidi*.

BASILICA, or **Basilicus**, in *Anatomy*, the name of a vein, ariſing from the axillary branch, and running the whole length of the arm. See *Tab. Anat.* (*Angeiol.*) *fig.* 6. *lit. o.* The *baſilica* is one of the veins opened in bleeding in the arm.

BASILICS, **Basilica**, a collection of the Roman laws, tranſlated into Greek by order of the emperors Baſil and Leo, and which were of force in the eaſtern empire till its diſſolution.

The *baſilics* comprehend the inſtitutes, digeſts, code, and novels, and ſome edicts of Juſtinian, and other emperors. The collection conſiſted of ſixty books, for which reaſon it was called ἑξηκονταϐιϐλος. It is ſuppoſed to be chiefly the work of the emperor Leo the Philoſopher, who denominated it from his father Baſilius Macedo, who firſt began it in 867. It was publiſhed by Leo, with additions, in 880; and thirty years after, corrected and improved by his ſon Conſtantin Porphyrogenitus.—Of theſe ſixty books there are now remaining only forty-one; the other nineteen are, in ſome meaſure, ſupplied by Fabrottus, from the *Synopſis Baſilicon*, &c.

BASILICI, *βασιλικοι*, in the Greek *Empire*, was a denomination given to the prince's mandatories, or thoſe who carried his orders and commands.

BASILICON, or BASILICUM, in *Pharmacy*, is the denomination of an officinal unguent or plaſter; called alſo *tetrapharmacum*, as being compoſed of four ſimples, viz. reſin, wax, pitch, and oil-olives.

BASILICUS, or BASILICA, in *Aſtronomy*, is the name of a fixed ſtar of the firſt magnitude, in the conſtellation Leo; called alſo REGULUS, and COR LEONIS.

BASILIDIANS, the followers of Baſilides, an Egyptian, who lived near the beginning of the ſecond century. In general, the *Baſilidians* held much the ſame opinions with the Valentinians, another branch of the GNOSTICS.

BASILISCUS, in *Zoology*, a name given by ſome of the old authors to the *regulus criſtatus*, or golden-crowned wren. This name is a diminutive of the word *baſileus*, *king*, another of its names, given it becauſe of its golden crown.

BASILISCUS, BASILISC, or BASILISK, is alſo uſed to denote a very dangerous ſort of ſerpent, which kills, as it is ſaid, by its breath or ſight only.

The generation of the *baſiliſk* is not leſs marvellous, being ſaid to be produced from a cock's egg, brooded on by a ſerpent. Theſe, and other things equally ridiculous, are related by Matthiolus, Galen, Dioſcorides, Pliny, and Eraſiſtratus. Kirchmayer and Vander Wiel have given the hiſtory of the *baſiliſk*, and detected the folly and impoſture of the traditions concerning it.

We find the *baſiliſc* mentioned in the Bible; but the Hebrew word *pethen*, which is tranſlated *baſiliſc*, ſignifies an *aſp*, as the beſt interpreters agree. Calmet.

The *baſiliſc*, in the Linnæan *Syſtem*, is a ſpecies of the LACERTA.

BASILISC is alſo myſtically uſed by the alchemiſts, to denote the ſublimate mercury of the philoſophers.

BASILISC alſo denotes a great piece of ordnance; thus denominated from its reſemblance to the ſuppoſed ſerpent of that name.

The *baſiliſc* throws an iron ball of two hundred pounds weight. It was much talked of in the time of Solyman, emperor of the Turks, in the wars in Hungary; but ſeems now out of uſe.

Maffeus ſpeaks of *baſiliſcs* made of braſs, which were drawn each by an hundred yoke of oxen.

Modern writers alſo give the name *baſiliſc* to a much ſmaller and ſizeable piece of ordnance, which the Dutch make fifteen feet long, and the French only ten. It carries forty-eight pound.

BASIOGLOSSUM, or rather BASIGLOSSUM, in *Anatomy*, a pair of muſcles, which ariſe fleſhy from the baſis of the *os hyoides*, and are inſerted into the root of the tongue: ſerving to draw the tongue towards the bottom of the mouth.

The word comes from the Greek *βασις*, *foundation*; and *γλωσσα*, a *tongue*.

The *par baſioglaſſum* is otherwiſe denominated, from its figure, *par hypſiloideum*.

Some have denied the exiſtence of the *par baſiogloſſum*, particularly Fallopius and Mr. Cowper; though this laſt, on further inquiry, found ſome fibres; which, by their contrary order to thoſe of the *geniogloſſum*, induced him to allow the *baſiogloſſum*. Heiſter only makes the *baſiogloſſum* a part of the *ceratogloſſum*.

The *baſiogloſſum*, with the *geniogloſſum*, *ceratogloſſum*, and *ſtylogloſſum*, form the body of the TONGUE.

BASIS, in the *Ancient Muſic* and *Poetry*, denotes the equability of ſounds proceeding in the ſame tenor.

In which ſenſe, *baſis* ſtands contradiſtinguiſhed from *arſis*, or elevation, as well as from *theſis*, or depreſſion.

BASIS, in *Oratory*, denotes the fourth member of a complete exordium, being that which ſucceeds the *apodoſis*, and prepares the way for the propoſition.

BASIUM. Chemiſts uſe the word *baſium*, which literally in Latin ſignifies *a kiſs*, for an extemporaneous tincture of iron and copper, invented by Cloſſæus.

BASKET, a kind of veſſel made of oſier, wicker, ruſhes, or the like, of different figures and ſizes, according to the uſe it is intended for.

Baſkets have their uſes not only in the œconomical, but military affairs: at ſieges, they make uſe of a ſmall *baſket* filled with earth, and ranged on the top of the parapet.

They are about a foot and a half high, as much in diameter at top, and eight or ten inches at bottom; ſo that being ſet together, they leave a ſort of embraſures at their bottom, through which the ſoldiers fire, without expoſing themſelves.

BASKET alſo imports a kind of meaſure or quantity of certain commodities.

BASKET, *corbeille*, in *Architecture*, a kind of vaſe, or figure-piece of ſculpture, in form of a *baſket* filled with flowers or fruits, ſerving to terminate ſome decoration.

BASKET *fiſh*, in *Natural Hiſtory*, a name given by the Engliſh in North America to a very remarkable fiſh, ſometimes caught in the ſeas thereabout, though not frequent any where.

Mr. Hooke, to whom it was referred by the Royal Society to name it, has called it, *Piſcis echinoſtellaris viſciformis*, the body of it reſembling an egg-fiſh, or *echinus marinus*, and the arms a ſtar-fiſh, and finally, the dividing of the branches being more like that of the branches of miſletoe than any other natural production we are acquainted with.

This fiſh ſpreads itſelf from a pentagonal mouth-piece, or root, in the centre of which the mouth is placed, into five main limbs or branches; and each of theſe, at its firſt iſſuing out of the body, is divided into two: this makes ten. Each of theſe ten again divides into two, which makes twenty, and ſo on, each dividing to the fourteenth time; at which place they make more than fourſcore thouſand limbs. Theſe are too ſmall to be traced farther by the eye, or preſerved in carriage; but it is very probable, that even theſe were again divided, perhaps, ſeveral times.

The branches between the joints are not all equally of a length, though, for the moſt part, they are pretty nearly ſo. The arms or branches are never very ſtrong; but, when they are dry, they are greatly more brittle than before, the leaſt force imaginable deſtroying them.

The ſhoals of Nantucket, an iſland on the coaſt of New England, at times furniſh the fiſhermen with this creature; but it is remarkable, that they are never ſeen there, unleſs when taken by hooks in fiſhing for other fiſh. They claſp the hook-bait faſt, and encircle it with all their arms, coming up, when drawn by it, in form of a wicker baſket; whence the name: but, when they have been ſome time out of the water, they become flat.

The uſe of the numerous arms of this fiſh is plainly to catch its prey. It probably extends them to their full length while under the water, and then claſps hold of any thing fit for food that chances to ſwim over them. The fiſhermen have ſometimes found the arms containing ſmall mackrel, or pieces of larger. Phil. Tranſ. Nº 57 and 74.

It is evident from the deſcription, that this fiſh is of the *ſtella arboreſcens*, or branched ſtar-fiſh kind; but whether the ſame with the commonly known kind, called the *caput meduſæ*, is not evident from this deſcription. The body of this fiſh, by what is related of its protuberance, and reſemblance to the *echini marini*, may probably be the *aſteropodium*, in its foſſil ſtate.

BASKET *ſalt*. This is a brime ſalt, made from the water of our ſalt ſprings in Cheſhire, and elſewhere, differing from the common brime ſalt in the fineneſs of the grain, and in its whiteneſs and purity.

In the preparing of this kind of ſalt, ſome uſe reſin, and other additions, to break the grain, and make it ſmall: others effect this by keeping up a very briſk fire under it, and ſtirring it all the while; but the moſt approved method is only to take out for this kind the third draught of every pan that is working for the common brime ſalt, and to do this before the granules or cryſtals are perfectly formed. By this means the ſalt is very fine; and when it has been hard preſſed down into ſmall wicker baſkets, it is dried at the ſtove in them, and ſo kept for ſale.

BASON, *pelvis*, in *Anatomy*, a round cavity in form of a tunnel, ſituate between the anterior ventricles of the brain, deſcending from its baſe, and ending in a point at the *glandula pituitaria*.

It is formed of the *pia mater*, and receives the *pituita* which comes from the brain, and paſſes through the pituitary gland, and from thence into the veins.

That capacity is alſo called *pelvis*, or *baſon*, which is formed by the *oſſa ilia* and *ſacrum*, and contains the bladder of urine, the *matrix*, and the inteſtines.

BASONS *of a balance*, two pieces of braſs, or other matter, faſtened to the extremities of the ſtrings; the one to hold the weight, the other the thing to be weighed.

BASON, or *diſh*, among *Glaſs Grinders*.—Theſe artificers uſe various kinds of *baſons*, of copper, iron, &c. and of various forms, ſome deeper, others ſhallower, according to the focus of the glaſſes that are to be ground. In theſe *baſons* it is, that convex glaſſes are formed, as concave ones are formed on ſpheres or bowls.

Glaſſes are worked in *baſons* two ways.—In the firſt, the *baſon* is fitted to the arbor, or tree of a lath, and the glaſs (fixed with cement to a handle of wood) preſented and held faſt in the right hand within the *baſon*, while the proper motion is given by the foot to the *baſon*. In the other, the *baſon* is fixed to a ſtand or block, and the glaſs with its wooden handle moved.

The moveable *baſons* are very ſmall, ſeldom exceeding five or ſix inches in diameter; the others are larger, ſometimes above ten feet diameter.

After the glaſs has been ground in the *baſon*, it is brought ſmoother with greaſe and emery; and poliſhed firſt with tripoli, and finiſhed with paper cemented to the bottom of the *baſon*.

Bason, among *Hatters*, is a large, round ſhell, or caſe, ordinarily of iron, placed over a furnace; wherein the matter of the hat is moulded into form.

The hatters have alſo *baſons* for the brims of hats, uſually of lead, having an aperture in the middle, of a diameter ſufficient for the largeſt block to go through.

Bason is alſo uſed on various occaſions for a ſmall reſervatory of water: as the *baſon* of a *jet d'eau*, or fountain; the *baſon* of a port, of a bath, &c. which laſt Vitruvius calls *labrum*. *Baſons* are made either with clay, cement, or lead; but they are moſt uſually made with clay. In the making them this way, the diameter muſt be made four feet longer on each ſide than the *baſon* is to be. This will be taken up by the walls and clay. For the ſame reaſon, it muſt be dug two feet deeper than the intended depth of the water; becauſe it is to be laid over eighteen inches thick with clay, and ſix inches with gravel and paving. The wall is to be made with ſhards, rubbiſh, or flints, with the natural earth for mortar; and the clay muſt be well worked, and trod firmly down with the naked feet.

The way of making them with cement is, to allow one foot nine inches every way for the work; then cut the banks perpendicularly, and raiſe a wall of maſonry a foot thick, made of pebble ſtones, or the like, laid in mortar of lime and ſand: the bottom is then to be covered to the ſame thickneſs; and then the ſolid lining of the cement is to be backed up againſt the walls, and over the bottom. This is to be made of ſmall flints in beds of mortar made of lime and cement. When this ſolid is eight inches thick, it muſt be plaſtered over the whole ſurface with cement well ſifted, before it be mixed with the lime; and with this it is to be wrought over ſmooth with a trowel. The proportion of this cement ſhould be two thirds of the cement, or powdered tile, to one third of lime; and this cement has the property of hardening ſo under water, that it will become like ſtone or marble, and will not be ſubject to decay of a long time.

After the finiſhing, the *baſon* ſhould, for four or five days, be anointed over very often with oil, or bullocks blood, to keep it from flawing or cracking in the drying; and after this, the water ſhould be let in as ſoon as may be.

The leaded *baſons* are made with walls a foot thick, and a bottom of half a foot. Theſe muſt be of rubble ſtones cemented with plaſter; for the lime would injure and eat the lead. The ſheets of lead are to be ſpread over theſe walls and bottom, and ſeamed with ſolder. Theſe *baſons*, however, are but little in uſe now, from the expence of making them, and the danger of the lead being ſtolen.

The waſte pipes of fountains ought always to be made large enough, for fear of choaking. When the waſte water is to be carried off into common ſewers, it may be carried away in drains, or earthen pipes; but when it is to ſerve for *baſons* that lie below it, it is to be conveyed in leaden ones. Miller.

There are divers ſorts of *baſons*; as

Bason, *figured*, that whoſe plan or circumference makes ſeveral turns and returns, either ſtraight, circular, or the like. Such are moſt of the *baſons* of fountains at Rome.

Bason *with a baluſtrade*, that whoſe cavity is ſurrounded with a baluſtrade of ſtone, marble, braſs, or the like.

Bason *with a trench*, or *baſſin a rigole*, that whoſe border being of marble, or other ſtone, has a trench cut in it, from whence, at certain diſtances, ſprings out a thread of water, which lines the trench, and forms a kind of nape or gargle around the baluſtrade. Such is that of the fountain of the rock of the Bellvidere at Rome.

Bason *en coquille*, that ſhaped like a ſhell.

Bason is likewiſe uſed for a dock.

Bason *of the ſea*. See Sea.

Bason, *ſale by the*, at Amſterdam, is uſed for the public ſales made under the direction of the *ven du meeſter*; thus called, by reaſon that, before adjudging the lot or commodity to the laſt bidder, they uſually ſtrike a braſs *baſon*, to give notice of it.

BASS, in *Muſic*, that part of a concert which is the moſt heard, which conſiſts of the graveſt, deepeſt, and longeſt ſounds; or which is played on the largeſt pipes or ſtrings of a common inſtrument, or on inſtruments larger than ordinary, for the purpoſe.

It is called *baſs*, from the Italian *baſſo*, of the Latin *baſis*, as being the foundation of the harmony.

Muſicians hold the *baſs* the principal part of a concert, and the foundation of the compoſition; though ſome will have the *treble* the chief part; which others only make a circumſtance, or ornament.

The ingenious Dr. Franklin, in his very curious letter to lord Kaimes on this ſubject, declares it to be his opinion that the *baſs* is unneceſſary to ſome tunes, and gives ſome reaſons in ſupport of it, which the curious may ſee there. Experiments, Obſervations, &c. 4to. 5th ed. p. 489. Rouſſeau appears to be of the ſame opinion. See Dict. de Muſique, an. 1768.

Bass, *counter*, is a ſecond *baſs*, where there are ſeveral in the ſame concert.

Bass, *thorough*, is that which proceeds, without interruption, from the beginning of a muſical compoſition to the end.—By which it ſtands contradiſtinguiſhed from the *ſinging baſs*, and the *baſſes of violins*, which make pauſes from time to time. The *thorough-baſs* is the harmony made by *baſs* viols, theorbos, or the like, continuing to play, both while the voices ſing, and the other inſtruments perform their part; and alſo filling the intervals when any of thoſe ſtop. M. Broſſard obſerves the *thorough-baſs* to be a part of the modern muſic, firſt invented in 1600, by an Italian, called Ludovico Viadana.

It is commonly diſtinguiſhed from the other *baſſes* by figures over the notes, directing what chords are to be played to them; which figures are proper only for the organ, harpſichord, ſpinet, and theorbo lute.—But it is to be obſerved a *thorough-baſs* is not always figured, though it ought to be ſo.

Bass, *fundamental*. See Fundamental and Key.

Bass, among *Gardeners*, a ſoft kind of ſedge or ruſh, uſed in binding plants, &c.

BASSAD, or Besd, an Arabian name for the purple *fucus* of the Greeks, uſed by the women to paint their cheeks, and by the dyers of cloths. It has been ſo far miſunderſtood by late authors as to be interpreted by the word coral; but the error of this is evident, ſince coral has none of theſe properties. See Margian.

BASSANUS, in *Ornithology*, a ſpecies of the pelican.

BASSE, in *Ichthyology*, the Engliſh name of the *ſea-wolf*, the *lupus piſcis* of authors. The Greeks have called this *labrax*; and ſome of the later writers, as Paulus Jovius, and others, *ſpigola*. It is properly a ſpecies of pearch, and is diſtinguiſhed by Artedi by the name of the pearch with thirteen rays in the ſecond fin of the back, and fourteen in the *pinna auri*. See Perca and Lupus *Marinus*.

Basse-*cour*, in *Building*; a court ſeparated from the principal one, and deſtined for the ſtables, coach-houſes, and livery-ſervants.

Basse-*cour* of a country-ſeat, is the yard, or place where the cattle, fowls, &c. are kept.

That where ſtrange creatures of divers ſorts are kept for curioſity, is called by the French *menagiere*. The Romans gave the name *vivarium* to that place, where beaſts were kept for the public ſhews.

Basse, in *Middle Age Writers*, denotes a collar for carthorſes, made of flags.

Hence alſo the round, matted cuſhion of flags, uſed for kneeling in churches, is called *baſſe*; in Kent, a *truſh*.

BASSET, or Basette, a game with cards, ſaid to have been invented by a noble Venetian, for which he was baniſhed. It was firſt introduced into France by ſignior Juſtiniani, ambaſſador of Venice, in 1674. Severe laws were made againſt it by Louis XIV. to elude which they diſguiſed *baſſet* under the name of *pour & contre*, that is, *for and againſt*, which occaſioned new arrets and prohibitions of parliament. The parties concerned in it are, a dealer or banker, his aſſiſtant, who ſuperviſes the loſing cards, and the punter, or any one who plays againſt the banker. Beſides theſe, there are other terms uſed in this game, as,

1. The *faſſe*, or *face*, which is the firſt card turned up by the *tailleur* belonging to the pack; by which he gains half the value of the money laid down on every card of that ſort by the punters.

2. The *couch*, or firſt money which every punter puts on each card; each perſon that plays, having a book of thirteen ſeveral cards before him, on which he may lay his money, more or leſs, at diſcretion.

3. The *paroli*, which is, when a punter having won the firſt ſtake, and having a mind to purſue his good fortune, crooks the corner of his card, and lets his prize lie, aiming at a *ſept et le va*.

4. The *maſſe*, when having won the firſt ſtake, the punter is willing to venture more money on the ſame card.

5. The *pay*, when the punter having won the firſt ſtake, be it a ſhilling, half-crown, guinea, or whatever he laid down on his card, and not caring to hazard the paroli, leaves off, or *goes the pay*; in which caſe, if the card turn up wrong, he loſes nothing, having won the couch before; whereas if it turn right, he, by this adventure, wins double the money ſtaked.

6. The *alpiew*, much the ſame with paroli, and uſed when a couch is won by turning up, or crooking the corner of the winning card.

7. *Sept et le va*, the firſt great chance or prize, when the punter having won the couch, makes a paroli, and goes on to a ſecond chance; ſo that if his winning card turns up again, it comes to *ſept et le va*, which is ſeven times as much as he laid down on his card.

8. *Quinze et le va* is the next higher prize, when the punter having won the former, is reſolved to puſh his fortune, and

lay his money a ſecond time on the ſame card, by crooking another corner; in which caſe, if it come up, he wins fifteen times the money he laid down.

9. *Trent et le va* is the next higher prize, when the punter crooking the fourth corner of his winning card, if it turn up, wins thirty-three times the money he firſt ſtaked.

10. *Soixant et le va* is the higheſt prize, and entitles the winner to ſixty-ſeven times his firſt money; which, if it were conſiderable, ſtands a chance to break the bank: but the bank ſtands many chances firſt of breaking the punter. This cannot be won, but by the *tailleur's* dealing the cards over again.

The rules of the game of *baſſet* are as follow:

The banker holds a pack of fifty-two cards, and having ſhuffled them, he turns the whole pack at once, ſo as to diſcover the laſt card; after which he lays down all the cards by couples.

The punter has his book of thirteen cards in his hand, from the king to the ace; out of theſe he takes one card, or more, at pleaſure, upon which he lays a ſtake.

The punter may, at his choice, either lay down his ſtake, before the pack is turned, or immediately after it is turned, or after any number of couples are down.

Suppoſing the punter to lay down his ſtake after the pack is turned, and calling 1, 2, 3, 4, 5, &c. the places of thoſe cards which follow the card in view, either immediately after the pack is turned, or after any number of couples are drawn. Then,

If the card, upon which the punter has laid a ſtake, comes out in any odd place, except the firſt, he wins a ſtake equal to his own.

If the card, upon which the punter has laid a ſtake, comes out in any even place, except the ſecond, he loſes his ſtake.

If the card of the punter comes out in the firſt place, he neither wins nor loſes, but takes his own ſtake again.

If the card of the punter comes out in the ſecond place, he does not loſe his whole ſtake, but only one half; and this is the caſe in which the punter is ſaid to be *faced*.

When the punter chooſes to come in after any number of couples are down, if his card happens to be but once in the pack, and is the laſt of all, there is an exception from the general rule; for though it comes out in an odd place, which ſhould entitle him to win a ſtake equal to his own, yet he neither wins nor loſes from that circumſtance, but takes back his own ſtake.

This game has been the object of mathematical calculations. Mr. De Moivre ſolves this problem: to eſtimate at *baſſet* the loſs of the punter under any circumſtance of cards remaining in the ſtock when he lays his ſtake, and of any number of times that his card is repeated in the ſtock. From his ſolution he has formed a table, ſhewing the ſeveral loſſes of the punter in whatſoever circumſtances he may happen to be. See Doctr. of Chances, p. 63.

From this table it appears, 1. That the fewer the cards are in the ſtock, the greater is the loſs of the punter. 2. That the leaſt loſs of the punter, under the ſame circumſtances of cards remaining in the ſtock, is when his card is but twice in it; the next greater when but three times; ſtill greater when four times; and the greateſt when but once. The gain of the banker, upon all the money adventured at *baſſet*, is 15*s.* 3*d. per cent.* De Moivre, Doctr. of Chances, p. 69. Edit. 3.

BASSETING, in the *Coal Mines*, denotes the riſe of the vein of coal towards the ſurface of the earth, till it come within two or three feet of the ſurface itſelf.

This is alſo called by the workmen *croping*, and ſtands oppoſed to *dipping*, which is the deſcent of the vein to ſuch a depth, that it is rarely, if ever, followed to the end.

BASSIA, in *Botany*, a genus of the *dodecandria monogynia* claſs.

BASSON, or **BASSOON**, a muſical inſtrument of the wind kind, blown with a reed, and furniſhed with eleven holes; ſerving for the *baſs* in concerts of hautboys, &c.

To make it more portable, it divides into two parts, whence it alſo bears the denomination *fagot*. Its diameter at bottom is nine inches, and its holes are ſtopped, like thoſe of large flutes.—A good *baſſoon* is ſaid to be worth four or five hundred piſtoles.

BASSO *relievo*, or **BAS** *relief*, a piece of ſculpture, the figures whereof do not project far, or ſtand out from the ground, with their full proportion.

Mr. Hellot, in the Mem. Acad. des Scienc. an. 1745, communicates a method of making raiſed figures of gold, on works of gold or ſilver, found among the papers of Mr. Du Fay, who had ſeen ſeveral trials of it. See the proceſs in the memoir above referred to, and in the Commerc. Phil. Techn. 4to. p. 80.

M. Felibien diſtinguiſhes three kinds of *relievos*: in the firſt, the front figures appear almoſt with their *full relievo*, called *alto relievo*; in the ſecond, they do but ſtand out one half, called *mezzo relievo*; and in the third, much leſs, which is the proper *baſſo relievo*, as in coins, vaſes, &c. See RELIEVO.

BASSO *relievos* make part of the furniture of antiquaries. Thoſe of the Trajan and Antonine columns have been copied by Bartoli, and explained by Bellori, &c. Thoſe of the arch of Severus by Suareſius.

Some have alſo made maps and proſpects of countries in *baſſo relievo*. Phil. Tranſ. Nº 6. p. 99.

BASSO *&* *alto*, in *Law*. See ALTO.

BASS-VIOL, a muſical inſtrument of the ſame form with that of the violin, except that it is much larger.—It is ſtruck like that, with a bow; and has ſtrings, and eight ſtops, divided by half-ſtops, or ſemi-tones.

The ſound it yields is much more grave, ſweet, and agreeable, than that of the VIOLIN, and of a much nobler effect in a concert.

BASTAGARII, in *Antiquity*, a college or company at Rome, who carried the fiſcal ſpecies out of the provinces to Rome or Conſtantinople.

The directors of theſe were called *præpoſiti baſtagarum*.

The word is derived from *baſtaga*, which properly imports the office of carriage or conveyance, from βαςαζειν, *portare, to carry*.

The denomination *baſtagarii* has alſo been given to thoſe who carry the images of ſaints at proceſſions. Du-Cange.

BASTARD, a natural child, or one born out of lawful wedlock.

The word is of Saxon etymology, and is compounded of *baſe*, *vile* or *ignoble*; and *ſtart*, or *ſteart*, *original*.

A *baſtard* differs from one born in adultery, or inceſt, in that the parents of the former are free, or allowed to marry, which thoſe of the latter are not.

The *baſtards*, or natural ſons of a king in France, are princes when owned; thoſe of a prince, or nobleman, are gentlemen; but thoſe of a gentleman are only plebeians, and pay taxes accordingly.

By the French laws, *baſtards* cannot inherit before they are legitimated; nor have heirs, except their own children begot in wedlock: for want of theſe, their inheritance devolves on the king.

By the Roman law, the mother inherited from her *baſtard* child, and *vice verſa*: but there was a great difference between *baſtards*, *nothi*, and thoſe they called *ſpurious*. The law did not own the latter, nor allow them ſuſtenance, becauſe they were born in common and uncertain proſtitution. *Is non habet patrem, cui pater eſt populus.* The former ſort, born in concubinage, which reſembles marriage, inherited from their mothers, and had a right to demand ſuſtenance of their natural fathers. They were looked upon as domeſtic creditors, that ought to be treated the more favourably, for being the innocent product of their parents crimes. Solon would have it, that the parents ſhould be deprived of their paternal authority over their *baſtards*, becauſe, as they were only parents for pleaſure, that ought to be their only reward.

Anciently, in Rome, natural children were quite excluded from inheriting after their fathers *ab inteſtato*: but they might be appointed heirs in general. The emperors Arcadius and Honorius made a reſtriction, that when there were legitimate children, the *baſtards* ſhould only come in for a twelfth, to be ſhared with their mother. Juſtinian afterwards ordered, that they might come in for half; and ſucceed *ab inteſtat.* for a ſixth, when there were legitimates.

Baſtards might be legitimated by ſubſequent marriage, or by the emperor's letters. Only the king in France, and the king and parliament in England, can give *baſtards* a right of legitimacy, and a power to inherit. The emperor Anaſtaſius allowed fathers to legitimate their *baſtards* by adoption alone: but this was aboliſhed by Juſtin and Juſtinian, leſt by this indulgence they ſhould authorize concubinage. The pope has ſometimes legitimated *baſtards*. Nay, the holy ſee has on ſome occaſions diſpenſed not only with illegitimates, but with the offspring of adultery, as to ſpiritual conſiderations, in allowing of their promotion to epiſcopacy.

Baſtards not legitimated may diſpoſe of their goods by donation when alive, or by will afterwards. Thoſe legitimated by ſubſequent marriage are in the ſame ſtate, and enjoy the ſame right with thoſe born in wedlock: but thoſe who are legitimated by the king's letters, are not eſteemed legitimate, or capable of inheriting, but with regard to ſuch of their parents as have conſented to their legitimation. Pope Clement VII. by his bull, forbad a prieſt to reſign his benefice to his *baſtard*.

An attempt was once made to introduce the civil law here in this reſpect, by declaring children legitimated by a ſubſequent marriage; but it was rejected: and it was upon this occaſion that the barons of England made that famous anſwer, *Nolumus leges Angliæ mutari*.

A *baſtard's* arms ſhould be croſſed with a bar, fillet, or traverſe, from the left to the right. They were not formerly allowed to carry the arms of their father, and therefore they invented arms for themſelves, and this is ſtill done by the natural ſons of a king.

Baſtards cannot be admitted to ſimple benefices, or the loweſt orders, or to more than a ſimple benefice, without orders from the pope: nor are they allowed to bear office without the prince's letters. But this doctrine ſeems now obſolete.

A *baſtard* by the law of England cannot inherit land as heir to his father, being *nullius filius*; nor can any perſon inherit land as heir to him, but one that is heir of his body. If a child be begotten by him who doth marry the woman after the child's birth, yet it is in judgment of the law a *baſtard*, though the church holds it legitimate.—If one marry a woman, and die before night, and never bed her, and ſhe have a child after, it is yet accounted his child, and legitimate.—If a man or woman marry again, and have iſſue by the ſecond wife or huſband, while the firſt is living, ſuch iſſue is a *baſtard*.—If a woman elope with a ſtranger, and have a child by him, her huſband being within the four ſeas, this is legitimate, and ſhall inherit the huſband's lands. But this notion is not now adhered to; for though the huſband and wife are both in England, if there be ſufficient proof that he had no acceſs to her, the child will be a *baſtard*.—He that gets a *baſtard* in the hundred of Middleton, in Kent, forfeits all his goods and chattels to the king. By ſtat. 18 Eliz. cap. 3. two juſtices may take order for the puniſhment of the mother and reputed father of a baſtard; and by ſtat. 7 Jac. I. cap. 4. the penalty of commitment to the houſe of correction is inflicted on the woman only. But it ſeems that in both caſes the penalty can only be inflicted, when the child becomes chargeable to the pariſh. By 6 Geo. II. cap. 31. the reputed father may be apprehended by warrant of a juſtice, on the oath of the pregnant woman, and committed, unleſs he gives ſecurity to indemnify the pariſh to which the child belongs. But by ſtat. 18 Eliz. the woman is not compellable to anſwer any queſtions relative to her pregnancy, till one month after her delivery.

If a *baſtard* be got under the umbrage of a certain oak in Knollwood in Staffordſhire, belonging to the manor of Terley Caſtle, no puniſhment can be inflicted; nor can the lord, nor the biſhop, take cognizance of it. Plott's Hiſt. Stafford. p. 279.

BASTARD, in the *Sea Language*, is uſed for a large ſail of a galley, which will make way with a ſlack wind.

BASTARD is alſo uſed adjectively, or in compoſition with divers other words, to denotes things of inferior or diminutive value.

In this ſenſe we meet with *baſtard*-coral, *baſtard*-alabaſter, *baſtard*-amianthus, &c.

BASTARD-*ſaffron* is the ſame with what is otherwiſe called *ſaf-flower*, ſometimes *ſcarlet-flower*, as being uſed in dying ſcarlets.

BASTARD-*ſcarlet* is a name given to red dyed with bale-madder, as coming neareſt the Bow-dye, or new ſcarlet.

BASTARD, in reſpect of artillery, is applied to thoſe pieces, which are of an unuſual or illegitimate make or proportion. Theſe are of two kinds, long and ſhort, according as the defect is on the redundant or defective ſide.

The long *baſtards*, again, are either common or uncommon. To the common kind belong the double culverin extraordinary, half culverin extraordinary, quarter culverin extraordinary, falcon extraordinary, &c.

The ordinary *baſtard*-culverin carries a ball of eight pounds.

BASTARDS are alſo an appellation given to a kind of faction or troop of banditti, who roſe in Guienne, about the beginning of the fourteenth century, and joining with ſome Engliſh parties, ravaged the country, and ſet fire to the city of Xaintes.

Mezeray ſuppoſes them to have conſiſted of the natural ſons of the nobility of Guyenne, who being excluded the right of inheriting from their fathers, put themſelves at the head of robbers and plunderers, to maintain themſelves.

BASTARDY is a defect of birth objected to one born out of wedlock.

BASTARDY, *right of*, *droit de batardiſe*, in the French *Laws*, is a right, in virtue whereof the effects of baſtards dying inteſtate, devolve to the king, or the lord.

BASTARD *diſeaſes*, &c. See SPURIOUS.

BASTARD *dittany*, &c. See DITTANY.

BASTERNA, a kind of vehicle, or chariot, uſed by the ancient Roman ladies.

Papias thinks, that *baſterna* was firſt written for *veſterna*: Roſweild ſays, it ſhould be *via ſterna*, which he concludes from Iſidore, who ſays, *baſterna, viæ ſterna*. But the word ſeems better derived from the Greek *βαςαζω*, *porto*, *I carry*.

Salmaſius obſerves, that the *baſterna* ſucceeded the *lectica*, or *litter*; from whence it differed very little, except that the litter was borne on the ſhoulders of ſlaves, and the *baſterna* borne or drawn by beaſts. Caſaubon ſays it was borne by mules. F. Daniel, Mabillon, &c. aſſert it was drawn by oxen, to go the more gently; and Gregory de Tours gives an inſtance of its being drawn by wild bulls. The inſide they called the *caveo*, or *cage*: it had ſoft cuſhions or beds, beſides glaſſes on each ſide like our chariots.

The mode of *baſternas* paſſed from Italy into Gaul, and thence into other countries; and to this we owe our chariots; which, though we call them *currus*, yet have they no conformity to the ancient *currus*, but are in effect *baſternas* improved.

The *baſterna* appears alſo to have been uſed in war, for carrying of baggage.

BASTILE denotes a ſmall antique caſtle, fortified with turrets. Such is the *baſtile* of Paris, which ſeems the only caſtle that has retained the name: it was begun to be built in 1369, by order of Charles V. and finiſhed in 1383, under the reign of his ſucceſſor.—Its chief uſe is for the cuſtody of ſtate-priſoners.

BASTION, in the *Modern Fortification*, a huge maſs of earth uſually faced with ſods, ſometimes with brick, rarely with ſtone, ſtanding out from a rampart, whereof it is a principal part.

This anſwers to what in the ancient fortification is called *propugnaculum*, or a *bulwark*.

Baſtions, ſome ſay, were firſt introduced by Ziſca the Bohemian; others attribute the invention of them to Achmet Baſhaw, in the year 1480, mentioning the fortification of Otranto, as the firſt inſtance in which they were uſed. However, they were well known ſoon after the year 1500; for Tartalea gives a plan of Turin, which had been completely fortified for ſome time with four *baſtions*, in his Queſiti & Inventioni diverſe, publiſhed in 1546. The firſt *baſtions*, ſuch as thoſe of Turin and of Antwerp, which was fortified about the year 1540, were ſmall, and removed at a great diſtance from each other: but they were made much larger, and brought nearer to each other in the citadel of Antwerp, erected under the direction of the duke d'Alva, about the year 1566.

A *baſtion* conſiſts of two faces, and two flanks, and an opening towards the center of the place, called the GORGE.—The faces are the lines BC and CS (*Tab. Fortificat. fig.* 1.) including the angle of the *baſtion*. See FACE.—The flanks are the lines BA, SD.

The union of the two faces makes the outmoſt or ſaliant angle, called alſo the *angle of the baſtion*, BCS.

The union of the two faces to the two flanks makes the ſide-angles, called the *ſhoulders*, or *epaules of the baſtion*.

And the union of the two other ends of the flanks to the two curtins, the angles of the flanks of the *baſtion*.—See *Tab. Fortific. fig.* 21. *lit. oo. &c. ppp.*

The foundation of the *baſtion*, i. e. of a work conſiſting of flanks and faces, is that great rule in fortification, viz that every part of a work muſt be ſeen and defended, from ſome other part: mere angles therefore are not ſufficient, but flanks and faces are indiſpenſibly requiſite.—Thus, if the *baſtion* conſiſts of flanks and faces, as ABCSD, *fig.* 1. all the points may be defended from the flanks; there being none, v. gr. in the face BC, but what may be defended from the oppoſite flank EL, nor any in the curtin AE, but may be defended from the adjacent flanks BA and EL; nor in any one flank BA, but may be defended from the other EL.

For the proportions of the faces, they are not to be leſs than 40 toiſes, nor more than 60: or differing little from 100 yards.

The flanks of *baſtions* are better as they are longer, provided they ſtand at the ſame angle under the line of defence: hence the flank muſt ſtand at right angles to the line of defence. Indeed, in the ancient fortification, the flank is made perpendicular to the curtin, ſo as to have the angle out of the enemies eye; but this is now provided for, by withdrawing the lower part of the flank two or three perches, towards the capital line: which part, thus withdrawn, is better, if made concave, than rectilinear; and, if double, with a ditch between, than if ſingle.

The buſineſs of diſpoſing the flanks of *baſtions* makes the principal part of the art of fortification; it is that on which the defence principally depends, and which has introduced the various forms and manners of fortifying.

If the angle of the *baſtion* be leſs than ſixty degrees, it will be too ſmall to give room for guns; and beſides, ſo acute as to be eaſily beaten down by the enemies guns: to which may be added, that it will either render the line of defence too long, or the flanks too ſhort: it muſt therefore be more than ſixty degrees; but whether or no it ſhould be a right angle, ſome intermediate angle between ſixty and ninety, or even whether or no it ſhould exceed a right angle, is ſtill diſputed; though thoſe are generally preferred, which are not much leſs than 90°, and not exceeding 120° or 130°. Hence it follows, that a triangle can never be fortified, in regard either ſome or all of the angles will be either ſixty degrees, or leſs than ſixty.

Baſtions are of divers kinds, *ſolid*, *void*, *flat*, *cut*, &c.

Baſtions, *ſolid*, are thoſe that are filled up intirely, and have the earth equal to the height of the rampart, without any void ſpace towards the centre.

Baſtions, *void*, or *hollow*, are thoſe ſurrounded with a rampart and parapet, only ranging round their flanks and faces, ſo as to leave a void ſpace towards the centre; where the ground is ſo low, that if the rampart be taken, no retrenchment can be made in the centre, but what will lie under the fire of the beſieged.

Baſtion, *flat*, is a *baſtion* built on a right line in the middle of the curtin, when it is too long to be defended by the *baſtion* at its extremes.

Baſtion, *cut*, is that whoſe point is cut off, and in lieu thereof has a re-entering angle, or an angle inwards with two points outward; this is ſometimes alſo called, *baſtion with a tenaille*; and is uſed either when, without ſuch a contrivance, the angle would be too acute, or when water, or ſome other impediment, hinders the carrying on the *baſtion* to its full extent.

Baſtion, *compoſed*, is when the two ſides of the interior polygon are very unequal, which makes the gorges alſo unequal.

Baſtion, *regular*, is that which has its due proportion of faces, flanks, and gorges; the faces being of an equal length, the flanks the ſame, and the two angles of the ſhoulder equal.

Baſtion, *irregular*, is where this proportion and equality is not obſerved.

Baſtion, *deformed*, is where the irregularity of the lines and angles makes the *baſtion* out of ſhape, as when it wants one of its demi-gorges; one ſide of the interior polygon being too ſhort.

Baſtion, *demi*, is that which hath but one face, and one flank; called alſo an *epaulement*.

To fortify the angle of a place that is too acute, they cut off the point, and make two *demi-baſtions*, which form a *tenaille*, or a re-entering angle.—Their chief uſe is before a hornwork, or crownwork.

Baſtion, *double*, is that, which on the plain of the great *baſtion*, has another *baſtion* built higher, ſomewhat after the manner of a cavalier; leaving twelve or eighteen feet between the parapet of the lower, and the foot of the higher.

Baſtion, *capital of a*. See Capital.

Baſtion, *gorge of a*. See Gorge.

Baſtion, *diſtance of the*. See Distance.

Baſtion *company of France*. See Company.

BASTON, in *Law*, is uſed for one of the warden of the Fleet's men, who attends the king's courts with a red ſtaff, for taking ſuch to ward as are committed by the court; and likewiſe attends on ſuch priſoners as are ſuffered to go at large by licence.

The word is French, literally ſignifying a *ſtaff*, and technically a *verge*, or *mace*.

Baſton, or Batoon, in *Architecture*, denotes a mould in the baſe of a column, otherwiſe called a *tore*.—See *Tab. Archit. fig.* 3.

Baſton, or Batoon, in *Heraldry*, a kind of bend, which has only one fourth of the uſual breadth.

The *baſton* does not go from ſide to ſide of the eſcutcheon, as the bend or ſcarf does, but is broken off ſhort, in form of a truncheon: its uſe in Engliſh coats of arms is a mark of baſtardy: but French heralds introduce it in arms as a difference, a mark of conſanguinity.

Baſton alſo ſignifies the earl marſhal's ſtaff.

BASTONADO, Baſtonade, the puniſhment of beating or drubbing a criminal with a ſtick.

The word is formed of the French *baſton*, a *ſtick* or *ſtaff*.

The *baſtonade* is a puniſhment uſed both among the ancient Greeks, Romans, and Jews, and ſtill obtains among the Turks.

The Romans called it *fuſtigatio*, *fuſtium admonitio*, or *fuſtibus cædi*, which differed from the *flagellatio*, as the former was done with a ſtick, the latter with a rod or ſcourge. The fuſtigation was a lighter puniſhment, and inflicted on freemen; the flagellation a ſeverer, and reſerved for ſlaves. It was alſo called *tympanum*, becauſe the patient here was beat with ſticks, like a drum.

The penalty is much in uſe in the Eaſt to this day. The method there practiſed is thus: the criminal being laid on his belly, his feet are raiſed, and tied to a ſtake, held faſt by officers for the purpoſe; in which poſture he is beaten by a cudgel on the ſoles of his feet, back, chin, &c. to the number of one or more hundred blows. Calmet. Dict. Bib. tom. i. p. 260.

BASTONIER, or Batonier, in the French *Law*, an ancient advocate, elected yearly according to ſeniority, to be the head or maſter of the community of advocates and attornies. He is preſident of the board held for maintenance of the order, and diſcipline of the *palais*. To him alſo belongs the commiſſion of the inferior judges, when put under interdict, ſo long as the interdiction laſts.

Baſtonier is alſo uſed for him who keeps the ſtaff of a community, and carries or follows it in proceſſions.

BAT, in *Zoology*, a genus of quadrupeds, of the order of *feræ*, the characters of which are theſe. The fore-teeth of the upper-jaw are ſix in number, acute, and diſtant from each other; the fore-teeth of the lower jaw are alſo ſix, and acute, but contiguous; the canine teeth are two, both above and below, on each ſide; the feet have each five toes; the fore-feet have the toes connected by a membrane, and expanded into a kind of wings, whereby it flies: whence this animal has been generally, but with the utmoſt impropriety, ranged among birds.

The *bat*, called alſo by us *lapwing*, and *flittermouſe*, by the Latins *veſpertilio*, ſeems a medium between the quadruped and the feathered kinds; but it partakes moſt of the former tribe; agreeing only with the birds in the ſternum, and the poſition of its liver; and with the quadrupeds in the kidneys, bladder, teeth, *penis*, teſticles, diaphragm, and lungs. In reality, it only appears to be a bird by its flying. They lay themſelves up in winter in the drieſt apartments of caves; where planting their talons to the roof, they cover their bodies with their wings, and ſo hanging perpendicularly in great numbers, but ſo as not to touch each other, they ſleep for ſome months.

Travellers ſpeak of a ſort of *bats* in Golconda bigger than hens.

In Braſil there is a large ſpecies of this animal, which, if men lie aſleep with their legs naked, will, it is ſaid, make a wound in them ſo gently, as not to wake them, but ſo deep, that they will ſuck the blood at it, and leave the perſon in ſome danger of bleeding to death. Piſo. Hiſt. Braſil.

Bat, in *Commerce*, a ſmall baſe ſilver-coin, current in divers parts of Germany and Switzerland at different prices.

The *bat*, or *fludermouſe*, at Nuremberg, is equal to four criotzers; at Zurich, to $\frac{1}{18}$ of the French crown; at Baſil, Schaffhauſen, &c. to $\frac{1}{17}$; and at Bern and Friburg to $\frac{1}{30}$ of the ſame crown. Theſe laſt are called *ſhort bats*.

BATARDIERE, a place in a garden, prepared for the planting of fruit-trees in, which being tranſplanted thither from the nurſery, are to be placed in eſpaliers, or elſewhere, to ſupply the place of dead trees.

BATATAS. See Potato.

BATCHELOR. See Bachelor.

Batchelor's *Buttons*, in *Botany*. See Campion.

Batchelor's *Pear*, a name given to a ſpecies of nightshade.

BATEMAN's *Drops*, in *Pharmacy*, are the anodyne balſam made with a weaker ſpirit, ſo that a larger doſe can be taken: they are tinctured with aniſeed.

BATENKETOS, a ſtar about the third magnitude, in the conſtellation of cetus.

BAT-FOWLING, a method of catching birds in the night, by lighting ſome ſtraw, or torches, near the place where they are at rooſt; for, upon beating them up, they fly to the flames, where, being amazed, they are eaſily caught in nets, or beat down with buſhes fixed to the end of poles, &c.

BATH, Balneum, a convenient receptacle of water for perſons to waſh, or plunge in, either for health or pleaſure.

Baths are either *natural* or *artificial*. *Natural*, again, are either *hot* or *cold*.

Baths, *hot*, called by the ancients *thermæ*, owe their origin partly to the admixture of ſulphureous particles, while the water is paſſing through its ſubterraneous canals, or rather while it creeps through beds and mines of ſulphur, &c. and partly to the fumes and vapours exhaling through the pores of the earth where ſulphur is, either pure or impure, as in coals, amber, &c.—Though in moſt hot baths there are likewiſe mixed particles of iron, alum, nitre, and other mineral bodies, which give them an acid aſtringent taſte.

The chief hot *baths* in our country are thoſe at Bath and Briſtol, in Somerſetſhire; and thoſe others at Buxton and Matlock in Derbyſhire; which latter, however, are rather warm or tepid than hot.

In the city of Bath there are four hot *baths*: one triangular, called the *croſs bath*, from a croſs that formerly ſtood in the midſt of it; the heat of which is more gentle than that of the others, becauſe it has fewer ſprings.—The ſecond is the *hot bath*, which heretofore was much hotter than the reſt, when it was not ſo large as it now is.—The other two are the *king's* and *queen's bath*, divided only by a wall; the laſt having no ſpring, but receiving the water from the king's *bath*, which is about ſixty feet ſquare, and has in the middle of it many hot ſprings, which render its healing quality more effectual.—Each of theſe is furniſhed with a pump to throw out water upon the diſeaſed, where that is required.

It has been thought by many, that the practice of drinking our Bath waters in Somerſetſhire is not very ancient, and that their ancient uſe was in bathing; but Dr. Freind endeavours to ſhew the internal uſe of thoſe waters to have been very early. Dr. Guidot, in whoſe time this uſage revived, and who has given us the beſt hiſtorical narrative of theſe waters, goes no higher for their internal uſe than the latter end of the ſixteenth century. But they appear to have been in uſe in the thirteenth century: Gilbert, ſurnamed Anglicus, who, according to Bayle, lived in 1210, in the reign of king John, or more probably in that of Edward I. mentions a perſon cured of a leucophlegmacy, attending with a ſwelling, &c. by the ſulphureous *baths*; which Dr. Freind underſtands of the Bath waters; and that the cure was wrought by drinking, not bathing, which had been improper in ſuch a caſe.

Dr. Muſgrave makes it probable, that they were reſorted to in the time of Geta; there being ſtill the remains of a ſtatue erected to that general, in gratitude for ſome benefactions which he had conferred on the place. Some pretend that theſe waters were in uſe 800 years before Chriſt. Phil. Tranſ. N° 49. N° 346.

See the uſes of Bath waters, and their difference from thoſe of Briſtol, under the head *Briſtol*-WATER.

The waters abound with a mineral ſulphur: they are hot, of a blueiſh colour, and ſtrong ſcent, and ſend forth thin vapours.—They do not paſs through the body like moſt other mineral waters; though, if ſalt be added, they purge preſently. On ſettlement they afford a black mud, which is uſed by way of cataplaſm in aches; of more ſervice to ſome than the waters themſelves: the like they depoſit on diſtillation, and no other.

Dr. Aſtendoff found the colour of the ſalt drawn from the *king's* and *hot bath* to be yellow; and that from the *croſs bath*, white; whence he concludes, that the *croſs bath* has more alum and nitre than the *hotter*, which abounds more with ſulphur; and yet the *croſs bath* is found to looſen ſhrunk ſinews, by which it ſhould ſeem to abound leſs with alum: it is harſher to the taſte than the others, and ſoaks the hands more.—The *croſs bath* preys on ſilver, and all of them on iron, but none on braſs.

The two ſtated ſeaſons for drinking the Bath waters are ſpring and fall; though they may be uſed whenever they are found neceſſary. The heat of theſe waters, and their milky detergent quality, are aſcribed to a mixture and fermentation of two different kinds of water, diſtilling from Clarton Down, and Lanſdown; of which the former has ſprings that are ſulphureous, or bituminous, mixed with nitre; and the latter ſuch as are tinctured with iron ore. Beſides, the adjacent country abounds with mines of coal, which all naturaliſts agree to be ſulphureous and bituminous.—It is from the combination of ſulphur, iron, and ſea-ſalt, that Bath water is ſo uſeful, whenever the vital heat requires an increaſe. Nothing but iron can make ſuch a quick improvement, as this water does in decayed conſtitutions; and it is the ſoapineſs of it, from the union of its ſulphur and iron, that relaxes, ſo as to give vent to gouty, and other peccant matters, by perſpiration. More than two pints per day can never be required, and they may be drank at three or four times. In all internal diſorders, where iron and ſulphur are preſcribed, the internal uſe of this water is effectual; and by merely bathing in it, much relief is obtained in a great variety of diſorders.

The virtues of many of our mineral waters have been very juſtly aſcribed to the fixed air with which they abound; and ſome have aſcribed thoſe of the Bath waters to the ſame principle. But Dr. Prieſtley found upon trial, that the quantity of fixed air contained in them is ſo ſmall as to render it very improbable that their virtues ſhould be at all owing to it. And Dr. Falconer obſerves, that theſe waters do not ſo properly contain fixed air, as a calcareous earth; which though it contain fixed air, may not part with it in the ſtomach, unleſs it meet with ſome acid to decompoſe it. By ſome accurate obſervations that were made on the heat of Bath and Briſtol water, by Mr. Canton, it appears, that a Fahrenheit's thermometer held in the ſtream from the common pump of the king's *bath*, after pumping about ¼ of an hour, was raiſed to 112°. The ſtream from the common pump of the hot *bath* raiſed it to 114°½. At the pump of the *croſs bath* it ſtood at 110°; the heat of the ſhaded air at noon being 66°, and of common water expoſed to it 61°. And the Briſtol water raiſed the thermometer to 76°, whilſt in common water, expoſed to the ſhaded air, it ſtood at 62°. Phil. Tranſ. vol. lvii. N° 22.

Buxton water has been obſerved to raiſe the thermometer to 80°, and that of Matlock to 66° or 68°. See WATERS.

The uſe of hot *baths*, it is obſerved, increaſe the weight of the body for the preſent, but cauſe a plentiful perſpiration afterwards; though not ſo great as ſet down by Dr. Keill, who makes it amount to 1½ pound in an hour's time.—By Mr. Martin's experiment at Buxton, it was only 5 ounces in one hour, and from 8 to 12 ounces in an hour and an half. Phil. Tranſ. N° 407. p. 27.

The uſe of theſe *baths* is found beneficial in diſeaſes of the head, as palſies, &c. in cuticular diſeaſes, as leproſies, &c. obſtructions and conſtipations of the bowels, the ſcurvy and ſtone, and in moſt diſeaſes of women and children.—The *baths* have performed many cures, and are commonly uſed as a laſt remedy in obſtinate chronic diſeaſes; where they ſucceed well, if they agree with the conſtitution of the patient: but whether they will agree or not, cannot be known without trial.

BATHS, *cold*, were long baniſhed out of medicine, though the ancients had them in the greateſt eſteem: but the improvements accruing to phyſic from geometry and mechanics, have brought them into uſe again; and the preſent age can boaſt abundance of noble cures performed by them, and ſuch as were long attempted in vain by the moſt powerful medicines. The *cold bath* is found one of the moſt univerſal and innocent remedies yet diſcovered. It is ſerviceable in moſt chronic diſtempers; and is reckoned ſo ſafe, that phyſicians ſometimes preſcribe it in a beginning *phthiſis*, or conſumption, when the lungs are but ſlightly affected.

The effect of cold bathing is attributed not only to its chilneſs, and conſtringing power, but in ſome meaſure to the weight of the water.—For, ſuppoſing a perſon immerged two feet, and the *area* of his ſkin to be fifteen feet, he ſuſtains a weight of water, added to that of the air, =228clb. For 2, the number of cubical feet of water preſſing upon a foot ſquare of the ſkin × 76, the number of pounds in a cubical foot of water, is = 152; which × 15, the ſuppoſed number of ſquare feet on the ſurface of the body, is =2280lb. troy.—Beſides, the water in bathing enters the body, and mixes with the blood, and dilutes this as well as the other juices.

The riſe and progreſs of *cold-bathing*, and the cures effected thereby, are deſcribed at large in Sir J. Floyer's, and Dr. Baynard's Hiſtory of Cold Bathing.

In tender conſtitutions, and ſome diſeaſes, a moderate *warm bath* ſhould be uſed before the *cold bath*, the approach to which ought to be gradual. People of rigid fibres, and unſound *viſcera*, are injured by the *cold bath*; fat people are little benefited by it; and, in general, nobody ought to go into it before a gentle glow be excited by moderate exerciſe, when the ſtomach is moſt empty; and ſuch evacuations, as the patient's conſtitution require, ought to precede the uſe of it; which is beneficial, and may ſafely be continued, when an univerſal glow ſucceeds the coming out of it. The *cold bath* is hurtful, and ought to be diſcontinued, when the patient continues to be cold and numb after coming out of it, notwithſtanding all precautions to prevent it. Even where immerſion in the *cold bath* is ſtrengthening, a continuance in it is weakening, and in proportion to its duration.

BATHS, *artificial*, are various, according to the various occaſions; ſome aqueous, others vaporous, others dry, &c.

BATHS, *aqueous*, are thoſe prepared from common plants, and other ſubſtances of emollient, reſolvent, and nervine kinds. *Aqueous baths* ſometimes conſiſt of milk and emollient herbs, with roſe-water, &c. when the deſign is to humectate; at other times of bran and water, when the deſign is only to cleanſe: ſometimes again, they are made of a decoction of roots and plants, with an addition of ſpirit of wine, when a perſon bathes for a great pain or tumour, &c.

BATHS, *in vapour*, the fume or ſteam of ſome decoction is received upon the body to promote a perſpiration.—Theſe are alſo by ſome called *Balnea Laconica*.

Vapour baths are, when the patient is not plunged into what is prepared for the *bath*, but only receives its ſteam upon thoſe parts of his body which require it: as in ſome diſtempers of the fundament and womb, where the patient ſits and receives the fumes of ſome proper fomentation, &c. To theſe may be added the *bagnio*, where people are made to ſweat by the heat of a room, and pouring on of hot water; after which they generally go into a *hot bath*, or BAGNIO.

BATHS, *dry*, are thoſe made of aſhes, ſalt, ſand, ſhreds of leather, and the like.

The ancients had divers ways of ſweating by a dry heat; as by the means of a hot ſand, ſtove-rooms, or artificial bagnios, and certain natural hot ſteams of the earth, received under a proper arch, or hot-houſe, as we learn from Celſus. They alſo had another kind of *bath* by inſolation, where the body was expoſed to the ſun for ſome time, in order to draw forth the ſuperfluous moiſture from the inward parts; and to this day it is a practice in ſome nations to cover the body over with horſe-dung, eſpecially in chronical diſeaſes, to digeſt and breathe out the humour that cauſes the diſtemper. In New England they make a kind of ſtoves of turf, wherein the ſick are ſhut up to bathe or ſweat. Phil. Tranſ. N° 384. p. 130.

The ſame name is ſometimes alſo given to another kind of *bath*, made of kindled coals, or burning ſpirit of wine; the patient being placed in a convenient cloſe chair for the reception of the fume, which riſes and provokes ſweat in a plentiful manner: care is here taken to keep the head out, and to ſecure reſpiration.

This *bath* has been found very effectual in removing old, obſtinate pains in the limbs, and venereal complaints;

and will often complete a cure leſt unperformed by ſalivation.

Some authors ſpeak of *bloody baths, balnea ſanguinolenta,* prepared eſpecially of the blood of infants, anciently ſuppoſed to be a kind of ſpecific for the leproſy.

Baths, *metalline,* thoſe made of water, impregnated with the *ſcoriæ* of metals. The moſt common and uſeful of this kind are thoſe prepared with the *ſcoriæ* of iron, which abound with the earthy, ſaline, and ſulphureous ſubſtance of the metal; and theſe are of excellent ſervice for ſtrengthening and bracing up the part to which they are applied, and recovering weak and decayed limbs; ſtopping various kinds of bleeding; and reſtoring the menſtrual and hæmorrhoidal flux, where obſtructed; inſomuch that they may well be ſubſtituted for the natural iron *baths.*

Adjacent to the ſmelting huts where metals are run from their ore, are to be found large quantities of the ſlag of copper, antimony, and cobalt, which abounding with ſulphur, vitriolic ſalt, and an earthy principle, make ſerviceable *baths* for ſtrengthening the loſt tone of the fibres, and relaxing them when they are too ſtiff. Theſe *baths* have likewiſe a deterſive and cleanſing virtue; ſo that, with prudence, and due regard to circumſtances, they may be uſed on many occaſions. The way of making theſe artificial *baths* is, either to take the flags as they come hot from the furnace, or elſe to heat them afreſh, and throw them into hot water; which is afterwards to be uſed either in the way of *bath,* or fomentation, occaſionally.

There are other artificial *baths,* prepared of alum and quick-lime, by boiling them together in fine rain-water. Such *baths* are highly ſerviceable in paralytic diſorders, and weakneſs of the limbs.

The *pepper bath,* or *peffer waſſer* on the Alps, is one of the moſt celebrated in Europe, and has been the ſubject of treatiſes expreſs, beſides what has been ſaid of it occaſionally by Scheuchzer, and others. It was firſt diſcovered in the year 1240, and is of the periodical kind. The water breaks forth in a dreadful place, ſcarce acceſſible to the ſun-beams, or indeed to men, unleſs of the greateſt boldneſs, and ſuch as are not in the leaſt ſubject to dizzineſs. Theſe *baths* have this ſingularity above all others, that they commonly break forth in May, and that with a ſort of impetuouſneſs, bringing with them beech-leaves, crabs, or other wood-fruit; and that their courſe deſiſts in September or October.

Scheuchzer profeſſes himſelf of opinion, that theſe waters are not impregnated with any minerals, or, if they do contain any, that their virtues in curing diſtempers, and preſerving health, do not proceed from them. They are exceeding clear, deſtitute of colour, taſte, or ſmell. Phil. Tranſ. N° 316. p. 151.

Baths, Balnea, in *Architecture,* denote large pompous buildings among the ancients, erected for the ſake of bathing. *Baths* made a part of the ancient *gymnaſia.* Though they were frequented more for the ſake of pleaſure than health.

The moſt magnificent *baths* were thoſe of Titus, Paulus Æmilius, and Diocleſian, of which there are ſome ruins ſtill remaining. It is ſaid, that at Rome there were 856 public *baths.* Fabricius adds, that the exceſſive luxury of the Romans appeared in nothing more viſible, than in their *baths.* Seneca complains, that the *baths* of plebeians were filled from ſilver pumps; and that the freed-men trod on gems. Macrobius tells us of one Sergius Oratus, a voluptuary, who had *pendant baths* hanging in the air.

According to Dion, Mæcenas was the firſt who made a *bath* at Rome: yet there are inſtances of public *baths* prior to this; but they were of cold water, ſmall, and poorly decorated.

Agrippa, in his ædilate, built one hundred and ſixty places for bathing, where the citizens might be accommodated, either with hot or cold, *gratis.* After his example, Nero, Veſpaſian, Titus, Domitian, Severus, Gordian, Aurelian, Maximilian, Diocleſian, and moſt of the emperors who ſtudied to gain the affections of the people, erected *baths* laid with the richeſt marble, and wrought according to the rules of the moſt delicate architecture. Plin. Hiſt. Nat. lib. xxxv. c. 13. Mem. Acad. R. Inſcr. tom. ii. p. 417.

The rich had *baths* at home, and frequently very magnificent ones, eſpecially after the time that the practice of pillaging the provinces had begun; but they only uſed them on extraordinary occaſions. The great men, and even emperors themſelves, ſometimes bathed in public with the reſt of the people. Alexander Severus was the firſt who allowed the public *baths* to be open in the night-time during the heats of ſummer.

The Greek *baths* were uſually annexed to *paleſtræ* or *gymnaſia,* of which they were conſidered as a part. Theſe *baths* conſiſted of ſeven different apartments, uſually ſeparated from each other, and intermixed with other buildings belonging to the other ſorts of exerciſes. Theſe were, firſt, the *cold bath, frigida lavatio*; ſecondly, the *elæotheſium,* or room where they were anointed with oil; thirdly, the *frigidarium,* or cooling room; fourthly, the *propnigeum,* or entrance of the *hypocauſtum,* or ſtove; fifthly, the vaulted room for ſweating in, or *vapour bath,* called *concamerata ſudatio,* or *tepidarium*; ſixthly, the *laconicum,* or dry ſtove; ſeventhly, the *hot baths,* called *callida lavatio.* Potter, Archæol. Gr. lib. iv. c. 19.

As for the *baths* ſeparate from the *paleſtræ,* they appear to have been uſually double, one for men, the other for women; but ſo near, that the ſame furnace heated both. The middle part was poſſeſſed by a large baſon, that received water by ſeveral pipes, and was ſurrounded by a baluſtrade, behind which there was an area for the reception of thoſe who waited to uſe the *bath.* They were vaulted over, and only received light from the top.

In the Roman *baths,* the firſt part that appeared was a large baſon, called κολυμβηθρα in Greek, and *natatio* or *piſcina* in Latin. In the middle was the *hypocauſtum,* which had a row of four apartments on each ſide, called *balnearia*: theſe were the ſtove, the *bath,* cold *bath,* and *tepidarium.* The two ſtoves, called *laconicum* and *tepidarium,* were circular and joined together. Their floor was hollow and ſuſpended, in order to receive the heat of a large furnace, which was communicated to the ſtoves through the vacuities of their floor. This furnace alſo heated another room called *vaſarium,* in which were three large braſen veſſels called *milliaria,* reſpectively containing hot, warm, and cold water; which were ſo diſpoſed, that the water might be made to paſs by ſyphons and pipes out of one or other of them into the *bath,* in order to adjuſt its temperature. The deſcription is given by Vitruvius.

At three in the afternoon, which is what Pliny calls *hora octava & nona,* the Romans all repaired to the *baths,* either the public or the private ones: this was called the *bath-hour, hora balnei,* which in winter was at nine, in ſummer at eight. The public *baths* were all opened by the ſound of a bell, and always at the ſame hour.

Thoſe who came too late, ſtood a chance for bathing in cold water.

They began with hot water, after which, as the pores were now opened, and might give room for too plentiful a perſpiration, they thought it neceſſary for their health to cloſe them again, either with the cold *bath,* or at leaſt with a ſprinkling of cold water. During the *bath,* the body was ſcraped with a kind of knives, or ſmall ſtrigils, ſuch as are ſtill found in the cabinets of the curious. After bathing, ſucceeded unction and perfuming, from which they went freſh to ſupper.

The Romans, when they found their ſtomachs overcharged with meat, went to the *bath,* as we learn from Juvenal, who inveighs againſt thoſe, who having gorged themſelves with eating, were forced to go into the *baths,* to give themſelves relief. They found alſo that a *bath* was good to refreſh themſelves after ſome conſiderable fatigue or travel, as Celſus tells us; which makes Plautus ſay, that all the *baths* in this world were not ſufficient to remove the wearineſs he felt.

After Pompey's time, the humour of bathing was carried to great exceſs, by which many were ruined, ſeveral having brought themſelves to ſuch a pitch, that they could not bear food without bathing firſt. The emperor Titus is ſaid to have loſt his life hereby. Hence Pliny inveighs ſeverely againſt thoſe phyſicians, who held, that hot *baths* digeſted the food. The emperor Hadrian firſt laid a reſtraint on the immoderate humour of bathing, by a public edict, prohibiting all perſons to bathe before the eighth hour.

Baths *of Agrippa, thermæ Agrippinæ,* were built of brick, but painted in enamel: thoſe of Nero, *thermæ Neronianæ,* were not only furniſhed with freſh water, but even had the ſea brought into them: thoſe of Caracalla were adorned with two hundred marble columns, and furniſhed with ſixteen hundred ſeats of the ſame matter. Lipſius aſſures us they were ſo large, that eighteen hundred perſons might conveniently bathe in them at the ſame time. But the *baths* of Diocleſian, *thermæ Diocleſianæ,* ſurpaſſed all the reſt in magnificence. One hundred and forty thouſand men were employed many years in building them. Great part of theſe, as well as thoſe of Caracalla, are ſtill ſtanding; and, with the vaſt high arches, the beautiful and ſtately pillars, the extraordinary plenty of foreign marble, the curious vaulting of the roofs, the prodigious number of ſpacious apartments, and a thouſand other ornaments, make one of the greateſt curioſities of modern Rome. Kennet, Rom. Ant. p. ii. lib. i. c. 7. and Schott. Itin. Ital. p. 132.

Bath, in *Chemiſtry,* ſeveral matters employed to tranſmit heat are called *baths,* but the ſubſtances moſt frequently uſed by chemiſts for this purpoſe, are *water* and *ſand.* When water is employed, it is called **Balneum** *mariæ,* or **Water** *bath*; which is very much uſed, very convenient for many operations, and may be employed ſucceſsfully for all degrees of heat inferior to that of boiling water. See Col. Acad. Part. Etr. tom. vi. p. 377.—As water, when expoſed to fire in any veſſel from which it can evaporate, does only receive a determinate degree of heat, which always remains the ſame, when once it has arrived to the boiling heat, it follows, that by the *water bath*, a degree of heat always equal may be tranſmitted with certainty. Further, this degree of heat being incapable of burning, or of communicating an empyreumatic quality to matters ſuſceptible of it, the *water bath* has alſo the advantage of not expoſing ſubſtances to this inconvenience.

When veſſels in which DISTILLATIONS and DIGESTIONS are made, are placed in *ſand*, then a SAND *bath* is formed. This intermediate ſubſtance of ſand is very convenient to moderate the too great activity of the naked fire, and to tranſmit any degree of heat, from the weakeſt, to a red heat. As this *bath* is attended with leſs trouble, and requires leſs apparatus than the *water bath*, it is much uſed in laboratories. Nothing is requiſite for the *ſand bath*, but an earthen or iron veſſel filled with fine ſand, which is fitted in to a furnace, and capable of containing the cucurbits, retorts, matraſſes, or other veſſels containing the matter to be operated upon.

Ancient chemiſts had all a tincture more or leſs of ALCHEMY; they were therefore much more careful and laborious in their operations, and uſed many different *baths*, in order to apply preciſely the proper degree of heat. They uſed the vapour of water, aſhes, dung, the ſubſtance remaining after the ſqueezing of grapes, and whatever elſe they imagined moſt proper for their purpoſe. Hence the names of *aſh bath*, *bath of a horſe's belly*, *dung bath*, *mercurial bath*, *vapour bath*, &c. See Commerc. Phil. Techn. 4to. p. 31.—But an intelligent experienced artiſt may very well perform all the chemical operations which do not require a naked fire, by means of the *water* and *ſand baths*; and as they are the moſt convenient, they are the only *baths* now generally uſed. Macquer.

BATH is alſo uſed by *Chemiſts*, to ſignify the fuſion of metallic matters in certain operations. In REFINING or CUPELLING, for example, the metals are ſaid to be *in bath* when they are melted. When gold is purified by antimony, this ſemi-metal melted is called by ſome, the BATH *of gold*; alchemiſts, who conſider gold as the king of metals, call antimony the *bath of the king only*, becauſe in fact gold only can reſiſt the action of antimony. Macquer. See BALNEUM.

BATH, in *Jewiſh Antiquity*, is alſo the name of a liquid meaſure, containing the tenth part of an omer.

Some diſtinguiſh five kinds of *baths*; viz. the greater *bath*, containing 80 pounds of water, or, according to Joſephus, 1440 Roman ounces; the ſecond *bath*, containing 100 ounces; the third, 66⅔ ounces; the fourth, containing 25 ounces; and the fifth, 6⅔ ounces of water. Beverin. Synt. de Menſ. p. ii. p. 127.

Some have eſtimated the ſacred *bath* at half as much again as the common *bath*; but there is no ſufficient reaſon for this diſtinction. Calmet.

BATH, *knights of the*, a military order in England, inſtituted by Richard II. who ordained that there ſhould be no more than four; however, his ſucceſſor Henry IV. increaſed them to forty-ſix. Their motto was *Tres in uno*, ſignifying the three theological virtues.

It was the cuſtom to bathe before they received the golden ſpurs; but this was only obſerved at firſt, being afterwards gradually dropt: however, it was this occaſioned the denomination of *knights of the bath*.

The order of *knight of the bath* is ſcarce ever conferred, but at the coronation of kings, or the inauguration of a prince of Wales, or duke of York. They wear a red ribband belt-wiſe; to which is affixed the badge of the order, viz. a ſceptre, roſe, thiſtle, and three imperial crowns joined within a circle; upon which circle is the motto in pure gold. Each knight wears a ſilver ſtar of eight points upon the left breaſt of his upper garment.

Camden and others ſay, Henry IV. was the inſtitutor in 1399, and upon this occaſion: that prince, being in the *bath*, was told by ſome knight, that two widows came to demand juſtice of him; when his majeſty, leaping out of the *bath*, cried, He ought to prefer doing juſtice to his ſubjects to the pleaſure of the *bath*; and thereupon created *knights of the bath*.

Some authors, however, will have the order of the *bath* to have been on foot long before Henry IV. even as early as the Saxon times: at leaſt, it is certain, the *bath* has been uſed long before, in the creation of knights, in France; though there was no order of knights under this name.

The order of the *bath*, after remaining many years extinct, was revived under king George I. by a ſolemn creation of a great number of knights.

BATH *metal*, is a preparation of copper with zink, which gives a more beautiful colour than the calamine uſed in the preparation of the common braſs. See *Prince's* METAL.

BATH *Kol*, in *Jewiſh Antiquity*, a ſpecies of revelation by a voice or echo from heaven.

The word ſignifies in the Hebrew original, *daughter voice*, or *daughter of a voice*; for it may be interpreted both ways. It ſeems to have been thus called with reſpect to the oracular voice delivered from the mercy-ſeat, when God was conſulted by *urim* and *thummim*: this latter was the grand and primary voice of revelation; the former, of ſecondary dignity, and inferior to it as the daughter to the mother. Prideaux Connect. P. ii. l. 5. p. 462.

The Jewiſh writers ſpeak of three kinds of revelation among them; the firſt by *urim* and *thummim*, which obtained from the erecting of the tabernacle to the building of the temple; the ſecond by the ſpirit of prophecy, which prevailed from the beginning of the world to the death of Malachi; the third, the *bath kol*, or *filia vocis*, which took place when the ſpirit of prophecy was wholly ceaſed in Iſrael; and was, ſays Grotius, the ſole oracle which remained during the time of the ſecond temple. Godw. Moſes and Aaron, lib. iv. c. 8. Lightfoot's Works, tom. i. p. 485. Grot. in John, xii. 28.

Danzius has a diſſertation on the iniquity and impoſture of the *bath kol*; *De filia vocis nefanda, divinæ æmula.*

BATHING, the act of uſing or applying a bath; that is, of immerging the body, or part of it, in water, or other fluid. See BATH.

Bathing, on a religious account, is more properly called ABLUTION, or BAPTISM.

Bathing is a practice of great antiquity. The Greeks, as early as the heroic age, are ſaid to have bathed themſelves in the ſea, in rivers, &c. We even find mention in Homer of hot baths in the Trojan times; but theſe ſeem to have been very rare, and only uſed on extraordinary occaſions. Athenæus ſpeaks of hot baths as unuſual even in his age. In reality, public baths appear to have been diſcouraged, and even prohibited, by the ancient Greeks, who were contented to waſh themſelves at home in a ſort of *bathing* tubs. Pott, Archæol. tom. ii. lib. iv. c. 19.

The method of *bathing* among the ancient Greeks was, by heating water in a large veſſel with three feet, and thence pouring it on the head and ſhoulders of the perſon, ſeated in a tub for that purpoſe, who, at coming out, was anointed with oil. Burette, in Hiſt. Acad. Inſcr. tom. i. p. 117.

The Romans were alſo long ere they came into the uſe of baths, the very name of which, *thermæ*, ſhews they borrowed it from the Greeks. As the ancient Romans were chiefly employed in agriculture, their cuſtom was, every evening, after work, to waſh their arms and legs, that they might ſit down to ſupper with more decency: for it is to be obſerved, the uſe of linen was then unknown, and the people of that age went with their arms and legs bare, and conſequently expoſed to duſt and filth. But this was not all; for every ninth day, when they repaired to the city, either to the *nundinæ*, or to attend at the aſſemblies of the people, they bathed all over in the Tiber, or ſome other river which happened to be neareſt them. This ſeems to have been all the *bathing* known till the time of Pompey, when the cuſtom began of *bathing* every day. Mercurial. de Art. Gymn. lib. i. c. 10. Mem. Acad. Inſcr. tom. ii. p. 414.

The Celtic nations were not without the uſe of *bathing*: the ancient Germans bathed every day, in winter in warm water, and in ſummer in cold. This is what Tacitus ſeems to ſuggeſt, *ſtatim e ſomno—lavantur, ſæpius calida, aut apud quos plurimum hiems occupat.* De Mor. Ger. cap. 22.

Bathing, among the ancients, made a part of diet, and was uſed as familiarly as eating, or ſleep: on which footing it ſtill remains among the Turks, where there are public baths in every town, and even village. But among us, it is become only a part of medicine, and rarely practiſed but under the direction of phyſicians. Great diſtinction is now made between thoſe who are fit, and thoſe unfit, to undergo the operation, and many rules and preſcriptions given for the more ſucceſsful uſe of it.

Bathing is either cold, or hot, or warm, ſimple, or mixed, according to the temperature and conditions of the fluids.

Bathing in waters too hot, heats and expands the blood and humours to exceſs; whence palpitations of the heart, pains in the head, faintneſs, &c. The miſchief is ſtill greater if the body be full of blood, or turgid with ill juices.

The waters uſed for *bathing* are either pure and ſimple, or ſuch as abound with heterogeneous parts of different kinds. Thoſe fitteſt for medicinal purpoſes are, the pureſt, lighteſt, ſimpleſt, and moſt free from all participations of mineral or metallic parts.

Bathing is not to be practiſed without great care and precaution, in melancholic, œdematous, or paralytic caſes. As to the *phthiſis*, authors are divided: ſome abſolutely reject the uſe of baths for this diſorder; others allow it, provided the water be only of a moderate degree of warmth, and the body be previouſly prepared by laxatives and venæſection. Different *baths* have different effects, according to the ingredients of their waters: thoſe of the vitriolic kind are ſaid to fix the morbific matter in arthritic diſorders, and render them ſtill more obſtinate. They are alſo leſs proper where the body is foul, and the *viſcera* weak or obſtructed, being apt to render ſuch patients hydropic.

Sulphureous and aluminous *baths* are commended againſt an incontinency of urine; but prove hurtful to cachectic habits.

The Caroline *baths* have this quality beyond other hot waters, that they do not ſoften the body, but rather, by reaſon of the copious earthy and aſtringent matter they contain, bind up the parts, ſtrengthen thoſe which are weak, block up the pores, and thus produce a contrary effect to other hot ſprings.

Hence they are prejudicial to people of a tender and delicate habit, where the body is foul, or affected with ſpaſmodic, hypocondriac, or colic diſorders, and in many other caſes. They are of uſe where the limbs are to be ſtrengthened, the ligaments and tendons to be gently excited to motion, and the body to be dried.

The uſefulneſs and miſchievouſneſs of *bathing* makes a complicated conſideration, only to be decided by taking the nation, climate, habit, the time of the day, ſeaſon of the year, diſorder, &c. of the perſon, and the particular qualities and ingredients of the water into conſideration.

In general, hot or warm *bathing* tends to relax the ſkin, promote perſpiration, cleanſe the body, dilute the blood, and carry off cuticular foulneſſes by the pores. To conceive the manner of its operation, it is to be obſerved, that when the body is plunged in a pure, light, and ſimple warm water, it muſt neceſſarily undergo the following changes:

1. The heat neceſſarily rarifies and expands the blood and all the juices, and thus dilates the whole ſyſtem of the veſſels; the conſequence of which is, that the pulſe, or contractive ſtroke of the arteries, increaſes; whence the blood circulates with greater force, and the external parts of the body become red, and begin to ſweat.

2. By the gravity of the water, the body, plunged therein, is greatly altered; as its ſurface, in that caſe, ſuſtains a violent preſſure, which ſqueezes the blood forcibly in upon the *viſcera*. See BATH. But the additional preſſure in common cold *bathing* is very inconſiderable, and therefore the contraction of the fibres is principally owing to the ſtimulus of cold. Thus, whilſt the veſſels are compreſſed from without, and dilated from within, the inteſtine motion of the conſtituent parts of the blood is increaſed, and conſequently the viſcid juices are thus diſſolved, obſtructions overcome, and the humours are better fitted to paſs through all the ſecretory and excretory ducts.

Thence, as by the water's gravity the parts are compreſſed from without, and the blood driven plentifully upon the heart, the lungs, the brain, and the larger veſſels, we ſee why, if the bath be too hot, it cauſes palpitations of the heart, oppreſſions in the *viſcera*, or ſometimes fainting; and again, why, when the body is foul, or full of bad juices, it produces continued fevers, or inveterate intermittents, if the firſt paſſages abound with crudities. Theſe ill effects are more frequently obſerved from the hot ſprings, which have alſo an aſtringent quality, as the violently hot Caroline ſpring evidently has.

3. Another change enſues upon the body from the moiſture of the bath, which, aſſiſted with a temperate heat, procures a great ſuppleneſs to the ſkin and fibres; inſomuch that, upon coming out of the water, the whole habit of the body ſwells conſiderably, is looſened in its texture, and opened in its pores and veſſels; whilſt the blood and juices have a more free paſſage to the ſurface. Hence it is, that if a perſon go directly out of the warm bath to bed, he preſently begins to ſweat plentifully, which is the beſt effect that can proceed from *bathing*, and of great ſervice in the cure of diſeaſes.

Bathing is found more eſpecially beneficial to thoſe of a moiſt habit, and who have ſtore of humours in their veſſels and pores, as it colliquates the humours, and promotes their diſcharge.

In the ſummer it ſerves to cleanſe the ſkin from ſweat, and keep the pores open; in winter, to promote perſpiration. It is uſed with good effect in many chronic diſorders, in atrophies, the ſtone, &c. It is a good palliative in the *coryza*; but uſeleſs in the jaundice, and hurtful in the *aſcites* and *ſciatica*, and generally to all in a time of plague. By its promoting perſpiration, it becomes noxious to perſons of a dry conſtitution, as it exſiccates too faſt; more eſpecially to perſons hectically inclined, as by means thereof the humours, already too prone to colliquation, are ſtill more reſolved.

Cold *bathing* was in high eſteem among the ancient phyſicians for the cure of diſeaſes, as appears from Strabo, Pliny, Hippocrates, and Oribaſius. Whence frequent exhortations to waſhing in the ſea, and plunging into cold water.

Hot *bathing* firſt, and then uſing the cold *bath* immediately afterwards, is ſaid to be good for the SCURVY, at leaſt for that kind ſo common in cold countries. This is confirmed by the practice of the Ruſſians, and other northern nations.

In violent pains, hot and cold *bathing* produce the ſame effects, and in the ſame way, in one reſpect, viz. aſſuaging the pain, by taking off the attention from it. When one is much pained, withdrawing the action of the nerves correſponding to the affected part, employing many nerves, or ſome of them violently, another way, will ſeldom fail of giving eaſe. One pain is often a cure for another. Applying garlic to a diſtant part, burning, and bliſtering, cure altogether in this way.

The efficacy of hot and cold *bathing* is acknowledged in many caſes. How they act, ſeems a queſtion not yet fully decided in the writings of phyſicians.

BATHING *a hawk or falcon* is, when being weaned from her ramage fooleries, and alſo hired, rewarded, and thoroughly reclaimed, ſhe is offered ſome water to *bathe* herſelf in, in a baſon, where ſhe may ſtand up to the thighs, chooſing a temperate clear day for that purpoſe. By the uſe of *bathing* ſhe gains ſtrength, with a ſharp appetite, and ſo grows bold.

BATHING, among the Cophts and Æthiopians, denotes the day of Chriſt's baptiſm, reputed the 6th of January; when, from an opinion of an extraordinary ſanctity in the waters on that day, they not only, by ancient cuſtom, baptized their catechumens, but were re-baptized themſelves. The water of this day they carry home to keep: and Chryſoſtom aſſures us, that it had often been known to remain ſweet, uncorrupted, for two or three years. Orat. 74.

BATHING *tub*, in the Roman baths. There were two kinds of *bathing tubs*, the one fixed, and the other moveable: among the latter, ſome were contrived on purpoſe to be ſuſpended in the air, whereby, to the pleaſure of *bathing*, was added that of being ſwung or rocked, by the motion given to the *bathing tub*. Burette, in Hiſt. Acad. Inſcript. tom. i. p. 123.

BATHMUS, βαθμος, from βαινω, *I move*; an appellation given to ſuch cavities of bones as receive the prominences of other bones into them.

BATHRUM, a name given by ancient ſurgeons to a kind of ſtool or bench proper for the reduction of diſlocated bones. This is called βαθρον Ἱπποκρατειον, or the *Hippocratic ſtool*. Its deſcription and uſe are repreſented at large by Sculterus, Arm. Chir. p. i.

BATHYCHRUS *color*, in *Painting*, a term uſed by the Greeks to expreſs what the Romans call *auſterus color*. Such a colour was coarſe and dull, and wanted the life of the florid colours. See EVANTHI *colores*.

BATILLUS, a muſical inſtrument made of metal, in the form of a ſtaff, furniſhed with metalline rings, which being ſtruck, yielded a kind of harmonical ſounds; uſed by the Armenians in their church-ſervice.

BATIS, in *Botany*, a name by which Pliny and ſome other authors call the ſea-plant, which we know by the name of *ſamphire*, and eat as a pickle.

In the Linnæan ſyſtem, it is a genus of the *diœcia tetrandria* claſs.

BATIS, in *Ichthyology*; ſee BATOS, and RAIA.

BATISTE, in *Commerce*, a fine white kind of linen cloth, manufactured in Flanders and Picardy.

There are three kinds of *batiſte*; the firſt very thin; the ſecond leſs thin; and the third much thicker, called Holland *batiſte*, as coming very near the goodneſs of Hollands.

The chief uſe of *batiſte* is for neck-cloths, head-cloths, ſurplices, &c.

BATMAN, a weight in Turky, conſiſting of ſix okes. Forty of theſe *batmans* make a camel's load, and amount to about ſeven hundred and twenty pounds Engliſh weight.

Batman, or *battemant*, is a weight uſed in Turky and Perſia. The Turkiſh *batman* is of two kinds; the larger containing ſix okes, or *ocquos*, at three pounds three quarters Paris weight the *ocquo*; ſo that the *batman* amounts to about twenty-two Paris pounds and an half; the ſmaller, compoſed likewiſe of ſix *ocquos*, at fifteen ounces the *ocquo*, amounting to five pounds ten ounces.

The Perſian *batman* is likewiſe of two kinds: one called the *king's weight*, *batman de chabi*, or *cheray*, uſed for weighing moſt of the neceſſaries of life, equivalent to about twelve pounds and an half Paris weight; the other called *batman of Tauris*, equal to ſix pounds four ounces Paris or Amſterdam weight.

Theſe, at leaſt, are the proportions given by Tavernier. Chardin rates the Perſian *batmans* ſomewhat lower, viz. the former at twelve pounds twelve ounces; and the latter at five pounds fourteen ounces.

BATON, or BATOON, in *Heraldry*; ſee BASTON.

BATON, in *Botany*, a name by which ſome authors call the true turpentine-tree.

BATOONS *of St. Paul*, BASTONCINI *di San Paulo*, in *Natural Hiſtory*, a name given by ſome of the Italian writers, as Aguſtino Scilla, and others, to the *lapides Judaici*, or other ſpines of *echini*. Theſe are found in vaſt abundance in the iſland of Malta; and as every thing there is commemorated with ſome title, with St. Paul at the end of it, theſe are called *baculi Sti Pauli*, or *St. Paul's batoons.*

BATOS, in *Ichthyology*, the name given by Ariſtotle, and all the old writers, to the ſkaite, or ſlaire. They have generally called the male BATOS, and the female BATIS. It is a ſpecies of the RAIA, and is diſtinguiſhed by Artedi, by the name of the variegated ray, with the middle of the back ſmooth, and with one row of ſpines on the tail. Albertus calls it the *rayte*, and *rubus*.

BATRACHIAS *lapis*, the *frog-ſtone*, a name applied by different writers to two very different ſubſtances; ſome underſtanding by it lumps of common flint, which have accidentally formed themſelves into this figure; and others, thoſe pieces of amber which contain either a whole frog, or any part of one.

BATRACHITES, among *Ancient Naturaliſts*, a kind of gem found in Egypt, denominated from its reſemblance in colour to a frog.

The word is formed from βατραχος, *rana, a frog.*

Pliny ſpeaks of three ſtones under this denomination; *unam ranæ ſimilem colore, alteram ebori* (or rather, according to Hardouin's correction, *ebeni), tertiam rubentis e nigro.*

The *batrachites* differed from the modern BUFONITES, which does not appear to have been known to the ancients.

BATRACHOMYOMACHIA, *battle of the frogs and the mice*; the title of a burleſque poem, uſually aſcribed to Homer.

The word comes from the Greek βατραχος, *frog*, μυς, *mouſe*, and μαχια, *pugna.*

The ſubject of the war is the death of Pſycharpax, a mouſe, ſon of Toxartes, who, being mounted on the back of Phyſignathus, a frog, on a voyage to his palace, to which he had been invited, was ſeized with fear when he ſaw himſelf in the middle of the pond, ſo that he tumbled off, and was drowned. Phyſignathus being ſuſpected to have ſhaken him off with deſign, the mice demanded ſatisfaction, and unanimouſly declared war againſt the frogs. Stephens, Nunneſius, and other modern authors, take the poem not to be Homer's; but ſeveral of the ancients ſeem of another opinion; and Statius, who wrote under Domitian, makes no doubt of it. See Fabric. Bibl. Græc. lib. ii. c. 1. § 3.

BATRACHOSALIS, in *Ichthyology*, a name given by many of the Greek authors to the LOPHIUS, or *rana piſcatrix* of authors.

BATRACHUS, a ſpecies of the SILURUS.

BATTABLE *ground*, denotes land lying between England and Scotland, heretofore in queſtion to which it belonged, when they were two diſtinct kingdoms.

The word imports as much as *litigious*, or *diſputable ground*; from *battre, to beat* or *fight.*

BATTALIA, an army ranged in order of battle, or ready for engagement.

In this ſenſe, we meet with the depth of a *battalia*; to march in *battalia*, with the baggage in the middle; to break the *battalia*, &c. In the Roman *battalia*, the HASTATI made the front.

BATTALION, in the *Military Art*, a little body of infantry ranged in form of battle, and ready to engage.

The word comes from *battel, an engagement of two armies*, &c. and that from *battualia, the place where two men fight*; or from *battalia, the exerciſe of people who learn to fight.*

A *battalion* uſually contains from five to eight hundred men, of which one third were formerly pikes in the middle, and the other two thirds muſqets poſted on the wings: they are now armed with firelocks, ſwords, and bayonets. The *battalion* is divided into thirteen companies, one of which is grenadiers, but the number of men it conſiſts of is not determined.

Battalions are uſually drawn up with three men in file, or one before another.—Some regiments conſiſt but of one *battalion*, which is too few: others more numerous are divided into four or five, which are too many.

M. De Folard decries the modern method of ranging *battalions* ſo ſhallow, which renders them weak, and unable to ſupport each other; ſo that they are eaſily penetrated or broken: an eſſential fault in the modern tactics. The real ſtrength of a corps, according to this author, conſiſts in its thickneſs, or the depth of its files, and their connection and cloſeneſs. This depth renders the flanks almoſt as ſtrong as the front. He adds, that it may be laid down as a maxim, that every *battalion* ranged deep, and with a ſmall front, will beat another ſtronger than itſelf, ranged according to the uſual method. Polyb. tom. i. p. 7. But this opinion of Folard has not been adopted in modern practice; and his theory has been vigorouſly attacked by two French officers in the ſervice of the States-General. They admit the ſuperior ſtrength of his column to that of a modern *battalion*, if the action were to be decided with pikes and ſwords; but where fire-arms muſt be uſed, M. Folard's column is ſo very ill diſpoſed for this purpoſe, that it muſt infallibly be deſtroyed.

BATTALION, *round*, is that in which the ſoldiers are ranged in concentric circles. This was much uſed by the Romans, and called *in orbem*. Cæſar, in his Commentaries, has given many inſtances of this kind of arrangement.

BATTALION, *ſquare*, is that, where the number of men in file is equal to the number of men in rank. To form any number of men, e. g. 500, into a *ſquare battalion*, extract the neareſt ſquare root of 500, which is in integers 22; and that will give the number of men for rank and file. There wlll be a remainder of 16 men, who may be diſpoſed of, as the commander thinks beſt.

M. Folard ſhews at large, in his book *De la Colonne*, the weakneſs of the *ſquare battalion*. Both the full and the *hollow ſquare*, according to him, are equally bad.

BATTALION, *triangular*, is a body of troops diſpoſed of in the form of a triangle; in which the ranks form an arithmetical progreſſion.

BATTALION, *doubling a*, is a motion of the ſoldiers, whereby two ranks, or two files, are put into one.

BATTALION, *angle of a*; ſee ANGLE.

BATTALION, *fraiſing a*; ſee FRAISING.

BATTARDEAUX, in *Bridge-building*; ſee COFFER-*dams.*

BATTEN, a name which the workmen give to a ſcantling of wooden ſtuff, from two to four inches broad, and about an inch thick; the length being pretty conſiderable, but undetermined.

The term is chiefly uſed in ſpeaking of doors, &c. which are not framed of whole deal, &c. with ſtiles, rails, and pannels, like wainſcot, but are made to appear as if they were, by means of theſe pieces, or *battens*, bradded on the plain board round the edges, and ſometimes croſs them, and up and down.

Hence *batten* doors, or windows, are ſuch as ſeem to be wainſcot ones, but are not. Theſe are ſaid to be either *ſingle* or *double*, as the *battens* are fitted on to one ſide, or to both.

BATTENS *of the hatches*, in *Sea-language*, are nailed along the tarpaulings, and ſerve to keep their edges cloſe down to the hatches, in order to prevent the water which waſhes over the deck from penetrating into the lower apartments of the ſhip.

BATTERING-RAM; ſee ARIES.

BATTERING-*rams*, in *Heraldry*, a bearing or coat of arms, reſembling the military engine of the ſame name.

BATTERING, the attacking a place, work, or the like, with heavy artillery. See BATTERY.

To **BATTER** *in breach, battre en breche*, is to play furiouſly on a work, as the angle of a half-moon, in order to demoliſh and make a gap or BREACH in it.

In this, they obſerve never to fire a ſingle piece againſt the top of the wall; but all towards the bottom: three, four, five, or ſix feet from the ground: they alſo fire *par camarade*, all together, till they perceive the earth fall from behind the lining of the rampart.

BATTERING-*pieces*, or pieces of *battery*; ſee CANNON.

BATTERY, in the *Military Art*, denotes an eminence caſt up, whereon to plant artillery, that it may play to better advantage. It conſiſts of an epaulement or breaſt-work, of about eight feet high, and eighteen or twenty thick.—See *Tab. Fortif. fig.* 21. *n.* 33. and *fig.* 23.

The word is French, formed of *battre, to beat, ſtrike.*

In all *batteries*, the open ſpace left to put the muzzles of the great guns out at, are called *embraſures*; and the diſtances between the embraſures, *merlons.*—The guns are generally about fifteen or ſixteen feet diſtant from one another, that the parapet may be ſtrong, and the gunners may have room to work.

There are alſo *batteries of mortars*, the ſame with thoſe of cannon, except that they have no *embraſures*: and the ſlope of the breaſt-work is made inwards, contrary to that of other parapets, having their platforms about ſix feet ſquare, and eight feet aſunder.

The *battery* of a camp is uſually ſurrounded with a trench and palliſades at the bottom, as alſo with a parapet on the top, having as many holes as there are pieces of artillery, and two redoubts on the wings, or certain places of arms, capable of covering the troops, which are appointed for their defence. See EMBRASURES, MAGAZINES, MERLONS, PARAPET, PLATFORMS, TRENCHES, &c.

BATTERY, *open*, is nothing more than a number of cannon, generally field-pieces, ranged in a row a-breaſt of one another, on ſome ſmall natural elevation of the ground, or on an artificial bank of about a yard or two high.

BATTERY, *covered*, is when the cannon and gunners are covered by a bank made of bruſh-wood, faggots, and earth; of about eighteen or twenty feet thick, and ſeven or eight feet high.

The cannon uſed in ſuch *batteries* are generally from nine to eighteen pounders; ſometimes twenty-four pounders are uſed in them.

BATTERY, *ſunk* or *buried*, is that whoſe platform is ſunk or let down into the ground, with trenches cut in the earth againſt the muzzles of the guns, to ſerve for embraſures.

This ſort, which the French call *batterie en terre*, and *ruimante*, is generally uſed upon the firſt making approaches, to beat down the parapet of the place.

Batteries, *croſs*, are two batteries at a conſiderable diſtance from each other, which play athwart one another at the ſame time, and upon the ſame point, forming right angles; where, what one bullet ſhakes, the other beats down.

Battery *d'enfilade*, is one which ſweeps the whole length of a ſtrait line, a ſtreet, &c.

Battery *en echarpe*, is that which plays obliquely.

Battery *de revers*, or *murdering battery*, is one that plays on the back of any place; and being placed on an eminence, ſees into it.

Battery *joint*, or *par camerade*, or *cameretta*, is when ſeveral guns play at the ſame time upon one place.

Battery *enrouage*, is that uſed to diſmount the enemy's cannon.

Battery *à ricochet*, is adapted to the method of *ricochet* firing, firſt invented and practiſed by Vauban, at the ſiege of Aeth, in 1697: the guns are loaded with ſmall charges, and are elevated, ſo as to fire over the parapet; and the ſhot is hereby made to roll along the oppoſite rampart. This method of firing with guns has ſince been applied to mortars and howitzes with great ſucceſs.

Battery *coffer*, is that where the ſides of the wall and merlons only are formed of faſcines, and all the cavities or included ſpaces filled with earth.

Battery, *gabion*; ſee Gabions.

Battery, in *Law*, denotes an act that tends to the breach of the peace of the realm, by unlawfully ſtriking, beating, or offering other violence to another perſon.

Battery is frequently confounded with *aſſault*, though in law they are different offences; for that, in the treſpaſs for *aſſault* and *battery*, one may be found guilty of the *aſſault*, yet convicted of the *battery*: there may therefore be *aſſault* without *battery*; but *battery* always implies an *aſſault*.

A perſon guilty of *battery* againſt a clergyman, is liable to three kinds of proſecution for the ſame offence: an indictment for breach of peace, a civil action for damages, and a ſuit in the eccleſiaſtical court.

Battery is ſometimes uſed in ſpeaking of the fabric of metalline utenſils.

In this ſenſe, *battery*-works include pots, ſaucepans, kettles, and the like veſſels, which, though caſt at firſt, are to be afterwards hammered or beaten into form.

Some make *battery* for the kitchen, *batterie de cuiſine*, comprehend all utenſils for the ſervice of the kitchen, whether of iron, braſs, copper, or other matters. Others take the term in a narrower ſenſe, and reſtrain it to utenſils of braſs or copper.

A ſociety for the mineral and *battery*-work of England was incorporated by queen Elizabeth.

Battery, in *Electricity*, is a combination of coated ſurfaces of glaſs, ſo connected together, that they may be charged at once, and diſcharged by a common conductor. Mr. Gralath, a German electrician, was the firſt who contrived to increaſe the ſhock, by charging ſeveral phials at the ſame time. Dr. Franklin, after he had analyſed the Leyden phial, and found that it loſt at one ſurface the electric fire which it received at the other, conſtructed a *battery* conſiſting of eleven panes of large ſaſh-glaſs, coated on each ſide, and connected in ſuch a manner, that the whole might be charged together, and with the ſame labour as one ſingle pane; and by bringing all the giving ſides into contact with one wire, and all the receiving ſides with another, he contrived to unite the force of all the plates, and to diſcharge them at once. The moſt complete *battery* that has yet been conſtructed, is deſcribed by Dr. Prieſtley, of which he ſays, that after long uſe he ſees no reaſon for wiſhing the leaſt alteration in any part of it. This *battery* (ſee *Plate of Electricity, fig.* 1.) conſiſts of 64 jars, each 10 inches long, and 2½ inches in diameter, coated within 1½ inch of the top; and contains in the whole 32 ſquare feet. The wire of each jar has a piece of very ſmall wire twiſted about the lower end of it, to touch the inſide coating in ſeveral places; and it is put through a pretty large piece of cork, within the jar, to prevent any part of it from touching the ſide, which would tend to promote a ſpontaneous diſcharge. Each wire is turned round, ſo as to make a hole at the upper end; and through theſe holes a pretty thick braſs rod with knobs paſſes, one rod ſerving for one row of the jars. The communication between theſe rods is made by laying over them all a thick chain. When part only of the *battery* is uſed, the chain is laid over as many rods as will furniſh the required number of rows of jars. The bottom of the box, in which the jars ſtand, is covered with a plate of tin, and a bent wire touching the plate paſſes through the box, and appears on the outſide. To this wire any conductor deſigned to communicate with the outſide of the *battery* is faſtened, as the ſmall wire in the figure, and the diſcharge is made by bringing the braſs knob to any of the knobs of the *battery*. When a very great force is required, the quantity of coated ſurface may be increaſed, or two or more *batteries* may be uſed. Franklin's Exp. and Obſ. ed. 1769. p. 28. Prieſtley's Hiſt. &c. of Electricity, ed. 1775. vol. ii. p. 99.

BATTEURS *d'eſtrade*, ſcouts, or horſemen ſent out before, and on the wings of an army, two or three miles, to make diſcoveries; of which they are to give an account to the general.

BATTIFOLIUM, or Battifollum, a kind of tower or defence, frequently mentioned by Latin hiſtorians of the middle age. It ſeems to have been of wood, and to have been erected on ſudden and haſty occaſions.

BATTLE, an action which paſſes between two armies ranged in order of *battle*, and who engage in a country ſufficiently open for them to encounter in front, and at the ſame time; or, at leaſt, for the greater part of the line to engage, while the remainder remains in ſight, by reaſon of ſome difficulty, which hinders it from entering ſo readily into action, with a front equal to that which may be oppoſed to it by the enemy.

Other great actions, though generally of a longer duration, and even frequently attended with greater ſlaughter, are only called *fights*, by the French *combats*. Feuq. Mem. c. 80.

A *battle* loſt, almoſt always draws with it the loſs of the artillery of the army, and frequently alſo that of the baggage: conſequently, as the army beaten cannot again look the enemy in the face till it have repaired thoſe loſſes, it is forced to leave the enemy a long time maſter of the country, and at liberty to execute all its ſchemes.—Whereas a great fight loſt is rarely attended with a loſs of all the artillery, and ſcarce ever of the baggage, becauſe the two armies not meeting in front, they can only have ſuffered in the part that has been engaged. Feuq. loc. cit.

An ingenious modern author remarks, that it is not, uſually, the real loſs ſuſtained in a *battle* (that is, of ſome thouſands of men) that proves ſo fatal to a ſtate; but it is the imaginary loſs, and diſcouragement, which deprives it of the uſe of thoſe very powers which fortune had left it. Conſid. ſur les Cauſ. de la Grand. des Rom. c. iv. p. 39.

Drawing up an army for Battle, is called *embattelling*; the rules and method for which are furniſhed by the ſcience called by the ancients *tactics*.

Battle, *order of*, the diſpoſition of the ſquadrons and battalions of an army in one or more lines, according to the conditions of the ground, either in order to engage the enemy, or to be reviewed by the general.

Battle, *field of*, the ground on which the two armies engage.

The Greeks notified the places of their *battles* and victories by adding the word Νικη; whence Nicodemia, Nicopolis, Theſſalonica, &c. The ancient Britons did the like, by adding the word *Mais*; whence Maiſſeveth, Malmaiſbury, &c. The Engliſh by the word *field*.

The Romans had their particular days, called *præliares dies*, wherein alone it was lawful to join *battle*; and others wherein it was unlawful, called *dies atri*.

The Athenians, by the ancient laws of their country, were not to draw out their forces for *battle* till after the ſeventh day of the month. And Lucian relates of the Lacedæmonians, that, by the laws of Lycurgus, they were not to fight before full moon. Among the Germans, it was reputed an impiety to fight in the wane of the moon; and Cæſar tells us, that Arioviſtus was beaten by him, becauſe, contrary to the laws of his country, he had fought when the moon was in her wane. The German ſoldiers were intimidated with the apprehenſion, and afforded Cæſar an eaſy victory; *acie commiſſa impeditos religione hoſte vicit.* De Bell. Gall. lib. ii.

It is well known that Jeruſalem was taken by Pompey in an attack on the ſabbath-day, when, by the Jewiſh ſuperſtitious notions, they were not allowed to fight, or even defend themſelves. Dion. lib. vii.

The Romans did not carry their ſuperſtition ſo far; their *atri dies* were only obſerved in reſpect of attacking: no day was too holy for them to defend themſelves in. Macrob. Saturn. lib. i. c. 16.

Among the ancients, we find frequent inſtances of *battles* in the night: it was by the moon-light that Pompey beat Mithridates, and Scipio, Aſdrubal and Syphax. Flor. lib. iii.

Battle *array*, denotes the order in which an army is drawn up at a review, or for engagement; more frequently called *line of battle*.

Battle, *pitched or ſet*, that wherein both armies have room and time to range themſelves in good order.

The firſt *pitched battle*, of which we have any diſtinct account, is that between Crœſus and Cyrus, deſcribed by Xenophon, concerning which we have a diſſertation by M. Freret, wherein ſeveral points of the ancient tactics are well explained. Cyropæd. lib. vi. and vii. Mem. Acad. Inſcr. tom. ix. p. 209.

In modern war, we find few *pitched* or *ſet battles*: the chief view of the great commanders of late days is rather to harraſs or ſtarve the enemy by frequent alarms, cutting off his proviſions, carrying off his baggage, ſeizing his poſts, &c. than to join iſſue with him, and put the whole on the event of one day; a *battle* generally deciding the fate of a campaign, ſometimes of a whole war. Hence it is a rule, never to venture a general *battle*, unleſs either you fight to advantage, or be forced to it.

Joining or giving *battle* ſhould always be by deſign: a general ſhould never ſuffer himſelf to be forced to fight.

Reaſons for giving *battle* are, ſuperiority in the number or quality of forces; neceſſity of putting a ſpeedy end to the war; different views or intereſts of the commanders of the enemy's army; their negligence in encamping or marching; neceſſity of relieving a place beſieged; the diſpoſition of an army, which muſt be ruined, unleſs prevented by the ſucceſs of a *battle*; the certainty of ſuccours coming to the enemy, which will render him ſuperior; ſome preceding advantage, which, though not deciſive, has given the enemy a conſiderable check. For avoiding it the reaſons are, having leſs to hope for from a victory, than to fear from a defeat; expecting further ſuccours, or the junction of a ſeparate corps; finding the enemy advantageouſly poſted, or a proſpect of diſſipating his army by temporizing and avoiding *battle*. Means for execution are, to form the order of *battle* ſuitable to the quantity and quality of the forces whereof the army is compoſed, and the ground wherein it is expected to find the enemy; diſtributing the poſts to the general officers; giving copies of the order of *battle* to all thoſe who have command in it; diſtributing a ſufficient number of charges to the men, and having freſh munition and arms ready behind thoſe who have a long fire to ſuſtain; letting the army have time to reſt and refreſh themſelves before the *battle*; being ſufficiently provided with medicines and ſurgeons; being abſolutely free from the incumbrance of the heavy baggage; inſpiring the army with the deſire of fighting, hopes of victory, and promiſes of plunder; and not neglecting the advantages of wind and ſun. The ſtratagem of the Arabs deſerves mention. They uſed to turn looſe a number of camels loaden with ſand and duſt-bags full of holes to the windward of the enemy, who by this means were covered and ſuffocated with a cloud of duſt. Vid. Phil. Tranſ. N° 219. p. 137.

On the day of *battle*, the means of execution are, taking the advantages of the ground, obſerving the order of *battle* before concerted, changing it where found neceſſary, and giving notice thereof to thoſe concerned; diſtributing the artillery in the line according to the ground; watching for all advantages to be taken, by opening and ſtrengthening the wings; giving the word before marching to the enemy; taking care to obſerve the right and left, and the diſtance between the lines: if the army march in front, to make frequent halts, to give time for the line to recover its order, and to the artillery to fire and load again; above all, forbidding the ſoldiers from firing, to receive the enemies fire, and not to charge till after drawing their fire from them, is a capital point; it being certain, that when troops, who have parted with their fire, ſee others advance, and going to pour in their fire upon them, they will immediately give way. But when both ſides purſue the ſame maxim, the beſt expedient ſeems to be, to march up cloſe to the enemy, before they give their fire, and having fired, to prevent the enemy from giving theirs, by falling upon them with the bayonets on the muzzle of the muſkets the inſtant you have fired, which may be done under cover of the ſmoke, before they can perceive it. Bland's Milit. Diſcip. c. ix. art. 2.

If the army, by its march, cannot come at the enemy in front, it muſt approach in a ſufficient number of columns to be in order of *battle*, out of diſtance of being charged in columns. The artillery is ſtill to accompany the firſt line in the order wherein it was firſt diſtributed, if the ground will allow, and the reſt of the army to follow this motion, ſtill obſerving the diſtance between the two lines as at firſt appointed, to prevent confuſion. If the victory continue to declare in his favour, and he has the good fortune to overthrow the ſecond line, more care ſtill is to be taken to prevent the troops from ſeparating, leſt they be charged and put into diſorder by the firſt line of the enemy, who may have rallied behind their ſecond line. The routed troops muſt ſtill be purſued in a body, and in lines. No battalion ought ever to advance before the line in purſuit, for fear of being flanked, till the diſorder be general: afterwards, the number of thoſe detached for the purſuit is to be increaſed, without ever ſuffering a man to quit his flag without being commanded. On this occaſion, the general is to make uſe of the reſerved body, and of freſh troops, who have not engaged, to purſue the enemy, to prevent their rallying, and to take priſoners, which the troops muſt never be ſuffered to meddle with during the *battle*, not ſo much as to look on the plunder of the field, till the victory be abſolutely aſſured, and the enemy ſo broken, and at ſuch a diſtance, that there is no danger of his turning back on the bodies detached to purſue them: after which, during the reſt of the day, the victorious troops may be ſuffered to reap the plunder of the field of *battle*. If the firſt line give way, or be put into diſorder by the enemy, the battalions are to retire through the intervals left between thoſe of the ſecond line, behind which they are to ſtop and rally. Great care is to be here taken by the officers, that, inſtead of retiring through the intervals, they do not run directly into the battalions, and either carry them off with them, or put them into ſuch confuſion, that the enemy be upon them before they have proper time to repair the diſorder.

On the firſt line's giving way, the ſecond ſhould march up briſkly to their relief, and attack the enemy, before they have time to repair the diſorder, which the action and the purſuit muſt of courſe have thrown them into; by doing which, they may eaſily retrieve what is loſt, and defeat and render uſeleſs the enemy's firſt line, which had been conſiderably weakened and diſordered by the former attack. This is the more eaſy to be effected, as the enemy's firſt fire is ſpent, which is that which does moſt execution; the other, from the great hurry of loading, being of little conſequence, in compariſon with the firſt. The great miſchief is, that the ſecond line ſeeing the firſt give way, are uſually ſtruck with a panic, which magnifies the enemy; ſo that by the time they approach near, they either betake themſelves to flight, or make but a faint reſiſtance.

In caſe fortune declare on the enemy's ſide, the great buſineſs of the general is to prevent a total rout. His capacity and experience are to ſhew him the moment which precedes the loſs of a *battle*, that he may take the neceſſary precautions to diminiſh the diſorder of a flight, either by the vigorous effort of a body of troops unſhattered, in order to give time for the reſt to rally, and thus ſecure a retreat; or by ſeizing ſome poſt behind, whither he may retire with ſafety; or a defile, behind which he may rally and re-aſſemble his ſcattered troops. As the loſs of the field of *battle* frequently carries with it that of the baggage and artillery, he is to remain no longer in this firſt place than while he can re-aſſemble his army; after which he is to lead it into ſome ſecure camp, where he may recover his loſſes, ſend for freſh cannon, troops, &c. If the loſs be conſiderable enough to hazard ſome conſiderable town, he is to throw into it the beſt of his infantry left, and endeavour ſtill to keep the field with the cavalry, to harraſs the enemy, in caſe he attempts a ſiege; or to oblige him to keep the army together, and prevent his dividing into ſeveral bodies, if his deſign be only to penetrate farther, and ravage the country. Bland.

The ancients never joined *battle* without much ceremony and preparation; as taking auguries, offering ſacrifices, haranguing the ſoldiers, giving the word, or a *teſſera*, &c. The ſignals of *battle* were ſounding the *claſſicum*, or general charge, and diſplaying a peculiar flag, called by Plutarch a purple robe. To which may be added, ſinging pæans, raiſing military ſhouts, and the like.

Battle was alſo formerly uſed for a body of forces drawn up in order of *battle*.

This amounts to the ſame with what is otherwiſe called BATTALION.

In this ſenſe, we meet with the length or depth of the *battle*; the front, rear, and flanks of the *battle*.

Battle, *length of the*, is the number of men in a rank, or the ſpace from the left flank to the right flank.

Battle, *depth of the*, is the extent of a file, or the number of men from the front to the rear.

A Roman legion, ranged in order of *battle*, conſiſted of *haſtati*, placed in the front; of *principes*, who were all old experienced ſoldiers, placed behind the former; and of *triarii*, heavy-armed with large bucklers, behind the *principes*. The *haſtati* were ranked cloſe; the ranks of the *principes* were much opener, ſo that they could receive the *haſtati*; and thoſe of the *triarii* opener ſtill, inſomuch that they could receive both the *principes* and the *haſtati* within them, without any diſorder, and ſtill facing the enemy. When therefore the *haſtati* found themſelves unable to ſtand the enemy's charge, they retired gently within the *principes*, where joining with them, they renewed the combat. If theſe found themſelves too weak to ſuſtain the enemy, both retired among the *triarii*, where rallying, they formed a new corps, and charged with more vigour than ever. If theſe failed, the *battle* was loſt; the Romans had no further reſource. Macchiav. Art. de Guer. lib. iii. c. 1.

The moderns are unacquainted with this method of inſerting or embatteling one company into another; without which, the former cannot be well ſuccoured or defended, and their places taken by others; which was a thing the Romans practiſed with great exactneſs.

As to the *velites*, and, in later times, the archers and ſlingers, they were not drawn up in this regular manner, but diſpoſed of either before the front of the *haſtati*, or ſcattered up and down among the void ſpaces of the *haſtati*, or ſometimes placed in two bodies in the wings. Theſe always began the combat, ſkirmiſhing in flying parties with the foremoſt troops of the enemy. If they were repulſed, which was uſually the caſe, they fell back to the flanks of the army, or retired again in the rear. When they retired, the *haſtati* advanced to the charge.

As to the cavalry, it was poſted at the two corners of the army, like the wings on a body, and fought ſometimes on foot, ſometimes on horſeback. The auxiliary forces compoſed the two points of the *battle*, and covered the whole body of the Romans.

Other leſs uſual forms of *battle* among the Romans were, the *cuneus*, or wedge; *globus*, or round form; *forfex*, or pair of ſheers; *turris*, or an oblong ſquare figure; *ſerra*, or ſaw. Kennet. Rom. Ant. Not. p. ii. lib. iv. c. 10.

The Greeks were inferior to the Romans in marſhalling their armies for *battle*, as they drew up their whole army in a front, and truſted the ſucceſs of the day to a ſingle force. Pott. Archæol. tom. ii. lib. iii. c. 9.

They had three forms of *battle* for the horſe, viz. the ſquare, the wedge, and the rhombus, or diamond form. The firſt held beſt for the defenſive; the two latter for the offenſive: the wedge being preferred as bringing moſt hands to fight. Ælian. Tact. c. 18.

BATTLE, in a *Naval Senſe*, denotes an engagement between two fleets, ſquadrons, or even ſingle ſhips.

This is more frequently diſtinguiſhed by the name of ſea-fight.

Of late times, fleets are ranged in line of *battle*, like land armies, and fight much after the ſame order; to the expediency of which, ſome objections may be made.

The ancients had divers forms of ſea-*battles*; as the half-moon, circle, and forceps. In all theſe, not only the ſhips engaged each other, and by their beaks and prows, and ſometimes their ſterns, endeavoured to daſh in pieces, or overſet and ſink each other, but the ſoldiers alſo annoyed the enemy with darts and ſlings, and, on their nearer approach, with ſwords and ſpears, boarding each other by laying bridges between the ſhips.

By way of preparation, they took down their ſails, and lowered their maſts, and ſecured whatever might expoſe them to the wind, chooſing rather to be governed by their oars.

It is obſervable, that the ancient and uſual way of fighting in our fleets was board and board, yard-arm and yard-arm, through and through; and not at a diſtance in a line or half-moon, as is now done: which practice our old ſailors ſay they were ſtrangers to.—For this reaſon our guns are ſhorter, and of larger bore, than thoſe of the French, which are adapted to the method of fighting in line of battle; as being longer, and carrying farther. So that we engage with them in this way at a diſadvantage. It has been often found that their balls will fly over our ſhips, before ours can reach them by a mile. Dennis Eſſ. on Navy, ſect. 2.—See SIGNAL.

BATTLE, *line of*; ſee LINE.

BATTLE, *ſquare*; ſee *Square* BATTALION.

BATTLE, *attainder by*; ſee ATTAINDER.

BATTLE, in *Middle Age Writers*, properly denotes a combat or duel decreed by order of a court of juſtice, for the deciſion of a cauſe, where otherwiſe ſufficient proof could not be had. See JUDICIUM *Dei*, ORDEAL, and PURGATION.

It was anciently allowed of in our law, and may ſtill be demanded at the election of the appellee (particular caſes only excepted), where the defendant in appeal of murder or felony, may fight with the appellant, and make proof thereby whether he be culpable or innocent of the crime. Glanv. lib. xiv. c. 1. If the appellee be ſo far vanquiſhed, that he cannot or will not fight any longer, he may be adjudged to be hanged immediately: but if he can maintain the fight until the ſtars appear, he ſhall have judgment to be quit of the appeal. 2 Hawk. P. C. 426. The trial by wager of *battle* may ſtill be demanded by the tenant, or defendant in a writ of right. Blackſtone's Comm. vol. iii. p. 337. vol. iv. p. 340, &c. See DUEL.

BATTLE *royal*, in *Cock-fighting*, denotes a fight between three, five, or ſeven cocks all together; ſo as that the cock which ſtands longeſt gets the day.

BATTLE *ax*. The *battle ax* was originally called *ſecuris Danica*, becauſe firſt introduced into England by the Danes; but being adopted in theſe countries, we find it called in later writers, *ſecuris Angla*, and *ſecuris Scotica*, the Engliſh and Scottiſh axes. The grandees wore them enriched with gold, and beſet with pearls. They were of that kind called *bipennes*, and have ſince generally degenerated into halbards or partiſans, though we find them ſtill retained, under their old denomination, by the band of gentlemen penſioners. Du-Cange.

BATTLEMENTS, in the *Military Art*, indentures; or notches on the top of a wall, parapet, or other building, in form of embraſures, for the ſake of looking through them, &c. much affected in the old fortification.

BATTOLOGY, from βαττος, *battus*, *babbler*, and λεγω, *I ſpeak*; in *Grammar*, a multiplying of words without occaſion, or a needleſs and ſuperfluous repetition of the ſame words, or things.

BATTOON, or BATOON; ſee BASTON.

BATTORY, a name given by the *Hans Towns* to their magazines or factories abroad.

The chief of theſe *battories* are thoſe at Archangel, Novogrod, Berghem, Liſbon, Venice, and Antwerp.

BATTUS, an order of penitents at Avignon, and in Provence, whoſe piety carries them to exerciſe ſevere diſcipline upon themſelves, both in public and private.

BATTUTA, in the *Italian Muſic*, the motion of the hand or foot in keeping or beating time.

Among Italian muſicians, we frequently find the words, *a battuta*, which import, *in meaſure*, or beating each time equally. This uſually occurs after what they call *recitativo*, which is rather declaiming than ſinging, and in which little or no meaſure is obſerved. *A battuta*, then, denotes, that they are to begin again to mark or beat the time equally.

BATUDA, a method of fiſhing mentioned in ſome *Middle Age Writers*, wherein the fiſh are driven by beating the water with poles, till flocking into one place, they are the ſooner caught.

BATZ, or BATZEN, a copper coin mixed with ſome ſilver, and current at different rates, according to the quantity of alloy, in many parts of Germany and Switzerland.

B. AV. See CHARACTER.

BAUDEKIN, BALDICUM, and BALDAKINUM, in our *Old Writers*, is uſed for cloth of *baudekin*, or gold; or tiſſue, upon which figures in ſilk, &c. were embroidered. But ſome writers account it only cloth of ſilk.

BAUGE, a drugget manufactured in Burgundy, with thread, ſpun thick, and coarſe wool.

BAUHINIA, in *Botany*, the name of a genus of plants of the *decandria monogynia* claſs, ſo called from the two *Bauhines*, famous for their botanical writings: *mountain ebony*. The characters are theſe: the flower is compoſed of five petals; and hath ten *ſtamina*. The oblong *germen* ſits upon the foot-ſtalk, which afterward becomes a long taper pod, incloſing a row of roundiſh compreſſed ſeeds. There are ten ſpecies.

All theſe plants are natives of the warm countries, and will not thrive in England, unleſs kept in a warm ſtove. They are propagated by ſeeds, which muſt be procured from the countries where they grow naturally, for they do not naturally perfect their ſeeds in England.

BAVINS, in *War*, bruſh faggots, made with the bruſh at length. See FASCINES.

BAUM, *meliſſa*, in *Botany*, a genus of the *didynamia gymnoſpermia* claſs of plants. The characters are theſe: the flower is of the lip kind, having a cylindrical tube, the chaps gaping, the upper lips erect, forked, and indented at the end. The under lip is trifid; it hath four awl-ſhaped *ſtamina*, two of which are as long as the petal, the others but half ſo long. It hath a quadrifid *germen*, which afterward turns to four naked ſeeds, ſitting in the empalement. There are eight ſpecies.

The common *baum* grows naturally on the mountains near Geneva, and in ſome parts of Italy; but is cultivated here in gardens as a medicinal and culinary herb. It has a perennial root, the ſtalks are ſquare, branching, and it riſes from two to three feet high, garniſhed with leaves ſet by pairs, indented about the edges, the lower ones ſtanding upon ſomewhat longiſh foot-ſtalks. The flowers grow in looſe bunches at the wings of the ſtalk in whorls, ſtanding upon ſingle foot-ſtalks: they are of the lip kind; the upper lip ſtands erect, and is forked; the under lip is divided into three parts: the middle one is roundiſh, and indented at the top. The flowers are white, and the whole plant has a pleaſant ſcent ſomewhat like lemons.

This plant is eaſily propagated by parting the root; for which the beſt time is in October, that the off-ſets may have time to get root before the froſts come on. They ſhould be planted two feet aſunder in beds of common garden earth, in which they will ſoon ſpread and meet together. The only culture required is to keep the plants clean from weeds, and to cut off the decayed ſtalks in autumn, ſtirring the ground between them.

Baum is greatly eſteemed among the common people, as good in diſorders of the head and ſtomach; but is leſs regarded in the ſhops. It is however reputed good in hypochondriac and hyſteric diſorders, and by outward application to eaſe the ſtinging of bees and waſps. It is moſt conveniently taken by way of infuſion, like tea; and the green herb, contrary to the general rule in regard to other plants, is much better than the dry. The only officinal preparation of *baum* is the ſimple water.

Hoffman has contrived a proceſs for the obtaining the virtues of this plant, which affords its principles better than any other, and gives two medicines to the phyſician, unknown before, but of great value.

This method might be purſued with the ſame ſucceſs in other caſes, and many plants, not ſufficiently eſteemed at preſent, might thus afford uſeful preparations.

He took a large quantity of the leaves of *baum*, freſh picked from the ſtalks, and filling a glaſs veſſel more than half full with them, fixing the ſtopper carefully in, he put the veſſel into a dung-hill, where he let it remain three months. At the end of this time he took it out, and found the whole reduced to a kind of pultice. This being diſtilled in a retort, yielded firſt an empyreumatic liquor, but afterwards, when the fire was increaſed, a black and ſtinking oil came over, in form of thin *laminæ*, ſpreading itſelf over the ſurface of the liquor. There remained at the bottom of the retort a black and burnt maſs, reſembling a coal, which, being thrown on burning charcoal, had very much the ſmell of the common tobacco.

In this firſt diſtillation no volatile ſalt appeared, but the empyreumatic liquor being examined, was found very ſharp and acrid on the tongue, and of a ſharp and pungent ſmell. Spirit of vitriol being mixed with it, it afforded no efferveſcence; but on the mixing it with ſpirit of hartſhorn, ſpirit of urine, or the like, a ſmall ebullition always was produced, though it laſted but a few moments.

This liquor, rectified by a ſecond diſtillation, affords the volatile ſalt of *baum*, which is a fine white and pellucid ſubſtance, adhering to the neck of the glaſs, in form of fine white and ſtriated cryſtal; and a yellow ætherial oil, of a very penetrating ſmell, and ſharp taſte, becomes ſeparated by the ſame rectification. Theſe are both found to be very great medicines, the ſalt as a ſudorific, and the oil as a high cordial, a carminative, and a deobſtruent.

Of the ENS PRIMUM of *baum*, we meet with high commendations in Mr. Boyle.

Baſtard BAUM; ſee MELITTIS.

Shrubby BAUM; ſee MOLUCCA.

Turky BAUM; ſee DRAGON'*s head*.

BAVOSA, in *Ichthyology*, a name given by the Italians to a ſpecies of the ray fiſh, called by the modern authors *leviraia*, and *raia oxyrynchus*, and by the earlier authors, *raja bos*, *bos marinus*, and *leioraia*. It is diſtinguiſhed by Artedi by the name of the variegated ray, with ten prickly tubercules on the middle of the back. See PHOLIS.

BAURAC, an ancient name for nitre, but in ſome places uſed in a reſtrained ſenſe, as not ſignifying every thing that was called by that name, but only one of two different ſalts that were confuſedly called nitre.

The Arabians give the name *baurach* to *tincar* or *tincal*, which when refined is called BORAX, but when it is rough, in little cryſtalline maſſes like the ſmall cryſtals of *ſal gem*, mixed with earth and other impurities, it is always diſtinguiſhed by the name of TINCAL. Neumann, p. 227.

BAWD, a perſon who keeps a place of proſtitution, or makes a trade of debauching women, and procuring or conducting criminal intrigues.

Some think the word is derived from the old French *baude*, *bold* or *impudent*; though Verſtegan has a conjecture which would carry it higher, viz. from *bathe*, anciently written *bade*.

In which ſenſe, *bawd* originally imported no more than bath-holder, as if bagnios had anciently been the chief ſcenes of ſuch proſtitution.

The Romans had their male as well as female *bawds*; the former denominated *lenones* and *proagogi*, among us *panders*; the latter, *lenæ*.

By a law of Conſtantine, *bawds* were to be puniſhed by pouring melted lead down their throats.

By the common law of England, a perſon may be indicted for keeping a bawdy-houſe, and puniſhed by fine and impriſonment: and haunters of bawdy-houſes bound to their good behaviour.

But it does not appear that the offence of being a *bawd* is indictable; though that of keeping a bawdy-houſe is. See STEWS.

BAWLING, among *Hunters*, is ſpoke of the dogs, when they are too buſy before they find the ſcent good.

BAY, *laurus*, in *Botany*, a genus of the *enneandria monogynia* claſs. Its characters are theſe: it is male and female in different plants; but the male flowers have no empalement. They have nine *ſtamina*, which are ſhorter than the petal, ſtanding by threes, terminated by ſlender ſummits. The female flowers have no empalements; they have one petal, which is cut into ſix ſegments at the top. In the bottom is ſituated an oval *germen*; and there are two globular glands, ſtanding upon very ſhort foot-ſtalks, fixed to the baſe of the petal. The *germen* becomes an oval berry with one cell, incloſing one ſeed of the ſame form. They are all propagated by ſowing the berries, or by laying down the tender branches, which will take root in one year's time, and may then be tranſplanted into beds for a year or two, or even placed at once where they are to remain. They muſt be trained up ſtraight, by tying them to ſtakes, and their under-ſhoots pruned off, to make them advance in height. Theſe trees are proper to plant on the warm ſides of hills, where they may be ſheltered from the north and north-eaſt winds. In open ſituations, the *bay*-tree will ſometimes indeed loſe all its verdure in ſevere winters, and appear dead, and many trees have on this occaſion been dug up and burnt; but this is a raſh and very wrong practice; for uſually, if they are ſuffered to remain, they ſhoot freely again, and after another ſeaſon are found as lively as ever.

Alexandria BAY; ſee BUTCHER'*s broom*.—*Cherry* BAY; ſee LAUREL.—*Dwarf* BAY; ſee SPURGE *laurel*.—*Indian* BAY; ſee MYRTLE.—*Loblolly* BAY; ſee GORDONIA.—*Plum* BAY; ſee GUAIAVA.—*Roſe* BAY; ſee OLEANDER.—*Sweet flowering* BAY; ſee *Laurel-leaved* TULIP-*tree*.

BAY, in *Geography*, denotes a little gulph; or an arm of the ſea, ſtretching up into the land; being larger in the middle within, than at its entrance, which is called the *mouth of the bay*.

BAY likewiſe ſignifies a pen, or pond-head, made up a great height, to keep in ſtore of water for driving the wheels of a forge or furnace of an iron-mill, by the ſtream that comes thence through a paſſage, or flood-gate, called the *pen-ſtock*.

BAY, among *Huntſmen*. Deer, &c. are ſaid to *bay*, or *be at bay*, when, after being hard run, they turn head againſt the hounds.

BAY, among *Farmers*, is that part of the barn where the mow is placed.

BAY *colour*, denotes a kind of red inclining to cheſnut, chiefly uſed in ſpeaking of horſes.

In this ſenſe, the word *bay* is formed from the Latin *baius*, or *badius*, and that from the Greek βαιος, *a palm-branch*: ſo that *badius* or *bay* properly denotes *color phœniceus*. Hence alſo, among the ancients, thoſe now called *bay* horſes, were denominated *equi palmati*.

We have divers ſorts and degrees of *bays*; as a light *bay*, a dappled *bay*, &c.

All *bay* horſes are ſaid to have black manes, which diſtinguiſh them from ſorrels, which have red or white manes.

Bay is one of the beſt colours, and *bay* horſes are commonly good.

BAY, in *Building*, denotes any kind of opening in walls; as a door, window, or even chimney.

BAY *à mirroir*, in the *Manege*, the ſame as DAPPLE *bay*.

BAY *ſalt*; ſee SALT.

BAY *windows*, are the ſame with what we otherwiſe call *bow windows*.

BAY *yarn*, is a denomination ſometimes uſed promiſcuouſly with *woollen yarn*. 10 and 11 W. III. c. 10. 5 G. II. c. 21. See YARN, &c.

BAYARD, or BAIARD, in ſome *Old Writers*, is an appellative for a horſe.

Hence the phraſes, *blind bayard*, *bayard's watering*, *bayard's green*, &c.

BAYONET, a ſhort broad dagger, made lancet-faſhion, and having, inſtead of an hilt, an iron handle and ring, to fix it to the end of a muſquet, ſo as not to hinder its firing or charging.

Bayonets are of great ſervice to the dragoons and fuſileers, after they have ſpent all their powder and ball.

This inſtrument is alſo uſed in hunting the boar or bear; for which purpoſe it is made larger than for the military uſe.

The origin of the word is unknown; probably it came from the city Bayonne, where this weapon is ſaid to have been firſt employed; or perhaps from its being invented by ſome engineer of that place.

BAYS, in *Commerce*, a kind of coarſe, open, woollen ſtuff, having a long knap; ſometimes frized on one ſide, and ſometimes not frized, according to the uſes it is intended for.

This ſtuff is without wale, being wrought on a loom with two treddles, like flannel.—The manufacture of *bays* is very conſiderable in England, particularly about Colcheſter; and in Flanders, about Liſle and Tournay, &c. Formerly the French, as well as Italians, were furniſhed with *bays* from England; but of late the French workmen have undertaken to counterfeit them, and ſet up manufactures of their own; and that with ſucceſs; eſpecially at Niſmes, Montpellier, &c.

The export of *bays* is very conſiderable to Spain, Portugal, and Italy. Their chief uſe is for the religious, and for linings in the army: the looking-glaſs makers alſo uſe them behind their glaſſes, to preſerve the tin or quickſilver; and the caſe-makers to line their caſes.

The breadth of *bays* is commonly a yard and half, yard and three quarters, or two yards; by forty-two to forty-eight in length: thoſe of a yard and three quarters are moſt proper for the Spaniſh trade.

BAZA, or **Bazat**, in *Commerce*, fine ſpun cotton, which comes from Jeruſalem, whence it is alſo called Jeruſalem COTTON.

BAZAR, or **Basar**, a denomination among the Turks and Perſians, given to a kind of exchanges, or places where their fineſt ſtuffs and other wares were ſold.

Theſe are alſo called *bezeſtins.*

The word *bazar* ſeems of Arabic origin, where it denotes *ſale*, or exchange of goods.

Some of the eaſtern *bazars* are open, like the market-places in Europe, and ſerve for the ſame uſes, more particularly for the ſale of the more bulky and leſs valuable commodities. Others are covered with lofty cielings, or even domes pierced to give light; and it is in theſe the jewellers, goldſmiths, and other dealers in the richer wares, have their ſhops.

The *bazar* or *maidan* of Iſpahan is one of the fineſt places in all Perſia, and even ſurpaſſes all the exchanges in Europe; yet, notwithſtanding its magnificence, it is excelled by the *bazar* of Tauris, which is the largeſt that is known, having ſeveral times held thirty thouſand men ranged in order of battle.

At Conſtantinople, there is the old and the new *bazar*, which are large, ſquare buildings, covered with domes, and ſuſtained by arches and pilaſters; the former chiefly for arms, harneſſes, and the like; the latter for goldſmiths, jewellers, furriers, and all ſort of manufacturers.

BAZGENDGES, in *Natural Hiſtory*, the name of a ſubſtance uſed by the Turks, and other eaſtern nations, in their ſcarlet-dying: they mix it for this purpoſe with cochineal and tartar, the proportions being two ounces of the *bazgendges* to one ounce of cochineal.

The *bazgendges* ſeem to be no other than the horns of the turpentine tree in the eaſtern parts of the world; and it is not only in Syria that they are found, but China alſo affords them. Many things of this kind were ſent over to Mr. Geoffroy at Paris from China, as the ſubſtances uſed in the ſcarlet-dying of that country, and they all proved wholly the ſame with the Syrian and Turkiſh *bazgendges*, and with the common turpentine horns. The lentiſk or maſtic tree is alſo frequently found producing many horns of a like kind with theſe, and of the ſame origin, all being owing to the *pucerons*, which make their way into the leaves, to breed their young there. Reaumur's Hiſt. of Inſects, vol. vi. p. 37.

BAZOCHE, or **Basoche**, a royal kind of juriſdiction exerciſed among the clerks of the palais, or courts of juſtice at Paris.

It is adminiſtered in the name and by the authority of the king of *Bazoche*, *roy de la Bazoche*, by virtue of an ancient grant of the kings of France. The elder among the clerks are the officers; and he who preſides is the chancellor.

This court only takes cognizance of cauſes among the clerks, or between clerks and artificers for goods bought, or work done. The freedoms they took with private characters in their inquiſitions and remonſtrances, has occaſioned ſeveral *arrets* to reſtrain their power, and prohibit their holding pleas without leave.

A collection of ſtatutes, ordonnances, regulations, monuments, and prerogatives of the kingdom of *Bazoche*, were publiſhed at Paris in 1654, 8vo.

BDELLIUM, βδέλλιον, an aromatic gum, brought from the Levant, of ſome uſe, both as a medicine, and a perfume.

The word is ſuppoſed to have been formed of the Hebrew בדלח, *bedollach*, which the Engliſh tranſlators render by the appellation *bdellium*. It is alſo written *bedellium*, *bedello*, *ptellium*, *petalium*, *megalium*, and *telinum*.

There is much uncertainty concerning both the plant and the place of its production, which is ſuppoſed to be in Africa. We find mention of the name both among the ancient naturaliſts, and in Scripture; but it is doubtful whether any of theſe be the ſame with the modern kind. As for the Scripture *bdellium*, we know very little of it. Moſes deſcribes *manna* as of the colour of *bdellium*; and Joſephus explains the paſſage, by ſaying it is the gum of a tree reſembling the olive tree; and that the manna wherewith the Jews were fed in the deſart reſembled this drug.—But Scaliger and others ſet aſide this explication, and own, they do not know what the *bdellium* mentioned in Scripture is.

The gum of this name among the moderns is ſomewhat bitteriſh to the taſte, looks tranſparent when broken, and if rubbed, ſeems a fattiſh ſubſtance.

It is thought to facilitate digeſtion, to diſcuſs and promote perſpiration, and to be good in coughs, and many diſorders of the breaſt; but its chief uſe now in compoſition is in diſcutient plaſters, cerates, and unguents; in which it is much commended for reducing of ruptures, and ſoftening any indurations of the nervous parts. Juncker. Lemery.

The *pilulæ de bdellio majores*, deſcribed by Meſſue, are uſed by ſome againſt the piles and exceſſes of the *menſes*. Hermannus alſo praiſes the oil of *bdellium* againſt obſtructions of the womb. Fumigations of the ſame gum, *ſuffitus ex bdellio*, received by the *anus*, are alſo ordered by ſome to ſtop immoderate fluxes of the hæmorrhoids. It is one of the weakeſt deobſtruent gums, and is now rarely uſed. From one ounce of this gum reſin, may be extracted by water ſix drams and two ſcruples; or by ſpirit, two drams.

BEACON, a SIGNAL for the better ſecuring the kingdom from foreign invaſions.

On certain eminent places of the country are placed long poles erect, whereon are faſtened pitch-barrels to be fired by night, and ſmoke made by day, to give notice, in a few hours, to the whole kingdom, of an approaching invaſion.—Theſe are commonly called *beacons*; whence alſo comes *beaconage*.

Beacons are alſo marks and ſigns for the ſea; erected on the coaſts by the maſters, &c. of Trinity-houſe, who are impowered to do this by act of parliament, 8 El. c. 13. If any perſon ſhall deſtroy or remove any ſea-mark, he ſhall forfeit 100*l.* and in caſe of inability to pay it, be *ipſo facto* outlawed.

BEACONAGE, money paid towards the maintenance of a *beacon*.

The word is derived from the Saxon *beacnian, to nod*, or *ſhew by a ſign*: hence alſo the word *beckon*.

BEAD, in *Architecture*, denotes a round moulding, carved in ſhort emboſſments, like beads in necklaces.

Sometimes alſo an aſtragal is carved *bead-faſhion*.

There are alſo a ſort of *beads plain*, frequently ſet on the edge of each *faſcia* of an architrave; ſometimes alſo on the lining-board of a door-caſe; and on the upper end of ſkirting-boards.

Bead, in *Aſſaying*, the ſmall lump or maſs of pure metal ſeparated from the *ſcoriæ*, and ſeen diſtinct and pure in the middle of the coppel while in the fire.

Thus, in ſeparating ſilver from its ore by means of lead, the ſilver remains in form of a *bead*, when the lead, that had before aſſiſted in the operation, is all reduced to *ſcoriæ*. In this proceſs, the *bead* of ſilver muſt be taken out of the coppel as ſoon as it is ſeen pure and fine, leſt growing cold, it ſhould be conglutinated to the coppel or litharge. This *bead*, when rightly made, is always porous underneath. Cramer.

Beads are more particularly uſed among us for a ſort of glaſs necklace, made in imitation of the colour and figure of pearl.

Beads are alſo uſed in ſpeaking of thoſe glaſs globules vended to the ſavages on the coaſts of Africa; thus denominated, becauſe they are ſtrung together for the convenience of traffic.

The common black glaſs of which *beads* are made for necklaces, &c. is coloured with mangaueſe only; one part of manganeſe is ſufficient to give a black colour to near twenty of glaſs. Lewis's Comm. Phil. p. 422.

Beads, in a religious ſenſe; ſee CHAPLET.

Bead *roll*, among the Romiſh prieſts, a liſt or catalogue of ſuch perſons, for the reſt of whoſe ſouls they are obliged to rehearſe a certain number of prayers, &c. which are told by means of their *beads*.

Bead *makers*, called by the French *paternoſtriers*, are thoſe employed in the making, ſtringing, and ſelling of *beads*.

At Paris there are three companies of *paternoſtriers*, or *bead makers*; one who make them of glaſs or cryſtal; another in wood and horn; and the third in amber, coral, jet, &c.

Bead *proof*, or *bubble proof*, terms uſed by our diſtillers, to expreſs that ſort of PROOF of the ſtandard ſtrength of ſpirituous liquors, which conſiſts in their having, when ſhaken in a phial, or poured from on high into a glaſs, a crown of bubbles, which ſtand on the ſurface ſome time after. This is eſteemed a proof that the ſpirit conſiſts of equal parts of rectified ſpirits and phlegm.

This is a fallacious rule as to the degree of ſtrength in the liquor; becauſe any thing that will increaſe the tenacity of the ſpirit, will give it this proof, though it be under the due ſtrength. Our malt diſtillers ſpoil the greater part of their goods, by leaving too much of the ſtinking oil of the malt in their ſpirit, in order to give it this proof, when ſomewhat under the ſtandard ſtrength.

But this is a great deceit on the purchaſers of malt ſpirits, as they have them by this means not only weaker than they ought to be, but ſtinking with an oil, which they are not eaſily cleared of afterwards.

On the other hand, the dealers in brandy, who uſually have the art of ſophiſticating it to a great nicety, are in the right when they buy it by the ſtrongeſt *bead proof*, as the grand mark of the beſt; for being a proof of the brandy containing a large quantity of its oil, it is, at the ſame time, a token of its high flavour, and of its being capable of bearing a very large addition of the common ſpirits of our own produce, without betraying their flavour, or loſing its own.

We value the French brandy for the quantity of this eſſential oil of the grape which it contains, and that with good reaſon; as it is with us principally uſed for drinking as an agreeably flavoured cordial; but the French themſelves, when they want it for any curious purpoſes, are as careful in the rectifications of it, and take as much pains to clear it from this oil, as we do to free our malt ſpirit from that nauſeous and fœtid oil, which it originally contains.

No judgment can be formed of brandies by the *bead proof* as to their mixed or adulterated, or their pure ſtate, further than that they are likely to be moſt pure, when they have the greateſt proportion of this oil, in regard to mixtures of other ſpirits. There are many occaſions where we want ſpirit, merely as ſpirit, and where any oil, whether ſweet or ſtinking, muſt be equally improper. Shaw's Eſſ. on Diſtillery.

BEAD *tree*, *azederach*, or *melia*, in *Botany*, a genus of the *decandria monogynia* claſs. Its characters are theſe: the flower has five ſpear-ſhaped petals which ſpread open, and a cylindrical *nectarium* of one leaf, indented at the brim in ten parts. It has ten ſmall *ſtamina* inſerted in the top of the *nectarium*; with a conical *germen*, which turns to a ſoft globular fruit, including a roundiſh nut, having five rough furrows, and five cells, each containing one oblong ſeed. There are two ſpecies.

BEADLE, or BEDEL, BEDELLUS, ſignifies a meſſenger or apparitor of a court, who cites men to appear and anſwer in the court to what is alleged againſt them.

BEADLE is alſo uſed for an officer in univerſities, whoſe place it is to walk before the maſters at all public proceſſions, &c. with a mace.

Spelman, Voſſius, and Somner derive *beadle* from the Saxon *bidel*, *a public crier*; in which ſenſe biſhops, in ſome ancient Saxon manuſcripts, are called *beadles of God*, *Dei bedelli*.—The tranſlator of the Saxon New Teſtament renders *exactor* by *bydele*; and the word is uſed in the ſame ſenſe in the laws of Scotland.

BEAGLES, a ſmall ſort of hounds or hunting dogs.

Beagles are of divers kinds; as the *ſouthern beagle*, ſomething leſs and ſhorter, but thicker than the deep-mouthed hound; the *fleet northern*, or *cat beagle*, ſmall, and of a finer ſhape than the ſouthern, and a harder runner. From the two, by croſſing the ſtrains, is bred a third ſort, held preferable to either.

To theſe may be added a ſtill ſmaller ſort of *beagles*, ſcarce bigger than lap-dogs, which make pretty diverſion in hunting the coney, or even ſmall hare in dry weather; but otherwiſe unſerviceable, by reaſon of their ſize.

BEAK, *roſtrum*, in *Ornithology*, the bill of a bird; from the form and ſtructure of which, Linnæus divides this whole family or general claſs of animals, into ſix orders. See BIRD, and ORNITHOLOGY.

BEAK, in *Architecture*, a little fillet left on the edge of a larmier, which forms a canal, and makes a kind of pendant chin; anſwering to what Vitruvius calls the *mentum*.

BEAK, or BEAK-*head of a ſhip*, is that part without the ſhip, before the forecaſtle, which is faſtened to the ſtem, and is ſupported by the main knee: this is uſually carved and painted, and, beſides its uſe, makes the becoming part, or grace of a ſhip.

The *beak* was anciently made of wood; but fortified with braſs, and faſtened to the prow, ſerving to annoy the enemy's veſſels. Its invention is attributed to Piſæus, an Italian. The firſt *beaks* were made long and high; but afterwards a Corinthian, named Ariſto, contrived to make them ſhort and ſtrong, and placed ſo low, as to pierce the enemy's veſſels under water. By the help of theſe, great havock was made by the Syracuſians in the Athenian fleet. Pott. Archæol. lib. iii. c. 17.

BEAK was alſo uſed for one of the ancient battalias, or forms of ranging an army for battle, particularly uſed by the Macedonians.

BEAK is alſo applied to the ſlender crooked prominences of divers bodies, bearing ſome analogy or reſemblance to the *beaks* of birds.

In this ſenſe we meet with *beaks* of ſhoes, *roſtra calceorum*, for long peaked toes, in uſe of old. Du-Cange.

Among *Farriers*, *beak* denotes a little horſe-ſhoe, turned up, and faſtened in upon the fore-part of the hoof. Its uſe is to keep the ſhoes faſt, and not liable to be ſtruck off by the horſe, when by reaſon of any itch, or being much diſturbed with the flies in hot weather, he ſtamps his feet violently on the ground.

BEAKED, *becqué*, in *Heraldry*, is uſed when the beak or bill of a fowl is of a different tincture from the body. In this caſe, they ſay *beaked* and membered of ſuch a tincture.

BEAKING, in *Cock-fighting*, expreſſes the fighting of theſe birds with their bills, or holding with the bill, and ſtriking with the heels.

BEAM, in *Architecture*, the largeſt piece of wood in a building; being laid acroſs the walls, and ſerving to ſupport the principal rafters of the roof.

No houſe has leſs than two of theſe *beams*, viz. one at each head: into theſe the girders of the garret floor are alſo framed; and, if the building be of timber, the teazle-tenons of the poſts.

The proportions of *beams* near London are fixed by ſtatute, as follows: a *beam* fifteen feet long muſt be ſeven inches on one ſide its ſquare, and five on the other: if it be ſixteen feet long, one ſide muſt be eight inches, the other ſix: if ſeventeen feet long, one ſide muſt be ten inches, the other ſix: in the country they uſually make them ſtronger. Sir H. Wotton adviſes theſe to be of the ſtrongeſt and moſt durable timber.

Some of the beſt authors have conſidered the force or ſtrength of *beams*, and brought their reſiſtance to a preciſe calculation; particularly M. Varignon, and M. Parent; the ſyſtem of the latter is as follows.

When, in a *beam* breaking parallel to its baſe, which is ſuppoſed to be a parallelogram, two plans of fibres, which were before contiguous, are ſeparated, there is nothing to be conſidered in thoſe fibres, but their number, bigneſs, tenſion before they broke, and the lever by which they act; all theſe together make the ſtrength or reſiſtance of the *beam* to be broke.

Suppoſe then another *beam* of the ſame wood, where the baſe is likewiſe a parallelogram, and of any bigneſs, with regard to the other, at pleaſure; the height or thickneſs of each of theſe when laid horizontal, being divided into an indefinite number of equal parts, and their breadth into the ſame number, in each of their baſes will be found an equal number of little quadrangular cells, proportional to the baſes whereof they are parts.—Theſe then will repreſent little baſes, or, which is the ſame thing, the thickneſſes of the fibres to be ſeparated for the fracture of each *beam*: and, ſince the number of cells is equal in each, the ratio of the baſes of both *beams* will be that of the reſiſtance of their fibres, both with regard to number and thickneſs.

Now, the two *beams* being ſuppoſed of the ſame wood, the fibres moſt remote from the points of ſupport, which are thoſe which break the firſt, muſt be equally ſtretched when they break. Thus the fibres, v. gr. of the tenth diviſion, are equally ſtretched in each caſe, when the firſt breaks; and in whatever proportion the tenſion be ſuppoſed, it will ſtill be the ſame in both caſes; ſo that the doctrine is entirely free, and unembarraſſed with any phyſical ſyſtem.

Laſtly, it is evident, the levers whereby the fibres of the two *beams* act, are repreſented by the height or depth of their baſes; and, of conſequence, the whole reſiſtance of each *beam*, is the product of its baſe by its height; or, which is the ſame thing, it is the ſquare of the height multiplied by the breadth: which holds, not only in caſe of parallelogrammatic, but alſo of elliptic baſes.

Hence, if the baſes of two *beams* be equal, though both their heights and breadths be unequal, their reſiſtance will be as their heights alone; and, by conſequence, one and the ſame *beam* laid on the ſmalleſt ſide of its baſe, will reſiſt more than when laid flat, in proportion as the firſt ſituation gives it a greater height than the ſecond: and thus an elliptic baſe will reſiſt more, when laid on its greateſt axis, than when on its ſmalleſt.

Since, in *beams* equally long, it is the baſes that determine the proportion of their weights or ſolidities; and ſince, their baſes being equal, their heights may be different; two *beams* of the ſame weight may have reſiſtances differing to infinity: thus, if in the one the height of the baſe be conceived infinitely great, and the breadth infinitely ſmall, while in the other the dimenſions of the baſe are infinite; the reſiſtance of the firſt will be infinitely greater than that of the ſecond, though their ſolidity and weight be the ſame. If therefore all required in architecture were to have *beams* capable of ſupporting vaſt loads, and at the ſame time to be of the leaſt weights poſſible, it is plain they muſt be cut thin as laths, and laid edgewiſe.

If the baſes of two *beams* be ſuppoſed unequal, but the ſum of the ſides of the two baſes equal, v. gr. if they be either 12 and 12, or 11 and 13, or 10 and 14, &c. ſo that they always make 24; and further, if they be ſuppoſed to be laid edgewiſe; purſuing the ſeries, it will appear, that in the *beam* of 12 and 12, the reſiſtance will be 1728, and the ſolidity or weight 144; and that in the laſt, or 1 and 23, the reſiſtance will be 529, and the weight 23: the firſt therefore, which is ſquare, will have leſs than half the ſtrength of the laſt, with regard to its weight.

Hence M. Parent remarks, that the common practice of cutting the *beams* out of trees as ſquare as poſſible, is ill huſbandry: he hence takes occaſion to determine geometrically, what dimenſions the baſe of a *beam* to be cut out of any tree propoſed, ſhall have, in order to its being of the greateſt poſſible ſtrength; or, which is the ſame thing, a circular baſe being given, he determines the rectangle of the greateſt reſiſtance that can be inſcribed; and finds, that the ſides muſt be nearly as 7 to 5, which agrees with obſervation.

Hitherto the length of the *beams* has been ſuppoſed equal; if it be unequal, the baſes will reſiſt ſo much the leſs, as the *beams* are longer.

To this it may be added, that a *beam* ſuſtained at each end, breaking by a weight ſuſpended from its middle, does not only break at the middle, but alſo at each extreme; or, if it does not actually break there, at leaſt immediately before the moment of the fracture, which is that of the equilibrium between the reſiſtance and the weight, its fibres are as much ſtretched at the extremes, as in the middle.—So that, of the weight ſuſtained by the middle, there is but one third part which acts at the middle, to make the fracture; the other two only acting to induce a fracture in the two extremes.

A *beam* may either be ſuppoſed loaden only with its own weight, or with other foreign weights applied at any diſtance, or elſe only with thoſe foreign weights. Since, according to M. Parent, the weight of a *beam* is not ordinarily above $\frac{1}{70}$ part of the load given it to ſuſtain, it is evident, that in conſidering ſeveral weights, they muſt all be reduced by the common rules to one common centre of gravity.

M. Parent has calculated tables of the weights that will be ſuſtained by the middle, in *beams* of various baſes and lengths, fitted at each end into walls, on a ſuppoſition that a piece of oak of an inch ſquare, and a foot long, retained horizontally by the two extremes, will ſuſtain 315lb. in its middle before it breaks, which it is found by experience it will. Mem. Acad. R. Scien. an. 1708.

BEAM *of a* PLOUGH, a name given by our farmers to the great timber of the plough, into which all the other parts of the plough-tail are infixed.

This is uſually made of aſh, and is ſtraight, and eight feet long in the common plough: but, in the four-coultered PLOUGH, it is ten feet long, and its upper part arched. The head of this *beam* lies on the pillow of the PLOUGH, and is raiſed higher, or ſunk lower, as that pillow is elevated or depreſſed by being ſhipped along the crow-ſtaves. Near the middle, it has an iron collar, which receives the tow-chain from the box, and the bridle-chain from the ſtake or gallows of the plough is fixed into it a little below the collar. Some inches below this, there is a hole, which lets through the coulter; and below that, there are two other ſmall ones, through which the heads of the retches paſs. Theſe are the irons which ſupport the ſheat, and with it the ſhare. Farther backward ſtill is a large perforation, through which the body of the ſheat paſſes; and behind that, very near the extremity, is another hole, through which the piece called the hinder-ſheat paſſes.

BEAMS *of a ſhip*, are the large, - main, croſs timbers, ſtretching from ſide to ſide, which hold the ſides of a ſhip from falling together, and which alſo ſupport the decks and orlops of the SHIP.

The *main beam* is that next the main maſt; and from it they are reckoned by *firſt*, *ſecond*, and *third beam*. The great *beam* of all is called the *midſhip beam*. See *Tab. Ship. fig.* 2. *n.* 36. 45. 61. 28. 91. 87.

There are uſually twenty-four *beams* on the lower deck of a ſhip of 74 guns, and to the other decks additional ones in proportion, as the ſhip lengthens above.

On the BEAM, in *Sea-language*, denotes any diſtance from the ſhip on a line with the *beams*, or at right angles with the keel. Any object that lies eaſt or weſt, when the ſhip ſteers northward, is ſaid to be on the ſtarboard or larboard *beam*.

Before the BEAM, ſignifies an arch of the horizon comprehended between the line of the *beam*, and that point of the compaſs which ſhe ſtems.

On the Weather BEAM, ſignifies on the weather ſide of the ſhip.

Camber BEAM; ſee CAMBER-*beam*.

BEAM *of an anchor*; ſee ANCHOR.

BEAM *of a balance*, is that piece of iron or wood, ſomewhat bigger toward the middle than at the ends, where there are holes through which run the ropes or ſtrings which hold the ſcales: the *beam* is divided into two equal parts, by a needle placed over it perpendicularly: and the centre of motion muſt be placed a little above the centre of gravity, that the *beam* may reſt exactly in an horizontal poſition. See BALANCE.

BEAM, or *roller*, among *Weavers*, is a long and thick wooden cylinder placed lengthways on the back-part of the loom of thoſe who work with the ſhuttle. The threads of the warp, of linen or woollen cloth, ſerges, or other woollen ſtuffs, are rolled upon the *beam*, and enrolled as the work goes on. That cylinder on which the ſtuff is rolled as it is weaved, is alſo called the *beam* or *roller*, and is placed on the fore-part of the loom.

BEAM, in *Heraldry*, is uſed to expreſs the main horn of a hart or buck.

BEAM, among *Hunters*, denotes the main ſtem of a deer's head, or that part which bears the antlers, royals, and tops; the little ſtreaks wherein are called circles.

BEAM is alſo uſed for a fiery meteor in the ſhape of a pillar; and for a ray of the ſun.

BEAM *compaſſes*; ſee COMPASSES.

BEAM *feathers*, in *Falconry*, the longeſt feathers of a hawk's wing.

BEAM-*filling*, in *Building*, the filling up the vacant ſpace between the raiſing plate and roof, with ſtones, or bricks, laid between the rafters on the raiſing plate, and plaſtered on with loam; this is frequent where the garrets are not pargeted, or plaſtered.

BEAM *fiſh*, in *Ichthyology*, a ſea monſter like a pike; a dreadful enemy to mankind, ſeiſing like a blood-hound, and never letting go if he gets faſt hold. The teeth of this fiſh are ſaid to be ſo venomous, that unleſs an antidote be immediately applied, the leaſt touch of them is mortal.

BEAM *tree*; ſee SERVICE *tree*.

BEAN, *faba*, in *Botany*. Linnæus comprehends this genus of plants under *vicia*. The characters are theſe: the flower is of the butterfly kind; the ſtandard is large, oval, and indented at the end; it hath two oblong erect wings, which incloſe the keel being much longer. The keel is ſhort, ſwelling, and cloſely covers the parts of generation: the nine *ſtamina* are in three parts, and one ſtands ſeparate. At the bottom is ſituated an oblong compreſſed *germen*, which afterward becomes a long compreſſed leathery pod, having one cell, filled with compreſſed kidney-ſhaped ſeeds.

We have four ſorts of *beans* commonly ſowed in our gardens. 1. The ſmall Liſbon or Maragan.. 2. The Spaniſh. 3. The Sandwich. And, 4. The Windſor *beans*. The firſt and ſecond ſorts are to be planted in October and November, under warm walls and hedges, where if they ſtand through the winter, they produce *beans* early in the ſpring. They may alſo be raiſed very cloſe in beds, and covered with hoops and mats in the winter, and in ſpring planted out; but there is ſome hazard in the tranſplanting, and they will be a fortnight or more later than thoſe which have ſtood the winter abroad.

The Liſbon *bean* is preferred to the Spaniſh; and the curious ought to have freſh ſeed every two years from abroad, for they are apt to degenerate, though not in goodneſs, yet in their earlineſs.

The Spaniſh and Windſor *beans* are not to be planted till after Chriſtmas; but eſpecially the Windſor, which are ſubject, more than any other kind, to be hurt by the cold. Theſe *beans* ſhould have an open ground, and be planted at the diſtance of three feet and an half row from row, and five or ſix inches from one another in the rows.

The Sandwich *beans* are hardier than the Windſor, and may be planted to come in between the early crops and them; and though not much regarded at preſent, they are a very good *bean*.

The firſt plantation of Windſor *beans* ſhould be made in the middle of January; and after that, a new plantation ſhould be made every three weeks till the middle of May, that there may be a ſucceſſion of crops.

The Toker *bean* comes about the ſame time with the Sandwich, and is a great bearer; therefore it is now much planted. The white and black bloſſom *beans* are alſo much eſteemed; but, unleſs their ſeeds are preſerved with care, are apt to degenerate. Miller.

There is ſcarce any plant, whoſe ſeed ſo well ſerves the purpoſe of the inquirer into the nature and ſtructure of ſeeds in general, as the *bean*.

Trials have not long ſince been made in France to raiſe garden *beans* in open fields, on the principles of the new huſbandry; and the reſult ſufficiently indicated, that with proper care large crops might be raiſed in this way.

The medicinal and dietetic qualities of *beans* are ſaid to be nutritive, but flatulent: the pods yield a water held good againſt the gripes in children. Some have uſed the horſe-*bean* as a ſuccedaneum to coffee, which in principles it much reſembles; only that it contains but half the quantity of oil. Mr. Boyle has ſeveral experiments

ments of *beans* treated pneumatically, to ſhew the great plenty of air they afford, on which their flatulency depends. The expanſion of *beans* in growing, the ſame author found ſo conſiderable, that it would raiſe a plug clogged with above an hundred pounds weight. Boyle's Works abr. tom. i. p. 285. tom. ii. p. 615, &c.

Beans, with proper management, make one of the fineſt of all baits for fiſh. The method of preparing them for this purpoſe is this: take a new earthen pot, glazed on the inſide; boil ſome *beans* in it, ſuppoſe a quarter of a peck: they muſt be boiled in river water, and ſhould be previouſly ſteeped in ſome warm water for ſix or ſeven hours. When they are about half boiled, put in three or four ounces of honey, and two or three grains of muſk: let them boil a little on, then take them off the fire, and uſe them in this manner: ſeek out a clean place, where there are no weeds, that the fiſh may ſee and take the *beans* at the bottom of the water. Throw in ſome *beans* at five or ſix in the morning, and in the evening, for ſome days. This will draw them together, and they may be taken in a caſting-net in great numbers together.

BEAN *flour*, called by the Romans *lomentum*, was of ſome repute among the ancient ladies as a coſmetic, wherewith to ſmooth the ſkin, and take away wrinkles.

The ancients made uſe of *beans* in gathering the votes of the people, and for the election of magiſtrates. A *white bean* ſignified abſolution, and a *black* one condemnation.

Beans had a myſterious uſe in the *lemuralia* and *parentalia*; where the maſter of the family, after waſhing, was to throw a ſort of *black beans* over his head, ſtill repeating the words, *I redeem myſelf and family by theſe beans.* Ovid gives a lively deſcription of the whole ceremony in his Faſti, lib. v. ver. 435.

Abſtinence from *beans* is ſaid to have been enjoined by Pythagoras, for which prohibition various reaſons have been aſſigned.

The Egyptian prieſts held it a crime to look at *beans*, judging the very ſight unclean. The *flamen dialis* was not permitted even to mention the name. Lucian introduces the ſame philoſopher in hell, ſaying, that to eat *beans*, and to eat our father's head, were equal crimes.

After all, both the genuineneſs of the precept, and the reality of any ſuch abſtinence among the ancient Pythagoreans, have been diſputed. Some attribute the precept to Empedocles, a diſciple of Pythagoras. Ariſtoxenus, an ancient writer cited by A. Gellius, introduces Pythagoras ſaying, that he eat more frequently of *beans* than of any other pulſe, on account of their gently looſening the belly.

BEAN *ſtalks*. The aſhes of *beanſtalks* make good and clear glaſs.

BEAN, *Horſe*. The *horſe bean* is the only kind propagated by the plough; it delights chiefly in a ſtiff and moiſt clay; three buſhels will ſow an acre, and this is to be done in February. The common produce is about twenty buſhels from an acre. They muſt lie ſome time upon the ground after they are cut, before they are carried in. Some farmers ſow tares and *horſe beans* together, which is a very good way, for the ſeeds are eaſily ſeparated by a riddle.

By the new huſbandry, leſs than one buſhel of ſeed will plant an acre of land: and the produce has exceeded that of the old, by more than ten buſhels an acre.

BEAN, *Bog*, *menyanthes*, in *Botany*, a plant common in boggy places, but as it is never cultivated, not worthy of further notice. It is a genus of the *pentandria monogynia* claſs, with a hairy corolla, a bifid ſtigma, and a ſingle-celled capſule.

BEAN, *Kidney*, *phaſeolus*, in *Botany*, a genus of the *diadelphia decandria* claſs. The characters are theſe: the empalement of the flower is of one leaf: the flower is of the butterfly kind; and hath a heart-ſhaped, obtuſe, inclined ſtandard, reflexed on the ſides: the wings are oval, the length of the ſtandard, with a narrow ſpiral keel twiſted contrary to the ſun. It hath ten *ſtamina*, nine joined in one body, and the other ſtanding ſeparate; and an oblong compreſſed hairy *germen*, ſupporting a ſlender inflexed ſpiral ſtyle, crowned by an obtuſe hairy *ſtigma*. The *germen* afterward becomes a long pod with a thick ſhell, ending in an obtuſe point, incloſing oblong compreſſed kidney-ſhaped ſeeds.

It would be to little purpoſe to enumerate all the varieties of this plant which have come to our knowlege; ſince America does annually furniſh us with ſo many new ſorts, that there is no knowing what varieties may be produced in England: beſide, as they are not likely to be much cultivated here, ſince ſome of the old ſorts are preferable to any of the new ones, for the uſe of the kitchen-garden, we need therefore only mention thoſe which are moſt eſteemed for the table.

There are at preſent three ſorts of *kidney beans* chiefly propagated for the table in England. Theſe are, 1. The common white or Dutch *kidney bean*. 2. The ſmaller *kidney bean*, commonly called the Batterſea *kidney bean*. And, 3. The upright ſort, called the tree *kidney bean*.

The firſt was ſome time ago greatly propagated in England, and is ſtill in Holland: it grows very tall, and requires long ſtakes and poles to climb on, and its beans are conſiderably broad; this makes them leſs ſaleable in the markets, people ſuppoſing them to be old becauſe they are broad; and they are hence grown into diſuſe, though a much more valuable kind for eating than any other.

The ſecond ſort or Batterſea *bean*, is what is more univerſally cultivated; it never grows very tall, nor rambles far, and the air can eaſily paſs between the rows, becauſe of its moderate growth; and this makes it bear plentifully, and ripen well for the table. It is the beſt taſted *bean*, except the laſt.

The third, or tree *kidney bean*, is alſo a plentiful bearer, and never rambles, but grows up in form of a ſhrub; but its beans are broader than the Batterſea kind, and are not ſo well taſted.

Miller recommends the ſcarlet bloſſom *bean*, which has been uſually cultivated for the beauty of its flowers, as the beſt ſort for the table.

They are all propagated from ſeeds, which are to be put into the ground the latter end of March or beginning of April for an early crop, but theſe ſhould have a warm ſituation and a dry ſoil; they muſt alſo be planted in a dry ſeaſon. The manner of planting them is, to draw lines with a hough over the bed, at two feet and a half diſtance, into which the ſeeds are to be dropped at about two inches aſunder, and the earth is to be drawn over them with the head of a rake, to cover them about an inch deep. In a week after ſowing, the plants will appear, and the earth ſhould be drawn up about their ſtalks as they riſe up; for a few days after this they will require no farther care, except to be kept clear from weeds, and, when the beans appear, to have them gathered twice a week; for if the beans are ſuffered to hang on too long, they not only become of no value, but they weaken the plant.

The firſt crop of *kidney beans* will continue a month in good order; and to ſupply the table afterwards, there ſhould be freſh ſowings in March, April, May, and June, the laſt of which will continue till the froſts come to deſtroy them. Some raiſe their early crops on hotbeds; and this is to be done exactly in the ſame manner as the raiſing the early CUCUMBER.

BEAN, *Kidney, tree*, in *Botany*; ſee GLYCINE.

BEAN *tree, binding, mimoſa*; ſee SENSITIVE *plant*.

BEAN, *Molucco*, a name given by Sir Robert Sibbald, in his *Prodromus*, and by Mr. Wallace, in his deſcription of the Orkney iſlands, to a ſort of fruit frequently caſt on ſhore in the North-weſt iſlands of Scotland; eſpecially on the coaſts moſt expoſed to the waves of the great ocean.

They are called by ſome Orkney *beans*, and are not the produce of that iſland, or indeed of any other part of Europe, but of America.

Sir Hans Sloane procured four ſpecies of them little injured by the ſea, and found on examination that three of them were the common produce of the iſland of Jamaica; where he had himſelf gathered them, and deſcribed them in his catalogue and hiſtory.

The firſt ſort was a kind of kidney bean, and the plant which produces it is deſcribed by Sir Hans under the name of the great perennial kidney bean with a great crooked lobe. It is alſo figured in the Hortus Malabaricus, by the name of *perim kakuvalli*, and Sir Robert Sibbald alſo calls it *nux Indica ex qua pyxides pro pulvere ſternutatorio parant*. This is a native of the Eaſt and Weſt Indies, and is ſometimes found thrown on ſhore in the county of Kerry in Ireland; and in ſome other places.

A ſecond kind of fruit thrown on ſhore in the Orkneys, is a very common fruit in Jamaica, known there by the name of the horſe-eye bean; it has this name from its reſembling the eye of ſome large animal, by reaſon of a *hilus* or welt which ſurrounds it. This is deſcribed by many authors, and among the reſt by Sir Hans Sloane, in his catalogue of Jamaica plants; and is found in many other of the hotter parts, both of the Eaſt and Weſt Indies.

A third kind of fruit found on theſe ſhores, is that called by the people of Jamaica the aſh-coloured nickar-nut; it has this name from its colour, and from its being perfectly round, of the ſhape of a nickar or marble, ſuch as boys play with. This is alſo common in the Eaſt and Weſt Indies.

A fourth kind is alſo a Jamaica fruit, with the hiſtory of which we are not yet well acquainted; no body has ſeen it growing, but the fruit itſelf is preſerved in many of the collections of the curious, and has been figured and deſcribed by Cluſius, and others, under the name of a round exotic fruit rigid with four riſing nerves.

Theſe are the principal kinds of fruit thus toſſed on ſhore with us; but how the products of Jamaica, or other parts of America, ſhould be brought to the ſhores of Scotland and Ireland, ſeems difficult to determine on any certain foundation. It is eaſy to conceive, that when they grow by the ſides of rivers, they may fall off from the trees into them, and be thence conveyed into the ſea. It is likewiſe eaſy to ſee, that when they are thus floating on the ſurface of the ſea, they may be carried about by the winds and currents to a conſiderable diſtance; but their motion this way muſt naturally be ſtopped by the main continent of America, and they muſt be forced through the gulf of Florida, or the canal of Bahama, going thence conſtantly eaſt, and into the North American ſea. This is eaſily conceived by a ſimilar fact which happens every day: which is, that a kind of ſea lentil, called *ſargaſſo*, which grows very plentifully on the rocks about Jamaica, is waſhed off from thence, and carried by the winds and currents, which for the moſt part go impetuouſly the ſame way, toward the coaſt of Florida, and thence into the North American ocean; and is there found floating on the ſurface. Thus far it is eaſy to trace our fruits from their native ſoil; but how after this they ſhould be forwarded to us is unaccountable, unleſs we ſuppoſe, that as ſhips when they go ſouth expect a trade eaſterly wind, and when they come north expect and generally find a weſterly wind, for at leaſt two parts in three of the year; ſo theſe fruits, being brought north by the current from the gulf of Florida, are put into the way of theſe weſterly winds, and by them conveyed to the coaſts of Scotland and Ireland. Philoſoph. Tranſ. N° 222. p. 300.

By the ſame means that theſe *beans* came to Scotland, it is reaſonable to believe that the ſame winds and currents brought from America thoſe ſeveral things towards the Azores and Porto Santo, which are recorded by Ferdinand Columbus, in the life of his father; which gave this bold adventurer the firſt notion that there was ſuch a place as America. Among the things he mentions as waſhed aſhore in this manner, was a piece of wood very ingeniouſly wrought, but evidently without the help of iron tools. This was taken up by a Portugueſe pilot, four hundred and fifty leagues from ſhore, off Cape St. Vincent, after a weſt wind, which had blown violently for many days: after this ſuch another piece of wood was taken up on the ſhores of Porto Santo, after ſuch another long and violent weſt wind. Large canes, vaſtly ſuperior to any of the growth of the then known parts of the world, were alſo found thrown on the ſame ſhores, and the fruits of pines which did not grow in any known part of the world: and finally, the bodies of two men appearing to be of a different nation from any of the known people, and two of their canoes, were driven on ſhore on the iſland Flores, one of the Azores. All theſe things having been found only after ſtrong and continued weſt winds, it appeared very evident, that there muſt be land ſomewhere to the weſt, where fruits and men were to be found; and that theſe men had no knowlege of our arts, by their want of iron. From theſe conjectural concluſions ſprung the greateſt diſcovery of modern times.

BEAN *caper*, *zygophyllum*, or *fabago*, in *Botany*, a genus of the *decandria monogynia* claſs. Its characters are theſe: the empalement of the flower is compoſed of five oval obtuſe leaves; the flower has five obtuſe petals, which are longer than the empalement, and are indented at their points: it has a cloſed *nectarium*, which includes the *germen*, compoſed of ſeveral ſcales or little leaves, to which the baſes of the *ſtamina* are faſtened. It has ten awl-ſhaped *ſtamina*, terminated by oblong ſummits and an oblong *germen*, ſupporting an awl-ſhaped ſtyle, crowned by a ſingle *ſtigma*. The *germen* becomes an oval five-cornered capſule with five cells, containing ſeveral roundiſh ſeeds. There are four ſpecies.

The Syrians uſe this plant to kill worms, on account of its bitterneſs.

BEAN *cod*, a ſmall fiſhing-veſſel or pilot-boat, very common on the ſea coaſts and in the rivers of Portugal.

BEAN *trefoil*; ſee *Shrub* TREFOIL.

BEAN *tree*, *erythrina*; ſee CORALLODENDRON.

BEAN *fly*, in *Natural Hiſtory*, the name given by authors to a very beautiful fly, of a pale purple colour, frequently found on *bean* flowers. It is produced from the worm or maggot called by authors *mida*.

BEAN is alſo uſed by ſome *Anatomiſts* to denote the *glans of the penis*, on account of its figure and reſemblance to that pulſe.

BEAN is alſo improperly uſed for a weight, containing the third part of a ſcruple.

BEAR, *urſus*, in *Phyſiology*, denotes a well-known quadruped of the cat kind, of ſome uſe in medicine; but more in commerce and ſport. See *Tab. of Quadrupeds*, &c. *fig.* 3.

Bear, in the Linnæan ſyſtem of *Zoology*, makes a diſtinct genus of animals of the *feræ* kind, the characters of which are, that the fore-teeth, above and below, are ſix in number, the upper ones alternately hollow within; the cutting teeth are ſingle and conical; the grinders five or ſix; the tongue ſmooth, the noſe prominent, and the *penis* large. The common *bear* has a ſhort tail. Under this genus, the author takes in the creature called the *coati mundi*, under the name of *lotor*, or *urſus cauda annulata*. See RACKOON.

The *bear* differs, in many reſpects, from all the other beaſts of prey. Its head is much larger than theirs: its ſkin on the back is extremely hard, tough, and ſtrong; under the belly it is more tender: its hairs are longer, ſofter, and leſs rigid than in any other wild beaſt of prey, and reſemble wool in ſome degree: its ſkull is much thinner than that of the lion; but its brain more than twice as much in quantity: its eyes are very ſmall, and, what is very remarkable, have a nictitating membrane to cover them on occaſion. Its feet have all five toes, as well the hinder as the fore ones; and what is remarkable is, that the large toe, which anſwers to the thumb with us, is in the place of the little finger. It is a very common creature in Germany, Poland, Lithuania, and many other places. Ray.

The *bear* was formerly an inhabitant of the Britiſh iſland; and was tranſported from Britain to Rome. *Bear*-baiting was a favourite paſtime with our anceſtors; an inſtance of which occurs ſo lately as the time of queen Elizabeth.

The *bear* is obſerved to bear ſome analogy to man; as having hair on both eye-lids, which no other brute has. His ſtructure and anatomy are deſcribed by the French academiſts. Du Hamel Hiſt. Reg. Acad. Sc. lib. i. § 11.

Some diſtinguiſh two kinds of *bears*, *terreſtrial* and *marine*; the former of which keep to the mountains, whereas the latter come out on the ice as far as the middle of the North ſea. Some of this kind are found in Nova Zembla, of an incredible ſize.

Each male among the ſea *bears* has a ſeraglio to himſelf, containing from fifteen to fifty females, which he poſſeſſes as his own property.

BEAR's *fleſh* was much eſteemed by the ancients: even at this day, the paw of a *bear* ſalted and ſmoaked, is ſerved up at the tables of princes.

Bear's fleſh is reckoned one of the greateſt rarities among the Chineſe; inſomuch that, as Du Halde informs us, the emperor will ſend fifty or a hundred leagues into Tartary, to procure them for a great entertainment.

BEAR's *greaſe* is eſteemed by ſome a ſovereign remedy againſt cold diſorders, eſpecially rheumatiſms. Some have alſo employed it with ſucceſs in the gout, and againſt tumours and ulcers.

To be good, it muſt be newly melted, greyiſh, glutinous, of a ſtrong diſagreeable ſmell, and a moderate conſiſtence. That which is too white, is adulterated with common tallow.

BEAR's *ſkin* makes a fur in great eſteem, and on which depends a conſiderable article of commerce, being uſed in houſings, on coach-boxes, &c. In ſome countries, cloaths are made of it, more eſpecially bags wherein to keep the feet warm in ſevere colds. Of the ſkins of *bears* cubs are made gloves, muffs, and the like.

BEAR *garden*, a place where *bears* and other beaſts are expoſed as a public ſpectacle to be baited.

BEAR *leading*, to ſhew tricks, is an ancient practice, which we find prohibited in the canons of the church. Du-Cange.

BEAR *wards*, *urſarii*, were a kind of ſervants in great families among the Romans, who had the care of breeding and feeding thoſe animals. Pitiſc. Lex. Ant. tom. ii. p. 1110.

Our nobility had formerly officers of this kind. The annual ſalary of one of them belonging to the fifth earl of Northumberland, was twenty ſhillings. Northumb. Houſehold Book.

Order of the **BEAR**, was a military order in Switzerland, erected by the emperor Frederic II. in 1213, by way of acknowledgment for the ſervice the Swiſs had done him, and in favour of the abbey of St. Gal. To the collar of the order hung a medal, on which was repreſented a *bear* raiſed on an eminence of earth.

BEAR, or **BERE**, is a ſpecies of barley cultivated in Scotland and Ireland, and the northern parts of England. It yields a large return, but is not eſteemed ſo good for malting as the common barley.

Ant **BEAR**, in *Zoology*; ſee ANT *eater*.

Bear'*s ears*, in *Botany*; ſee Auricula.

Bear'*s ear ſanicle*; ſee Sanicle.

Bear-*bind*; ſee Convolvulus.

Bear'*s breech*, Acanthus, in *Botany*, and Branc *urſine*; a genus of the *didynamia angioſpermia* claſs. Its characters are theſe: the empalement of the flower is two-leaved and bifid; the petal has but one lip, which is turned backward, and is divided into three at the end. The capſule has two cells, each containing one ſeed; it is of the ringent claſs of flowers, whoſe ſeeds are in a capſule. It is in the ſecond diviſion of Linnæus's fourteenth claſs. There are four ſpecies. See *Tab. I. of Botany, Claſs* 1.

The common *acanthus*, whoſe leaves compoſe the ornaments of the Corinthian capital, and is uſed in medicine, grows naturally in Italy, Sicily, and the Levant.

The *farina* of *bear's breech*, microſcopically examined, has the appearance repreſented in *Tab. of Microſcopical Objects, Claſs* 2.

Bear'*s foot*; ſee Hellebore.

Bear, in *Aſtronomy*, a name given to two conſtellations called the *greater* and the *leſſer bear*; or ursa *major* and *minor*.

The pole ſtar is ſaid to be in the tail of the *leſſer bear*; this ſtar is never above two degrees diſtant from the north pole of the world.

BEARD, the hair growing on the chin, and adjacent parts of the face; chiefly of adults and males.

Various are the ceremonies and cuſtoms the *beard* has been liable to: Kingſon aſſures us, that a conſiderable branch of the religion of the Tartars conſiſts in the management of their *beards*; and that they waged a long and bloody war with the Perſians, and declared them infidels, though, in other reſpects, of the ſame faith with themſelves, merely becauſe they would not cut their whiſkers after the mode or rite of the Tartars.

Athenæus, from Chryſippus, obſerves that the Greeks always wore their *beards* till the time of Alexander; and that the firſt who cut it at Athens ever after bore the addition of κορσης, *ſhaven*, on medals. Plutarch adds, that Alexander commanded the Macedonians to be ſhaven, leſt the length of their *beards* ſhould give a handle to their enemies: however this be, we find Philip, his father, as well as Amyntas and Archelaus, his predeceſſors, repreſented on medals without *beards*.

Pliny obſerves, that the Romans did not begin to ſhave till the year of Rome 454, when P. Ticinius brought over a ſtock of barbers from Sicily: he adds, that Scipio Africanus was the firſt who introduced the mode of ſhaving every day.

Among that people, it became the cuſtom to have viſits made in form at the cutting of the *beard* for the firſt time: the firſt fourteen Roman emperors ſhaved, till the time of the emperor Adrian, who retained the mode of wearing the *beard*. Plutarch tells us he did it to hide the ſcars in his face.

Formerly there was a great deal of ceremony uſed in bleſſing the *beard*; and there are ſtill extant the prayers uſed in the ſolemnity of conſecrating it to God, when an eccleſiaſtic was ſhaven.

Perſons of quality had their children ſhaved the firſt time by others of the ſame, or greater quality, who, by this means, became god-father, or adoptive father of the children.

Anciently, indeed, a perſon became god-father of the child by barely touching his *beard*: thus hiſtorians relate, that one of the articles of the treaty between Alaric and Clovis was, that Alaric ſhould touch the *beard* of Clovis to become his God-*father*.

As to eccleſiaſtics, the diſcipline has been very different on the article of *beards*: ſometimes they have been enjoined to wear them, from a notion of too much effeminacy in ſhaving, and that a long *beard* was more ſuitable to the eccleſiaſtical gravity; and ſometimes again they were forbid it, as imagining pride to lurk beneath a venerable *beard*.

The Greek and Romiſh churches have long diſputed together about their *beards*: ſince the time of their ſeparation, the Romaniſts ſeem to have given more into the practice of ſhaving, by way of oppoſition to the Greeks; and have even made ſome expreſs conſtitutions *de radendis barbis*.

The Greeks, on the contrary, eſpouſe very zealouſly the cauſe of long *beards*, and are extremely ſcandalized at the beardleſs images of ſaints in the Roman churches.

By the ſtatutes of ſome monaſteries, it appears, that the lay-monks were to let their *beards* grow, and the prieſts among them to ſhave; and that the *beards* of all that were received into the monaſteries were bleſſed with a great deal of ceremony.

To let the *beard* grow is a token of mourning in ſome countries, and to ſhave it is ſo in others. Le Comte obſerves, that the Chineſe affect long *beards* extravagantly; but nature has balked them, and only given them very little ones, which, however, they cultivate with great care: the Europeans are ſtrangely envied by them on this account.

The Ruſſians wore their *beards* till within theſe few years, when the czar Peter enjoined them all to ſhave; but notwithſtanding his injunction, he was obliged to keep on foot a number of officers to cut off by violence the *beards* of ſuch as would not otherwiſe part with them.

Chryſoſtom obſerves, that the kings of Perſia had their *beards* woven or matted together with gold thread; and ſome of the firſt kings of France had, in the ſame manner, their *beards* knotted and buttoned with gold.

Among the Turks, it is more infamous for any one to have his *beard* cut off, than among us to be publicly whipt, or branded with a hot iron. They who ſerve in the ſeraglio have their *beards* ſhaved as a token of ſervitude; and when they are ſet at liberty, they permit it to grow. With them and the Perſians, the *beard* is a mark of authority and liberty. There are abundance in that country who would prefer death to this kind of puniſhment. The Arabs make the preſervation of the *beard* a capital article of religion, becauſe Mahomet never cut his.

The Turkiſh wives kiſs their huſbands *beards*, and children their fathers, as often as they come to ſalute them. The men kiſs one anothers *beards* reciprocally on both ſides, when they ſalute one another in the ſtreets, or come off from any journey.

The Jews wear a *beard* on their chin, but not on the upper lip or cheeks.

Beard, *touching the*, was an action anciently made uſe of by ſupplicants, and thoſe who made vows.

Beard, *anointing the*, with unguents, is an ancient practice both among the Jews and Romans, and ſtill continues in uſe among the Turks; where one of the principal ceremonies obſerved in ſerious viſits, is to throw ſweet-ſcented water on the *beard* of the viſitant, and to perfume it afterwards with aloes wood, which ſticks to this moiſture, and gives it an agreeable ſmell, &c.

In *Middle Age Writers* we meet with *adlentare barbam*, uſed for ſtroking and combining it to render it ſoft and flexible.

The Turks, when they comb their *beards*, hold a handkerchief on their knees, and gather very carefully the hairs that fall; and when they have got together a certain quantity, they fold them up in paper, and carry them to the place where they bury the dead.

Beard, *plucking the*, was practiſed to Cynics by way of contempt.

Some authors alſo ſpeak of *mortgaging the beard*, *barbam hypothecare*. Du-Cange.

Beard, *barba falſa*, was an artificial one. In a general court of Catalonia, held in 1351, it is expreſly enjoined, *Ne quis barbam falſam ſeu fictam audeat deferre vel fabricare*. Du-Cange.

Hottoman has given an elegant dialogue *de barba*, firſt printed by Plantin in 1586.

Beard *of a muſcle*, oyſters, or the like, denotes an aſſemblage of threads or hairs, by which thoſe animals faſten themſelves to ſtones, &c.

The hairs of this *beard* terminate in a flat ſpungy ſubſtance, which being applied to the ſurface of a ſtone, ſticks thereto, like the wet leather ſuckers uſed by boys.

Beards, in the *Hiſtory of Inſects*, are two ſmall, oblong, fleſhy bodies, placed juſt above the trunk, as in the gnats, and in the moths and butterflies.

Beard, or *under-beard*, called alſo *chuck*, of a horſe, is that part under the lower mandible on the outſide, and above the chin, which bears the curb of the bridle.

Beard, *old man's*, in *Botany*; ſee Clematis.

Beard *of a comet*, denotes the rays which the comet emits towards that part of the heavens to which its proper motion ſeems to direct it.

In which the *beard* of the comet is diſtinguiſhed from the *tail*, which is underſtood of the rays emitted towards that part from which its motion ſeems to carry it. See Tail.

It is called *beard*, from ſome fancied reſemblance it bears to the *beard* of a man.

BEARDED, *barbatus*, denotes a perſon or thing with a beard, or ſome reſemblance thereof.

In *Middle Age Writers*, this is ſometimes expreſſed by *malibarbis*, q. d. *barba in malis ſeu genis*.

The faces on ancient Greek and Roman medals are generally *bearded*. Some are denominated *pogonati*, as having long beards, e. gr. the Parthian kings. Others have only a *lanugo* about the chin, as the Seleucid family. Adrian was the firſt of the Roman emperors who nouriſhed his beard: hence all imperial medals before him are *beardleſs*; after him, *bearded.*

The medals of gods, and heroes in vigorous youth, repreſent them *beardleſs*, except Jupiter, and a few others.

The Romans paid their worſhip to a *bearded* Venus, *Veneri barbatæ*, ſuppoſed to have been of both ſexes; a ſtatue of whom was alſo found in the iſle of Cyprus.

The reaſon of repreſenting the goddeſs of beauty with a *beard*, is variouſly gueſſed at by the learned.

Bearded *women* have been all obſerved to want the menſtrual diſcharge; and ſeveral inſtances are given by Hippocrates, and other phyſicians, of grown women, eſpecially widows, in whom the *menſes* coming to ſtop, *beards* appeared. Euſebius Nieerembergius mentions a woman, who had a *beard* reaching to her navel. Bartholin ſpeaks of a *bearded* woman at Copenhagen, who, partly in virtue thereof, paſſed for an hermaphrodite.

Bearded *brothers*, *fratres barbati*, are more particularly uſed in *Eccleſiaſtical Writers* for thoſe otherwiſe called *fratres converſi* in the order of Grammont and the Ciſtercians.

They took this denomination, becauſe allowed to wear their *beards*, contrary to the rule of the profeſſed monks.

Bearded *huſk*, among *Floriſts*, a huſk which is hairy on the edges, as is that of the roſe, &c.

BEARDING *of wool*; ſee Wool.

BEARER, in *Architecture*, a poſt, or brick wall, trimmed up between the two ends of a piece of timber, to ſhorten its bearing, or to prevent its bearing with the whole weight at the ends only.

Bearers, *geſtantes*, in *Middle Age Writers*, are ſometimes uſed for a child's goſſips, becauſe they hold the infant in their arms, and preſent him to the prieſt in the ceremony of baptiſm. Du-Cange.

Bearers *of a* Bill *of* Exchange, denote the perſons in whoſe hands it is, and in favour of whom the laſt order or indorſement was made.

When a bill is ſaid to be *payable to bearer*, it is underſtood to be payable to him, who firſt offers himſelf after it becomes due. To be paid a bill of this kind, there needs neither order or transfer; yet it is good to know to whom it is paid.

Bearers are more peculiarly uſed among us for thoſe who carry the dead to their graves.

In a ſenſe ſomewhat different from this, we aſay *pall-bearers*, &c.

The ancients had peculiar orders or officers of *bearers*, called by the Greeks κοπιαται; by the Romans, *lecticarii.* The *veſpillones*, or *bajuli*, were a lower ſort of *bearers*, appointed for perſons of inferior rank.

Bearers, in *Agriculture*, denote the fruit branches, or ſuch as bear fruit.

The *bearers*, or bearing branches of an apple-tree, and the like, are found to be rougher, and fuller of aſperities in their bark, than the other branches.

Bearers, in *Heraldry*; ſee Supporters.

Bearer, *Croſs*; ſee Cross.

BEARING, in *Geography* and *Navigation*, the ſituation of one place from another, with regard to the points of the compaſs; or the angle, which a line drawn through the two places makes with the meridians of each.

The *bearings* of places on the ground are uſually determined from the magnetic needle: in the managing of theſe lies the principal part of ſurveying; ſince the *bearing* and diſtance of a ſecond point from a firſt being found, the place of that ſecond is determined; or the *bearings* of a third point from two others, whoſe diſtance from each other is known, being found, the place of the third is determined: inſtrumentally we mean; for to calculate trigonometrically, there muſt be more *data.* Mr. Collins gives the ſolution of a problem in the Philoſophical Tranſactions, where the diſtances of three objects on the ſame plain being given, and the *bearings* from a fourth place in the ſame plain obſerved, the diſtances from the place of obſervation to the reſpective objects are required.

Bearing, in the *Sea-language.*—When a ſhip ſails towards the ſhore, ſhe is ſaid to *bear in with the land.*—When a ſhip that was to windward comes under another ſhip's ſtern, and ſo gives her the wind, ſhe is ſaid to *bear under her lee.*—If a ſhip ſails into an harbour with the wind large, or before the wind, ſhe is ſaid to *bear in with the harbour*, &c.

In conding they ſay, *bear up the helm*, that is, let the ſhip go more large before the wind—*bear up round*, that is, let the ſhip go between her two ſheets, directly before the wind—*bear a hand*, i. e. make haſte.

They alſo ſay, a ſhip *bears*, when, having too ſlender a quarter, ſhe will ſink too deep into the water with an over-light freight, and therefore can carry but a ſmall quantity of goods.

To **Bear** *ſail well* is ſaid of a ſhip, when ſhe is a ſtiff-guided ſhip, and will not couch down on a ſide with a great deal of ſail.

When a ſhip is ſaid to *bear out her ordnance*, it is meant, that her ordnance lie ſo high, and ſhe will go ſo upright, that in reaſonable fighting weather, ſhe will be able to keep out her lower tire, and not be forced to ſhut in her ports.

A ſhip is ſaid to *overbear another*, when it is able, in a great gale of wind, to carry out more ſails, viz. a topſail more, or the like.

Bearing *off* is alſo uſed by *Seamen*, generally in buſineſs belonging to ſhipping, for *thruſt off.*

Thus, in hoiſting any thing into the ſhip, if it hath hold by any part of the ſhip or ordnance, or the like, they ſay, *bear it off from the ſhip's ſide.*—So, if they would have the breech or mouth of a piece of ordnance, or the like, put from one, they ſay, *bear off*, or *bear about* the breech.

Bearing *up*, or *bearing away*, is improperly uſed to denote the act of changing the courſe of a ſhip, in order to make her ſail before the wind, after ſhe had ſailed ſome time with a ſide-wind, or cloſe-hauled.

Bearing alſo expreſſes the ſituation of any diſtant object, eſtimated from ſome part of the ſhip, according to her poſition. In this ſenſe, the object muſt be either a-head, a-ſtern, a-breaſt, on the bow, or on the quarter.

Bearing *of a piece of timber*, in *Carpentry*, denotes the ſpace either between the two fixt extremes thereof, when it has no other ſupport; which is called *bearing at length:* or between one extreme, and a poſt, brick wall, or the like, trimmed up between the ends to ſhorten its *bearing.*

Joiſts are not to *bear* above ten feet length; nor ſingle rafters more than nine feet. 19 Car. II. c. 3.

Bearing *of an arch*, or *vault*, denotes the effort which the ſtones make to burſt open the piers, or *piedroits.*

This amounts to the ſame with what the French call *pouſsée.*

Bearings, in *Heraldry*, a term uſed to expreſs a coat of arms, or the figures of armories, by which the nobility and gentry are diſtinguiſhed from the vulgar, and from one another. Theſe ſigns of nobility with us, are evidently a copy of the ſtatues and images among the ancient Romans, which they uſed to expoſe before their houſes on public days, and carried before the body at a funeral of a great perſon. Theſe ſtatues among them were the reſemblances of their noble anceſtors. And as our coats of arms evidently were brought up in the place of them, it ſeems very natural to date the riſe and origin of heraldry in England, as now practiſed, from the time of the ſubverſion of the Roman empire by the Goths and Vandals; who, as they deſtroyed many liberal arts, ſo they ſeem in return, to have given birth to this of heraldry.

Theſe warlike nations, having ſubdued the mighty Roman empire, and raiſed their glory by military ſervice, became very fond of the atchievements of their anceſtors and great men, and derived their enſigns and titles of honour from what concerned a ſoldier. They firſt, therefore, diſtinguiſhed the whole community into three ranks, which they named, according to the different orders of military men, *miles*, *eques*, and *ſcutifer*; and their poſterity, willing to commemorate their honours, reſerved to themſelves their ſeveral military enſigns; and theſe became what we call *bearings*, or arms, the marks of gentility, or of houſes, ſome one of which had once deſerved an elevation above the common rank of men. While the direct deſcendant of this honourable perſon carried his enſigns of honour for his diſtinction, the collateral branches alſo were ambitious of preſerving the memory of their having belonged to ſuch an honourable houſe; and therefore aſſumed the ſame figure, but with ſome difference, to diſtinguiſh the diſtance from the original claim. In proceſs of time, other families, who had deſerved as well of their prince and country, whether in civil or military affairs, became deſirous of the ſame ſort of diſtinction, by way of perpetual memorial of their ſervices; and upon this occaſion many other devices were formed into arms, and continued down to poſterity in the ſeveral families.

Armorial bearings, in the tenth and eleventh centuries, were ſingle and plain, conſiſting only of few figures. Charges, differences, quarterings, &c. are the inventions of later times.

Bearing *of an organ pipe*, denotes an error or variation from the juſt ſound it ought to yield. See Temperature.

Bearing *down of the matrix*, a diſorder in pregnant women, being a ſenſation of a weight at the bottom of the *abdomen*, or preſſure on the neck of the womb, ſo as to hinder the perſon from walking without pain; and ſometimes alſo occaſioning difficulty of urine, numbneſs of the hips, uneaſineſs in going to ſtool, and in the end abortion.

BEARING *claws*, among *Cock-fighters*, denote the foremoſt toes, on which the bird goes; and if they be hurt or gravelled, he cannot fight.

BEARING *of a ſtag*, is uſed in reſpect of the ſtate of his head, or the croches which he bears on his horns.

If you be aſked what a ſtag *bears*, you are only to reckon the croches, and never to expreſs an odd number: as, if he have four croches on his near horn, and five on his far, you muſt ſay he bears ten; a falſe right on his near horn: if but four on the near horn, and ſix on the far horn, you muſt ſay he bears twelve; a double falſe right on the near horn.

BEARN *ſtone*; ſee PHOSPHORUS.

BEAST; ſee BRUTE. Authors make this difference between *beaſts of the foreſts* and *of chaſe*, that the firſt are *ſilveſtres tantum*, the latter *campeſtres tantum*. *Beaſts of the foreſt* make their abode all the day time in the great coverts and ſecret places of the woods; and in the night ſeaſon, they repair into the lawns, meadows, paſtures, and pleaſant feeding-places: whence their denomination *ſilveſtres*, q. d. *beaſts of the wood*.

Beaſts of the chaſe reſide all the day time in the fields, and on the mountains afar off, to prevent ſurprize; but on night's approach, they feed as the reſt in meadows, &c. whence their appellation *campeſtres*, q. d. *beaſts of the field*.

BEASTS *of* CHASE, in our *Statute-books*, are five; the buck, doe, fox, martin, and roe.

BEASTS *of the foreſt* are, the hart, hind, hare, boar, and wolf.

BEASTS and *fowls of the warren* are, the hare, coney, pheaſant, and partridge. See GAME.

No other, according to Manwood, are accounted *beaſts* or fowls of warren, than hares, coneys, pheaſants, and partridges. Lord Coke is of another opinion, diſtinguiſhing *beaſts* on the warren from fowls of the warren. Under the former, he includes hares, coneys, and roes: the latter he divides into *ſilveſtres*, *campeſtres*, and *aquatiles*. To the firſt belong the pheaſant, woodcock, &c. to the ſecond the partridge, quail, rail, &c. to the third the mallard, hern, &c. Coke on Littleton, p. 233.

BEAST *of burden* is underſtood of all quadrupeds employed in carrying goods on their backs.

BEAST *at ombre* is, where the player, or perſon that undertakes the game, loſes it to the other two; the penalty of which is a forfeiture equal to the ſtake played for.

BEAST, *la bête*, is alſo the name of a French game at cards.

BEASTS, *rother*. See ROTHER.

BEAT, or UNDULATION, in *Muſic*. See UNDULATION.

BEAT, in *Fencing*, denotes a blow or ſtroke given with the ſword. See BEATING.

There are two kinds of *beats*; the firſt performed with the foible of a man's ſword on the foible of his adverſary's, which in the ſchools is commonly called *baterie*, from the French *batre*, and is chiefly uſed in a purſuit, to make an open upon the adverſary. The ſecond and beſt kind of *beat* is performed with the fort of a man's ſword upon the foible of his adverſary's, not with a ſpring, as in binding, but with a jerk, or dry *beat*; and is therefore moſt proper for the parades without or within the ſword, becauſe of the rebound a man's ſword has thereby from his adverſary's, whereby he procures to himſelf the better and ſurer opportunity of riſpoſting.

BEAT, in the *Manege*. A horſe is ſaid *to beat the duſt*, when, at each ſtroke or motion, he does not take in ground or way enough with his fore-legs.

He is more particularly ſaid to *beat* the duſt at *terra à terra*, when he does not take in ground enough with his ſhoulders, making his ſtrokes or motions too ſhort, as if he made them all in one place.

He *beats the duſt* at curvets, when he does them too precipitantly, and too low.

He *beats upon a walk*, when he walks too ſhort, and thus rids but little ground, whether it be in ſtraight lines, rounds, or paſſings.

BEAT *upon the hand*, in the *Manege*. See CHACK.

BEAT *of the drum*, in the *Military Art*, is differently performed, according to the purpoſes deſigned by it. Notice is hereby given of any ſudden change; ſoldiers are ſummoned to repair to their arms and quarters; and the various movements before and after, and during the engagement, are denoted by *different beats* of the drum.

The chief *beats* or beatings on the drum are, the *general*, the *aſſembly*, the *march*, the *reveille*, the *retreat*, &c.

BEATA. See MASS *of the Beata*.

BEATER is applied, in *Matters of Commerce*, to divers ſorts of workmen, whoſe buſineſs is to hammer or flatten certain matters, metals, or the like.

In this ſenſe we meet with *plaſter-beater*, *cement-beater*, *mortar-beater*, &c.

BEATERS, *gold*, are artiſans, who, by beating gold and ſilver with a hammer on a marble, in moulds of vellum and bullocks guts, reduce them to thin leaves fit for gilding, or ſilvering of copper, iron, ſteel, wood, &c.

Gold-beaters differ from *flatters* of gold or ſilver, as the former bring their metal into leaves by the hammer; whereas the latter only flatten it by preſſing it through a mill, preparatory to beating.

There are alſo *Tin*-BEATERS employed in the looking-glaſs trade, whoſe buſineſs is to beat tin on large blocks of marble, till it be reduced to thin leaves, fit to be applied with quickſilver behind LOOKING-GLASSES. See FOLIATING, GOLD-*beating*.

BEATER is alſo uſed for an inſtrument wherewith to gravel walks and alleys in gardens even.

It is a piece of wood half a yard long, ſix inches thick, and eight or nine broad, having a handle fixed obliquely in the middle.

BEATIFIC *viſion*. See VISION.

BEATIFICATION, in *Electricity*, a term uſed by profeſſor Boze to denote an electrical experiment, by which he incircled the head of a perſon ſtrongly electrified, and ſtanding on a large cake of pitch, with a luminous glory, reſembling that with which painters ornament the heads of ſaints. The ſecret of this experiment, which occaſioned many fruitleſs and expenſive trials to the firſt electricians in Europe, conſiſted in the uſe of a ſuit of armour, decked with ſteel, in various figures; and the glory was produced by rays iſſuing from the edges of the helmet.

BEATIFICATION, in the Romiſh *Church*, the act whereby the pope declares a perſon happy, after death.

Beatification differs from *canonization*; in the former, the pope does not act as a judge in determining the ſtate of the *beatified*, but only grants a privilege to certain perſons to honour him by a particular religious worſhip, without incurring the penalty of ſuperſtitious worſhippers: but, in *canonization*, the pope ſpeaks as a judge, and determines *ex cathedra*, upon the ſtate of the *canonized*.

Beatification was introduced, when it was thought proper to delay the canonization of ſaints, for the greater aſſurance of the truth, and manifeſtation of the rigorous ſteps taken in the procedure.

It is remarkable, that particular orders of monks aſſume to themſelves the power of *beatification*.

Thus Octavia Melchiorica was *beatified* with extraordinary ceremonies by the Dominicans, for a legacy of 7000 dollars to the order.

BEATING, among *Sportſmen*, denotes the noiſe which hares make in RUTTING-*time*.

The hare is ſaid to *beat*, the hart to *bell*, &c.

BEATING, PULSATION, in *Medicine*, is applied to the reciprocal agitation or palpitation of the heart and pulſe.

Some phyſicians diſtinguiſh 81 different kinds of ſimple *beatings*, and fifteen compound ones. They compute 60 beats in the ſpace of a minute, in a temperate man. But, in fact, we generally find a greater number.

BEATING *of the heart*. Divers ſyſtems have been framed to account for the *beating* of the heart. Some have doubted whether it be mechanical, that is, deducible from any known laws or powers of nature. See Ray's Wiſdom of God, part i. p. 48.

BEATING *flax*, or *hemp*, is an operation in the dreſſing of theſe matters, contrived to render them more ſoft and pliant.

When hemp has been ſwingled a ſecond time, and the hurds laid by, they take the ſtrikes, and dividing them into dozens, and half dozens, make them up into large thick rolls, which being broached on long ſtrikes, are ſet in the chimney-corner to dry; after which they lay them in a round trough made for the purpoſe, and there with beetles beat them well, till they handle, both without and within, as pliant as poſſible, without any hardneſs or roughneſs to be felt: that done, they take them from the trough, open and divide the ſtrikes as before, and if any be found not ſufficiently beaten, they roll them up, and beat them over as before.

Beating hemp is a puniſhment inflicted on looſe or diſorderly perſons.

BEATING, in *Book-Binding*, denotes the knocking a book in quires on a marble block, with a heavy broad-faced hammer, after folding, and before binding or ſtitching it. On the *beating* it properly, the elegance and excellence of the binding, and the eaſy opening of the book, principally depends.

BEATING, in the *Paper Works*, ſignifies the *beating* of paper on a ſtone with a heavy hammer, with a large, ſmooth head, and ſhort handle, in order to render it more ſmooth and uniform, and fit for writing.

BEATING *the wind*, was a practice in uſe in the ancient method of trial by combat. If either of the combatants did not appear in the field at the time appointed, the other was to *beat the wind*, or make ſo many flouriſhes with his weapon; by which he was intitled to all the advantages of a conqueror. Du-Cange.

BEATING *the hands or feet*, by way of praiſe or approbation. See APPLAUSE.

BEATING *time*, in *Muſic*, a method of meaſuring and marking the time for performers in concert, by a motion of the hand or foot up and down ſucceſſively, and in equal times.

The general rule is, to contrive the diviſion of the meaſure ſo, that every down and up of the *beating* ſhall end with a particular note, on which very much depends the diſtinctneſs, and, as it were, the ſenſe of the melody. Hence the beginning of every time, or *beating* in the meaſure, is reckoned the accented part thereof. Malcolm.

Beating time is denoted, in the Italian muſic, by the term *a battuta*, which is uſually put after what they call *recitativo*, where little or no time is obſerved, to denote, that here they are to begin again to mark or beat the time exactly.

The Romans aimed at ſomewhat of harmony in the ſtrokes of their oars, and had an officer called *portiſculus* in each galley, whoſe buſineſs was to *beat* time to the rowers; ſometimes by a pole or mallet, and ſometimes by his voice alone.

The ancients marked the rhythm in their muſical compoſitions; but, to make it more obſervable in the practice, they beat the meaſure or time, and this in different ways. The moſt uſual conſiſted in a motion of the foot, which was raiſed from, and ſtruck alternately againſt the ground, according to the modern method.

To make the beats or ſtrokes more audible, their feet were generally ſhod with a ſort of ſandals, either of wood or iron, called by the Latins *pedicula*, *ſcabella*, or *ſcabilla*, becauſe like to little ſtools, or foot-ſtools. Sometimes they beat upon ſonorous foot-ſtools, with the foot ſhod with a wooden or iron ſole.

They beat the meaſure not only with the foot, but alſo with the right hand, all the fingers whereof they joined together, to ſtrike into the hollow of the left. He who thus marked the rhythm, was called *manuductor*. The ancients alſo beat time or meaſure with ſhells, and bones of animals, which they ſtruck one againſt another, much as the moderns now uſe caſtanets, and the like inſtruments. Burette, Mem. Acad. Inſcr. tom. vii. p. 243. 247.

BEATING, in *Navigation*, the operation of making a progreſs at ſea againſt the wind, in a zigzag line, or traverſe. See TACKING.

BEATING, *drubbing*, or *ſtripes*, make one of the moſt ancient, as well as univerſal ſpecies of puniſhment. Among the Romans it obtained, under the denomination of *verberare*, *fuſtigare*, *flagellare*, *pulſare*, &c. In the Eaſt it ſtill prevails under the name of BASTONADO.

Some diſtinguiſh between *pulſation* and *verberation*, as if the latter imported a *beating* with pain, the former without; but this diſtinction is not always kept to.

BEATING, in the Engliſh *Law*. See BATTERY.

BEATING *in the flanks*, a diſtemper to which black cattle are ſubject, and is an indication of a great inflammation in the bowels.

BEATING, in *Huſbandry*. See BURNING *of Land*.

BEATITUDE imports the ſupreme good, or the higheſt degree of happineſs human nature is ſuſceptible of.

In which ſenſe, it amounts to the ſame with what we otherwiſe call *bleſſedneſs* and *ſovereign felicity*; by the Greeks ευδαιμονια; and by the Latins *ſummum bonum*, *beatitudo*, and *beatitas*.

BEATITUDE, among *Divines*, denotes the beatific viſion, or the fruition of God in a future life to all eternity.

BEATITUDE is alſo uſed in ſpeaking of the *theſes* contained in Chriſt's ſermon on the mount, whereby he pronounces *bleſſed the poor in ſpirit*, *thoſe that mourn*, *the meek*, &c.

BEATITUDE was alſo a title anciently given to all biſhops; but of later days reſtrained to the pope.

It appears to have been ſometimes alſo given to laymen.

BEATS, in a watch or clock, are the ſtrokes made by the fangs or pallets of the ſpindle of the balance; or of the pads in a royal *pendulum*.

To find the *beats* of the balance in any watch, or in one turn of any wheel.—Having found the number of turns, which the crown-wheel makes in one turn of the wheel you ſeek for (by the direction given under the word TURN), thoſe turns of the crown-wheel, multiplied by its notches, give half the number of *beats* in that one turn of the wheel: for the balance or ſwing has two ſtrokes to every tooth of the crown-wheel: inaſmuch as each of the two pallets has its blow againſt each tooth of the crown-wheel: whence it is, that a pendulum which beats ſeconds, has in its crown-wheel only 30 teeth. To explain this, ſuppoſe the numbers of a ſixteen hour watch wherein the pinion of report is 4, the dial-wheel 32, the great wheel 55, the pinion of the ſecond wheel 5, &c. The number of the notches in the crown-wheel 17, being multiplied into 6336 (the product ariſing from the continual multiplication of the quotients 8, 11, 9, 8) gives 107712, for half the number of *beats* in one turn of the dial-wheel; for 8 times 17 is 136, which is half the number of beats in one turn of the contrate-wheel 40, and 9 times 136 is 1224, the half-beats in one turn of the ſecond wheel; and 11 times 1224 is 13464, the half-beats in one turn of the great wheel 55; and 8 times 13464 makes 107712. If you multiply this by the two pallets, i. e. double it, it gives 215424, which is the number of *beats* in one turn of the dial wheel, or 12 hours.

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4)32( 8
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5)55(11
5)45( 9
5)40( 8
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     17
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To know how many *beats* this watch has an hour, divide the *beats* in 12 hours into 12 parts, and it gives 17952, which is called the *train* of the watch, or the *beats* in an hour.—If this be divided into 60 parts, it gives 299, and a little more, for the *beats* in a minute; and ſo you may proceed to ſeconds or thirds.

By the *beats* and turns of the fuſee, the hours that any watch will go, may be found thus.—As the *beats* of the balance in one hour, are to the *beats* in one turn of the fuſee; ſo is the number of the turns of the fuſee 1, to the continuance of the watch's going.—Thus, 20196 : 26928 : : 12 : 16.

To find the *beats* of the balance in one turn of the fuſee, ſay, As the number of turns of the fuſee, to the continuance of the watch's going in hours: ſo are the beats in one hour, to the *beats* of one turn of the fuſee; i. e. 12 : 16 : : 20196 : 26928.

To find the *beats* of the balance in an hour, ſay, As the hours of the watch's going, to the number of turns of the fuſee; ſo are the *beats* in one turn of the fuſee, to the *beats* of an hour.—Thus, 16 : 12 : : 26928 : 20196. Derham's Artificial Clock Maker, p. 14, &c. and 22.

BEAVER, CASTOR, in the Linnæan *Syſtem of Zoology*, makes a diſtinct genus of animals, of the order of *glires*, and claſs of *marimalia*, the characters of which are, that the upper fore-teeth are trunctated, and hollowed obliquely, and that the lower are oblique at the apex, with a flat tail, and with feet which have five toes on each, and palms adapted for ſwimming. Under this genus are comprehended, 1. The *beaver*, properly ſo called, or *fiber*, with a black, flat, and oval tail, with palmated feet: this ſpecies produces the CASTOREUM. 2. The *caſtor*, with a flat lanceolated, or oblong tail, called by Cluſius, the exotic water-rat. 3. The *caſtor*, with a long, flat, lanceolated tail, with cloven feet, called *zibethicus*.

The *beaver*, diſtinctively ſo called, has two very different ſorts of hair, the one very ſoft and fine, the other long and thick; the firſt ſerves to defend the creature from the cold, the other to receive the mire in which it often wallows, and to prevent its getting to the ſkin. The teeth of this creature are formed in a very particular manner, and are extremely fit to cut trees, with which they build themſelves lodging to defend them from the weather, and to breed their young in. The fore-feet are formed like the human hand, and by this means they are able to carry their materials, and work at their habitations: the hinder feet, which are deſtined to be of uſe to them in ſwimming, are on the contrary webbed like thoſe of a gooſe. Their addreſs and contrivance in conſtructing their habitations, would ſcarcely obtain credit, were they not well atteſted.

Beavers were formerly found in Great Britain; but the breed has been long extirpated. Giraldus Cambrenſis's account of them is the lateſt in 1188. Itin. 178, 179.

The bladders in this animal deſtined for receiving the medicinal ſubſtance called *caſtor*, are diſtinct from the teſticles, and are four large ones, placed about the lower part of the *os pubis*; two of theſe ſtand above the other two, but cloſely joined to one another, the two upper being to prepare that matter, and the two other to bring it to the greater perfection and unctuouſneſs, and render it of a ſtronger ſcent and deeper colour, as it is always found with this difference in theſe bags from what it is in the upper ones. The lower bags, for this reaſon, are of a glandular ſtructure; and under theſe lower bags there is another long one full of a matter, more yellow and liquid, and ſeeming more elaborated than any of the others. This is of a different ſmell from the former, and more than any thing elſe reſembles the yolk of an egg. It is ſaid that the creature uſes this liquor to get itſelf an appetite, and that it gets it out by ſqueezing the bag that contains it with its paws. The people of Canada ſet gins for theſe creatures, and catch many of them that way; and, knowing how fond they are of this liquor, they always anoint the gins with ſome of it.

It has been generally ſaid that the teſticles of this creature were faſtened to the back-bone, but they are, in reality, not ſo, but placed on the ſides of the *os pubis* about the groin, and are altogether hid, not appearing at all any more than the *penis*, till the ſkin is removed; and the *penis*, contrary to that of a dog, which goes from the *os pubis* to the navel, deſcends in this animal downwards to the vent of the excrements, at which hole it terminates.

Beaver *ſkin*, the fur or ſkin of an amphibious animal called the *caſtor*, or *beaver*, ſometimes found in France, Germany, and Poland, but moſt abundantly in the province of Canada in North America.

Its chief uſe is in the compoſition of hats, furs, &c. Beſides this, in 1669, an attempt was made to employ it in other merchandizes; accordingly a manufactory was ſettled in the Fauxbourg S. Antoine near Paris, where they made cloths, flannels, ſtockings, &c. of *caſtor*, with a mixture of wool. The manufacture flouriſhed for a while, but ſoon decayed, it being found by experience that the ſtuffs loſt their dye when wet, and that when dry again they were harſh, and ſtiff as felts.

The merchants diſtinguiſh three kinds of *caſtor*, though all equally the ſkins of the ſame animal; theſe are *new caſtor*, *dry caſtor*, and *fat caſtor*: *new caſtor*, called alſo *winter caſtor*, and *Muſcovite caſtor*, becauſe ordinarily reſerved to ſend into Muſcovy; this is that taken in the winter huntings. This is the beſt, and moſt eſteemed for rich furs, as having loſt none of its hair by moulting. *Dry caſtor*, or *lean caſtor*, is the reſult of the ſummer huntings; when the beaſt is moulted, and has loſt part of its hair: this being much inferior to the former, is little uſed in furrs, but moſtly in hats. *Fat caſtor*, uſually called *old-coat*, or coat-*beaver*, is that which has contracted a certain fat, unctuous humour, by ſweat exhaled from the bodies of the ſavages, who have wore it for ſome time: this, though better than the dry, is yet only uſed for hats.

After the hair is cut off the ſkin to be uſed in hats, the pelt or ſkin itſelf is uſed in various works, viz. for the covering of mails and trunks, in ſlippers, &c.

Beaver is chiefly imported by the Hudſon's-bay company, from the northern parts of America; where the animal abounds.

Beaver is alſo uſed to denote a hat made of *beaver's* hair.

BEAUFET, Buffet, or Bufet, was anciently a little apartment ſeparated from the reſt of a room by ſlender wooden columns, for the diſpoſing china and glaſs ware, &c. called alſo a *cabinet*.

It is now, properly, a large table in a dining-room, called alſo a *ſide-board*, for the plate, glaſſes, bottles, baſons, &c. to be placed, as well for the ſervice of the table as for magnificence.

The *buffet*, among the Italians called *credenza*, is incloſed within a balluſtrade, elbow-high.

BEAU-MASS. See Mass.

BEAU-PLEADER, or Bew-Pleader, a writ on the ſtatute of Marlbridge, whereby it is provided, that no fine ſhall be taken of any man in any court for *fair-pleading*, i. e. for not pleading aptly, and to the purpoſe.

BEAUTY is a term whereby we expreſs a certain relation of ſome object, either to an agreeable ſenſation, or to an idea of approbation.

When, therefore, I ſay, a thing is *beautiful*, I either mean that I perceive ſomething that I approve, or that ſomething gives me pleaſure: whence it appears, that the idea annexed to the word *beauty* is double; which renders the word equivocal, and this is the ſource of moſt of the diſputes on the ſubject of *beauty*.

We muſt therefore diſtinguiſh between *ideas* and *ſenſations*. Ideas occupy the mind, ſenſations intereſt the heart. Though we ſee nothing in an object to intereſt us, we may yet diſcover ſomething in its idea to merit our approbation. Such an object therefore pleaſes, and does not pleaſe, i. e. it pleaſes the underſtanding, and not the ſenſe. On the contrary, there are ſome objects, whoſe ideas do not offer any thing laudable, which yet excite agreeable ſenſations. There is therefore *beauty* of two ſorts. It is exceeding hard to fix any general characteriſtic of *beauty*: for, as the ideas and ſenſations of different perſons differ according to the habitudes of the body, and the turn of the mind; ſo do the relations of objects to thoſe ideas and ſenſations vary, whence what we call *beauty*, reſults. Hence ariſe thoſe different opinions of a *beautiful* thought, a *beautiful* woman, a *beautiful* painting, &c. The principles of *beauty*, according to Mr. Hogarth, are fitneſs, variety, uniformity, ſimplicity, intricacy, and quantity. Analyſis of Beauty.

Dr. Hutcheſon makes uniformity amidſt variety the ſource of *beauty*; and he refers our ideas of it merely to an implanted ſenſe. Inquiry into the Original of our Ideas of Beauty and Virtue. See Sense.

M. Perrault diſtinguiſhes two kinds of *beauty* in architecture, which correſpond with the two ſpecies of *beauty* above; the one, he calls *poſitive* and *convincing*, ſuch as the richneſs of the materials, grandeur of the ſtructure, neatneſs of the workmanſhip, ſymmetry, &c. The others he calls *arbitrary*, which depend on the will, and which would admit of having their proportions changed without deformity. Theſe only pleaſe by the connexion, or aſſociation of their ideas with others of a different kind which pleaſe of themſelves; they owe their *beauty* to that prepoſſeſſion of the mind, whereby a thing, whoſe value we do know, inſinuates an eſteem for others which we do not.

Thus, he obſerves, there are many things in architecture, which reaſon and good ſenſe would judge deformed, and which, however, cuſtom has not only made tolerable, but even *beautiful*, by their being always joined with other *beauties* that are poſitive. Thus, being at firſt pleaſed with viewing them in company, and merely on account of their company, at length we become pleaſed with them alone; and thus we frequently grow fond of faults, and fall in love with deformity.

BECAH, or Bekah, a Jewiſh coin, being half a shekel.

In Dr. Arbuthnot's table of reductions, the *bekah* amounts to $13\frac{11}{16}$*d.* in Dr. Prideaux's computation to 1*s.* 6*d.*

Every Iſraelite paid an hundred *bekahs* a head every year for the ſupport of the temple. Calmet.

BECALMING, in the *Sea Language*, is when any thing keeps the wind off or away from a veſſel.

Thus one ſhip is ſaid to *becalm* another, when ſhe comes up with her on the weather-ſide: the like is ſaid of the ſhore, when it keeps the wind away. A ſhip is likewiſe ſaid to be *becalmed*, when there is no wind ſtirring.

BECASSE, in *Natural Hiſtory*. See Woodcock.

BECASSINE, in *Zoology*, a name given by many to the *tringa minor*, or, as we commonly call it, the *ſandpiper*.

BECCA, in the *Materia Medica of the Ancients*, a name given to a fine kind of reſin, collected from the turpentine and maſtic-trees of Greece and Syria, and mixed together for uſe. It was much eſteemed formerly, and not only uſed in the country where it was produced, but carried in great quantities to Mecca, and other parts of the Turkiſh dominions, where it was valued at a very great rate.

Becca *Bunga*. See Brooklime.

BECCIFAGO, in *Zoology*, the name of a ſmall bird, ſcarce ſo large as the common linnet, and with a very remarkable ſhort body. Its head, neck, back, wings, and tail, are of a greeniſh grey, and in ſome of the birds of a greeniſh brown. It feeds on vegetables, berries, &c. and is common in the north of England, where it is called the *pettychaps*. Ray.

BECHICS, Bechica, medicines proper for relieving coughs.

The word is formed of the Greek βηξ, βηχος, *a cough*.

Bechics amount to much the ſame with what we otherwiſe call *pneumonics*, *thoracics*, expectorants, and pectorals.

Bechic *pills*. See Pill.

BECK, a little river or brook, called alſo rivulet, or rill.

According to Verſtegan, the original word is *beke*, which properly imports a ſmall ſtream of water iſſuing from ſome bourn or ſpring.

Hence *hell-becks*, little brooks ſo called, on account of their ghaſtlineſs and depth, or rather from their being covered, or much concealed. See Hell.

Beck is chiefly uſed among us in the compoſition of names of places originally ſituate on rivulets; hence Welbeck, Bournbeck, &c.

The Germans uſe *beck* in the ſame manner.

BECKETS, in the *Marine*, ſignify large hooks, or circular wreaths of rope, or wooden brackets, uſed to confine ropes, tackles, oars, or ſpars, in a convenient place, till they are wanted. And, *to put the tacks and ſheets in the beckets*, is to hang up the weather-main and fore-ſheet, and the lee-main and fore-tack, to a little knot and eye-*becket* on the fore-moſt main, and fore-ſhrouds, when the ſhip is cloſe-hauled, to prevent them from hanging in the water.

BECTASSE, a ſect among the Turks, denominated from their founder Bectaſh, preacher to ſultan Amurath.

All the Janizaries belonging to the Porte are of the religion of *Bectaſſe*, and are ſaid to have derived their origin from the founder of this ſect.

BED, a place prepared to ſtretch and compoſe the body on, for reſt and ſleep; made chiefly of feathers incloſed in a ticken caſe.

We ſay a feather *bed*, a down *bed*; a ſtanding *bed*, a ſettee *bed*, a tent *bed*, a truckle *bed*, &c.

No *beds* are to be ſold, except filled with one ſort of ſtuffing only; e. gr. feather *beds* with only dry pulled feathers; and down *beds* with clean down alone. No ſcalded feathers are to be mixed with the former; nor fen-down with the latter, on pain of forfeiture; the mixture of ſuch things being conceived as contagious for man's body to lie on. Stat. 11 Hen. VII. cap. 19.

Alſo *bed* quilts, matraſſes, and cuſhions ſtuffed with horſe-hair, fen-down, goats-hair, and neats-hair, which are dreſſed in lime; and which the heat of man's body will cauſe to exhale and yield a noxious ſmell, whereby many of the king's ſubjects have been deſtroyed, are prohibited by the ſame ſtatute.

The ancient Romans had various kinds of *beds* for repoſe; as their *lectus cubicularis*, or *chamber-bed*, whereon they ſlept; their *table-bed*, or *lectus diſcubitorius*, whereon they eat (for they always eat lying), there being uſually three perſons to one *bed*, whereof the middle place was accounted the moſt honourable, as well as the *middle bed*.—Theſe *beds* were unknown before the ſecond Punic war: the Romans, till then, ſat down to eat on plain wooden benches. As for the ladies, it did not ſeem at firſt conſiſtent with their modeſty to adopt the mode of lying; accordingly they kept to the old cuſtom all the time of the commonwealth; but, from the firſt Cæſars, they eat on their *beds*. As to the youth, who had not yet put on the *toga virilis*, they were long kept to the ancient diſcipline. When they were admitted to table, they only ſat on the edge of the *beds* of their neareſt relations. Never, ſays Suetonius, did the young Cæſars, Caius and Lucius, eat at the table of Auguſtus; but they were ſet *in imo loco*, or, as Tacitus expreſſes it, *ad lecti fulcra*. From the greateſt ſimplicity, the Romans, by degrees, carried their dining *beds* to the moſt ſurpriſing magnificence. Pliny aſſures us, it was no new thing to ſee them covered over with plates of ſilver, adorned with the ſofteſt mats, and the richeſt counterpanes. Hiſt. Nat. lib. xxxiii. cap. 11.—They had alſo their *lectus lucubratorius*, whereon they ſtudied; and a *lectus funebris*, or *emortualis*, whereon the dead were carried to the pile. See FUNERAL.

BED *of ſtate*. See PARADE.

BED *of juſtice, lit de juſtice*, in the French *Laws*, denotes a throne whereon the king is ſeated in parliament.

In this ſenſe, the king is ſaid to hold his *lit de juſtice*, when he goes to the parliament of Paris, and holds a ſolemn ſeſſion, under a high canopy erected for the purpoſe.

The *bed of juſtice* is only held on affairs relating to the ſtate; on which occaſion, all the officers of the parliament appear in red robes; at other times they wear black ones. Several authors have treated expreſly on the ceremonies of the *bed of juſtice*.

BED *of a great gun*, is a piece ef plank laid within the cheeks of the carriage, on the middle tranſum, for the breech of the gun to reſt on.

BED or *ſtool of a mortar*, is a ſolid piece of oak, in form of a parallelopiped, bigger or leſs, according to the dimenſions of the mortar, hollowed a little in the middle to receive the breech, and half the trunions.

On the ſides of the *bed* are fixed the cheeks or brackets by four bolts of iron.

In ſhips, when the decks lie too low from the ports, ſo that the carriages of the pieces, with the trucks, cannot mount the ordnance ſufficiently, but that they lie too near the gun-wale; the method is to make a falſe deck for ſo much as the piece will require for her traverſing to raiſe it higher; and this they call a *bed*.

BED, in *Gardening*, a piece of made-ground, raiſed above the level of the adjoining ground, uſually ſquare or oblong, and enriched with dung, or other amendments; intended for the raiſing of herbs, flowers, ſeeds, roots, or the like.

BEDS for raiſing melons, muſhrooms, and the like, are commonly denominated *ridges*.

Muſhrooms raiſed on *beds* are not ſo good as thoſe which grow at large in the natural ſoil. See HOT-*Bed*.

BEDS, in ſpeaking of hops, denote the floor whereon they are ſpread to dry.

BED *of corn* is a heap, flat at top, three or four feet high, otherwiſe called a *couch*.

Corn, in granaries, keeps beſt in *beds* or couches.

BED-*algenſe*, a name given by the Arab aſtronomers to a fixed ſtar of the firſt magnitude in the right ſhoulder of ORION.

Bed-algenſe is of a ruddy colour, by which it is eaſily diſtinguiſhed.

BED, in *Maſonry*, denotes a COURSE or range of ſtones.

BED, *joint of the*, is the mortar between two ſtones placed over each other.

BED, in *Sea Language*, a flat, thick piece of timber, laid under the quarters of caſks, containing any liquid, and ſtowed in the ſhip's hold.

BED *of a river*, the bottom of the channel in which the ſtream flows.

BEDS, in ſpeaking of minerals and foſſils, ſignify certain STRATA, or layers of matter diſpoſed over each other.

BEDS, in the *New Huſbandry*, denotes the ſpaces occupied by the rows of corn, in contradiſtinction from the open ſpaces between them, which are called ALLEYS.

BED-CHAMBER.—*Lords or Gentlemen of the* BED-CHAMBER, are perſons of the firſt rank, ten in number; whoſe office is, each in his turn, to attend a week in the king's *bed-chamber*, lying by the king on a pallet-bed all night, and to wait on the king when he eats in private.

The firſt of theſe is called *groom of the* STOLE.

BED-MOULDING, or BEDDING-*moulding*, in *Architecture*, is a term uſed by the workmen of thoſe members in a corniche, which are placed below the coronet.

A *bed-moulding* uſually conſiſts of theſe four members, an ogee, a liſt, a large boultine, and another liſt under the coronet.

BEDALACH, in the *Materia Medica*, a name given by ſome writers to the gum bdellium; but particularly to that kind of it which was brought from Arabia, and was of a yellowiſh colour, like wax.

BEDAUDE, in *Natural Hiſtory*, a name given by French authors to a ſort of prickly CATERPILLAR found on the elm.

BEDDING, *lectoria*, in reſpect of horſes and other cattle, denotes ſtraw or litter ſpread under them to lie on.

Bedding, in ſpeaking of a roe, is uſed by ſportſmen, for the lodging of that beaſt.

A roe is ſaid to *bed*; a hart to *harbour*; a fox to *kennel*.

BEDENGIAN, in *Botany*, a name given by Avicenna and Serapion to the *poma amoris*, or *love-apples*, a ſort of fruit uſed in food by the Italians, and ſome other nations, and ſeeming to be the third kind of the *ſtrychnos*, or *ſolanum*, mentioned by Theophraſtus. That author firſt deſcribes two kinds of this plant, the one of which occaſioned ſleepy diſorders, and the other threw people who eat of it into madneſs. After theſe, which he properly accounts poiſonous kinds, he mentions a third, which was cultivated in gardens, for the ſake of the fruit, which, he ſays, is large and eſculent. This is certainly the ſame with *bedengian*, or *poma amoris*.

BEDOARA, in *Botany*, a name uſed by the Arabians, and ſome other authors, for the white thorn.

BEDRIP, or BEDREPE, or BEDERAPE, the cuſtomary ſervice which inferior tenants anciently paid their lord, by cutting down his corn, or doing other work in the field. The word is formed from the Saxon *biddon*, *to pray*, and *repe*, *to reap*, or *cut corn*.

BEDSTRAW, ſee LADY's *Bedſtraw*.

BEE, in *Phyſiology* and *Huſbandry*, a winged, favificous inſect, bred from maggots or worms, that are *apoda*, or without feet; remarkable for its ſkill and induſtry in collecting honey and wax from flowers, &c. and on that account frequently preſerved in gardens. In the Linnæan ſyſtem, it is a genus of inſects belonging to the claſs of *hymenoptera*, and comprehending fifty-five different ſpecies. Beſide the common *honey-bee*, Mr. Ray reckons nine other ſpecies, which are found wild about the fields. To this ſpecies of *hive-bees* belong the common *working-bee*, the *drones*, and the *queen-bee*.

BEES, *age of*. The large drones live but a little while, being deſtroyed without mercy by the working *bees*, probably to ſave honey. But there is another ſort of drones, lately diſcovered, no larger than the working *bees*, and not eaſily to be diſtinguiſhed from them, the age of which has not yet been aſcertained. See DRONE.

Writers are not agreed as to the age of the honey-*bees*. Some maintain that they are annual, and others ſuppoſe that they live many years. Many of them, it is well known, die annually of hard labour; and though they may be preſerved by ſucceſſion in hives, or colonies, for ſeveral years, the moſt accurate obſervers are of opinion, that their age is but a year, or, at the longeſt, no more than two ſummers.

BEE, *anatomy and ſtructure of*. This inſect is divided by two ligaments into three principal parts; viz. the head, the breaſt, and the belly. The head is furniſhed with two eyes of an oblong figure, and black colour, which are guarded by a horny tunicle, not eaſily penetrated. Between the eyes, near the middle of the head, are placed the *antennæ*, or pair of horns, which are the principal inſtruments of feeling, eſpecially in a dark hive. The jaws open to the right and left, and ſerve to carry out of the hives any thing that incommodes or offend them. Theſe are armed with teeth, which they make uſe of in their wars with each other, and the wounds of which are always mortal. The trunk, or tongue, is long and taper, and extremely pliant and flexible, adapted to the purpoſe of penetrating to the bottom of the flowers, and exhauſting them of their mellifluous juice. This part is porous, and compoſed of circular fibres, ſo that it may be contracted and folded up, when it is not uſed; and it is likewiſe fortified againſt injury by four ſtrong ſcales, two of which ſheath it, and the other two, which are larger, encompaſs the whole. Lewenhoeck calls this part the *wiper*, and Dr. Garden deſcribes it under the name of the *ſucker*, or *proboſcis*. Phil. Tranſ. Nº 94, and Nº 175.

The breaſt of the *bee* is of a cylindrical, or rather a ſpheroidical form; on each ſide of the breaſt there are two wings, and underneath ſix legs of unequal length, three on the right, and three on the left, the paws of which are furniſhed with ſmall hooks, that may be ſeen with the microſcope, whereby they faſten themſelves together in hiving and ſwarming, and alſo with a ſpongy ſubſtance, which preſerves their claws from injury. The belly of the *bee* is formed by ſix rings, which are capable of extenſion or contraction, as occaſion requires, and within theſe plaits they fix and carry their wax. The belly, beſide the inteſtines, contains a bag or bladder, in which are lodged the juices collected from flowers, and out of which it is afterwards diſcharged, by the two canals through which it was at firſt conveyed, into the cells of the magazine for winter ſupply. The ſting of the *bee* is a very curious weapon, and, when examined by the microſcope, appears of a very ſurpriſing ſtructure. It has a horny ſheath, or ſcabbard, which includes two bearded darts. This ſheath ends in a ſharp point, near the extremity of which a ſlit opens, through which, at the time of ſtinging, the two bearded darts are protruded beyond the end of the ſheath; one of theſe is a little longer than the other, and fixes its beard firſt, and the other inſtantly following, they penetrate alternately deeper and deeper, taking hold of the fleſh with their beards or hooks, till the whole ſting is buried in the fleſh; and then a venomous juice is injected through the ſame ſheath, from a little bag at the root of the ſting, which occaſions an acute pain, and a ſwelling of the part, that ſometimes continues ſeveral days. But this is beſt prevented by enlarging the wound directly, to give it a diſcharge. Mr. Derham counted on the ſting of a waſp eight beards on the ſide of each dart, ſomewhat like the beards of fiſh-hooks; and the ſame number are to be counted on the darts of the *bee's* ſting. Derham's Phyſ. Theol. p. 241. Baker's Microſc. &c. p. 210.

When theſe beards are ſtruck deep in the fleſh, if the wounded perſon ſtarts, or diſcompoſes the *bee* before it can diſengage them, the ſting is left behind ſticking in the wound; but if he hath patience to ſtand quiet, the *bee* will bring the hooks cloſe to the ſides of the darts, and withdraw the weapon; in which caſe, the wound is always much leſs painful. A waſp is not ſo liable to leave its ſting in the wound as a *bee*; the beards of it being ſhorter, and the inſect more vigorous and nimble in its operations. The *bee* is covered with a fine hair, ſmooth, and ſhining like velvet.

Bees, *architecture of*. See Honey-*combs*.

Bees, *colonies of*. See Hive.

Bees, *generation of*. Theſe inſects begin to breed in the upper part of the hive, in the empty cells adjoining to thoſe that are filled with honey; and they deſcend gradually into the lower parts, as the flowers which furniſh them with the means of ſubſiſtence increaſe; and the brood is carried to the outermoſt part of the combs. The queen-*bee* lays an egg, of an oblong figure, and larger at one end than the other, at the bottom of each cell; fixing it to one of the angles by its ſmaller end, whilſt the other end points exactly to the oppoſite angle. Sometimes more than one egg has been depoſited in the ſame cell; when this is the caſe, the working *bees* remove the ſupernumerary eggs, and leave only one in each cell. On the firſt or ſecond day after the egg is lodged in the cell, the drone *bee* injects a ſmall quantity of whitiſh liquid, which in about a day is abſorbed by the egg. On the third or fourth day is produced a worm or maggot, which, when it is grown ſo as to touch the oppoſite angle, coils itſelf up in the ſhape of a ſemicircle, and floats in a proper liquid, whereby it is nouriſhed and enlarged in its dimenſions: this liquor is of a whitiſh colour, of the thickneſs of cream, and of an inſipid taſte like flour and water. Naturaliſts are not agreed as to the origin and qualities of this liquid; ſome have ſuppoſed, that it conſiſts of ſome generative matter, injected by the honey *bees* into each cell, in order to give fecundity to the egg; but the moſt probable opinion is, that it is the ſame with what ſome writers have called the *bee-bread*; and that it is a mixture of water with the juices of plants and flowers collected merely for the nutrition of the young, whilſt they are in their weak and helpleſs ſtate. Whatever be the nature of this aliment, it is certain that the common working *bees* are very induſtrious in ſupplying the worms with a ſufficient quantity of it. The worm is fed by the working *bees* for about eight days, till one end touches the other in the form of a ring; and when it begins to feel itſelf uneaſy in its firſt poſture, it ceaſes to eat, and begins to unrol itſelf, thruſting that end forward towards the mouth of the cell, which is to be the head. The attendant *bees*, obſerving theſe ſymptoms of approaching transformation, deſiſt from their labours in carrying proper food, and employ themſelves in faſtening up the top of the cell with a lid of wax, formed in concentric circles, and by their natural heat in cheriſhing the brood, and haſtening the birth. In this concealed ſtate the worm extends itſelf at full length, and prepares a web of a ſort of ſilk, in the manner of the ſilk-worm; this web forms a complete lining for the cell, and affords a convenient receptacle for the transformation of the worm into a nymph, or chryſalis. Some naturaliſts ſuppoſe, that, as each cell is deſtined to the ſucceſſive breeding of ſeveral worms, the whole web, which is compoſed of many cruſts or doubles, is, in reality, a collection of as many webs as there have been worms. M. Maraldi apprehends, that this lining is formed of the ſkin of the worm thrown off at its entrance into the nymph ſtate; but it is urged, that if the cells are opened when newly covered by the *bees*, the worm within will be found in its own form, and detected in the art of ſpinning its web; and by means of glaſſes it will be found compoſed of fine threads, regularly woven together, like thoſe of other ſpinning animals.

In the ſpace of eighteen or twenty days the whole proceſs of transformation is finiſhed, and the *bee* endeavours to diſcharge itſelf from confinement, by forcing an aperture with its teeth through the covering of the cell; the paſſage is gradually dilated; ſo that one horn firſt appears, then the head, and afterwards the whole body: this is uſually the work of three hours, and ſometimes of half a day. The *bee*, after it has diſengaged itſelf, ſtands on the ſurface of the comb, till it has acquired its natural complexion, and full maturity and ſtrength, ſo as to become fit for labour. The reſt of the *bees* gather round it in this ſtate, congratulate its birth, and offer it honey out of their own mouths. The *exuviæ*, and ſcattered pieces of wax which are left in the cell, are removed by the working *bees*; and the *matrix* is no ſooner cleanſed, and fit for new fecundation, but the queen depoſits another egg in it; inſomuch that, Mr. Maraldi ſays, he has ſeen five *bees* produced in the ſame cell, in the ſpace of three months. The young *bees* are eaſily diſtinguiſhed from the others by their colour; they are grey, inſtead of the yellowiſh brown of the common *bees*. The reaſon of this is, that their body is black, and the hairs that grow upon it are white, from the mixture of which ſeen together reſults a grey; but this colour forms itſelf into a browniſh yellow by degrees, the rings of the body becoming more brown, and the hairs more yellow.

The *drones* owe their original to the ſame cauſe with the honey-*bees*; they are generated after the ſame manner, only in different cells deſignedly prepared for them in the drone-comb; of which there is one in each hive, often two, and ſometimes three. The circumſtances that attend the production of the *queen-bee* are more peculiar. See Drone and Queen-*bee*.

Bees, *government of*. See Queen-*bee*.

Bees, *hiving of*. See Hive and Hiving.

Bees, *oeconomy of*. Naturaliſts relate wonders on this ſubject. The moral virtues have been all, at one time or other, attributed to the *bees*; and they have been particularly celebrated for their prudence, induſtry, mutual affection, unity, loyalty to their ſovereign, public ſpirit, ſobriety, and cleanlineſs. The ſagacity of *bees* in foreſeeing rain has been often mentioned; but it is very queſtionable. Though ſome of the accounts that have been given of theſe inſects are fabulous, yet intimate acquaintance with them in their domeſtic operations hath furniſhed many real facts that are as ſurpriſing as thoſe which are groundleſs. It muſt not however be omitted, that at certain times, when they think their ſtores will fall ſhort, they make no ſcruple to throw out of the hives their own offſpring; the nymphs, and young *bees* of the drone kind, ſcarce extricated from their covering, have been carried away, and left to periſh. Though they are juſt in their own kingdom, and to thoſe who may properly be called their fellow-ſubjects, they rob and plunder ſtrangers and foreigners whenever they have power and opportunity; and they have frequent battles in committing depredations on neighbouring colonies and hives, or in ſelf-defence, which end fatally to many of their number. But it ſhould be obſerved that this never happens, unleſs in the ſpring or autumn, when the weather is warm, and honey ſcarce, and there are no flowers to produce it. In this caſe, when they have ranged the fields without ſucceſs, they endeavour to ſupply themſelves, at the hazard of their lives, from the ſtocks of other *bees*. However, if the queen of either hive that happens to be engaged is killed, the conteſt is finiſhed, and both parties unite under the ſurvivor.

The induſtry and activity of *bees* in their domeſtic labours afford a very inſtructive and amuſing ſpectacle; all are buſily engaged in their ſeveral departments; whilſt ſome are employed in gathering honey or wax, others repair rotten combs; others carry out the dead, and cleanſe the filth; others keep guard, placing themſelves in five or ſix files, eight or ten deep, upon the floor of the hives, ſo that all the *bees* at entrance muſt paſs between them; ſome are even ſaid to ſerve for bridges, or ladders, for others to paſs over; and when they are tired with labour, they recruit themſelves with reſt. For this purpoſe they form ſmaller or larger cluſters in the following manner: each *bee*, with its two fore-legs, lays hold of the hinder legs of the *bee* that is next above it, and thus a chain is made by the ſucceſſive application of one to another, and the firſt *bee* ſupports the weight of all the reſt to the bottom of the chain. The larger cluſters are only a multiplicity of theſe chains, of which there are ſometimes many hundreds together. The *bees* never lay hold of any part of one another, except the legs. In this way they likewiſe guard themſelves from the effects of cold, and continue for ſeveral weeks in a torpid ſtate.

Bees, *preſervation of.* The preſervation of this induſtrious and uſeful inſect is an object of great importance; and it chiefly depends on ſupplying them with a ſufficient quantity of food, on guarding them from their enemies, and collecting the produce of their labour, without deſtroying them. Beſide the attention which ſhould be paid to the neceſſities of *bees*, in chuſing the ſituation of an APIARY, it may be neceſſary to feed them toward the cloſe of autumn, and again in the ſpring, if they appear to have conſumed their winter ſtock. This ſhould be done, eſpecially in cloudy miſty weather, when they go little abroad, and when ſeveral days of bad weather immediately follow their ſwarming. Mr. Thorley directs, that no hive ſhould be kept which does not weigh twenty pounds; and that the ſupply ſhould be given in quantities of honey, which is their proper food, not leſs than a pound and a half, or two pounds, at a time. The honey ſhould be firſt diluted with water, or ſmall beer, and then poured into an empty comb; a drone-comb is the ſtrongeſt, and the beſt for the purpoſe; and in the evening, when the *bees* are quiet, the hive ſhould be gently raiſed on one ſide, and the comb put under it; the contents will be conveyed away the next day into the ſeveral magazines.

Reaumur recommends a plate of liquid honey, unmixed with water, croſſed with ſtraws, and covered with a paper full of holes, through which the *bees* will ſuck the honey, without daubing themſelves. But care ſhould be taken that the hive be well guarded from robbers, whenever it is provided with a freſh ſupply. The winter-quarters of *bees* ſhould likewiſe be well ſecured both againſt the weather, and againſt other enemies that would annoy them. Mild winters, as well as ſevere cold, are injurious; ſun-ſhine in winter tempts them to go abroad, and expoſes them to the fatal effects of ſudden changes, either of cold or rain. *Bees*, it has been remarked, are moſt likely to ſurvive in cold winters, becauſe they are then in a torpid ſtate, and require little nouriſhment, provided the apiary be well ſecured from northerly and eaſterly winds; whereas a ſmall degree of warmth enlivens them, and they conſume their winter ſtock, and are left deſtitute in a cold, wet ſpring. When they are chilled, and apparently dying by cold, and the cluſters of them are broken, ſo that they drop down in the hive, they may be recovered by a ſmall degree of heat. Varro and Columella adviſe hot aſhes to be laid about the hive, or ſprinkled over cluſters of *bees* which lie ſeemingly dead at the bottom. But a ſufficient warmth may be given them by putting them into a handkerchief, and breathing upon them, or by placing them in the ſun-beams, and laying them before the fire. This precaution ſhould be uſed in time; otherwiſe, when their vitals are impaired, it is impoſſible to recover them. However it is much to be wiſhed, that a method could be found of preſerving all the hives from injury, without removing them out of the places where they ſtand during the ſummer: Reaumur made many attempts for this purpoſe. Some hives he covered over with ſtraw, by means of ſticks fixed around them, and reaching a few inches above the top; but the moſt ſucceſsful method was that of preſerving them in large tubs with earth or hay; contriving, at the ſame time, to convey-air to them through a ſquare tube of wood, two inches in width, and half an inch in depth, which paſſed through the ſide of the tub, and of ſuch a length as to reach the mouth of the hive, and to project three or four inches from the ſides of the tub. After all, the common ſtone covering, which is generally uſed in England, is ſufficient for the purpoſe.

There are other enemies, beſide hunger and cold, againſt which the proprietors of *bees* ſhould be cautioned. It has been obſerved already, that different colonies of *bees* ſometimes plunder each other; and theſe rovers make their attacks chiefly in ſpring and autumn. The moſt effectual way to guard againſt their incurſions is to leſſen the entrance into the hive, ſo as to leave room only for two or three *bees* to paſs abreaſt; or to ſtop up the hives that are attacked, till the rovers diſappear; or if ſtrangers have gained admittance, the proper inhabitants of the hive may be rouſed to ſelf-defence by diſturbing them with a bunch of ſtinking madder, faſtened to the end of a ſmall ſtick of a convenient length; thus their reſentment will be rouzed, and they will inſtantly ſeize the robbers. This, indeed, is needleſs, if the queen is ſafe. However, if the hives that are attacked have but few *bees*, and little honey, it is better to take them than to ſtand a trial.

Hornets and waſps are alſo very formidable enemies; their neſts ſhould be carefully deſtroyed. Mice ſhould be guarded againſt, by diminiſhing the entrance into the hives as the cold comes on, and the *bees* are leſs able to defend themſelves; and the hives may be placed in ſuch a manner, that it will be impoſſible for the mice to reach them. Spiders and caterpillars are very deſtructive to *bees*; a ſpecies of the latter, called the wax-worm, or wax-moth, becauſe it feeds on wax, lays its eggs in the hive, which turn to maggots that are very noiſome and prejudicial. Hives of *bees* that have ſwarmed more than once, and ſuch as contain little honey, are moſt expoſed to theſe inſects; for the empty combs ſerve them for ſhelter, and the wax ſupplies them with food. Theſe hives ſhould be cleaned at leaſt once a week; and the ſtools on which they reſt, where the moths are laid by the *bees*, ſhould be cleaned every morning. But they cannot be entirely deſtroyed, without taking away the infected hive, removing the *bees*, and cleanſing it of the moths, before it is reſtored to its former occupiers. *Bees* are often troubled with lice, which may be deſtroyed by ſtrewing tobacco over them. The depredations of birds, and particularly of the houſe-lark and ſwallow, ſhould be carefully prevented.

Theſe inſects are ſubject to a kind of purging in the ſpring, which is often very fatal. Madame Vicat, in the Memoires, &c. of the Berne Society for 1764, aſcribes this diſtemper to the honey which the cold has candied in the hive. Columella ſuppoſes that it is an annual diſtemper, occaſioned by ſpurge bloſſoms and elm ſeeds; and he adviſes giving them roſemary and honey, diluted with water. The moſt effectual cure is that preſcribed by Ariſtomachus, which is the removal of the vitiated combs, or of thoſe in which there are open cells containing candied honey. Others attribute this diſeaſe to their feeding on pure honey, and recommend their being fed with a honey-comb taken out of another hive, the cells of which are filled with crude wax, or *bee*-bread. Perhaps the true cauſe, and the effectual remedy of this diſeaſe, are ſtill unknown.

For the method of preſerving *bees* in hives and boxes, and of collecting the produce of their labours without deſtroying them, ſee Hive, Honey, and Wax.

Bees, *ſex of.* There are in every hive or colony three ſorts of *bees*, viz. the ſovereign or queen, the working or honey-*bees*, and the drones. The working *bees* have generally been ſuppoſed to be neutral, or of neither ſex; but M. Schirach, in his Hiſtoire Naturelle de la Reine des Abeilles, &c. publiſhed in 1772, has advanced a new and ſingular opinion on this ſubject. He ſuppoſes that all the common, or honey-*bees*, are females in diſguiſe; in which the organs that diſtinguiſh the ſex, and particularly the *ovaria*, are obliterated, or, at leaſt, through their extreme minuteneſs, they have not yet been obſerved; and that every one of theſe *bees*, in the earlier period of its exiſtence, was capable of becoming a queen-*bee*, had it been lodged and fed, and brought up, when in the worm-ſtate, with that deſign. He adduces a great variety of experiments in confirmation of this hypotheſis: in one inſtance two ſpoonfuls of common *bees* were ſhut up in a ſmall box, four inches ſquare, with a piece of brood-comb of the ſize of a crown-piece, containing worms of three days. This ſmall colony, upon examining it four days afterwards, had completed two royal cells, which was a certain indication that one or more queens was to be produced. He likewiſe challenges any perſons to chooſe a piece of the common brood-comb, as ſmall as they pleaſe, and to deſtroy all the eggs, worms, and nymphs, contained in it, reſerving only one worm of their own choice, and leaving it in its cell; and he undertakes, by the aſſiſtance of the working *bees*, to produce this worm metamorphoſed into a queen-*bee*. M. Schirach has more than once fulfilled his engagement. M. Bonnet, the celebrated naturaliſt of Geneva, was proſelyted to this opinion.

The drones have been ſuppoſed by many to be the males; and later experiments and diſcoveries have confirmed this opinion. See Drones and Queen-*bee*.

There is in ſome parts of America a very different ſpecies of *bees* from ours; and the manner of erecting their combs, and lodging their honey, is not leſs different than their form. Their combs are compoſed of a ſeries of ſmall bottles or bladders of wax, of a duſky brown, or blackiſh colour; and each of theſe is much of the ſize and ſhape of a Spaniſh olive. They hang together in cluſters, almoſt like a bunch of grapes, and are ſo contrived, that each of them has its aperture, while the *bees* are at work upon it; but as ſoon as it is filled with honey, this aperture is cloſed, and the *bees* leave it, and go to work upon another veſſel. Their lodgings are uſually taken up in the hollow of an old tree, or in ſome cavity of a rock by the ſea-ſide. They are ſagacious in chooſing the moſt ſecure retreats, becauſe their honey is ſo delicious a bait, that they are hunted after by many animals; and they have no power of defending themſelves, having no ſtings, as our *bees* have. The combs are brittle; and the honey is clear and liquid like rock-water. It is uſed by the natives rather as a drink with their food, than as honey. They uſe it alſo in medicine as a purge, drinking half a pint of it in the morning, faſting. Phil. Tranſ. N° 172.

Mr. Dudley ſpeaks of a method of hunting *bees*, for finding their neſts, practiſed of late years in the woods in New England. It conſiſts in catching a *bee*, then letting it fly, and obſerving the way it ſteers; this ſhews the hunter the courſe or bearing of the neſt. To find the diſtance, he takes an offset of an hundred perches, and lets fly another *bee*, belonging to the ſame neſt; the angle or point wherein theſe two courſes interſect, is the place of the neſt. Phil. Tranſ. N° 376; or Abr. vol. vii. part 3. p. 403.

Bees, *ſwarming of*. See Swarm.

Bees, *writers on*. Many authors have written on *bees*. Among the ancients, Ariſtomachus is ſaid to have ſtudied them ſixty years; Philliſcus retired into a deſert wood, that he might have the opportunity of obſerving them to better advantage; Ariſtotle made a great number of curious obſervations on this inſect, which Virgil has put into Latin verſe: they have been enlarged and confirmed by Pliny and others. Theophraſtus has a fragment ſtill extant, Περι μελιτων, *concerning bees*; or, as entitled in Laertius, Περι μελιτος, *of honey*.

Among the moderns, prince Frederic Ceſi, inſtitutor of the Roman Academy of Sciences, wrote expreſly on *bees*; but it is not known what became of the MS. no more than of that promiſed by Swammerdam on the anatomy of the *bee*, the want of which has been much regretted among the French.

Maraldi, and Reaumur in his Hiſt. Inſect. have largely treated of *bees*.

Among the Engliſh, Butler, Gurnay, Mills, Levets, Thorley, Southern, Remnant, Hartlib, Ruſden, Warder, White, Wildman, and others, have diſcourſes expreſly on *bees*. Phil. Tranſ. N° 257. p. 365.

Bee, in *Aſtronomy*. See Apis.

Bee is alſo uſed figuratively to denote ſweetneſs, induſtry, &c. Thus Xenophon is called the Attic *bee*, on account of the great ſweetneſs of his ſtyle. Antonius got the denomination *meliſſa*, or *bee*, on account of his collection of common places.

Leo Allatius gave the appellation *apes urbanæ* to the illuſtrious men at Rome from the year 1630 to the year 1632.

Bee-*bird*. See Colibri.

Bee-*boxes*. See Hive.

Bees-*bread*. See Pain *d'Abeiles*. Thorley, p. 86.

Bee-*eater*, in *Zoology*. See Apivorus *buteo*.

Bee-*flower*, Ophrys. See Twyblade.

Bee-*fly*. See Drone-*fly*.

Bee-*glue*, a ſoft, unctuous matter, employed by *bees* to cement the combs to the hives, and to cloſe up the cells.

Bee-*hive*. See Hive.

Bee, *humble*. See Bombylius.

BEECH-*tree*, *Fagus*, in *Botany*, a tree of the maſt-bearing kind, the characters of which are theſe. It hath male and female flowers on the ſame tree; the male flowers are collected into globular heads, and have no petals, but have ſeveral ſtamina included in an empalement of one leaf. The female flowers have a one-leaved empalement, cut into four parts, but have no petals; the germen is fixed to the empalement, which afterward becomes a roundiſh capſule, armed with ſoft pines, opening in three cells, each containing a triangular nut. This genus belongs to the *monoecia polyandria* claſs of plants in the Linnæan ſyſtem, and comprehends the common chestnut-*tree*. See *Tab. I. of Botany, Claſs* 19.

This tree will grow to a conſiderable ſtature, though the ſoil be ſtony and barren; as alſo upon the declivities of hills, and chalky mountains, where it will reſiſt the winds better than moſt other ſorts of trees: but then the nurſeries for the young plants ought to be made on the ſame ſoil. For if they are raiſed in a good ground, and a warm expoſure, and afterward tranſplanted into a bleak and barren ſituation, they ſeldom thrive, which holds true in moſt other trees. The nurſery therefore ought to be made upon the ſame ſoil with the intended plantation; and the plants annually drawn, that the plantation may be extended.

Theſe trees are very proper to form large hedges to ſurround plantations, or wilderneſs quarters; and may be kept to a regular figure, if cut twice a year, eſpecially if they ſhoot ſtrong; in which caſe, if they are neglected for a ſeaſon or two, it will be difficult to reduce them again. The ſhade of this tree is very injurious to moſt ſorts of plants which grow near it; but is generally believed to be very ſalubrious to human bodies.

Beech-wood is whitiſh, hard, and dry. It crackles in the fire, and is uſed in building and furniture; alſo to make utenſils, as ſhovels, ladles, bellows, ſtools, ſhoes, diſhes, trays, trenchers, dreſſer-boards, fellies of carts, &c.

If *beech*-timber be kept altogether under water, it is little inferior to elm; but if kept dry, or partly wet, partly dry, it is liable to the worm.

That of the mountain-*beech* is whiteſt, and moſt fit for the turner's uſe; that of the field-*beech* is blacker, but more durable. In turning *beech*, it yields a well-ſcented effluvia, not unlike roſes.

The ſcale of *beech*-wood ſerves to make ſcabbards and band-boxes. The bark is uſed as floats for fiſhers nets, inſtead of cork. Its ſhavings are of uſe for fining wine.

Its aſhes, according to Creſcentius, with proper mixtures, are excellent to make glaſs.

Its leaves, gathered about the fall, before they are much froſt-bitten, afford the beſt matraſſes to lay under quilts, inſtead of ſtraw, as being very ſoft, and continuing ſweet for ſeven years. When chewed, they are held good for the gums and teeth.

The ſtagnant water gathered on the hollow of the *beech*-tree, is ſaid to cure tetter-ſcabs and ſcurfs in man and beaſt, by fomentation.

Beech-*galls*, in *Natural Hiſtory*, the name of a ſpecies of galls or protuberances found on the *beech*-tree, and ſerving for the lodgment of inſects.

Theſe galls are found on the leaves of the *beech*, and are ſometimes only one upon a leaf, ſometimes more; they always grow from the ſame point, owing, no doubt, to the fly's having laid ſo many eggs in the ſame ſpot.

Theſe galls are of an oblong figure, and ſomewhat flatted. They reſemble the ſtone of a plum in ſhape, and are ſo hard, that they are not to be broken between the fingers: their ſubſtance ſeems of the ſame nature with that of a nut-ſhell. In each gall there is only one cavity, inhabited by a white worm, which, in time, paſſes through the nymph ſtate into that of the fly, to which it owed its origin.

Beech-*maſt*, the fruit of the *beech*-tree. It fattens hogs and deer, and has ſometimes ſupplied men inſtead of bread. Chios is ſaid to have endured a memorable ſiege by means of it.

Beech-*oil*, an oil drawn from the fruit, or maſt, of the *beech-tree*.

The *beech-maſt* is a kind of triangular ſeed, in form of a nut, or rather acorn, containing a whitiſh, oleaginous pith, of a very agreeable taſte; whereof is made an oil much valued for ſallads, &c.

It is very common in Picardy, and other places, where the maſt abounds. They draw it cold by expreſſion, after the maſt has been ſhelled, and pounded.

An attempt was made, a few years ago, to introduce the manufacture of *beech-oil* in England, and a patent granted to the proprietor, but without ſucceſs; the country people, it ſeems, turning their maſt to better account in feeding the hogs with it, than in ſelling to the patentee, and his co-proprietors, for oil.

BEELE, in *Mining*, an inſtrument uſed by the workmen to break and pick out the ore from the rocks in which it lies. This inſtrument is called by the tin-men in Cornwall a *tubber*. It is an iron inſtrument of eight or ten pounds weight, made ſharp, and ſteeled on both ends, and having a hole in the middle, where the handle is fixed in. When the ore lies in hard rocks, this inſtrument wears out ſo faſt, that it muſt have new points made to it every fortnight. The miners, who dig up the ore in the mines, are, from the uſe of this inſtrument, called *beele*-men; and thoſe who attend them, and whoſe buſineſs it is to take up the matter the others looſen or break up, are, from their inſtrument, which is a broad and hollow iron ſhovel, or a wooden one, with a very ſtrong iron lip, called the *ſhovellers*. In Cornwall, when the ore lies in a hard bed, they allow two ſhovellers to three *beele*-men; and when it lies in a ſoft or earthy matter, two *beele*-men and three ſhovellers are the proportion. Phil. Tranſ. N° 69. p. 2104.

BEEMEN, or Sheemen, in *Aſtronomy*, ſeven ſtars of the fourth magnitude, following each other, in the fourth flexure of the conſtellation Eridanus.

BEER, a popular drink, prepared from MALT and HOPS. The word is Saxon, formed from the German *bier*, of the Latin *bibere*.

Matthiolus takes the *zythum* and *curmi* of the ancients to be the ſame with the *beer* and ALE of our days; and thinks the only difference between *zythum* and *curmi* to have conſiſted in ſome circumſtances of the preparation, which rendered the one ſtronger than the other.

Tacitus, in ſpeaking of the ancient Germans, as alſo Dioſcorides, Galen, &c. condemn *beer*, as prejudicial to the head, nerves, and membranous parts, as occaſioning a more laſting and more uneaſy drunkenneſs than wine, and as promoting a ſuppreſſion of urine, and ſometimes a leproſy.

Meſſ. Perrault, Rainſſant, and others, defend the modern *beer*; urging, that the hops uſed with us, and which the ancients were ſtrangers to, having a faculty of purifying the blood, and removing obſtructions, ſerve as a corrective, and free our drink from the inconveniences objected to that of the ancients.

For the manner of preparing *beer*, ſee HOPS, and BREWING. For its qualities, MALT-LIQUOR.

In New England they make *beer* from maize, or even the bread made thereof. Some phyſicians recommend *beer* made of oats and birch-water, as preferable, in nephritic caſes, to that made of barley. Phil. Tranſ. Nº 97. p. 6135. Nº. 138.

Sour or decayed *beer* may be reſtored divers ways; as by ſalt made of the aſhes of barley-ſtraw, put into the veſſel, and ſtirred; or by three or four handfuls of beech-aſhes thrown into the veſſel, and ſtirred; or, where the liquor is not very ſour, by a little put in a bag, without ſtirring; chalk calcined, oyſter-ſhells, egg-ſhells burnt, ſea-ſhells, crabs eyes, alcalized coral, &c. do the ſame, as they imbibe the acidity, and unite with it into a ſweetneſs.

Beer, it is ſaid, may be kept from turning ſour in ſummer, by hanging into the veſſel a bag containing a new-laid egg, prickt full of little pin-holes, ſome laurel-berries, and a few barley-grains; or by a new-laid egg and walnut-tree leaves. Laurel-berries alone, their ſkin being peeled off, will keep *beer* from deadneſs; and the throwing FIXT AIR into it will reſtore it. Glauber commends his ſal mirabile and fixed nitre, put in a linen bag, and hung on the top of the caſk, ſo as to reach the liquor, not only for recovering ſour *beer*, but preſerving and ſtrengthening it.

Beer taſting of the caſk, may be freed from it, by putting a handful of wheat in a bag, and hanging it to the veſſel. The grounds of *beer* form a very rich manure.

Beer, as a malt liquor, is of ſo great antiquity in this kingdom, that in the year 1492, we meet with a licence from Henry VII. to a Fleming, to export fifty tons of ale, called *beer*.

BEER-*poſſet*. See ZYTHOGALA.

BEER, *eager*, is uſed by callico-printers, chemiſts, lapidaries, ſcarlet-dyers, vinegar-merchants, white-lead-men, &c.

BEER-*meaſure*. See MEASURE.

BEER-*vinegar*. See VINEGAR.

BEES-WAX. See WAX.

BEESTINGS, or BREASTINGS, denote the firſt milk taken from a cow after calving.

The *beeſtings* are of a thick conſiſtence, and yellow colour, ſeemingly impregnated with ſulphur. Dr. Morgan imagines them peculiarly fitted and intended by nature to cleanſe the young animal from the recrements gathered in its ſtomach and inteſtines during its long habitation *in utero*. The like quality and virtue he ſuppoſes in womens firſt milk after delivery; and hence infers the neceſſity of the mother's ſuckling her own child, rather than committing it to a nurſe whoſe firſt milk is gone.

BEET, BETA, in *Botany*, the name of a genus of plants of the *pentandria digynia* claſs, of which the characters are theſe. The flower hath a five-leaved empalement, which is permanent, but no petal, and five ſtamina placed oppoſite to the leaves of the empalement. The germen is ſituated below the receptacle, which afterward becomes a capſule with one cell, having a ſingle ſeed wrapped up in the empalement. There are three ſpecies.

All the ſpecies of this plant are propagated by ſowing their ſeeds in February or March in a looſe, deep ſoil, not over dunged. When they are come up, they muſt be howed out, ſo as to leave them ten or twelve inches aſunder; for, if they have not room, the roots ſeldom grow large. It is a cuſtom with the gardeners about London to ſow carrots on the ſame ground with their *beets*. The carrots are drawn off in the ſummer-time, and the *beets* have then ſufficient time to grow to their ſize. *Beets* are more uſed as a pot-herb, and to eat with ſalt meat, than phyſically. They looſen the belly, and attemperate hot cholic humours. The juice of the roots is ſometimes uſed as an errhine, being ſnuffed up the noſe to clear the head of phlegm, and mucous humours; and by that means to help old head-achs.

The *beet* is one of the five emollient herbs.

BEET, *hare's*, *beta leporina*, a name given by ſome of the old Latin writers to a ſmall green plant of an acrid taſte.

BEET-*fly*, a very ſmall fly, found always among the flowers of the *beet*.

BEET-*gall-inſect*. See GALL-*inſect*.

BEETLE, in *Zoology*. See SCARABÆUS.

BEETLE, *Capricorn*, in *Zoology*, the Engliſh name for the CERAMBYX. The generical characters of theſe inſects are theſe: they have long and ſlender bodies; their horns are long and jointed; and they are fond of places in the neighbourhood of rivers. There are ſix different ſpecies of this inſect deſcribed by Liſter, in his treatiſe De Scarabæis, publiſhed at the end of Mr. Ray's Hiſtory of Inſects.

BEETLE, *oil*, *Meloe*, in *Zoology*, the name of a genus of four-winged flies, whoſe *antennæ* are ſlender and filiform; and the exterior wings are dimidiated. It is called in Engliſh the *oil-beetle*, as being ſoft and mucous to the touch. It is black, but not at all gloſſy, and has been deſcribed by authors under the names *ſcarabæus mollis*, *cantharus unctuoſus*, and *proſcarabæus*. See SCARABÆUS.

BEETLE, *ſtinking*, *Tenebrio*, in *Zoology*, the name of a genus of beetles, the *antennæ* of which are oblong, ſlender, and filiform.

It has no interior wings, in which ſingular deficiency it differs widely from all other beetles; but the form and ſtructure of all its other parts refer it to this claſs. See SCARABÆUS.

Mouffet has called it the *blatta fœtida*. There are ſeveral ſpecies of it.

BEETLE, *water*, *Dytiſcus*, in *Zoology*, the name of a genus of four-winged flies, the *antennæ* of which are ſlender and ſetaceous. They have likewiſe feet formed for ſwimming, and their habitation is generally in the water, whence they have been called in Engliſh, *water-beetles*.

BEETLE, in a mechanical ſenſe, denotes a large wooden inſtrument, formed after the manner of the mallet, having each face bound with a ſtrong iron hoop, to keep it from ſpreading, and uſed for driving piles, ſtakes, paliſades, wedges, and the like.

In this ſenſe, the word is alſo corruptly written in ſome places *boytle*. Skinner derives it from the Engliſh *beating*.

For the military uſe, *beetles*, called alſo *ſtampers*, are thick round pieces of wood, a foot and a half long, and eight or ten inches in diameter, having a handle of about four feet long. Their uſe is for beating or ſettling the earth of a parapet, or about paliſades; which is done by lifting up the *beetle* a foot or two, and letting it fall with its own weight.

The name *beetle* is alſo given to the paviour's rammer, or inſtrument, wherewith the ſtones are beaten down, and faſtened.

BEEVES, a general name for oxen.

BEG, or BEY, is a Turkiſh title, properly ſignifying *lord*.

The word is alſo written *begh*, or *beig*, ſometimes *bec*, or *bek*, or *bech*; but pronounced BEY.

BEGS, or BEGHS, of Egypt, denote twelve generals, who have the command of the militia, or ſtanding forces of the kingdom, and are to ſecure the country from the inſults of Arabs, as well as to protect the pilgrims in their annual expeditions to Mecca.

The *begs*, ſeveral of whom are deſcended from the ancient race of the Mamalukes, are very rich and powerful, maintaining each five hundred fighting men for their own guard, and the ſervice of their court. On diſcontents, they have frequently riſen in rebellion. They are often at variance with the *baſhaw*, whom they have more than once plundered and impriſoned.

BEGGAR. *Beggars* pretending to be blind, lame, &c. found begging in the ſtreets, are to be removed by the conſtables; and refuſing to be removed, ſhall be whipped, &c. ſtat. 12 Anne; and our ſtatutes have been formerly ſo ſtrict for puniſhing of *beggars*, that in the reign of king Henry VIII. a law was enacted, that ſturdy *beggars* convicted of a ſecond offence, ſhould be executed as felons. But this ſtatute was afterward repealed. See ROGUE and VAGABOND.

BEGGING *order*. See MENDICANT.

BEGHARDI, BEGUARDI, or BEGGHARDI, called alſo in Italy *bizochi*, and in France *beguins*, derive their name from the old German word *beggen*, *begguen*, which ſignifies to *ſeek any thing with zeal and importunity*. This was a general appellation given to no leſs than thirty ſects, or orders, that ſprung up in Europe in the thirteenth century, which differed widely from each other in their opinions, their diſcipline, and manner of living. It was at firſt indiſcriminately applied to all perſons, who embraced, with reſignation and free choice, the horrors of abſolutely poverty; begging their daily bread from door to door, and renouncing all their worldly poſſeſſions an occupations. It was afterwards reſtricted to thoſe, who diſtinguiſhed themſelves by an extraordinary appearance of devotion, and was uſed much in the ſame ſenſe with the term *methodiſt* among us. Theſe perſons formed a ſort of intermediate order between the monks and citizens, reſembling the former in their manner of living, without aſſuming their name, or contracting their obligations. They were divided into two claſſes, which derived their different denominations of *perfect* and *imperfect* from the different degrees of auſterity that they diſcovered in their manner of living. The *perfect* lived upon alms, abſtained from wedlock, and had no fixed habitations. The *imperfect* conformed to the cuſtoms of the reſt of their fellow-citizens in theſe reſpects. The name was at firſt honourable, but by degrees it ſunk into reproach; being adopted by many, who, under the maſk of religion, concealed the moſt abominable principles, and committed the moſt enormous crimes.

The *beghards* of Flanders is a denomination, by which certain unmarried perſons, both bachelors and widowers, are diſtinguiſhed, who formed themſelves into communities of the ſame kind with thoſe of the female *beguines*, reſerving to themſelves the liberty of returning to their former method of life. The firſt ſociety of theſe *beghards* was eſtabliſhed at Antwerp in the year 1228, and continues ſtill; though the brethren of which it is compoſed have long ſince departed from their primitive rule of diſcipline and manners. This firſt eſtabliſhment was ſucceeded by many others in Germany, France, Holland, and Flanders. Theſe fraternities long enjoyed the toleration of the Roman pontiffs; but moſt of their convents are now either demoliſhed, or converted to other uſes. See BRETHREN *of the free Spirit*. Moſheim's Ecc. Hiſt. vol. iii. p. 86. 8vo. 1758.

BEGINNING *of an eclipſe*. See ECLIPSE.

BEGINNING *of the action*. See ACTION.

BEGLERBEG, a Turkiſh title for the chief governor of a province, who has under him ſeveral *beys* or *ſangiacs*, that is, ſubgovernors.

The word is alſo written *beylerbey*, *beglerbey*, *beghelerbeghi*, and *beylerbeg*.—It is compounded of *begler*, *lords*; the plural of *beg*, *lord*, with the word *beg* ſubjoined; importing as much as *lord of lords*.

The next to the vizier *azem*, or the firſt vizier, are the *beglerbegs* in Turky, who, according to Rycaut, may be compared to archdukes in ſome other countries, being the next miniſters below the prime vizier, and having under their juriſdiction many *ſangiacs* or provinces, and their *begs*, *agas*, &c.

To every *beglerbeg* the grand ſignior gives three enſigns or ſtaves, trimmed with a horſe-tail, to diſtinguiſh them from the baſhaws, who have but two, and from ſimple *begs*, or *ſangiac-begs*, who have but one.

The province or government of a *beglerbeg* is called *beglerbeglik*, or *beglierbeglik*. Theſe are of two ſorts; the firſt called *baſile beglerbeglik*, which have a certain rent aſſigned out of the cities, countries, and ſignories allotted to the principality; the ſecond called *ſalianæ beglerbeglik*, for maintenance of which is annexed a certain ſalary or rent, collected by the grand ſignior's officers with the treaſure of the empire.

The *beglerbegs* of the firſt ſort are in number twenty-two, viz. thoſe of Anatolia, Caramania, Diarbekir, Damaſcus, Aleppo, Tripoli, Trebizond, Buda, Temiſwar, &c.

The *beglerbegs* of the ſecond ſort are in number ſix, viz. thoſe of Cairo, Babylon, &c.

Five of the *beglerbegs* have the titles of viziers, viz. thoſe of Anatolia, Babylon, Cairo, Romania, and Buda.

The *beglerbegs* appear with great ſtate, and a large retinue, eſpecially in the camp, being obliged to bring a ſoldier for every five thouſand aſpers rent which they enjoy.

The *beglerbegs* of Romania brought ten thouſand effective men into the field.

BEGLERBEG is alſo a title given to the chief governors of provinces in the Perſian empire, having the command over all kans, ſultans, &c. in their reſpective diſtricts.

BEGONIA, in *Botany*, the name of a genus of plants of the *polygamia monoecia* claſs; the characters of which are theſe: the flowers are of two kinds; the one kind is the barren, or male flower; this is compoſed of four leaves, ſome broader, and others narrower; the other kind, which produces the embryo-fruit, is of the roſaceous ſort, and is compoſed of ſeveral petals, arranged in a circular form, and placed on a foliated cup, which finally becomes a trigonal alated fruit, divided into three cells, and containing ſmall ſeeds.

BEGUINS, devout ſocieties of young women, eſtabliſhed in ſeveral parts of Flanders, Picardy, and Lorrain; who maintained themſelves by the work of their own hands; leading a middle kind of life, between the ſecular and religious, but make no vows. The poor and diſtreſſed were ſupported by the pious liberality of ſuch opulent perſons as were friends to the order.

Theſe ſocieties began at Nieville, in Brabant, A. D. 1226, though others ſay in the year 1207, and ſoon ſpread into France, Germany, Holland, and Flanders, where a conſiderable number of them ſtill ſubſiſt. Their habit was particular, but modeſt; they lived in common, and had men of great piety for their governors.

BEHEADING, a capital puniſhment, wherein the head is ſevered from the body by the ſtroke of an ax, ſword, or other cutting inſtrument.

Beheading was a military puniſhment among the Romans, known by the name of *decollatio*. Among them the head was laid on a *cippus* or block, placed in a pit dug for the purpoſe; in the army, without the *vallum*; in the city, without the walls, at a place near the *porta decumana*. Preparatory to the ſtroke, the criminal was tied to a ſtake, and whipped with rods. In the early ages the blow was given with an ax; but in after-times with a ſword, which was thought the more reputable manner of dying. The execution was but clumſily performed in the firſt times; but afterwards they grew more expert, and took the head off clean, with one circular ſtroke.

In England and France, *beheading* is the puniſhment of nobles; being reputed not to derogate from nobility, as hanging does.

In Scotland they do not behead with an ax, as in England; nor with a ſword, as in Holland and France; but with an edged inſtrument called the MAIDEN.

BEHMISTS, BOHMENISTS, or BOHMISTS, a kind of myſtic philoſophers and followers of Jacob Behmen, commonly called the Teutonic philoſopher.

The *Behmeniſts* are attached to that motley ſpecies of philoſophy firſt introduced by Paracelſus, under the name of THEOSOPHIA.

Behmen, or Bohmen, from whom the ſect takes its denomination, was born in 1575, near Gorlitz, and bred up to the trade of a ſhoe-maker, or taylor, having juſt learning enough to read and write a little, which he acquired at ten years of age. He derived the greateſt part of his myſtical doctrine from the writings of Robert Fludd, a native of England. Wood's Athenæ Oxon. vol. i. p. 610.

In 1600 he was ſeized with a ſpiritual rapture, and ten years after began to compoſe a book on the light he then received, entitled Aurora, being a mixture of *aſtrology*, *philoſophy*, *chemiſtry*, and *divinity*, written in a quaint obſcure ſtyle; ſeven years after he wrote divers others on the ſame model; the chief is the *Myſterium Magnum*. He died in 1624. All his works have been publiſhed together at Amſterdam in 1682, 8vo. His tenets are, that there is a great darkneſs among the ſtars, where the devil holds his principality; that all arts and ſciences flow from the ſiderial ſpirit of this world; that the ſeven liberal arts proceeded from ſeven ſpirits of nature; that all human things are compoſed of the four firſt properties, bitter, ſour, heat, and pain, (Angore).

Quirinus, Kuhlman, Abr. a Frackenberg, and Limmerman, are the moſt diſtinguiſhed among the *Behmeniſts*.

Mr. William Law, an Engliſh viſionary, was an induſtrious and zealous diſciple of Behmen; and he prepared a new edition and tranſlation of his works, which have been publiſhed in 2 vols. 8vo. ſince his deceaſe.

Gilbert Iſcheſchius, and Antagnoſſus, were great oppoſers of *Behmeniſm*.

Dr. Henry More has alſo a piece expreſs againſt *Behmeniſm*; Cenſura Philoſophiæ Teutonicæ, printed in his works, p. 520.

BEHEMOTH, a huge animal mentioned in Scripture, concerning which interpreters are much divided.

BEHEN. See BEN.

BEIBENIÆ *ſtellæ*, a name given by ſome aſtronomers to the principal fixed ſtars in each conſtellation.

The appellation is more particularly given to the ſtars of the firſt magnitude, otherwiſe called the hearts, *corda*, of the ſeveral conſtellations; though ſome would diſtinguiſh between *corda*, and *beibeniæ ſtellæ*, reſtraining the former to ſtars only of the firſt magnitude, and extending the latter to ſeveral of the ſecond, or even third.

Hermes has a treatiſe expreſs De Stellis Beibeniis, publiſhed by Junctinus, in his Speculum Aſtrologicum, and alſo in his commentaries upon Jo. de Sacroboſco's book De Sphæra.

BEIDELSAR, in *Botany*, a name by which ſome authors call the Syrian DOGS-*bane*, or *apocynum Syriacum*, a poiſonous plant.

BEISSKER, in *Ichthyology*, a name given by Geſner and others to the fiſh commonly called *muſtela foſſilis*: this is a ſpecies of the COBITIS, diſtinguiſhed by Artedi by the name of the bluiſh COBITIS, with fine black longitudinal lines on each ſide. Schonefeldt calls this the *pœcilia*, and Jonſon the *piſcis foſſilis*.

BEIZA, or BEZIATH, a Hebrew word, ſignifying an *egg*, in Jewiſh *Antiquity*, a certain meaſure in uſe among the Jews; they ſay that the *beiza* contains the ſixth part of a LOG.

The *beiza* is alſo a ſort of gold coin common among the Perſians; it weighs forty *drachmas*, and from this word, not from the city Byzantium, the *bezam* was formed. A *bezam* is worth two *dinars*, and every *dinar* twenty or five and twenty *drachmas*.

BEKKERANISM, or BEKKERIANISM, the ſyſtem or ſentiments of Balth. Bekker, who denied that ſpirits can act or operate on bodies.

The author of this ſyſtem was a Dutch divine, towards the cloſe of the ſeventeenth century, ſtrongly impreſſed with the Carteſian principle, that the eſſence of ſpirit conſiſts in thinking; hence he was led to conclude, that ſpirits cannot act, either on bodies, or on other ſpirits; and therefore he underſtood the declarations of Scripture concerning the operations of ſpirits, in a metaphorical ſenſe. He attributed the poſſeſſions recorded in the Goſpel to bodily diſeaſes, or mental diſorders. Budd. Elem. Phil. Theor. p. 5. cap. 2. § 1—12. See DEMONIAC.

BEL, in *Botany*, the name of a plant called by ſome the *cucumis capparis*, or *caper-cucumber*. This plant is very imperfectly deſcribed to us; and we find among the Arabian writers, that the fruit was called by this name as well as the whole plant. Avicenna, who gives the fulleſt account we have of it, ſays that it was an Indian plant, reſembling in growth the common cucumber-plant, but bearing a fruit like the caper; he tells us that this fruit was the only part of the plant uſed in medicine, and that it was very hot and bitter, being ſomewhat like ginger in the fiery heat of the taſte, and in qualities hot and dry in the ſecond degree, as they expreſſed it; or, according to Dioſcorides, in the third.

BELATUCADRUS, the name of an ancient Britiſh idol, recorded in old inſcriptions; and ſuppoſed by Selden and Voſſius to be the ſame with BELENUS.

BELAY, on board a ſhip, ſignifies the ſame as *faſten*.—Thus they ſay, *belay* the ſheet, or tack, that is, faſten it to the kevel, by winding it ſeveral times round a laſt, &c.

BELCHING. See RUCTATION.

BELEMNITES, or BELENITES, in *Natural Hiſtory*, a kind of figured ſtone, uſually hollow, and a little tranſparent, ſhaped ſomewhat like an arrow, formed of ſmall *ſtriæ*, or threads, radiating from the axis to the ſurface of the ſtone; and which when burnt, or rubbed againſt one another, or ſcraped with a knife, yields an odour like raſped horn. See its figure repreſented in *Tab. of Foſſils*, *Claſs* 10.

The word is formed from the Greek βελεμνον, *arrow*.

The *belemnites* is otherwiſe denominated *dactylus*, or *dactylus idæus*, on account of its bearing a reſemblance to the figure of a finger; by the ancients, *lyncurius lapis*, or *lapis lyncis*, as being ſuppoſed to be generated of the urine of the *lynx*.

Among us, popularly, it is called the thunderbolt, or thunder-ſtone, as having been ſuppoſed to fall in time of thunder.

Dr. Woodward, and a great many other authors, ſuppoſe the *belemnites* to be a native foſſil in its own proper figure; but it is more probably ſuppoſed by others to owe its preſent form to ſome animal body; and to be, like the other formed ſtones, the *echinitæ*, &c. a ſubſtance caſt in a ſhell. Ph. Tr. vol. xlviii. art. 97. and vol. liv. art. 5.

The general diſtribution of the *belemnitæ* is into three kinds; viz. the cylindric, conic, and fuſiform, of which the latter are moſt rare.

The *belemnitæ* are all of an alcalious nature, making a ſtrong effervеſcence with acids. Hence alſo they become abſorbent and reſolvent, and, on theſe accounts, are ranked by phyſicians among antinephritic medicines.

The German writers ſpeak much of the virtue of this foſſil, and it is kept in their ſhops, and ſometimes enters into extemporaneous preſcription. They give it in caſes of the gravel, and all nephritic complaints; and ſay, that it has great virtues againſt the night-mare. With us it is not uſed at all, except among farriers; but, in all probability, it will anſwer the purpoſe of ſpar in any other form; and ſpar has at all times been celebrated for its virtues as a lithontriptic, whether given under the form of the LAPIS JUDAICUS, or that of the OSTRACITES, or, finally, as diſſolved in the water of certain ſprings, which form incuſtrations on things that fall into them.

BELENNUS, in *Zoology*, the name of a ſmall anguilliform fiſh, called by others BLENNIS. It is a ſea-fiſh, and very ſcarce. It approaches much in figure to the Engliſh bull-head, or miller's thumb, the COTTUS of authors.

BELENUS, in *Mythology*, a name which the Gauls gave to the ſun, which they alſo called *Mithra*; and, as ſome ſuppoſe, the ſame with the *Baal* of Scripture, and the *Belus* of the Aſſyrians.

BELFRY, BELFREDUS, is uſed by military writers of the middle age for a ſort of tower, erected by beſiegers to overlook and command the place beſieged.

They were alſo called *berfredi*, *berefredi*, *verfredi*, and *belfragia*. Their ſtructure and uſe are deſcribed in verſe by a poet of thoſe days.

Belfry originally denoted a high tower, whereon centinels were placed to watch the avenues of a place, and prevent ſurprize from parties of the enemies, or to give notice of fires, by ringing a bell. Du-Cange.

In the cities of Flanders, where there is no *belfry* on purpoſe, the tower of the chief church ſerves the ſame end.

The word *belfry* is compounded of the Teutonic *bell* and *freid*, *peace*, becauſe the bells were hung for preſerving the peace.

BELFRY is alſo uſed for that part of a ſteeple wherein the bells are hung.

This is ſometimes called by middle-age writers *campanile*, *clocaria*, and *triſtegum*. Du-Cange.

BELFRY is more particularly uſed for the timber-work, which ſuſtains the bells in a ſteeple; or that wooden ſtructure, to which the bells in church-ſteeples are faſtened.

BELIDES, in *Antiquity*. See DANAIDES.

BELIEF, in its general and natural ſenſe, denotes a perſuaſion, or a ſtrong aſſent of the mind to the truth of any propoſition.

In which ſenſe, *belief* has no relation to any particular kind of means or arguments, but may be produced by any means whatever.—Thus we are ſaid to *believe* our ſenſes, to *believe* our reaſon, to *believe* a witneſs, &c. And hence, in rhetoric, all ſorts of proofs, from whatever topics deduced, are called πιςεις, becauſe apt to get *belief*, or perſuaſion, touching the matter in hand.

BELIEF, in its more reſtrained and technical ſenſe, invented by the ſchoolmen, denotes that kind of aſſent which is grounded only on the authority, or teſtimony, of ſome perſon or perſons, aſſerting or atteſting the truth of any matter propoſed.

In this ſenſe, *belief* ſtands oppoſed to knowledge and ſcience. We do not ſay we *believe* that ſnow is white, or that the whole is equal to its parts; but we ſee and know them to be ſo.—That the three angles of a triangle are equal to two right angles, or that all motion is naturally rectilinear, are not ſaid to be things *credible*, but *ſcientifical*; and the comprehenſion of ſuch truths is not *belief*, but *ſcience*.

But, when a thing propounded to us is neither apparent to our ſenſe, nor evident to our underſtanding; neither certainly to be collected from any clear and neceſſary connexion with the cauſe from which it proceeds, nor with the effects which it naturally produces; nor is taken up upon any real arguments, or relation thereof to other acknowledged truths; and yet, notwithſtanding, appears as true, not by a manifeſtation, but by an atteſtation of the truth, and moves us to aſſent, not of itſelf, but in virtue of a teſtimony given to it—this is ſaid to be properly *credible*; and an aſſent to this is the proper notion of *belief* or FAITH.

BELIEVERS, an appellation given toward the cloſe of the firſt century, to thoſe Chriſtians, who had been admitted into the church by baptiſm, and inſtructed in all the myſteries of religion: they had alſo acceſs to all the parts of divine worſhip, and were authorized to vote in the eccleſiaſtical aſſemblies. They were thus called in contradiſtinction to the *catechumens*, who had not been baptized, and were debarred from theſe privileges.

BELINGELA, in *Botany*, a name given by ſome authors to the *mala inſana*, or *mad-apples*. See MAD-*apple*.

BELL, a popular machine, ranked by muſicians among the number of muſical inſtruments of percuſſion. See MUSIC.

The parts of a *bell* are the body or barrel, the *clapper* within ſide, and the ear or *cannon*, whereby it is hung to a large beam of wood.—Its uſual matter is a kind of compound metal, called *bell-metal*. The thickneſs of its edges is uſually $\frac{1}{12}$ of the diameter, and its height twelve times its thickneſs.—The *bell*-founders have a diapaſon, or *bell*-ſcale, wherewith they meaſure the ſize, thickneſs, weight, and tone, of their *bells*.—For the method of caſting *bells*, ſee FOUNDERY.

The uſes of *bells* are ſummed up in the Latin diſtich:

Laudo Deum verum, plebem voco, congrego clerum,
Defunctos ploro, peſtem fugo, feſta decoro.

The firſt *bells* are ſaid to have been made about the year 400, at Nola, in Campania, whereof St. Paulinus was biſhop; at leaſt, it is aſſured, he was the firſt who brought them into uſe in the church. And hence, it is added, they had their Latin names, *Nolæ* and *Campanæ*: but others ſay, they take theſe names, not from their being invented in Campania, but becauſe it was here the manner of hanging and balancing them, now in uſe, was firſt practiſed; at leaſt, that they were hung on the model of a ſort of balance invented or uſed in Campania. For in Latin writers we find *Campana ſtatera*, for a *ſteel-yard*; and in the Greek καμπανιζειν, for *ponderare*, to weigh.

Polydore Virgil aſcribes the invention of church-*bells* to pope Sabinian, St. Gregory's ſucceſſor; but by miſtake: for St. Jerom, contemporary with Paulinus, makes mention of one. In effect, pope Sabinian did not invent *bells*; but he was the firſt who appointed the canonical hours to be diſtinguiſhed by them.

We even find mention made of *bells* in Ovid, Tibullus, Martial, Statius, Manilius, and the Greek authors, under the appellations of *tintinnabula*, and *ſounding braſs*. Suetonius, Dion, Strabo, Polybius, Joſephus, and others, mention them under the names of *petaſus*, *tintinnabulum*, *æramentum*, *crotalum*, *ſignum*, &c. But theſe appear to have been no more than baubles, and little like the huge *bells* in uſe among us.

Hieronymus Magius, who has a treatiſe on *bells* (written, when in chains, in Turky, and which is accounted very remarkable, purely from his memory, without the aſſiſtance of any books) makes large *bells* a modern invention. Indeed, we do not hear of any before the ſixth century: in 610, we are told, Lupus, biſhop of Orleans, being at Sens, then beſieged by the army of Clotharius, frighted away the beſiegers by ringing the *bells* of St. Stephen's.—The firſt large *bells* in England are mentioned by Bede towards the latter end of that century. They ſeem to have been pretty common in the year 816. The Greeks are uſually ſaid to have been unacquainted with them till the ninth century, when their conſtruction was firſt taught them by a Venetian.

Indeed, it is not true, that the uſe of *bells* was intirely unknown in the ancient eaſtern churches, and that they called the people to church, as at preſent, with wooden mallets. Leo Allatius, in his Diſſertation on the Greek Temples, proves the contrary from ſeveral ancient writers. It is his opinion that *bells* firſt began to be diſuſed among them, after the taking of Conſtantinople by the Turks; who, it ſeems, prohibited them, leſt their ſound ſhould diſturb the repoſe of ſouls, which, according to them, wander in the air. He adds, that they ſtill retain the uſe of *bells* in places remote from the intercourſe of the Turks; particularly, very ancient ones in mount Athos. F. Simon thinks the Turks rather prohibited the Chriſtians the uſe of *bells* out of political, than religious reaſons; inaſmuch as the ringing of *bells* might ſerve as a ſignal for the execution of revolts, &c.

The city of Bourdeaux was deprived of its *bells* for rebellion; and, when it was offered to have them reſtored, the people refuſed it, after having taſted the eaſe and conveniency of *being* freed *from the conſtant din and jangling of bells*.

Matthew Paris obſerves, that anciently the uſe of *bells* was prohibited in the time of mourning; though, at preſent, they make one of the principal ceremonies of mourning. Mabillon adds, that it was an ancient cuſtom to ring the *bells* for perſons about to expire, to advertiſe the people to pray for them; whence our *paſſing-bells*.

Lobineau obſerves, that the cuſtom of ringing *bells* at the approach of thunder, is of ſome antiquity; but, that the deſign was not ſo much to ſhake the air, and ſo diſſipate the thunder, as to call the people to church, to pray that the pariſh might be preſerved from miſchief from it.

The cuſtom of chriſtening, or bleſſing *bells*, is very ancient. Some ſay it was introduced by pope John XIII. in 972, but it is evidently of an older ſtanding; there being an expreſs prohibition of the practice in a capitular of Charlemagne in 789. See Hoſpinian de Origine Templorum, p. 113. where there is a particular account of all the ridiculous ceremonies practiſed about *bells*.—See Dr. Franklin's Obſervations on conſecrated Bells, and the form in conſecrating them, Experiments, Obſervations, &c. p. 448. ed. 1769.

Nankin, a city of China, was anciently famous for the largeneſs of its *bells*; but their enormous weight having brought down the tower, in which they were hung, the whole building fell to ruin, and the *bells* have ever ſince been diſregarded.—One of theſe *bells* is near twelve Engliſh feet high, the diameter ſeven and a half, and its circumference twenty-three; its figure almoſt cylindric, except for a ſwelling in the middle, and the thickneſs of the metal about the edges, ſeven inches.—From the dimenſions of this *bell*, its weight is computed at 50000 pounds, which is more than double the weight of that at Erfort, ſaid by father Kircher to be the greateſt *bell* in the world.—Theſe *bells* were caſt by the firſt emperor of the preceding dynaſty, about three hundred years ago. They have each their name, the hanger *tchoui*, the eater *che*, the ſleeper *choui*, the will *fi*.—Father le Comte adds, that there are ſeven other *bells* in Pekin, caſt in the reign of Youlo, each of which weighs 120,000 pounds. But the ſounds even of their biggeſt *bells* are very poor; being ſtruck with a wooden inſtead of an iron clapper.

The Egyptians have none but wooden *bells*, except one brought by the Franks into the monaſtery of St. Anthony.

The ſound of a *bell* ariſes from a vibratory motion of the parts thereof, much like that of a muſical chord. The ſtroke of the clapper, it is evident, muſt change the figure of the *bell*, and of round make it oval: but the metal having a great degree of elaſticity, that part which the ſtroke drove fartheſt from the centre will fly back again, and this even ſomewhat nearer to the center than before: ſo that the two points, which before were the extremes of the longer diameter, now become thoſe of the ſhorter. Thus, the circumference of the *bell* undergoes alternate changes of figure, and by means thereof gives that tremulous motion to the air, wherein SOUND conſiſts

M. Perrault maintains, that the ſound of the ſame *bell* or chord, is a compound of the ſounds of the ſeveral parts thereof; ſo that where the parts are homogeneous, and the dimenſions of the figure uniform, there is ſuch a perfect mixture of all theſe ſounds, as conſtitutes one uniform, ſmooth, even ſound; and the contrary circumſtances produce harſhneſs. This he proves from the *bells* differing in tune according to the part you ſtrike; and yet ſtrike it any where, there is a motion of all the parts. He therefore conſiders *bells* as compoſed of an infinite number of rings; which, according to their different dimenſions, have different tones, as chords of different lengths have; and, when ſtruck, the vibrations of the parts immediately ſtruck determine the tone; being ſupported by a ſufficient number of conſonant tones in the other parts. Mr. Haukſbee, and others, have found by experiment, that the ſound of a *bell* ſtruck under water is a fourth deeper than in the air: though Merſenne ſays, it is of the ſame pitch in both elements.

Bells are obſerved to be heard farther, placed on plains, than on hills; and ſtill farther, in valleys, than on plains: the reaſon of which it will not be difficult to aſſign, if it be conſidered, that the higher the ſonorous body is, the rarer is its medium; conſequently, the leſs impulſe it receives, and the leſs proper vehicle it has to convey it to a diſtance.

There is a curious obſervation in a paper of M. Reaumur's in the Memoirs of the Paris Academy, relating to the ſhape moſt proper for *bells*, to give them the loudeſt and cleareſt ſound. He obſerves, that as pots, and other veſſels more immediately neceſſary to the ſervice of life, were doubtleſs made before *bells*, it probably happened, that the obſerving theſe veſſels to have a ſound when ſtruck, gave occaſion to making *bells*, intended only for ſound, in that form: but that it does not appear that this is the moſt eligible figure; for lead, a metal which is, in its common ſtate, not at all ſonorous, yet becomes greatly ſo on its being caſt into a particular form, and that very different from the common ſhape of *bells*. In melting lead for the common occaſions of caſting in ſmall quantities, it is uſually done in an iron ladle; and as the whole is ſeldom poured out, the remainder, which falls to the bottom of the ladle, cools into a maſs of the ſhape of that bottom. This is conſequently a ſegment of a ſphere, thickeſt in the middle, and thinner towards the edges: nor is the ladle any neceſſary part of the operation, ſince if a maſs of lead be caſt in that form in a mould of earth or ſand, in any of theſe caſes it is found to be very ſonorous. Now, if this ſhape alone can give ſound to a metal which in other forms is perfectly mute, how much more muſt it neceſſarily give it to other metals naturally ſonorous in whatever form. It ſhould ſeem, that *bells* would much better perform their office in this than in any other form, and that it muſt particularly be a thing of great advantage to the ſmall *bells* of common houſe-clocks, which are required to have a ſhrill note, and yet are not allowed any great ſize. M. Reaumur very judiciouſly obſerves, that had our forefathers had opportunities of being acquainted with the ſound of metals in this ſhape, we ſhould probably have had all our *bells* at preſent of this form. Mem. Acad. Par. 1726.

BELLS, *foundery of*. See FOUNDERY.*

BELL, *diving*. See DIVING.

BELLS, *electrical*, are uſed in a variety of entertaining experiments by electricians. The apparatus, which is originally of German invention, conſiſts of three ſmall *bells* ſuſpended from a narrow plate of metal (*Plate Electricity, fig.* 2.); the two outermoſt by chains, and that in the middle, from which a chain paſſes to the floor, by a ſilken ſtring. Two ſmall knobs of braſs are alſo hung by ſilken ſtrings, one on each ſide of the *bell* in the middle, which ſerve for clappers. When this apparatus is connected with an electrified conductor, the outermoſt *bells* ſuſpended by the chains will be charged, attract the clappers, and be ſtruck by them. The clappers becoming electrified likewiſe will be repelled by theſe *bells*, and attracted by the middle *bell*; and diſcharge themſelves upon it by means of the chain extending to the floor. After this, they will be again attracted by the outermoſt *bells*, and thus, by ſtriking the *bells* alternately, occaſion a ringing, which may be continued at pleaſure. Flaſhes of light will be ſeen in the dark between the *bells* and the clappers; and if the electrification be ſtrong, the diſcharge will be made without actual contact, and the ringing will ceaſe. An apparatus of this kind, connected with one of thoſe CONDUCTORS that are erected for ſecuring buildings from lightning, will ſerve to give notice of the approach and paſſage of an electrical cloud.

Bell, in *Chemiſtry*, denotes a glaſs veſſel placed over ſome matter in a ſtate of exhalation, either to collect the vapour, or gather the flowers.

Chemical *bells* are a ſort of receptacles chiefly uſed in preparing the oil or ſpirit of ſulphur, for gathering and condenſing fumes into a liquor.

Bell, in *Building*, is uſed to denote the body of the Corinthian and Compoſite capital, by reaſon of its reſemblance to the figure of a *bell* inverted.

In this ſenſe, *bell* is the ſame with what we otherwiſe called *vaſe* and *tambour*, ſometimes alſo *corbeil*.

The naked of the *bell*, is always to be even and perpendicular with the bottom of the flutings of the column.

Bell *flower*, in *Botany*. See Campanula.

Bells, *hair*, in *Botany*. See Hyacinth.

Bell-*metal* is a compoſition of tin and copper melted together in due proportion; which has this property, that it is more ſonorous than any of the ingredients taken apart. The ordinary proportion is about twenty-two or twenty-three pounds of tin to one hundred weight of copper; though the proportion varies according to the ſize of the *bells*; a greater quantity of copper being uſed in the greater *bells* than in the ſmaller ones. Some add lead and braſs, others zinc or ſpelter, to the compoſition.

It has long been obſerved, that though tin is ſpecifically lighter than copper, yet the gravity of the compound *bell-metal* is greater than that of copper itſelf. Notice has been frequently taken of this not uncommon phænomenon in chemiſtry, from which it appears, that Archimedes's propoſition and tables, calculated upon that principle, for determining the proportion of two metals in any given compound, by hydroſtatical experiments, are leſs to be depended upon than has hitherto been ſuppoſed. Some alſo ſpeak of a native mineral under the denomination *bell-metal*, or *belmettel*, from which Becher affirms he procured zaffer and ſmalt.

Bell-*animal*, a name given by the writers on microſcopical diſcoveries to a very ſmall animal found at the roots of the common duckweed. The bodies of theſe animals are ſhaped like *bells*, and they have very long and ſlender tails, by which they faſten themſelves to the roots of theſe little plants. They are uſually found in great numbers together, in a ſort of cluſters or bunches; and all of the ſame bunch have always the ſame motion, very frequently contracting themſelves, and afterwards expanding all together to the full length of their tails. They uſually contract inſtantaneouſly; but are more ſlow in the expanding themſelves again. Baker's Microſ. p. 90.

Bell-*muſchus*, in *Botany*, a name given by ſome authors to the plant called *bamia moſchata*, and moſch-ſeed.

Bell-*pepper*, in *Botany*. See Capsicum.

Bell-*polype*, in *Zoology*, a particular ſpecies of POLYPE, the extremities of whoſe branches reſemble *bells*. See *Tab. of Microſcopical Objects*, *Claſs* 1.

Bell-*weed*, an Engliſh name uſed by ſome authors for the *jacea nigra*, or common knap-weed, called alſo by many Engliſh writers MATFELON.

BELLADONA *lily*. See Amaryllis.

Belladona, in *Botany*, a name given by the Italians to the *deadly* NIGHTSHADE, becauſe the ladies make a coſmetic of the juice, or diſtilled water, which they uſe to make their complexion fair and white. Ray.

Others derive the name from the intoxicating quality of this plant: *Quod inſomnis pulchras oſtendat virgines feminaſque.* Bod. Comment. in Theophraſt. p. 1078.

BELLATRIX, in *Aſtronomy*, a ruddy, glittering ſtar of the ſecond magnitude, in the left ſhoulder of Orion.

It takes its name from *bellum*, as being anciently ſuppoſed to have great influence in kindling wars, and forming warriors.

BELLE *de nuit*, in *Botany*, a name which the French give to the flower of the JALAP.

BELLICA *columna*, in *Antiquity*, a *column* near the temple of Bellona, from which the conſuls or feciales caſt javelins towards the enemy's country, by way of declaration of war.

BELLICULI, or **Bellirici** *Marini*, among *Naturaliſts*, denote a ſpecies of ſea-ſhells of an umbilical figure, ſometimes of a white colour, ſpotted with yellow; and ſometimes of a yellow, ſtreaked with black lines, after the ſnail-faſhion.

BELLING *of hops* denotes their opening and expanding to their cuſtomary ſhape, ſuppoſed to bear ſome relation to that of a bell.

Hops blow towards the end of July, and *bell* the latter end of Auguſt, or beginning of September.

BELLIS, in *Botany*. See Daisy.

BELLON, or **Belland**, in *Medicine*, a diſtemper very common in Derbyſhire, and other countries, where they ſmelt lead-ore; to which beaſts, and even poultry, as well as men, are ſubject; and for this reaſon, a certain ſpace round the ſmelting houſes, is called *bellon*-ground, where it is dangerous for any animal to feed. This diſorder is attended with languors, weakneſs, intolerable pains, ſenſation of gripings in the belly, and generally coſtiveneſs. It frequently proves fatal.

The method of cure which has been found moſt ſucceſsful on this diſtemper, is, to give *cremor*, or cryſtals of tartar, in ſmall doſes, and to repeat them frequently, as two or three times a day.

BELLONA, in *Mythology*; *a bello*, the goddeſs of war, ſiſter to Mars. Before her temple the herald ſet a ſpear on a pillar, when any war was proclaimed.

BELLONARII, in *Antiquity*, prieſts of Bellona, the goddeſs of war and battles.

The *bellonarii* cut and mangled their bodies with knives and daggers in a cruel manner, to pacify the deity. In this they are ſingular, that they offered their own blood, not that of other creatures, in ſacrifice. In the fury and enthuſiaſm wherewith they were ſeized on theſe occaſions, they ran about raging, uttering prophecies, and foretelling blood and ſlaughter, devaſtations of cities, revolutions of ſtates, and the like; whence Martial calls them *turba entheata Bellonæ*. Lactant. Inſt. lib. i. cap. 1. Lucan. lib. i. Tertull. Apoll. cap. 9. Minut. Felix. p. 298. In after-times, they ſeem to have abated much of their zeal and tranſport, and to have turned the whole into a kind of farce, contenting themſelves with making ſigns and appearances of cutting and wounds. Lampridius tells us, the emperor Commodus, out of a ſpirit of cruelty, turned the farce again into a tragedy, obliging them actually to cut and mangle their bodies. Lamp. in Commod. cap. 9.

BELLONIA, ſo called after the name of M. Bellon, a phyſician of Caen, in *Botany*, a genus of the *pentandria monogynia* claſs. The characters of this plant are, that the flower is wheel-ſhaped, of one leaf with a ſhort tube, but ſpread open above, and cut into five obtuſe ſegments; that it hath five ſtamina which cloſe together; that the germen is ſituated under the receptacle of the flower, which afterward becomes an open turbinated ſeed-veſſel, ending in a point, having one cell filled with ſmall round ſeeds.

We have but one ſpecies of this plant, viz. ſhrubby *bellonia*, with a rough balm leaf. This plant is very common in ſeveral of the warm iſlands in America.

BELLOWING, among *Sportſmen*, is uſed for the noiſe which roes make in RUTTING-*time*.

BELLOWS, a machine uſed to give a briſk agitation to the air, by enlarging and contracting its capacity, and thus expiring and inſpiring the air by turns.

Bellows are of various kinds, as *domeſtic bellows*, *enamellers bellows*, *ſmiths bellows*, &c.

There are ſome *bellows* triangular, which only move on one ſide: others, called *lantern bellows*, from their reſembling a paper lantern: theſe move every way, and yet ſtill continue parallel.

Mr. Triewald, engineer to his Swediſh majeſty, has contrived a kind of *water-bellows*.—This is not the firſt time that water has been applied to blow the fire. The ſame is done at Tivoli, and other parts of Italy, where the contrivances for this purpoſe are called *foſſi d'acqua*.—Phil. Tranſ. N° 448. p. 234.

Mr. Stirling has given the deſcription of a *water-bellows*, or machine to blow fire by the fall of water. Phil. Tranſ. N° 475. § 19. Dr. Lewis's Com. Ph. Techn. p. 269, &c. Where may be ſeen an account of *bellows*, and of BLOWING *machines*, of various conſtructions, for all kinds of furnaces; and many curious and important remarks on the various quantity of air afforded by them, &c.

The action and effect of *bellows* of every kind, whether leathern or wooden, wrought by water or men, depend on this, that the air which enters them, and which they contain when raiſed, is again compreſſed into a narrower ſpace when they are cloſed. And, as the air, like all other fluids, runs to that place where it meets the leaſt reſiſtance, the air muſt of conſequence fly out of the pipe or aperture with a velocity proportional to the force whereby the air is compreſſed, and muſt of conſequence blow ſtronger or weaker, as the velocity with which the top and bottom of the *bellows* meet is greater or leſſer. The blaſt alſo will laſt in proportion to the quantity of air that was drawn into the *bellows* through the valve or wind-clap.

The Heſſian *bellows* are a contrivance for driving air into a mine for the reſpiration of the miners. This M. Papin improved, changing its cylindrical form into a ſpiral one; and, with this, working it only with his foot, he could make a wind to raiſe two pound weight.

Anarcharſis the Scythian is recorded as the inventor of *bellows*. Strabo, lib. vii. p. 209.

The action of *bellows* bears a near affinity to that of the lungs; and what we call blowing in the latter, affords a good illuſtration of what is called reſpiring in the former.

There are *bellows* made wholly of wood, without any leather about them; one of which is preſerved in the repoſitory of the Royal Society; and Dr. Plott deſcribes another uſed in the copper-works at Ellaſton in Staffordſhire. Nat. Hiſt. Staff. chap. 4. ſect. 18.

We are alſo told of a new ſort of *bellows* to work in vacuo. Some have even pretended to effect a perpetual motion by a new-contrived *bellows*. Boyle's Works, abr. tom. ii. p. 503. Phil. Tranſ. N° 182.

Smiths and founders *bellows*, whether ſingle or double, are wrought by means of a rocker, with a ſtring or chain faſtened thereto, which the workman pulls. The *bellows*-pipe is fitted into that of the tewel. One of the boards is fixed, ſo as not to play at all. By drawing down the handle of the rocker, the moveable board riſes, and, by means of a weight on the top of the upper board, ſinks again.

The *bellows* of forges and furnaces of mines uſually receive their motion from the wheels of a water-mill. Others, as the *bellows* of enamellers, are wrought by means of one or more ſteps or treddles under the workman's feet.

Acoſta ſays, that the metal of the Peruvian mines of Porco is eaſily refined with *bellows*; but that of the mines of Potoſi cannot be fuſed with them, but only by the breath of their ſmall furnaces built upon the ſides of mountains, and directed where the wind lies.

The *bellows* of an organ are ſix feet long, and four broad; each having an aperture of four inches, that the valve may play eaſily. There ſhould likewiſe be a valve at the noſe of the *bellows*, that one may not take the air from the other. To blow an organ of ſixteen feet, there are required four pair of theſe *bellows*.

The *bellows* of organs are wrought by a man called the blower; and, in ſmall organs, by the foot of the player.

Bellows, *Bone*, φυσητηρες οστεινοι, occur in Herodotus for thoſe applied by the Scythians to the genitals of mares, in order to diſtend the *uterus*, and, by this compreſſion, make them yield a greater quantity of milk.

Bellows, *Hydroſtatic*; ſee HYDROSTATIC.

BELLUÆ, in *Zoology*, the ſixth order of the *mammalia*; the character of which is, that their fore-teeth are obtuſe, their feet hoofed, their walk heavy, and their food vegetables.

BELLUGA *ſtone*, in *Natural Hiſtory*, the name of a *calculus* or ſtone found in the *belluga*, a large fiſh, accounted a ſpecies of ſturgeon, and called by Artedi *accipenſer tuberculis carens*.

The fiſh is much like the ſturgeon in ſhape; but its ſnout is ſhorter and thicker. Of its row or ſpawn is made cavear; and ſome of them are ſo large as to yield two hundred weight of it. The fiſh is very common and very large in the Volga, near the city of Aſtracan. It has been caught there thirty-ſix feet long, and eighteen thick. It is alſo found in the Don, and other rivers, and in the Baltic and Caſpian ſeas. See ACCIPENSER.

It is not certainly known in what part of this fiſh the ſtone is found. It is found in both ſexes, but moſt frequently in the male; and is found in fiſh of all ages and ſizes. It is far from being common, however; for in a thouſand fiſhes, there ſometimes is not found one ſtone. It is hence evident, that theſe ſtones are no natural part of the fiſh; but are mere morbid concretions, like the bezoar ſtones in the animal which produces them, or like the ſtones in human bladders. The ſituation of the parts in which it is found, and other circumſtances, may allot it its particular appearances.

This ſtone is of various ſhapes and ſizes; but its moſt uſual figure is either globular or oval. It is of a yellowiſh-white colour, and of a ſmooth and naturally poliſhed ſurface; and it is found from the ſize of a pigeon's egg to that of a gooſe. They are uſually compact, ponderous, and ſolid, not friable, but requiring a ſtrong blow to break them. They yield eaſily to the ſaw: but this defaces their internal texture, which is naturally very elegant and regular. The ſtones conſiſt of ſeveral concentric coats, firmly adhering to one another, formed about a *nucleus*, which generally appears to be ſome heterogeneous ſubſtance.

But another very obvious circumſtance there is in its ſtructure, which makes it greatly different from all other ſtones of this kind, that is, its radiated ſtructure, it being compoſed of a number of regular and even *ſtriæ* running from the centre to the circumference, repreſenting, both in colour and form, the flakes of the *terra foliota tartari*, or the ſtriated *ſpiculæ* of antimony.

If the ſtone be ſcraped to powder, and ſprinkled upon a hot iron, it gives a faint urinous ſmell, and calcines into a light, inſipid, greyiſh earth.

The people about the Volga eſteem it greatly, and account it to have great virtues: they ſay it promotes delivery; and give it conſtantly in caſes of the ſtone, and diſorders of the urinary parts. Its doſe is from ten grains to a dram. Phil. Tranſ. vol. xliv. part ii. N° 4.

BELLULA *bos*, in *Ichthyology*, a name given by Paulus Jovius to that ſpecies of the ray-fiſh, which was called by the old Greek and Latin writers *bos marinus*, and by the later authors *raja oxyrynchus*. It is diſtinguiſhed by Artedi by the name of the variegated ray, with ten prickly tubercles on the middle of the back.

BELLY, in a general ſenſe, denotes the whole ABDOMEN, or that region of the body contained between the *ſeptum tranſverſum*, the *hypochondria*, and *pubes*.

Belly is alſo uſed, in a more confined ſenſe, for the inteſtines alone, as containing the *fæces*.

In this ſenſe it is we ſpeak of the looſeneſs or coſtiveneſs of the *belly*, &c.

Belly is alſo uſed ſometimes for a pregnant woman.

In this ſenſe we are to underſtand the phraſe among *Civil Lawyers*, to put the *belly* in poſſeſſion of an eſtate.

Belly is alſo uſed in ſpeaking of the bodies of beaſts. Thus, we ſay a light *belly*, meaning a ſlender or lank one: a cow *belly*, that where the ribs being unable to hold the *viſcera*, they preſs downwards, and bulge diſagreeably.

Feeding horſes with graſs, or much hay, and few oats, makes them grow cow-bellied. It is a maxim, that horſes which are light-bellied, and firey, ſoon deſtroy themſelves.

The *belly* of a horſe ſhould be of an ordinary bigneſs, except in draught horſes, where the larger the better, provided it be round, and well incloſed within the ribs; rather extending upon the ſides than downwards. Thoſe horſes are apt to be cow-bellied, which having ſtraight ribs, are great feeders.

The *belly* is ſometimes alſo denominated the body, cheſt, gut, or flank.

A horſe is ſaid to be thick-bellied, well-bodied or flanked, when he has large, long, and well-made ribs, neither too narrow, nor too flat. A horſe again is ſaid to have no *belly*, or body, or to be thin-flanked, when his ribs are too narrow or ſhort, and the flank turns up; ſo that his body looks flankleſs, like a greyhound. Such horſes are called by the French *eſtracs*, and generally prove fine and tender, not fit for travelling or fatigue, unleſs they feed very heartily. Coach-horſes are rejected when they are not well-bellied, or well-bodied, but narrow or thin-gutted, ſeeming to have the ſkin of their flanks ſtitched on their ribs. But a hunter is not the worſe liked for being light-bellied. Horſes pained, or weak in their hind-quarters, are commonly light-bellied. Such as have painful ſcratches in their hind-legs, are found to loſe their *bellies* extremely.

Belly *of a* MUSCLE, in *Anatomy*, denotes the body thereof; as contradiſtinguiſhed from the two extremities, or tendons.

From the conditions of this, muſcles are divided into monogaſtric, or ſingle-bellied; and digaſtric, or double-bellied. Phil. Tranſ. N° 258.

Lower will have all the muſcles to be digaſtric, or double-bellied; in which he is ſeconded by Hoffman, and others.

Belly-*ach weed*, a name given in America to a ſpecies of the *jatropha*. See CASSADA.

Belly, *Dragon's*, *venter draconis*, is uſed by ſome *Aſtronomers* to denote the point in a planet's orbit, wherein it has its greateſt latitude, or is fartheſt diſtant from the ecliptic; more frequently called its limit.

BELOAR, a name given by ſome to a ſtone, otherwiſe called WIDURIS.

BELOMANCY, **Belomantia**, a kind of divination by means of arrows, practiſed in the Eaſt, but chiefly among the Arabians.

The word is of Greek origin; compounded of βελος, *arrow*, and μαντεια, *divination*.

Belomancy has been performed in different ways: one was, to mark a parcel of arrows, and put eleven, or more of them, into a bag; theſe were afterwards drawn out, and according as they were marked, or not, they judged of future events.

Another way was, to have three arrows, upon one of which was written, *God orders it me*; on another, *God forbids it me*; and upon the third, nothing at all. Theſe were put into a quiver, out of which they drew one of the three at random; if it happened to be that with the firſt inſcription, the thing they conſulted about was to be done; if it chanced to be that with the ſecond inſcription, it was let alone; and if it proved to be that without inſcription, they drew over again.

Belomancy is an ancient practice, and probably that which Ezekiel mentions, chap. xxi. ver. 21. At leaſt St. Jerom underſtands it ſo, and obſerves that the practice was frequent among the Aſſyrians and Babylonians. Something like it is alſo mentioned in Hoſea, chap. iv. only that *ſtaves* are there mentioned inſtead of *arrows*, which is rather *rhabdomancy* than *belomancy*.—Grotius, as well as Jerom, confounds the two together, and ſhews that they prevailed much among the Magi, Chaldeans, and Scythians; whence they paſſed to the Sclavonians, and thence to the Germans, who, as Tacitus obſerves, made uſe of *belomancy*.

BELONE, in *Zoology*, a name by which ſome of the old naturaliſts have called the ACUS *Oppiani*, called in Engliſh the horn-fiſh, or gar-fiſh, a ſpecies of the ESOX. The name is retained by Linnæus.

BELSEBUL, a ſpecies of the *ſimia*, with a bearded black tail.

BELT, BALTHEUS, properly denotes a kind of military girdle, uſually of leather, wherewith the ſword or other weapons are ſuſtained.

Belts are known among the ancient and middle-age writers by divers names, as *ζωνη*, *ζωμα*, *zona*, *cingulum*, *reminiculum*, *rinca*, or *ringa*, and *baldrellus*.

The *belt* was an eſſential piece of the ancient armour; inſomuch that we ſometimes find it uſed to denote the whole armour. Pott. Arch. Græc. tom. ii. lib. 3. cap. 4.

In later ages, the *belt* was given to a perſon when he was raiſed to knighthood; whence it has alſo been uſed as a badge or mark of the knightly order.

The denomination *belt* is alſo applied to a ſort of BANDAGES in uſe among ſurgeons, &c.

Thus we meet with quick-ſilver *belts*, uſed for the itch. A late writer deſcribes a *belt* for keeping the belly light, and diſcharging the water in the operation of tapping. Medic. Eſſ. Edinb. tom. i. p. 218.

Belt, or **Beltis**, in *Eccleſiaſtical Writers of the Middle Age*, denotes a ſort of ſtring of beads.

Belt is alſo a frequent diſeaſe in ſheep, cured by cutting their tails off, and laying the ſore bare; then caſting mould on it, and applying tar and gooſe-greaſe.

Belts, *Faſciæ*, in *Aſtronomy*, two zones or girdles ſurrounding Jupiter's body, more lucid than the reſt, and terminated by parallel lines; being ſometimes broader, and ſometimes narrower, nor conſtantly taking up the ſame places in his diſk.

Dark ſpots have been frequently obſerved on Jupiter's *belts*. Caſſini has alſo diſcovered a permanent one in the moſt northern part of the moſt ſouthern *belt*: by this he has determined the length of Jupiter's day; that is, the time of his revolution on his axis, which is finiſhed in 9 hours 56 minutes. Phil. Tranſ. N° 10, and vol. lxiii. part I. N° 11. p. 73.

Some aſtronomers take the *belts* to be ſeas, which alternately cover, and leave bare large countries of the Jovial world. The ſpots are by theſe writers conjectured to be gulphs in thoſe ſeas, perhaps as big as our ocean, and ſometimes full, ſometimes dry. M. Azout rather imagined the ſpots to be protuberances of the *belts*. Hiſt. Acad. Sc. 1708. 1692. Phil. Tranſ. N° 34. I. 15.

But the generality of aſtronomers take the ſpots, we mean the tranſparent and moveable ones, for the ſhadows of Jupiter's ſatellites.

The *belts* of Jupiter were firſt obſerved, and deſcribed by Huygens, in his Syſt. Saturnin. p. 7.

Caſſini alſo ſpeaks of *belts* of Saturn; being three dark, ſtraight, parallel bands, or *faſciæ*, on the diſk of that planet.

Saturn's *belts* do not appear to be inherent on his globe, as thoſe of Jupiter are; but rather to be large dark rings at a diſtance from the planet, and ſurrounding his body. Some imagine them to be clouds in his atmoſphere. The middlemoſt ſeems to be the ſhadow of Saturn's ring. Hiſt. Acad. Sc. 1715.

Belts, in *Navigation*, denote certain ſtreights near the ſound, through which ſhips muſt paſs going between the Baltic and the German ocean.

The *Belts* belong to the king of Denmark, who exacts a toll of all ſhips which paſs them, excepting the Swedes, who are exempt from it.

BELVIDERE, an Italian term, denoting a fine proſpect.

The name is more peculiarly given to a pavilion on the top of a building, or an eminence in manner of a platform in a garden, ſuſtained by a terrace-wall, or a maſſive of turf, contrived for the ſake of commanding a large or beautiful proſpect.

Belvidere, in *Botany*, a ſpecies of the CHENOPODIUM.

BELULCUM, a chirurgical inſtrument of various figures, contrived for extracting darts, arrows, or the like, from wounds.

Hence alſo the denomination *belulcum*; *quaſi* το βελος ελκων.

BELUS, in *Mythology*, the principal deity of the Babylonians; and if, as ſome ſuppoſe, the tower of Babel was his temple, one of the moſt ancient among the pagans. The kings of Babylon amaſſed immenſe treaſures in this place, which were pillaged by Xerxes on his return from the expedition into Greece. Herod. lib. i.

BEMA, *βεμα*, in *Antiquity*, denotes a ſtep or pace.

The *bema* made a kind of itinerary meaſure among the Greeks, whoſe length was equivalent to on cubit, and two thirds, or to ten palms.

Whence alſo the term *βηματιζειν*, *to meaſure a road.*

Bema, in *Eccleſiaſtical Writers*, denotes the altar-part, or ſanctuary, in the ancient churches.

In which ſenſe, *bema* made the third, or innermoſt part of the church, anſwering to the chancel among us.

Bema was alſo uſed for the biſhop's chair, ſeat, or throne, placed in the ſanctuary. It was called *bema* from the ſteps by which it was to be aſcended.

Bema was alſo uſed for the reader's deſk.

This in the Greek church was denominated *βημα γνοςων*, in the Latin church AMBO.

Bema is more peculiarly uſed for the *Manichees* altar, which was in a different place from that of the catholics.

Bema was alſo a denomination given by this ſect to the anniverſary of the day when *Manes* was killed, which with them was a ſolemn feaſt, and day of rejoicing.

One of the chief ceremonies of the feaſt conſiſted in ſetting out and adorning their *bema*, or altar, with great magnificence.

BEMETRE, in *Zoology*, a name by which the Portugueſe in the Braſils call a greeniſh black-bird of the ſtarling kind, common there, and more commonly known by its Braſilian name PITANGUA-GUACU.

BEMILUCIUS, in *Mythology*, a ſurname of Jupiter, repreſented young and beardleſs.

BEN, or **Behen**, in *Pharmacy*, denotes a medicinal root, celebrated, eſpecially among the Arabs, for its aromatic, cardiac, and alexiterial virtues.

There are two kinds of *bens*, viz. the *white ben*, which is inſipid, making little impreſſion on the tongue, beſides that of a little bitterneſs which it leaves behind it, and ſuppoſed by ſome modern botaniſts to be the ſame with our *lychnis terreſtris*, by others called the *papaver ſpumeum*. *Red ben*, is fibrous, brown without, and reddiſh within; ſuppoſed to be the root of a ſpecies of *limonium*, or *ſea*-LAVENDER.

They are both brought from the Levant, and have much the ſame virtues, being ſubſtituted for each other; they muſt be choſen dry, and of an aromatic aſtringent taſte.

Ben, or **Ben**-*nut*, a fruit about the ſize of a filberd, the product of a middle-ſized tree, ſaid to reſemble the birch, and to grow ſpontaneouſly in the Eaſt Indies, and in America. Lemery, in his Dictionnaire des Drogues, mentions ſeveral kinds of this fruit. It is called *glans unguentaria*, becauſe it yields an oil by expreſſion, which is uſed by perfumers in perfuming other oils, and never turns rancid; as being a detergent, it is thought proper in cutaneous diſeaſes, &c. Geoffroy.

To impregnate oil of *ben* with the odour of flowers, dip ſome fine carded cotton in the oil, and put it in the bottom of ſome proper veſſel; on this ſpread a thick layer of freſh flowers, and above them more cotton dipped in oil, and thus alternately *ſtratum ſuper ſtratum*, till the veſſel be full; and then by DIGESTION, during twenty-four hours in a *water*-BATH, the oil will receive the odour of the flowers. As the oil of *ben* does not become rancid, at leaſt for years, it is the beſt *menſtruum* for extracting the odoriferous parts of roſes, jonquils, and many other flowers, which yield little or no eſſential oil by *diſtillation*, but impart their fragrance to expreſſed oils.

BENÆ *lapis*, in the *Natural Hiſtory of the Ancients*, the name given by the earlieſt writers to that foſſile body, afterwards called THRACIUS *lapis*.

BENCH. See BANC, BANK, &c.

Bench, *King's*. See COURT *of King's Bench.*

Bench, *free*. See FREE-*Bench.*

Bench, *widow*. See WIDOW.

BENCHERS, in an INN *of court*, the ſeniors of the houſe, who have the government and direction thereof; and out of whom is yearly choſen a treaſurer, &c.

BEND, in *Heraldry*, an ordinary or bearing, formed by two lines, drawn diagonally, or athwart, from the dexter chief of the ſhield to the ſiniſter baſe; being ſuppoſed to repreſent a ſhoulder-belt, or ſcarf, worn over the ſhoulder.—See *Tab. Herald. fig.* 7.

The *bend* is one of the ten honourable ordinaries, containing a third part of the field when charged, and a fifth when plain.—It is ſometimes indented, ingrailed, &c. Heralds ſpeak of a *bend dexter*, and a *bend ſiniſter*.

A *bend* is ſubdivided into a *benlet*, or *bandelet*, which is the ſixth part of the field; a *garter*, which is the moiety of a *bend*; a *coſt*, which is the fourth part of a *bend*; and a *ribband*, which is the moiety of a *coſt*.

Bend *dexter*, is that properly and abſolutely called a *bend*, as above defined.—The word *dexter* is uſually annexed to prevent miſtakes, and diſtinguiſh it from the

Bend *ſiniſter*, which is the ſame with what is otherwiſe called after the French heralds, a BAR, *barre*.

The *bend ſiniſter* is ſubdivided into the *ſcarf*, or *ſcarp*, and the *batoon*; which latter is the fourth part of the *bend*, and the moſt uſual mark of illegitimacy; but then it never extends itſelf quite athwart the ſhield, but is cut off a little at each end. See BASTON, and *fig.* 6.

When two ſtrait lines drawn within the *bend* run nearly parallel to the outward edges of it, this is called *voiding*; and, he that bears it, is ſaid *to bear a bend voided.*

Party per BEND *dexter.* See PARTI.

Point in BEND. See POINT.

BENDIDIA, βενδιδεια, in *Antiquity*, ſolemn feaſts held by the Athenians on the twenty-firſt day of the month Tragelion, in honour of the goddeſs Diana.

The word is formed of βενδις, a denomination of Diana, according to Strabo, or of the moon according to Suidas, which amounts to the ſame.

The *bendidia* were held in the Piræus, and bore ſome reſemblance to the BACCHANALIA.

BENDING. M. Bernouilli has a diſcourſe on the *bending* of ſprings, or elaſtic bodies. M. Amontons gives ſeveral experiments concerning the *bending* of ropes. The friction of a rope *bent*, or wound round an immoveable cylinder, is ſufficient, with a very ſmall power, to ſuſtain very great weights. Mem. Acad. Sc. 1703. 1705. 1699.

Divers methods have been contrived for *bending* timber, in order to ſupply crooked planks, and pieces for building ſhips: M. Daleſme ingeniouſly enough propoſed to have the young trees bent, while growing in the foreſt.

The method of *bending* planks by a ſand-heat, now uſed in the king's yards at Deptford, was invented by captain Cumberland. Phil. Tranſ. N° 371. p. 75.

The *bending* of boards, and other pieces of timber for curved works in joinery, is effected by holding them to the fire, then giving them the figure required, and keeping them in this figure by tools for the purpoſe.

A method has been lately invented and practiſed for *bending* pieces of timber, ſo as to make the wheels of carriages without joints. See WHEELS.

BENDING, in the *Sea Language.*—They ſay, *bend the cable*, when it is to be made faſt to the ring of the anchor.—To *bend two cables*, ſignifies to tie them together with a knot, which, though leſs ſure than ſplicing, is ſooner done.

To *unbend the cable*, is to looſen it from the ring of the anchor; which is done when a ſhip deſigns to be long at ſea.

To *bend a main ſail*, is to make it faſt to the yard in its proper place.

BENDS, in a ſhip, are the ſame with *wailes*, or *wales*, which are the outermoſt timbers of a ſhip, on which men ſet their feet in climbing up.

They are reckoned from the water, the *firſt*, *ſecond*, and *third bend*: they help much to ſtrengthen the ſhip, and have the beams, knees, and foothooks, bolted into them.

BENDY, BANDÉ, in *Blazonry*, denotes an eſcutcheon's being divided bend-wiſe into an even number of partitions, varying in metal and colour.—If they be odd, the field muſt firſt be named, and then the number of bends. In England, the number is always made even; in other countries this is not regarded.

They ſay, *bendy* of four, *bendy* of ſix, &c.

Barry-BENDY. See BARRY.

Counter-BENDY. See COUNTER.

Paly-BENDY. See PALY.

BENE. See DE *Bene Eſſe*.

BENEAPED, in the *Sea Language*, is ſaid of a ſhip, when the water does not flow high enough to bring her off the ground, out of the dock, or over the bar.

BENEDICITE is a name given to the hymn, or ſong of the three children, in the fiery furnace; by reaſon of its beginning with the words *benedicite omnia opera Dominum*.

The uſe of the *benedicite* is very ancient; it appearing to have been ſung in all the Chriſtian churches, as early as St. Chryſoſtom's time.

BENEDICTINS, or BENEDICTIN *order*, is an order of monks, who profeſs to follow the rule of St. Benedict, or Benet, of Nurſia, who was born about the year 480.

The *Benedictins* are thoſe properly called *monachi*, *monks*; the other orders are better denominated *friers*, or *religious*.

In the canon law, the *Benedictins* are called *black monks*, being diſtinguiſhed from the other orders by the colour of their habit; and not by the name of their patriarch, St. Benedict.—Among us they were formerly alſo denominated *black friers*.

The *Benedictins* wear a looſe black gown, with large wide ſleeves, and a capuche on their heads, ending in a point behind.

The liſt of ſaints of the *Benedictin* order is very ample; but they are accuſed by Baronius, and many other writers, of putting many in the liſt who were never of the order.

For ſix hundred years after the erection of the *Benedictin* order, moſt of the European monks were followers of this rule; whatever other names they went by, Carthuſians, Ciſtercians, Grandimontenſes, Premonſtratenſes, Cluniacs, &c. they were but different branches of the *Benedictins*, till about the year 1220, when the Dominicans and Franciſcans took new rules.

Hoſpinian reckons no leſs than twenty-three religious orders that ſprang from this one.

According to the *Benedictin* computation, there have been of this order 24 popes, 200 cardinals, 7000 archbiſhops, 15000 biſhops, 15700 abbots, 4000 ſaints, 40,000 confeſſors, above 3000 martyrs and apoſtles, who have converted 30 provinces to the Chriſtian faith, beſides emperors, kings, &c.

The *Benedictins*, though but one order, are divided into ſeveral congregations, which have their peculiar cuſtoms and obſervances different from the reſt.

Each of thoſe are ſubdivided into provinces, which have their general chapters. This order is ſaid to have been brought into England about the year 596.

The Engliſh congregation, which had ſubſiſted from the time of the miſſion of St. Auſtin, was deſtroyed under Henry VIII. and by degrees reduced to one ſingle man; father Buckley, who in 1607, procured a re-eſtabliſhment of the congregation, at Doway, in the Netherlands, where it ſtill ſubſiſts in a kind of dependency on that of St. Valladolid in Spain.

At the general chapters they chooſe provincials, with their aſſiſtants, for each of the provinces of Canterbury and York, who have juriſdiction over the miſſionaries employed therein. They are governed by a preſident-general, and three DEFINITORS, choſen every three years.

At their admiſſion they make a fourth vow, viz. that they will go to the miſſion in England, and return, when their ſuperiors think fit.

BENEDICTIN *nuns*, are religious women who embrace the rule of St. Benedict.

BENEDICTION, in a general ſenſe, the act of bleſſing, or giving praiſe to God, or returning thanks for his favours.

Hence alſo *benediction* is ſtill applied to the act of ſaying grace, before or after meals.

Neither the ancient Jews, nor Chriſtians, ever eat without a ſhort prayer.

The Jews are obliged to rehearſe an hundred *benedictions* per day; of which, eighty are to be ſpoken in the morning. Vitring. de Synag. Vet. lib. iii.

Rabbi Nehemiah Baruch, in 1688, publiſhed a diſcourſe on the manner wherein the ſacerdotal *benediction* is to be pronounced. In the ſynagogue of Ferrara, it is rather ſung than ſpoken.

The cuſtom of receiving *benediction*, by bowing the head before the biſhops, is very ancient, and was ſo univerſal, that emperors themſelves did not decline this mark of ſubmiſſion.

Under the name *benediction*, the Hebrews alſo frequently underſtand the preſents which friends make to one another, in all probability becauſe they are generally attended with bleſſings and compliments, both from thoſe who give, and thoſe who receive them.

BENEDICTION, *nuptial*, the external ceremony performed by the prieſt in the office of matrimony.

The *nuptial benediction* is not eſſential to, but the confirmation of a marriage in the civil law.

BENEDICTION, *beatic*, *benedictio beatica*, is the *viaticum* given to dying perſons.

The pope begins all his bulls with this form: *Salutem & apoſtolicam benedictionem*.

BENEDICTION, *regular*, that conferred by abbots on their monks, or by a ſenior monk on a junior.

BENEDICTIONE *privari*, to be deprived of benediction, was a kind of puniſhment inflicted on monks, whereby, when the reſt received the abbot's bleſſing, the offenders were diſmiſſed without it.

BENEDICTION is alſo uſed for an eccleſiaſtical ceremony, whereby a thing is rendered ſacred, or venerable.

In this ſenſe *benediction* differs from conſecration, as in the latter unction is applied, which is not in the former. Thus the chalice is conſecrated, and the pix bleſſed, as the former, not the latter, is anointed; though in the common uſage theſe two words are applied promiſcuouſly.

The ſpirit of piety, or rather of ſuperſtition, has introduced into the Romiſh church *benedictions* for almoſt every thing.—We read of forms of *benediction* for wax-candles, for boughs, for aſhes, for church-veſſels, and ornaments; for flags or enſigns, arms, firſt-fruits, houſes, ſhips, paſchal eggs, *cilicium*, or the hair-cloth of penitents, church-yards, &c.

BENEDICTION *of arms* was a ſort of public conſecration of the weapons, and enſigns, before the entering on a war, by a *formula* of words, and ceremonies appointed for that purpoſe.

BENEDICTIONALIS *liber*, an ancient church book, containing the forms of the divers ſorts of *benedictions* given by biſhops, prieſts, &c.

Such was the *benedictionalis liber* of Gregory the Great, deſcribed by Lambecius.

BENEDICTUM, an epithet formerly given to lenient, or gently operating medicines; more eſpecially rhubarb.

In this ſenſe we find, in ſome diſpenſatory writers, *benedictum laxativum*, uſed for lenitive electary. Though in others, *benedicta laxativa*, or the *bleſſed laxative*, denotes another eaſy purge, made up of turbith, *diagrydium*, ſpurges, hermodactyls, aniſe-ſeeds, fennel-ſeeds, *ſal gemmæ*, and honey.

Schroder alſo gives the appellation *aqua benedicta* to his emetic; and Mynſicht does the ſame to his *aqua ſerpylli*, or water of wild thyme.

Some have called the philoſopher's ſtone *lapis benedictus*.

BENEDICTUM *vinum*. See VINUM.

BENEDICTUS, *carduus*. See THISTLE.

BENEDITTO *ſacco*. See SAN BENITO.

BENEFICE, BENEFICIUM, in an eccleſiaſtical ſenſe, a church endowed with a revenue for the performance of divine ſervice; or the revenue itſelf, aſſigned to an eccleſiaſtical perſon for life, in return for his performing the ſervice of the church.

All church preferments, except biſhoprics, are called *benefices*; and all *benefices* are, by the canoniſts, ſometimes called *dignities*: but we now ordinarily diſtinguiſh between *benefice* and *dignity*, by applying the word *dignity* to biſhoprics, deanries, archdeaconries, and prebends; and *benefice* to parſonages, vicarages, and donatives.

The term *benefice* comes to us from the old Romans, who uſing to diſtribute part of the lands they had conquered on the frontiers of the empire to their ſoldiers; thoſe who enjoyed ſuch rewards, were called *beneficiarii*, and the lands themſelves *beneficia*, as being held on the pure beneficence and liberality of the ſovereign. Theſe *benefices* at firſt were given for life only; but afterwards they became hereditary and patrimonial.

From the Romans, both the name and the thing paſſed into France and England, with this difference, as Mr. Blount obſerves, that *benefices* were not given as mere gratuities for paſt ſervices, but as warrants for future ones, and were accordingly held by the tenure of ſerving, on occaſion, in the wars, &c. So that what was before a *benefice*, became now converted into a FEE, and SERVICE. There is an obvious reference in the term *benefice* to the feudal ſyſtem, which was incorporated in all the governments of Europe. As the lands of all private proprietors were holden of the prince, and becauſe they were originally gratuitous donations, denominated *beneficia*, the pope aſſumed the privilege of a feudal lord, and claimed the authority of diſtributing the preferments of the church at pleaſure; and hence the care of the ſouls of a pariſh came to be called a *benefice*. Blackſtone's Comm. vol. iv. p. 106. ed. 1769.

Hence, doubtleſs, came the term *benefice* to be applied to church livings; for, beſides that the eccleſiaſtics held for life like the ſoldiers, the riches of the church aroſe from the beneficence of princes.

As to the origin of eccleſiaſtical *benefices*, it is hard to determine when the revenues of the church were firſt divided: it is certain, till the fourth century, all the revenues were in the hands of the biſhops, who diſtributed them by their œconomy; they conſiſted principally in alms, and voluntary contributions.—As the church came to have lands, parts thereof were aſſigned for the ſubſiſtence of the clerks, and called *benefices*; of which we find ſome traces in the fifth and ſixth century: but then there does not appear to have been any certain partition, nor any preciſe quota allotted to each particular; but the allotments were abſolutely diſcretional till about the twelfth century.

At firſt, each was contented with a ſingle *benefice*; but pluralities were, by degrees, introduced, on pretence of equity: for, a ſingle *benefice* being ſometimes ſcarce thought a competency, the prieſt was allowed two: as his quality, or occaſions, increaſed, ſo the number of *benefices* that were to ſupport him were increaſed too. Hence ſome, affecting to equal princes in quality, pretend to revenues anſwerable to it.

The canoniſts diſtinguiſh three ways of vacating a *benefice*, viz. *de jure*, *de facto*, and *by the ſentence of a judge*.—A *benefice* is vacated *de jure*, when the perſon enjoying it is guilty of certain crimes, expreſſed in laws, as hereſy, ſimony, &c.—A *benefice* is vacated *de facto*, as well as *de jure*, by the natural death, or the reſignation of the incumbent: which reſignation may be either expreſs, or tacit; as when he engages in a ſtate, &c. inconſiſtent with it; as among the Romaniſts, by marrying, entering a religious order, or the like.—A *benefice* becomes vacant by the *ſentence of a judge*, by way of puniſhment for certain crimes, as concubinage, perjury, ſorcery, &c. See DEGRADATION.

Benefices are divided by the canoniſts into *ſimple*, and *ſacerdotal*: in the firſt, there is no obligation but to read prayers, ſing, &c. Such are canonries, chaplainſhips, chantries, &c.—The ſecond are charged with a cure of ſouls, or the direction and guidance of conſciences. Such are the vicarages, rectories, &c.

The Romaniſts, again, diſtinguiſh *benefices* into *regular* and *ſecular*.

Regular or *titular* BENEFICES, are thoſe held by a religious, or a regular, who has made profeſſion of ſome religious order. Such are abbeys, priories conventual, &c.

Or rather, *regular benefice* is that which cannot be conferred on any but a religious; either by its foundation, by the inſtitution of ſome ſuperior, or by preſcription. For preſcription, forty years poſſeſſion by a religious, makes the benefice regular.

Secular BENEFICES, are thoſe which are only to be given to ſecular prieſts, i. e. to ſuch as live in the world, and are not engaged in any monaſtic order.

All *benefices* are reputed ſecular, till the contrary is made appear. They are called *ſecular benefices*, becauſe held by ſeculars. Of which kind are almoſt all cures.

Some *benefices*, regular in themſelves, have been ſeculariſed by the pope's bull. See REGULAR and SECULAR.

A BENEFICE *in commendam*, is that, the direction and management whereof, upon a vacancy, is given, or recommended to an eccleſiaſtic for a certain time, till it may be conveniently provided for. See COMMENDAM.

BENEFICES, *Conſiſtorial*, in the *French Cuſtoms*, are thoſe of royal foundation, which were elective before the concordat, and are now nominated by the king of France.

They are called *conſiſtorial*, becauſe, on the king's nomination, they are to be propoſed in the papal conſiſtory, that is, in the congregation of cardinals, where the pope preſides.

To this claſs belong archbiſhoprics, biſhoprics, and abbies. Theſe *benefices* were formerly elective; but by the concordat, which aboliſhed all elections, they are to be conferred by the pope, on the king's nomination. Annates are to be paid, and the pope's bulls obtained, for *conſiſtorial benefices*.

BENEFICES, *Non-conſiſtorial*, are either elective, or collative, or in patronage.

BENEFICES, *Elective*, are thoſe which are to be filled or ſupplied in the way of election; only this election to be confirmed by the proper ſuperior.

BENEFICES, *Collative*, are thoſe in the free diſpoſal of the collator, and which need no confirmation; provided the party have the qualifications required.

BENEFICES *in patronage*, are thoſe which the collator is obliged to confer upon thoſe preſented by the patron.

BENEFICES *vacant in curia*, are thoſe, whoſe incumbents or beneficiaries die *in curia*, that is, within ten leagues round Rome.

BENEFICE, *Manual*, is that depending on an abbey, and ſerved by a religious ſent thither, who is removeable at pleaſure by the ſuperior.

We alſo meet with *manual benefices*, *beneficia manualia*, uſed for thoſe, where the daily allowances of proviſions were only diſtributed to the reſidents.

Theſe are alſo denominated *victual benefices*, *beneficia victualia*.

Poſſeſſion of a BENEFICE; ſee POSSESSION.

BENEFICIARII, in *Roman Antiquity*, denote ſoldiers who attended the chief officers of the army, being exempted from other duty.

Beneficiarii were alſo ſoldiers diſcharged from the military ſervice or duty, and provided with *beneficia* to ſubſiſt on.

Theſe were probably the ſame with the former, and both might be compriſed in the ſame definition. They were old, experienced ſoldiers, who having ſerved out their legal time, or received a diſcharge as a particular mark of honour, were invited again to the ſervice, where they were held in great eſteem, exempted from all military drudgery, and appointed to guard the ſtandard, &c.

Theſe, when thus recalled to ſervice, were alſo denominated *evocati*; and before their recal, *emeriti*.

BENEFICIARII was alſo uſed for thoſe raiſed to a higher rank by the favour of the tribunes, or other magiſtrates.

The word *beneficiarius* frequently occurs in the Roman inſcriptions found in Britain, where *conſulis* is always joined with it; but beſides *beneficiarius conſulis*, we find in Gruter *beneficiarius tribuni*, *prætorii*, *legati*, *præfecti*, *proconſulis*, &c.

BENEFICIARY, in a general ſenſe, ſomething that relates to BENEFICES.

Rebuffe has collected ſix volumes on *beneficiary* matters. F. Paul has alſo a treatiſe on them.

BENEFICIARY, *beneficiarius*, is more particularly uſed for a beneficed perſon, or him who receives and enjoys one or more benefices.

Beneficiary is more particularly uſed, among *Roman Writers*, for a perſon exempt from public offices.

In which ſenſe, BENEFICIARII ſtand contradiſtinguiſhed from *municipes*.

Beneficiary is alſo uſed, in *Middle Age Writers*, for a feudatory or vaſſal.

Beneficiary is alſo uſed for a clerk or officer, who kept the account of the *beneficia*, and made the writings neceſſary thereto.

The ſame denomination was alſo given to the officers who collected the rents and duties belonging to the *fiſcus*.

BENEFICIO; ſee Deprivation *à beneficio*.

Suſpenſio à **Beneficio**; ſee Suspension.

Primo **Beneficio** *eccleſiaſtico habendo*; ſee Primo.

BENEFIT is uſed for a privilege granted to ſome perſon, as of an immunity, or the like.

Benefit *of ceſſion*, in the *French Law*, is when a debtor is admitted to ſurrender all his effects to his creditors, and in conſequence thereof ſet at liberty.

Benefit *of age*, in France, is when a minor obtains the king's letters, whereby he is emancipated, and impowered to manage his own income from eighteen years to his full majority.

Benefit *of clergy*; ſee Clergy.

BENENAIM, **Benenath**, **Benenasch**, or **Benenat**, in *Aſtronomy*, the outermoſt ſtar, of the ſecond magnitude, in the tail of the URSA *major*.

This is ſometimes alſo called *alalioth*.

BENEVOLENCE, *Univerſal*, in *Ethics*, denotes a hearty deſire of the good of mankind, evidencing itſelf, as ability and opportunity offer, in the chearful and diligent practice of whatever may promote the well-being of all. Some have traced the origin of this affection in ſelf-love: others again in ſome INSTINCT or determination of our nature, antecedent to all reaſon from intereſt, which influences us to the love of others, and they have accordingly made it the foundation of univerſal VIRTUE: others more properly aſcribe it to the *intelligent* conſtitution of human nature, and obſerve, that it ariſes not from inſtinct, but from the natures and neceſſity of things. Hutcheſon's Inquiry concerning Moral Good and Evil. Price's Review, &c. chap. iii.

Benevolence is uſed, both in our ſtatutes and chronicles, for a voluntary gratuity given by the ſubjects to their ſovereign, to which each perſon contributes in proportion to his eſtate: and as *benevolences* had been extorted under many ſucceeding princes, without a real and voluntary conſent, it was made an article in the petition of right, 3 Car. I. that no man ſhall be compelled to yield any gift, loan, or *benevolence*, &c. without common conſent by act of parliament.

In this ſenſe, *benevolence* amounts to much the ſame with what in other nations is called *ſubſidium charitativum*, given ſometimes by tenants to their lords, by the clergy to their biſhops, &c.—In France it is called *free gift*, excepting that this latter is reſtrained to the act of the clergy.

Among us, there are ſeveral ſtatutes againſt charging the people with *benevolences*; ſee 1 Rich. III. c. 2. 13 Car. II. ſtat. 1. c. 4.

BENJAMIN, in *Pharmacy*, a reſin. See Asa *dulcis*, and Benzoin.

Benjamin *tree*, in *Botany*, a ſpecies of the BAY.

BENISH *Days*, among the Egyptians, a term for three days of the week, which are days of leſs ceremony in religion than the other four, and have their name from the *beniſh*, a garment of common uſe, not of ceremony.

In Cairo, on Sundays, Tueſdays, and Thurſdays, they go to the baſhaw's divan; and theſe are the general days of buſineſs. Fridays they ſtay at home, and go to their *moſques* at noon; but, though this is their day of devotion, they never abſtain from buſineſs. The three other days of the week are the *beniſh* days, in which they throw off all buſineſs and ceremony, and go to their little ſummer-houſes in the country.

BENLOJA, in *Ichthyology*, the name by which the Swedes call that ſpecies of CYPRINUS, which we call the *bleak*. It is the ALBURNUS of authors.

BENNET *Herb*, in *Botany*; ſee Herb *Bennet*.

BENZOIN, a medicinal kind of reſin, imported from the iſlands Siam and Sumatra, and ſeveral other parts of the Eaſt Indies.

Benzoin is the ſame with what is popularly called *benjamin*, or *benjoin*, ſometimes alſo ASA *dulcis*.

It is procured by a wound, or inciſion made in a tree, whoſe leaves reſemble thoſe of the lemon-tree. The *benzoin*-tree is plentiful in Virginia and Carolina, and has been brought from thence into England, where it grows with vigour in the open ground. The bark and leaves yield with rectified ſpirit a reſin like *benzoin*, though this tree diſcharges none naturally in our clime nor in America. It is of a yellowiſh colour, of an agreeable ſcent, and melts eaſily.

There are three ſorts of *benzoin*. The firſt is called *amygdaloides*, becauſe of its being interſperſed with ſeveral white ſpots, which reſemble broken almonds: this comes from Siam, and is eſteemed the beſt. The ſecond is black, and very odoriferous; it drops from young trees; and comes from Sumatra; it is called *benzoinum de Boninas*. The third ſort is alſo black, but leſs odoriferous; this is found in the iſlands of Java and Sumatra. See Geoffroy, p. 354.

Benzoin is uſed in phyſic, as a pectoral, and anti-aſthmatic; and thrown on live coals, it ſerves to perfume houſes, &c.

Some recommend *benzoin* diſſolved in ſpirit of wine as a cephalic. It makes a tincture, commended for taking away freckles. It alſo enters the compoſition of ſome plaſters, as a diſcutient and ſtrengthener.

Pharmaceutic writers ſpeak of a water and tincture of *benzoin*, drawn with the ſpirit of wine, ſaid to be good againſt aſthmas, &c. Flowers of *benzoin*, procured by ſublimation, are eſteemed a powerful pectoral. Spirit of *benzoin* is uſed as a diuretic; and oil of *benzoin* is accounted a good vulnerary.

If two or three pounds of *benzoin* be diſtilled dry in a retort, with a mixture of a little ſand, there will ariſe ſpirit, oil, and flowers. This ſpirit being ſeparated from the reſt by filtration, and mixed with *ſal ammoniac*, two parts of the ſpirit of *benzoin* to one part of the other, though both are ſeparately clear and colourleſs, the mixture will become red. Phil. Tranſ. Nº 225.

The principal uſe of this fragrant reſin, is in perfumes, and as a coſmetic for ſoftening and ſmoothing the ſkin. For this laſt purpoſe it is diſſolved in ſpirit of wine, with an addition ſometimes of ſtorax, and the ſolution mixed with water makes a white liquor, which is called VIRGIN'S *milk*.

BER, in *Botany*, a name uſed by ſome authors for the Indian *jujube*; that ſpecies of the jujube-tree, on which the gum *lacca* of the ſhops is uſually found.

BERBENGINE, a name given by the *Arabian Phyſicians* to the *pomum amoris*, or *love-apple*, a kind of eſculent nightſhade; and by ſome to a tree producing the nut *metel*, becauſe of its likeneſs to the plant which produces the *melongena* in the ſhape of its leaves.

BERBERII, in *Medicine*; ſee Palsy.

BERBERIS; ſee Barberry-*tree*.

BERCARIA, **Berqueria**, or **Berkeria**, in *Middle Age Writers*, denotes a ſheep-fold, ſheep-cote, ſheep-pen, or other incloſure, for the ſafe-keeping a flock of ſheep.

The word is abbreviated from *berbicaria*; of *berbex*, detorted from *vervex*. Hence alſo a ſhepherd was denominated *berbicarius*, and *berquarius*.

BERCHEROIT, or **Berkcoits**, a weight uſed at Archangel, and in all the Ruſſian dominions. It is equal to about 364 pounds Engliſh avoirdupois.

BERDASH, in *Antiquity*, was a name formerly uſed in England for a certain kind of neck-dreſs; and hence a perſon who made or ſold ſuch neck-cloths was called a *berdaſher*, from which is derived our word HABERDASHER.

BERDIN, in *Natural Hiſtory*, a name given to the PATELLA, or limpet, in Normandy, and other places. In ſome it is pronounced *berlin*.

BERENGARIANS, a religious ſect, adhering to the opinions of Berengarius, archdeacon of Anjou, who, in the latter part of the eleventh century, a conſiderable time before Luther, oppoſed the doctrine of tranſubſtantiation, and the real preſence, ſtrenuouſly maintained by Lanfranc and Anſelm.

He is further charged by the Romaniſts with decrying marriage, and maintaining the common uſe of all ſorts of women, and aſſerting infant-baptiſm of no effect.

His followers were divided on the head of the euchariſt: though they all agreed, that the bread and wine were not eſſentially changed, yet ſome allowed, that the body and blood of Chriſt were contained in them, though concealed under an impanation, which was the opinion of Berengarius himſelf: others denied any change at all, and reſolved the whole into figure; others again allowed a change in part; and others an entire change with this reſtriction, that to thoſe who preſented themſelves unworthily, it was changed back again. See Moſheim's Ecc. Hiſt. vol. ii. p. 321, &c.

Mabillon has a diſſertation expreſs on the manifold condemnations of Berengarius, his retractions, relapſes, and repentance.

BERENICE's *Hair*; ſee Coma *Berenices*.

BEREWICHA, or **Berewica**, in our *Old Writers*, denotes a village or hamlet belonging to ſome town or manor, ſituate at a diſtance therefrom.

The word frequently occurs in Doomſday-book: *Iſtæ ſunt berewichæ ejuſdem manerii.*

BERFISCH, in *Ichthyology*, a name given by the Germans to the common PEARCH, or *perca*.

BERG-*gruen*, in *Natural Hiſtory*, the name of an earth uſed in painting, and properly called *green ochre*, though not known among the colour-men under that name. It is found in many parts of Germany, Italy, and England, commonly in the neighbourhood of copper-mines, from particles of which metal it receives its colour. The characters by which the native kind is known from other green earths, are theſe: it is a denſe, compact ſubſtance, conſiderably heavy, and of a pale, but not diſagreeable green; of a rough and uneven, but not duſty ſurface, and ſomewhat unctuous to the touch. It adheres firmly to the tongue; does not break eaſily between the fingers; nor at all ſtain the hands. It is of a brackiſh diſagreeable taſte, and does not ferment with acids.

BERGAMOT gives the denomination to a kind of eſſence, drawn from a fruit, produced by ingrafting the lemon-tree on the *bergamot* pear-ſtock. It is properly the oily fluid of the peels of theſe lemons, expreſſed by the fingers.

There is likewiſe a kind of ſnuff of the ſame name, which is only clean tobacco, with a little of the eſſence rubbed into it.

BERGAMOT is alſo the denomination of a coarſe tapeſtry, manufactured with flocks of ſilk, wool, cotton, hemp, ox, cow, or goat's hair, and ſuppoſed to be invented by the people of Bergamo in Italy.

BERGANDER, in *Zoology*, a name by which ſome have called the ſhell-drake, or burrough-duck, a very beautiful ſpecies of duck, common on the coaſts of Lancaſhire; but not much eſteemed for eating, called TADORNA.

BERGHMOT, or BERGHMOTE, vulgarly BARMOTE, a court held on a hill for deciding pleas and controverſies among the Derbyſhire miners.

The word is formed from the Saxon *berg*, *mons*; and *mote*, *conventus*, *aſſembly*, or *meeting*.

BERIBERI, the name of a diſeaſe among the Indians, being a ſpecies of PALSY.

BERICARIA, BERCARIA, or BERQUARIA, a ſheep-down, or ground whereon to feed ſheep.

BERITH, a ſimple mentioned in Scripture, uſed for cleanſing or taking out ſpots. Jerem. chap. ii. ver. 22. Some will have it to be the *kali*, or ſalt-wort, from the aſhes of which ſoap is made; and in our verſion it is rendered *ſoap*: others, after Rudbeck, make it to be the dye of the purple-fiſh.

BERLIN, a ſort of vehicle, of the chariot kind; taking its name from the city of Berlin, in Germany: though ſome attribute the invention of it to the Italians, and derive the word from *berlina*, a name given by them to a ſort of ſtage, whereon perſons are expoſed to public ſhame.

The *berlin* is a very convenient machine to travel in, being lighter, and leſs apt to be overturned, than a chariot. The body of it is hung high, on ſhafts, by leathern braces; there being a kind of ſtirrup, or footſtool, for the conveniency of getting into it: inſtead of ſide-windows, ſome have ſcreens to let down in bad weather, and draw up in good weather.

BERLIN, in *Natural Hiſtory*; ſee LIMPET.

BERLUCCIO, in *Zoology*, the name of a ſmall bird of the *hortulanus* kind, and much reſembling the *yellow-hammer*; but ſomething ſmaller, and longer bodied.

BERME, in *Fortification*, a ſmall ſpace of ground, four or five feet wide, left without the rampart, between its foot and the ſide of the moat, to receive the earth that rolls down from the rampart, and prevent its falling into, and filling up the moat.

This is alſo called *liſiere*, *relais*, *retraite*, *pas de ſouris*, *fore-land*, &c.

Sometimes, for greater ſecurity, the *berme* is paliſadoed.

BERMUDIANA, in *Botany*; ſee SISYRINCHIUM.

BERNACLE, in *Ornithology*; ſee BARNACLE.

BERNARD *the hermit*, in *Ichthyology*; ſee SQUILLA.

BERNARDINS, or BERNARDITES, the name of a religious order, differing very little from the CISTERCIANS. Their uſual habit is a white gown, with a black ſcapulary; but when they officiate, they put on a large white coul with great ſleeves, and a hood of the ſame colour.

BERNHARDIA, in *Botany*, a name given by Houſton to a genus of plants, characteriſed by Linnæus under the name of CROTON.

BERNICLE, in *Natural Hiſtory*, the name of a ſpecies of ſhell-fiſh, called by authors CONCHA *anatifera*.

This is compoſed of five ſhells or valves, and agrees, according to Liſter, with the *pholas*, as well in the diſpoſition as in the number of the valves. Liſt. Hiſt. Nat. p. 360.

BERNICLE is alſo a name given by the people of many parts of France to the *patella*, or LIMPET.

BEROE, in *Natural Hiſtory*, is a marine animal found on our coaſts, of a gelatinous tranſparent nature, and of an oval or ſpherical form, about half an inch to an inch diameter, divided like a melon into longitudinal ribs, each of which is furniſhed with rows of minute fins, by means of which this animal, like the *animalia infuſoria*, can ſwim in all directions with great ſwiftneſs. The excellent Linnæus, ſays Mr. Ellis (who gives the above mentioned deſcription of this animal), has joined the *beroe* to the *volvox*, one of the *animalia infuſoria*.

BERRY, *bacca*, a grain, fruit, or ſeed, produced by ſeveral herbs, trees, and ſhrubs, thence called BACCIFEROUS, for the conſervation, and reproduction of their kind.

Some define *berries* as a fruit ſmaller than apples, growing in bunches, but not ſo thick or cloſe as grapes. Others a ſoft, fleſhy, ſucculent fruit, having ſtones or kernels within them.

Such are the fruits of laurels, olives, currants, and the like.

Berries are of various ſizes, forms, properties, and uſes, according to the plants whereon they grow.—Some are uſed in medicine, as juniper *berries*, buckthorn *berries*, &c.—Others in dying, as French or yellow *berries*, &c. The yellow *berry* waſh may be thus prepared: take a pound of the French *berries*, and put them to a gallon of water, with half an ounce of alum; boil them an hour in a pewter veſſel, and filter off the fluid: put them again into the boiler, and evaporate the fluid till the colour appear of the required ſtrength.

BERRY likewiſe denotes a pulpy *pericarpium* without valves, in which the ſeeds are naked.

BERRY, *Avignon*; ſee AVIGNON.

BERRY, *Ale*; ſee ALE.

BERS, in *Ancient Medicine*, an electary uſed by the Egyptians to excite deliriums.

BERSARII, in *Writers of the Middle Age*, a kind of hunters or ſportſmen, who purſued wild beaſts in foreſts and chaces.

The word ſeems derived from the barbarous Latin *berſare*, *to ſhoot with a bow*. On which principle, it ſhould properly denote archers only, or bowmen. Or it might be derived from *berſa*, the *fence* or *pales of a park*. In which view, it ſhould primarily import thoſe who hunt or poach in parks or foreſts.

Hincmar ſpeaks of a kind of inferior officers in the court of Charlemagne, under the denomination of *berſarii*, *veltrarii*, and *beverarii*. Spelman takes the firſt to denote thoſe who hunted the wolf; the ſecond, thoſe who had the ſuperintendency of the hounds for that uſe; and the third, thoſe who hunted the beaver.

BERSE, in *Botany*, the name given by the French writers to the *ſphondylium*, or *cow*-PARSNEP, a ſpecies of umbelliferous plants common in our meadows, and known by its large rough leaves and remarkable height.

BERTH, in the *Sea-language*, denotes a convenient diſtance or room to moor a ſhip in.

To take a good **BERTH**, ſignifies to go ſome diſtance to ſea-board off any point, rock, or other thing which the ſeamen would go clear of.

BERTHING, in the *Sea-language*, denotes the raiſing or bringing up of ſhip-ſides. Thus they ſay, a clincher hath her ſides *berthed* up before any beam is put into her.

BERTONA, BERTONIA, BERTHONA, BERTON, or BARTON, properly denotes that part of a country farm, where the barns and other inferior offices ſtand, and wherein the cattle are foddered, and other buſineſs is managed.

BERTON is alſo uſed to ſignify a farm, as diſtinct from a manor. Du-Cange.

In ſome parts of the weſt of England, they call a great farm a *berton*; and a ſmall one a *living*.

Hence alſo *bertonarii* was anciently uſed for thoſe we now call farmers, or tenants of *bertons*.

BERULA, in *Botany*, a name given by ſome authors to the common upright water-parſnep, or *ſium erectum umbellatum*. See SKIRRET.

BERUS, a ſpecies of the COLUBER.

BERY, BERIA, or BERIE, in *Middle Age Writers*, denote a flat, wide champaign.

In which ſenſe, the word differs from *bury* or *borough*, *a town*, though uſually confounded with it by gloſſographers. Hence *Beria S. Edmundi*, mentioned by Matt. Paris under the year 1174, is not to be underſtood of the town, but of the adjoining plain.—And hence the denomination *bery-field*, and *bery-meadow*, is ſtill retained to divers flat and wide meads, and open grounds. Hence alſo *berras aſſartare* is to dry or plow up heaths or downs. And hence our warrens are called *coney-beries*.

Bery is either uſed ſeparately, or in compoſition with the names of divers places; as *Mixbery*, *Acornbery*, &c.

BERYL, or BERYLL, βηρυλλος, in the *Ancient Phyſiology*, denotes a tranſparent ſtone, or gem, brought from India, of a light, or pale green colour; inſomuch that ſome have repreſented it as of two colours, the one green, the other pale.

The *beryl* of the ancients is the ſame with what in latter times has been denominated AQUA *marina*, by reaſon of its glaucous, or ſea-green colour.

The *beryl* differs from the *chryſoberyl*, which is ſomewhat paler, and partakes more of the yellow; and from the *chryſophraſus*, which partakes more of the green.

Some authors take the *beryl* to be the diamond of the ancients.

The *beryl* is ſometimes found in pieces large enough to form fine vaſes. It is ſaid there are many of theſe in Cambaya, Martaban, Pegu, and Ceylon.

The *beryl*, in its fineſt ſtate, approaches to the hardneſs of the garnet; but it is often much ſofter, and conſequently of the leſs value. There is, however, a common error which gives our jewellers an idea of this, and other of our gems, being much ſofter than they really are, which is, the miſtaking the common tinged cryſtals, frequent in mines, and called by authors *pſeudoberyllus*, &c. for the genuine gems of thoſe names. It is eaſy to conceive theſe cannot be any harder, and it is natural enough to ſuſpect they cannot be ſo hard as cryſtal in its common colourleſs ſtate.

The *beryl* parts with its colour in a very ſmall fire; but is, when colourleſs, greatly inferior to the amethyſt or ſapphire. It is found in great abundance in the iſland of Ceylon, and in many other parts of the Eaſt Indies, as alſo in America: many of them are found alſo in Sileſia, and ſome other parts of Europe; but in this, as in all other gems, the oriental are vaſtly ſuperior to thoſe of any other part of the world in hardneſs, as well as in luſtre, and the beauty of their colour.

Gorræus gives a liſt of eight ſorts of *beryls*, diſtinguiſhed only by the diverſity of their colour.

Mr. Boyle alſo ſpeaks of a white kind of *beryl*.

BERYL is alſo a name given by ſeveral of our jewellers to a ſpecies of brown ſprig cryſtal, with a remarkably long pyramid.

This is the brighteſt of all the brown cryſtals, and is eſſentially different from the ſpecies commonly known by that name. It is found in Italy, and ſome parts of Germany. The Italians call it, by way of eminence, the *beryl cryſtal*; but our jewellers drop the word cryſtal, and call it ſimply the *beryl*. Hence any tolerably clear brown cryſtal was ſome time ago cut, to ſupply its place; and good brown cryſtal was generally accounted the *beryl* of the ancients.

BERYL, *berillus*, is alſo a name given to a kind of cryſtal looking-glaſs, ſuperſtitiouſly conſecrated to the purpoſes of conjuring and divination.

Hence alſo the term *berillyſtica*, uſed for the myſterious art of ſeeing future or diſtant events in ſuch glaſſes.

BERYTIUM, in the *Ancient Phyſic*, an ophthalmic medicine or collyrium, invented by Berytius againſt the ſevereſt epiphoras.

The ſame denomination is alſo given to a ſort of paſtil, of uſe in dyſenteries.

BES, or BESSIS, an ancient Roman weight, containing two thirds of the AS; that is, eight *unciæ*.

The *bes* originally weighed two aſſes; whence the origin of the word *quaſi binus as*. Though Scaliger conjectures it to have been formed from *dues*; as *bellum* from *duellum*, or *bonum* from *duonum*.

BES was alſo uſed in the menſuration of lands, to denote two thirds of a *jugerum*, or acre.

BESAILE, in the *Common Law*, a writ that lies where the great-grandfather or great-grandmother was ſeiſed the day that he or ſhe died of any lands or tenements in fee-ſimple; and after his or her death, a ſtranger entered the ſame upon him, and keeps out the heir.

The word is French, *beſaile*, or *biſayeul*, *a great-grandfather*.

BESANT, BEZANT, BISANT, or BYZANT, a ſort of coin, ſtruck at Byzantium, in the time of the Chriſtian emperors.

The *beſant* was pure gold, or twenty-four carats fine: but writers are not generally agreed with reſpect to its value.

Hence alſo the gold offered by the king at the altar, on feſtivals, is ſtill called *beſant*, or *biſant*.

Thirteen *beſants*, or *beſantins*, are preſented at the maſs at the coronation of the kings of France. Henry II. had that number coined on purpoſe.

BESANTS, or BEZANTS, in *Heraldry*, are repreſentations of round, flat pieces of money or bullion, without ſtamp or impreſs, introduced into coat-armour by thoſe who were at the holy war.

Beſants are ever of metal, and when blazoned, ſhould be expreſly ſaid to be of *or*, or *argent*. The Engliſh heraldry knows only the gold; but foreigners have alſo the ſilver kind.

When a field or charge contains above eight *bezants*, ſo placed as to fill the ſame equally on all ſides, and repreſenting a promiſcuous ſtrewing of pieces over the whole, ſome blazon the field or charge *bezanted*, *bezantée*: but if there be ten, twelve, fifteen, or more, confined to any particular form or poſition, the number and form muſt be particularly mentioned. Coat's Dict. Her. p. 49.

Croſs BESANTED, *bezantée*, denotes a croſs made up of *beſants*, or pieces of money.

This amounts to the ſame with what Upton calls a *croſs talented*, *crux talentata*, or made up of talents.

BESBASE, in the *Materia Medica*, a name given by the Arabian writers Serapion and Avicenna to mace; but as the names *macis* and *macir* are very much alike in ſound, though different in ſenſe, they have confounded theſe two things under the ſame term *beſbaſe*; the one meaning the covering of the nutmeg, and the other the bark of a tree uſed as an aſtringent; ſo that this word *beſbaſe* is to be underſtood as meaning the one or the other of theſe, according to the virtues aſcribed to it.

BESD, a term often uſed by Arabian writers for the plant called MARGIAN.

BESLERIA, in *Botany*, the name given by Plumier, and afterwards by Linnæus, to a genus of the *didynamia angioſpermia* claſs of plants; the characters of which are theſe: the flower is of the lip kind, and of one leaf; it hath four *ſtamina* in the tube of the flower, two of which are longer than the other; with an oval *germen*, which afterward becomes an oval berry, with one cell filled with ſmall ſeeds. There are three ſpecies, which grow naturally in the warm parts of America, but are too tender to live in this country, without artificial heat.

BESORCH, a coin of tin, or of ſome alloyed metal, current at Ormus, at the rate of about $\frac{7}{49}$ parts of a farthing ſterling.

BESSIS *centeſimæ*, denotes two thirds of centeſimal intereſt, or uſury at eight *per cent*.

BESTAIL, or BESTIAL, in *Ancient Statutes*, is uſed for CATTLE. 5 Ed. III. c. 2.

BESTARCHA, a dignity in the courts of the emperors of Conſtantinople, ſuppoſed to anſwer to that of the *maſter of the wardrobe* among us.

The word *beſtarcha* ſeems to have been formed from *veſtarcha*, by a change of the *v* into *b*.

BESTIARII, among the *Ancient Romans*, thoſe who were hired to combat with beaſts, or thoſe who were expoſed to them, by ſentence of law.

We uſually diſtinguiſh two kinds of *beſtiarii*: the firſt were thoſe condemned to the beaſts; either as being enemies taken priſoners, or as being ſlaves, and guilty of ſome enormous crime.—Theſe were all expoſed naked, and without defence, to the beaſts; nor did it aught avail to conquer and kill the beaſt, freſh ones being continually let looſe on them, till they were dead. But it ſeldom happened, that two were required for the ſame man; on the contrary, one beaſt frequently diſpatched ſeveral men. Cicero mentions a lion, which alone diſpatched two hundred *beſtiarii*.—Thoſe who ſucceeded the firſt were called εφεδροι, and the laſt εσχατοι; among the Romans, *meridiani*.

The Chriſtians were *beſtiarii* of this kind, even ſome of them who were Roman citizens; though it was the legal right of ſuch to be exempt from it.

The ſecond kind of *beſtiarii*, Seneca obſerves, conſiſted of young men, who, to become expert in managing their arms, fought ſometimes againſt beaſts, and ſometimes againſt one another; and of bravoes, who, to ſhew their courage and dexterity, expoſed themſelves to this dangerous combat. Auguſtus encouraged this practice in young men of the firſt rank; Nero expoſed himſelf to it; and it was for the killing beaſts in the amphitheatre, that Commodus acquired the title of the *Roman Hercules*.

Vigenere to theſe adds two kinds of *beſtiarii* more: the firſt were thoſe who made a trade of it, and fought for money; the ſecond was where ſeveral *beſtiarii*, armed, were let looſe at once, againſt a number of beaſts.

BETA, in *Botany*, the BEET.

BETEL, in *Botany*, an Indian plant, in great uſe and eſteem throughout the Eaſt, where it makes a conſiderable article of commerce.

The *betel* bears ſome reſemblance to the pepper-tree. Its leaves are like thoſe of ivy, only ſofter, and full of red juice, which, among the Orientals, is reputed of wonderful virtue for fortifying the teeth, and rendering the breath ſweet. The Indians are continually chewing theſe leaves, which renders their lips ſo red, and teeth black, a colour by them vaſtly preferred to the whiteneſs affected by the Europeans.

The conſumption of *betel* leaves is incredible, no body, rich or poor, being without their box of *betel*, which they preſent to each other by way of civility, as we do ſnuff. In many places they chew the *areca* nut, either alone or mixt with the *betel* leaf and lime, and the leaves of this plant are ſometimes chewed alone; but they are too ſharp, and uſually injure the teeth, and it is not uncommon to find men of twenty-five wholly toothleſs in this part of the world, merely from their having chewed this plant to an exceſſive degree. The prepared *betel* is a very common preſent among the poorer ſort; and, on taking leave of a friend, it is always the cuſtom to make him a preſent of a purſe of the leaves prepared for uſe. When the poorer ſort are to appear before the rich, they always chew a large quantity of *betel*, to give them a ſweet breath; and the women, on certain occaſions, never fail to take largely of it as a provocative. On all viſits, the company is regaled with prepared *betel*. The principal time of uſing it is after dinner, at which time, they ſay, it prevents ſickneſs of the ſtomach; and they never abſtain from it, except on the ſolemn occaſions of the funerals of their relations, and their days of faſting. Moderately uſed, it ſtrengthens the gums, corroborates the heart and ſtomach, diſcuſſes flatulencies, and purges both the ſtomach and brain. If chewed after breakfaſt, it makes the breath ſweet for the whole day. The Portugueſe women are as fond of the *betel* as the Indians themſelves, and cannot live a day without it.

BETELGEULE, or BEDELGAEZE, a fixed ſtar of the firſt magnitude in ORION's hind-ſhoulder.

BETH, in *Literary Hiſtory*, makes the title of a multitude of books in the Hebrew language; e. gr. *beth avoth*, or *the houſe of the fathers*; *beth Elohim*, or *the houſe of God*; *beth Iſrael*, or *the houſe of Iſrael*, &c.

BETHLEHEM *ſtar*, in *Botany*; ſee STAR *of Bethlehem*.

BETHLEHEMITES, or BETHLEMITES, in *Church Hiſtory*, a ſort of monks introduced into England in the year 1257, habited like the Dominicans, except that, on their breaſt, they wore a ſtar with five rays, in memory of the ſtar or comet which appeared over Bethlehem at the nativity of our Saviour. They were celled at Cambridge, and had only one houſe in England.

There is alſo an order of *Bethlehemites* ſtill ſubſiſting in Peru, who have convents at Lima; one called of the incurables, the other of our Lady of mount Carmel.

Theſe *Bethlehemites* came originally from the city of Guatimala in Mexico, where they were inſtituted by the venerable Peter Joſeph of Betaneur, for the ſervice of the poor. Innocent XI. in 1687, approved the inſtitute. They have already nine convents in Peru.

The *Bethlehemites*, though outwardly of great ſimplicity, paſs for the moſt refined politicians; inſomuch as to be called the quinteſſence of the Carmelites and Jeſuits. They are all friars. For their almoner they chooſe a ſecular prieſt, whom they hire, and who has no vote in the chapter.

BETON, a name given by the French engineers to a kind of mortar, which they uſe in raiſing the foundations of maſonry under water. It conſiſts of twelve parts of pozzolans, or Dutch terraſs, ſix of good ſand, nine of unſlaked lime, thirteen of ſtone ſplinters about the ſize of an egg, and three of tile duſt, or cinders, or ſcales of iron out of a forge; this being well worked together, is left to ſtand for about twenty-four hours, or till it becomes ſo hard as not to be ſeparated without a pick-ax.

BETONY, BETONICA, in *Botany*, a genus of plants, of the *didynamia gymnoſpermia* claſs; the characters of which are theſe: the flower is of one leaf, of the lip kind, with a cylindrical incurved tube; the upper lip is roundiſh, plain, erect, and entire; the lower lip is cut into three parts. It hath four *ſtamina*, two long, and two ſhorter, which incline to the upper lip. The *germen* is quadripartite, which afterward becomes four naked oval ſeeds, lodged in the empalement. There are ſeven ſpecies.

This plant has been celebrated for abundance of medicinal virtues, but does not promiſe to have any conſiderable activity. Its principal uſe is in herb ſnuffs, and as a ſubſtitute for tea. Its root, like the root of hellebore, operates both upwards and downwards.

Betony is eſteemed a good cephalic, vulnerary, cardiac, diuretic, and dryer. Some alſo make *betony* a good ſplenetic, hepatic, thoracic, uterine, &c.

The Italians, when they would praiſe any body, ſay, *tu hai piu di virtu che non ha betonica*; that is, *you have more virtues than betony*; and proverbially deſire, *vende la tunica & compra la betonica*; that is, *ſell your coat and buy betony*.

Ant. Muſa, phyſician of the emperor Auguſtus, wrote a treatiſe expreſs, *De betonica*, ſtill extant; wherein he commends it greatly as a vulnerary, eſpecially in wounds of the head, and enumerates its uſes in the cure of no leſs than forty-ſeven diſeaſes.

Betony is chiefly adminiſtered in the way of decoction, ſometimes of ſmoak, ſometimes as an ingredient of a cerat or plaſter, hence called *emplaſtrum de betonica*. Some alſo give its juice, boiled to the conſiſtence of honey, mixed with a little balſam of Peru, as a pectoral healer.

Foreign diſpenſaries alſo give the preparations of a *betony* water, a ſyrup, conſerve, and extract of *betony*.

BETONY, *Water*, in *Botany*; ſee FIG-*wort*.

BETONICA *Pauli*, in *Botany*, a name given by many to ſome of the ſpecies of the *veronica*, or SPEEDWELL.

BETROTHMENT, a mutual promiſe or compact between two parties, for a future marriage.

The word imports as much as giving one's troth; that is, true faith, or promiſe.

Betrothment amounts to the ſame with what is called by civilians and canoniſts *ſponſalia*, or *eſpouſals*; ſometimes *deſponſation*; and, by the French, *fiançailles*.

Betrothment is either ſolemn, made in the face of the church, or private, made before witneſſes out of the church. *To betroth by giving arrhæ*, or earneſt, is called by *Middle Age Writers*, *ſubbarrare*.

The nuns of the *annunciada*, hold an annual feaſt, in honour of the deſponſation, or *betrothment* of the Virgin Mary to Joſeph.

BETULA, in *Botany*, the BIRCH.

BEVEL, in *Maſonry*, and among *Joiners*, a kind of ſquare, one leg whereof is frequently ſtrait, and the other crooked, according to the ſweep of an arch, or vault; being withal moveable, on a point, or centre, ſo that it may be ſet to any angle.

The make and uſe of the *bevel* are pretty much the ſame as thoſe of the common ſquare and mitre, except that theſe latter are fixed; the firſt at an angle of ninety degrees, and the ſecond at forty-five; whereas the *bevel*, being moveable, may, in ſome meaſure, ſupply the office of both, and yet, which it is chiefly intended for, ſupply the deficiencies of both, ſerving to ſet off, or transfer angles, either greater or leſs than ninety, or forty-five degrees.

Bricklayers have alſo a *bevel*, by which they cut the under ſides of the bricks of arches ſtraight or circular, to ſuch oblique angles as the arches require, and alſo for other uſes.

BEVEL, *Graduated*, is that which has about the centre of one of its arms a ſemicircle graven, and divided into 180 degrees, whoſe diameter ſtands ſquare with the ſides of the ſame arm; ſo that the end of the other arm, being divided at right angles, almoſt to the centre, ſhews by its motion the number of degrees contained in the angle to be meaſured.

This is alſo called *recipiangle*, and *pantametre*.

BEVEL *angle* is uſed among the workmen, to denote any other angle beſide thoſe of ninety or forty-five degrees.

BEVELLING, in *Ship-building*, the art of hewing timber with a proper and regular curve, according to a mould which is laid on one ſide of its ſurface.

BEVERAGE, in a general ſenſe, ſignifies a drink. Hence nectar is ſaid to be the *beverage* of the gods. In *Writers of the Middle Age*, *beverage*, *beveragium*, or *biberagium*, denotes money given to an artificer, or other perſon, to drink, over and above his hire or wages. Du-Cange.

BEVILE', in *Heraldry*, denotes a thing broken, or opening like a carpenter's rule.—Thus he beareth argent a chief *bevilé* vert, by the name of *Beverlis*.—Vid. *Tab. Herald. fig.* 8.

BEWITS, in *Falconry*, denote pieces of leather to which a hawk's bells are faſtened, and buttoned to his legs.

BEXUQUILLO, in the *Materia Medica*, a name given to the white *ipecacuanha*, which the Spaniards bring from Peru, as the Portugueſe do the brown from Braſil.

BEY, or BEG, denotes a governor of a country, or town, in the Turkiſh empire.

The Turks write the word *begh*, or *bek*, but they pronounce it *bey*: properly it ſignifies *lord*, but is particularly applied to a *lord of a banner*, whom in the ſame language they call *ſangiakbeg*, or *bey*; *ſangiak*, which among them ſignifies *banner*, or *ſtandard*, being the badge of him who commands in an important place of ſome province, having under him a conſiderable number of ſpahis, or horſe.

Each province in Turky is divided into ſeven of theſe *ſangiaks*, or banners, each of which qualifies a *bey*; and theſe are all commanded by the governor of the province, whom they alſo call *beghiler-beghi*, or *beyler-bey*, i. e. *lord of the lords* or *beys* of the province.

Theſe *beys* are, in a great meaſure, the ſame that *bannerets* formerly were in England.

BEY, of Tunis, denotes a *prince*, or *king* thereof; anſwering to what at Algiers is called the *dey*.

In the kingdom of Algiers, each province is governed by a *bey*, or vice-roy; who is appointed and removed at pleaſure by the dey; but has a deſpotic power within his juriſdiction; and at the ſeaſon for collecting the tribute from the Arabs, is aſſiſted by a body of troops from Algiers.

BEZANT; ſee BESANT.

BEZANTLER, among *Sportſmen*, that branch of a deer's horn next below the brow antler.

BEZOAR, or **Bezoard**, primarily denotes an antidote, or counter-poiſon.

The word is formed from the Perſian *pa-zahar*, which denotes the ſame; *pa* ſignifying *againſt*; and *zahar*, *poiſon*.

In this ſenſe the name is applied to divers chemical compoſitions of that intention; as the *mineral*, *ſolar*, and *jovial bezoards*.

Some have alſo given the appellation *animal bezoard*, to a powder, made of the heart and liver of vipers, pulverized together.

Bezoar, or **Bezoard**, in a more proper ſenſe, denotes a medicinal ſtone, brought from the Eaſt or Weſt Indies, compoſed of ſeveral coats, or *laminæ*, laid one over another, like an onion, generated in the ſtomach of an animal of the goat kind, and eſteemed a powerful antidote and cardiac. See Ægagropilus.

This is ſometimes alſo called the *true bezoar*; and is of two kinds, *oriental* and *occidental*.

Bezoar, *Oriental*, is in the moſt eſteem, and is brought from ſeveral parts of the Eaſt Indies, chiefly Golconda and Cananor: it is there found mingled with the dung of an animal of the goat kind, called *pazan*; in the belly whereof this ſtone is found.

There is generally, if not always, ſome foreign body in the centre of the *bezoar*, around which, as a *nucleus*, the bezoartic coats, or *ſtrata*, are ranged; as ſtraws, hair, marcaſites, pebbles, talc, ſand, &c. and ſtones like cherry-ſtones; but the common *nucleus* is the pod of a fruit much like that of the ACACIA *vera Ægyptiaca*; though at firſt ſight it reſembles a *caſſia*, or tamarind-ſtone. This fruit being taken into the ſtomach, cauſes, by its aſtringency, a condenſation of the liquors it there meets with, from which in time ariſes the *bezoar*. Phil. Tranſ. N° 282. p. 1284.

In ſome of the ſtones alſo found on this *nucleus*, the outer membrane of the bean having periſhed, and the bean ſhrunk in drying, there remains a vacuity between it, and the next coat of the *bezoar*; ſo that it rattles within it, when ſhaken in the manner of an *ætites*.

The formation of the *bezoar* ſeems to be this, that the undigeſted matter, be it what it will, remaining in the ſtomach of the animal, irritates the glands, and makes them diſcharge their contents, which, mixing with the juices of the ſtomach, impregnated with the virtues of the aromatic plant on which the animal feeds; theſe may together collect, and harden by degrees about this ſubſtance. In fine, their coats ſurrounding one another; the conſequence of which muſt be, that the whole *bezoar* muſt be of the ſhape of the accidental matter, on which it was formed. If it be a ſtraw, the *bezoar* will be long; if a ſmall pebble, the *bezoar* will exactly be of its ſhape, however irregular that be; and, if a kidney-bean, there will be ſeen on the *bezoar* the ſeveral lineaments of that fruit. Mem. Acad. Par. 1711.

The ſtones produced by each animal may be felt and numbered on the outſide, by which in trade the price of the animal is regulated.

Bezoar ordinarily grows to the bigneſs of an acorn, ſometimes of that of a pigeon's egg: it is compoſed of ſeveral ſhining ſkins, or coats, like an onion, ſometimes of a blood colour, ſometimes a greeniſh yellow, a browniſh red, and honey colour.—The number of *bezoars* produced by each animal is various, ſome yielding one, two, &c. to ſix, and others none at all.

The larger the ſtone, the more valuable it is held; its price increaſing like that of the diamond.—A ſtone of one ounce is ſold in the Indies for 100 livres, and one of four ounces and a quarter for 2000 livres.

The genuine *bezoar* ſtones are ſo ſcarce even in the Indies, that few, if any of them, are brought into Europe. The greater number are no other than artificial compounds made there. Theſe, which are ſuppoſed to be genuine, Mr. Neumann obſerves, are compounded of plaſter of Paris, chalk, or other earths, impregnated with a vegetable green tincture: thoſe which are acknowleged to be counterfeit, are formed chiefly of reſinous ſubſtances, and are diſtinguiſhable by their liquefying in the fire, and diſſolving in ſpirit of wine. He never could diſcover in either of theſe any mark of an animal nature. Chemical Works, by Dr. Lewis, p. 533, &c.

Oriental *bezoar* muſt be choſen gloſſy, of a ſmell like that of ambergris, ſmooth to the touch, and in large pieces; its figure is indifferent, its colour uſually olive.

Bezoar is eaſily ſophiſticated; but the deceit is as eaſily diſcovered. The methods of proving it are, 1ſt, To ſteep it three or four hours in luke-warm water; if the water be not tinged, nor the *bezoar* loſe of its weight, it is pure. 2dly, To try it with a ſharp, red-hot iron; if it enters the ſtone, and the heat makes it fry and ſhrivel, it is factitious. 3dly, To rub it over a paper ſmeared with chalk, or quick-lime; if it leave a yellow teint on the former, or a green one on the latter, it is good.

We are, however, told of *artificial bezoars* in the iſle of Ormus, made ſo dexterouſly, as not to be diſcernible from the *natural*, unleſs they be firſt broken. *Bezoar* is ſaid to be adulterated among us with powders, roſin, and mucilage. Le Mort deſcribes a factitious *bezoar*, reſembling the native one, and ſhews how it may be prepared, from the magiſtery of alexipharmic herbs.

The true oriental *bezoars* were, about eighty years ago, ſo common in Cananor, that thoſe of the bigneſs of a pigeon's egg were frequently brought to market at ſix or ſeven reals a piece, and thoſe of the bigneſs of a hen's egg at twelve reals. The method of trying the genuineneſs of the *bezoar* by water, was firſt brought into uſe in that place.

Bezoar is given in vertigoes, epilepſies, palpitations of the heart, jaundice, colic, and ſo many other diſeaſes, that were its real virtues anſwerable to its reputed ones, it were doubtleſs a *panacea*. Indeed, its rarity, and the peculiar manner of its formation, have contributed as much to its reputation, as any intrinſic worth. At preſent it begins to be prized leſs, and a great many able phyſicians regard it, as of no uſe or efficacy at all.

Bezoar, *Occidental*, is heavier, more brittle, of a dirtier green colour, as alſo leſs gloſſy, and generally held much inferior in virtue to the oriental kind.—It is ſaid to be found in the belly of ſeveral animals, eſpecially in Peru; as the *guanacos*, *jachos*, *vicunnas*, and *taraguas*; the *bezoar* of which laſt is the moſt eſteemed, this animal being much like the goat that produces the oriental. But that of the firſt is more common, viz. the *guanacos*, a creature about the ſize of a horſe, by ſome deſcribed, as a ſpecies between a camel and a wild goat.

In ſome, this ſtone is of the bigneſs of a nut, in others of a pullet's egg: in ſome it is oval, in others flat, in others round; it is uſually of an aſh-colour, ſometimes duſky; and formed of ſcales, like the oriental, but much thicker: it is ſmooth and even without-ſide, but when broken, looks as if it had been ſublimated, by reaſon of the little ſhining needles whereof it appears to be compoſed.

This kind of *bezoar*, Mr. Neumann apprehends, is more likely to be an animal production than the former, as it yields in diſtillation ſome ſmall portion of volatile urinous matter. Chem. Works, p. 537.

Bezoar, in a more extenſive ſenſe, includes all animal ſubſtances formed *ſtratum ſuper ſtratum*, in the ſtomachs or inteſtines of animals. Geoffr. in Mem. Acad. Scienc. 1712. p. 268.

In which ſenſe, pearls, the ſtones found in *caſtoreum*, &c. belong to the claſs of *bezoars*. Fonten. Hiſt. Acad. Scienc. 1717. p. 32.

Human *bezoars* are ſtony ſubſtances found in the inteſtines of ſeveral perſons, formed from the ſtones of plums, or other fruits, retained in the *cæcum*, or other guts, and growing coated over; of which we have an inſtance given by Dr. Cole, Phil. Tranſ. N° 235. p. 30.

To this kind alſo belongs the *hippolithes*, or *bezoar equinum*, a ſort of ſtone ſometimes voided by theſe creatures by ſiege. Ibid. N° 250. p. 99.

Bezoar, *German*, which ſome call *cow's egg*, is ſaid to be found in the ſtomach of ſome cows, but more frequently in that of the *chamois*, a ſort of *rupicapra*, or wild goat.

Theſe *bezoars* are ſuppoſed to be nothing elſe but the hair of thoſe animals, which being occaſionally licked off by the tongue, is ſwallowed down, and being impregnated with the *ſaliva*, &c. is condenſed into balls.

Some of them weigh eighteen ounces; but they are not much eſteemed, though they are uſed in ſome medicines, and by the painters in miniature, to make a yellow colour.

Beſides theſe, there are other kinds, viz.

The *Hog* or *Boar* **Bezoar**, called by the Dutch, *pedro de porco*; and by the Portugueſe, who firſt brought it into Europe, *pedro de vaparis*, found in the gall-bladder of a boar in the Eaſt Indies.

In figure and ſize it reſembles a filberd, though more irregular; its colour not fixed, but moſt commonly white, with a teint of green; it is ſmooth and ſhining; and is valued at ten times its weight in gold.

The Indians attribute infinite virtues to this *bezoar*: they call it *maſtica de ſoho*, and prefer it to the *goat bezoar*; not ſo much on account of its being ſuppoſed the beſt preſervative in the world againſt poiſons, as on account of its being ſovereign in the cure of the *mordoxi*, a diſeaſe they are very liable to, and which is not leſs dangerous than the plague in Europe. Other properties which they aſcribe to it are, that it is admirable againſt malignant fevers, ſmall-pox, and moſt diſeaſes of women not with child; experience ſhewing, that it promotes abortion in thoſe who are, if they uſe it indiſcreetly. To uſe it, they infuſe it in water, or wine, till it has communicated a little bitterneſs to it. To facilitate the infuſion, and at the ſame time preſerve ſo precious a ſtone, they uſually ſet it in a gold caſe pierced with holes.

The *Porcupine* and *Monkey* BEZOARS only differ from thoſe of the hog, in that they are found in the gall-bladders of thoſe animals; unleſs we ſay with Tavernier that theſe two, which he calls *Malacca ſtones*, are not taken from the gall-bladders, but from the heads, of the monkey and porcupine, and that they are held in ſuch eſteem by the natives of Malacca, that they never part with them, unleſs as preſents to embaſſadors, or the greateſt princes of the Eaſt.

The *bezoar* of the ape, and that of the porcupine, called *piedra del porco*, have been valued moſt. Single ſtones have been ſold for ſixty and eighty pounds ſterling. Neumann.

Some add, that they are likewiſe found in Siam.—Indeed, the form, colour, and properties of theſe three *bezoars* are ſo near akin, that it is more than probable, they are all the ſame ſtone under three different names.

The *cow bezoar*, in the Chineſe cabinet, in the repoſitory of the Royal Society, though compoſed of *laminæ* or coats, is apparently factitious, becauſe it melts, when applied to the candle. Sloan, Phil. Tranſ. Nº 250. p. 70.

The forms in which *bezoars* appear, when genuine, are very different; the moſt frequent figure is round, but many are oblong; ſome of the ſhape of a kidney, and ſome perfectly irregular: they are of a greeniſh, or olive colour, and are ſpotted with pale, or whitiſh ſpots in different places; when tried by burning, they are found to be eaſily inflammable, and to contain a volatile ſalt, and an oil; and the *reſiduum* much reſembles the *caput mortuum* left in the retort, after the diſtillation of different animal ſubſtances; a gentle heat will often make the ſeveral beds or *laminæ*, of which a *bezoar* is compoſed, ſeparate from one another. If *bezoar* ſtones are put to infuſe in ſpirit of wine, or in common water, both liquors will thoroughly penetrate their ſubſtance, but neither will receive any change from them.

BEZOAR *goat*, in *Zoology*, a name uſed for the Indian ANTELOPE, on account of the *bezoar* ſtone found in its ſtomach.

BEZOAR is alſo applied to a kind of foſſile figured ſtone, formed like the animal *bezoar* of ſeveral coats, or *ſtrata*, ranged round ſome extraneous body, which forms a *nucleus*, and is ſuppoſed to have the ſame virtues with the other. Mem. Acad. Scienc. an. 1710. p. 316.

It is found in Italy, eſpecially Sicily; and in France, eſpecially Languedoc. We have alſo inſtances of it in England. Woodw. Nat. Hiſt. Engl. Foſſ. tom. ii. p. 9.

The foſſile, or mineral *bezoar*, is a cruſtated ferruginous body.

The Sicilian *bezoar*, or *bezoar minerale Siculum*, is by ſome, with Boccone, taken for a ſpecies of *geodes*, from which Dr. Woodward diſtinguiſhes it, as well as from the *enhydros* and *ætites*, in that it has properly no cavity with matter in it, as thoſe bodies have. Phil. Tranſ. Nº 311. p. 406. and Nº 249. p. 54.

Boccone mentions *nuclei* of different matters, as flints, gravel, wood, metal, coal, &c. M. Geoffroy even found rock cryſtal in the middle of a mineral of this ſpecies, called *priapolites*.

BEZOARDIC is applied to certain medicinal powders, ſtones, &c. wherein *bezoar* is an ingredient.

To the claſs of *bezoardic* powders belong the Gaſcoyn's, and counteſs of Kent's powders, and others formed thereof. Among *bezoardic* ſtones is found the *lapis de Goa*, or Goa ſtone. We alſo meet with *bezoardic* tinctures given in fevers, &c.

BEZOARDIC is more generally applied to all medicines endowed with a powerful alexiterial virtue, uſed for expelling poiſons, and other malignities.

In this ſenſe, *bezoardics* are either ſimple or compound, and derived either from the vegetable or animal kingdoms.

The chief in the vegetable kind is the root of *anthora*, or *contrayerva*; and in the animal kingdom, hartſhorn, or, according to ſome, the unicorn's horn.

Among the compound kind, the *tinctura bezoardica Michaelis* is in much repute, at leaſt abroad. Salt of hartſhorn is by ſome called *bezoar ſeptentrionalis*. Willius has a poem on the uſe and abuſe of the *northern bezoar*.

BEZOARDICA *terra*, a name uſed by ſome authors for a medical earth dug in the pope's territories, and more frequently called TERRA *noceriana*.

BEZOARDICUM *Minerale*, or *Mineral* BEZOAR, is a preparation of antimony corrected with ſpirit of nitre, and ſoftened by repeated lotions, which carry off the purgative virtue, and ſubſtitute a diaphoretic one; by which it promotes ſweat, like the ſtone of that name. See *Butter of* ANTIMONY.

It appears to have been the invention of Baſil Valentine, though later chemiſts have given other proceſſes for preparing it. It is much adulterated, by adding to it half, or two thirds the quantity of *ſal ammoniac*.

Sylvius firſt ventured to introduce it into medicine, and frequently gave it with very bad ſucceſs. Yet many are to this day perſuaded with him, that it is poſſeſſed of wonderful antidotal virtues, as being obtained innocent and harmleſs from that violent poiſon, butter of antimony; whence they conclude, it muſt needs have a magnetical power of attracting to itſelf, like the *bezoar* ſtone, all the poiſon in the body.

Boerhaave, however, conteſts all its virtues, chiefly from the manner of preparing it. The acid of the antimony, he argues, being driven away by the violence of the fire, nothing remains but the ſluggiſh and calcined metalline part, which, though dignified with the name of *mineral bezoar*, is deſtitute of all medicinal virtues, and only ſerves to oppreſs the body by its gravity, being perfectly indigeſtible therein. Meth. Chym. P. iii. p. 318.

From the *bezoar mineral*, mixed with other metals in various ways, with or without detonation, ariſe other compound *bezoardics*, which is a common appellation in Germany, &c. for all medicines ſuppoſed to be of alexipharmic powers. Neumann, p. 533.

BEZOARDICUM *ſolare*, a name given by the chemiſts to a preparation of gold. It is made by diſſolving plates of gold in the *ſpiritus nitri bezoardicus*, and fixing it by pouring it on butter of antimony. It is ſaid to be a great ſudorific, and of great uſe in the pox, the plague, the gout, the dropſy, fevers, and obſtructions of the ſpleen. Its doſe is from three to eight grains.

BEZOARDICUM *Veneris*, *bezoar* of copper, a name given by the chemiſts to a preparation of copper, made by extracting a tincture from the filings of copper with rectified butter of antimony, and fixing it according to art with ſpirit of nitre. It is given by ſome in leproſies, and diſeaſes of the head and brain. It doſe is ſix grains. Externally it is of uſe in old ulcers, fiſtulas, and impetigoes.

BEZOARDICUM *Saturni*, *bezoar* of lead, the name given by the chemiſts to a preparation of lead; it is made by extracting a tincture from glaſs of lead, prepared from red lead and flints, and mixing this with unrectified butter of antimony, and fixing it by means of ſpirit of nitre. It is eſteemed an anti-hyſteric, and is ſaid to be good in diſorders of the ſpleen; the doſe is ſix grains.

BEZOARDICUM *Joviale*, or BEZOAR *of Jupiter*, is a regulus made by melting three ounces of regulus of antimony, and two of block-tin, powdered and mixed with ſix ounces of corroſive ſublimate, and diſtilled off in a kind of butter, and that diſſolved in ſpirit of nitre, and the ſolution diſtilled three times; the *bezoar* remaining at the bottom is to be powdered, waſhed, and mingled with ſpirit of wine, till it grow inſipid. See ANTIHECTICUM *Poterii*.

BEZOARDICUM *lunale*, or of ſilver, is made by mixing rectified butter of antimony with fine ſilver, diſſolved in ſpirit of nitre; upon which, a powder falls to the bottom, which is the *bezoar*.

It is eſteemed a ſpecific in epilepſies, convulſions, and apoplexies; and is ſaid to be anodyne and ſudorific, and of great uſe againſt the eryſipelas. The doſe is from ſix to ten grains.

BEZOARDICUM *martiale*, is a diſſolution of *crocus Martis* by reverberation in butter of antimony, with ſpirit of nitre poured on it: commended by ſome againſt hyſterical, hypochondriacal, and icterical diſorders.

BEZOLA, in *Zoology*, the name of a truttaceous fiſh of the *albula* kind, and called by Geſner the *albula cærulea*. It reſembles the herring in ſhape, is of a duſky bluiſh colour, and does not eſſentially differ from the LAVARETUS.

BIA, a name given by the Siameſe to a ſort of little white ſhells brought from the Maldive iſlands, and uſed throughout moſt part of the Eaſt Indies for ſmall money. Nine of theſe are equal in value to the French *denier*.

Theſe are otherwiſe called *coris*, or *cowries*.

BIÆUM, from βια, *oppoſition*, in *Rhetoric*, denotes a kind of counter-argument, whereby ſomething alleged for the adverſary is retorted againſt him, and made to conclude a different way; for inſtance, *Occidiſti, quia adſtitiſti interfecto.—Immo quia adſtiti interfecto, non occidi*; *nam ſi id eſſet, in fugam me conjeciſſem.* "You killed the perſon, becauſe you were found ſtanding by his body." *(Biæum.)* "Rather I did not kill him, becauſe I was found ſtanding by his body; ſince, in the other caſe, I ſhould have fled away."

BIÆUM, in the *Grecian Laws*, was an action brought againſt thoſe who raviſhed women, or uſed violence to any man's perſon. Potter, Archæol. lib. i. c. 24.

BIÆUM alſo denotes a kind of ſaline or ſea-wine, uſed by the ancient Greeks in various diſorders. It was made of grapes gathered a little before ripe, and dried in the ſun; then preſſed, the juice put up in caſks, and mixed with a large proportion of ſea-water; though Dioſcorides ſeems to deſcribe it as made of grapes ſteeped in ſea-water, and then preſſed. Gorr. Def. Med. p. 75.

BIAFORA, in the *Cuſtoms of the Middle Age*, a form of cry, or alarm to arms; on the hearing whereof, the inhabitants of towns, or villages were to iſſue forth, and attend their prince. The word ſeems originally from Gaſcony; and the Italians even now, on a ſudden inſurrection of the people, commonly cry, *Via fora*, by an uſual change of the letter B into V.

BIARCHUS, an officer in the court of the emperors of Conſtantinople, intruſted with the care and inſpection of the proviſions of the ſoldiery.

The word is formed from βιος, *annona*, *victuals*, and αρχη, *chief*.

The *biarchus* was the ſame with what the Latins call *præfectus annonæ*. His function was called *biarchia*; by the Latins, *præfectura rei cibariæ*. He belonged to the *ſcholia agentium in rebus*. See AGENTES.

BIARUM, in *Botany*, a name by which the people of Egypt at this time call the root of the NILUFAR, or *faba Ægyptia*, growing on the Nile.

BIAS, or BIASS, the tendency or propenſity of a thing towards one ſide more than the other; particularly the deviation of a body, or a plane, from its rectilinear courſe, or its level. See INCLINATION.

The word is French, *biais*, which ſignifies the ſame. Menage deduces this further from the Italian *biaco*; and that again from the Latin *obliquus*.

BIAS *of a bowl*, is a piece of lead put into one ſide, to load and make it incline towards that ſide.

BIATHANATI, βιαθανατοι, from βια, *violence*, and θανατος, *death*; the ſame with ſuicides, or thoſe who kill themſelves. Dr. Donne, dean of St. Paul's, has a work under the title of *Biathanatos*; wherein he undertakes to prove this poſition, or paradox: "That ſuicide is not ſo naturally "ſin, as that it may never be otherwiſe." Lond. 4to. 1644.

BIBIO, the *wine-fly*, in the *Hiſtory of Inſects*, a very ſmall fly, found frequently among empty wine-caſks. It is produced from a ſmall, oblong, red worm, very common in the ſediments of wine.

BIBITORY *Muſcle*; ſee ADDUCTOR *Oculi*.

BIBLE, a book, by way of eminence ſo called, containing the Scriptures, i. e. the writings of the Old and New Teſtament.

The word *Bible* comes from the Greek Βιϐλια, or Βιϐλιον, uſed to denote any book; but, by way of eminence, applied to the book of Scripture. Βιϐλιον again comes from βιϐλος, the Egyptian reed, from which the ancient paper was procured. See BIBLUS.

The *Bible* is known by various other appellations, as the *ſacred books*, the *inſpired writings*, *holy writ*, *ſacred text*, &c. By the Jews it is called *mikra*, that is, *lecture*, or *reading*; by the Chriſtians uſually *ſcripture*, q. d. *writing*; ſometimes alſo the *book of God*, the *canon*, *rule of faith*, &c.

Bibles are diſtinguiſhed, according to their language, into Hebrew, Greek, Latin, Chaldee, Syriac, Arabic, Cophtic, &c. Some account of each, and their ſeveral editions, &c. we ſhall here ſubjoin.

The liſt of the books contained in the *Bible* is called the CANON of ſcripture.

The books of the *Bible* are ſaid to be *canonical*, by way of contradiſtinction from others called *deutero-canonical*, *apocryphal*, *pſeudo-apocryphal*, &c.

For the authors of the *Bible*, the names of moſt of them are prefixed to the books ſuppoſed to be written by them; as the Pentateuch by Moſes; Joſhua by the general of that name, &c. though many objections have been made to divers of them.

Aben Ezra, followed by Hobbes, Pereyra, Spinoſa, and ſome others, deny the five firſt books to have been written by Moſes. F. Simon in particular aſſerts, that the books, as we now have them, are not the originals written by the inſpired pen-men, but abridgments of them made in after-times by a kind of college or order of public actuaries or ſcribes appointed for that end.

The original language of the Old Teſtament was doubtleſs the old Hebrew, at leaſt the greateſt part; for all the books do not appear to have been written in the ſame. Some chapters of Eſdras and Daniel are judged to have been compoſed in Chaldaic; and other chapters of this latter writer, as alſo the apocryphal books of Maccabees, of Wiſdom, &c. in Greek; Tobit and Eccleſiaſtes either in Greek or Syriac. Du-Pin, Diſſ. Prel. § 3. Calmet's Dict. Bib. tom. i. p. 293.

As for the New Teſtament, it was written in Greek, except the Goſpel of St. Matthew, which is thought by many to have been compoſed in the later Hebrew, that is, the Syriac. Some will have Mark's Goſpel to have been written in Latin; and the Epiſtle to the Hebrews in Hebrew. Calmet.

Divers of the ancient *Bible* books appear to have been irrecoverably loſt, whether it be that the copies of them periſhed, or that Eſdras threw them out of his canon. Hence it is, that, in the books ſtill extant, we find divers citations of, and references to others, which are now no more; as the book of Jaſher, the book of the wars of the Lord, annals of the kings of Judah and Iſrael, part of Solomon's three thouſand Proverbs, and his thouſand and five Songs, beſides his books on plants, animals, fiſhes, inſects, &c. To which may be added a book of Jeremiah, wherein he enjoined the captives who went to Babylon to take the ſacred fire and conceal it; alſo the precepts which that prophet gave the Jews to preſerve themſelves from idolatry, and his lamentations on the death of king Joſiah.

In the time of Joſiah, through the impiety of the two preceding reigns of Manaſſeh and Ammon, the book of the law was ſo totally loſt, that, beſides a copy of it found by Hilkiah in the temple, none other appears to have been known; at leaſt, the ſurpriſe which Hilkiah ſhewed at the finding it, and the grief which Joſiah expreſſed at the hearing it read, ſhew, that neither of them had ever ſeen it before. 2 Kings, chap. xxii. ver. 8—13, 2 Chron. chap. xxxiv.

Copies were now made and diſperſed; yet, within a few years after, the authentic copy, preſerved in the temple, was burnt, with the temple, by the Babylonians. It was reſtored again after the return of the Jews from the Babylonian captivity by Nehemiah, or rather by Ezra; ſome ſay by divine inſpiration; others, with greater probability, by collecting the fragments and copies which were ſtill remaining, comparing them together, and, out of them all, framing one complete copy, where the readings were adjuſted, and the ſeveral books ranged in their proper order. Prid. Conn. P. i. lib. v. Du-Pin, Diſſ. Prel.

Ezra made additions in ſeveral parts of the book, among which is to be reckoned the laſt chapter of Deuteronomy, wherein Moſes ſeems to give an account of his own death and burial, and of the ſucceſſion of Joſhua after him. To the ſame cauſe are to be attributed many other interpolations in the *Bible*, which created difficulties and objections to the authenticity of the ſacred text, no ways to be ſolved without allowing them. Prideaux.

The preſent Samaritan and Jewiſh copies of the *Bible* differ in many reſpects, chiefly in the chronology of the patriarchs, where the Samaritan comes nearer to the Septuagint. Other variations may be reſolved into the errors of tranſcribers, interpolations for explication's ſake, and, perhaps, the deſigned corruption of the Samaritan.

The books of the *Bible* are divided by the Jews into three claſſes, viz. the law, the prophets, and the hagiographers; a diviſion which they are ſuppoſed to borrow from Ezra himſelf.

The Jews, at firſt, were very reſerved in communicating their ſcripture to ſtrangers: deſpiſing and ſhunning the Gentiles, they would not diſcloſe to them any of the treaſures concealed in the *Bible*. We may add, that the people bordering on the Jews, as the Egyptians, Phœnicians, Arabs, &c. were not very curious to know the laws or hiſtory of a people, whom in their turn they hated and deſpiſed. Their firſt acquaintance with theſe books was not till after the ſeveral captivities of the Jews, when the ſingularity of the Hebrew laws and ceremonies induced ſeveral to deſire a more particular knowledge of them. Joſephus ſeems ſurpriſed to find ſuch ſlight footſteps of the ſcripture-hiſtory interſperſed in the Egyptian, Chaldean, Phœnician, and Grecian hiſtory; and accounts for it hence, that the ſacred books were not as yet tranſlated into Greek or other languages, and conſequently not known to the writers of thoſe nations. Contra Appion. p. 1038. Calmet.

The firſt verſion of the *Bible* was that of the SEPTUAGINT into Greek, in the time of Ptolemy Philadelphus; though ſome maintain that the whole was not then tranſlated, but only the Pentateuch; between which and the other books in the verſion called of the Seventy, the critics find a great diverſity in point of ſtyle and expreſſion, as well as of accuracy.

Divers kinds of books have been compoſed on the *Bible*, either to explain the ſenſe, or make its doctrine more obvious, to facilitate the remembrance of it, or to eſtabliſh particular opinions from it; as introductions, apparatuſes, ſummaries, manuals, hiſtories, expoſitions, commentaries, harmonies, &c.

BIBLES, *Hebrew*, are either manuſcript, or printed.—The beſt *manuſcript Bibles* are thoſe copied by the Jews of Spain. Thoſe copied by the Jews of Germany are leſs exact, but more common. The two kinds are eaſily diſtinguiſhed from each other; the former being in beautiful characters, like the Hebrew *Bibles* of Bomberg, Stephens, and Plantin; the latter in characters, like thoſe of Munſter and Gryphius.—F. Simon obſerves, that the oldeſt manuſcript Hebrew *Bibles* are not above ſix or ſeven hundred years old; nor does rabbi Menaham, who quotes a vaſt number of them, pretend that any of them exceed ſix hundred years.

The moſt ancient *printed* Hebrew *Bibles* are thoſe publiſhed by the Jews of Italy, eſpecially of Peſaro and Breſſe. Thoſe of Portugal alſo printed ſome parts of the *Bible* at Liſbon, before their expulſion.—This may be obſerved in the general, that the beſt Hebrew *Bibles* are thoſe printed under the inſpection of the Jews; there being ſo many *minutiæ* to be obſerved, that it is ſcarce poſſible for any other to ſucceed in it.

The Complutenſian *Bible* was printed in 1515. See BIBLES, *Greek*.

In the beginning of the ſixteenth century Dan. Bomberg printed ſeveral Hebrew *Bibles* in folio and quarto at Venice, moſt of which are eſteemed both by the Jews and Chriſtians: the firſt in 1517, which is the leaſt exact, and generally goes by the name of Felix Pratenſis, the perſon who reviſed it. This edition contains the Hebrew text, the targum, and the commentaries of ſeveral rabbins. In 1528, the ſame Bomberg printed the folio *Bible* of rabbi Benchajim, with his preface, the maſoretical diviſions, a preface of Aben Ezra, a double *maſora*, and ſeveral various readings. The third edition was printed in 1618; it is the ſame with the ſecond, but much more correct. From the former editions it was, that Buxtorf, the father, printed his rabbinical Hebrew *Bible* at Baſil, in 1618; which, though there are many faults in it, is more correct than any of the former. In 1623 appeared at Venice a new edition of the rabbinical *Bible* by Leo of Modena, a rabbin of that city, who pretended to have corrected a great number of faults in the former edition; but, beſides that it is much inferior to the other Hebrew *Bibles* of Venice, with regard to paper and print, it has paſſed through the hands of the inquiſitors, who have altered many paſſages in the commentaries of the rabbins.

As to Hebrew *Bibles* in 4to. that of R. Stephens is eſteemed for the beauty of the characters; but it is very incorrect. Plantin alſo printed ſeveral beautiful Hebrew *Bibles* at Antwerp: one, in eight columns, with a preface by Arias Montanus in 1571, which far exceeds the Complutenſian in paper and print, and contents; this is called the Royal *Bible*, becauſe it was printed at the expence of Philip II. of Spain: another at Geneva, in 1619; beſides many more of different ſizes, with and without points. Manaſſeh Ben Iſrael, a learned Portugueſe Jew, publiſhed two editions of the Hebrew *Bible* at Amſterdam; the one in 4to. in 1635; the other in 8vo. in 1639: the firſt has two columns, and for that reaſon is commodious for the reader. In 1639, R. Jac. Lombroſo publiſhed a new edition in 4to. at Venice, with ſmall literal notes at the bottom of each page, where he explains the Hebrew words by Spaniſh words. This *Bible* is much eſteemed by the Jews at Conſtantinople: in the text they have diſtinguiſhed between words where the point *camets* is to be read with a *camets-katuph*, that is, by *o*, and not an *a*.

Of all the editions of the Hebrew *Bible* in 8vo. the moſt beautiful and correct are the two of Jo. Athias, a Jew of Amſterdam. The firſt, of 1661, is the beſt paper; but that of 1667, is the moſt exact: that, however, publiſhed ſince at Amſterdam by Vander Hooght, in 1705, is preferable to any of them.

After Athias, three Hebraizing proteſtants engaged in reviſing and publiſhing the Hebrew *Bible*; viz. Clodius, Jablonſki, and Opitius.—Clodius's edition was publiſhed at Frankfort, in 1677, in 4to. At the bottom of the page it has the various readings of the former editions; but the author does not appear ſufficiently verſed in the accenting, eſpecially in the poetical books; beſides, as it was not publiſhed under his eye, many faults have crept in. That of Jablonſki in 1699, in 4to. at Berlin, is very beautiful as to letter and print: but, though the editor pretends he made uſe of the editions of Athias and Clodius, ſome critics find it ſcarce in any thing different from the 4to. edition of Bomberg.—That of Opitius is alſo in 4to. at Keil, in 1709; the character is large and good, but the paper bad: it is done with a great deal of care; but the editor made uſe of no manuſcripts but thoſe of the German libraries; neglecting the French ones, which is an omiſſion common to all three.—They have this advantage, however, that beſides the diviſions uſed by the Jews, both general and particular, into *paraſkes* and *peſukim*, they have alſo thoſe of the Chriſtians, or of the Latin *Bibles*, into chapters and verſes; the *keri ketib*, or various readings, Latin ſummaries, &c. which made them of conſiderable uſe, with reſpect to the Latin editions, and the concordances. See CHAPTERS.

The little *Bible* of R. Stephens, in 16to. is very much prized for the beauty of the character. Care, however, muſt be taken; there being another edition of Geneva, exceedingly like it, excepting, that the print is worſe, and the text leſs correct.—To theſe may be added ſome other Hebrew *Bibles* without points, in 8vo. and 24to. which are much coveted by the Jews; not that they are more exact, but more portable than the reſt; and are uſed in their ſynagogues and ſchools: of theſe there are two beautiful editions, the one of Plantin, in 8vo. with two columns, and the other in 24to. reprinted by Raphalengius at Leyden, in 1610. There is alſo an edition of them by Laurens at Amſterdam, in 1631, in a larger character; and another in 12mo. at Frankfort, in 1694, full of faults, with a preface of M. Leuſden at the head of it.

Houbigant publiſhed an elegant edition of the Hebrew *Bible* at Paris, in 1753, contained in four volumes, folio. The text is that of Van der Hooght, without points, to which he has added marginal notes, ſupplying the variations of the Samaritan copy. Dr. Kennicott, after almoſt twenty years laborious collation of near ſeven hundred copies, manuſcript and printed, either of the whole, or of particular parts of the *Bible*, did, in 1776, publiſh the firſt volume of his Hebrew *Bible*, in folio. The text is that of Everard Van der Hooght, already mentioned; differing from it only in the diſpoſition of the poetical parts, which Dr. Kennicott has printed in hemiſtichs, into which they naturally divide themſelves; however the words follow one another in the ſame order as they do in the edition of Van der Hooght. This edition is printed on an excellent type; the Samaritan text, according to the copy in the London Polyglott, is exhibited in a column parallel with the Hebrew text; thoſe parts of it only being introduced, in which it differs from the Hebrew. The numerous variations both of the Samaritan manuſcripts from the printed copy of the Samaritan text, and of the Hebrew manuſcripts from the printed text of Van der Hooght, are placed ſeparately at the bottom of the page, and marked with numbers referring to the copies from which they are taken. The editor regrets, that the Diſſertatio Generalis, which would help much to enrich this article, is not to be publiſhed till the ſecond volume is ready.

BIBLES, *Greek*.—There is a great number of editions of the *Bible* in Greek; but they may be all reduced to three or four principal ones, viz. that of Complutum, or Alcala de Henares, that of Venice, that of Rome, and that of Oxford.—The firſt was publiſhed in 1515, by cardinal Ximenes, and inſerted in the *Polyglot Bible*, uſually called the *Complutenſian Bible*: this edition is not juſt, the Greek of the Seventy being altered in many places according to the Hebrew text.—It has, however, been reprinted in the *Polyglot Bible* of Antwerp, in that of Paris, and in the 4to. *Bible*, commonly called, *Vatablus's Bible*.

The ſecond Greek *Bible* is that of Venice, printed by Aldus, in 1518. Here the Greek text of the Septuagint is reprinted juſt as it ſtood in the manuſcript, full of faults of the copyiſts, but eaſily amended.—This edition was reprinted at Straſburg, in 1526, at Baſil, in 1545, at Frankfort, in 1597, and other places, with ſome alterations to bring it nearer the Hebrew. The moſt commodious is that of Frankfort; there being added to this, little *ſcholia*, which ſhew the different interpretations of the old Greek tranſlators: the author of this collection has not added his name; but it is commonly aſcribed to Junius.

The third Greek *Bible* is that of Rome, or the Vatican, in 1587, with Greek *ſcholia* collected from the manuſcripts in the Roman libraries by Pet. Morin. It was firſt ſet on foot by cardinal Montalbo, afterwards pope Sextus Quintus. This fine edition has been reprinted at Paris in 1628, by J. Morin, prieſt of the oratory, who has added the Latin tranſlation, which in the Roman was printed ſeparately, with *ſcholia*.—The Greek edition of Rome has been printed in the *Polyglot Bible* of London; to which are added, at bottom, the various readings of the Alexandrian manuſcript. This has been alſo reprinted in England in 4to. and 12mo. with ſome alterations. It has been again publiſhed at Franeker in 1709, by Bos, who has added all the various readings he could find.

The fourth Greek *Bible* is that done from the Alexandrian manuſcript, begun at Oxford by Dr. Grabe in 1707. In this the Alexandrian manuſcript is not printed ſuch as it is, but ſuch as it was thought it ſhould be; i. e. it is altered wherever there appeared any fault of the copyiſts, or any word inſerted from any particular dialect: this ſome think an excellence, but others a fault; urging, that the manuſcript ſhould have been given abſolutely and intirely of itſelf, and all conjectures, as to the readings, ſhould have been thrown into the notes. See SEPTUAGINT.

Bibles, *Latin*, how numerous ſoever, may be all reduced to three claſſes; the *ancient* VULGATE, called alſo *Italica*, tranſlated from the Greek *Septuagint*: the *modern* VULGATE, the greateſt part of which is done from the Hebrew text; and the *new Latin tranſlations*, done alſo from the Hebrew text in the ſixteenth century.—We have nothing remaining of the *ancient Vulgate*, uſed in the primitive times in the Weſtern churches, but the Pſalms, Wiſdom, and Eccleſiaſtes. Nobilius has endeavoured to retrieve it from the works of the ancient Latin fathers; but it was impoſſible to do it exactly, becauſe moſt of the fathers did not keep cloſe to it in their citations.

As to the *modern* VULGATE, there are a vaſt number of editions very different from each other. Cardinal Ximenes has inſerted one in the *Bible* of *Complutum*, corrected and altered in many places. R. Stephens, and the doctors of Louvain, have taken great pains in correcting the modern vulgate.

The beſt edition of Stephens's Latin *Bible* is that of 1540, reprinted in 1545, in which are added, on the margin, the various readings of ſeveral Latin manuſcripts, which he had conſulted. The doctors of Louvain reviſed the modern vulgate after R. Stephens; and added the various readings of ſeveral Latin manuſcripts. The beſt of the Louvain editions are thoſe, at the end of which are added the critical notes of Francis Lucas of Bruges.

All theſe reformations of the Latin *Bible* were made before the time of pope Sixtus V. and Clement VIII. ſince which, people have not dared to make any alterations, excepting in comments, and ſeparate notes. The correction of Clement VIII. in 1592, is now the ſtandard throughout all the Romiſh churches: that pontiff made two reformations; but it is the firſt of them that is followed. From this the *Bibles* of Plantin were done, and from thoſe of Plantin all the reſt; ſo that the common *Bibles* have none of the after-corrections of the ſame Clement VIII.—It is a heavy charge that lies on the editions of pope Clement, viz. that they have ſome new texts added, and many old ones altered, to countenance and confirm what they call the Catholic doctrine; witneſs that celebrated paſſage of St. John, *tres ſunt*, &c.

There are a great number of Latin *Bibles* of the third claſs, comprehending the verſions from the originals of the ſacred books made within theſe two hundred years.—The firſt is that of Santes Pagninus, a Dominican, under the patronage of pope Leo X. printed at Lyons in 4to. in 1527, much eſteemed by the Jews. This the author improved in a ſecond edition. In 1542, there was a beautiful edition of the ſame at Lyons in folio, with *ſcholia*, publiſhed under the name of Michael Villanovanus, i. e. Michael Servetus, author of the *ſcholia*. Thoſe of Zurich have likewiſe publiſhed an edition of Pagninus's *Bible* in 4to. And R. Stephens reprinted it in folio, with the vulgate, in 1557, pretending to give it more correct than in the former editions. There is alſo another edition of 1586, in four columns, under the name of *Vatablus*: and we find it again in the Hamburgh edition of the *Bible* in four languages.

In the number of Latin *Bibles* is alſo uſually ranked the verſion of the ſame Pagninus corrected, or rather rendered literal, by Arias Montanus; which correction being approved of, by the doctors of Louvain, &c. was inſerted in the *Polyglot Bible* of Philip II. and ſince in that of London. There have been various editions of this in folio, quarto, and octavo; to which have been added the Hebrew text of the Old Teſtament, and the Greek of the New. The beſt of them all is the firſt, which is in folio, 1571.

Since the Reformation, there have been ſeveral Latin verſions of the *Bible* from the originals, by proteſtants. The moſt eſteemed are thoſe of Munſter, Leo Juda, Caſtalio, and Tremellius: the three laſt whereof have been reprinted various times. Munſter publiſhed his verſion at Baſil in 1534, which he afterwards reviſed; he publiſhed a correct edition in 1546.—Caſtalio's fine Latin pleaſes moſt people; but there are ſome who think it too much affected; the beſt edition thereof is that in 1573. Leo Juda's verſion, altered a little by the divines of Salamanca, was added to the ancient Latin edition, as publiſhed by R. Stephens with notes, under the name of *Vatablus's Bible*, in 1545. It was condemned by the Pariſian divines, but printed with ſome alterations by the Spaniſh divines of Salamanca. That of Junius and Tremellius is preferred, eſpecially by the Calviniſts, and has undergone a great number of editions.

One may add a fourth claſs of Latin *Bibles*, comprehending the *vulgate* edition corrected from the originals. The *Bible* of Iſidorus Clarus is of this number: that author, not being contented with reſtoring the ancient Latin copy, has corrected the tranſlator in a great number of places, which he thought ill rendered. Some proteſtants have followed the ſame method; and, among others, Andrew and Luke Oſiander, who have each publiſhed a new edition of the *vulgate*, corrected from the originals.

Bibles, *Oriental*.—At the head of the Oriental verſions of the *Bible* muſt be placed the Samaritan; as being the moſt ancient of all, though neither its age nor author have been yet aſcertained, and admitting no more for holy Scripture but the Pentateuch, or five books of Moſes.—This tranſlation is made from the Samaritan Hebrew text, which is a little different from the Hebrew text of the Jews. This verſion has never been printed alone; nor any where but in the *Polyglots* of London and Paris.

Bibles, *Chaldee*, are only the gloſſes or expoſitions made by the Jews in the time when they ſpake the Chaldee tongue. Theſe they call by the name of *Targumim*, or *paraphraſes*, as not being any ſtrict verſions of the Scripture. They have been inſerted entire in the large Hebrew *Bibles* of Venice and Baſil; but are read more commodiouſly in the *Polyglots*, being there attended with a Latin tranſlation.

Bibles, *Syriac*.—There are extant two verſions of the Old Teſtament in the Syriac language: one from the Septuagint, which is ancient, and made probably about the time of Conſtantine; the other called *antiqua & ſimplex*, made from the Hebrew, as ſome ſuppoſe, about the time of the apoſtles. This verſion is printed in the *Polyglots* of London and Paris.

In the year 1562, Widmanſtadius printed the whole New Teſtament in Syriac, at Vienna, in a beautiful character: after him there were ſeveral other editions; and it was inſerted in the *Bible* of Philip II. with a Latin tranſlation. Gabriel Sionita alſo publiſhed a beautiful Syriac edition of the Pſalms, at Paris, in 1525, with a Latin interpretation.

Bibles, *Arabic*.—In the year 1516, Aug. Juſtinian, biſhop of Nebio, printed at Genoa an Arabic verſion of the Pſalter, with the Hebrew text, and Chaldee paraphraſe, adding Latin interpretations. There are alſo Arabic verſions of the whole Scriptures in the *Polyglots* of London and Paris; and we have an edition of the Old Teſtament entire, printed at Rome in 1671, by order of the congregation *de propaganda fide*; but it is of little eſteem, as having been altered agreeably to the *vulgate* edition. The Arabic *Bibles* among us are not the ſame with thoſe uſed with the Chriſtians in the Eaſt.—Some learned men take the Arabic verſion of the Old Teſtament, printed in the *Polyglots*, to be that of Saadias, who lived about the year 900; at leaſt in the main. Their reaſon is, that Aben Ezra, a great antagoniſt of Saadias, quotes ſome paſſages of his verſion, which are the ſame with thoſe in the Arabic verſion of the *Polyglots*; yet others are of opinion, that Saadias's verſion is not extant. In 1622, Erpenius printed an Arabic Pentateuch, called alſo the Pentateuch of Mauritania, as being made by the Jews of Barbary, and for their uſe. This verſion is very literal, and eſteemed very exact. The four Evangeliſts have alſo been publiſhed in Arabic, with a Latin verſion, at Rome, in 1591, folio. Theſe have been ſince reprinted in the *Polyglots* of London and Paris, with ſome little alterations of Gabriel Sionita. Erpenius publiſhed an Arabic New Teſtament, entire, as he found it in his manuſcript copy, at Leyden, in 1616.

There are ſome other Arabic verſions of late date mentioned by Walton in his Prolegomena; particularly a verſion of the Pſalms preſerved in Sion College, London, and another of the Prophets, at Oxford; neither of which have been publiſhed.

Bibles, *Cophtic*.—There are ſeveral manuſcript copies of the Cophtic *Bible* in ſome of the great libraries, eſpecially in that of the French king.

Dr. Wilkins publiſhed the Cophtic New Teſtament in 4to. in the year 1716, and the Pentateuch alſo in 4to. in 1731, with Latin tranſlations. He reckons theſe verſions to have been made in the end of the ſecond, or the beginning of the third century.

Bibles, *Ethiopic*.—The Ethiopians have alſo tranſlated the *Bible* into their language.—There have been printed ſeparately, the Pſalms, Canticles, ſome chapters of Geneſis, Ruth, Joel, Jonah, Zephaniah, Malachi, and the New Teſtament; all which have been ſince reprinted in the *Polyglot* of London.—As to the Ethiopic New Teſtament, which was firſt printed at Rome in 1548, it is a very inaccurate work, and is reprinted in the Engliſh *Polyglot* with all its faults.

Bibles, *Armenian*.—There is a very ancient Armenian verſion of the whole *Bible*, done from the Greek of the Seventy, by ſome of their doctors about the time of St. Chryſoſtom. This was firſt printed entire in 1664, by one of their biſhops at Amſterdam in 4to; with the New Teſtament in 8vo.

Bibles, *Perſian*.—Some of the fathers ſeem to ſay, that all the Scripture was formerly tranſlated into the language of the Perſians; but we have nothing now remaining of the ancient verſion, which was, certainly, done from the Septuagint. The Perſian Pentateuch printed in the London

don *Polyglot* is, without doubt, the work of Rabbi Jacob, a Perſian Jew. It was publiſhed by the Jews at Conſtantinople, in the year 1551. In the ſame *Polyglot* we have likewiſe the four Evangeliſts in Perſian, with a Latin tranſlation; but this appears very modern, incorrect, and of little uſe. Walton ſays this verſion was written above four hundred years ago. Another verſion of the Goſpels was publiſhed at Cambridge by Wheloc in the laſt century: there are alſo two Perſian verſions of the Pſalms made in the laſt century from the vulgar Latin.

Bibles, *Gothic.*—It is generally ſaid, that Ulphilas, a Gothic biſhop, who lived in the fourth century, made a verſion of the whole *Bible*, excepting the book of Kings, for the uſe of his countrymen. That book he omitted, becauſe of the frequent mention of the wars therein; as fearing to inſpire too much of the military genius into that people. We have nothing remaining of this verſion, but the four Evangeliſts, printed in 4to. at Dort, in 1665, from a very ancient MS.

Bibles, *Muſcovite.*—An intire *Bible*, in the Sclavonic tongue, was printed at Oſtravia in Volhinia, in the year 1581, and this is what we commonly call the *Muſcovite* Bible. It was printed at the expence of Con. Baſil, duke of Oſtravia, for the common ſervice of all Chriſtians, who ſpake the Sclavonic language, whereof the Muſcovitiſh is a dialect.

Bibles, *Spaniſh.*—There are two tranſlations of the *Bible* into this language; one done by the Jews, and firſt printed at Ferrara in 1553; the other by Caſſiodore, printed at Baſil in 1569. A corrected edition of it was printed at Amſterdam in 1602.

Bibles, *Italian.*—There are four Italian verſions: the firſt towards the cloſe of the thirteenth century, by James de Voragine, archbiſhop of Genoa; the ſecond by Brucciolus, in 1530; the third by Malermi, printed at Venice in 1541; and the fourth by Diodati, a proteſtant, which is much eſteemed, and has been often printed.

Bibles, *French.*—There are nine French verſions.

There are alſo Dutch, Flemiſh, Poliſh, Hungarian, and Croatian verſions. Luther, with the aſſiſtance of Melancthon, and others of his diſciples, tranſlated the *Bible* into the German tongue in 1524, and the publication of it very much contributed to the progreſs of the Reformation.

Bibles, *Saxon.*—The whole ſcripture is ſaid by ſome to have been tranſlated into the Anglo-Saxon by Bede, about the year 701; though others contend he only tranſlated the Goſpels.

We have certain books or parts of the *Bible* by ſeveral other tranſlators; as, 1. The Pſalms, by Adelm biſhop of Shireborn, contemporary with Bede; though by others this verſion is attributed to king Alfred, who lived two hundred years after. Another verſion of the Pſalms in Anglo-Saxon was publiſhed by Spelman in 1640. 2. The Evangeliſts, ſtill extant, done from the ancient vulgate, before it was reviſed by St. Jerom, by an author unknown, and publiſhed by Matth. Parker in 1571. An old Saxon verſion of ſeveral books of the *Bible*, made by Elfric abbot of Malmeſbury, ſeveral fragments of which were publiſhed by Will. Lilly in 1638, the genuine copy by Edm. Thwaites in 1699, at Oxford.

Bibles, *Indian.*—A tranſlation of the *Bible* into the North American Indian language, by Elliot, was publiſhed in 4to. at Cambridge, in 1685.

Bibles, *Engliſh.*—The firſt Engliſh *Bible* we read of was that tranſlated by J. Wickliffe about the year 1360; but never printed, though there are MS. copies of it in ſeveral of the public libraries. J. de Treviſa, who died about the year 1398, is alſo ſaid to have tranſlated the whole *Bible*; but whether any copies of it are remaining, does not appear.

Bible, *Tindal's.*—The firſt printed *Bible* in our language was that tranſlated by Will. Tindal, aſſiſted by Miles Coverdale, printed abroad in 1526; but moſt of the copies were bought up and burnt by biſhop Tunſtal and Sir Thomas More. It only contained the New Teſtament, and was reviſed and republiſhed by the ſame perſon in 1530. The prologues and prefaces added to it, reflect on the biſhops and clergy; but this edition was alſo ſuppreſſed, and the copies burnt.

In 1532, Tindal and his aſſociates finiſhed the whole *Bible*, except the Apocrypha, and printed it abroad: but while he was afterwards preparing for a ſecond edition, he was taken up, and burnt for hereſy in Flanders.

Bible, *Matthews's.*—On Tindal's death, his work was carried on by Coverdale and John Rogers, ſuperintendant of an Engliſh church in Germany, and the firſt martyr in the reign of queen Mary, who tranſlated the Apocrypha, and reviſed Tindal's tranſlation, comparing it with the Hebrew, Greek, Latin, and German, and adding prefaces and notes from Luther's *Bible*. He dedicated the whole to Henry VIII. in 1537, under the borrowed name of Thomas Matthews; whence this has been uſually called *Matthews's Bible.* It was printed at Hamburgh, and licence obtained for publiſhing it in England by the favour of archbiſhop Cranmer, and the biſhops Latimer and Shaxton.

Bible, *Cranmer's.*—The firſt *Bible* printed by authority in England, and publicly ſet up in churches, was the ſame Tindal's verſion, reviſed, compared with the Hebrew, and in many places amended, by Miles Coverdale, afterwards biſhop of Exeter; and examined after him by archbiſhop Cranmer, who added a preface to it: whence this was called *Cranmer's Bible.* It was printed by Grafton, of the largeſt volume, and publiſhed in 1540; and, by a royal proclamation, every pariſh was obliged to ſet one of the copies in their church, under the penalty of forty ſhillings a month; yet two years after, the popiſh biſhops obtained its ſuppreſſion of the king. It was reſtored under Edward VI. ſuppreſſed again under queen Mary, and reſtored again in the firſt year of queen Elizabeth; and a new edition of it given in 1562.

Bible, *Geneva.*—Some Engliſh exiles at Geneva in queen Mary's reign, Coverdale, Goodman, Gilbie, Sampſon, Cole, Whittingham, and Knox, made a new tranſlation, printed there in 1560; the New Teſtament having been printed in 1557; hence called the *Geneva Bible*, containing the variations of readings, marginal annotations, &c. on account of which it was much valued by the puritan party in that and the following reigns.

Bible, *Biſhop's.*—Archbiſhop Parker reſolved on a new tranſlation for the public uſe of the church, and engaged the biſhops and other learned men to take each a ſhare or portion. Theſe being afterwards joined together, and printed, with ſhort annotations, in 1568, in a large folio, made what was afterwards called the *Great Engliſh Bible*, and commonly the *Biſhop's Bible.* The following year it was alſo publiſhed in 8vo. in a ſmall but fine black letter: and here the chapters were divided into verſes; but without any breaks for them, in which the method of the Geneva *Bible* was followed, which was the firſt Engliſh *Bible* where any diſtinction of verſes was made. It was afterwards printed in large folio, with corrections, and ſeveral *prolegomena*, in 1572; this is called *Matthew Parker's Bible.* The initial letters of each tranſlator's name were put at the end of his part, e. gr. at the end of the Pentateuch, W. E. for William Exon; that is, William biſhop of Exeter, whoſe allotment ended there: at the end of Samuel, R. M. for Richard Menevenſis, or biſhop of St. David's, to whom the ſecond allotment fell: and the like of the reſt. The archbiſhop overſaw, directed, examined, and finiſhed the whole. This tranſlation was uſed in the churches for forty years, though the Geneva *Bible* was more read in private houſes, being printed above thirty times in as many years. King James bore it an inveterate hatred on account of the notes, which, at the Hampton-court conference, he charged as partial, untrue, ſeditious, &c. The *Biſhop's Bible* too had its faults; the king frankly owned he had yet ſeen no good tranſlation of the *Bible* in Engliſh; but he thought that of Geneva the worſt of all.

Bible, *Rhemiſh.*—After the tranſlation of the *Bible* by the biſhops, two other private verſions had been made of the New Teſtament; the firſt by Laur. Thomſon, made from Beza's Latin edition, together with the notes of Beza, publiſhed in 1582, in 4to. and afterwards in 1589, varying very little from the Geneva *Bible*; the ſecond by the papiſts at Rheims in 1584, called the *Rhemiſh Bible*, or *Rhemiſh tranſlation.* Theſe finding it impoſſible to keep the people from having the ſcriptures in the vulgar tongue, reſolved to give a verſion of their own, as favourable to their cauſe as might be. It was printed on a large paper, with a fair letter and margin. One complaint againſt it was its retaining a multitude of Hebrew and Greek words untranſlated, for want, as the editors expreſs it, of proper and adequate terms in the Engliſh to render them by; as the words *azymes*, *tunike*, *rational*, *holocauſt*, *præpuce*, *paſche*, &c. However, many of the copies were ſeiſed by the queen's ſearchers, and confiſcated; and Th. Cartwright was ſolicited by ſecretary Walſingham to refute it; but, after a good progreſs made therein, archbiſhop Whitgiſt prohibited his further proceeding therein, as judging it improper the doctrine of the church of England ſhould be committed to the defence of a puritan, and appointed Dr. Fulke in his place, who refuted the Rheimiſts with great ſpirit and learning. Cartwright's refutation was alſo afterwards publiſhed in 1618, under archbiſhop Abbot. About thirty years after their New Teſtament, the Roman catholics publiſhed a tranſlation of the Old at Doway, 1609 and 1610, from the vulgate, with annotations; ſo that the Engliſh Roman catholics have now the whole *Bible* in their mother-tongue; though, it is to be obſerved, they are forbidden to read it without a licence from their ſuperiors.

BIBLE, *king James's*.—The laſt Engliſh *Bible* was that which proceeded from the Hampton-court conference in 1603, where many exceptions being made to the Biſhop's *Bible*, king James gave order for a new one; not, as the preface expreſſes it, for a tranſlation altogether new, nor yet to make of a bad one a good one, but to make a good one better, or of many good ones one beſt. Fifty-four learned perſons were appointed for this office by the king, as appears by his letter to the archbiſhop, dated in 1604; which being three years before the tranſlation was entered upon, it is probable ſeven of them were either dead, or had declined the taſk, ſince Fuller's liſt of the tranſlators makes but forty-ſeven; who being ranged under ſix diviſions, entered on their province in 1607. It was publiſhed in 1613, with a dedication to James, and a learned preface, and is commonly called *King James's Bible*. After this, all the other verſions dropped, and fell into diſuſe, except the Epiſtles and Goſpels in the Common-Prayer Book, which were ſtill continued, according to the biſhops tranſlation, till the alteration of the liturgy in 1661, and the Pſalms and Hymns, which are to this day continued as in the old verſion.

There was a Welch tranſlation of the *Bible* made from the original in the time of queen Elizabeth, in conſequence of a bill brought into the houſe of commons for this purpoſe in 1563. It was printed in folio in 1588. Another verſion, which is the ſtandard tranſlation for that language, was printed in 1620. It is called Parry's *Bible*. An impreſſion of this was printed in 1690, called Biſhop Lloyd's *Bible*. Theſe were in folio: the firſt 8vo. impreſſion of the Welch *Bible* was made in 1630.

There is alſo a verſion of the *Bible* in the Iriſh language.

BIBLIA, or BIBLIA *petraria*, in a military ſenſe, denotes a machine uſed by the ancients for throwing ſtones or darts.

BIBLIOGRAPHIA, a branch of ARCHÆOGRAPHIA, employed in the judging and peruſing of ancient manuſcripts, whether written in books, paper, or parchment.

The ſenſe of it is now extended, and it ſignifies a work, intended to give information concerning the firſt, or beſt editions of books; and the ways of ſelecting and diſtinguiſhing them properly. In ſhort, it is uſed for a *notitia* or deſcription of printed books, either in the order of the alphabet, of the times when printed, or of the ſubject-matters.

In which ſenſe, *bibliographia* amounts to much the ſame with what is otherwiſe called BIBLIOTHECA.

Literary journals afford alſo a kind of *bibliographia*.

BIBLIOMANCY, a kind of divination performed by means of the BIBLE.

This amounts to much the ſame with what is otherwiſe called *ſortes biblicæ*, or *ſortes ſanctorum*.

It conſiſted in taking paſſages of ſcripture at hazard, and drawing indications thence concerning things future; as in Auguſtin's *tolle & lege*. It was much uſed at the conſecration of biſhops.

F. J. Davidius, a Jeſuit, has publiſhed a *bibliomancy*, under the borrowed name of *Veridicus Chriſtianus*.

BIBLIOMANIA, an extravagant paſſion for books, to a degree of madneſs; or a deſire of accumulating them beyond all reaſon and neceſſity.

BIBLIOTHECA, from βιϐλος, *book*, and θηκη, *repoſitory*, from τιθημι, *I lay up*, properly ſignifies a LIBRARY, or repoſitory of books.

It is alſo uſed for a compilation of all that has been written on a certain ſubject; or a digeſt of all the authors who have treated of it.

In this ſenſe, we have hiſtorical *bibliothecæ*, as that of Diodorus Siculus; mythological *bibliothecæ*, as that of Apollodorus; theological and ſacred *bibliothecæ*, as thoſe of Ravanellus, &c.

It is alſo uſed for a catalogue of the books in a library: ſuch are the *bibliotheca Coiſliniana*, *bibliotheca Cordeſiana*, *bibliotheca Thuanæa*, *bibliotheca Bignoniana*, *bibliotheca du Boiſiana*, &c.

L'Abbe has publiſhed a *bibliotheca* of *bibliothecæ*, or a catalogue of the names of thoſe who have written *bibliothecæ*, which has ſince been continued, and improved under another title by Teſſier, from 800 writers to the number of no leſs than 2500. Schrammius has alſo publiſhed a *programma* on the writers of theological *bibliothecæ*.

BIBLIOTHECA is a name given to the books of the Old and New Teſtament, in reſpect of their excellency, and ſufficiency for the uſes of the Chriſtian life; and it is alſo a title given to divers journals, or periodical accounts in French of new books.

BIBLIOTHECA *patrum*, or *of the fathers*, is a collection of the writings of the leſſer fathers, printed in one or more volumes. The firſt of this kind was publiſhed at Paris by Marg. de la Bigne in 1576.

BIBLIOTHECARIAN, a library-keeper, otherwiſe called LIBRARIAN.

The word is alſo uſed for the author of a BIBLIOTHECA, or a catalogue of books.

In this ſenſe, P. L'Abbe has given a *bibliotheca*, or catalogue of *bibliothecarians*. Geſner, Lipenius, Struvius, Fabricius, &c. are celebrated *bibliothecarians*.

BIBLISTS, *bibliſtæ*, an appellation given by ſome Romiſh writers to thoſe who profeſs to adhere to ſcripture alone as the ſole rule of faith, excluſive of all tradition, and the ſuppoſed authority of the church.

In which ſenſe, all proteſtants are, or ought to be, BIBLISTS.

Bibliſts, among Chriſtians, anſwer nearly to CARAITES or TEXTUARIES among the Jews. The Chriſtian doctors were divided, towards the cloſe of the twelfth century, into two claſſes; viz. the *biblici*, and the ſcholaſtics: the former were called *doctors of the ſacred page*, becauſe they explained the doctrines of Chriſtianity in their manner by the ſacred writings; however, their reputation declined, and the ſcholaſtic theology prevailed in all the European colleges till the time of Luther.

BIBLUS, in *Botany*, an aquatic plant in Egypt, called alſo PAPYRUS; of the ſkin whereof the ancient Egyptians made their PAPER.

Hence alſo the Greeks gave the denomination βιϐλος, to books made hereof.

BICAUDA, from *bis*, *double*, and *cauda*, *tail*; in *Zoology*, the name of a fiſh of the *xiphias* or SWORD-*fiſh* kind.

It is five feet long, or more, and a foot and half broad at the breaſt, tapering gradually towards the tail. It is covered with a thick and rough ſkin, and is brown on the back and ſides; and has there ſeveral ſhort bony prickles: its belly is white: its fins are all of a browniſh grey, and the back one has ſeveral beautiful black ſpots. It is a very well-taſted fiſh.

BICAUDALIS, in *Anatomy*, an appellation given by ſome to a muſcle of the external ear, on account of its having two tails; but which is ſubject to great variety, having ſometimes only one, and ſometimes three tails: in which caſes, it is called *intricalis* and *tricaudalis*.

BICE, or BISE, among *Painters*, a blue colour, prepared from the LAPIS ARMENUS, formerly brought from Armenia, but now from the ſilver mines in Germany. Phil. Tranſ. Nº 179. p. 26.

The word comes from the barbarous Latin *biſus*, or *biſius*; and that, perhaps, from the French *bis*, *grey*, *griſius*; whence *biſius panis*. Vid. Du-Cange, Gloſſ. Lat. tom. i. p. 565. Skin. Etym. in voc.

Bice bears the beſt body of all bright blues, uſed in common work; but it is the paleſt in COLOUR. It works indifferently well; but inclines a little to be ſandy, and therefore requires good grinding on a very hard ſtone, and ſhould be waſhed before it is uſed. It lies beſt near the eye of any blue now in uſe, except ULTRAMARINE.

We have alſo a green *bice*, made of the blue, with the addition of orpiment.

BICEPS, from *bis*, and *caput*, *head*; in *Anatomy*, is a name common to ſeveral muſcles, which are ſeparated into two diſtinct portions called *heads*.—Such is the

BICEPS *cubiti*, or *humeri*, a muſcle of the arm, one of whoſe heads ariſes from the upper edge of the cavity of the head of the *ſcapula*, and is round and tendinous, and incloſed in the channel in the head of the *humerus*: the other ariſing from the *proceſſus coracoides*, is broad and tendinous: and both *unite* about the middle and fore-part of the arm, and make one belly, which is *inſerted* by a ſtrong and round tendon into the tuberoſity at the upper end of the *radius*.—See *Tab. Anat.* (*Myol.*) *fig.* 1. *n.* 24. *fig.* 2. *n.* 20. *fig.* 6. *n.* 15.

Some of the fibres of the tendon form a large and thin *aponeuroſis*, which covers all the muſcles of the *radius* and fingers externally.—Care ought to be taken in bloodletting, not to cut a-croſs, but according to the length of the fibres of this *aponeuroſis*.—This muſcle, with the BRACHIÆUS *internus*, bends the arm.

BICEPS *externus*, is called alſo GEMELLUS.

BICEPS *tibiæ*, or *femoris*, a muſcle made up of two portions, one long, the other ſhort, and ending in one common tendon. Both portions are fleſhy, and conſiderably thick, and are ſituated on the back and outſide of the thigh, between the buttock and the ham. The great portion is fixed above by a ſtrong tendon, in the poſterior and lower part of the tuberoſity of the *iſchium*, under the inſertion of the inferior *gemellus*, and cloſe behind that of the *ſeminervoſus*: from thence it runs down towards the lower extremity of the thigh, where it meets the other portion, and joins with it, forming a common tendon. The ſmall portion is fixed by fleſhy fibres to the outſide of the *linea aſpera*, below its middle, and to the *faſcia lata*, where it forms a *ſeptum* between the *triceps* and *vaſtus externus*: from thence the fibres run down a little way, and then meeting the great portion, a common tendon is formed between them. This ſtrong tendon runs down to the outer and back-part of the knee, and is inſerted in the lateral ligament of the joint, and in the head of the *fibula*, by two very ſhort tendinous branches. It ſometimes ſends off a tendinous expanſion, which is often unſkilfully cut off with the fat. As they run down they become contiguous, and afterwards cloſely united by one common broad tendon.

Both the fleſhy bodies of the *biceps* contribute to the formation of the *aponeuroſis*, each of the two portions, of which the common tendon is made up, furniſhing a ſeries of tendinous fibres, which covering the fore-ſide of the true tendon, unite near the internal condyle by a particular kind of inter-texture, and thus form the *aponeuroſis*. Winſlow.

Its uſe is to help to bend the *tibia*, and it is likewiſe employed in turning the leg, together with the foot and toes, outward, when we ſit down.—See *Tab. Anat.* *(Myol.) fig.* 6. *n.* 40.

BICHET, a corn meaſure, containing about a Paris *minot*, chiefly uſed in Burgundy and the Lyonois.

BICHET denotes alſo a certain quantity of land, as much as may be ſown by a *bichet* of corn.

BICINIUM, from *bis*, and *cano*, *I ſing*; in *Church Muſic*, the ſinging of two, either together or alternately.

In which ſenſe, the word ſtands oppoſed to MONODY.

BICKERN *of an* ANVIL, the pike or beak-iron.

BICLINIUM, from *bis*, and *κλινη*, *bed*; in *Antiquity*, two beds about a table; or, as ſome ſay, rather a BED whereon two perſons lay to eat.

BICORNES, from *bis*, and *cornu*, *horn*; in *Botany*, plants whoſe *antheræ* have the appearance of two horns. The term likewiſe expreſſes an order of plants in the *Fragmenta Methodi Naturalis* of Linnæus.

BICORNE *os*, or *two-horned bone*, in *Anatomy*, the ſame with the *os* HYOIDES.

BICORNIS, in *Anatomy*, an extenſor muſcle of the arm, otherwiſe denominated RADIÆUS *externus*, and EXTENSOR *carpi radialis*.

BICORNIS *pollicis manus*, is the proper extenſor muſcle of the thumb: ſometimes alſo, from the number of its horns, called *tricornis*.

It takes its riſe from the poſterior and middle part of the *radius* and *ulna*, and is inſerted in the firſt, ſecond, and third phalanx.

BICORPOREA *ſigna*, from *bis*, and *corpus*, *body*; thoſe ſigns of the zodiac which have two bodies, or conſiſt of two figures.

Such are *gemini*, or the twins; alſo *piſces*, and *ſagittarius*, conſiſting of a man and a horſe.

BICUIBA, in *Botany*, the name of an Indian nut, uſed for relieving colics; and from which an oil is extracted for the cure of cancers.

BIDAL, or BIDALE, in our *Ancient Cuſtoms*, denotes the invitation of friends to drink ale at ſome poor man's houſe, who, in conſideration hereof, expects ſome contribution for his relief.

This cuſtom ſtill obtains in the weſt of England, and is mentioned in ſome of our ancient ſtatutes. 26 Hen. VIII. c. 6.

BIDALDI, an ancient kind of foot-ſoldiers mentioned by the French hiſtorians, armed with two darts.

Hence the origin of the word, which ſeems to be a corruption for *bidardi* or *à binis dardis*. They are alſo called *bidarii*, *bidaus*, *bideaux*, *bidauts*, and *pitauts*.

BIDDING, is uſed for proclaiming or notifying; alſo for offering a price for goods put up by auction.

BIDDING *of the beads*, a charge or warning which the pariſh-prieſt gave to his pariſhioners at certain ſpecial times, to ſay ſo many *pater-noſters*, &c. on their beads.

BIDENS, in *Botany*; ſee *Water-hemp* AGRIMONY.

BIDENTAL, in *Antiquity*, a place ſtruck with a thunderbolt, and on that account conſecrated to the gods, and forbidden to be trod on. *Bidental* only differed from *puteal*, as in the latter the thunderbolt was ſuppoſed to be hidden, or buried with ceremony under the ground. The fall of lightning, or a thunderbolt, on any place, was judged by the Romans an indication that Jupiter demanded it for himſelf. Hence they ſurrounded it with a wall, rail, ſtakes, or even a rope; and expiated it, by the ſacrifice of a *bidens*, or ſheep of two years old. Feſtus repreſents the *bidental* as a temple, where ſheep of two years old were offered in ſacrifice. But by temple he here means no more than a place incloſed, and conſecrated to the gods.

BIDENTALES, prieſts among the ancient Romans, inſtituted for the performance of the ceremonies of a *bidental*.

The *bidentales* conſtituted a college, or decury, who had the ſervice and procuration, or interpretation of thunder and lightning.

The firſt and principal part of their office was, the ſacrificing a ſheep of two years old, which in their language was called *bidens*, as having only two teeth, one on each ſide; or rather from *bidennis*, anciently written for *biennis*, *two years old*.

BIDENTES, in *Middle Age Writers*, denotes two yearlings, or ſheep of the ſecond year.

The wool of theſe *bidentes*, or two year old ſheep, being the firſt ſheering, was ſometime claimed as a heriot to the king, on the death of an abbot.

Among the ancient Romans, the word was extended further to any ſorts of beaſts uſed for victims, eſpecially thoſe of that age: whence we meet with *ſues bidentes*.

BIDET, a nag, or little horſe, formerly allowed each trooper, and dragoon, for his baggage, and other occaſions.

Bidets are grown into diſuſe, on account of the expences thereof, and the diſorders frequently ariſing from thoſe who attended on them, &c.

BIDIÆI, an order of magiſtrates at Sparta, five in number, whoſe buſineſs was to ſuperintend the *ephebi*, and be preſent at their exerciſes, wreſtlings, &c.

BIDON, a liquid meaſure of about five quarts Engliſh meaſure; ſeldom uſed except among ſhip's crews.

BIER, a kind of wooden carriage, in which the bodies of the dead are borne to their grave. See BURIAL.

The word comes from the French *biere*, which ſignifies the ſame. It is called in Latin *feretrum*, *a ferendo*.

Among the Romans, the common *bier*, whereon the poorer ſort were carried, was called *ſandapila*; that uſed for the richer ſort, *lectica*, *lectica funebris*, ſometimes *lectus*. The former was only a ſort of wooden cheſt, *vilis arca*, which was burnt with the body; the latter was enriched and gilded for pomp. It was carried bare, or uncovered, when the perſon died a natural and eaſy death; when he was much disfigured or diſtorted, it was veiled or covered over.

BIER is more peculiarly uſed for that whereon the bodies of ſaints are placed in the church to reſt, and expoſed to the veneration of the devout.

BIFARIA *folia*, in *Botany*, are ſuch as point two ways.

BIFFA, in *Middle Age Writers*, a machine for caſting ſtones and darts, having a moveable counterpoiſe, which turned round its yard.

BIFID *leaf*, in *Botany*, a leaf cloven into two parts.

BIFOLIUM, in *Botany*; ſee TWYBLADE.

BIFRONS, a perſon double-fronted, or two-faced.

BIFRONS is more peculiarly an appellation of Janus, who was repreſented by the ancients with two faces, as being ſuppoſed to look both backwards and forwards: though other reaſons for it are recited by Plutarch. Sometimes he was painted with four faces, *quadrifons*, as reſpecting the four ſeaſons.

BIGA, a chariot for racing, drawn by two horſes a-breaſt.

The word ought rather to be written *bigæ*, in the plural; q. d. *bijugæ*, two horſes being joined by a *jugum*, or yoke.

Bigæ ſtand contradiſtinguiſhed from *trigæ*, *quadrigæ*, &c.

Bigæ are of very ancient ſtanding: all the heroes in Homer, Heſiod, Virgil, &c. fought in them.

The invention of *bigæ*, is attributed by Pliny to the Phrygians; by Iſidore, to Cyreſtenes of Sicyon, who firſt yoaked two horſes together.

Bigæ were the CHARIOTS firſt uſed in the CIRCENSIAN games; then *trigæ*, and afterwards *quadrigæ*.

The moon, night, and the morning, are by mythologiſts ſuppoſed to be carried in *bigæ*, the ſun in *quadrigæ*.

STATUES in *bigæ* were at firſt only allowed to the gods, then to conquerors in the Grecian games; under the Roman emperors, the like ſtatues, with *bigæ*, were decreed and granted to great and well-deſerving men, as a kind of half triumph, being erected in moſt public places of the city.

Figures of *bigæ* were alſo ſtruck on their coins, and are termed BIGATI.

The drivers of *bigæ* were called *bigarii*; a marble buſt of one Florus a *bigarius* is ſtill ſeen at Rome.

BIGA, or BIGATA, in *Writers of the Middle and Barbarous Age*, a cart with two wheels, drawn often with one horſe. It was more frequently called *birota*.

BIGAMY, a double marriage, or the poſſeſſion of two wives at the ſame time.

Among the ancient Romans, thoſe convicted of *bigamy* were branded with a note of ignominy; and, in France, they were anciently puniſhed with death. See POLYGAMY.

BIGAMY, in the *Canon Law*, is alſo where a perſon either marries two women ſucceſſively; or only marries one woman who had been married before. Each of which the canoniſts account impediments to be a clerk, or to hold a biſhopric without a diſpenſation: a point of diſcipline founded on that of St. Paul, *Let a biſhop be the huſband of one wife*, 1 Tim. chap. iii. ver. 2. Apoſt. Conſt. 17, 18.

Bigamy they make of two kinds: *real*, as where the party actually marries twice; and *interpretative*, where he marries a widow, or woman defiled before, which is eſteemed a kind of ſecond marriage.

The Romaniſts make a third kind of *bigamy*, *by interpretation*; as, when a perſon in holy orders, or that has taken on him ſome monaſtic order, marries.—This the biſhop can diſpenſe withal, at leaſt on ſome occaſions.

There is alſo a kind of *ſpiritual bigamy*; as, when a perſon holds two incompatible benefices, v. gr. two biſhoprics, two vicarages, two canonries *ſub eodem tecto*, &c.

BIGATI, in *Antiquity*, a kind of ancient Roman ſilver coins, on one ſide whereof was repreſented a *biga*, or chariot drawn by two horſes.

The *bigatus* was properly the Roman *denarius*, whoſe impreſſion, during the times of the commonwealth, was a chariot driven by Victory, and drawn either by two horſes, or four, according to which it was either denominated *bigatus*, or *quadrigatus*.

Bigati therefore were of different values, according to the ſpecies of *denarii*, &c.

Several of thoſe called conſular medals are alſo *bigati*.

In lieu of horſes, the chariot is repreſented on ſome *bigati*, as drawn by two deer, eſpecially in the medals of the family of Axſia; on thoſe of the family Crepereia, by two *hippopotami*, who draw, or rather bear Neptune on their tails.

BIGGEL, in *Natural Hiſtory*, a quadruped much about the colour and bigneſs of a rein-deer; its head is ſaid to be like that of a horſe; its main like that of an aſs, with black cloven feet, and two black horns on his head.

This animal is found in the Eaſt Indies, according to Mandelſloe, in Harris's Collection of Voyages.

BIGHT, in the *Sea-language*, denotes any part of a rope, as it is taken compaſſing, coiled up; or the double part of a rope, when it is folded in contradiſtinction to the end. It ſignifies alſo a ſmall bay between two points of land.

BIGNONIA, in *Botany*, Trumpet-*flower*.

BIGOT, a perſon fooliſhly obſtinate, or perverſely attached to an opinion.

The word comes from the German *bey*, and *Gott*, or the Engliſh *by-God*.

Camden relates, that the Normans were firſt called *Bigots*, on occaſion of their duke Rollo; who receiving Giſſa, daughter of king Charles, in marriage, and with her the inveſtiture of the dukedom, refuſed to kiſs the king's foot in token of ſubjection, unleſs he would hold it out for that purpoſe: and being urged to it by thoſe preſent, anſwered haſtily, *No by God*; whereupon the king, turning about, called him *Bigot*; which name paſſed from him to his people.

Bigot, in Italian *bigontia*, is uſed to denote a Venetian liquid meaſure, containing the fourth part of the *amphora*, or half the *boot*.

BIGOURNEAU, in *Natural Hiſtory*, a name given by Bellonius to that genus of *cochleæ*, called the ſemi-circular mouthed, or ſemi-lunar kind, including the NERITA.

BIJUGUM *folium*, in *Botany*, denotes a winged leaf, bearing two pair of *foliola*.

BIL, in *Ichthyography*, a name given in ſome parts of England to a particular ſpecies of cod-fiſh, called by Willughby *aſellus luſcus*. It is diſtinguiſhed from the cod by its ſmallneſs, by its being ſhorter and broader in its ſhape, by the paleneſs of its colour, and largeneſs of its ſcales; though it agrees with it, in having a beard under the chin.

BILANCIIS *deferendis*, a writ directed to a corporation, for the carrying of weights to ſuch a haven, there to weigh the wool, which perſons by our ancient laws were licenſed to tranſport.

BILANDER, in *Navigation*, a ſmall merchant-ſhip with two maſts; diſtinguiſhed from other veſſels of the ſame kind by the form of the main-ſail. Few veſſels are now rigged in the manner of *bilanders*; the name has been variouſly applied in different countries.

BILARIUS Porus, Bilary *pore*, or *hepatic duct*, a conſiderable appendage of the liver, formed from the concurrence of a multitude of ſmall ramifications ſpringing from the glands of the liver, which unite into ſeveral trunks equal in magnitude to the branches of the hepatic arteries; and accompany them branch for branch through the whole ſubſtance of the liver; being wrapped up in the ſame *capſula* with the *porta*. See *Tab. Anat.* (*Splanch.*) *fig.* 5. *litt. ff*.

Theſe branches are about the ſize of a wheat-ſtraw, the biggeſt large enough to admit the little finger; and are diſtinguiſhable from the *porta* by their contents, being always full of bile. Beſides the *capſula* common to theſe and the *porta*, each has a thick white coat proper to itſelf, like the muſculous coat of an artery.

On the concave ſide of the liver the ſeveral ramifications meet, and form one trunk, or channel, properly called the *bilary pore*, about the bigneſs of a gooſe quill, which deſcending about two inches, meets with the cyſtic duct, and together with it forms what we call the *ductus communis*; which deſcending in a right line, about four inches, diſcharges itſelf into the *duodenum*, by an oblique inſertion, oftentimes at the ſame aperture with the pancreatic duct.

The *porus bilarius* communicates with the gall-bladder, by a duct firſt deſcribed by Dr. Gliſſon, and afterwards by Blaſius and Perrault, who gave it the name of the *cyſt-hepatic duct*. Verheyen, in oxen, found two, three, or four of theſe *cyſt-hepatic ducts*; and the like has been obſerved in a dog, and a man.

BILATERAL Cognation, denotes kinſhip, or kindred, on both ſides; that of the father as well as mother.

Such is the relation of brothers, ſiſters. *Bilateral* ſtands contradiſtinguiſhed to *unilateral*.

BILBERRY, in *Botany*, Whortle-berry.

BILBOWS, in *Sea-phraſe*, a puniſhment anſwering to the STOCKS at land.

BILCOCK, in *Zoology*, a name given by ſome to the water-rail, a bird of the moor-hen kind, but ſmaller than the common moor-hen. See Rollus.

BILDGE, or Bilge *of a ſhip*, denotes the bottom of her floor; or the breadth of that part which ſhe reſts on, when ſhe is a-ground.

Bildge-*water*, is that which, by reaſon of the flatneſs of the ſhip's bottom, lies on her floor, and cannot go to the well of the pump.

The Dutch, whoſe ſhips are often of this form, uſe a ſort of pumps called *bildge-pumps*; or, as we call them, *burr-pumps*, to carry off the *bildge-water*.

When a ſhip ſtrikes on a rock, they alſo ſay, ſhe is *bildged*, or *buldged*.

BILE, Bilis, a yellow bitter juice, ſeparated from the blood in the liver, collected in the *porus bilarius*, and gall-bladder, and thence diſcharged by the common duct into the *duodenum*.

The word *bile* comes from the Latin *bilis*, which ſome derive further, from the Greek *βια*, *violence*; becauſe bilious people are inclined to anger: others derive it from the Latin *bullire*, *to boil*.

Bile is of two kinds; *hepatic*, and *cyſtic*.—The firſt, moſt properly called *bile*, is ſeparated immediately from the glands of the liver into the PORUS *bilarius*.—The ſecond, more properly called *gall*, is ſeparated likewiſe from the glands of the liver into the gall-bladder, by roots or ducts proper to itſelf. See Gall.

The *cyſtic bile* is thicker, of a deeper yellow, and bitter; though it has varied in colour and taſte in different ſubjects, and different circumſtances; is not evacuated continually, but only when its receptacle is replete; in which caſe, the contraction of the irritated fibres propels it into the *duodenum*.—The *hepatic bile* is greener, thinner, more mild and pellucid, reſembling lymph, ſubalcaline, and rather oily, and is continually ouſing out; being expelled by the ſole action of the neighbouring parts. The *cyſtic bile* reſiſts acids, and, mixed with other fluids, gives them the like property: it abſterges like ſoap, and renders oils capable of mixing with water; it reſolves and attenuates reſins, gums, and other tenacious bodies, rendering them homogeneal to itſelf. It is neither alcalious nor acid, but ſeems a concretion of oil, ſalt, and ſpirits diluted with water. By a chemical analyſis, Dr. Drake obſerves it affords ſome ſulphur, or oil, ſome volatile ſalt, a good deal of ſixt ſalt (in which particular it differs from all other animal liquors), and a moderate quantity of *caput mortuum*, or earth: the baſis is phlegm.

Dr. Maclurg obſerves, that the mixture of the mineral acids with the *bile* produces a fine green colour, which he attributes to the union of the phlogiſton of the *bile* with the acid: and that the action of the concentrated mineral acids upon the *bile*, whereby they change and decompoſe it, depends on their violent attraction for the principle of inflammability: and that the menſtruum which extracts the colour of the *bile*, extracts at the ſame time its bitterneſs; ſo that it no longer exhibits the phænomena depending on its phlogiſton. The vegetable acids do not decompoſe the *bile*, which, he ſuppoſes, is owing to their weaker attraction of the phlogiſton. As the brown colour of the *cyſtic bile* is reſtored by the addition of an alcali, he infers, that this colour depends on an alcaline nature acquired by the *bile* during its ſtagnation in the gall-bladder. He concludes alſo, that there is fixed air in the *bile*, becauſe the cauſtic alcali, diſſolving its coagulum, becomes mild, and capable of efferveſcence. From other experiments he infers, that the antiſeptic principle of the *bile* cannot reſide in the part to which it owes its coagulability, and which is exactly analogous to the lymph of the blood; but that it is probably connected with its bitterneſs, and that both are qualities of the colouring matter. Of all the animal fluids, Dr. Maclurg thinks, that the milk and the *bile* are moſt analogous to one another, and to the BLOOD. See Maclurg's Exp. on the Human Bile.

The principal uſe and effect of the *bile* is, by mixing with the chyle and *fæces*, to attenuate, reſolve, abſterge, and ſtimulate the *fibræ motrices* of the inteſtines; as alſo to mix together things very different, to bruiſe and blunt thoſe that are ſharp and ſaline, to divide thoſe that are coagulated, to open the paſſages for the chyle, to excite appetite, to act the part of a ferment, and to aſſimilate crude things to things concocted. Theſe effects the *cyſtic bile* has in a greater, the *hepatic* in a leſſer degree.

Dr. Quincy thinks the principal uſe of both ſorts of *bile* is to ſheathe and blunt the ACIDS of the chyle, entangling them with its ſulphur, ſo as to prevent their being ſufficiently diluted by the pancreatic juice to enter the lacteals: which ſeems confirmed by this; that, notwithſtanding the great quantity of acid ſalts in the aliment in the ſtomach, there are never any found in the chyle after it has paſſed the *duodenum*, and being impregnated with the *bile* continually ouſing out of the PORUS *bilarius*. See Acid, and Blood.

Borelli aſſerts, that part of the *bile* diſcharged into the inteſtines re-enters the meſeraic veins, and, mixing with the blood of the *vena porta*, is again percolated through the liver; and Boerhaave ſeems of the ſame opinion: on which footing the *bile* has its circulation, as well as the BLOOD.

Some will have the *cyſtic bile* brought to its receptacle three different ways, and that it is even compoſed of three different kinds of *bile*, whence its different properties. Though Boerhaave takes thoſe properties rather to reſult from its ſtagnating in the gall-bladder; and, with Malpighi, thinks the bitter part may probably become ſo in the glands between the coats of the gall-bladder, which are furniſhed from the cyſtic arteries; whence it proceeds bitter, and mixes with the reſt in the bladder.

The influence of *bile* upon the animal œconomy is allowed to be very great. By its fermentative quality, it promotes digeſtion; in which reſpect, it differs widely from vegetable bitters, which are retarders of fermentation. However, in one thing it agrees with them, viz. as a corrector of acidities.

Bile ſpeedily corrupts, but not to ſuch an high or offenſive degree as the blood or fibrous parts of the body. To this corruption of the *bile*, as one cauſe, Dr. Pringle attributes the paroxyſms in bilious fevers: nay, all bilious diſorders, as the *cholera morbus*, dyſentery, &c. are thought to be chiefly owing to a redundance or corruption of the *bile*. Hence, the reaſon why theſe diſorders are moſt frequent in hot countries, and in armies when much expoſed to the ſun, is, that the *bile*, if not more abundant, is in ſuch circumſtances more corrupted than uſual.

The *bile* is a juice of great importance, with regard to the good or ill habitude of the animal. Dr. Woodward has traced its effects throughout the body very minutely, and makes no ſcruple to aſcribe moſt of the diſeaſes thereof to ſome diſorder of the *bile*. This he takes to be the chief ſpring in the animal machine, and from this accounts for moſt of the phænomena of a body, whether healthy or diſeaſed: and yet the ancients generally took it to be no more than an excrement, for which they could not find any uſe.

Many of the moderns, from the ſmall quantity of *bile* ſecerned, have been led into a miſtake, that this ſecretion is not the ſole end of ſo conſiderable a *viſcus* as the liver.

Dr. Keill obſerves, that in a dog, whoſe common duct was near as big as that of a man, he gathered at the rate of about two drachms an hour; though, in a human body, there is reaſon to think the quantity ſecreted to be greater.

The *bile* is a part found in all animals; even pigeons, &c. which have no gall-bladder, yet have *bile*: their liver being found very bitter. Mr. Tauvry obſerves, that the *bile* becomes one of the principal cauſes of THIRST, by mixing with the ſalival juice.

Sometimes the *bile* from yellow becomes greeniſh, like verdegris, and frequently pale, like the yolks of eggs, and that without any other apparent cauſe than a little motion, a convulſion, or a violent paſſion of the mind. This occaſions many and terrible diſeaſes; as nauſeas, an abhorrence of food, anxiety, ſighing, cardialgias, wind, diarrhœas, dyſenteries, acute diſeaſes, fevers, and convulſions.

Sometimes it becomes black, and takes the name of *choler*: in this caſe, it ſometimes taſtes like a very ſharp vinegar; ſometimes like putrefied blood; gnawing, burning, diſſolving, conſuming, occaſioning inflammations, gangrenes, mortifications, violent pains, and terrible fermentations.

Of ATRA *bilis*, or *black bile*, Boerhaave diſtinguiſhes three kinds: firſt, the mildeſt, ariſing from the matter of the blood, put in too great a motion, which hence takes the name of *aduſt*: the ſecond is an aggravation of the firſt, ariſing from the ſame cauſes only heightened: the third is a corrupt, parched *bile*, which if it aroſe from a greeniſh or paliſh ſort, is ſtill worſe.

Too great an evacuation of the *bile*, either upwards or downwards, robs the chylefaction of its main inſtrument: hence it prevents digeſtion, ſecretion, excretion of the *fæces*, and produces an acid temperature, coldneſs, weakneſs, paleneſs, ſwoonings, &c. When the ſtomach is full, the *cyſtic bile* is more copiouſly diſcharged into the *duodenum*; when it is empty, the *hepatic bile* is more freely ſecerned in the gall-bladder. If the *bile*, when prepared, be prevented its diſcharge into the inteſtines, it produces a JAUNDICE, and an overflowing of the GALL.

Bile, *ſecretion of the.*—For the manner in which the *bile* is ſeparated in the liver, there are various opinions. Some maintain, that the pores of the ſecretory glandules of the liver have a certain configuration and magnitude, to which the particles of the *bile* floating in the blood being juſt anſwerable, both in bulk and figure, are admitted in, and all the reſt excluded. Others, with Sylvius and Liſter, not allowing any difference in the configuration, as knowing that the pores of all the veſſels are circular, and that particles of all kinds will be admitted, if ſmall enough, have recourſe to a ferment, which they ſuppoſe to reſide in the liver, by means whereof the particles of the blood, in their paſſage through the ſecretory ducts, aſſume the form of *bile*. But, as this is little elſe than begging the queſtion, others have recourſe to another hypotheſis; maintaining, that the fluids contained in the blood of the *vena porta*, while that enters the ſubſtance of the liver in its way to the extremities of the *vena cava*, indifferently apply to the apertures of the ſecretory tubes contiguous to the extreme branches of the *porta*, which are wide enough, and to the roots of the *cava*, which are not wide enough, to receive them; by which means, being ſeparated from the ſociety and the inteſtine motion of the other and eſſential part of the blood, and being no longer agitated by the vital action of the blood-veſſels, and becoming expoſed to the actions of the biliary veſſels, they conſtitute a new humour, diſtinct from the blood, called *bile*, &c. Dr. Keill accounts for the ſecretion of the *bile* from the ſtrong attraction between the particles whereof it is compoſed. He obſerves that the heart and liver being ſo near each other, were the cœliac artery to have carried all the blood to the liver, conſidering the velocity of the blood, ſo viſcid a ſecretion as the *bile* could never have been effected. Nature, therefore, forms a vein for the purpoſe; viz. the *porta*; and by it ſends the blood from the branches of the meſenteric and cœliac arteries to the liver; by which the blood is brought a great way about, paſſing through the inteſtines, ſtomach, ſpleen, and *pancreas*, before it arrives at the liver: thus its velocity is exceedingly diminiſhed, and the particles that are to form the *bile* have a ſufficient time to attract one another, and unite, before they come to their ſecerning veſſels. But, as if this diminution of velocity were not ſufficient for the purpoſe, nature has gone farther, having made the cavities of all the arteries increaſe as they divide: thus the ſum of the branches, ariſing from the *aorta*, is to the *aorta* itſelf, as 102740 to 100000. And yet, as if that proportion were too little for the preſent purpoſe, nature has here taken a further ſtep, and increaſed the branches ſpringing from the meſenteric artery in a greater ratio. Thus, in a body which he examined, he found the ſum of the branches more than double that of the trunk; and therefore the velocity of the blood, in the former, muſt be leſs than half that of the latter. He further ſhews, from a juſt calculation, that the time the blood now takes, in its paſſage from the *aorta* to the liver, is at leaſt twenty-ſix minutes: whereas, had an artery gone directly from the *aorta* to the liver, it would have paſſed in little more than half a ſecond; viz. 2437 times in the ſpace it now takes up in its paſſage. Whence it appears, that the blood was not in a ſtate fit to yield *bile*, had it gone directly from the *aorta* to the liver; and that a longer time, and more languid motion, was neceſſary, to have the bilious particles in a readineſs to be ſeparated. He adds, that did the humours exiſt in the glands the ſame as they are found after ſecretion, nature would not, on this occaſion, have been at ſo much expence to retard the blood's velocity: beſides, that the *bile* has another advantage from the uſe of the *porta*: for, by running through ſo many parts before it reaches the liver, it leaves behind it moſt of its *lympha*; by which means the particles being brought nearer each other, are, by their mutual attraction, ſooner united. But it has been objected, that this account is too ſyſtematical. See Gall, Secretion, &c.

Biliary *concretions*, found in the paſſages of the *bile*, or in the gall-bladder, commonly called gall-ſtones, are not of a cretaceous nature, but are merely *coagula* of the bile formed by an acid; which, being allowed to ſtagnate, acquire a ſtony hardneſs.

BILGE; ſee BILDGE.

BILIMBI, in *Natural Hiſtory*, the name of an Eaſt India tree, very famous throughout that part of the world for its uſes in medicine. European botaniſts have called it MALUS *Indica fructu pentagono*, or the India apple-tree, with the five-cornered fruit.

It ſeldom grows to above twelve feet high, and is not commonly wild, even in the Eaſt Indies, but is carefully cultivated in gardens, where it flowers all the year round. The juice of the root is drank as a cure for fevers. The leaves boiled, and made into a cataplaſm with rice, are famed in all ſorts of tumours, and the juice of the fruit is uſed in almoſt all external heats, dipping linen rags in it, and applying them to the parts. It is drank, mixed with arrack, to cure diarrhœas; and the dried leaves, mixed with betel leaves, and given in arrack, are ſaid to promote delivery. The fruit is pleaſant to the taſte, when fully ripe, and is commonly eaten; when ſmaller, and unripe, it makes a very pleaſant pickle.

BILINGUIS, in *Law*; ſee MEDIETAS *Linguæ*.

BILINGUIS properly denotes a perſon, who has two TONGUES in his mouth; an inſtance of which is given by Dolæus. It is alſo uſed for a perſon who ſpeaks two languages.

BILIOUS *complexion*; ſee CHOLERIC, COMPLEXION, TEMPERAMENT.

BILIOUS *colic*; ſee COLIC.

BILIOUS FEVER, a term uſed by medical writers to expreſs ſuch fevers as ariſe from an immediate effuſion of the bile. Theſe often ariſe from violent fits of anger in the patient. Of this nature are the *cholerica febris*, and *cauſus*.

Dr. Pringle, in his Obſervations on the Diſeaſes of the Army, remarks, that the *bilious* or putrid fever is epidemic in camps, eſpecially in low and marſhy countries, where the air being full of moiſt and putrid effluvia, tends to relax the fibres and promote putrefaction. As to the ſymptoms of the *bilious* fever, it always begins with chillneſs and laſſitude, pains of the head and bones, and a diſorder at the ſtomach. At night the fever runs high; the heat and thirſt are great; the tongue is parched; the head aches violently; the perſon gets no reſt, and often becomes delirious; but generally in the morning an imperfect ſweat brings on a remiſſion of all the ſymptoms. In the evening the paroxyſm returns, but without any cold fit, and is commonly worſe than the former: on the ſecond morning it remits as before. Theſe periods go on, daily, till the fever changes inſenſibly, either into a confirmed, or into an intermitting ſtate. Sometimes looſe ſtools carry off the fit, and ſupply the place of ſweats: however, though it reſembles an ague in many particulars, yet it is rare to meet with a real ague in the camp, unleſs the perſon has been ill of it before he took the field. The remiſſions uſually appear from the beginning, eſpecially if the patient has been plentifully blooded: but ſometimes there are no remiſſions for the laſt two or three days. Hæmorrhages of the noſe happen frequently in the height of the paroxyſm, and always bring on the remiſſion ſooner, and make it fuller. Vomiting or purging have the like effects. The fits are ſeldom preceded by ſhiverings, or any ſenſe of cold after the firſt attack; the pulſe is always full and quick during the paroxyſms, and in the remiſſions it ſtill indicates ſome degree of fever. The blood is florid, the *craſſamentum* is firm, in large quantity, and ſinks in the *ſerum*. Whilſt the weather continues warm, the *bilious* ſymptoms are moſt frequent, but as winter approaches, the INFLAMMATORY ones prevail.

The doctor enumerates other ſymptoms, as crudeneſs of the urine, *bilious* ſtools, coſtiveneſs, &c. and further obſerves, that the infantry are more liable to it than the cavalry.

As to the cure of the *camp-fever*, before it becomes continued, it depends upon the proper uſe of evacuations, the neutral ſalts, and the bark. Bleeding he judges indiſpenſible; which he would have repeated once or oftener, according to the urgency of the ſymptoms. After bleeding it will be neceſſary to give an emetic, the beſt time for doing which is in the remiſſion of the fever, and rather ſooner after a paroxyſm than before one. He adds, however, that vomits do harm when the ſtomach is anywiſe inflamed; in which caſe they ought never to be given. Ipecacuanha is the ſafeſt and eaſieſt, but antimonials make the moſt efficacious vomit. If the body remains coſtive, it is neceſſary to open it with ſome lenient phyſic; and eſpecially if the bowels are affected with pains, or a *teneſmus*. He likewiſe recommends ſalt of wormwood, lemon juice, *ſpiritus Mindereri*, and the bark; which laſt ought not to be given till the urine breaks, and the intermiſſions take place. Bleeding and purging are alſo neceſſary before the bark ought to be given: it anſwers beſt in ſubſtance adminiſtered in Rheniſh wine, after ſtanding a night in infuſion.

If, after remiſſions or intermiſſions, the diſeaſe changes into a continued fever, bleeding becomes neceſſary, unleſs other ſymptoms forbid it; but whether there be room for bleeding or no, bliſters are not only uſeful, but the beſt remedy. To theſe may be joined the neutral ſalts and diaphoretic powders. But, though a ſweat be the proper criſis, it ought never to be promoted by *theriaca*, or the like hot medicines; unleſs the pulſe ſhould ſink, and the *petechiæ* or other bad ſymptoms appear: in which caſe the warmer alexipharmics are neceſſary, as the diſeaſe has changed into a MALIGNANT FEVER. See *Malignant catarrhal* FEVER.

BILL, in *Huſbandry*, denotes an edge-tool, of the ax kind, with a hooked point, fitted to a handle, and uſed to lop boughs of trees, &c.—When ſhort, it is called an *hand-bill*; when long, an *hedge-bill*.

BILL, in *Commerce*, denotes a ſecurity for money under the hand and ſometimes ſeal of the debtor, without any condition, or forfeiture, in caſe of non-performance.—In which it is diſtinguiſhed from a bond or obligation.

It has been uſually defined a writing, wherein one man is bound to another to pay a ſum of money, on a day that is future, or preſently on demand, according to the agreement of the parties at the time when it is drawn, and the dealings between them.

BILL, in *Law*, denotes a declaration in writing, expreſſing a wrong, or grievance, which the complainant hath ſuffered by the party complained of; or elſe ſome offence committed by him againſt ſome law or ſtatute of the realm. This *bill* is commonly addreſſed to the lord chancellor, eſpecially for unconſcionable wrongs done ſometimes to others having juriſdiction, according as the law they are grounded on directs.—It contains the fact complained of, the damages ſuſtained, and the petition of proceſs againſt the defendant for redreſs.

BILL, in PARLIAMENT, denotes a paper containing propoſitions offered to the houſes, to be paſſed by them, and then to be preſented to the king to paſs into an act or law.

BILL *of attainder*; ſee ATTAINDER.

BILL *of appeal*; ſee APPEAL.

BILL *of* EXCHANGE, a ſhort note, or writing, ordering the payment of a ſum of money in one place, to ſome perſon aſſigned by the drawer, or remitter, in conſideration of the like value paid to him in another place. See REMITTANCE.

The whole eſtate and effects of merchants often conſiſt in *bills of exchange*.

A *bill of exchange* is an inſtrument ſo noble and excellent, that though it want thoſe formalities required by the common law; as ſeal, delivery, and witneſſes; and ſo cannot be deemed a ſpeciality; yet is it ſuperior to any bond or ſpeciality by the reſpect that is paid it, and the punctuality and preciſeneſs of the payment.

There is ſome diſpute about the nature and ſanction of a *bill of exchange*: ſome take it to be a contract of permutation, or exchange; but the more general opinion is, that it is a mere contract of buying and ſelling; that the money given the perſon who draws the bill is the price of ſale; and that paid at the appointed place, the thing bought and ſold.

Bills of exchange were unknown in the ancient Roman commerce, as well as juriſprudence. According to the common opinion, they are the invention of the Jews: who, being baniſhed France, for ſome enormous crimes charged on them, retired into Lombardy, about the twelfth century, and found means to withdraw their effects, which they had lodged in the hands of friends, by ſecret letters and *bills* conceived in ſhort preciſe terms, like the modern *bills of exchange*; and this, by the aſſiſtance of merchants and travellers.—The faction of the Gibellins, being expelled Italy by the Guelphs, retired to Amſterdam, and uſed the ſame means, for the recovery of their effects in Italy, as the Jews had done; hence the Dutch merchants took the hint of negociating *bills of exchange*; and ſoon ſpread the practice throughout all Europe.—The ſame Gibellins are ſaid to be the inventors of the *rechange*, on account of damages and intereſts, when *bills of exchange*, which they call *polizza di cambio*, are not paid, but returned on proteſt. See RE-EXCHANGE.

That which conſtitutes the form and eſſence of a *bill of exchange*, is, the ceſſion, or transferring of a ſum of money made by the drawer, to him on whoſe account it is drawn, to be received of his correſpondent in another place; which ceſſion, or transfer, is made, in the mercantile terms, for *value received*, i. e. for a like ſum given by the perſon for whoſe ſake the *bill* is drawn, to the drawer, in money, merchandize, or other effects.

There are therefore three things neceſſary to conſtitute a *bill of exchange*: 1ſt, That it be drawn in one city on another. 2dly, That there be three perſons concerned; the drawer, the preſenter, or the perſon for whom it is drawn, and the ACCEPTOR, or he on whom it is drawn. 3dly, That it make mention, that the value which the drawer has received, is either in *bills of exchange*, in money, merchandize, or other effects, which are to be expreſſed; otherwiſe it is no *bill of exchange*.

When a *bill of exchange* is expreſſed to be *value in myſelf*, it is not ſuppoſed the drawer has received the ſum; but the perſon for whom it is drawn, ſtands debtor to him for it.—When a *bill of exchange* bears, *for which ſum I promiſe to furniſh bills of exchange* to ſuch a place, the perſon for whom the *bill* is drawn may compel him to give the *bills*, or to return the money.

Bills of exchange may be divided into *inland* and *outland*. *Outland* or *foreign bills* are thoſe made for money taken up in ſome other country, and to be paid in England; or *vice verſa*.—*Inland bills* are thoſe made for money taken up in one part of the kingdom, and to be repaid in another.—By the ſtat. 9 and 10 Will. III. theſe latter are made equally binding with the former: and the method of proteſting ſuch *bills* is farther regulated by 3 and 4 Anne. See NOTE.

BILLS, *Lumbard*, are inſtruments of an uncommon kind and figure, uſed in Italy and Flanders, and of late alſo in France; conſiſting of a piece of parchment, cut to an acute angle about an inch broad at top, and terminating in a point at bottom; chiefly given, where private perſons are concerned in the fitting out a ſhip on any long voyage.

The manner is this: The party, who is deſirous to be concerned in the cargo or venture, carries his money to the merchant, who fits out the ſhip, where it is entered down in a regiſter; at the ſame time the merchant writes down on a piece of parchment, upwards of an inch broad, and ſeven or eight inches long, the name of the lender, and the ſum lent, which being cut diagonalwiſe, or from corner to corner, each party retains his half. On the return of the veſſel, the lender brings his moiety to the merchant, which being compared with the other, he receives his dividend accordingly. Much the ſame is practiſed in Holland by thoſe who lend money on pledges: the name of the borrower, and the ſum, are written on a like ſlip of parchment, which is cut in two, and half given to the borrower, and the other half ſtitched to the pledge; that, upon comparing them together again, the borrower may receive his goods on paying the money ſtipulated.

BILL, *to note a*. See NOTE.

BILL, *to proteſt a*. See PROTEST.

BILLS, *bank*, are notes or obligations ſigned on behalf of the company of the BANK, by one of their caſhiers, for value received. See NOTE.

BILL *of parcels*, an account of the particular ſorts and prices of goods bought, given by the ſeller to the buyer.

BILL *of lading*, an inſtrument ſigned by the maſter of a ſhip, acknowleging the receipt of a merchant's goods, and obliging himſelf to deliver them, at the place to which they are conſigned, in good condition.

Of ſuch *bills* there are uſually three: the *firſt*, the merchant keeps; the *ſecond* is ſent to the factor to whom the goods are conſigned; and the *third* is kept by the maſter of the ſhip.

BILL *of ſale* is when a perſon, wanting a ſum of money, delivers goods as a ſecurity to the lender, to whom he gives this *bill*, impowering him to ſell the ſaid goods, in caſe the ſum borrowed is not repaid, with intereſt, at the time appointed.

BILL *of ſtore*, a kind of licence granted at the cuſtom-houſe to merchants, to carry ſuch ſtores and proviſions as are neceſſary for their voyages, cuſtom-free.

BILL *of ſufferance*, a licence granted at the cuſtom-houſe to a merchant, to ſuffer him to trade from one Engliſh port to another, without paying cuſtom.

BILL *of entry*, an account of goods entered at the cuſtom-houſe, both inward and outward; wherein is expreſſed, the merchant importing or exporting, the quantity of goods, and the ſorts, and from whence imported, or to what place exported.

BILLS *of mortality* are weekly liſts compiled by the pariſh-clerks in and about London, containing the numbers of ſuch as die of each diſeaſe, as well as of thoſe that are born, every week. See MORTALITY.

BILL, in *Phyſiology*, is a cartilaginous ſubſtance covered with a ſkin or *cutis*, which forms the beak, or *roſtrum*, of a BIRD.

The *bill* does the office of teeth in ſome birds; alſo of weapons of offence. In the parrot kind it is hooked, and ſerves to climb, and catch hold of boughs. The upper *bill* of this bird is filled with rows of croſs bars; and the under *bill*, which is much ſhorter, ſhuts within the upper, and draws againſt the roof of the mouth; by which means a kind of maſtication is effected, before the meat paſſes into the craw. The PHOENICOPTER'S *bill* is a true *hyperbola*, pointed at the end like a ſword; and what is remarkable, the upper *bill* of this bird moves in eating, the lower being fixed, which is the contrary of what is found in all other kinds. The wood-pecker's *bill* is ſtrong, and ſharp enough to dig holes, and build in the heart of the hardeſt timber. See PHOENICOPTERUS and PICUS. Phil. Tranſ. Nº 211, p. 155. Nº 350, p. 509.

In the iſland of Fero, a fixed reward is given for the *bills* of ravenous birds: all watermen are obliged to bring a certain number yearly to the country courts, at the feaſt of St. Olaus; when they are thrown into a heap, and burnt in triumph. Plott gives divers inſtances of monſtrous irregularities in the *bills* of birds; particularly of a raven, whoſe mandibles croſſed each other, the lower chap turning upwards, and the upper downwards. Plott's Nat. Hiſt. Stafford. ch. vii. § 4.

BILL, *crow's*, among *Chemiſts*, the beginning of the fanciful proceſs of the philoſopher's ſtone, diſcovered by the blackneſs of the matter, called alſo the *crow's head*.

BILLA VERA, *the bill is true*. The grand jury indorſing a *bill* whereby any crime puniſhable in that court is preſented to them, with the words *billa vera*, ſignify thereby, that the preſenter has furniſhed his preſentment with probable evidence, and worthy of further conſideration; whereupon the party preſented is ſaid to ſtand *indicted* of the crime, and bound to make anſwer thereto, either by confeſſing or traverſing the indictment.

BILLARD, in *Ichthyology*, an Engliſh name for the young of the coal-fiſh, or rowling pollack, up to a certain ſize, as the cod to a certain ſize is called a *codling*. Willughby.

BILLES, in *Traffic*, a name given firſt by the French, and afterwards by other nations, to the maſſes of raw ſteel, or ſuch as has been tempered for ſale, and is ready to be wrought into tools, &c. This in working loſes its temper, but it recovers it again by plunging it into cold water.

BILLET, in *Heraldry*, a bearing, in form of a long ſquare. See *Tab. Herald. fig.* 9.

Billets are ſaid to be couched, or inverted, when their longeſt ſide is parallel to the top of the ſhield, and the ſhorteſt perpendicular.

They are ſuppoſed to repreſent pieces of cloth of gold or ſilver, longer than broad, placed at a diſtance by way of ornament, on cloaths, and afterwards tranſlated to their coat-armour; though Guillim takes the *billet* to repreſent a letter ſealed up.

A coat is ſaid to be *billetted*, when it is charged with *billets*; thus, he bears *argent-billette* a croſs engrailed gules by the name of *Heath*. Bloom ſays, the number of the *billets* muſt be expreſſed when they are not above ten.

BILLET, *Billette*, in the *French Cuſtoms*, a little ſign in form of a caſk, hung up at places where toll is to be paid, to advertiſe paſſengers and carriages, that before they advance farther, the dues are to be paid to the king, or the lord who is charged with the care of repairing the highways.

BILLETS for fuel, are to be three feet long, and the band twenty-four inches round.

BILLETING *of ſoldiers*, is the lodging or quartering them in the houſes of the inhabitants of a place.

BILLETINS. See BROTHERS *of Charity*.

BILLIARDS, an ingenious kind of game played with two ſmall ivory balls, on an oblong table, covered with green cloth, and placed exactly level, which balls are driven by ſticks, made on purpoſe, alternately againſt each other, with a view to puſh the paſſive ball into hazards, or holes, on the edges and corners, according to certain laws, or conditions of the game.

The word comes from the French *billard*, of *bille*, the ball made uſe of; and that from the Latin *pila*, a *ball*.

BILLON, BILLIO, in *Coinage*, a kind of baſe metal, either of gold or ſilver, in whoſe mixture copper predominates. The word is French, formed according to Menage, from the Latin *bulla*, or *bullo*, *bullion*.—We do not find it is naturalized among us; but the neceſſity we are frequently under of uſing it in the courſe of this work, required its being explained.

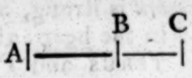
According to M. Boutteroue, *billon of gold* is any gold beneath ſtandard, or twenty-one carats; and *billon of ſilver*, all below ten penny-weights. But, according to others, and amongſt the reſt, M. Boizard, gold and ſilver beneath the ſtandard, as far as twelve carats, and ſix penny-weights, are properly baſe gold and ſilver, and all under thoſe, *billon of gold*, and *billon of ſilver*, in regard copper is the prevailing metal.

BILOCULAR, in *Botany*, a term applied to a CAPSULE having two cells.

BILUR, in *Natural Hiſtory*, a name given by many of the Arabian writers to a gem, which, though they often mention, yet they have no where given us a deſcription of. Some have imagined it the *onyx*, and others the *beryl*; but it appears more probably to have been a ſpecies of cryſtal; probably the pebble-cryſtal of the Eaſt Indies, which is conſiderably finer than the common ſprig-cryſtal,

tal, and is often ſold under the name of the white ſaphire; though conſiderably inferior, both in luſtre and hardneſs, to the true white ſaphire.

BIMEDIAL, in *Mathematics.* When two medial lines, as AB and BC, commenſurable only in power, and containing a rational rectangle, are compounded; the whole AC ſhall be irrational, with reſpect to either of the two, and is called a *firſt bimedial* line. Eucl. lib. x. prop. 38.



BINACLE. See BITTACLE.

BINARY *number*, that compoſed of two units. See NUMBER.

BINARY *arithmetic*, a method of computation, firſt propoſed by M. Leibnitz; wherein, in lieu of the ten figures in the common arithmetic, and the progreſſion from 10 to 10, he has only two figures, and uſes the ſimple progreſſion from two to two.

Joſ. Pelican of Prague has more largely explained the principles and practice of the *binary* arithmetic, in a book entitled, Arithmeticus perfectus, qui tria numerare neſcit. 1712.

All his characters uſed in this arithmetic are 0 and 1; and the cypher, here, multiplies every thing by 2, as in the common arithmetic by 10. Thus, 1 is one; 10, two; 11, three; 100, four; 101, five; 110, ſix; 111, ſeven; 1000, eight; 1001, nine; 1010, ten, &c. which is founded on the ſame principles with the common arithmetic.

Hence immediately appears the reaſon of the celebrated property of the duplicate geometrical proportion in whole numbers; viz. that one number of each degree being had, we may thence compoſe all the other whole numbers above the double of the higheſt degree. It being here, v. gr. as if one ſhould ſay, 111 is the ſum of 4, 2, and 1, which property may ſerve eſſayers to weigh all kinds of maſſes with a little weight; and may be uſed in coins, to give ſeveral values with ſmall pieces. This method of expreſſing numbers once eſtabliſhed, all the operations will be eaſy: in multiplication particularly, there will be no need for a table, or getting any thing by heart.

100	4
10	2
1	1
111	7

The author, however, does not recommend this method for common uſe, becauſe of the great number of figures required to expreſs a number; adding, that if the common progreſſion were from 12 to 12, or from 16 to 16, it would be ſtill more expeditious: but its uſe is in diſcovering the properties of numbers, in conſtructing tables, &c.

What makes the *binary* arithmetic the more remarkable is, that it appears to have been the ſame with that uſed 4000 years ago among the Chineſe, and left in *ænigma* by Fohi, the founder of their empire, as well as of their ſciences.

M. Lagni has propoſed a new ſyſtem of logarithms, on the plan of the *binary* arithmetic; which he finds ſhorter, more eaſy and natural, than the common ones.

BINARY *meaſure*, in *Muſic*, is that which is beaten equally; or where the time of riſing is equal to that of falling. See TIME and MEASURE.

BINATED *leaf*, in *Botany*, a digitate leaf, conſiſting of two *foliola*.

BIND-*weed*. See CONVOLVULUS, and BRYONY.

BIND-*weed, rough*. See SMILAX.

BIND-*weed, ſea*. See SOLDANEL.

BINDER-*ooze*, the weakeſt kind of *tan-ooze*. See TANNING.

BINDING *joiſts*, in *Architecture*, are thoſe joiſts in a floor, into which the trimmers of ſtair-caſes, or well-holes of the ſtairs, and chimney-ways, are framed: they ought to be ſtronger than common joiſts.

BINDING, in the *Art of Defence*, a method of ſecuring or croſſing the adverſary's ſword with a preſſure, accompanied with a ſpring from the wriſt. See BEATING.

Unleſs a man, by ſome kind of croſs, ſecure, as it were, or render his adverſary's ſword incapable to offend him during the time of his performing a leſſon upon him, it is impoſſible for him to be certain but that he may receive from his adverſary, either a fortuitious *contretemps*, or an exchanged thruſt, before the recovery of his body, or going off after a thruſt.

The great objection made by ſome people, particularly thoſe time-catchers, againſt the frequent uſe of *binding*, is, that when a man, in performing it, cleaves too much to his adverſary's ſword, he is liable to his adverſary's ſlipping of him, and conſequently of receiving either a plain thruſt, or one from a feint.

BINDING is a term in *Falconry*, which implies tiring, or when a hawk ſeizes.

BINDING *books*. See BOOK-*binding*.

BINN, *binna*, a ſort of cheſt or cupboard, wherein to lock up bread, meat, or other proviſions.

The word is alſo uſed for a place boarded up to put corn in.

BINN, or BIN. The peaſe and oatmeal, uſed at ſea, are apt to ſpoil in caſks. Dr. Hales propoſes to prevent this, by putting them into large *binns*, with falſe bottoms of hair clothes laid on bars, whereby freſh air may be blown upwards through them, at proper times, with ſmall VENTILATORS.

BINOCLE, or BINOCULAR *teleſcope*, from *binus, double*, and *oculus, eye*, that to which both the eyes may be applied, and conſequently the ſame object be obſerved at the ſame time by both.

It conſiſts of two tubes, with two ſets of glaſſes of the ſame power, and adjuſted to the ſame *axis*; and ſome have pretended that it repreſents objects much larger and clearer, than a ſingle, or MONOCULAR glaſs.

But this is only an illuſion, occaſioned by the ſtronger impreſſion, which two equal images alike illuminated make upon the eye. This method of conſtruction was invented by father Rheita, and brought into uſe by father Cherubin of Orleans. There are alſo microſcopes of the ſame kind, but very ſeldom uſed.

BINOMINAL, or BINOMIAL, from *bis, twice*, and *nomen, name*, in *Algebra*, a root conſiſting of two parts, or members, connected by the ſign +, or −.

Thus $a+b$ and $5-3$ are *binomials*, conſiſting of the ſums and difference of thoſe quantities; though the latter is uſually called RESIDUAL.

The powers of a *binomial* are found by a continual multiplication of it by itſelf, as often as unit is contained in the index of the power required. Thoſe of a *reſidual*, $a-b$, are obtained in the ſame manner, only with this difference in the reſult, that the terms in which the exponent of b is an odd number, will be negative.

If a ROOT have three parts, as $a+b+c$, it is called a TRINOMIAL; if more, a MULTINOMIAL.

BINOMIAL, *impoſſible*, in *Algebra*, is uſed for a *binomial*, one of the terms of which is an impoſſible quantity. Thus, $a+\sqrt{-bb}$, is an *impoſſible binomial*.

BINOMIAL *ſurd* is uſed for a *binomial*, the terms of which are ſurds; as $\sqrt{a}+\sqrt{b}$, or a^m+b^n, if m and n be fractions. The term *binomial ſurd*, is alſo applied to any quantity having a rational part and a ſurd part, as $25+\sqrt{968}$.

For the extraction of roots of *binomial ſurds*, ſee Newton's Arithmetica Univerſalis, and Mac Laurin's Algebra, p. 114—130.

BINOMIAL *curve* is uſed for a curve, the ordinate of which is expreſſed by a *binomial*. Thus if the ordinate of a curve be of this form $\overset{\theta}{x}+\overline{e+fx^{4}}^{\,\lambda}$, the curve is called a *binomial curve*. Stirling, Method. differ. p. 58.

BINOMIAL *theorem* is often uſed to ſignify Sir Iſaac Newton's theorem for raiſing a *binomial* to any power, or for extracting any ROOT of a *binomial*.

This *theorem* may be inveſtigated and explained in the following manner: whatever power of $a\mp b$ be required, it is obvious, from a continued multiplication of this quantity into itſelf, that the index of a in the firſt term is equal to the index of the power required; and that the indices of a decreaſe by the ſame difference, viz. unit, ſo as to become 0 in the laſt term; the quantity being $a^{0}=1$. Thoſe of b increaſe; in the firſt term it has 0 for its index, in the ſecond 1, &c. and in the laſt term its index is the ſame with that of a in the firſt; and the ſum of the indices of both quantities in every term is the ſame, or equal to the index of the power required. The coefficient for any term is eaſily found; that of the firſt term being unit, by multiplying the coefficient of the preceding term by the index of a in the ſame term, and dividing the product by the index of b in the given term, and continuing the operation, till the number of coefficients after the firſt be equal to the number of units in the index of the power required. Whence it appears that the coefficients increaſe, till the indices of the two quantities are equal, in a power denominated by an even number; and in a power denominated by an odd number thoſe of the two middle terms are the ſame; and then the remaining coefficients decreaſe in the ſame order. Thus, if $\overline{a\mp b}$ is to be raiſed to a power denoted by m, $\overline{a\mp b}|^{m}$ will be equal to $a^{m}\mp ma^{m-1}b+m\times\frac{m-1}{2}\times a^{m-2}b^{2}\mp m\times\frac{m-1}{2}\times\frac{m-2}{3}\times a^{m-3}b^{3}+m\times\frac{m-1}{2}\times\frac{m-2}{3}\times\frac{m-3}{4}\times a^{m-4}b^{4}$, &c. The ſame *theorem* may be eaſily applied to the *evolution* of powers, or the *extraction* of any root; the index in this caſe being a fraction whoſe denominator is equal to the index of the root required. E. gr. $\sqrt{a\mp b}=\overline{a\mp b}|^{\frac{1}{2}}=a^{\frac{1}{2}}\mp\frac{1}{2}\times a^{1-\frac{1}{2}}b+\frac{1}{2}\times\frac{\frac{1}{2}-1}{2}\times a^{\frac{1}{2}-2}b^{2}\mp\frac{1}{2}\times\frac{\frac{1}{2}-1}{2}\times\frac{\frac{1}{2}-2}{3}\times a^{\frac{1}{2}-3}b^{3}$, &c. $=a^{\frac{1}{2}}\mp\frac{1}{2}\times a^{-\frac{1}{2}}b+\frac{1}{2}\times-\frac{1}{4}\times$

$a^{-\frac{3}{2}}b^2 \mp \frac{1}{2}\times -\frac{1}{4}\times -\frac{1}{2}\times a^{-\frac{5}{2}}b^3$, &c. $= a^{\frac{1}{2}} \mp \frac{1}{2}a^{-\frac{1}{2}}b - \frac{1}{8}\times a^{-\frac{3}{2}}b^2 \mp \frac{1}{16}\times a^{-\frac{5}{2}}b^3$, &c. $= a^{\frac{1}{2}} \mp \frac{b}{2a^{\frac{1}{2}}} - \frac{b^2}{8a^{\frac{3}{2}}} \mp \frac{b^3}{16a^{\frac{5}{2}}}$, &c. See ROOT, REVERSION, SERIES, &c.

BINOMIUS, from *bis*, and *nomen*, *name*, in *Middle Age Writers*, denotes a perſon with two names.

Moſt Chriſtians anciently were *binomii*, as having had other names in their heathen ſtate, which they changed at their converſion. Beſides, it was an ancient cuſtom for parents to give names to their children immediately after they were born, and ſometimes other different ones afterwards at their baptiſm; one of which frequently became a *cognomen*, or ſurname. In reality, it was a conſtant practice to aſſume a new name at baptiſm, as the religious ſtill do in the Romiſh church, on their reception into the monaſtic ſtate; or the Jewiſh proſelytes at their circumciſion.

BIOCOLYTÆ, in the *Byzantine Empire*, an order of officers appointed to prevent the violences frequently committed by the ſoldiers.

The word is compounded of βια, *vis*, *violence*, and κωλυω, *I binder*; and ſhould rather be written *biacolytæ*.

The *biocolytæ* appear to have been much the ſame with the French archers of the Marſhalſea. They were ſuppreſſed by the emperor Juſtinian.

BIOGRAPHER, an author who writes the hiſtory, or life, of one or more perſons.—Such were Plutarch, Corn. Nepos, &c.

The word is formed from the Greek βιος, *life*; and γραφω, *ſcribo*, *I deſcribe*.

BIOGRAPHY, the art of deſcribing or writing lives.

Biography is a branch or ſpecies of hiſtory more entertaining, as well as more uſeful in many reſpects, than general hiſtory, as it repreſents great men more diſtinctly, unincumbered with a croud of other actors, and, deſcending into the detail of a man's actions and characters, gives more light into human nature, as well as excites us more to imitation. See an excellent paper on *biography* in the Idler, and in the Annual Regiſter, vol. i. p. 436. an. 1759.

BIOLYCHNIUM, a ſubſtantial fire, flame, or HEAT, which ſome phyſicians ſuppoſe actually lodged, or inherent in the heart, and remaining there as long as life laſts.

The word *biolychnium* is compounded of the Greek βιος, *life*, and λυχνος, *light*.

Some will have it to have been the human ſoul, others the animal ſpirits, and others the Deity, that did the office of a *biolychnium*, and was the ſpring of all the actions and motions of the body. See BLOOD, &c.

Caſp. Hoffman and Conringius have written treatiſes expreſs on the ancient doctrine of the lamp of light, or innate heat.

BIOLYCHNIUM is alſo a denomination of a peculiar kind of vital balſam, prepared from human blood; the proceſs of which is deſcribed by Beguinus. J. Ern. Burggravius has a treatiſe expreſs on it.

BIOTA, in *Zoology*, a name introduced by Dr. Hill for the POLYPE.

It is of a cylindric figure, but variable; the *tentacula* are arranged in a ſingle ſeries round the aperture of the mouth, at the extremity of the body. There are ſeveral ſpecies of this animal.

Linnæus calls this creature *hydra*, no doubt, from the reproduction or repullulation of the parts, when cut off; and this name, *biota*, is likewiſe given it on the ſame account, being derived from βιος, *life*.

BIOTHANATI, from βια, *violence*, and ϑανατος, *death*, in ſome *Medicinal Writers*, denotes thoſe who die a violent death.

The word is alſo written, and with more propriety, *biathanati*; ſometimes *biæothanti*.

In a more particular ſenſe, it denotes thoſe who kill themſelves, more properly called *autothanati*. See MURDER. In this ſenſe it is, that the word is uſed both by Greek and Latin writers. By the ancient diſcipline of the church, they were puniſhed by denying them burial, and refuſing all commemoration of them in the prayers and offices of the church.

BIOTHANATI, ſuppoſed by ſome to be derived from βιος, *life*, and ϑανατος, *death*, and alluding to the belief of a future life after death, was alſo a name of reproach given by the heathens to the primitive Chriſtians, for their conſtancy, and forwardneſs to lay down their lives in martyrdom.

BIOTHANATOS is alſo uſed in ſome writers of the barbarous age for wicked, damnable, or accurſed. Du-Cange.

BIOUAC, BIVOUAC, or BIOVAC, in the *Military Art*, a nightly guard performed by the whole army, when there is an apprehenſion of danger from the enemy.

The word is formed, by corruption, from the German *weywacht*, a *double watch* or *guard*.

BIPARTIENT, in *Arithmetic*, is a number that divides another into two equal parts without a remainder. Thus 2 is a *bipartient* to 4, &c.

BIPARTITE *leaf*, in *Botany*, ſignifies a leaf divided into two ſegments.

BIPARTITION ſignifies ſuch dividing.

BIPENNIS, in *Roman Antiquity*, a two-edged ax, uſed anciently by the Amazons in fight; as alſo by the ſeamen, to cut aſunder the ropes and cordage of the enemy's veſſels. The *bipennis* was a weapon chiefly of the oriental nations, made like a double ax, or two axes, joined back to back, with a ſhort handle. Some compare it to the figure of a pen, and ſuppoſe it hence to have acquired the name *bipennis*; the tube or barrel of the pen repreſenting the handle, and the point or nib the head. Modern writers uſually compare it to our HALBARD, or *partizan*; from which it differed in that it had no point, and that its ſhaft or handle was much ſhorter.

BIQUADRATE, or BIQUADRATIC, is the next POWER above the cube, or the ſquare multiplied by itſelf.

BIQUADRATIC *equation*, in *Algebra*, an equation raiſed to the fourth power; or where the unknown quantity of one of the terms has four dimenſions: thus $x^4 + ax^3 + bx^2 + cx + d = 0$ is a *biquadratic* equation. See EQUATION.

BIQUADRATIC *parabola*, in *Geometry*, a curve-line of the third order, having two infinite legs tending the ſame way. See PARABOLA.

BIQUADRATIC *power of any number*, is the fourth power, or ſquared ſquare of that number: thus 16 is the *biquadratic* power of 2; for 2 × 2 = 4, and 4 × 4 = 16.

BIQUADRATIC *root of any number*, is the ſquare root of the ſquare root of that number: thus the *biquadratic* root of 81 is 3; for the ſquare root of 81 is 9, and the ſquare root of 9 is 3.

BIQUALAR, in the *Cuſtoms of the Algerines*, a cook of the divan.

The janizaries, whom the Algerines call *oldachis*, after ſerving a certain term as common ſoldiers, are preferred to be *biqualars*, or cooks of the divan, which is the firſt ſtep towards arriving at higher preferment. *Biqualars* have the care of furniſhing the officers and commanders of the Algerine ſoldiery with meat and drink in the camp, in garriſon, &c. From *biqualars* they are made *odobachis*; that is, corporals of companies, or commanders of ſquadrons.

BIQUINTILE, an ASPECT of the planets, when they are 144 degrees diſtant from each other. It is thus called, becauſe they are diſtant from one another by *twice* the *fifth* part of 360 degrees.

BIRABETANE, in the *Botanical Writings of the Ancients*, a name given to *verbena*, or vervain, and to other herbs uſed in ſacrifices. It is only the word *hierobotane*, as altered by the Æolic manner of writing and ſpeaking it. *Hierobotane* is the common Greek name of vervain, and other ſacrificial herbs, and it is probable that the Latin name *verbena* came from the Æolic manner of ſpeaking this word. All thoſe herbs, which were laid upon the altars on ſolemn occaſions, ſuch as making of peace, and other ſolemn contracts, and were to be taken up by the contracting parties as part of the ceremony, were called by the Greeks *hierobotanæ*, that is, *ſacred plants*, and *verbenæ*; but as the plant we now particularly know by the name *verbena* was more frequent in uſe than any other on this occaſion, it was afterwards diſtinguiſhed by that name.

BIRAO, in *Botany*, the name given by the inhabitants of the Philippine iſlands to a plant more commonly known among botanical writers by the name TUGUS, and ſuppoſed by Camelli, who carefully obſerved it on the ſpot, to be the true AMOMUM of the ancient Greeks.

BIRCH-*tree*, *Betula*, in *Botany*, a genus of trees of the *monoecia tetrandria* claſs; the characters of which are theſe: it hath male and female flowers, at ſeparate diſtances on the ſame tree; the male flowers collected in a cylindrical catkin. The flower is compoſed of three equal florets, fixed to the empalement by a ſingle ſcale, having four ſmall ſtamina. The female flowers grow in a catkin, in the ſame manner as the male, which are heart-ſhaped. They have no viſible petals, but a ſhort oval germen. It hath no *pericarpium*, but the ſeeds are included in the ſcales of the catkin, which are oval and winged. There are four ſpecies.

The firſt is the common *birch*-tree, which is ſo well known as to need no deſcription. This is not much eſteemed for its wood, but however may be cultivated to advantage upon barren land, where better trees will not thrive; for there is no ground ſo bad but this tree will thrive in it; it will grow in moiſt ſpringy land, or in dry gravel or ſand, where there is little ſurface. So that upon ground which produced nothing but moſs, theſe trees have ſucceeded ſo well, as to be fit to cut in ten years after planting, when they have been ſold for near 10*l.* an acre ſtanding, and the after-produce has been conſiderably increaſed. Many woods near London, which were chiefly ſtocked with theſe trees, having been of late years grubbed up, the value of theſe plantations has advanced in proportion. Perſons therefore who are poſſeſſed of poor land, cannot employ it better than by planting it with theſe trees, eſpecially as the expence of doing it is not great.

The beſt method of cultivating this tree, is to procure young plants from the woods, where they grow naturally; but where no young plants are near, they may be raiſed from ſeeds, which ſhould be carefully gathered in autumn, as ſoon as the ſcales under which they are lodged begin to ripen, otherwiſe they will ſoon fall out and be loſt; and being ſmall, ſhould not be buried deep in the ground. Autumn is the beſt ſeaſon for ſowing them; and in a ſhady ſituation they will thrive better than when expoſed to the full ſun.

The ſeeds of *birch* are ſo diſpoſed for germination, that they will even grow on the body of the mother-tree when falling, and being incaſed on it, adhere ſo ſtrongly, as never to ſeparate from it; but increaſing yearly, form thoſe crouded buſhes, like birds neſts, often ſeen on *birch* trees.

If the plants take kindly to the ground, they will be fit to cut in about two years; after which they may be cut every ſeventh or eighth year, when deſigned for the broom-makers only; but when they are intended for hoops, they ſhould not be cut oftener than every twelfth year.

Broom-makers are conſtant cuſtomers for *birch*, in all places within twenty miles of London, or where it is near water carriage; in other parts the hoop-benders are the purchaſers. But the larger trees are often bought by the turners; and the wood is uſed for making ox-yokes, and other inſtruments of huſbandry. In ſome of the northern parts of Europe, the wood of this tree is greatly uſed for making carriages and wheels, being hard, and of long duration. In France it is generally uſed for making wooden ſhoes, and it is good fuel. In ſome places theſe trees are tapped in the ſpring, and the ſap drawn to make *birch*-wine, which has been recommended for the ſtone and gravel, as is alſo the ſap unfermented. In Sweden the houſes are covered with it, where it laſts many years. It frequently happens that the wood is entirely rotten, while the bark is perfectly ſound and good.

The piercing and bleeding of *birch* is performed thus: about the beginning of March, when the buds begin to be proud and turgid, and before they expand into leaves, with a chiſſel and a mallet cut a ſlit almoſt as deep as the pith, under ſome branch of a well-ſpreading *birch*; cut it oblique, and not long-ways, as a ſurgeon does a vein; and inſert a ſmall ſtone or chip, to keep the lips of the wound a little open; laſtly, to this orifice faſten a bottle, or other convenient veſſel, appendant, into which will extil a limpid and clear water, retaining an obſcure ſmack both of the taſte and odour of the tree. The wonder is, that, in the ſpace of twelve or fourteen days, as much juice will be gathered, as will outweigh the whole tree, body and roots. Phil. Tranſ. N° 43, p. 854. N° 44, p. 880. N° 46, p. 917 and 963.

The liquor or juice, thus procured, is uſed, in ſome northern countries, as a preſervative againſt the ſtone. Van Helmont extols a drink prepared with this juice, daucus-ſeeds, and brook-lime. Mr. Boyle tells us, he has ſeen extraordinary medicinal effects of the juice itſelf, even when the other remedies failed; ſo that he uſually provided a quantity of it every ſpring. He ſays, it may eaſily be preſerved, by pouring a little oil on the top of it, or by diſtillation; but that the beſt way is, to impregnate it with the fumes of ſulphur. Phil. Works abr. vol. i. p. 51. and vol. iii. p. 338.

The juice is uſed both to make wine of, and for brewing; being here employed in lieu of water, a barrel of malt will afford as much, and as good ale, as four with common water. Phil. Tranſ. N° 46, p. 963.

A great difference is found between the efficacy of that liquor which diſtils from the bold, or parts of the tree nearer to the root, and that which weeps out from the more ſublime branches; the former being more crude and watery, the latter purer, and more refined. Evel. Sylv. cap. 16. § 3. p. 71.

Birch-*tree of America*. See Mastic-*tree*.

Birch-*bark* being bituminous, and conſequently warm and emollient, is uſed in fumigations to correct a diſtempered air.

The inner ſilken bark was anciently uſed for writing-tables, before the invention of paper; though Ray rather aſſigns the office of paper to the cuticle, or outer ſkin, which peels off yearly. And with the outward, thicker, and coarſer part are houſes in Ruſſia, Poland, and other northern tracts, covered, inſtead of ſlates and tyle. Hiſt. Plant.

The Indians make pinnaces with white cedar; which they cover with large flakes of *birch*-bark, ſewing them with thread of ſpruſe-roots, and pitching them; as the ancient Britons did with the willow. Pliny ſpeaks of a bitumen actually procured from the *birch*-tree. Hiſt. Nat. lib. xvi. c. 18.

Birch, *fungus of*, an excreſcence growing on its trunk: it is aſtringent, and good againſt hæmorrhages; when boiled, beaten, and dried in an oven, it makes excellent ſpunk, or touchwood.

Birch-*leaves* are of uſe in the dropſy, itch, &c. either internally or externally applied.

Birch-*twigs* ſerve to make rods and brooms; ſmeered with bird-lime they are uſed by fowlers, to ſay nothing of the ancient faſces carried by lictors.

Birch-*wine* is made by fermenting the vernal juice: formerly it was in great repute againſt all nephritic diſorders; but is left out in the modern London practice.

The preparation of *birch*-wine is well and amply deſcribed in a book, intituled, Vinetum Britannicum. Phil. Tranſ. N° 123. p. 574.

BIRD, *Avis*, in *Natural Hiſtory*. The characters of this claſs of animals are, that they have a body covered with feathers, two legs, two wings, and a hard or bony bill; and that the females are oviparous.

Linnæus, from the conſideration of the different ſhapes and ſtructure of their beaks, has diſtributed *birds*, which form the ſecond claſs of animals, into ſix orders, viz. *accipitres*, *picæ*, *anſeres*, *grallæ*, *gallinæ*, and *paſſeres*, comprehending 921 known ſpecies. Syſtema Nat. ed. 13. tom. i.

The hiſtory and deſcription of *birds* make a particular branch of ſcience called *ornithology*.

Birds are variouſly divided and denominated by naturaliſts from the places of their abode, their food and manner of living, make of their bills, wings, feet, &c.

Birds are uſually divided into *terreſtrial* and *aquatic*.

Birds, *terreſtrial*, comprehending the *rapacious*, *pies*, the *gallinaceous*, the *columbine*, and the *paſſerine*, are ſubdivided into thoſe which have *crooked beaks* and *talons*; and thoſe whoſe beaks and claws are *ſtraiter*.

Of *birds* with *crooked beaks* and *talons*, ſome are carnivorous and rapacious, called *birds of prey*; others are frugivorous, called by the general name of *parrots*.

Of *birds of prey*, ſome prey in the day-time, and are called *diurnal*; others in the night, and are called *nocturnal birds*. *Diurnal birds of prey* are either of a *greater* or a *leſſer* ſize.—The *greater* are either of a more bold and generous nature, as the eagle-kind, or of a more cowardly and ſluggiſh, as the vulture.

Concerning the carnivorous or rapacious *birds*, it is obſerved, 1. That though Ariſtotle ſays they fly ſolitary, yet that holds not in all; ſeeing that vultures have been ſeen to fly in troops fifty or ſixty together.

2. That the females of the ravenous *birds* are bigger, ſtronger, and of greater courage, than the males; nature ſeeming to have been ſo provident, as to furniſh theſe females with ſuch advantages, upon the account that they muſt provide food not only for themſelves, but alſo for their young ones. Phil. Tranſ. N° 120. N° 483.

The *leſſer* diurnal *birds* of prey are either of a generous and docible, or of a cowardly, ſluggiſh, and untractable nature. The *generous* and *docible* are the hawk-kind, which are wont to be reclaimed and manned for fowling. Theſe by the falconers are diſtinguiſhed into *long-winged*, as the *falcon*, *lanner*, *ſacre*, *gerfalcon*, *keſtril*, &c. whoſe wings reach almoſt as far as the end of their train; and *ſhort-winged*, as the *goſs-hawk* and *ſparrow-hawk*, whoſe wings, when cloſed, fall much ſhort of the end of their trains.

The *cowardly* and *ſluggiſh* are neglected by our falconers, and ſo live at large.—Of theſe alſo there is a *greater* ſort, as the *buzzard-kind*; to which may be added, the *ring-tail* and *kite*; and a *leſſer*, as the *butcher-kind*, or *ſhrike*, about the bigneſs of a *blackbird*.

Of *birds* of prey with crooked beaks and talons, others are *nocturnal*, as the *owl-kind*, which prey by night; and theſe are either horned or eared, as the eagle-owl, horn-owl, &c. or without horns or ears, as the brown owl, white owl, grey owl, howlet, fern-owl, or goat-ſucker, &c.

Frugivorous land-*birds*, with crooked beaks and talons, are diſtinguiſhed into three ſorts, according to their bigneſs; the *greateſt* ſize being called *maccaws*, and *cockatoons*; the *middle-ſized*, and moſt common, *parrots*, and *poppinjays*; and the *leaſt* ſort, *parrakeets*: theſe all make uſe of their beak in climbing, and move the upper jaw.

Land-*birds*, which have their bills and claws more ſtrait, are diſtinguiſhed into three ſizes; the *greateſt* kind are; ſuch as by reaſon of the bulk of their bodies, and ſmallneſs of their wings, cannot fly at all; ſuch are the *oſtrich*, the *caſſowary*, and the *dodo*.

The *middle-ſized* are divided into ſuch as have either *large* and *long*, or *ſmaller* and *ſhorter bills*.

Of thoſe with large, thick, ſtrong, and long bills, ſome feed promiſcuouſly on fleſh, inſects, and fruits, as the *crow-kind*, which are wholly black; and the *pye-kind*, which are party-coloured, as the *magpye*, *jay*, &c. others feed on fiſh only, as the *king's-fiſher*; and others on inſects only, as the *wood-pecker*.

For thoſe which have a ſmaller and ſhorter bill, their fleſh is either white, as the poultry kind ; or blackiſh, as the *pigeon* and *thruſh-kind*.

The *leaſt-ſized* kind of *land-birds*, with ſtrait bills and claws, are called *ſmall birds*. Small *birds* are ſubdivided into thoſe with *ſlender bills*, as the *lark*, *ſwallow*, *martin*, &c. *thick and ſhort bills*, as the *bull-finch*, *houſe-ſparrow*, *linnet*, &c. thoſe with a hard protuberance on the upper chap or bill, as the *bunting*, *yellow hammer*, *reed-ſparrow*, &c.

Among *birds* which have ſtrait beaks and claws, Mr. Willughby obſerves, that the *caſſowary* (as well as the *pelican*) is without a tongue ; ſwallowing not only bits of iron, as the *oſtriches*, but alſo red-hot coals ; yet, not digeſting the iron, but voiding it whole, as the *oſtrich* alſo does.

Birds, *aquatic*, or *water-fowl*, comprehending the *cloven-footed*, the *fin-footed*, and *web-footed*, are diſtinguiſhed into ſuch as *walk* in the waters, and ſuch as *ſwim* in them.

Aquatics which *walk*, are all cloven-footed, and generally have long legs, and thoſe naked, or bare of feathers, a good way above the knee, that they may the more conveniently wade in waters.—Of theſe authors reckon two kinds ; a *greater* and a *leſſer*.—To the *greater* belong the *crane*, *jabiru*, &c.—The *leſſer* are either *piſcivorous*, as the *heron*, *ſpoon-bill*, *ſtork*, &c. or *mudſuckers*, and *inſectivorous*.

Of aquatic *birds*, ſome have *ſlender bills*, ſharp-pointed, as the greateſt *diver*, *gull*, *grey gull*, &c. others *toothed bills*, as the *gaſſander*, &c. others *broad bills*, as the *ſwan*, *hooper*, *gooſe*, *duck*, &c.

Of *inſectivorous* water-fowl, ſome have *very long* bills ; others *middle-ſized* ones, as the *ſea-pye*, and *red-ſhank* ; others *ſhort bills*, as the *lapwing* and *plover*.

Of thoſe with *long bills*, ſome have them crooked, as the *curlieu* and *wimbrel* ; and others ſtrait, as the *woodcock* and *godwit*.

Note, thoſe are reckoned ſhort bills, which exceed not an inch and a half ; middle-ſized bills, to two inches and an half ; and long bills above two inches and an half.

Of aquatics, which *ſwim* in the water, ſome are *fiſſipedes*, cloven-footed, as the *rail*, *plover*, &c. ſome are fin-footed, *pinnati*, as the *coot* and *grebe*, &c. but moſt are whole-footed, or web-footed, *palmipedes*.

Of theſe, ſome few have very long legs, as the *flammant*, the *avoſetta*, and *corrira* ; but the generality are ſhort-legged.

Of the *ſhort-legged*, *whole-footed aquatics*, ſome have but three toes on each foot, as the *penguin*, *razor-bill*, &c. but generally they have four toes on each foot, and theſe either all connected together by intervening membranes, as in the *pelican*, *ſoland-gooſe*, &c. or more uſually with the back-toe looſe.

This laſt kind are either *narrow-billed*, or *broad-billed*.—Thoſe with *narrow bills* have them either blunt or hooked at the tip, or ſharp-pointed and ſtraiter.

Of the former ſort ſome are ſerrate, as in the diver-kind ; and ſome not toothed, as in the *puffin*.

Of thoſe with ſharp-pointed and ſtraiter bills, ſome have long wings, as the *gull-kind*, and ſome ſhorter, as thoſe diving *birds* called *douckers*.

Thoſe with *broad bills* may be divided into the *gooſe-kind*, which are larger ; and the *duck-kind*, which are ſmaller ; and theſe latter into ſea-ducks, or river, and plaſh-ducks.

In flat-billed *birds*, as *ducks*, there are three pair of nerves, which come down between the eyes into the upper bill, whereby they are enabled to ſmell, and find out their food in the mire, water, and the like. The like has alſo been diſcovered in ſeveral round-billed *birds* ; but much ſmaller, and ſcarce diſcernible, except in the rook, where they are conſpicuous enough ; and it is remarkable that theſe, more than any other round-billed *birds*, ſeem to grope for their meat in cow-dung and the like. In the lower bill there are alſo nerves, which have much the ſame ſituation with thoſe in the flat-billed kind ; but very ſmall, and ſcarce diſcernible. Phil. Tranſ. N° 206. p. 990.

Moſt water-fowls have a ſhort tail ; and none of this kind have their feet diſpoſed like parrots and woodpeckers, which have two toes forward, and two backward ; whereas none of theſe have more than one back-toe, and ſome have none at all.

The ſtructure and œconomy of *birds* are, in many reſpects, different from thoſe of their fellow-biped man, and of their fellow-brutes the quadrupeds, having ſome parts which thoſe want, and being without others which they have, beſides great variations in the contrivance of parts which are common to both ; all wiſely adapted to their different conditions and manners of life.

Among the parts peculiar to *birds*, are firſt, the bill, which ſerves them both in lieu of lips and teeth ; wherewith the rapacious tear their meat, the granivorous crack their ſeeds, and ſeparating the pulp with the tongue, throw out the huſk. Drake's Anthrop. lib. i. cap. 14.

Secondly, a horny nictitating membrane, to draw over and cover their eyes, and ſave them from the annoyance of thorns and buſhes, much like that which frogs are furniſhed with, to ſecure their eyes from mud and dirt. See Derham's Phyſ. Theol. & Niewent. Rel. Philoſ. § 18.

To which may, thirdly, be added, feathers and wings for cloathing and flight.

The parts which phyſiologiſts have generally ſuppoſed not to be found in *birds* are, 1. Teeth and lips, as already mentioned. 2. Lacteal veſſels. But Mr. Hewſon obſerves, that the difficulty of diſcovering the lacteals of *birds* is owing to the tranſparency of the chyle which they contain, and the want of meſenteric glands. The lymphatic ſyſtem in *birds*, he ſays, may be divided, as it is in quadrupeds, into the branches, viz. the lacteals and lymphatics, and their trunk, or thoracic duct. The lacteals are the lymphatics of the inteſtines, and, like the other lymphatics, carry a tranſparent lymph ; and, inſtead of one thoracic duct, there are two, of which one goes to each jugular vein. The lymphatics in the necks of fowls were diſcovered by Mr. J. Hunter many years ago. We may infer from hence, that abſorption is not carried on even in *birds* by the common veins. See an account of the lymphatic ſyſtem in *birds* by Mr. Hewſon, Phil. Tranſ. vol. lviii. N° 34. 1768. 3. Kidneys, and a bladder of urine, which they can be without, as they have but little moiſture in their bodies, do but rarely drink, and this only to moiſten their food. 4. A *ſeptum tranſverſum*, the want of which is ſupplied by a peculiar diſpoſition of the lungs.

Laſtly, Pliny ſays they alſo want an *epiploon* ; but in two eagles, and other *birds* diſſected by the royal academiſts at Paris, there were membranes like *epiploons* found.

Some authors alſo ſpeak of ducts which paſs immediately from a ſort of kidneys to the extremity of the *rectum* of *birds*, whereby a white, liquid kind of excrement is diſcharged, being firſt mixed with the groſſer *fæces*. Gentzken's Phyſ. Hypoth. p. 2. cap. 5, &c.

Variations in the parts of *birds* from thoſe of men and quadrupeds, are, 1. In the ear, where the cavities and the drum are of a peculiar make. Phil. Tranſ. N° 199. The ears of *birds* differ much from thoſe of men or beaſts ; there is almoſt a direct paſſage from one ear to the other of *birds* ; ſo that prick but the ſmall membrane called the drum in either ear, and water poured in at the one ear will run out at the other. But this is not all : what is much more remarkable, they have no *cochlea* ; but, inſtead thereof, there is a ſmall twiſting paſſage that opens into a large cavity running betwixt two ſculls, and paſſes all round the head ; the upper ſcull is ſupported by many hundreds of ſmall thread-like pillars or fibres, which, as it is ſuppoſed, have another uſe alſo, to break the ſound from making any confuſed echo, and to make it one and diſtinct.

This paſſage, obſerved betwixt the two ſculls, is much larger in ſinging *birds* than in others that do not ſing ; ſo very remarkable, that any perſon that has but been ſhewn this, may eaſily judge by the head what *bird* is a ſinging *bird*, or has aptitude thereto, though he never ſaw the *bird* before, nor knew what *bird* it were. Phil. Tranſ. N° 206, p. 995.

2. In the diviſion of the *aorta*.

3. In the ſpinal marrow, which is divided into two in the middle of the back, with a ventricle between the two. Phil. Tranſ. N° 180, p. 374.

4. In the bones, which are all hollow and fiſtular, to make the body lighter and more buoyant. Niewent. Relig. Philoſ. cont. 22. § 12. p. 335, ſeq.

Both in the bones, and in the fleſhy parts, there are receptacles of air communicating with the lungs. Phil. Tranſ. vol. lxiv. N° 29.

5. In the heart, which has a fleſhy valve at the mouth of the *vena cava*. See Pitfield's Nat. Hiſt. of Anim.

6. In the lungs, which are ſtrongly conjoined to the back, for greater convenience of flight. Vater Phyſ. Exp. p. 806, &c.

7. In the ſtomach, of which *birds* have two or three, to ſupply the want of maſtication. See Grew's Comp. Anat. The digeſtion of *birds* is very ſtrong, eſpecially in *hens*, *ducks*, and *pigeons*, whoſe ſtomachs have been found to act even on glaſs bullets. Boyle's Phil. Works abr. tom. ii. p. 183.

8. In the legs and feet, which, in ſome ſpecies of *birds*, are made to hold or cling faſt by ; in others to wade in the mud without ſinking. Niewent. Relig. Phil. p. 341. The poſture and action of *birds* in ſtanding and walking, are ſhewn by Borelli to be very different from thoſe of man, though both be bipeds ; particularly as to contrivance, whereby *birds* are enabled to ſtand better on one foot. See Phil. Tranſ. N° 144, p. 63. N° 92, p. 6004.

9. In their tails, which are made to poiſe their bodies in flight. Ibid. ſect. 20. p. 342.

10. In the pectoral muſcles, which, in *birds*, are the ſtrongeſt of all, as ſerving for the motion of the wings, which, in long or ſwift flights, requires great ſtrength ;

whereas, in man, the crural muſcles are ſtrongeſt; ſo that, if he would fly, it muſt rather be by the action of his legs than his arms. Phil. Tranſ. N° 220.

Their whole ſtructure is admirably accommodated to flight, eſpecially that of the *pelican*, which, beſide all other *apparatus* for this purpoſe, has a quantity of air lodged in the *veſiculæ* of the ſkin, which it takes in at every inſpiration, and expels again at expiration, whereby its bulk is conſiderably enlarged, without any ſenſible increaſe of weight. Hiſt. Acad. Sc. an. 1693, p. 259, &c.

11. In the brain, which is different from that both of man and quadrupeds, being adapted rather to the exerciſe of the locomotive faculty, than for imagination and memory.

However, the ſagacity of *birds* in building, and placing their neſts out of the reach of enemies, and in avoiding noxious plants, is prodigious. It is ſaid they will not ſo much as touch or perch on ſuch plants, being warned of the danger by the ſmell or *effluvia* of the plant. Boyle's Phil. Works abr. tom. ii. p. 183, and p. 437.

12. In the bronchial ducts, which are extended to the very bottom of the cavity of the *abdomen*, that the air received into them, may the better fill and enlarge the *thorax*, whereby they are rendered much lighter, than if their bodies were ſolid, like other animals. Acad. des Sc. an. 1693. p. 259.

13. In the ovaries, which, in *birds*, are ſingle, and only furniſhed with ſingle tubes, whereby to convey the eggs to the *uterus*; the whole faſtened to their back. Acad. des Scienc. an. 1699, p. 36.

Many methods have been uſed by naturaliſts for preſerving dead *birds* from corruption, in their natural form and colour. Some have taken off the ſkin, with all the feathers upon it, from the body and thighs, leaving the legs and wings, and the whole neck with the bill, and filled it with ſome ſoft ſtuff, ſuch as hay, wool, or flax. Others have put them into veſſels full of ſpirit of wine, or ſtrong brandy; againſt which it has been objected that ſpirituous liquors change the colours of the feathers; but M. Reaumur concludes from many experiments, that this objection is groundleſs; and he has given ſeveral minute directions for preſerving and conveying them in this way. Others again, eſpecially in countries where ſpices are cheap, have embalmed dead *birds*: Reaumur obſerves, that powdered alum or lime will ſerve the ſame purpoſe. Another method, which has been ſometimes practiſed, is that of drying *birds* for preſervation in a heated oven. The ſame ingenious naturaliſt informs us, that quadrupeds, fiſhes, reptiles, and inſects, may be preſerved in the ſame manner with birds. Phil. Tranſ. vol. xlv. p. 304, &c. See farther on this ſubject, ibid. vol. lx. N° 16, and N° 26.

Birds, *feetleſs*, *apodes*, a fictitious denomination given by ſome of the ancients to the *birds* of paradiſe, from a miſtaken notion that they had no feet, and could not walk, but only fly.

Theſe were placed in contradiſtinction to the *oſtriches*, which could only walk, not fly.

Birds, *ſubterranean*, thoſe which reſide in caves and holes under ground; as ſome ſpecies of owls, batts, &c.

To this claſs may alſo be referred thoſe vaſt quantities of *ducks*, which break out of the caves adjoining to the Zirchnitzer ſea in time of thunder, in ſuch numbers as to cover the lake. Phil. Tranſ. N° 191, p. 420.

Birds, *ſinging*, are the *nightingale*, *blackbird*, *ſtarling*, *thruſh*, *linnet*, *lark*, *throſtle*, *Canary-bird*, *bullfinch*, *goldfinch*, &c. See ſome very curious experiments and obſervations on the ſinging of *birds*, Phil. Tranſ. vol. lxiii. part ii. N° 31. Their firſt ſound is called *chirp*, which is a ſingle ſound repeated at ſhort intervals; the next *call*, which is a repetition of one and the ſame note; and the third ſound is called *recording*, which a young *bird* continues to do for ten or eleven months, till he is able to execute every part of his ſong; and when he is perfect in his leſſon, he is ſaid to *ſing his ſong round*. Their notes are no more innate, than language in man; they all ſing in the ſame key. The honourable author, Daines Barrington, has there attempted to reduce their comparative merits to a ſcale; and to explain how they firſt came to have particular notes. See SONG *of Birds*.

Birds, *migratory*, the ſame with *birds* of PASSAGE, and MIGRATION. Phil. Tranſ. vol. lxii. N° 20.

Birds, *decoy*, thoſe trained up to call and allure others into the fowler's nets, ſnares, lime-twigs, or the like.

Birds, *meſſage*, *aves internunciæ*, thoſe employed to convey letters, or other diſpatches, either for the ſake of expedition or ſafety. See CARRIER-*pigeon*.

Bird, *mocking*, in Virginia, a *bird* which imitates the voices of men, and the notes of all other *birds*, by way of diſguiſe, and thus eludes and eſcapes the fowler. Trev. Dict. Univ. tom. iv. p. 264. See MOCK-*bird*.

We have one *mocking bird* in England, which is the *ſky*-LARK.

Bird, *humming*, the American *tomineius*, denominated from the noiſe it makes in flight. It is ſaid to be the ſmalleſt of the whole ſpecies of *birds*. See GUAINUMBI, and Phil. Tranſ. N° 200, p. 760.

Birds, *anomalous*. It is diſputed whether the BAT belong to the *bird* or quadruped kind. Later naturaliſts incline to the latter, and, notwithſtanding its wings, condemn it to be a mouſe.

The like difficulty has been raiſed with reſpect to the *barnacle*, *ſolan-gooſe*, or *macreuſe*. Some, notwithſtanding its feathers, maintain it to be a fiſh. What ſhall we then ſay of the *pinguin*, or *penguin*, an eaſtern *bird*, denominated from the iſland of that name, which walks erect like a man, has no feathers, nor flies, nor aſſociates with other *birds*; and which ſome will have to participate both of the human, the volatile, and the fiſhy kingdom. In reality, it is *animal bipes* and *implume*, and conſequently a man, on the terms of Plato's definition.

Macer, among the ancients, and Willughby and Ray among the moderns, have written expreſly on *birds*. This laſt author affirms, that the kinds of *birds* known and deſcribed, are about 500. Boyle has given pneumatical experiments on *birds in vacuo*. Phil. Tranſ. N° 100. p. 480, &c.

Preſcience, or knowledge of futurity, was ſuppoſed, among the ancients, a natural faculty of *birds*, owing, perhaps, to their nearer intercourſe with heaven, or their breathing a purer and more celeſtial air than other animals. Hence it was, that divination by *birds* obtained among the ancient Greeks and Romans, being performed by obſerving, and interpreting the flight, chirping, and feeding of divers birds. See AUGURY and AUSPICIUM.

Birds, with regard to augury and divination, were of divers kinds, viz.

Aves auſpicatæ, or *felices*, thoſe which naturally portended good: ſuch were the *dove*, *ſwan*, &c.

Aves inauſpicatæ, *diræ*, *ominoſæ*, thoſe which boded ſome evil or miſchief: ſuch were the *kite*, *raven*, *crow*, and *owl*, every where, except at Athens.

Admiſſiva, that which excites and encourages the conſulter to execute what he has in view.

Arciva or *arcula*, that which forbad a thing to be done; otherwiſe called *clivia*, *clamatoria*, and *prohibitoria*, *inebra*, and *inhiba*.

Incendiaria, that which gave omen of a fire, or other calamity; or which is ſeen carrying a fire-brand from the funeral-pile to a houſe.

Remora, that which ſtays, or delays an action.

Siniſtra, that on the left hand, denoted a happy or proſperous omen; and was alſo called *ſecunda*, *proſpera*.

Alites, thoſe which gave omens by their wings and flight.

Oſcines, thoſe by their ſinging or chirping.

Pulli, by their pecking.

Præpetes, thoſe which by their flight, or perching, gave happy omens.

Inferæ, or *inebræ*, thoſe which in like manner gave ill omens.

Bird, in *Falconry*, denotes a *hawk*, or FALCON.

Birds, *niais*, *aves nidulariæ*, thoſe taken while in the neſt.

Birds, *ramage*, *arborariæ aves*, thoſe only arrived at ſtrength ſufficient to fly from branch to branch.

Bird, *hagard*, that which has lived at liberty, and is thence more wild and untractable.

Bird *of the fiſt*, that which having been reclaimed, returns to, and perches on the hand, without the help of a lure.

Bird *of lure*, that which comes to the lure, and by that means to the hand.

Bird, *baſtard*, a *hawk*, for inſtance, bred of a *hawk* and a *lanier*. Or a *ſaker*, bred of a *ſaker* and a *lanier*.

Birds, *coward*, thoſe which only purſue their game for their own belly, and which are not to be reduced to juſt ſport. As *ravens*, *kites*, &c.

Birds, *ſtorm*. See PROCELLARIA.

Birds, in *Medicine*, are chiefly the *gooſe*, *duck*, *hen*, *peacock*, and *pigeon*; of which the fat, eggs, and dung, are in uſe. Sextus Placidus treats at large concerning remedies from *birds*.

Birds, conſidered as foods, are of a dry warm nature, as feeding chiefly on dry meats, and drinking little. They are ſuppoſed to abound much in ſalt and ſulphur; whence Kircher accounts for the bright colours of their feathers. Some have denied the exiſtence of any volatile ſalt in *birds*. Borrichius eſtabliſhes it.

The *peacock* has been called *avis medica*, or the *medicinal bird*, on account of its great efficacy in divers diſeaſes.

Birds, in *Huſbandry*, are to be guarded againſt as deſtructive. *Kites* and *hawks*, to chickens; *crows* and *pigeons*, to corn; *jays*, *ſparrows*, and other ſmall *birds*, to fruits, &c.

Writers in huſbandry preſcribe divers methods of ſcaring away, or deſtroying noxious *birds*. Some prevent *birds* from eating the ſeed when firſt ſown, by liming, and mixing it with ſoot.

Bird, in *Aſtronomy*, *avis Indica*. See Apus.

Bird *of Phœbus*, the *raven*, one of the ſouthern conſtellations. See Corvus.

Birds, in *Heraldry*, are figures frequently borne in arms.

Birds are eſteemed a more honourable bearing than fiſhes; and wild, ravenous *birds*, than tame ones. The terms *armed*, *cloſe*, *creſted*, *diſplayed*, *jeſſed*, *jowlopped*, *languid*, and *membered*, are applied to *birds*, which ſee.

Bird *of the wiſe*, among *Chemiſts*, is the philoſophical mercury; and, in general, ſublimations or ſubſtances ſpiritualized by the ſeparation of their terreſtrial part.

Bird, *golden*, the hermetic matter partly matured.

Bird, *green*, the philoſopher's ſtone, at the time when its green colour appears.

Bird-*call*, a little ſtick cleft at one end, in which is put a leaf of ſome plant, wherewith to counterfeit the cryer's call of ſeveral *birds*, and bring them to the net, or ſnare, or lime-twig, to be taken.

A laurel leaf fitted on the *bird-call*, counterfeits the voice of *lapwings*; a leek, that of *nightingales*, &c.

Birds, *Cyprian*, *aves Cypricæ*, or *aviculæ Cypriæ*, is a denomination given to a kind of odorous candles, made of the matter of troches, and burnt for the ſake of their fumes, called alſo, from their figure, *baculi*, or *ſticks*.

Bird *of Hermes*, *avis*, or *avicula Hermetica*. All chemiſts ſpeak much of that which flies in the night without wings.

Some will have the *avicula Hermetica* to be an univerſal ſalt prepared from dew.—It alſo denotes red-lead.

Bird *cherry*, in *Botany*. See Prunus.

Bird's *eye*, in *Botany*. See Pheasant's *eye*.

Bird's *foot*, *Ornithopus*, in *Botany*, a genus of the *diadelphia decandria* claſs. Its characters are theſe: the empalement of the flower is permanent, of one leaf, tubulous, and indented in five equal ſegments at the brim. The flower is of the butterfly kind, the ſtandard heart-ſhaped and entire, the wings oval, erect, and almoſt as large as the ſtandard; and the keel is ſmall and compreſſed. It has ten ſtamina, nine of which are joined, and one ſtanding ſeparate, terminated by ſingle ſummits. The germen is narrow, ſupporting a briſtly aſcending ſtyle, terminated by a punctured ſtigma. The germen becomes a taper incurved pod, having many joints connected together, which ſeparate when ripe, each containing one oblong ſeed. There are five ſpecies.

Bird, or *fowl-mead* graſs, a ſpecies of graſs, which has been lately cultivated with a particular attention. It is a fine, ſweet, ſilky graſs, with a durable verdure; throws out a great crop, and produces a large quantity of ſeed. One rood of ground yielded a hundred weight of ſeed, and a very large load of hay. It is moſt proper for upland meadow: the ſeed ſhould be left uncovered on the ground.

Bird's *neſt*, in *Botany*, a name uſed by ſome for the *daucus*, or carrot; by others for ophrys.

Bird's *neſt*, *purple*. See Orchis.

Birds-*neſts*, in *Cookery*, the neſts of a ſmall Indian ſwallow, very delicately taſted, and frequently mixed among ſoops.

On the ſea-coaſts of China, at certain ſeaſons of the year, there are ſeen vaſt numbers of theſe *birds*; they leave the inland country at their breeding time, and come to build in the rocks, and form their neſts out of a ſpumous matter, which they find on the ſhore, waſhed thither by the waves. They are of a hemiſpheric figure, and of the ſize of a gooſe's egg, and in ſubſtance much reſemble the *ichthyocolla*, or iſinglaſs. The Chineſe gather their neſts, and ſell them to all parts of the world; they diſſolve in broths, &c. and make a kind of jelly, of a very delicious flavour.

Bird's *pepper*. See Capsicum.

BIRDLIME, a viſcid ſubſtance, prepared various ways, and from various materials, for the catching of birds, mice, and other vermin.

The *birdlime*, ordinarily uſed among us, is made from holly-bark, boiled ten or twelve hours: when the green coat is ſeparated from the other, it is covered up a fortnight in a moiſt place, then pounded into a tough paſte, ſo that no fibres of the wood be left, and waſhed in a running ſtream till no motes appear, put up to ferment four or five days, ſkimmed as often as any thing ariſes, and laid up for uſe.—To uſe it, a third part of nut-oil, or any thin greaſe, is incorporated with it over the fire.

The miſletoe affords a juice, even ſuperior to that of the holly; and if a young ſhoot of the common elder be cut through, a ſtringy juice will draw out in threads, and follow the knife like *birdlime*, or the juice of holly. It ſeems in this tree to be lodged, not in the bark, but in certain veins juſt within the circle of the wood. The roots of all the hyacinths alſo afford a tough and ſtringy juice of the ſame kind, and ſo do the aſphodel, the Narciſſus, and the black bryony root, in a ſurpriſing quantity.

The *birdlime* brought from Damaſcus is ſuppoſed to be made of ſebeſtens, their kernels being frequently found in it; but this does not endure either froſt or wet.—That brought from Spain is of an ill ſmell; that of the Italians is made of the berries of miſleto heated, mixed with oil, as before; to make it bear the water, they add turpentine.—It is ſaid, the bark of our *viburnum*, or way-faring ſhrub, makes *birdlime* as good as the beſt.

Birdlime is a ſubſtance very apt to be congealed, and rendered unſerviceable by froſts; to prevent which, it is proper, at the cold ſeaſons, to incorporate ſome petroleum with it, before it is uſed. The method of uſing it is to make it hot, and to dip the ends of a bundle of rods in it; then to turn them about, and play them together till a ſufficient quantity is extended over them all. If ſtrings, or cords, are to be limed, they are to be dipped into the *birdlime*, while very hot. The cords may be put in cold, but the rods ſhould be warmed a little. Straws are to be limed, while the matter is very hot; a large bundle of them ſhould be put in at once, and worked about in it, till they are well beſmeared. When thus prepared, they ſhould be preſerved in a leather bag, till they are uſed.

When the twigs, or cords, are to be put in places ſubject to wet, the common *birdlime* is apt to have its force ſoon taken away. It is neceſſary, therefore, to have recourſe to a particular ſort, which, from its property of bearing water unhurt, is called *water birdlime*; and is prepared thus.

Take a pound of ſtrong and good *birdlime*, waſh it thoroughly in ſpring-water, till the hardneſs is entirely removed; and then beat it well, that the water may be ſeparated from it; then dry it well, and put it into an earthen pot; add to it, as much capon's greaſe as will make it run. Then add two ſpoonfuls of ſtrong vinegar, one ſpoonful of oil, and a ſmall quantity of Venice turpentine. Let the whole boil for ſome minutes over a moderate fire, ſtirring it all the time. Then take it off; and when there is occaſion to uſe it, warm it, and cover the ſticks well with it. This is the beſt ſort of *birdlime* for ſnipes, and other birds that love wet places.

M. Barrera, phyſician at Perpignon, has diſcovered an animal *birdlime*, prepared of the bolls of a ſort of caterpillars, by putrifying them in the earth, ſteeping them in water, and then pounding and mixing them with olive oil. Fontenel. Hiſt. Acad. Scienc. 1720, p. 12.

BIREMIS, from *bis*, *double*, and *remus*, *oar*, in *Antiquity*, a veſſel with one or more rows of oars, ranged, as ſome think, in two ſtages over each other; or a veſſel having two ranks or rows of oars placed over, and aſide of each other. But the particular fabric of theſe veſſels ſeems far from being a ſettled point among the learned.

The Roman *biremis* is the ſame with what the Greeks called δικροτα, and ſtands contradiſtinguiſhed from *triremis*, *quadriremis*, &c.

BIRETUM. See Birretum.

BIROTA, *Birotum*, from *bis* and *rota*, *wheel*, a kind of vehicle denominated from the two wheels whereon it moved.

The *birota*, by the conſtitution of Conſtantin, was drawn by three mules, and carried two hundred pound weight; by which it was diſtinguiſhed from the *rheda*, which carried a thouſand pounds, and was drawn by eight, and in winter by ten mules.

BIRRETUM, in *Writers of the Middle and Lower Ages*, a thin black cap, or cover for the head, made of linen fitted cloſe to the head, and pointed by a pyramid, anciently worn by prieſts, ſoldiers, doctors, &c. Du-Cange.

The word *birretum*, ſometimes written *birrettum* and *biretum*, is alſo applied to a cap or coif of a judge, or ſerjeant at law.

The *birretum* alſo denotes the cap worn by the novices in the Jeſuits order, formerly of a ſquare, now a round figure.

The *birret* was the ordinary cover of the head in France five hundred years ago. It took its denomination from *birrus* or *birrum*, the coat anciently uſed by eccleſiaſtics; with which the cap was then of a piece, and made part of it; ſo that the whole covered, not only the head, but the ſhoulders. Afterwards, when they began to retrench the lower part, ſtill retaining the upper, it was no longer called *birrus*, or *birrum*, but diminutively *birret*, or *birretum*.

BIRRUS, an ancient habit worn by the Chriſtians in Africa.

The word is alſo written *byrrus*, ſuppoſed to be formed from ϖυῤῥος, on account of its red colour.

Some will have the *birrus* an epiſcopal habit. Others extend it to all the clergy. Others, on juſter grounds, make it the common coat of all the Chriſtians in that quarter.

BIRTH, the natural excluſion of a perfect foetus from the womb by the *vagina*. See Delivery, &c.

BIRTH, *an immature*, is called an ABORTION.

BIRTH, *ſeven months*, *partus ſeptimeſtris*, that which happens on the hundred and eighth, or hundred and eighty-ſecond day after impregnation.

This phyſicians allow may not only be a living, but a vital *birth*; though it does not often prove long-lived. And the civil laws all own it as legitimate.

Hippocrates has written expreſly on the ſeven months birth, Περι ἑπταμηνȣ, in two books, the firſt of which, as now extant, is held ſpurious. The ſecond is commented on by Galen, Περι ἑπταμενων βρεφων.

A child born in the ſeventh month oftner lives than a child born in the eighth; perhaps becauſe the premature *birth* in the firſt caſe is owing to the ſtrength of the child, and in the ſecond to the weakneſs of the mother.

BIRTH, *eight months*, *partus octimeſtris*, ſeldom if ever produces a living, or lively child. An eight month's *birth* is always weak and ſickly, and ſcarce ever ſurvives the fortieth day.

BIRTHS, *præternatural*, are thoſe made by the way of the *anus*, navel, &c.

For the number of *births*, ſee MARRIAGE: under which the proportions of *births* to marriages, of *births* to burials, and of male-*births* to females, is computed.

BIRTH, *after*. See AFTER-*birth*.

BIRTH, or BIRTHING, among *Seamen*, denotes the due diſtance obſerved between ſhips lying at an anchor, or under ſail.—A convenient place a-board for a meſs to put their cheſts, ſleep, &c. is alſo called a *birth*.—There is uſually one of theſe in ſhips of war between every two guns.—And a proper place to moor a ſhip in is called by the ſame name, as is alſo the ſtation in which a ſhip rides at anchor.

BIRTH, *expoſition of*, among the *Ancients*, was where a new-born infant was expoſed or caſt away, and left to the mercy of the firſt-comer, who might either take and bring it up, or ſuffer it to periſh. See EXPOSING *of children*.

Ger. Nodt has a treatiſe expreſs on the ſubject. Julius Paulus, ſive de partu expoſitione & nece apud veteres Lugd. Bat. 1710, 4to.

BIRTH, *ſuppoſition of*, *partus ſuppoſitio*, in the *Civil Law*, is a crime, for which accuſation may be intented by thoſe who have intereſt therein, and is puniſhed with death, like the *crimen falſi*, or forgery.

BIRTH, *ſuppreſſion of*, *partus ſuppreſſio*, is the crime of a woman, who endeavours, by medicines, to deſtroy or hinder the *birth* of a child; or, after its being born, hides, expoſes, or even ſtrangles it.

BIRTH-*day*, the anniverſary return of the day whereon a perſon was born.

This anſwers to what the ancients called γενεθλιον, *genethlion*, *natalis dies*, *natalitius dies*, *natalitia*, and, in the middle age, *genetalius*.

The ancients made much of their religion to conſiſt in the celebration of *birth-days*, and took omens from thence of the felicity of the coming year. We meet with *birth-days* of the gods, emperors, great men, poets, and even private perſons. What is more, the *birth-days* of cities, as Rome and Conſtantinople, were celebrated with great pomp by the inhabitants. Virgil's *birth-day* was held very ſtrictly by the wits and poets who ſucceeded him. Pliny aſſures us, that Silius kept it with more ſolemnity than he did his own. Epiſt. lib. iii. Ep. 7.

The manner of celebrating *birth-days* was by a ſplendid dreſs; wearing a ſort of rings peculiar to that day; offering ſacrifices, the men to their Genius, of wine, frankincenſe; the women to Juno; giving ſuppers, and treating their friends and clients; who, in return, made them preſents, wrote and ſung their panegyrics, and offered vows and good wiſhes for the frequent happy returns of the ſame day.

The *birth-days* of emperors were alſo celebrated with public ſports, feaſts, vows, and medals, ſtruck on the occaſion.

But the ancients, it is to be obſerved, had other ſorts of *birth-days* beſides the days on which they were born. The day of their adoption was always reputed as a *birth-day*, and celebrated accordingly.

The emperor Adrian, we are told, obſerved three *birth-days*; viz. the day of his nativity, of his adoption, and his inauguration. Fabr. Bibl. Græc. tom. xii. lib. vi. cap. 6.

In thoſe times it was held, that men were not born only on thoſe days when they firſt came into the world, but on thoſe alſo when they arrived at the chief honours and command in the commonwealth, e. gr. the conſulate. Hence that of Cicero in his oration *Ad Quirites*, after his return from exile: *A parentibus id quod neceſſe erat, parvus ſum procreatus, a vobis natus ſum conſularis.*

Beſides, thoſe who returned from baniſhment, were alſo conſidered as being born again, *renati*, and ever after called the day of their return their *birth-day*. Thus Cicero to Atticus: *Diemque natalem reditus mei cura, ut in tuis ædibus amæniſſimis agam tecum, & cum meis.*

Cenſorinus has a treatiſe *de die natali*, addreſſed to Q. Cerellius, as a compliment on his *birth-day*.

BIRTH-*days of the ſaints and martyrs*, *natales ſanctorum*, denote the days of their deaths.

In reality, *natalis* among the ancients was not reſtrained to *birth-days*, but extended to all feaſt-days.

Hence it is we meet with *natalis ſolis*, *natalis calicis*, *natalis eccleſiæ*, *natalis reliquiarum*, &c.

BIRTH-*ſin*, the ſame with *original* SIN.

BIRTH-*wort*, in *Botany*, the Engliſh name of the plant ARISTOLOCHIA, a genus of the *gynandria hexandria* claſs. Its characters are theſe: the flower is of one leaf, which is unequal; the baſe is ſwelling and globular. It is afterward extended in a cylindrical tube, which ſpreads open at the brim, where the lower part is ſtretched out like a tongue. The oblong angular germen ſits under the flower, which afterwards turns to a large ſeed-veſſel, differing in form, which opens in ſix cells, filled with ſeeds, for the moſt part compreſſed. There are nine ſpecies, one of which is the ſnake-root, which is greatly uſed in medicine; theſe roots are brought over from Virginia and Carolina. There are ſome of theſe plants preſerved in the gardens of thoſe who are curious; but as they are ſometimes killed by froſt in winter, ſo they are not very common in the Engliſh gardens.

BIS, in *Botany*, a name given by ſome old writers to the NAPELLUS, or monks-hood; and by others to the CICUTA, or hemlock.

There is, however, another ſenſe of the word, very different from both theſe, in which it is uſed to expreſs an eſculent plant. The phraſe *bis al nil* is frequent among the Arabian writers; and as *al nil* ſignifies only of the river Nile, the whole name ſhould ſeem to expreſs the character of ſome poiſonous plant growing in the Nile. This, however, is by no means the ſenſe in which it is received; for we are told, that *bis al nil* ſignifies a bulbous root of a ſweet taſte, growing on the mountains about Damaſcus, and in other parts of Syria, and eaten in the ſpring by the people of the adjacent country.

BIS-*annual*, a name given by botaniſts to thoſe plants, which ordinarily do not flower till the ſecond year.

BISA, or BIZA, a coin in Pegu, current there for half a ducat. The denomination is alſo given to a kind of weight uſed in the ſame country, equivalent to two Venetian pounds five ounces, or to three pounds nine ounces of the ſmaller weight of that city.

BISACUTA, in *Middle Age Writers*, an ax with two edges, or which cuts either way; or a miſſive weapon, pointed at both ends.

Walſingham repreſents the *ſecuris biſacuta* as peculiar to the Scottiſh nation. See BATTLE-*ax*.

BISANT. See BESANT.

BISARCA, in *Botany*, a name uſed by ſome authors for the herb TARRAGON.

BISBÆA, a feaſt celebrated by the Meſſapii, after the pruning of their vines, to obtain of the gods that they might grow again the better.

The word is formed from βισβυ, uſed by ſome for a *vine*.

BISCAIAN *language* denotes the Cantabrian, or ancient language of Spain, being a branch of the Celtic, which firſt gave way to the Romanſe.

BISCIA, in *Zoology*, a name by which ſome have called the ACUS, or, as we call it in Engliſh, the tobacco-pipe fiſh, the needle-fiſh, or trumpet-fiſh.

BISCUIT. See BISKET.

BISCUTELLA, in *Botany*. See MUSTARD.

BISECTION. See BISSECTION.

BISELLIARII, or BISELLIARI, in *Antiquity*, thoſe who enjoyed the honour or privilege of the BISELLIUM.

The word occurs in ancient inſcription, CN. PLAETORIO VIVIRO AUGUSTALI BISELLIARIO. Gruter, Inſcr. p. 1099.

The *honor biſellii* appears to have been much the ſame with what in France is called *droit de fauteuil*; and the *biſelliarii* thoſe who, in public aſſemblies, enjoy this diſtinction of the *fauteuil*, while other perſons are obliged to ſtand, or ſit on benches, ſtools, or ordinary chairs. Scaliger, in his index to Gruter, miſtook the *biſelliarii* for artificers who made theſe ſeats.

BISELLIUM, from *bis* and *ſella*, a *chair*, in *Antiquity*, a kind of ſeat or chair, larger and richer than ordinary, big enough to hold two perſons, wherein to ſit in courts, theatres, and other public aſſemblies.

BISERRULA, in *Botany*, a genus of the *diadelphia decandria* claſs. We have no Engliſh name for this plant. Its characters are theſe: the flower is papilionaceous, having a large roundiſh ſtandard, whoſe edges are reflexed. The wings are oblong, and the keel is of the ſame length with the wings. It hath ten ſtamina, nine of which are joined, and the other ſingle; in the centre is ſituated an oblong compreſſed germen, which afterward becomes a flat, narrow pod, indented on both edges like the ſaw of a ſword-fiſh, having two cells filled with kidney-ſhaped ſeeds. We have but one ſpecies of this genus, which is an annual plant, growing naturally in Italy, Sicily, Spain, and the ſouth of France.

BISETÆ, from *bis* and *ſeta, briſtle*, in *Natural Hiſtory*, a term uſed to expreſs a genus of flies of the claſs of the SETICAUDÆ, diſtinguiſhed from the others by their having two hairs or briſtles growing out at the tail. There are many ſpecies of this genus, and they are uſually divided by authors into two principal kinds; ſuch as have ſharp ends, and ſuch as have blunt ones. There are ſeveral ſpecies of the former found in our hedges. See HENOTHRIX.

BISHOP, a prelate, or perſon conſecrated for the ſpiritual government and direction of a dioceſe.

The word comes from the Saxon *biſchop*, and that from the Greek επισκοπος, an *overſeer*, or *inſpector*; which was a title the Athenians gave to thoſe whom they ſent into the provinces ſubject to them, to ſee whether every thing were kept in order; and the Romans gave the ſame title to thoſe who were inſpectors and viſitors of the bread and proviſion. It appears from a letter of Cicero, that he himſelf had a biſhopric; being *epiſcopus Oræ & Campaniæ*.

A *biſhop* differs from an archbiſhop in this, that an archbiſhop with *biſhops* conſecrate a *biſhop*, as a *biſhop* with prieſts ordain a prieſt; that the archbiſhop viſits a province, as the *biſhop* a dioceſe; that the archbiſhop convocates a provincial ſynod, as the *biſhop* a dioceſan one; and that the archbiſhop has canonical authority over all the *biſhops* of his province, as the *biſhop* over the prieſts in his dioceſe.

It is a long time that *biſhops* have been diſtinguiſhed from mere prieſts or preſbyters; but whether that diſtinction be of divine or human right, whether it was ſettled in the apoſtolical age, or introduced ſince, is much controverted. On the one ſide ſtands the New Teſtament, wherein it is certain the names *biſhop* and prieſt are uſed indifferently: on the other ſide are tradition, the fathers, and the Apoſtolical Conſtitutions.

There appear no footſteps of any inſtitution of *biſhops*, diſtinct from prieſts, in the Scriptures; neither do the oppoſers thereof pretend to ſhew any mark of any other form of church-government therein: ſo that it may ſeem probable, the apoſtles did not ſettle any thing of this kind at all; but either left the ſpiritual œconomy in the hands of the preſbyters, or of thoſe together with the people.

Accordingly, new occaſions requiring new meaſures, in a little time the functions of the prieſthood were divided, and the prieſts diſtinguiſhed into degrees; the political part of religion being aſſigned principally to *biſhops*, and the evangelical to the prieſts, &c. Or rather, as ſome will have it, the functions of teaching and preaching were reſerved to the *biſhop*, and that of ordination ſuperadded; which was their principal diſtinction, and the mark of their ſovereignty in their dioceſe.

By the ancient diſcipline, *biſhops* were to be married once, and not to put away their wives on pretence of religion; but a ſecond marriage was a diſqualification for this order. If they lived chaſte, they were ranked as confeſſors.

Some *biſhops*, in the middle age, on account of their *regalia*, or temporalities, were obliged to a military ſervice called *hoſtis*, by which they were to lead their vaſſals into the field, and attend the king in his military expeditions. This Charlemagne excuſed, and even forbid: but the prohibition was little regarded; ſince we find the thing often practiſed afterwards. Du-Cange.

The election of *biſhops* was anciently placed in the clergy, and the people of the pariſh, province, or dioceſe; but afterwards, princes and magiſtrates, patriarchs and popes, uſurped the power. The election was to be within three months after the vacancy of the ſee; and the perſon to be choſen out of the clergy of that church. Formerly the *biſhop* claimed a ſhare in the election of an archbiſhop; but this was ſet aſide by the popes.

In England, during the Saxon times, all eccleſiaſtical dignities were conferred by the king in parliament. At length, however, after ſeveral conteſts, eſpecially between archbiſhop Anſelm and Henry I. in conſequence of a grant of king John, recognized in Magna Charta, and eſtabliſhed by ſtat. 25 Edw. III. ſtat. 6. § 3. *biſhops* were elected by the chapters of monks or canons, ſome ſhadow of which ſtill remains in the preſent method of diſpoſing of biſhopricks. But by ſtat. 25 Hen. VIII. cap. 20. the right of nomination was reſtored to the crown.

Ordinarily, at leaſt three *biſhops* are required in the ceremony of conſecrating a *biſhop*; but, in ſome caſes, a ſingle one might ſuffice. The Engliſh ſucceſſion of proteſtant *biſhops* ſtands on this laſt ground.

In England, the king being certified of the death of a *biſhop* by the dean and chapter, and his leave requeſted to elect another, the *conge d'elire* is ſent to them, with a letter miſſive, nominating the perſon whom he would have choſen. The election is to be within twelve days after the receipt of it, otherwiſe the king by letters patent appoints whom he pleaſes; and the chapter, in caſe of refuſing the perſon named by the king, incurs a *præmunire*.—After election, and its being accepted of by the *biſhop*, the king grants a mandate under the great ſeal for confirmation; which the archbiſhop conſigns to his vicar-general; conſiſting moſtly in a ſolemn citation of ſuch as have any objections to the *biſhop* elect, a declaration of their contumacy in not appearing, and an adminiſtration of the oaths of allegiance and ſupremacy, of ſimony, and canonical obedience. Sentence being read by the vicar-general, the *biſhop* is inſtalled in the province of Canterbury by the arch-deacon; the fact is recorded by a public notary; and the biſhop is inveſted with full powers to exerciſe all ſpiritual juriſdictions, though he cannot ſue for his temporalities till after conſecration.—Then follows the conſecration by the archbiſhop, or ſome other *biſhop* appointed by lawful commiſſions, and two aſſiſtant *biſhops*: the ceremony of which is much the ſame as in the Romiſh church, ſave that, having put on the epiſcopal robes, the archbiſhop and *biſhops* lay their hands on the new prelate's head, and conſecrate him with a certain form of words.

The proceſs of the tranſlation of a *biſhop* to another biſhopric only differs in this, that there is no conſecration.

The age of a *biſhop* is to be at leaſt thirty years; and, by the ancient diſcipline, none were to be choſen but thoſe who had paſſed through all the inferior orders; but, in ſome caſes of neceſſity, this was diſpenſed with, and deacons, nay laymen, were raiſed *per ſaltum* to the epiſcopal dignity.

The form of conſecrating a *biſhop* is different in different churches.—In the Greek church, the *biſhop* elect, being by the aſſiſtant *biſhops* preſented for conſecration, and the inſtrument of election put in his hand; after ſeveral prayers, (the firſt called *diaconicum*) demanding conſecration, makes profeſſion of his faith; after which he receives a benediction. He is then interrogated as to the belief of the Trinity; to which he anſwers by a *long profeſſion of faith*, and receives a ſecond benediction. Laſtly, he is aſked what he thinks of the *incarnation*; to which he anſwers in a *third profeſſion of faith*; which is followed by a third benediction: after which the conſecrator gives him the paſtoral ſtaff: then he is led up to the altar; where, after certain prayers, and three croſſes on his head, he receives the *pallium*, if he be an archbiſhop or patriarch; he then receives the kiſs of peace, of his *conſecrator* and two aſſiſtants; and, ſitting down, reads, prays, and gives the communion to his *conſecrator* and others.

In the Romiſh church, the *biſhop* elect being preſented by the elder aſſiſtant to the conſecrator, takes the oath: he is then examined as to his faith; and, after ſeveral prayers, the New Teſtament is drawn over his head, and he receives the chriſm or unction on his head. The paſtoral ſtaff, ring, and Goſpel, are then given him; and, after communion, the mitre is put on his head: each ceremony being accompanied with proper prayers, &c. the conſecration ends with Te Deum.

Theſe laſt mentioned ceremonies are laid aſide in the conſecration of Engliſh *biſhops*. Nevertheleſs, the book of conſecration, ſet forth in the time of Edward VI. and confirmed by act of parliament, in which ſome of them are enjoined, is declared to be the ſtandard for this purpoſe by the thirty-ſixth article.

The function of a *biſhop* in England may be conſidered as two-fold; viz. what belongs to his *order*, and what belongs to his *juriſdiction*.—To the *epiſcopal order* belong the ceremonies of dedication, confirmation, and ordination; to the *epiſcopal juriſdiction*, by the ſtatute-law, belong the licenſing of phyſicians, chirurgeons, and ſchoolmaſters, the uniting ſmall pariſhes (though this laſt privilege is now peculiar to the *biſhop* of Norwich), aſſiſting the civil magiſtrate in the execution of ſtatutes relating to eccleſiaſtical matters, and compelling the payment of tenths and ſubſidies due from the clergy.

By the common law, the *biſhop* is to certify the judges, touching legitimate and illegitimate births and marriages; and by that and the eccleſiaſtical law, he is to take care of the probate of wills, and granting adminiſtrations; to collate to benefices, grant inſtitutions on the preſentation of other patrons, command induction, order the collecting and preſerving the profits of vacant benefices for the uſe of the ſucceſſors, defend the liberties of the church, and viſit his dioceſe once in three years. To the *biſhop* alſo belong ſuſpenſion, deprivation, depoſition, degradation, and EXCOMMUNICATION.

The *biſhops* of England are all barons. Barons in a two-fold manner; viz. *feudal*, in regard of lands and baronies annexed to their biſhopricks; and by *writ*, as being ſummoned by writ to parliament.—They have the precedence of all other *barons*, and ſit in the upper houſe as *barons*.—They are twenty-four in number, beſides two archbiſhops.

With reſpect to the order of precedency among one another, the archbiſhop of Canterbury takes the lead; then the archbiſhop of York; next to him the *biſhop* of London, of Durham, and Wincheſter. The other *biſhops* follow according to the ſeniority of their conſecration; excepting only, that a *biſhop* being a privy-counſellor, takes place after the *biſhop* of Durham.

Biſhops have two ſpecial privileges next to regal; the firſt, that in their courts they ſit, and paſs ſentence, of themſelves, and by their own authority: the *biſhops* courts being not like other courts; but writs are ſent out in their own name, *teſte* the *biſhop*, not in the king's name, as is done in the king's courts.—The ſecond, that, like the king, they can depute their authority to another, as their ſuffragan, chancellor, commiſſary, &c.

They have alſo this advantage over lay-lords, that, in whatever Chriſtian country they are, their epiſcopal degree and dignity are acknowledged; and they may, *quatenus biſhops*, ordain, &c.

They have ſeveral immunities, as from arreſts, outlawries, diſtreſs, &c. liberty to hunt in the king's foreſts, &c. to have *certain tuns of wine duty-free*, &c. Their perſons may not be ſeized, as lay-peers may, upon contempt, but their temporalities alone. They may qualify as many chaplains as a duke, viz. ſix. But, as they have no right to be tried themſelves in the court of the lord-high ſteward, as peers, they ought not to be judges there.

By law, the crime of *epiſcopicide*, which a clergyman commits by killing his *biſhop*, is petty-treaſon.

In Denmark, there are ſix ſuperintendents, who take it very kindly to be called *biſhops*, and *my lords*.—They have no temporalities; keep no eccleſiaſtical courts; have no cathedrals, or prebends, &c. but are only *primi inter pares*, having the rank above the inferior clergy of the province, and inſpection over their doctrine and manners. They are allowed two or three pariſhes each. Their habit is common with that of the other miniſters.

In Sweden are an archbiſhop, and ten *biſhops*, with ſeven or eight ſuperintendents under them.—They have alſo eccleſiaſtical courts, &c

Bishop-*abbot*, *epiſcopus-abbas*, was an abbot inveſted with the epiſcopal order; of which we meet with ſeveral in the richer and more conſiderable monaſteries.

Bishop, *cardinal*, a *biſhop* in chief, or *in capite*.

St. Gregory ſometimes uſes the term for a proper *biſhop*.

Anciently there were alſo *biſhops*, who, by a peculiar privilege from the holy ſee, were ranked, and had a ſeat among the cardinals.

Bishop, *cathedral*, was alſo a title given to the proper *biſhops*, by way of diſtinction from the *chorepiſcopi*.

Bishops, *vague*, thoſe without any dioceſe, ſometimes attendant in camps, or in foreign countries, for the converſion of infidels.

The like *vague biſhops* were ſometimes alſo granted by popes to monaſteries, exempt from the juriſdiction of the dioceſan, where they performed all the epiſcopal functions. Du-Cange.

Bishop *in partibus infidelium*, he who is dignified with the title of a biſhopric, whoſe diſtrict or dioceſe is in the poſſeſſion of infidels or heretics.

By the canon law, a *biſhop in partibus* is qualified hereby to be a COADJUTOR of another *biſhop*.

The denomination took its riſe from the expulſion of the *biſhops* and clergy, out of the Holy Land by the Saracens; when flying into Italy for ſhelter, coadjutories were given them for their ſubſiſtence.

Bishop, *acephalous*, he who is immediately ſubject to the papal ſee, without any metropolitan over him.

Bishop-*elect* is he who has the king's nomination, with the ſanction of the chapter; but without conſecration.

Bishop-*deſigned*, *epiſcopus deſignatus*, denoted a COADJUTOR of a *biſhop*, who, in virtue of his office, is to ſucceed at the incumbent's death.

Bishops, *ſuffragan*, are coadjutors or aſſiſtants of dioceſan *biſhops*, authorized by commiſſion from him.

Bishops, *exempt*, thoſe freed from the juriſdiction of the metropolitan, and immediately ſubject to the ſee of Rome alone.

Bishop *of the palace*, *epiſcopus pallatii*, was probably the ſame with *biſhop* of the king's chapel, a title in the court of Bohemia. Du-Cange.

It was alſo a title given thoſe *biſhops*, who, by licence of the pope, dwelt in palaces of kings, to be in readineſs for ſpiritual ſervice and counſel in church-matters.

Bishop *of the prime ſee*, denoted a PRIMATE, otherwiſe denominated a *ſenior biſhop*.

Bishops, *commendatory*, or *biſhops in* COMMENDAM, are cardinals not of the order of *biſhops*, or other prelates, who yet hold biſhoprics *in commendam*.

The appellation had its origin during the reſidence of the papal ſee at Avignon, when ſcarce any cardinal, prieſt, or deacon, was created, who held not one, two, three, or more *biſhoprics in commendam*. Du-Cange.

Bishop, *univerſal*, or *catholic*, is a title given to the patriarch of Armenia.

Bishop *of the catholic or univerſal church*, a title ſometimes aſſumed by the popes.

Bishop *of biſhops*, was a title anciently given to the prelates of ſome of the greater and more honoured ſees, as Jeruſalem and Rome.

The firſt who had the title was James *biſhop* of Jeruſalem. Some will have the appellation to have been common to all *biſhops*.

Bishops, in the *Lutheran Church*, are thoſe more uſually called SUPERINTENDENTS.

The Calviniſts allow of no other *biſhops* beſides preſbyters; but the Lutherans make ſome diſtinction, and give a ſuperiority or pre-eminence over the reſt to their *biſhops*, *ſuperintendents*, or *overſeers*.

Bishop is alſo a quality ſometimes attributed to ſecular princes, in reſpect of their SUPREMACY or juriſdiction in matters belonging to religion.

In this ſenſe it is that the emperor Conſtantine, in a letter to the *biſhops* in his dominions, calls himſelf *common biſhop*, as being, in ſome reſpects, general *biſhop* of the whole Roman world.

Bishop *of the Jews*, the head of that people in England, choſen by themſelves, to whom they ſubmitted to be judged, and governed according to their law. Prideaux's Connect. part ii. lib. v. p. 478.

This officer, which ſubſiſted under our Norman kings, and was licenſed by them, anſwered to the ÆCHMALOTARCHS in Babylon, and the ALABARCHS in Egypt.

Bishops *at cheſs*, a kind of pieces, the third in rank, below queens, but above knights, diſtinguiſhed by their cloven heads.

In Latin writers of the middle age, the *biſhop* is called *alphinus*; and by the French *le fou*, the *fool* or *madman*. See CHESS.

Bishop, in *Zoology*, a little ſpotted beetle, commonly called the lady-cow, or lady-bird.

Bishops, *regionary*. See REGIONARY.

Bishop'*s Court*. See COURT.

Bishop'*s ſee*, or *ſeat*, originally denoted the throne or chair in the church where the *biſhop* ſat.

This was alſo denominated APSIS.

Bishop'*s ſee* alſo denotes the city or place where the reſidence of the *biſhop* is fixed.

Every *biſhop's ſee* was anciently called *ſedes apoſtolica*; though the appellation has ſince been reſtrained to the ſee of Rome.

Anciently *biſhops* ſeem to have had a right in England to ſit as judges in the hundred and county-courts. In after-times, they were forbid to ſit in ſecular courts, and had ſeparate courts erected for them; which proved an occaſion of much diſpute between the two juriſdictions. No church-tenant might be ſued in any court but the *biſhop's*. There are alſo traces of a ſeparate court of the *biſhops* much earlier, among our Saxon anceſtors, in the eighth century.

The regard borne to the character of *biſhops*, made them the common arbitrators even of ſecular cauſes: they had the cognizance of all cauſes concerning lands in *frank-almoign*; and for eccleſiaſtics, were judges even in capital cauſes.

Bishop'*s weed*, *Ammi*, in *Botany*, a genus belonging to the *pentandria digynia* claſs of Linnæus. Its characters are theſe: it is an umbelliferous plant, with difform flowers, each having five heart-ſhaped petals; they have five ſlender ſtamina, and two reflexed ſtyles, crowned with obtuſe ſtigmas; the germen becomes a ſmall, round, ſtriated fruit, compoſed of two ſeeds. There are two ſpecies.

Bishop, in *Ornithology*, is a name given to an excellent ſinging bird in Louiſiana. His ſong continues for the ſpace of a *miſerere*, in all which time he does not appear to breathe; he is then ſilent twice as long before he renews it; ſo that the alternative of ſong and reſt continues two hours.

BISHOPING, in *Horſemanſhip*, a term denoting the arts uſed by jockeys for making old horſes appear young, &c.

BISHOPRIC, the juriſdiction of a *biſhop*: or the diſtrict within which it is compriſed; called alſo *dioceſe*.

There are 24 *biſhoprics*, and two archbiſhoprics, in England and Wales.—To the *old* ones, ſubſiſting before the times of the Reformation, Henry VIII. by letters patent added five more *biſhoprics*; viz. thoſe of Cheſter, Gloceſter, Peterborough, Briſtol, and Oxford, ſtat. 34 & 35 H. VIII. cap. 17.

In Ireland, there are eighteen *biſhoprics*, and four archbiſhoprics; in Scotland none.

BISK, or **BISQUE**, in *Cookery*, a rich ſort of broth or ſoop, made of pigeons, chickens, force-meat, mutton-gravy, and other ingredients.

The word is French, formed, as ſome think, from *biſcocta*; becauſe the *biſque*, conſiſting of a diverſity of ingredients, needs ſeveral repeated coctions to bring it to perfection.

There is alſo a *demi-biſque*, made at a low expence, in which only half the ingredients are uſed; and a *biſque* of fiſh, made of carps, minced with their roes and lobſters.

BISKET, or **BISQUET**, uſually denotes a delicate kind of bread prepared by the confectioners, of fine flour, eggs, ſugar, and roſe of orange-water; or of flour, eggs, and ſugar, with aniſe-ſeeds and citron-peel; baked in the oven in tin or paper moulds.

The word comes from the Latin *bis*, *twice*; and the French *cuit*, *coctus*, q. d. *baked*.

We find divers ſorts of ſuch *biſkets*; as, ſeed-*biſket*, fruit-*biſket*, long-*biſket*, round-*biſket*, Naples-*biſket*, ſpunge-*biſket*, &c.

BISKET, *ſea*, is a ſort of bread much dried, by paſſing the oven twice, to make it keep for the ſervice of the ſea.—For long voyages they bake it four times, and prepare it ſix months before the embarkation. It will hold good a whole year.

To preſerve ſea-*biſkets* from inſects, Dr. Hales adviſes to make the fumes of burning brimſtone paſs through the caſks full of bread.

Biſket may be likewiſe preſerved a long time, by keeping it in caſks well calked, and lined with tin.

The ancients had their *biſket* prepared after the like manner, and for the like uſe as the moderns. The Greeks called it αρτον διπυρον, q. d. *bread put twice to the fire.* The Romans gave it the name of *panis nauticus*, or *capt.* Pliny denominates it *vetus aut nauticus panis tuſus atque iterum coctus.* By which it appears, that, after the firſt baking, they ground or pounded it down again for a ſecond. In ſome middle-age writers, it is called *paximas*, *paximus*, and *panis paximatus*.

Among the Romans, we alſo meet with a kind of land-*biſket* for the camp-ſervice, called *buccellatum*, ſometimes *expeditionalis annona*, which was baked much, both to make it lighter for carriage, and leſs liable to corrupt, the coction being continued till the bread was reduced one fourth of its former weight.

BISLINGUA, *double-tongue*, a name uſed by many authors for the narrow-leaved RUSCUS, or BUTCHERS-BROOM; called by many others the Alexandrian bay, or *laurus Alexandria*.

BISMILLAH, in the *Mahometan Cuſtoms*, a ſolemn form, viz. *in the name of the moſt merciful God*, conſtantly placed at the beginning of their books and writings in general, as a peculiar mark, or diſtinguiſhed characteriſtic, of their religion, it being counted an impiety to omit it.

The Jews, for the ſame purpoſe, make uſe of the form, *in the name of the Lord*, or, *in the name of the great God.* Sale.

BISMILLAH is alſo uſed among the Arabs, as a word of invitation to eat.

An Arab prince will frequently ſit down to eat in the ſtreet before his own door, and call all that paſs, even beggars, by this word, who do not fail to come and ſit down to eat with him; for the Arabs are great levellers, and ſet every body upon a footing with themſelves. Pococke's Egypt, &c. p. 483.

BISMUTH, a mineral body, of the ſemimetallic kind; by many ſuppoſed to be compoſed of the firſt matter of tin, while yet imperfect. It is found uſually in tin-mines, ſometimes alſo in ſilver-mines.

Its weight and colour diſcover it to be of a mercurial or metallic nature. In common menſtruums, it undergoes much the ſame alterations, and aſſumes much the ſame forms as lead. Quincy ſays, there is always ſome ſilver in it.

Its ſubſtance is hard, ponderous, and brittle, of a large grain, gloſſy, white, and ſhining.—It is alſo called TIN-*glaſs*; becauſe, when broken, it ſhews a vaſt number of little poliſhed *laminæ* like glaſs: it is alſo called MARCASITE, by way of excellence, becauſe ſurpaſſing all other marcaſites or ſemimetals in whiteneſs and beauty.

It appears to be compoſed of cubes, formed by the application of plates upon each other. Its colour is leſs white than that of the regulus of antimony, and has a reddiſh tinge, eſpecially when expoſed to the air. It is the heavieſt of the ſemimetals, and loſes in water about a ninth part of its weight. Like the other ſemimetals it is ſemi-volatile; when expoſed to the fire, flowers riſe from it, it is calcined, and converted into a litharge and glaſs nearly as lead is, and, like it, may be employed to the purification of gold and ſilver by cuppellation. It eaſily combines with ſulphur, and amalgamates with mercury, and unites with all metallic matters, excepting, according to Mr. Gellert, zinc, and arſenic; their affinities with it are, according to him, in the following order. Iron, copper, tin, lead, ſilver, and gold. *Biſmuth*, like iron, is ſaid to occupy, when fuſed, a leſs ſpace than when ſolid; it is fuſible with a heat of 460° degrees of Fahrenheit's thermometer; it greatly increaſes the fuſibility of ſome other metals; a ſmall portion of it increaſes the brightneſs, hardneſs, and ſonorouſneſs of tin, for making pewter, with which it is chiefly uſed; as it is alſo for ſoldering ſome metals, and for making printer's types; for ſoils for mirrors; for anatomical injections; for imitating ſilvering upon wood; and for rendering ſome metals fitter for being caſt into moulds.

Biſmuth is ſometimes found native, but that very rarely. Its moſt uſual appearance is in the ſtate of ore, into which it is reduced by its particles being penetrated by, and intimately mixed with, a ſulphur, and with a large quantity of arſenic, and with an earthy matter, which yields a blue colour, equal to the zaffer, or ſmalt produced from cobalt.

In the fuſion of this ore, the ſulphur and arſenic evaporate over the fire; and the reguline matter, being freed from its impriſoned ſtate, runs off from the earthy ſubſtance, which being left fixed behind, may, with the addition of flints, and a fixed alkali, be run into a fine blue, glaſſy matter, no way differing from the ſmalt of cobalt.

Native *biſmuth* is found in ſmall compact maſſes, of a pale lead colour on the outſide, and when broken, of a fine, glittering, ſilvery white, and compoſed of a multitude of foliaceous flakes or plates, laid evenly over one another, and diſpoſed in ſeveral irregular directions in the maſs.

It is ſubject to fewer variations in its ore than moſt other minerals; but it is ſometimes turned yellow by too great a proportion of ſulphur, and ſometimes is very deeply tinged with the matter of the common marcaſites, and, in this condition is often miſtaken for mere marcaſite, to the no ſmall loſs of the proprietor of the mine.

It is very common in Germany and England. The tin-mines in Cornwall afford great quantities of it; but it is not much known there.

Mr. Boyle mentions a medicine prepared from *biſmuth* by calcination, and the addition of ſpirit of vinegar and *cremor tartari*, which has been extolled in the dropſy. He alſo mentions a preparation of it with common ſublimate into a white powder, a few grains of which purge gently. Works abr. p. 501.

Its medicinal virtue is much the ſame with that of the droſs of lead, being ſeldom uſed except in external forms, as containing an arſenical ſalt, very dangerous to be taken inwardly; yet M. du Clos made a purgative of it, to be uſed in the dropſy. Add, that *biſmuth* being diſſolved in ſpirit of nitre, yields a fume, which, being precipitated with water, produces a white powder, called magiſtery of *biſmuth*, and Spaniſh white, found a good diaphoretic in acute caſes.

But its chief uſe among the ancients, as well as moderns, is as a coſmetic. Other menſtrua, and other precipitates, have been uſed for producing this powder; but by whatever means it is prepared, it retains a corroſive quality, and injures the complexion.

Sig. Poli, by repeated diſtillations of *biſmuth* with an equal quantity of corroſive ſublimate, procured a running mercury, and a fine powder, of the colour of pearl, which might be of uſe in counterfeiting the oriental pearls. Hiſt. Acad. Sc. 1713.

To the ſame purpoſe, Neumann ſays, that by expoſing a mixture of *biſmuth* and corroſive ſublimate to the fire in a retort, part of the quickſilver diſtilled, and was ſucceeded by a dark brown butter, which concocting, grew hard as a ſtone. By repeatedly rectifying the butter, it became clearer and browner, and harder; and an unctuous pearl-coloured matter remained after every diſtillation. Neumann's Works, p. 109.

Biſmuth bears a near affinity to ZINC.

Lemeri ſays, that if the ſolution of *biſmuth* be uſed as an ink to write with, the writing does not appear, but that it becomes very black, when moiſtened with the deliquiated liquor of the ſcoria of *regulus* of antimony. See INK *ſympathetic*.

There is alſo an *artificial biſmuth*, which is that ordinarily found in the ſhops, made by reducing tin into thin *laminæ*, or plates, and cementing them by a mixture of white tartar, ſalt-petre, and arſenic, ſtratified in a crucible over a naked fire. The ſame is alſo by ſome made of a mineral called ZINC, uſing lead inſtead of tin, and a little calamine.

BISMUTH-*graupen*, in *Mineralogy*, a name given by the Germans to a fixed earth contained in the ores of *biſmuth*, which ſerves to make *ſmalt*, as well as the earth of *cobalt*. After the *biſmuth* is melted from the ore, they take the *reſiduum*, or *graupen*, and mixing it with flints calcined and powdered, they run it into a fine blue glaſs, which is no way inferior to the common *ſmalt*.

The *biſmuth* ore is often mixed among the *cobalt*, and, in this caſe, the miners ſeparate them with all the care they can; but often they are not able to do it perfectly, and the two minerals bear the fire together; in which caſe, there ariſes ſome difficulty in the working; for the *biſmuth* mixing itſelf with ſome of the earth of the *cobalt*, in this caſe, ſubſides to the bottom of the veſſel in form of reddiſh *regulus*; but this is to be ſeparated by a ſecond operation, and the *regulus* obtained pure and white; and its own earth, together with that of the *cobalt*, are ſeparated from it, and wrought together into *ſmalt*.

BISNOW, or BISCHNOU, a ſect among the Indian BANIANS, or caſt of merchants.

The banian ſect conſiſts of two leſſer ones; that of *biſnow*, and that of *ſamarath*.

The followers of the former hold one God, whom they call *ram-ram*, and allow of no lieutenants or deputy-gods, as is done by thoſe of the ſect *ſamarath*; but they allow their god a wife, and have idols, which they dreſs up with gold chains, and collars of pearl and precious ſtones, and pay them worſhip, by ſinging hymns in their temples, and dancing before them to the ſound of flagelets and kettle-drums.

In this ſect, the wives do not burn themſelves after their huſbands death, as is practiſed by thoſe of the *ſamarath* ſect; but content themſelves with a perpetual widowhood.

BISOMUM, in *Antiquity*, a TOMB for two bodies, or the aſhes of two.

The word is compounded of *bis*, *twice*, and the Greek σωμα, *body*, or *aſhes of a body*. Some, with greater purity, write *diſomum*.

The ancients frequently buried two, three, or four bodies in the ſame ſepulchre, diſpoſed aſide of each other; for it was held an impiety to lay one a-top of another. Hence the ſepulchres of the primitive Chriſtians had the words *biſomi*, *triſomi*, *quadriſomi*, &c. inſcribed on them, to indicate the number of bodies depoſited in them. Du-Cange.

BISON, in *Natural Hiſtory*, the name of a ſpecies of wild-bull, which differs from all other ſpecies, by having a very ſhaggy mane, running down his neck quite to his ſhoulders, and a large hump on his back. In Mr. Ray's time, there was a bull of this kind kept in St. James's Park; but there was no account whence it was brought. This author ſuppoſes it to have been from Florida, where, according to Ambroſe Paré, there are bulls called *butrones* by the natives, which have horns of about a foot long, and a bunch in the middle of the back, like the camel. Thevet alſo mentions this creature; and Geſner deſcribes it under the name of the BOS CAMELITA.

BISQUET. See BISKET.

BISSACRAMENTALES, a denomination given by ſome Romiſh writers to proteſtants, on account of their only holding two ſacraments, viz. baptiſm and the ſupper.

BISSECTION, in *Geometry*, the diviſion of any quantity into two equal parts, otherwiſe called BIPARTITION. See DIVISION, &c.

BISSELÆON, in the *Materia Medica*, a name that is found in many works of the moſt ancient Greek and Roman writers, and uſed to expreſs the oil of pitch, or that fluid ſubſtance which ſwims at the ſurface of melted pitch, and was taken up by means of wool or cotton by the ancients, and uſed in many external diſorders.

The common name of this oil was *piſſelæum*; and this other name is only a corrupt way of ſpelling it. The old authors, in many other words as well as this, have changed the initial P into B.

BISSEXTIALIS, or BISSEXTIALIS *olla*, an ancient meaſure or veſſel, containing twelve ounces, or two SEXTARIES.

BISSEXTILE, or *Leap-year*, in *Chronology*, a YEAR conſiſting of 366 days, happening once each four years, by reaſon of the addition of a day in the month of February, to recover the ſix hours which the ſun ſpends in his courſe each year, beyond the 365 days ordinarily allowed for it.

The day thus added, is alſo called *biſſextile*; Cæſar having appointed it to be the day before the 24th of February, which among the Romans was the ſixth of the calends of March, and was reckoned twice.

By the ſtatute *de anno biſſextile*, 21 Hen. III. to prevent miſunderſtandings, the intercalary day, and that next before it, are to be accounted as one day.

The aſtronomers concerned in reforming the calendar, by order of pope Gregory XIII. in 1582, obſerving, that the *biſſextile* in four years added 44 minutes more than the ſun ſpent in returning to the ſame point of the zodiac; and computing that theſe ſupernumerary minutes in 133 years would form a day; to prevent any changes being thus inſenſibly introduced in the ſeaſons, directed, that, in the courſe of 400 years, there ſhould be three *biſſextiles* retrenched; ſo that every centeſſimal year, which, according to the Julian account, is *biſſextile*, or leap-year, is a common year, in the Gregorian account, unleſs the number of centuries can be divided by 4, without a remainder. Thus 1600 and 2000 are *biſſextile*; but 1700, 1800, and 1900, are common.

The Gregorian computation was received in moſt foreign countries ever ſince the reforming of the calendar; and by act of parliament paſſed anno 1751, it commenced in all the dominions under the crown of Great Britain, in the year following, ordering that the natural day following the ſecond of September, ſhould be accounted the fourteenth; omitting the intermediate eleven days of the common calendar.

BISTER. See BISTRE.

BISTI, a ſpecies of Perſian money, valued at ſixteen or eighteen French *deniers*. Some repreſent the *biſti* as an ancient ſilver coin: others, as Chardin, make it only a money of account, and call it DINAR BISTI.

BISTORT, or SNAKEWEED, *Polygonum*, in *Botany*, the name of a genus of the *octandria trigynia* claſs of plants, the characters of which are theſe: the flower is of the apetalous kind, conſiſting of a number of ſtamina, which ariſe from a cup, divided into ſeveral ſegments at the edge: the piſtil becomes afterwards a ſeed, uſually of a triangular figure, and contained in a capſule, which was before, the cup of the flower. See *Tab.* 1. *of Botany*, *Claſs* 15.

To this it is to be added, that the flowers are diſpoſed in ſpikes; and the roots are large and fleſhy, oddly twiſted or contorted, and furniſhed with a number of ſmall fibres, like hairs. There are alſo ſome ſpecies of *biſtort*, in which, beſide the common flowers and ſeeds, there are certain tubercles, which have their roots, and rudiments of leaves.

There are three different ſpecies of this plant which are found wild in England, but they are ſeldom planted in gardens, the common ſort only is uſed in medicine. Phil. Tranſ. vol. xlix. part ii. N° 112.

The common great *biſtort*, or *ſnakeweed*, flowers in May, and if the ſeaſon proves moiſt, will continue to produce new ſpikes of flowers until Auguſt: it may be propagated by planting the roots in a moiſt ſhady border, either in ſpring or autumn, which will ſoon furniſh a garden with plants, for it greatly increaſes by its creeping roots.

The root of *biſtort*, which is the only part that is uſed, is drying and binding; of ſervice in all kinds of fluxes and hæmorrhages, either from the bowels, or any other part; they help the incontinence of urine, and the making bloody water; they are alſo alexipharmic, and good in peſtilential fevers, reſiſt poiſon, and the bites and ſtings of venomous creatures.

BISTOURY, a kind of ſurgeon's cutting inſtrument, of the knife-kind; much uſed in making inciſions.—There are three kinds: the blade of the *firſt* turns backwards and forwards like a lancet for opening abſceſſes, and is ſometimes uſed inſtead of it.—The *ſtrait biſtoury* does not turn, but ſtands ſtrait in the handle like a common knife.—The *crooked biſtoury* is ſhaped like a half moon, the keen edge being on the inſide.

We have the deſcription of a *biſtoury*, and furrowed director, ſomewhat different from the common, by Mr. Monro, in the Medic. Eſſ. Edinb. vol. v. art. 41.

M. le Dran deſcribes a *biſtoury caché*, for more ſafely performing the operation of *herniæ*. The point of the *biſtoury* ſlides in the furrow of the director, to keep down the guts, and thereby prevent their being cut.

BISTRE, a compoſition made of the moſt gloſſy and higheſt burnt ſoot, pulverized, and paſſed through a fine ſieve, then baked in a little gum-water, and made into cakes.

The beſt is prepared from the ſoot of dry beech-wood, by grinding it with urine or water, into a ſmooth paſte, and then diluting it with more water; after the groſſer ſubſtance has ſubſided, the liquor is poured off into another veſſel, and left to ſettle three or four days; the fine matter that remains is *biſtre*. That which is good is tranſparent, when moiſtened with water, and of a warm, deep, brown colour.

Inſtead of this, ſome uſe the hatches of a pen, with a little Indian ink, others red chalk, others black lead, &c. See WASHING.

BIT, or BITT, an eſſential part of a bridle; its form and uſe well known; its parts and kinds various.

The kinds of *bits* are, 1. The muſroll, ſnaffle, or watering *bit*. 2. The cannon-mouth, jointed in the middle; preferred by Solleyſel to all others. 3. The cannon with a faſt mouth all of a piece, only kneed in the middle, to form a liberty or ſpace for the tongue; fit for horſes too ſenſible or ticklish, and liable to be continually bearing on the hand. 4. The cannon-mouth, with the liberty in form of a pigeon's neck; proper where a horſe has too large a tongue. 5. The cannon with a port, mouth, and an upſet, or mounting liberty, uſed where a horſe has a good mouth but large tongue. 6. The ſcatch-mouth, with an upſet; ruder, but more ſecure than a cannon-mouth. 7. The cannon-mouth with a liberty, after M. Pignatel's manner; proper for a horſe with a large tongue and round bars. 8. The maſticadour, or ſlavering *bit*. 9. The cat's foot *bit*. 10. The baſtonet *bit*, &c.

The ſeveral parts of a ſnaffle or curb-*bit* are—the mouth-piece, the cheeks and eyes, guard of the cheek, head of the cheeks, the port, the welts, the campanel, or curb and hook, the boſſes, the bolſters and rabbets, the water-chains, the ſide-bolts, bolts and rings, kirbles of the *bit* or curb, trench, top-roll, flap, and jeive.

To BIT *a horſe*, is to give him ſuch a bridle as is moſt proper for gaining his conſent to thoſe actions, which are required of him.

All *bits* ought to be proportioned to the mouth of the horſe, according as it is more or leſs cloven or wide; or more or leſs ſenſible and tender: alſo according as the tongue and lips are higher and flatter; and as the palate is more or leſs fleſhy.

BIT is alſo uſed for a little tool, fitted to a ſtock or handle, to bore withal.

In this ſenſe we ſay, the *bit* of a piercer, an AUGRE, or the like; meaning that iron part of thoſe tools, wherewith the holes are bored.

BIT *of a key* is that part fitted at right angles to the ſhank of the KEY, wherein the wards are made. See LOCK, &c.

BIT is alſo uſed, in *Commerce*, for a piece of coin current in Jamaica, and valued at 7*d*. ½.

BITS, or *bitts*, in a ſhip, are two great pieces of timber uſually placed abaft the manger in the ſhip's loof, through which the croſs-piece goes, their lower parts being faſtened to the rudders; and their middle parts, in great ſhips, bolted to two large beams, croſs the bows. Their uſe is to belay the cable to, when the ſhip rides at anchor.

The word ſeems formed from the French *bittes*, which ſignifies the ſame; unleſs we ſuppoſe that the French word is formed from ours.

In great ſtorms, to ſtrengthen the *bits*, and ſecure the bows, the cable is faſtened to the main-maſt.

BITS, *fore-jeer*, thoſe to which the fore-jeer is faſtened and belayed.

BITS, *fore-top-ſail-ſheet*, thoſe to which the fore-top-ſail-ſheet is belayed.

BITE is defined to be a ſolution of the continuity of a ſoft part, cauſed by the impreſſion of an animal's teeth.

For the poiſonous, or venomous *bites* of VIPERS, the RATTLE-SNAKE, MAD-DOGS, the TARANTULA, &c. See VIPERS, &c.

SNAKE-STONE, SNAKE-WEED, *terra melitenſis*, &c. are reputed ſpecifics againſt poiſonous *bites*.

The *bites* of ſpiders, at leaſt of ſome *ſpecies*, alſo appear to be poiſonous; which has perhaps been the occaſion of the common error, that this inſect is poiſonous, when eaten. See SPIDER.

Mr. Robie, a phyſician in New England, gives the hiſtory of a perſon bitten in the leg by a ſmall ſpider, accidentally incloſed in his ſtocking; it was followed by an acute, erratic pain; firſt in the leg, then in the groin, and ſucceſſively paſſing into the ſmall of the back, the thigh, and the head, attended with a numbneſs, &c. It was cured with *ſp. cor. cerv.* and *ſal. vol. corn. cerv.* with *vinum viperinum*, and onions or garlic applied to the wound. Phil. Tranſ. N° 382, p. 69.

Sig. Redi attributes the malignity of the *bite* of a VIPER, to a yellow juice lodged in a bag behind the gum, which is inſtilled through a ſlit in the teeth, into the wound. M. Bourdelot, and Charas, aſcribe it to the irritated bilious ſpirits, and breath of the enraged animal. Phil. Tranſ. N° 83.

In ſupport of which it is alledged, that the viper's lungs are full of bilious ſpirits, which exhale with its breath; and that there is an immediate duct in this creature, from the gall-bladder to the throat; by means of which, a quicker, and more copious infuſion of the bile, is made into the wound. But much of this may be juſtly doubted. Phil. Tranſ. N° 77. p. 3015.

The beſt remedy for it is ſucking the wound; a kind of cure, for which the ancient Marſi and Pſilli are celebrated.

The beſt cure for the *bite* of the rattle-ſnake is an actual cautery; e. gr. a hot burning coal held on the wound. Phil. Tranſ. N° 210.

The *bites* of divers creatures, when mad, are poiſonous, which at other times are not ſo, as of dogs, cats, men, &c. See HYDROPHOBIA, MAD-*dog*, MADNESS, MANIA, &c.

BITE is alſo applied, in a leſs proper ſenſe, to the impreſſion of other ſharp, or pungent bodies. Thus a file is ſaid to *bite* the metal; *aqua fortis bites*, or eats into copper. An anchor is alſo ſaid to *bite*, when it holds faſt in the ground.

BITERLOGH, or BITHERLAGE, the ancient Daniſh military, or camp law.

The word is compounded from *bithe*, *mulct*; and *lagh*, *law*; q. d. the law of *mulcts*, or *wites*.

Among the laws of the Danes, there are two peculiarly eminent; viz. the *bird ſtraa*, or *court-law*; and the *biterlage raett*, made by Canute the Great, about the year 1035. Of which an edition has been given by Reſenius.

BITHYNIARCHIA, a ſort of ſuperior prieſthood in the province of Bithynia, to which belongs the ſuperintendency of the ſacred games, and which gave an exemption to him poſſeſſed of it, called *bithyniarcha*, from the care of tutorage.

BITTACLE, or BINACLE, a ſquare box, or frame of timber, placed in the ſteerage of a ſhip, wherein the COMPASS is placed.

The word is formed, by contraction, from the French *habitacle*, a *ſmall habitation*, which ſignifies the ſame.

Large veſſels have two *bittacles*, a leſſer placed before the pilot, and a greater before the ſteerſman.

In the ſmaller veſſels, the *bittacle* is divided into three ſpaces or apartments; in large veſſels into five. One for the hour-glaſſes; another for the lamp, or light; another for the compaſs, &c.

Great care is to be taken in the diſpoſition, framing, &c. of the *bittacle*, that it ſtand true, and that it be not faſtened together with iron nails, but with wooden pins, becauſe the former would affect the compaſs.

BITTACUS, in *Natural Hiſtory*, a name given by Cteſias, and ſome others of the Greek authors, to the parrot.

The word *pſittacus* is ſo near this, that they are plainly only a corruption of one another. The Greeks called this bird indifferently *pſittacus*, and *ſittacus*, as they did the fine ointment *ſagda*, indifferently by that name, or *pſagda*, the *ps* being only one letter with them; and that, and the ſingle S, very frequently uſed at pleaſure for one another.

BITTER *almonds*. See ALMOND.

BITTER *apple*. See COLOCYNTHIS.

BITTER *gourd*. See COLOCYNTHIS.

BITTER *waters*. See WATER.

BITTER *wine*. See WINE.

BITTER *ſweet*, in *Botany*. See NIGHTSHADE.

BITTER *vetch*. See VETCH.

BITTER *wort*. See GENTIAN.

BITTERN, in *Zoology*, the name of a bird of the heron-kind, called by authors ARDEA *ſtellaris*; and by ſome *taurus*, *botaurus*, *butorius*, and *ocnus*: in Engliſh, the *butter-bump*, and *mire-drum*. It builds on the ground, and lays five or ſix eggs, which are roundiſh, and of a greeniſh white. When wounded, and going to be taken, it ſtrikes at the perſon's eye, and ought carefully to be guarded againſt.

BITTERN is alſo a name given to the brine ſwimming upon the firſt concreted ſalt in the ſalt-works; this liquor is ladled off, that the ſalt may be taken out of the veſſel, and is afterwards put in again, and affords more ſalt, which is to be ſeparated like the reſt, by lading off the liquor a ſecond time, and ſo on.

The *bittern*, according to Mr. Boyle, is a very ſaline, bitter, ſharp, pungent liquor, which drains off in the making of ſalt from ſea-water; or which remains in the pans, after the coagulation, and granulation of the purer, and more ſaline part, by boiling.

A *bittern* alſo runs, or oozes, from the heaps of foſſile ſalt at Limington, and Portſea in Hampſhire. Phil. Tranſ. N° 377. p. 348.

Bittern makes the *baſis* of *ſal catharticum amarum*, or EPSOM-SALT.

Bittern is the mother-ley of SEA-*ſalt*, or the liquor which remains after the purification and cryſtallization. It is employed in this country for making a purging bitter ſalt, which proves ſimilar in quality to the ſalt obtained from the Epſom waters, and is commonly ſold under its name. The *ley* is boiled down to a certain pitch, then filtered and inſpiſſated, the dry matter is calcined, rediſſolved, and cryſtallized. If the mother-ley be inſpiſſated and diſtilled with vitriolic additions, a ſpirit of ſalt is obtained. Neumann, p. 212.

BITTERNESS, a kind of ſavour or ſenſation, oppoſite to ſweetneſs.

According to Grew, *bitterneſs* is produced by a ſulphur well impregnated with a ſalt, either alcaline or acid, and ſhackled with earth.

Hence it is that the bittereſt plants uſually yield the greateſt quantity of lixivial ſalt; and that many diſtilled oils, digeſted with any ſtrong acid, acquire a bitter taſte. Add, that the leaves of all ſweet roots are bitter; the fig-tree, which bears a ſweet fruit, bleeds a bitter milk; and that the roots of plants, which bear a bitter ſtalk, are not bitter, but hot. That the earthy parts contribute conſiderably to the *bitterneſs* of bodies, appears hence, that moſt bodies of that kind are fixed; or, if they do emit fumes, do not loſe their bitter taſte therewith. Diſc. of Taſte of Plants, cap. iv. § 12.

Bitterneſs, Neumann obſerves, is extracted both by water and ſpirit; does not ariſe in diſtillation; is freed from its ſmell by boiling in water, and covered by acids. He has given the chemical hiſtory of *bitter* VEGETABLES. See his Works.

Mr. Boyle obſerves, that a ſubſtance bitter in the higheſt degree, may be divided into two ſubſtances, the one extremely ſour, and the other inſipid. This happens, when the cryſtals of ſilver are diſtilled by a heat ſufficient to drive away all the ſpirits from the ſilver. What remains is inſipid, and what riſes is highly acid. Works abr. vol. i. p. 541.

The extinguiſhing, or removing of *bitterneſs*, is called DULCIFYING, ſweetening, &c.

M. Bon has given methods of removing, or diſcharging the *bitterneſs* of olives and Indian cheſnuts. Mem. Acad. Sc. 1720. p. 600.

The *bitterneſs* of SEA-water has been ſuppoſed to ariſe from the diſſolution of the beds, or ſtrata of BITUMEN; as its ſaltneſs does from a diſſolution of the ſtrata of ſalt. Ibid. 1710. p. 33.

The qualities of *bitter* bodies are ſuppoſed to be dry, warm, aſtringent, and earthy.

According to Grew, all plants which are *bitter* and pungent, either on the tongue, or in the throat, are good cleanſers, e. gr. daiſy, anagallis, &c. The ſame author adds, that moſt purgative and emetic plants, which have any ſenſible taſte, are *bitter*; either ſimply, as colocynthis; or *bitter* and aſtringent, as aloes, &c.

Bitter things are generally reputed STOMACHIC; yet, according to Abercromby, they are naturally the reverſe, and hurtful to the ſtomach; and only become beneficial to it, where their aſtringency renders them proper. Phil. Tranſ. N° 171. p. 1026.

Bitters are ſaid to reſiſt putrefaction and moderate fermentation: hence appears their uſe in putrid diſorders. *Bitters* likewiſe correct acidities, and aſſiſt digeſtion, by bracing the fibres of the ſtomach.

BITTER *purging ſalt*, *ſal catharticum amarum*. See EPSOM *ſalt*.

BITTER *place*, *locus amarus*, a poor barren ſoil, by Pliny called *terra amara*, *ſive macra*.

BITTER, in the *Sea-language*, denotes a turn of the cable about the bitts, in order to its being veered out by little and little at pleaſure.

A ſhip is ſaid to be brought up to a *bitter*, when ſhe is ſtopped by her cable.

BITTER *end*, is that part of the cable which ſtays within board, wound about the bitts, when the ſhip is at anchor. When they would have that end bent to the anchor, they ſay, bend to the *bitter end*.

BITUMEN, in a general ſenſe, a fatty, tenacious, mineral juice, very inflammable; or a foſſil body, which readily takes fire, yields an oil, and is not ſoluble in water.

The origin of *bitumens* has not yet been aſcertained: ſome ſuppoſe that they belong to the mineral kingdom, and others that they proceed originally from vegetable ſubſtances. Macquer inclines to the latter opinion; though Dr. Lewis, the tranſlator of Neumann's works, diſtinguiſhes between mineral *bitumens* and vegetable reſins.

Naturaliſts diſtinguiſh three kinds of *bitumens*; *hard*, *ſoft*, and *liquid* or *oily*; each of which they ſubdivide into ſeveral ſpecies.

Among the *hard* or *ſolid bitumens* are ranked, yellow amber, ambergris, jet, aſphaltum, piſſaſphaltum, pit-coal, and ſulphurs.—The *ſoft* are maltha, *bitumen* of Calao, and of Surinam.—Laſtly, the naphtha of Italy, and petroleum, are ranked among the *liquid bitumens*.

Of *bitumens*, ſome again are foſſil, others are found floating on the ſurface of certain lakes, and others ſpring from the earth like fountains; as at Pitchford in Shropſhire, &c.—Some *bitumens* are ſo hard, that they are uſed in forges, inſtead of coals: others ſo glutinous, that they ſerve inſtead of cement, or mortar, in buildings; of which kind that was wherewith the famous walls of Babylon were built: and others ſo liquid, that they are burnt in lamps inſtead of oil.

The *bitumen* in moſt eſteem is that of Judea.

From the origin and inflammability of *bitumens*, it appears they bear a near affinity to ſulphurs, and are ſuppoſed both formed of the ſame principles or ingredients; only differing in this, that ſulphurs are harder and more brittle, *bitumens* more fatty and tenacious.

Bitumens are uſually divided into two ſpecies, *liquid* and *ſolid*. Though ſome diſtinguiſh three kinds, as before mentioned.

Dr. Woodward gives a different diviſion of the Engliſh *bitumens*, or bituminous foſſils. The firſt are thoſe of a more lax and coarſe conſtitution; and which, when wetted, yield a groſſer, or pitchy matter. Such are the *lapis piceus*, or pitch-ſtone, the *lapis ampelites*, *obſidianus* or canel, and the *lithanthrax* or coal. The ſecond is of a more denſe and fine conſtitution, and yields an oil: ſuch are the GAGATES, or jet; and SUCCINUM, or amber.

Bitumen is ſuppoſed the chief fuel of the ſubterranean fires.

Many have been fond of ſuppoſing all ſea-water to contain a large quantity of *bitumen*, and that it owes its bitterneſs to this admixture; but this ſeems erroneous, ſince we find that all ſea-water contains a large quantity of bitter purging ſalt of the nature of what is ſold in our ſhops, under the name of *Epſom ſalt*; and its bitterneſs is of the very ſame kind with the taſte of that ſalt.

That there are, however, *bitumens* mixed in ſeveral places with the water of the ſea, is very certain. Barbadoes tar is found floating on the ſea, being waſhed in great quantities from the rocks, and count Marſigli obſerved ſpiral filaments ariſing from the ſurface of the ſea Marmora, near Conſtantinople, which concreted into *bitumen*, exactly of the ſame kind with that he obſerved at Zant, flowing from the ſides of a bituminous mountain.

On ſome of the coaſts of Italy they ſkim off a kind of liquid *bitumen*, or petroleum, from the ſurface of the ſea. Some think that ambergris is a *bitumen* of the ſea, and many travellers tell us of a fatty ſubſtance on the ſurface of it, that gives light in the night. Theſe various ſubſtances may impart various properties to the ſea-water, in ſuch parts where they are found to abound, and they may be common in many places, but they are certainly not found in all, nor is *bitumen* a neceſſary ingredient in ſea-water. Count Marſigli has indeed proved, that a ſpirit diſtils from the moſt common of all *bitumens*. Pit-coal will gave water a bitter taſte, but ſea-water is not yet proved to be impregnated with ſuch a ſpirit. On the contrary, when diſtilled, it has no bitter taſte; therefore marine waters are not impregnated with ſuch a volatile ſpirit, but evidently owe their *bitterneſs* to a fixed principle; and it is very certain, that pit-coal cannot give this taſte, ſince the waters which iſſue out from among the ſtrata of ſea-coal are never found to be bitter, though often ſtrongly impregnated with iron.

All *bitumens* have this good quality in their burning, that they will do without a wick. Dr. Plott therefore conjectures, that the famous ſepulchral LAMPS of the ancients were contrived of theſe *bitumens*, particularly of the liquid kind, becauſe any thing that would require a wick, would be liable to its choaking up, and being deſtroyed.

BITUMEN, in a more particular ſenſe, is reſtrained to the ASPHALTOS, otherwiſe called *bitumen Judaicum*.

BITUMEN *Barbadenſe*; ſee BARBADOES *tar*.

BITUMEN *Hybleanum*, in *Mineralogy*, a name given by Boccone and others to a peculiar ſpecies of bituminous foſſil, which is flexile while in the earth, a property very ſingular in a foſſil not of the talcy kind, as this evidently is not. It is a ſtony ſubſtance, ſmelling like the common *bitumens*, and compoſed of a very great number of thin plates, laid evenly and regularly on one another. It has its name from the place where it is found, which is the Hyblæan mountains of Sicily, near Milelli, neighbouring upon the town of Auguſta and the ancient Megara. When burnt in a candle, the bituminous ſmell is perceived very ſtrong; and the ſtone, though when firſt taken up it be flexible like paper, yet in time hardens, and becomes brittle like other foſſils of that lax conſiſtence. There are found whole hillocks covered with it. This does not prevent their bearing plants and herbage, the roots of the graſs, &c. inſinuating themſelves between the *laminæ* of this ſtone, and getting good nouriſhment there. Phil. Tranſ. N° 100.

BITUMINOUS, ſomething that relates to, or partakes of the nature and qualities of BITUMEN.

All *bituminous* bodies are offenſive to the head. Their ſmell or ſtench makes the EPILEPSY diſcover itſelf.

BIVALVE, or BIVALVULAR, a term uſed by the writers of natural hiſtory, for ſuch ſhell-fiſh as have two ſhells, e. gr. cockles, muſcles, oyſters, &c. which are ſaid to be of the *bivalvular* kind.

Theſe are a leſs numerous claſs than the *univalves*, and have been arranged by an accurate French writer under ſix genera. Theſe are, 1. The OISTERS. 2. The CHAMÆ. 3. The MYTULI, or MUSCLES. 4. The CARDIFORM ſhells. 5. The PECTINES, or ſcallops.

And, 6. The SOLENS, or razor-ſhells. For the characters and ſpecies of each of theſe, ſee their ſeveral heads, OISTERS, &c.

See a deſcription of *bivalve* inſects by Mr. Muller, in the Phil. Tranſ. vol. lxi. part i. Nº 29.

BIVALVE is alſo applied to the *ſiliquæ*, or ſeed-pods, of ſuch plants as open their whole length to diſcharge their ſeeds. Such are peas, beans, &c. which the botaniſts ſay, have *bivalve* or *bivalvular ſiliquæ*.

BIVENTER, from *bis*, and *venter*, *belly*; in *Anatomy*, a denomination given to the ſixth muſcle of the lower jaw; being the laſt of thoſe ſerving to depreſs or open it: thus called, as having two bellies for its two extremities, and a tendon in the middle.—See *Tab. Anat.* (*Myol.*) *fig.* 2. *n.* 2.

The *biventer* or *digaſtricus* has its origin from a ſciſſure between the occipital bone and the maſtoidal *apophyſis*; whence paſſing its tendon through a hole in the *ſtyl-hyoideus*, and an annular ligament of the *os hyoides*, there ariſe ſome fibres, which join its ſecond belly: hence, growing fleſhy, and returning upwards, it is inſerted into the middle of the inferior part of the lower jaw.—By this contrivance it is enabled to draw the jaw downwards.

BIUMBRES, from *bis*, *double*, and *umbra*, *ſhadow*; in *Geography*, an appellation given to the inhabitants of the torrid zone, becauſe, at two different ſeaſons of the year, their ſhadows are projected two different ways.

The *biumbre* are the ſame with thoſe otherwiſe denominated AMPHISCII.

BIXA, in *Botany*, a genus of the *polyandria monogynia* claſs; ANOTTA, by the French called ROUCOU. Its characters are theſe: the flower hath a double ſeries of petals, the outer conſiſting of five, which are large, the inner of the ſame number and ſhape, but narrower. It hath a great number of briſtly STAMINA: in the centre is ſituated an oval *germen*, which afterward becomes an oval heart-ſhaped capſule, covered with ſharp briſtles, opening with two valves, with one cell, and filled with angular ſeeds. We have but one ſpecies of this genus; which muſt be conſtantly kept in a bark ſtove, or they will not thrive in England.

BIZARRE, Fr. denoting *capricious*, &c. a term uſed among *Floriſts* for a particular kind of carnation, which has its flowers ſtriped or variegated with three or four colours.

BIZE, in *Zoology*, a name by which ſome call the PELAMYS, a ſea-fiſh, of the ſhape of the tunny, and reſembling the young brood of that fiſh; but diſtinguiſhable by its wanting ſcales in moſt parts of its body.

BIZOCHI, or BISOCHI, a ſect or branch of religious minorites, condemned by ſeveral popes.

The *Bizochi* were alſo called *fratricelli*, or *fratres de paupere vita*; ſometimes *Bichini*, or *Bicchini*, and BEGUINS. The name is formed from *biſaccus*, on account of a double budget or wallet wherewith they begged their living. See BEGHARDI.

BIZZARRO, or *con* BIZZARIA, in the *Italian Muſic*, ſignifies *with capricious changes*; ſometimes faſt, at others ſlow, ſoft, ſtrong, &c. at the fancy of the compoſer.

BLACK, ſomething opake and porous, that imbibes all the light falling on it, reflects none, and therefore exhibits no colour. See BLACKNESS.

There are various kinds of *blacks*, which paſs in commerce; viz. *blue black*, *dyers black*, *painters black*, *German black*, *ivory black*, *Spaniſh black*, *lamp black*, *Indian black*, &c.

Bodies of a *black* colour are found more inflammable, becauſe the rays of light falling on them are not reflected outwards, but enter the body, and are often reflected and refracted within it, till they be ſtifled and loſt. They are alſo found lighter, *cæteris paribus*, than white bodies, being more porous. It may be added, that cloaths dyed of this colour wear out faſter than thoſe of any other, becauſe their ſubſtance is more penetrated and corroded by the vitriol neceſſary to ſtrike their dye, than other bodies are by the galls and alum which ſuffice for them.

The inflammability of *black* bodies, and their diſpoſition to conceive heat, beyond thoſe of other colours, is eaſily evinced. Some appeal to the experiment of a white and a *black* glove worn in the ſame ſun; the conſequence will be, a very ſenſibly greater degree of heat in the one hand than the other. Others allege the phænomena of burning-glaſſes, by which *black* bodies are always found to kindle ſooneſt. Mr. Boyle gives other proofs ſtill more obvious: he took a large tile, and having whited over one half of its ſuperficies, and blacked the other, expoſed it to the ſummer ſun; where having let it lie a convenient time, he found, that whilſt the whited part remained ſtill cool, the *black* part was grown very hot. For farther ſatisfaction, the ſame author has ſometimes left on the ſurface of the tile a part retaining its native red, and expoſing all to the ſun, has found the latter to have contracted a heat in compariſon of the white part, but inferior to that of the *black*.

So alſo on his expoſing two pieces of ſilk, one white, the other *black*, in the ſame window to the ſun, he often found the latter conſiderably heated, when the former has remained cool. It is obſervable likewiſe, that rooms hung with *black* are not only darker, but warmer than others Boyle's Works abridg. tom. i. p. 144. and tom ii. p. 36.

To all which may be added, that a virtuoſo of unſuſpected credit aſſured Mr. Boyle, that in a hot climate, he had, by carefully blackening the ſhells of eggs, and expoſing them to the ſun, ſeen them thereby well roaſted in a ſhort time.

Dr. Watſon of Cambridge covered the bulb of a thermometer with a *black* coating of Indian ink; in conſequence of which, the mercury roſe ten degrees. Phil. Tranſ. vol. lxiii. part i. p. 40.

Black cloaths heat more, and dry ſooner in the ſun than white cloaths. *Black* is a bad colour for cloaths in hot climates; but a fit colour for the linings of ladies ſummer hats. Dr. Franklin's Experiments, Obſervations, &c. 5th edit. p. 483, & ſeq He obſerves alſo, ibid. p. 3 2, that a chimney painted *black*, when expoſed to the ſun, will draw more ſtrongly.

BLACK, in matters of dreſs, is the diſtinguiſhing habit of church-men and mourners.

Some will have it, that the common people among the Romans were cloathed in *black*; whence the denomination given them of *turba pullata*.

BLACK, in *Heraldry*, is properly called SABLE.

BLACK, in the *Manege*.—A horſe of a deep, ſhining, and lively *black* is called a *black-more*, or *coal-black*. Horſes *black* all over are commonly reckoned dull and melancholy; but a white foot, or ſtar in the forehead, gives them a degree of ſprightlineſs. The Spaniſh gravity is ſaid to be beſt pleaſed with thoſe entirely *black*.

BLACK, *blue*, is the coal of ſome kind of wood, or other vegetable matter: the beſt ſort is ſaid to be made of vine-ſtalks and tendrils.

BLACK, *bone*, is made of the bones of bullocks, cows, &c. well burnt and ground. To be good, it muſt be ſoft and friable, of a gloſſy caſt. It is in conſiderable uſe, though inferior in goodneſs to *ivory black*.

The invention of *bone* or *ivory black* is attributed to Apelles. Plin. Hiſt. Nat. lib. xxxv. cap. 5.

BLACK, *dyers*, is one of the five ſimple and mother colours uſed in DYING; and given differently, according to the different quality and value of the ſtuffs to be dyed.

Green vitriol ſtrikes a *black* colour with vegetable aſtringents, and hence it is the baſis of the *black* dye for cloth, leather, hats, &c. And as ſolutions of iron with galls, &c. produce the ſame colour, a method is derived from hence of diſtinguiſhing the minuteſt portions of iron in mineral waters, &c. Neumann.

For broad cloaths, fine ratines, and druggets, &c. they uſe woad and indigo; the goodneſs of the colour conſiſts in there not being above ſix pounds of indigo to a ball of woad, when the latter begins to caſt its blue flower; and, in its not being heated for uſe above twice.—Thus blued, the ſtuff is boiled with alum, or tartar, then maddered; and, laſtly, the *black* given with galls, copperas, and ſumac.—To bind it, and prevent its ſmearing in uſe, the ſtuffs are to be well ſcoured in the fulling-mill, when white, and well waſhed afterwards.

For ſtuffs of leſs value, it is ſufficient they be well blued with woad, and *blacked* with galls and copperas: but no ſtuff can be regularly dyed from white into *black*, without paſſing through the intermediate blue.

Yet there is a colour called *coal black*, or *Jeſuit's black*, prepared of the ſame ingredients as the former, and ſufficient of itſelf without the blue dye. Here the drugs are diſſolved in water that had boiled four hours, and ſtood to cool till the hand would bear it; then the ſtuff is dipped in it, and again taken out ſix or eight times. Some even prefer this *black* to the other.—This method of dying *black* is ſaid to have been invented by the Jeſuits, and to have been practiſed in their houſes, where they retained numbers of dyers.

By 23 El. c. 9. nothing of the nature of cloth ſhall be maddered for a *black*, except it be firſt grounded with woad only, or with woad and anele [blue ind.] unleſs the madder be put in with ſumac or galls; on pain of forfeiting the value of the thing dyed: provided it ſhall be lawful to dye any manner of *gall black*, and *ſumac black* [*plain black*] wherein no madder ſhall be uſed.

Logwood ſtrikes a *black* with chalybeate ſolutions, and is employed with thoſe liquors for ſtaining wood *black*, as picture-frames, &c. With the addition of galls, it is uſed for dying cloth and hats *black*. Neumann's Works, p. 385. This *black* colour is not permanent, though beautiful, any more than the natural violet dye of the LOG-*wood*.

BLACK, *earth*, is a kind of coal found in the ground, which, well pounded, is uſed by painters in freſco.

There is alſo a kind of BLACK made of ſilver and lead, uſed to fill up the ſtrokes and cavities of things engraved.

BLACK, *German* or *Frankfort*, is made of the lees of wine burnt, then waſhed in water, and ground in mills for that purpoſe, together with ivory or peach-ſtones burnt. This *black* makes the principal ingredient in the rolling-preſs-printers INK. It is ordinarily brought from Frankfort, Mentz, or Straſbourg, either in lumps or powder. That made in France is more valued than that of Germany.

BLACK, *harts*, that which remains in the retort after extracting the ſpirit, ſalt, and oil of hartſhorn. This reſidue being ground up with water, makes a *black* not much inferior to that of ivory.

BLACK, *ivory*, is made of ivory burnt or charred, ordinarily between two crucibles well luted; which, being thus rendered perfectly *black*, and in ſcales, is ground in water, and made into troches, or little cakes, uſed by the painters; as alſo by the jewellers to blacken the bottom or ground of the collets, wherein they ſet diamonds to give them their teint or foil. Some recommend ſoaking the chips or ſhaving of ivory in hot linſeed oil, before it is charred.

There are particular machines and contrivances for burning the *ivory* for theſe purpoſes, by which the colour is rendered more beautiful than that of the coal which remains in the diſtillation. Neumann.

The goodneſs of *ivory black* may be perceived by its fulneſs, without a blue caſt; and by the fineneſs of the powder.

BLACK, *lamp*, or *Lam* BLACK, originally perhaps the ſoot collected from lamps, is generally prepared by melting and purifying reſin or pitch in iron veſſels; then ſetting fire to it under a chimney, or other place made for the purpoſe lined a-top with ſheep ſkins, or thick linen cloth, to receive the vapour or ſmoke, which is the *black*: in which manner they prepare vaſt quantities of it at Paris. In England it is ordinarily prepared from the reſinous and fatty parts of woods, burnt under a kind of tent, which receives it; but the greateſt part is brought from Sweden and Norway, where it is frequently obtained not from pure reſin or pitch, but from the dregs, and pieces of the bark of the tree, ſeparated in preparing them. The droſs left on ſtraining the reſin is burnt for *lamp black*, in a low oven, from which the ſmoke is conveyed by a long paſſage into a ſquare chamber, having an aperture in the top, upon which is faſtened a large ſack. The ſoot concretes partly in the ſack, and partly in the chamber and canal.

It is uſed on various occaſions, particularly in the printers INK; for which it is mixed with oils of turpentine and linſeed, all boiled together.

It muſt be obſerved, that this *black* takes fire very readily, and when on fire, is very difficultly extinguiſhed: the beſt method of putting it out is with wet linen, hay, or ſtraw; for water alone will not do it.

There is a finer and brighter kind of *lamp* or *candle black* procured from the fumes of a lamp or candle, gathered by a proper receptacle placed in manner of a canopy over the luminary, and wiped or bruſhed off; but it is not procured in quantity ſufficient for ordinary uſe.

A glaſs tube cloſely filled with *lamp black* has been found to conduct a conſiderable charge of electricity inſtantaneouſly, and with ſcarce any exploſion. But a coating of this ſubſtance mixed with tar or oil is a perfect nonconductor, and has proved a preſervative from lightning, by repelling the electric matter from thoſe parts of the maſts of ſhips which have been covered with it.

BLACK, *ſoot*, or *chimney*, is a poor colour; but ready for painting *black* draperies in oil. See SOOT.

BLACK, *Spaniſh*, ſo called, becauſe firſt invented by the Spaniards, and moſt of it bought from them; is no other than burnt cork uſed in various works, particularly among painters.

BLACK, *Indian*; ſee *Indian* INK.

BLACK, *curriers*, ſignifies a teint or dye laid on tanned leather; of which there are uſually two; the firſt made of galls, alegre, and old iron; the ſecond of galls, copperas, and gum Arabic. See CURRYING.

BLACK *act*; the ſtatute of 9 Geo. I. c. 22. is commonly called the Waltham *black act*, becauſe it was occaſioned by the devaſtations committed near Waltham in Eſſex, by perſons in diſguiſe, or with their faces *blacked*. By this ſtatute it is enacted, that perſons hunting armed and diſguiſed, and killing or ſtealing deer, or robbing warrens, or ſtealing fiſh out of any river, &c. or any perſons unlawfully hunting in his majeſty's foreſts, &c. or breaking down the head of any fiſh-pond, or killing, &c. of cattle, or cutting down trees, or ſetting fire to houſe, barn, or wood, or ſhooting at any perſon, or ſending letters, either anonymous or ſigned with a fictitious name, demanding money, &c. or reſcuing ſuch offenders, are guilty of felony, without benefit of clergy. This act is made perpetual by 31 Geo. II. c. 42. See farther 6 Geo. II. c. 37. and 27 Geo. II. c. 15. Blackſtone's Comm. vol. iv. p. 144. 208. 232. 244.

BLACK-*berry*, in *Botany*, a ſpecies of the RASP-*berry*.

BLACK-*bird*, *merula*, in *Ornithology*, a bird of the TURDUS or thruſh kind, of which there are ſeveral ſpecies. 1. The common kind, well known in our hedges. 2. The kind called the PASSER *ſolitarius*, or ſolitary ſparrow. 3. The *cæruleus*, of which there are two kinds. 4. The Braſilian *black-bird*, remarkable for the ſhortneſs and crookedneſs of its beak, and for its remarkably beautiful colours. Its tail and wings are black, and the reſt of its body of a fine beautiful deep red. Its legs and feet are black, or of a browniſh grey. Its wing-feathers alſo have ſome ſlight variegations of red. 5. The MERULA *roſea*, or roſe-coloured *black-bird*; this is ſmaller than the common kind, and its back, breaſt, and wings are of a pale red or damaſk roſe-colour. Its wings and tail black. 6. The red-breaſted Indian *black-bird*, called by the Braſilians JACAPU. 7. The *merula torquata*, or ring AMZELL. Beſide theſe there is the MERULA *montana*, or common AMZELL: and the MERULA *bicolor*: and two other birds, called MERULA *congeneres*, deſcribed by Aldrovandus, but not now known. See *Tab. of Birds*, Nº 29, 30.

The muſic of the *black-bird* is not its only valuable quality; for it is a very delicate bird for the table. It builds its neſt in woods, very early in the ſpring, often in March, while the ſnow is on the ground. It generally chooſes the ſtumps of trees, or thick hedges, for the place. The outſide of the neſt is made of dry graſs, ſticks, and the fibres of roots of trees: the inſide is lined with clay, and formed ſo round, that art cannot mend it. They build three or four times in the year, and even oftener than that, if their neſts are taken early from them. The young ones may be eaſily raiſed with any kind of meat. It ſings three or four months in the year: the note is loud, and not very agreeable; but may be much improved by teaching.

BLACK-*books*, a name given to thoſe which treat of NECROMANCY, or, as ſome call it, NIGROMANCY.

The BLACK-*book* of the Engliſh monaſteries was a detail of the ſcandalous enormities practiſed in religious houſes, compiled by order of the viſitors under king Henry VIII. to blacken them, and thus haſten their diſſolution.

BLACK-*canons*, a name given to the regular canons of St. Auguſtine, who wore a *black* mantle over their ſurplice, by way of diſtinction from the *Præmonſtratenſes*.

BLACK-*cap*, in *Zoology*, a name given by the common people of many counties of England to the PEWIT, a bird of the gull-kind.

BLACK-*cap* is alſo the common Engliſh name for the *parus paluſtris*, or marſh-TITMOUSE.

BLACK-*cap*, or *motacilla atricapilla* of Linnæus, is one of the ſmalleſt birds: the crown of the head in the male is black, but in the female of a dull duſt-colour; and they are thus diſtinguiſhed. This is a bird of paſſage. It ſings finely, with a full, ſweet, deep, loud, wild pipe: its ſtrains are ſhort, and motions deſultory. Its notes are ſuperior to thoſe of any of our feathered warblers, the nightingale excepted: and it is therefore called in Norfolk the mock-nightingale.

BLACK-*chalk*; ſee CHALK.

BLACK-*diver*, in *Zoology*, a name given by many to a ſpecies of duck very common about the coaſts of Lancaſhire, Yorkſhire, and ſome other counties, and called more generally the SCOTER. It is all over *black*.

BLACK-*ears*, or black-eared cat; ſee SIGAH *guſh*.

BLACK-*earth*, *terra nigra*, denotes the natural mould or loam. See SOIL, &c.

BLACK-*eunuchs*, in the cuſtoms of Eaſtern nations, are Ethiopians caſtrated, to whom their princes commonly commit the care of their women. See EUNUCH.

BLACK-*eye*, *hypoſphagma*, in *Medicine*, a ſuffuſion of blood on the *tunica adnata* turning livid, occaſioned by a blow. See ECCHYMOSIS.

BLACK-*eye* is alſo a name given to the GERM in BEANS, which the Romans called HILUM.

BLACK-*fryers*, a name given to the DOMINICAN order, called alſo *Predicants* and *Preaching fryers*; in France, *Jacobins*.

BLACK-*game*, in *Zoology*, a common Engliſh name for the *urogallus* or *tetrao minor*, called alſo the GROUSE.

BLACK-*glaſs*; ſee GLASS.

BLACK-*graſs*, a ſpecies of American graſs, growing in meadows which border on tide-rivers, well ſupplied alſo with freſh water; for a mixture both of freſh and ſalt water ſeems to be neceſſary for its prolific vegetation. Its ſeeds are ſmall, like thoſe of tobacco; its colour a deep green; and it affords from three to four tons of hay by the acre. This kind of graſs thrives beſt on a clay or ſtrong loam; nor is the vicinity of ſalt water abſolutely neceſſary. The ſeeds have been lately brought over into England, and diſtributed for trial in proper ſoils.

Black-*jack*, or Blend, is a mineral called alſo *falſe* galena, and blinde, &c.

Black-*land*, in *Agriculture*, a term by which the huſbandmen denote a particular ſort of clayey ſoil, which, however, they know more by its other properties than by its colour, which is rarely any thing like a true *black*, and often but a pale grey. This, however pale when dry, always blackens by means of rains; and when ploughed up at theſe ſeaſons, it ſticks to the plough-ſhares, and the more it is wrought, the muddier and duſkier-coloured it appears. This ſort of ſoil always contains a large quantity of ſand, and uſually a great number of ſmall white ſtones.

Black-*lead*; ſee Lead.

Black-*leather*, is that which has paſſed the curriers hands, where, from the ruſſet as it was left by the tanners, it is become *black*, by having been ſcored and rubbed three times on the grain-ſide with copperas-water.

Black-*legs*, a name given in Leiceſterſhire to a diſeaſe frequent among calves and ſheep. It is a kind of jelly which ſettles in their legs, and often in the neck, between the ſkin and fleſh.

Black-*mail*, a certain rate of money, corn, cattle, or other matter, anciently paid by the inhabitants of towns in Weſtmorland, Cumberland, Northumberland, and Durham, to divers perſons inhabiting on or near the borders, being men of name, and allied with others in thoſe parts, known to be great robbers and ſpoil-takers; in order to be by them freed and protected from any pillage. Prohibited by 43 El. c. 13.

The origin of this word is much conteſted, yet there is ground to hold the word *black* to be here a corruption of *blank* or white, and conſequently to ſignify a rent paid in a ſmall copper coin called *blanks*. This may receive ſome light from a phraſe ſtill uſed in Picardy, where ſpeaking of a perſon who has not a ſingle halfpenny, they ſay, *il n' a pas une blanque maille*.

Black-*monks*, a denomination given to the Benedictins, called in Latin *nigri monachi*, or *nigromonachi*; ſometimes *ordo nigrorum*, the order of *blacks*.

Black-*oats*; ſee Oats.

Black-*proceſſion*, in *Eccleſiaſtical Writers*, that which is made in *black* habits, and with *black* enſigns and ornaments. See Procession.

Anciently at Malta there was a *black-proceſſion* every Friday, where the whole clergy walked with their faces covered with a *black* veil.

Black-*rents*, the ſame with black-*mail*, ſuppoſed to be rents formerly paid in proviſions and fleſh, not in ſpecie.

Black-*rod*.—*Gentleman-uſher of the* Black-*rod*, is the chief gentleman-uſher to the king, called in the black-book, *Lator virgæ nigræ, & haſtiarius*; and elſewhere, *virgæ bajulus*.

His duty is to bear the rod before the king at the feaſt of St. George at Windſor; he has alſo the keeping of the chapter-houſe door, when a chapter of the order of the garter is ſitting; and, in time of parliament, attends the houſe of peers. His badge is a *black-rod*, with a lion in gold a-top. This rod has the authority of a mace: and to his cuſtody all peers queſtioned for any crime are firſt committed.

Black-*row grains*, a ſpecies of iron-ſtone or ore found in the mines about Dudley in Staffordſhire.

Black-*ſands*; ſee Sands.

Black *ſealing-wax*; ſee Wax.

Black-*ſheep*, in the *Oriental Hiſtory*, the enſign or ſtandard of a race of Turkmans ſettled in Armenia and Meſopotamia; hence called the *dynaſty of the black-ſheep*.

Black-*ſtains*; ſee Staining.

Black-*ſtones* and gems, according to Dr. Woodward, owe their colour to a mixture of tin in their compoſition.

Black-*ſtrakes*, a range of planks immediately above the wales in a ſhip's ſide: they are always covered with a mixture of tar and lamp-*black*.

Black-*thorn*, in *Botany*, a ſpecies of the *prunus*. See Plum-*tree*.

Black-*tin*, in *Mineralogy*, a denomination given to the tin-ore when dreſſed, ſtamped, and waſhed ready for the blowing-houſe, or to be melted into metal. Phil. Tranſ. N° 69. p. 2110.

It is prepared into this ſtate by means of beating and waſhing; and when it has paſſed through ſeveral buddles or waſhing-troughs, it is taken up in form of a black powder, like fine ſand, called *black*-tin.

Black-*varniſh*; ſee Varnish.

Black *vegetable juice*; ſee Anacardium.

Black-*whytlof*, in our old writers, bread of a middle fineneſs betwixt white and brown, called in ſome parts *ravel-bread*.

In religious houſes, it was the bread made for ordinary gueſts, and diſtinguiſhed from their houſehold loaf, or *panis conventualis*, which was pure manchet, or white bread.

Black-*work*, iron wrought by the black-ſmith; thus called by way of oppoſition to that wrought by white-ſmiths.

Black *of charcoal*; ſee Charcoal.

Black *Book of the Exchequer*, *Eagle*, *Hellebore*, *Money*, *Order*, *Star*; ſee the ſeveral ſubſtantives.

BLACKING is ſometimes uſed for a factitious black, as lamp-black, ſhoe-black, &c. A mixture of ivory or lamp-black with linſeed oil, makes the common oil *blacking*. For a ſhining *blacking*, ſmall-beer or water is uſed inſtead of oil, in the proportion of about a pint to an ounce of the ivory-black, with the addition of half an ounce of brown ſugar, and as much gum Arabic. The white of an egg, ſubſtituted for the gum, makes the black more ſhining; but is ſuppoſed to hurt the leather, and make it apt to crack.

BLACKNESS, the quality of a black body; or a colour ariſing from ſuch a texture and ſituation of the ſuperficial parts of the body, as does, as it were, deaden, or rather abſorb, the light falling on it, without reflecting any, or very little of it, to the eye.

In which ſenſe, *blackneſs* ſtands directly oppoſed to *whiteneſs*; which conſiſts in ſuch a texture of parts, as indifferently reflects all the rays thrown upon it, of what colour ſoever they be.

Deſcartes, ſays Dr. Prieſtley, though miſtaken with reſpect to the nature of light and colours, yet diſtinguiſhes juſtly between *black* and *white*, obſerving, that *black* ſuffocates and extinguiſhes the light that falls upon it; but that *white* reflects them. This, adds the hiſtorian of philoſophy, is the firſt diſtinct account I have met with of this ſenſible hypotheſis. Hiſt. of Viſion, p. 127 and 143, &c.

Sir Iſaac Newton, in his Optics, ſhews, that for the production of *black* colours, the corpuſcles muſt be leſs than thoſe which exhibit any other colours; becauſe, where the ſizes of the component particles are greater, there is too much light reflected to conſtitute this colour: but, if there be a little leſs than is requiſite to reflect the white, and very faint blue of the firſt order, they will reflect ſo little light, as to appear intenſely black; and yet may, perhaps, reflect it variouſly to and fro within them ſo long, till it happen to be ſtifled and loſt; by which means they will appear *black* in all poſitions of the eye, without any tranſparency.

And from hence it appears, why fire, and putrefaction, by dividing the particles of ſubſtances, turn them black: why ſmall quantities of *black* ſubſtances impart their colours very freely, and intenſely, to other ſubſtances, to which they are applied; the minute particles of theſe, by reaſon of their very great number, eaſily overſpreading the groſs particles of others. Hence alſo appears, why glaſs, ground very elaborately with ſand, on a copper plate, till it be well poliſhed, makes the ſand, together with what by rubbing is worn off from the glaſs and copper, become very black; and why black ſubſtances do, ſooneſt of all others, become hot in the ſun's light, and burn (which effect may proceed partly from the multitude of refractions in a little room, and partly from the eaſy commotion of ſuch very ſmall particles): alſo, why blacks are uſually a little inclined towards a bluiſh colour; for, that they are ſo, may be ſeen by illuminating white paper with light reflecting from black ſubſtances, where the paper will uſually appear of a bluiſh white; and the reaſon is, that black borders on the obſcure blue of the firſt order of colours; and therefore reflects more rays of that colour than of any other.

BLACKS, *Negroes*: a people, ſo called from the colour of their ſkin.—For the reaſon of their colour, and the commerce of them, ſee Negro.

Blacks, is alſo a name given to an aſſociation of diſorderly, and ill-deſigning perſons, formerly herding chiefly about Waltham in Eſſex, who deſtroyed deer, robbed fiſh-ponds, ruined timber, &c.—See Black *act*.

BLADDER, in *Anatomy*, a thin expanded membranous body, found in ſeveral parts of an animal, ſerving as a receptacle of ſome juice, or of ſome liquid excrement; from whence it takes various denominations, as *urine-bladder*, *gall-bladder*, &c.

Bladder, by way of eminence, is a large veſſel, which ſerves as a receptacle of the urine of animals, after its ſecretion from the blood in the kidneys.

This is ſometimes alſo called, by way of diſtinction, the *urinary bladder*, *veſica urinaria*.

The *bladder* is ſituated in the *pelvis* of the *abdomen*; in men immediately on the *rectum*; in women, on the *vagina uteri*: its figure in quadrupeds reſembles a pear, with the baſis upwards; but in human bodies the lower part is almoſt on a level with the upper; and its orifice, or neck, placed ſideways, while the *fundus*, or bottom, which in a human bladder is very broad, reſts either on the *rectum*, or the *vagina uteri*.—It is faſtened to the navel by the *urachus* degenerated into a ligament, its ſides to the umbilical arteries, and its neck to the *inteſtinum rectum* in women.

The *bladder* is compoſed of three coats; the firſt a covering of the *peritonæum*; the ſecond conſiſts of muſcular fibres, which run irregularly ſeveral ways; and the third, which is full of wrinkles for facilitating its dilatation, is both glandulous and nervous.—Its glands ſeparate a viſcous and ſlimy matter, which defends the *bladder* from the acrimony of the ſalts in the urine. Around its neck there goes a ſmall muſcle, called *ſphincter veſicæ*, which contracts the orifice of the *bladder*, to prevent the urine from dripping involuntarily, or till it thruſt open the paſſage, by the contraction of the ſecond coat of the *bladder*, which is therefore called *detruſor urinæ*.

Though the urinary *bladder* be naturally ſingle, yet there have been inſtances of nature's varying from herſelf in this particular. The *bladder* of the famous Caſaubon, upon diſſecting his body after his death, was found to be double; and, in the Philoſophical Tranſactions, we have an account of a triple *bladder* found in the body of a gentleman, who had long been ill, and no one could gueſs the cauſe.

As to the figure and ſituation of the human *bladder*, Mr. Weitbrecht has given a better deſcription of them than is to be met with in the common ſyſtems. Vid. Med. Eſſ. Edinb. Phil. Tranſ. N° 280. p. 1211.

The diſeaſes to which the *bladder* is ſubject are ulcers, wounds, deſcents or ruptures, preternatural contents, particularly ſtones and gravel, *ſchirrhus*, palſies, inflammations of its neck, &c. To theſe diſeaſes may be added incontinence of urine.

The internal membrane of the *bladder* has been known to come away with the urine, without any great danger. Mr. Rohault gives an account, in the Memoirs of the Academy of Sciences, of a patient he had, who, after a very violent ſtoppage of urine, voided with ſome pain a piece of a membrane of an inch ſquare. Three or four days afterwards, the patient felt ſomething again obſtruct the paſſage; and as it came nearer the end of the *urethra*, he at length took hold of it, and drew out a larger piece of the ſame ſort of membrane. Some time after this, in ſtraining violently in diſcharging his urine, he voided three other ſuch pieces, which together, according to Mr. Rohault's judgment, could not make leſs than two thirds of the internal membrane of the whole *bladder*; and in effect it was plain, that, in the courſe of the diſeaſe, the whole internal membrane had gradually detached itſelf from the external one, and made its way out by the *urethra*. After the whole was thus diſcharged, the urine found no ſtoppage; and it is evident, that what had before ſtopped its paſſage, was no other than the pieces of this membrane falling before, or blocking up the *urethra*. The pieces of the membrane, when examined, appeared to have all their blood-veſſels in their natural ſize; and the urine, in the whole courſe of the diſeaſe, having never been tinged with blood, is a proof, that the membrane detached itſelf naturally, not by violence. The patient, after this, was wholly cured of his complaint; but had a ſmall incontinence of urine attending him, which was plainly owing to the ſphincter's having been weakened, by being, as well as the *bladder*, diveſted of its membranes. Mem. Acad. Scienc. 1714.

The operations performed on the *bladder* are chiefly ſection, and extraction of the ſtone; to which may be added injection, dilatation, the application of lithontriptics, diuretics, &c. Phil. Tranſ. N° 236. p. 15, ſeq. where Hippocrates's aphoriſm, that the ſections of the *bladder* are always mortal, is defended; and the beſt method of extracting the STONE out of the *bladder*, eſpecially in women, is ſhewn to be by a gradual dilatation of the *urethra*. See alſo Hiſt. Acad. Scienc. ann. 1720. p. 33. where the great impediments to the diſſolution of the STONE in the *bladder* by lithontriptics, are repreſented to be the medicine's not continuing long enough in the *bladder*, and its being altered by the urine.

The urinary *bladders* of brutes are differently contrived from the human *bladder*, and from each other, according to the ſtructure, œconomy, and manners of living of each creature.

Birds are uſually ſaid to be without *bladders*, as being without urine; yet does not this hold univerſally; ſince, in an oſtrich diſſected by the French academy, a *bladder* was found ſituate at the extremity of the *rectum*, big enough to hold both fiſts, and in it eight ounces of urine.

Many have alſo denied a *bladder* of urine to fiſhes; but the more exact obſervers find this part in all, at leaſt, the greater part of the fiſhy kind. Phil. Tranſ. N° 178. Tortoiſes, Ariſtotle obſerves, have large *bladders*, and they need ſuch; ſince being covered with a thick ſhell, and having no pores or perſpirative veſſels whereby to carry off their moiſture, it is retained within them, and accumulated in the *bladder* of urine.

In the lion, the *bladder* is ſmall, as is the kidney; for that creature rarely drinks; inſomuch that Albertus affirms the female does not ſuckle her young, as having no milk.

Bladders, when below a certain magnitude, are more uſually denominated by the diminutive veſicles, *veſiculæ*. Of theſe we meet with many ſorts both in the animal and vegetable world; ſome natural, as in the lungs, eſpecially of frogs, and as ſome alſo imagine, in the muſcles; others morbid or preternatural, as the *hydatides*, and thoſe obſervable in the itch. Naturaliſts have alſo diſcovered *bladders* in the *thorax* and *abdomen* of birds, as well as others in the belly of fiſhes, called *air-bladders* and *ſwims*.

Vegetable *bladders* are found every-where, in the ſtructure of the bark, the fruit, pith, and *parenchyma*, or pulp; beſides thoſe morbid ones raiſed on the ſurface of leaves by the puncture of inſects.

BLADDER, *ſwimming*; ſee AIR-*bladder*.

BLADDERS, *oil*, in the anatomy of plants; ſee OIL-*bladders*.

BLADDER-*puceron*; ſee PUCERON.

BLADDER-*nut*, *ſtaphylæa*, in *Botany*, a genus of the *pentandria trigynia* claſs. Its characters are theſe: the empalement is concave, coloured, and ſo large as to encloſe the flower, which has five oblong erect petals, and a pitcher-ſhaped concave *nectarium*, at the bottom of the flower, with five oblong erect ſtyles terminated by ſingle ſummits, and a thick *germen* divided in three parts, ſupporting three ſtyles to which there are obtuſe ſtigmas contiguous. The *germen* afterward becomes two hard almoſt globular ſeeds, included in three bladders, joined by a longitudinal ſeam, with an acute point, opening within. There are two ſpecies; the *bladder-nut* with winged leaves; and, the *bladder-nut* with trifoliate leaves, or three-leaved Virginian *bladder-nut*. See *Tab.* I. *of Botany*, *Claſs* 21.

The firſt makes a pretty variety, when intermixed with others; though the flowers are not very beautiful. The nuts of this tree being hard and ſmooth, are ſtrung for beads by the Roman catholics in ſome countries; and the children of the poor inhabitants eat the nuts, though they have a diſagreeable taſte.

It is ſaid that from the ſeeds is expreſſed an oil having a reſolvent virtue.

BLADDER-*nut*, *African*; ſee ROYENA.

BLADDER-*nut*, *laurel-leaved*; ſee HOLLY.

BLADDER-*ſena*; ſee SENA.

BLADE, in *Botany*, that part of the flower, or florid attire of a plant, which ariſes out of the concave of the ſheath, and, at the top, uſually divides into two parts, which are covered with globules of the ſame nature as thoſe of the *apices*, but not ſo copious.

The *blade* runs through the hollow of the ſheath and baſe, and is faſtened to the convex of the ſeed-caſe, having its head and ſides beſet with globules, which, through a glaſs, appear like turnip-ſeeds, and which, in ſome plants, grow cloſe to the *blade*, and in others adhere to it by little pedicles, or foot-ſtalks. Theſe globules, as the *blade* ſprings up from within the ſheath, are ſtill rubbed off, and ſo ſtand like a powder on both. In ſome plants, as knap-weed, they ſeem alſo to grow on the inſide of the ſheath, as appears on ſplitting it with a pin. The head of a *blade* is divided uſually into two; but ſometimes, as in the cichory, into three parts, which, by degrees, curl outward, like ſcorpion-graſs. Grew's Anat. of Plants, lib. i. c. 5. § 20. lib. iv. c. 4. § 5.

BLADE, in *Anatomy*; ſee SHOULDER-*blade*.

BLADE, in *Commerce*, a thin, ſlender piece of metal, either forged by the hammer, or run and caſt in moulds, to be afterwards ſharpened to a point, edge, or the like. Sword-*blades* are made by the armourers, knife-*blades* by the cutlers, &c.

The Engliſh and Damaſcus *blades* are moſt eſteemed. Among the French, thoſe of Vienne in Dauphiny have the preference.

The conditions of a good *blade* of a ſmall ſword are, that it be light and tough, apter to bend than break. When it will ſtand in the bend, it is called *a poor man's blade*.

BLADE *of a chiſſel*, is the iron or ſteel part, as diſtinguiſhed from the wooden handle.

BLADE *of mace*, or cinnamon, among apothecaries, are little ſlips or ſlices of thoſe barks.

BLADE *of an oar*, is the flat part, which is plunged into the water in rowing. On the length of this does the force and effect of the oar, in a great meaſure, depend.

Blade *of a ſaw*, the thin part wherein the teeth are cut, which, to be good, muſt be ſtiff, yet bend equally into a regular bow all the way, without yielding more in one place than another.

Blade-*mill*, is that contrived for grinding iron tools, as ſithes, reaping-hooks, axes, chiſſels, and the like, to a bright edge.

BLADUM, in *Middle Age Writers*, is taken for all ſort of ſtanding corn in the blade and ear. The word is alſo written *blatum*, *blava*, and *blavium*.

In our old charters, the word *bladum* included the whole product of the ground, fruit, corn, flax, graſs, &c. and whatever was oppoſed to living creatures.

The word *bladum* was ſometimes alſo applied to all ſorts of grain or corn threſhed on the floor: *tria quarteria frumenti, tria quarteria avenarum, & unum quarterium fabarum, erunt quieti de ſolutione prædicti bladi in perpetuum.*

But the word was more peculiarly appropriated to bread-corn, or wheat, called in French *blé*.

Thus the knights Templars are ſaid to have granted to ſir Wido de Meriton's wife *duas ſummas bladi*. Kennet's Paroch. Ant. and Du-Cange.

BLÆRIA, in *Botany*, a genus of the *tetandria monogynia* claſs of plants.

BLÆSUS, among *Medicinal Writers*, the ſame with *balbus*.

Dr. Holder calls the letters F and Th *bleſe*, on account of the difficulty multitudes find of pronouncing them. Elem. Speech, p. 52.

The word is alſo uſed to denote an irregularity in the figure of the limbs, eſpecially the legs, when bent outwards.

BLAIN, a diſtemper incident to beaſts, conſiſting in a bladder growing on the root of the tongue againſt the wind-pipe, which at length ſwelling, ſtops the breath.

It comes by great chafing, and heating of the ſtomach; whereby, as ſome judge, it ſtill grows, and increaſes by more heat.

It is perceived, by the beaſt's gaping, holding out his tongue, and foaming at the mouth: to cure it, caſt the beaſt, take forth his tongue, and then ſlitting the bladder, waſh it gently with vinegar and a little ſalt.

BLAISE, a military order inſtituted by the kings of Armenia, in honour of St. Blaiſe, anciently biſhop of Sebaſta in that country, the patron ſaint of that nation.

Juſtinian calls them *knights of St. Blaiſe and St. Mary*, and places them not only in Armenia, but in Paleſtine.

They made a particular vow to defend the religion of the church of Rome, and followed the rule of St. Baſil.

The preciſe year of the inſtitution of the *knights of St. Blaiſe* is not known; but they appear to have commenced about the ſame time with the knights Templars, and Hoſpitallers; to the former of which they bore a near affinity, the regulars being the ſame in both.

BLAKEA, in *Botany*, a genus of the claſs of *dodecandria monogynia*.

BLANC; ſee Blank.

Blanc-*manger*, Fr. q. d. *white food*, is a preparation of diſſolved iſinglaſs, milk, ſugar, cinnamon, &c. boiled into a thick conſiſtence, and garniſhed for the table with blanched almonds. It is cooling and ſtrengthening.

Blancs *manteaux*, a name originally given to the *Servites*, or ſervants of the Bleſſed Virgin, on account of their white cloaks; but ſince applied to divers ſorts of religious, who have ſucceſſively inhabited the houſe of the *Servites*, and now to the Benedictines at Paris, though habited in black.

BLANCA, in *Medicine*, denotes a lenitive compoſition, formerly much in uſe; ſo called either from its white colour, or becauſe of its purging white, i. e. phlegmatic humours. There were three ſorts; a great, middle, and leaſt *blanca*.

Blanca *mulierum*, among the *Chemiſts*, ſignifies ceruss.

BLANCARDS, a name given to certain linen cloth, thus called, becauſe the thread uſed to weave them, has been half blanched or bleached before it was uſed. They are manufactured in Normandy, particularly in the places which are in the diſtrict, or under the juriſdiction of Pont-Audemer, Bernay, and Liſieux.

BLANCH *fermé*, or Blank *farm*, a *white farm*, that is, where the rent was to be paid in ſilver, not in cattle.

In ancient times, the crown rents were many times reſerved to be paid in *libris albis*, called *blanch firmes*: in which caſe the buyer was holden *dealbare firmam*; viz. his baſe money or coin, worſe than ſtandard, was melted down in the exchequer, and reduced to the fineneſs of ſtandard ſilver; or inſtead thereof he paid to the king 12*d*. in the pound, by way of addition. Lowndes on Coin, p. 5.

BLANCHE *carte*; ſee Carte.

BLANCHERS, a name given to mechanics employed in blanching, i. e. the art or manner of bleaching or whitening.

BLANCHING, in *Gardening*, is an operation performed on certain ſallads, roots, &c. as of celery, and endives, to render them fairer and fitter for the table. See Apium, and Endive.

Blanching alſo denotes the operation of covering iron plates with a thin coat or cruſt of tin. See Latten.

Blanching *of copper* for ſale, in imitation of ſilver; or mixing blanched copper with ſilver; or expoſing the ſame to ſale; or any malleable compoſition or mixture of metals or minerals heavier than ſilver, and which looks, and touches, and wears like gold, but is manifeſtly worſe than ſtandard, is made felony, 8 and 9 W. III. &c. 26.

Blanching *of wax*; ſee Wax.

Blanching, in *Coinage*, the operation of preparing the pieces before ſtriking, to give them the requiſite luſtre and brightneſs.

The *blanching*, as now practiſed, is performed by nealing or heating the pieces in a kind of pan or ſhovel, with a wood-fire, in manner of a reverberatory furnace, ſo that the flame paſſes over the ſhovel. The pieces being ſufficiently heated, and cooled again, are put ſucceſſively to boil in two copper pans, wherein are *aqua fortis*, common ſalt, and tartar of Montpellier; when they have been well-drained of this firſt water in a copper ſieve, they throw ſand and freſh water over them; and when dry, they are well-rubbed.

The ancient method of *blanching* was, by putting the pieces, after heating, in a large veſſel of common water, and ſome ounces of *aqua fortis*; but in different proportions for gold and ſilver.—The method is now diſuſed, partly by reaſon of its expenſiveneſs, and partly becauſe it diminiſhes the weight of the metal.

BLANK, or Blanc, in a general ſenſe, ſignifies white; and Blancus, or Blanca, is more particularly uſed for a kind of white, or ſilver money, of baſe alloy, coined by Henry V. in thoſe parts of France then ſubject to England, valued at 8*d*. ſterling. They were forbidden by his ſucceſſor to be current in this realm. In ſome ancient charters they are called *ſolidi blanci*, *white ſhillings*.

Blank alſo denotes a ſmall copper coin, formerly current in France, at the rate of five deniers Tournois.

They had alſo great *blanks*, or pieces of three *blanks*, and others of ſix, in reſpect whereof the ſingle ſort were called little *blanks*; but of late they are all become only monies of account.

Blank, or Blank-*ticket*, in lotteries, that to which no prize is allotted.

The French have a game, under the denomination *blanque*, anſwering to our lottery.

Blank, in *Coinage*, a plate, or piece of gold, or ſilver, cut and ſhaped for a coin, but not yet ſtamped. See Coining.

Blank, in *Zoology*, a name given by authors to a ſpecies of the cod-fiſh, called *gelbe*, *kolmulen*, and *aſellus flaveſcens*.

Blank-*bar*, in *Law*, is uſed for the ſame with what we call a *common bar*, and is the name of a *plea in bar*, which in an action of treſpaſs is put in to oblige the plaintiff to aſſign the certain place, where the treſpaſs was committed.

Blanks, in judicial proceedings, certain void ſpaces ſometimes left by miſtake. A blank (if ſomething material be omitted) in a declaration, abates the ſame: and ſuch a *blank* is a good cauſe of demurrer.

Blank-*verſe*; ſee Verse, and Rhyme.

Blank, *point*; ſee Point *blank*.

BLANKET, in *Commerce*, a warm woolly ſort of ſtuff, light and looſe woven; chiefly uſed in bedding.

The manufacture of *blankets* is chiefly confined to Witney in Oxfordſhire, where it is advanced to that height, that no other place comes near it. Some attribute a great part of the excellency of the Witney *blankets* to the abſterſive, nitrous water of the river Windruſh, wherewith they are ſcoured; others rather think they owe it to a peculiar way of looſe ſpinning, which the people have thereabouts. Be this as it will, the place has engroſſed almoſt the whole trade of the nation for this commodity; inſomuch, that the wool fit for it centers here, from the furthermoſt parts of the kingdom. Plott, Hiſt. Oxf. chap. 9. § 163.

Blankets are made of felt-wool, i. e. wool from off ſheep-ſkins, which they divide into ſeveral ſorts.

Of the head wool, and bay wool, they make *blankets* of twelve, eleven, and ten quarters broad; of the ordinary and middle ſort, *blankets* of eight and ſeven quarters broad; of the beſt tail wool, *blankets* of ſix quarters broad, commonly called *cuts*, ſerving for ſeamen's hammocks. See Hykes.

BLANKET, *toſſing in a*, a ludicrous kind of puniſhment, of which we find mention in the ancients, under the denomination *ſagatio*. Martial deſcribes it graphically enough. *Ibis ad excuſſo, miſſus ad aſtra, ſago.*

A late writer repreſents it as one of Otho's imperial delights. But this is turning the tables; that emperor's diverſion, as related by Suetonius, was not to be the ſubject, but the agent in the affair; it being his practice to ſtroll out in dark nights, and where he met with a helpleſs, or drunken man, to give him the diſcipline of the *blanket*.

BLANQUILLE, a ſmall ſilver coin, equivalent to about 1½*d.* ſterling, current in Morocco, and on the coaſts of Barbary.

BLAPSIGONIA, a kind of diſeaſe, or defect in bees, when they neglect, or fail to produce young, being wholly employed in making honey.

The word is Greek, compounded of *βλαπτω*, *I hurt*, and *γονη*, *brood* or *iſſue*.

BLARE, a ſmall copper coin, containing a little mixture of ſilver, ſtruck at Bern, and valued at much the ſame with the RATZE in other places.

BLAS, a novel term, in the Helmontian philoſophy, denoting the local, and alterative motion of the ſtars; from whoſe influence proceed changes of weather, ſeaſons, ſtorms, and the like.

In imitation of this *blas ſtellarum*, the ſame author framed another in animals, either natural, whereby each *viſcus* is framed, according to the model of its particular; or voluntary, which is directed to motion by the will.

BLASIA, in *Botany*, the name of a genus of plants belonging to the claſs of *cryptogamia algarum*, approaching to the nature of the *lichens*; the characters of which are theſe: the male flower has a cup compoſed of one leaf, which is oval at the baſe, ſomewhat cylindric in the middle, and expanded and truncated at the top; in this are contained a number of looſe granules, which ſeem to perform the office of *apices*, and contain the *farina fœcundans*. The female flower has ſcarce any cup, but produces a ſingle roundiſh fruit, uſually immerſed in the leaves; in this are contained certain round bodies, which appear to be ſeeds. Linnæus is much in doubt, whether theſe flowers are not to be underſtood a contrary way, and ſeems to ſuſpect, that what are called female flowers are really male ones; and what are called male, female.

BLASPHEMY, *blaſphemia*, or *blaſphemium*, in *Middle Age Writers*, denotes ſimply the blaming, or condemning of a perſon, or thing.

The word is Greek, *βλασφημια*, from *βλαπτω*, *lædo*.

Among the Greeks, *to blaſpheme*, was to uſe words of evil omen, or that portended ſomething ill, which the ancients were careful to avoid, ſubſtituting in lieu of them other words of ſofter and gentler import, ſometimes the very reverſe of the proper ones.

BLASPHEMY is more peculiarly reſtrained to evil or reproachful words ſpoken of the Deity. Auguſtin ſays, *Jam vulgo blaſphemia non accipitur niſi mala verba de Deo dicere.*

According to Lindwood, *blaſphemy* is an injury offered to God, by denying that which is due and belonging to him; or attributing to him what is not agreeable to his nature.

By the Moſaic law, *blaſphemy* was puniſhed with death. Levit. chap. xxiv. ver. 13—16. As alſo by the civil law. Novel. 77. In Spain, Naples, France, and Italy, the pains of death are not now inflicted. In the empire, either amputation, or death, is made the puniſhment of this crime.

By the canon law, *blaſphemy* was puniſhed only by a ſolemn penance; and by cuſtom, either by a pecuniary or corporal puniſhment. By the Engliſh laws, *blaſphemies* of God, as denying his being, or providence, and all contumelious reproaches of Jeſus Chriſt, &c. are offences by the common law, and puniſhable by fine, impriſonment, and pillory. And, by the ſtatute law, he that denies one of the perſons in the Trinity, or aſſerts there are more than one, or denies Chriſtianity to be true, for the firſt offence, is rendered incapable of any office; for the ſecond, adjudged incapable of ſuing, being executor or guardian, receiving any gift or legacy, and to be impriſoned for three years. 9 and 10 W. III. c. 32.

According to the law of Scotland, the puniſhment of *blaſphemy* is death. The firſt ſpecies thereof conſiſts in railing at, or curſing God, and here the ſingle act conſtitutes the crime. The ſecond conſiſts in denying the exiſtence of the Supreme Being, or any of the perſons of the Trinity; and therein obſtinately perſevering to the laſt. For reiterated denial does not fully conſtitute the crime, becauſe the ſtat. of Charles II. 1661, admits of repentance before conviction, as a complete expiation. This ſtatute of 1661, is ratified by a ſtatute of king William, whereby the calling in queſtion the exiſtence of God, or of any of the perſons of the Trinity, or the authority of Scripture, or the Divine Providence, is made penal. For the firſt offence, impriſonment, till ſatisfaction given by public repentance in ſack-cloth. For the ſecond, a fine of a year's valued rent of the real eſtate, and twentieth part of the perſonal eſtate. And the trial in both theſe caſes is competent to inferior judges. The trial of the third offence is death, to be tried only by the juſtices.

BLASPHEMY *againſt the Holy Ghoſt*. Divines are not agreed with reſpect to the nature of the crime thus denominated, Matthew, chap. xii. ver. 31. and the grounds of the extreme guilt aſcribed to it. Dr. Tillotſon maintains, that it conſiſted in maliciouſly attributing the miraculous operations which Chriſt performed by the power of the Holy Ghoſt to the devil. Vol. ii. ſerm. xvii. But Dr. Whitby, with greater probability, refers it to the diſpenſation of the Holy Ghoſt, which commenced after our Lord's reſurrection and aſcenſion; and thoſe were guilty of the crime, who perſiſted in their unbelief and blaſphemed the Holy Ghoſt, repreſenting him as an evil ſpirit. The crime was unpardonable, becauſe it implied a wilful oppoſition to the laſt and moſt powerful evidence which God would vouchſafe to mankind, and precluded the poſſibility of a recovery to faith and repentance. Whitby's Fourth Appendix to the Goſpel of St. Matthew, in his Paraphraſe, vol. i. p. 268.

BLAST, *flatus*, in the *Military Art*, a ſudden compreſſion of the air, cauſed by the diſcharge of the bullet out of a great gun.

The *blaſt* ſometimes throws down part of the embraſures of the wall.

BLAST is alſo applied, in a more general ſenſe, to any forcible ſtream of wind, or air; excited by the mouth, bellows, or the like.

BLAST is alſo uſed in *Agriculture* and *Gardening*, for what is otherwiſe called a BLIGHT.

Blaſts differ from MILDEWS, *rubigines*.

The SMUT of corn is a ſpecies of *blaſt*.

Blaſts, or *blaſtings*, are by ſome ſuppoſed owing to cold; by others, to the want of a due ſupply of ſap; by others, to aſcending fumes of the earth; by others, to ſharp winds and froſts, immediately ſucceeding rains. Phil. Tranſ. Nº 44.

That ſpecies called *uredines*, or *fire-blaſts*, is ſuppoſed by Mr. Hales owing to the ſolar rays reflected from, or condenſed in the clouds, or even collected by the denſe ſteams in hop-gardens, and other places. Ibid. Nº 399.

The effect of them is to wither, ſhrivel, ſcorch, turn black, and, as it were, burn up the leaves, bloſſoms, and fruits of trees, ſhrubs, herbs, graſs, corn, even for whole tracts of ground.

Phyſicians alſo ſpeak of a kind of *blaſts* affecting human bodies, and cauſing ERYSIPELAS, PALSIES, &c.

BLASTS, among *Miners*; ſee DAMPS.

BLASTED, ſomething ſtruck with a BLAST.

Among the Romans, places *blaſted* with lightning were to be conſecrated to Jupiter, under the name of BIDENTALIA, and PUTEALIA.

It was alſo a ceremonial of religion to burn *blaſted* bodies in the fire.

BLASTING, among *Miners*, a term for the tearing up rocks, which they find in their way, by gun-powder. The method of doing which is this; they make a long hole, like the hollow of a large gun-barrel, in the rock they would ſplit; this they fill with gun-powder, then they firmly ſtop up the mouth of the hole with clay, except a touch-hole, at which they leave a match to fire it. A ſmall quantity of powder does great things this way.

BLASTOLOGY, from βλαστος, *bud*, and λεγω, *I gather*; the regular and ſtated pruning of VINES.

BLASTUM *moſylitum*, in the *Materia Medica*, a term uſed by ſome writers to expreſs the *caſſia lignea*, or caſſia bark, when not peeled off from the branches, but kept with the wood within it; this was a common way of collecting and preſerving, not only this bark, but the cinnamon, and many others.

BLATTA, in *Natural Hiſtory*, a genus of inſects of the order of *hemiptera* in the Linnæan ſyſtem, the characters of which are, that the head is inclined, the *antennæ* are ſetaceous, the wings are membranaceous, the *thorax* is flat, orbiculated, and marginated, the feet are formed for running, and there are two ſmall horns above the tail. There are ſeveral ſpecies.

It is likewiſe the name of a ſpecies of beetle, called by Columna SCARABÆUS *teſtudinatus*.

BLATTA, in *Middle Age Writers*, denotes a purple in the wool or ſilk, dyed with the liquor of the fiſh of the BLATTA.

This was otherwiſe denominated *blatta ſerica*, or *blatto ſericum*; whence alſo *blattiarius*, uſed in ancient writers for a dyer in purple.

BLATTA, according to ſome writers, was alſo uſed for the KERMES inſect; and, according to others, for the purple-worm. But both of theſe acceptations are ſuſpicious.

We know that it was anciently uſed for a kind of moth, or fly, whoſe fat was reputed excellent for the ears. See BOOK-*worm*.

BLATTA, *byzantina*, in *Phyſiology* and *Pharmacy*, a teſtaceous body, being the *operculum*, or lid of a turbinated ſhell, whoſe fiſh yields a purple dye.

The *blatta* differs from the lid of the *buccinum*, or *purpura*, in figure; the firſt being oblong, the latter round: but in the ſhops they are ordinarily confounded, and ſold for each other. The *blatta byzantina* is alſo confounded by apothecaries with the UNGUIS ODORATUS, from which it ought to be diſtinguiſhed, as belonging to another kind of ſhell-fiſh.

Dr. Liſter takes the *blatta byzantina* to have ſucceeded the UNGUIS ODORATUS, and to have been brought into the ſhops in its place. In Dioſcorides's time, the beſt was brought from the Red ſea, viz. the paleſt and fatteſt; the blacker and leſs from Babylon, or the Perſian gulph: but, it ſeems, latter times took up with thoſe found about Conſtantinople; whence the preſent ſhop-*blatta* had its name.

The name *blatta* ſeems to have been given to this *operculum* from the colour; as being of a dark hair-colour, as the common *blatta piſtinaria*, or *bakehouſe beetle*, ſo frequent in London, is.

The *blatta byzantina*, when exhibited internally, renders the body ſoluble, ſoftens the ſpleen, and diſcuſſes peccant humours. When uſed externally, by way of fumigation, it reſtores epileptic patients, and women-labouring under a ſtrangulation of the *uterus*. In other diſorders its effects are the ſame with thoſe of moſt other teſtaceous ſubſtances.

BLATTARIA, in *Botany*; ſee MULLEIN.

BLAZE, in the *Manege*; ſee STAR.

BLAZING-*ſtar*; ſee COMET.

BLAZON, or BLAZONRY, in *Heraldry*, the art of deciphering the arms of noble houſes; or of naming all the parts in their proper and particular terms.

Various etymologies are given of the word *blazon*: the moſt probable is that which derives it from the German *blaeſen*, *to blow a horn*; it being the cuſtom of thoſe who preſented themſelves at the liſts in the ancient tournaments to blow a horn, to notify their coming. After this the heralds ſounded their trumpets, and then *blazoned* the arms of thoſe who preſented themſelves; deſcribed them aloud, and ſometimes expatiated on the praiſes, and high exploits, of the perſons who bore them.

There is this difference between *arms* and *blazon*; that the firſt are the device or figures borne on the coat, or ſhield; and *blazon*, the deſcription thereof in words.

The rules of *blazon* are, 1. To name the metal or colour of the field firſt: as, *or*, *argent*, or *gules*, &c. 2. To name the manner of the diviſion of the eſcutcheon by line, whether downright or bendwiſe, and alſo the difference of the line, whether it be indented, ingrailed, &c. in the next place. 3. Then to name the charge that is on the field. 4. Having thus expreſſed the field, the diviſion, and the charge, if there be more parts of the field occupied by the charge than one, you are to name the principal part of the field firſt. 5. If there be more than one kind of charge in a field, that in the chief part is to be named firſt. 6. To uſe no iteration or repetition of words, in *blazoning* a coat, eſpecially of any of theſe four words, *of*, *or*, *and*, *with*. 7. The three forms of *blazon* are by metals and colours, by precious ſtones, and by the celeſtial planets: the firſt for private gentlemen; the ſecond for perſons ennobled with titles, as dukes, earls, &c. and the third for emperors, kings, and princes. Though this variety of form is rejected by the French, from whom we had our heraldry, and by all other nations, who uſe none but metals and colours for all degrees. 8. That metal upon metal, and colour upon colour, is falſe heraldry: which admits of no exception, except in the arms of Jeruſalem, which are, argent, a croſs potent between four croſlets, or.—Add, that when lions ſtand upright in a coat, they are called *rampant*; when walking forward, *paſſant*; when they look you in the face, *paſſant guardant*: in other poſtures they have other terms, as *ſaliant regardant*, &c. Wolves and bears are termed after the manner of lions; griffons (inſtead of *rampant* and *ſaliant*) are termed *ſegreant*; lions, griffons, and eagles, are alſo ſaid to be *langued* and *armed*; ſwans, *membred*; hawks, *jeſſed* and *belled*; cocks, *armed*, *creſſed*, and *jowlped*: that is, when the tongues, bills, and claws of ſuch creatures are found of different colours from the body.—When an animal proceeds from the bottom of the ordinary, it is termed *iſſuant*; when over ſome ordinary, *jeſſant*; and if it proceed from the middle of any ordinary, or common charge, *naiſſant*.

BLEA, in vegetables, is that part of a tree, which lies immediately under the bark, and between that and the hard wood, and is the firſt progreſs of the alteration of the bark into wood by the natural growth and ſtrengthening of the fibres.

While the *blea* remains yet ſoft, and retains ſomething of the nature of bark, it may maintain a feeble vegetation; but when it is grown abſolutely hard and woody, it can contribute nothing to the growth of the tree. The vegetation of the young branches of trees is the moſt lively and vigorous, and the only one that goes as far as the flowers and fruit, becauſe theſe branches are little elſe but bark.

BLEACHING, or BLANCHING, the art of whitening linens, ſtuffs, ſilks, and other matters.

BLEACHING *of ſilk*.—While it is yet raw, it is put into a thin linen bag, and thrown into a veſſel of boiling river-water, wherein ſoap has been diſſolved, then boiled two or three hours, and the bag being turned ſeveral times, it is taken out, beaten and waſhed in cold water, ſlightly wrung out, and thrown into a veſſel of cold water, mixed with ſoap and a little indigo: the indigo gives it the bluiſh caſt always obſerved in white ſilks. After taking it out of the ſecond veſſel, it is wrung out, and all the water and ſoap expreſſed, ſhook out to untwiſt and ſeparate the thread, and hung up in the air, in a kind of ſtove made on purpoſe, wherein is burnt ſulphur; the vapour whereof gives the laſt degree of whiteneſs to the ſilk.

BLEACHING *or ſcouring of woollen ſtuff*.—There are three ways of whitening woollens; the firſt with water and ſoap; the ſecond with vapour of ſulphur; the third with chalk, indigo, and vapour of ſulphur.

For the firſt, the ſtuffs being taken from the fulling-mill, are put into ſoaped water a little warm, and worked afreſh by force of arms over a bench, which finiſhes the whitening the fulling-mill had begun; and laſtly, waſhed out in clear water and dried; this is called *the natural way of bleaching*.

In the ſecond method, they begin with waſhing the ſtuff in river-water: it is then laid to dry on poles, and, when half dry, ſpread out in a kind of ſtove well cloſed, wherein is burnt ſulphur; the vapour whereof diffuſing itſelf, ſticks by little and little over all the ſtuff, and gives it a fine whitening: this is commonly called *bleaching by the flower*.

In the third method, after the ſtuffs have been waſhed, they are thrown into cold water impregnated with chalk and indigo; after they have been well agitated here, they are waſhed afreſh in clear water, half dried on poles, and ſpread in a ſtove to receive the vapour of the ſulphur: which finiſhes the operation. This is not eſteemed the beſt method of *bleaching*, though agreeable enough to the ſight.

It may be here obſerved, that when a ſtuff has once received the ſteam of ſulphur, it will ſcarce receive any beautiful dye but black or blue.

BLEACHING *of hollands or fine linens*.—After taking them from the loom, they are ſteeped a day in fair water, waſhed out and cleared of their filth, and thrown into a bucking-tub filled with a cold *lixivium*, or lie of wood-aſhes and water. When taken out of the lie, they are waſhed in clear water, ſpread in a meadow, and watered, from time to time, with water from little dikes, or canals, along the ground, by means of ſcoops, or hollow peels of wood, called by the Dutch, who pretend to be the inventors of them, *gieters*. After lying a certain time on the ground, they are paſſed through a new lie, poured on hot, and again waſhed in clear water, and laid a ſecond time on the ground, and every thing repeated as before; then paſſed through a ſoft gentle lie, to diſpoſe them to reſume the ſoftneſs which the other harſher lies have taken from them, waſhed in clear water, ſoaped with black ſoap, and that ſoap again waſhed out in clear water: they are then ſteeped in cow's milk, the cream being firſt ſkimmed off, which finiſhes their whitening and ſcouring, gives them a ſoftneſs, and makes them caſt a little knap: when taken out of the milk, they are waſhed in clear water for the laſt time. After all this proceſs, they give the linen its firſt blue, by paſſing it through a water wherein a little ſtarch, and ſmalt, or Dutch *lapis lazuli*, have been ſteeped.—Laſtly, the proper ſtiffneſs and luſtre is given with ſtarch, pale ſmalt, and gums, the quantity and quality whereof may be adjuſted according to occaſion.

In fine weather, the whole proceſs of *bleaching* is completed in a month's time; in bad weather it takes up ſix weeks, or more.

In ſome parts of France, ARUM, or WAKE-*robin*, is uſed in *bleaching*, being ſuppoſed by its corroſive quality to diſſolve unctuoſities, and make the linen white. It was uſed alſo for STARCH before the diſcovery of that from wheat; and was ſaid to cauſe a ſoreneſs of the hands hardly relievable by ointments. Neumann.

BLEACHING *of coarſe linens.* They are taken from the loom, and laid in wooden frames, full of cold water; where, by means of wooden hammers, worked by a water-mill, they are beat, ſo as to waſh and purge them of their filth; then ſpread on the ground, where the dew, which they receive for eight days, takes off more of their impurity; then put into a kind of wooden tubs or pans, with a hot lie over them. Thus lixiviated, they are again purged in the mill, laid afreſh on the ground, and after eight days more, paſſed through a ſecond lie, and all things repeated, till ſuch time as they have acquired their juſt degree of whiteneſs.

The proceſs of *bleaching* in Scotland differs in ſome particulars from that above deſcribed, and uſed in France, &c. The following is an abſtract. The linens are folded up, in diſtinct pieces, depoſited in a wooden veſſel, and covered with warm water, or equal parts of water and lie: a wooden cover is laid over them to preſs them down: when the fermentation begins, bubbles of air riſe to the ſurface of the liquor, and there form a kind of pellicle or ſcum; when this begins to ſubſide, which generally happens in the ſpace of thirty-ſix or forty-eight hours, the linen is taken out, well rinſed, waſhed in a mill, and ſpread on a field to dry. As ſoon as it is thoroughly dry, it is fit for bucking. For this purpoſe a mother-lie is prepared of 30lb. of blue, and as much white pearl aſhes, 200lb. of Marcoſt aſhes, or 300lb. of caſhub, and 300lb. of Muſcovy aſhes, all well pounded, and boiled for a quarter of an hour in a large copper, containing about 126 Scots gallons of water. This liquor is left to ſettle, and is then uſed for preparing the bucking-lie: two gallons of this, with 2lb. of ſoft ſoap, are mixed with thirty-eight gallons of water: this lie, made blood-warm, is poured on the linens, previouſly diſpoſed in a large wooden veſſel: after a ſhort interval, the liquor is drawn off and heated again to a greater degree, and poured on the linen as before; which proceſs is repeated ſeveral times, till at laſt the lie is thrown on boiling hot. When this is done, the linens are ſpread on the graſs, and watered ſeveral times in the courſe of forty-eight hours: this proceſs of bucking and watering is repeated from ten to ſixteen times or more, and the lie is gradually made ſtronger from the firſt to the middle bucking, and weakened in the ſame manner to the laſt. The next operation is that of ſouring, which is performed by pouring ſuch a quantity of butter milk or ſour milk, or inſtead of this, ſour liquor made with bran or rye-meal and water, as is ſufficient to cover and well-moiſten the linen, which is put in rows into a large veſſel, and kept down by a lid full of holes, and prevented from riſing. A fermentation takes place in this part of the proceſs, which laſts five or ſix days, and when the ſcum formed by the aſcending air-bubbles begins to ſubſide, the linen ſhould be taken out, rinſed, mill-waſhed, and then waſhed with ſoap and water. Theſe ſeveral operations are repeated in ſucceſſion, till the linen is ſufficiently whitened; after which it is blued, ſtarched, and dried. In *bleaching* coarſe cloths, boiling is uſed inſtead of bucking; and they are ſoured with warm water and bran.

Inſtead of the acid of milk, Dr. Home recommends for this purpoſe water acidulated with ſpirit of vitriol, in the proportion of half an ounce, or at moſt three quarters of an ounce to a gallon. This proceſs is much quicker than the other, requiring only as many hours as the other requires days. Home's Exper. on Bleaching.

The method uſed for *bleaching* coarſe cloths in Scotland, is like that practiſed in Ireland for both fine and coarſe. Perſons appointed by the truſtees for improving the hempen and flaxen manufactures in Scotland, may enter into any bleach-yard, back-houſe, &c. and ſearch all rooms, and the boilers therein, and view the lees, and refuſe and dregs thereof, to ſee whether there have been any lime, pigeons-dung, or ſoap-dregs, uſed in the *bleaching* of linen cloth or yarn, contrary to the ſtatute, 13 Geo. I. c. 26. § 16.

Lime, or pigeons-dung, are not to be uſed in *bleaching* and whitening of linen, 10 Ann, c. 21.

Lime-water prohibited in *bleaching* is made either of ſhell-lime, or of ſtone-lime; the former is ſtronger than the latter, and more powerful on the human *calculus*; and Dr. Home diſcovered by experiment, that it was likewiſe more efficacious in *bleaching* linen. It whitens more, but weakens more, and extracts more out of the cloth. He concluded from his experiments, that it ought to be conſidered as the moſt expeditious, but at the ſame time as the moſt dangerous material for *bleaching* yet known. In the courſe of his experiments, this remarkable phænomenon occurred, that though LIME and LIME-*water* preſerve many animal ſubſtances in a ſound ſtate; yet mixed with alcalies, it produced a lie corroſive with reſpect to animals; but the effects on linen were juſt the reverſe, LIME-*water* was corroſive, and alcalies in proportion to their quantity weakened its corroſive power; inſomuch that he judged that a mixture of one part of lime with four of pure alcali, might be ſafely uſed in *bleaching*.

For BLEACHING *of hair*, ſee HAIR.

For BLEACHING *of wax*, ſee WAX.

BLEAK, in *Ichthyology*, a name given by us to the fiſh called by authors the ALBURNUS and *albula*. According to the new ſyſtem of Artedi, it is a ſpecies of the CYPRINUS. The French call it the ABLETTE.

BLEB, a ſmall bliſter or BUBBLE.

Naturaliſts have obſerved ſmall purple *blebs* on all the plants of the *hypericum* kind. Phil. Tranſ. Nº 274.

Thick pieces of glaſs, fit for large optic glaſſes, are rarely to be had without *blebs*. Ibid. Nº 4.

BLECTINUM, in *Botany*, a genus of plants of the claſs of the *cryptogamia filices*; the fructifications of which are diſpoſed in parallel lines on the ſides of the leaves.

BLEEDING, PHLEBOTOMY, an operation in chirurgery; being the opening of a vein with a lancet, for the evacuation of corrupt, or redundant blood.

Some phyſicians extol *bleeding* as the ſureſt, and moſt efficacious ſpecies of evacuants. Yet it was very rare among the ancients, however frequent among the moderns.—Oſtenſius obſerves, that at Rome perſons of quality are not allowed to be let blood, even in the moſt dangerous diſeaſes, without leave from the pope.

The *hippopotamus* is ſaid to have firſt taught men the uſe of *bleeding*: for that animal, being overcharged with blood, rubs itſelf againſt a pointed bulruſh, and opens a vein; till finding its plenitude diſcharged, it welters in the mire to ſtanch the blood again.

Bleeding is a ſpecies of evacuation of the utmoſt importance in medicine; an idea of its effects, with the reaſon of its uſe, may be conceived from what follows.

It is evident the blood thrown out of the heart, while it ſtrikes upon the antecedent blood, and drives it forwards, transfers to it part of its own motion, and it is therefore ſo much retarded in its own motion. Hence, if blood be drawn out of the baſilic vein of the right arm; the ſucceeding blood, or that carried by the axillary artery, or right ſubclavian, will be leſs hindered in its motion, than it was before that vein was opened: for part of the blood being taken away by the opening of that vein, there remains behind a leſſer quantity in the axillary vein, or leſs is contained between the farther extremity of the axillary artery and the heart, than was before: therefore the blood being let out by the vein, the remainder in the artery will be leſs impeded in its motion than before.

Hence the blood of that artery which communicates with the vein that is opened, will flow with a greater velocity after the aperture is made than before. Conſequently, while the blood is flowing out of the vein in the arm, that thrown out of the heart into the *aorta*, will find leſs reſiſtance in the aſcending trunk, than in the deſcending; and will therefore flow faſter in the aſcending, than in the deſcending trunk: and thence too it will find leſs reſiſtance in the right ſubclavian artery than in the left.

Laſtly, it hence appears, that the blood being let out of a vein in the right arm, the remaining blood in the right axillary artery runs with a greater velocity into the artery of that arm that is contiguous to it, than through the thoracic artery, or the right ſcapulary, which is likewiſe contiguous to it; becauſe, when the blood is not ſuppoſed to be drawn out from any vein correſponding to the thoracic artery, or into which this diſcharges itſelf, there is proportionably a greater impediment to the motion of the blood in the thoracic artery, than in that of the arm. But becauſe the velocity of the blood in the ſubclavian artery, or the right axillary, is greater than in the left; the velocity in the right thoracic will alſo be greater than in the left thoracic artery. Hence it is manifeſt, that the blood being let out of a vein in the right arm; the greateſt velocity of the remaining blood will be in the artery of that arm, becauſe it immediately empties its blood into the vein that is opened; and the next greateſt velocity will be in the thoracic artery, or ſcapulary of the ſame ſide, going out from the axillary artery. But the velocity of the blood will be far leſs in the brachial, axillary, and thoracic artery on the left and oppoſite ſide; and leaſt of all in the arteries ariſing from the deſcending trunk of the *aorta*.

On this view it may eaſily be gathered, what is to be done in the ſeveral circumſtances of blood-letting: for inſtance, if we would prevent the increaſe of any humour from the blood ſtagnating in the left leg, or bring it about, that as little blood as poſſible ſhould flow to that leg in any given ſpace of time; firſt, blood is to be taken from the arm or leg of the right ſide: becauſe this is truly making what is called a *revulſion*.

Again, if blood be drawn away on the ſame ſide, and from ſome vein that receives the blood from a branch of that trunk which tranſmits it to the ſwelled part; it will occaſion a greater derivation of blood to that limb for a few moments: and this is all that can make any difference between the different parts from which the blood is drawn.

As to what relates to the whole habit; in all lentors and viſcidities, if there be a due ſtrength and elaſticity remaining in the ſolids, PHLEBOTOMY will make the remaining blood circulate the faſter, and become thinner and warmer; but in a *plethora*, from a debauch, or too large quantities of ſpirituous nouriſhment, or from a diminution of perſpiration, where the blood yet retains its natural fluxility, PHLEBOTOMY will make the remaining maſs circulate ſlower, and become cooler.

In the former caſe, a diminution of the reſiſtance in the blood-veſſels, will increaſe the contractile powers of thoſe veſſels, and make them beat faſter, and circulate their contents with greater velocity; but in the latter caſe a diminution of the quantity of a ſpirituous blood will leſſen the quantity of ſpirit ſecreted in the brain, the conſequence of which will be, that the heart and arteries will not contract ſo often nor ſo ſtrongly as before, and therefore the blood will move ſlower, and become cooler. And on theſe things depend the whole doctrine of blood-letting.

Bleeding, according to Dr. Pringle, is the moſt indiſpenſible of all remedies in inflammatory diſeaſes; to the delaying of which too long, or not repeating it, are chiefly owing the bad conſequences of colds, as dangerous fevers, rheumatiſms, and conſumptions. He obſerves farther, that, in general, young practitioners are apt to be too ſparing in letting blood, by which means many lives are loſt: for a ſurgeon may be aſſured a ſoldier will never complain of a cough, or pains with inflammatory ſymptoms, wherein *bleeding* is not neceſſary; and from the ſizineſs of the blood, and continuance of the complaints, he is to judge of the neceſſity of repeating it, which, in caſe of a ſtitch, or difficult breathing, is never to be delayed. In inflammatory caſes, from twelve to fifteen ounces may be taken for the firſt *bleeding*, and ſomewhat leſs for all the reſt; and when it is neceſſary to exceed this quantity, it may be proper to follow Celſus's rule, in minding the colour of the blood whilſt it flows, and when it is of a blackiſh caſt, which is always the caſe in difficult breathing and great inflammations, to let it run till it becomes more florid. In all caſes where plentiful *bleeding* is indicated, it is beſt to do it in bed, to prevent fainting; and we may obſerve, that a perſon will bear the loſs of a much greater quantity of blood if the ſtream is ſmall, than by a large orifice, which ſome have thought neceſſary for making a more ſpeedy revulſion.

Bleeding is highly neceſſary in the *phrenitis*, *ophthalmia*, quinſey, rheumatiſm, cough, hectic fits, and, in general, in all inflammatory caſes. See Pringle's Obſervations on the Diſeaſes of the Army, *paſſim*.

It is to be obſerved, however, that, in malignant and putrid diſorders *bleeding* frequently renders them more malignant; it is therefore to be omitted, or at leaſt not repeated unleſs there appear evident marks of inflammation. See MALIGNANT *fever*, BILIOUS *fever*, DYSENTERY, &c.

As to the method of the operation, the puncture ſhould neither be too ſmall nor too large. Different ſurgeons open the vein in three different directions: ſome make the orifice in a ſtraight line with the courſe of the vein; others tranſverſely; but moſt make it obliquely: and if the patient is to be blooded in the left arm, the ſurgeon ſhould be able to uſe his left hand, inſtead of his right.

If the blood ſtops after a ſmall time, looſen the BANDAGE a little, to give way to more blood's deſcending by the artery, and it will bleed freſhly again; and if the orifice be obſtructed by too great a tenſion of the ſkin, or an intruſion of the *membrana adipoſa*, the piece of fat ſhould be returned by preſſing with the finger, or a bit of ſponge, and the ſkin relaxed by bending the arm; and, laſtly, if the orifice be obſtructed by thick grumous blood, that impediment may be removed by wiping with a ſponge dipped in warm water.

When a ſufficient quantity of blood is diſcharged, the ligature muſt be immediately taken off, and the ſkin about the orifice gently ſtroaked or preſſed together by the two fore-fingers of the left hand; by which means, the lips of the divided vein are cloſed: then the ſmaller of the two compreſſes is to be applied, firſt letting what little blood there may be between the orifice and the vein be diſcharged; the larger compreſs ſhould then be laid on the ſmaller, and preſſed ſlightly down with the thumb: then wiping the blood from the arm, the bandage is to be applied. Some wet the compreſſes in vinegar, water, or ſpirit of wine; but it is not neceſſary, and they ſit eaſieſt when applied dry.

In *bleeding* it ſometimes happens that an artery is opened either inſtead of, or together with, the vein: an accident of this kind is attended with the utmoſt danger. An artery is known to be wounded when the blood ſpins out very forcibly from the orifice, and that by ſtarts or leaps, not in an even ſtream, and extends itſelf in a greater arch from the orifice to the baſon. The colour of the blood from an artery is alſo much more florid than from a vein; to which add, that, on preſſing the finger on the veſſel below the orifice, the blood ſtarts out more violently than before; and ſtops, or at leaſt abates, on preſſing above the orifice; quite the contrary of what happens on the opening a vein.

In an accident of this kind, the ſurgeon ſhould have preſence of mind not to betray the caſe, by his fears, to the patient, or attendants: he ſhould obſerve whether the blood flows freely from the orifice, or whether it inſinuates itſelf in any conſiderable quantity between the integuments. If the firſt is the caſe, he muſt take a large quantity of blood away, even till the patient faints, perſuading the attendants that the heat of the blood requires it; and while the patient is in his fainting fits, as the flux then ceaſes, he may commodiouſly dreſs and bind up the wound; and by this precaution hinder a freſh hæmorrhage or an aneuriſm. The ſurgeon muſt place ſome ſmall piece of money between the folds of the firſt compreſs; and on this place two, three, or more compreſſes, each larger than the other: and then, bending the *cubitus*, apply two bandages in this manner, as after bleeding in the vein, only a little tighter; and lay a thick, long, and narrow compreſs over the artery, from the *cubitus* to the *axilla*: and the patient muſt be warned to wear his arm in a ſling, pinned to his cloaths, for a fortnight, and refrain from all uſe of it.

If the blood from the wounded artery is found to inſinuate itſelf between the integuments, the orifice muſt be immediately compreſſed, and tied up as before directed; and the arm often inſpected, to ſee whether a bleeding within the integuments does not yet continue. The patient muſt be frequently bled in the other arm, and, if a large quantity of blood ſhould be lodged from the wounded artery under the integuments, it will be neceſſary to open the integuments to diſcharge it.

It is too common an accident to find a nerve or tendon punctured in *bleeding*; and this is generally known to be the caſe by the patient's making a ſevere outcry at the time; and eſpecially if he complains afterwards of acute pains, and the limb begins to ſwell and be inflamed, convulſed, ſtiff, and extended as in the cramp: which ſymptoms, if not timely relieved, threaten convulſions of the whole body, a gangrene of the part, and even death in a ſhort time.

The beſt method to be taken in theſe accidents is, to firſt bathe the part with a mixture of oil of turpentine and ſpirit of wine, and then inveſt the whole arm with the diachalciteos plaſter, melted down in oil of vinegar and roſes, retaining it on by the expulſive bandage; which, beginning upon the hand, aſcends gradually by ſpiral turns to the top of the ſhoulder; by which means the impulſe of the blood on the part is not only much abated, but alſo the pain and inflammation much diminiſhed: and, laſtly, the following cataplaſm ſhould be applied to the arm, to complete the cure: take of flour of barley and of bitter vetch, of each two ounces; chamomile flowers and melilot flowers, of each two handfuls; freſh butter, an ounce and half: boil theſe into a cataplaſm with ſoap ſuds, and apply them to the arm till the pain and other bad ſymptoms are removed. Heiſter.

BLEEDING *in the hand*.—There are two principal veins in the hand, which are ſometimes opened to bleed the patient: the one is the *ſalvatella*, which runs on the outſide of the back of the hand towards the little finger. This was called *ſplenica* by the ancients, and they eſteemed the opening it particularly ſerviceable in melancholy, and diſeaſes of the ſpleen. The other is the *cephalica*, which runs betwixt the thumb and fore-finger, and was ſo denominated from an opinion, that the *bleeding* from it was particularly ſerviceable in diſeaſes of the head; but theſe opinions were all without foundation; and though the patient is bled more difficultly and ſlowly in theſe veins, the effect is the ſame as if bled in the arm. It is ſometimes, however, neceſſary for a ſurgeon to open them, either at the particular deſire of the patient, or when the veins of the arm are very obſcurely ſituated, or lie deep, while theſe lie fair and conſpicuous.

When any one is to be blooded in the hand, it muſt firſt be held for a conſiderable time in warm water, and well rubbed there with the other hand, in order to make the ſmall veins become turgid and conſpicuous; then a ligature is to be fixed on the wriſt, that the veins may continue thus diſtended, and wiping the hand dry with a napkin, an orifice is to be made in the moſt convenient part of the vein, as in *bleeding* in the arm. If the blood does not flow freely from the orifice, the hand muſt be again plunged into warm water, and kept there, till the quantity taken away is judged ſufficient; then the hand is to be wiped dry, and the orifice covered with a compreſs, defended by a proper BANDAGE. Heiſter.

Bleeding *in the head.*—Many phyſicians have been of opinion, that *bleeding* from the veins of the forehead and temples is more expeditious in giving relief in diſorders of the head, than the like diſcharge by veins more remote from the part affected. There ſeems, however, to be but little foundation for this, and that the *bleeding* by the jugular vein would much more expeditiouſly anſwer the end propoſed. If the ſurgeon, however, is called upon to perform this operation, he muſt firſt draw a handkerchief or neck-cloth as tight round the neck as can be conveniently borne, that by compreſſing the jugular vein, thoſe branches of it may become more turgid and conſpicuous. The vein being opened, the patient muſt hold down his head, that the blood may not trickle down into his eyes or mouth, when the ſtream does not ſpin out with ſufficient force. If the blood does not ſtop of itſelf, after a ſufficient quantity is diſcharged, you muſt compreſs the orifice with a finger, and, after wiping the forehead and face, apply a compreſs or two, with the proper bandage.

Bleeding *in the eyes.*—There are ſeveral ways of performing this operation, but the beſt ſeems to be this. The patient being ſeated on a chair, and his head held in a proper poſture, a tranſverſe inciſion is to be made, with a fine lancet, upon the turgid ſmall veins in the corners of the eye, ſo as to open them or cut them quite aſunder. The eye-lids muſt be held apart with one hand, whilſt the veins are opened with the other; and ſome uſe a pair of fine ſciſſars for this purpoſe, inſtead of a lancet, and others elevate the veins with a crooked needle before they divide them: but in this operation the better way would be to make the needles with edges, that when the veins were thus elevated, they might divide them without the help of any other inſtrument. When the inciſion is made, the diſcharge of blood muſt be promoted by means of fomentation, with a ſpunge dipped in warm water; and if the diſcharge is not ſufficient, the inciſion may be repeated two or three times: but few patients can be brought to ſuffer this, and there is no practiſing it at all upon infants, becauſe they will not keep the eye ſteady. Heiſter.

Bleeding *in the neck.*—It has been a very ancient practice to bleed in the external jugular veins of the neck for moſt inflammatory diſorders of the adjacent parts. The accumulated blood and humours may certainly be thus diſcharged from the parts, and the operation is no way difficult or dangerous; ſince the jugular veins run on each ſide the neck from the head to the clavicles, juſt under the ſkin. They are very large, and eaſily opened; but a ſtricture is firſt to be made on the lower part of the neck with a handkerchief, or the like ligature. The beſt method of raiſing this vein is, however, by a looſe ligature thrown over the neck, which the patient, or an aſſiſtant, may pull downward over the breaſt; and by this means the jugular veins will be compreſſed on each ſide, and become turgid, without occluding the *trachea*, or obſtructing perſpiration. When the veins are thus made turgid, whichever of them lies the faireſt, may be ſecured by the finger for inciſion, if the diſorder affects the whole head; but if only one ſide be affected, it is beſt to open the jugular on that ſide.

When the proper quantity of blood is taken, cloſe the orifice, and apply a proper compreſs and bandage. The common fear of this vein's *bleeding* afterwards is ill-grounded, and there ſeldom is any difficulty of ſtopping the blood. The patient commonly faints away in *bleeding*; but this occaſions no harm. Heiſter.

Bleeding *in the ranulæ.*—It is often found of ſervice in quinſies and other inflammatory diſorders of the neck, to bleed in two ſmall veins, which run under the tip or end of the tongue, eſpecially if a larger vein has been before opened in the neck or arm. To bleed in theſe veins, a ſtricture muſt be made upon the neck; the *apex* of the tongue muſt be then elevated with the left hand, while with the other the veins are both opened, firſt one, and then the other, by the lancet. When they have bled ſufficiently, remove the ſtricture from the neck, on which the *bleeding* uſually ſtops of itſelf; but, if it does not, let the patient take a little vinegar, or red wine, in his mouth, or elſe apply a bit of vitriol, or alum, or a compreſs dipped in ſome ſtyptic liquor, till the hæmorrhage ceaſes. But there is no need of being too buſy with theſe topics; for the blood never flows violently, or long, without them; and if there be not a good quantity of blood diſcharged by theſe veins on the occaſions for which they are uſually opened, the operation is of no uſe. Heiſter.

The bramins never bleed, but, in lieu thereof, faſt.

Bleeding *at an artery* is called ARTERIOTOMY.

Bleeding *by meaſure*, is where account is taken of the quantity as it flows from the vein, in order to put a ſtop to the flux when the requiſite portion is had.

Bleeding *at large*, where the flux is continued without regard to the quantity, till ſuch time as ſome expected effect is perceived. This method is ſometimes uſed in caſes of apoplexies, comata, &c.

Bleeding *of a corpſe, cruentatio cadaveris*, is a phænomenon ſaid to have frequently happened in the bodies of perſons murdered, which, on the touch, or even approach of the murderer, began to bleed at the noſe, ears, and other parts; ſo as formerly to be admitted in England, and ſtill allowed in ſome other parts, as a ſort of detection of the criminal, and proof of the fact. Phil. Tranſ. N° 77. p. 3012. But this kind of evidence derives its weight merely from ſuperſtition and credulity.

Numerous inſtances of theſe poſthumous hæmorrhages are given by Webſter, Lemnius, Libavius, and eſpecially Horſtius, who has a diſcourſe expreſs on the point, under this title, De Cruentatione Cadaverum.

Bleeding is alſo applied, in a leſs proper ſenſe, to a flux of SAP out of the wounded veſſels of plants, either ſpontaneouſly at certain ſeaſons, or by art, and the help of inciſion.

BLEMISH, a term in *Hunting*, uſed when the hounds, or beagles, finding where the chaſe has been, make a proffer to enter, but return.

BLEMMYES, or **Blemyes**, among the *Ancient Geographers*, a fabulous ſort of people, ſuppoſed without heads; having eyes and mouths on their breaſts; ſaid to have inhabited part of Æthiopia.

Bochart derives the word *Blemmyes* from בלי, which implies a *negation*, and מוח, *brain:* in which ſenſe the *Blemmyes* ſhould have been people without brains.

BLENCH, a ſort of tenure of land; as to hold land in *blench* is by payment of a ſugar-loaf, a couple of capons, a beaver-hat, &c. if the ſame be demanded in the name of *blench*, i. e. *nomine albæ firmæ*.

BLEND, **Blende**, or **Black-*Jack***, is a mineral called alſo *falſe galena*. See BLIND.

Blend-*metal iron*, a coarſe ſort of iron from the Staffordſhire mines, uſed for making nails and heavy ware; in ſome places alſo for horſe-ſhoes.

Blend-*water*, a diſtemper incident to black cattle, and comes ſeveral ways, 1. From blood. 2. From the yellows, which is a ringleader of all diſeaſes. And, 3. From change of ground; for being hard, it is apt to breed this evil, which if not remedied in ſix days, will be paſt help.

BLENNA, **Blena**, βλεννα, μυξα, κορυζα, in Hippocrates, is a thick phlegm and mucus flowing from the brain through the noſtrils, and ſhewing ſigns of a beginning concoction; as Galen explains him in ſeveral parts of his works.

BLENNIUS, in *Ichthyology*, the name of a genus of fiſh of the general order of the ACANTHOPTERYGII, according to the diſtribution of Artedi, and of the *jugulares* in the Linnæan ſyſtem. The name is derived from the word βλεννα, which ſignifies a tough and mucous matter, ſuch as that which the body of this fiſh is covered with. The characters of this genus are, that the membrane of the gills has ſix bones; the fore-part of the head is very ſlanting; the body is prickly; and the belly-fins have two bones. Of this genus there are ſeveral ſpecies, as the creſted *blennius*, or *galerita*, with a triangular lobe red at the edges, and ſituated between the eyes, and a cuticular creſt running tranſverſely over the head; the *gattorugine*, or *blennius*, with two little fins at the eyes, and twenty-three bones in the *pinna ani*; the *gunnellus Cornubenſium*, *liparis*, or *butter-fiſh*, with about ten black ſpots, and a white border on each ſide of the back-fin; the *pholis*, or ſmooth-headed *blennius*, called in Cornwall *mulgranoc*, and *bul-card*; the viviparous *blennius*, &c. But the name *blennius*, and *blennus*, is uſually appropriated to that with a furrow between the eyes, and a large beautiful ſpot, black in the middle, and edged with white, in the back-fin; and on this account called in Engliſh the *butterfly-fiſh*. It is common in the Mediterranean, and is ſold in Venice and elſewhere for the FABER. The fleſh is very ſoft. See *Tab. of Fiſh*, N° 16. Willughby, p. 131.

Blennus is alſo a name given by ſome authors, particularly Schonfeldt, to the SYNGNATHUS *corpore hexagono, cauda pinnata*; the ACUS of Ariſtotle; and *acus ſecunda* of other writers; called alſo by Geſner and Bellonius, TYPHLE *marina.* It is a name uſed alſo by ſome for the tobacco-pipe fiſh.

BLESENSIS *bolus, bole of Blois,* in the *Materia Medica,* a very valuable medicinal earth dug about Saumur, Blois, and Bourgoyne in France, and ſeeming to poſſeſs all the virtues of the Armenian bole of Galen, which it alſo much reſembles in external appearance.

It is a very valuable medicine in fluxes and many other caſes, and might be had in any quantities, at a ſmall price; but the common red French bole, or a counterfeit of it, or the ſubſtance called BOLE *Armenic,* is generally ſold for it.

BLESTRISMUS, from βληστριζω, *I toſs,* derived from βαλλω; in the *Ancient Phyſic,* a continual toſſing and inquietude of the body, occaſioned by a tumultuary effervеſcence of the blood, eſpecially in acute fevers.

BLETA *alba,* an epithet given by ſome to the milky urine voided in ſome diſorders of the kidneys, ranked by Paracelſus among the cauſes of the *phthiſis.*

BLETUS, βλητος, from βαλλω, *I ſtrike*; in the *Ancient Phyſic,* a perſon whoſe ſide, by reaſon of ſome internal inflammation, as a pleuriſy or peripneumony, turns black or livid-ſpotted, chiefly preſently after death.

BLEW-CAP, an Engliſh name for a peculiar ſpecies of fiſh of the ſalmon-kind, diſtinguiſhed by a broad blue ſpot on the head, from whence they have their name. Theſe ſeem not to breed with us; but appear in our rivers only at certain ſeaſons, when there have been very violent north winds. This fiſh is ſeldom found ſingle; ſo that the fiſhermen rejoice at the taking one of them, expecting a large ſhoal of them near.

BLEYME, in *Farriery,* an inflammation in a horſe's hoof, occaſioned by blood putrified in the inner part of the coffin towards the heel, between the ſole and the coffin-bone. Some write the word corruptly *bleyne.* It is originally French, *bleime,* which ſignifies the ſame.

There are three ſorts of *bleymes*; the firſt bred in ſpoiled wrinkled feet with narrow heels, are uſually ſeated in the inward or weakeſt quarter: the ſecond, beſides the uſual ſymptoms of the firſt, infects the griſtle, and muſt be extirpated, as in the cure of a quitter-bone: the third is occaſioned by ſmall ſtones and gravel between the ſhoe and the ſole.—For a cure, they pare the foot, let out the matter, if any, and dreſs the ſore, like the prick of a nail.

BLICEA, in *Ichthyology,* the name of a ſmall fiſh of the harengiform kind, caught in the German and other ſeas, and ſuppoſed by many to be the ſame with what in England we call the ſprat, which to ſome ſeems to be no other than a young herring.

It is likewiſe the name of a freſh-water fiſh of the *malacoſtomous,* or, as we call it in Engliſh, the leather-mouthed kind, ſeeming to be the ſame with the more common kind of *carcaſſius.* It is alſo the name of an Eaſt Indian fiſh, which might be more properly called *harengus minor Indicus,* or the ſmall Indian herring. It is of the ſhape of the herring; but ſomewhat broader and thinner, and is of the ſame colour. Its tail alſo is forked; but its head is of an odd figure, its eyes and the end of its ſnout being extremely large. This fiſh ſwims uſually in vaſt ſhoals, and is caught principally on the coaſt of Malabar. It is a well-taſted fiſh; but has not at all the taſte of the herring. It takes ſalt, which ſcarce any other of the Eaſt Indian fiſh will do, and is therefore very much valued, and ſent into all the neighbouring parts of the country in pickle. There is alſo another very conſiderable uſe it is put to by the natives, which is the manuring the lands whereon they ſow their rice: they uſe this fiſh, which is caught in prodigious plenty, inſtead of dung on this occaſion. Willughby and Ray.

BLIEGG, in *Ichthyology,* a name given by the Germans to the fiſh we call the BLEAKE, and authors in general the ALBULA and ALBURNA.

BLIGHT, in *Huſbandry,* a diſeaſe incident to plants, and affecting them variouſly; the whole plant ſometimes periſhing by it, and ſometimes only the leaves and bloſſoms, which will be ſcorched and ſhriveled up, the reſt remaining green and flouriſhing.

This diſorder ſeldom happens but upon the blowing of ſharp eaſterly winds, which are moſt frequent with us about March; whence that month proves, of all others, the moſt fatal to plants.—From this circumſtance, ſome imagine the colds that then reign, being exaſperated by the eaſtern winds, effect *blights*; but Mr. Bradley furniſhes a more plauſible account: for on this principle, it were hard to ſay why one plant, or one part of a plant, ſhould be *blighted* more than another. He obſerves then, that caterpillars and other inſects generally attend thoſe winds; and that they infect ſome one kind of tree more than another, and even ſome particular branch more than others; and thence infers, either that the eggs of thoſe inſects, or the inſects themſelves, are brought to us by the eaſterly winds; or that the temperature of the air, when the eaſtern winds blow, is neceſſary to hatch thoſe creatures, ſuppoſing the eggs to have been already laid on the infected parts. Now each of theſe cauſes ſeems to have its effect: thoſe *blights* attended with large worms, or caterpillars, ſeem hatched by the eaſtern winds; and thoſe others, which only produce the ſmall inſects, that occaſion the curling of the leaves of trees, may proceed from ſwarms of them, either ready hatched, or in the egg, brought with the wind.

The coldneſs of thoſe winds he ſhews to be no objection againſt their being fitted to hatch inſects; different inſects requiring vaſtly different degrees of heat. To this he adds, that every inſect has its proper plant, or tribe of plants, which it naturally requires for its nouriſhment, and will feed on no other; and in which, therefore, it lays its eggs: it is no wonder then, that one kind of tree ſhould be infected, and all the reſt eſcape. That wind, v. gr. which brings or hatches the caterpillars on the apple-tree, will not infect the pear, plum, or cherry; becauſe, were the ſhoals of inſects natural to the apple to light on thoſe other trees mentioned, they would either want their proper matrix to hatch in; or, were they ready hatched, would periſh for want of proper food. So that it is morally impoſſible all kinds of plants ſhould be *blighted* at the ſame time, unleſs the eggs of every kind of inſect natural to each tree could be brought at one time with the wind; or, that an eaſterly wind could contain in it, at once, as many different degrees of cold, or heat, as would be required to hatch and maintain each different claſs of inſects. Nor is it any objection, that in *blights* there are not frequently any animals immediately perceivable. By the microſcope, we diſcover animalcules a million of times leſs than the ſmalleſt which come under ordinary notice; theſe, the gentleſt air may be conceived capable of blowing from place to place; ſo that it is no wonder if they be brought to us from the remoteſt regions, eſpecially the north-eaſt part of Great Tartary, &c. where the cold is intenſe enough to give them life; and from whence there is not ſea enough, by the warmth and ſaltneſs of whoſe vapours they might be ſuffocated. Thoſe brought from the north-eaſt parts of America are probably deſtroyed by paſſing the vaſt Atlantic ocean, which may be the reaſon why the north-weſt wind is not ſo infectious.

But that *blights* are frequently no more than an inward weakneſs or diſtemper in trees, evidently appears, if we conſider how often it happens, that trees againſt the ſame wall, expoſed to the ſame aſpect, and equally enjoying the advantages of ſun and air, with every other circumſtance which might render them equally healthy, are often obſerved to differ greatly in ſtrength and vigour; and as often do we obſerve the weak trees to be continually *blighted,* when the vigorous ones in the ſame ſituation eſcape. Dr. Hales aſcribes *blights* to the obſtruction of perſpiration in bloſſoms and leaves, occaſioned by a continued dry eaſterly wind, without ſhowers or dew; in conſequence of which the perſpirable matter becomes glutinous, and adheres to the ſurfaces of leaves, hereby affording a proper nutriment for inſects, which prey on the leaves and tender branches of fruit-trees, when the *blight* happens, though they are not the firſt cauſe of it.

To prevent *blights,* the more knowing among country-people, while the eaſterly winds blow, uſed to guard againſt them by burning heaps of weeds, chaff, and other combuſtibles, on the wind-ſide of their orchards, that the ſmoke may either poiſon the inſects, or their eggs, as they paſs along. It may be added, that theſe fires are often made with good ſucceſs, to deſtroy the caterpillars, even after they are hatched, and have begun to devour the trees.—Another method of preſerving trees from *blights* is, by ſprinkling tobacco-duſt, or pepper-duſt, or waſhing the leaves with water wherein tobacco-ſtalks have been infuſed; which, it is ſaid, is preſent death to all inſects, and animalcules.—Another is by pulling off the leaves when withered, and cutting off the ſmaller branches, when they produce crooked and unnatural ſhoots. Dr. Hales recommends waſhing and ſprinkling the trees occaſionally with fair water: and if their ſhoots ſeem to be much infected, waſhing them with a woollen cloth, ſo that their perſpiration may not be obſtructed.

But there is another ſort of *blight,* againſt which it is more difficult to guard fruit-trees; that is, occaſioned by ſharp, pinching, froſty mornings, which often happen at the time when the trees are in flower, or while the fruit is very young, and occaſion the bloſſoms or fruit to drop off; and ſometimes the tender parts of the ſhoots and leaves are greatly injured thereby. The only method yet found out to prevent this miſchief is, by carefully covering the walls, either with mats, canvas, &c. which being faſtened ſo as not to be diſturbed with the wind, and ſuffered to remain on during the night, are to be taken off every day, if the weather permits.

Another ſort of *blight*, which ſometimes happens in April or May, and which is often very deſtructive to orchards and open plantations, and againſt which we know of no remedy, is what is called a *fire-blaſt*, which in a few hours hath not only deſtroyed the fruit and leaves, but many times parts of the trees, and ſometimes whole ones have been killed by it. This more frequently happens in cloſe plantations, where the ſtagnating vapours from the earth, and the plentiful perſpirations from the trees, are pent in, for want of a free air to diſſipate and diſpel them; than in thoſe planted at a greater diſtance, or ſurrounded with hills or woods. See RUST.

Corn is liable to *blights*, like other ſorts of grain.

BLIGHT *of corn* is called SMUT.

BLIKE, in *Ichthyology*, a name given by ſome to an anadromous fiſh, ſomewhat reſembling our river chub, and called by Geſner *capito anadromus*; but more generally known by the name of ZERTA, or the ZERTE.

BLIND.—*Pore* or *Pur*-BLIND, denotes only a great degree of ſhort-ſightedneſs. Phil. Tranſ. Nº 37. p. 731.

BLIND, *Moon*, is uſed in ſpeaking of horſes, which, according to the vulgar, but very abſurd opinion, loſe their ſight only under certain ſtates of the moon, and ſee at every other time. This diſeaſe is the forerunner of cataracts, and generally ends in total blindneſs.

In ſome caſes of this diſtemper, a thin viſcid corroſive water runs from the diſeaſed eye, more or leſs in proportion to the degree in which the eye and eye-lids are ſwelled and inflamed. In other caſes, the diſeaſed eye diſcharges no humour; but looks thick and troubled; and the horſe ſees little or very indiſtinctly. The cauſes of this diſtemper are various: it ſometimes proceeds from a natural defection of the eyes, and often from ſome accidental malady. When the humour attaches one eye without changing to the other, there is hope of a cure; at leaſt of preſerving one eye. But when the eyes look depreſſed, and gradually decay, total blindneſs commonly enſues. If the eyes are full and inflamed, bleeding is proper; but if they appear ſunk and periſhing, it is often pernicious. In the former caſe, when the eyes diſcharge a ſharp water, they ſhould be waſhed twice a day with a ſtrong tincture of roſes, made by ſteeping two drams of roſe-buds in half a pint of boiling water, and diſſolving half a dram of ſugar of lead in the quantity of four ounces of it. If the matter digeſts, two drams of honey ſhould be added to the above quantity. At the ſame time purges ſhould likewiſe be adminiſtered twice a week. Lenitive electary and cream of tartar, of each four ounces; Glauber's purging ſalts, three ounces; the ſolutive ſyrup of roſes, two ounces, mixed with white wine and water, or warm water-gruel, are very proper for this purpoſe. Cutting out the haw is alſo an operation which is uſually performed on *moon-blind* horſes. Gibſon.

BLIND is alſo uſed for occult, or imperceptible. Hence *blind* rampart, *cæcum vallum*, among the ancients, was that beſet with ſharp ſtakes, concealed by graſs or leaves growing over them.

BLIND *teſtimonies*, *cæca teſtimonia*, thoſe given by abſent perſons in writing.

BLIND is alſo uſed in ſpeaking of bodies without apertures. Hence,

BLIND *wall*, *cæcus paries*, that without windows. In a like ſenſe we meet with *blind* chamber, *cæcum cubiculum*.

BLIND is alſo uſed in ſpeaking of veſſels which are not perforated.

In this ſenſe, the chemiſts ſay a *blind* alembic. A tube is ſaid to be *blind*, when it is cloſed a-top.

Some anatomiſts alſo call the third cavity of the ear CÆCUM, as having no iſſue; but it is more uſually denominated LABYRINTH.

BLIND *granado*, that which does not light or take fire.

BLIND, in *Ichthyology*, a local name for a fiſh, called by authors the ASELLUS *luſcus*, and more univerſally in Engliſh the *bib*. It is a fiſh of the cod-kind, but never growing to any great ſize. The word *blind* is uſed in Cornwall.

BLIND, or BLINDE, among *Mineraliſts*, a ſpecies of lead-MARCASITE, by our miners called *mock-ore*, *mock-lead*, and *wild-lead*, &c.

Blinde is a mineral maſs, flaky, gloſſy, and breaking in angles, much like the potters lead-ore, only of a colour more duſky, and approaching to black. In it are veins of a yellow ſhining MARCASITE, with a little white ſpar, and on one ſide a greeniſh æruginous matter. On a trial by the fire, it yielded very little copper, leſs lead, and no tin. It is very obſtinate, ſeveral attempts having been made with the alcaline fluxes to run it, in vain.

The German mineraliſts call it BLENDE, whence our denomination *blinde*. It anſwers to what in Agricola is called GALENA *inanis*. It uſually lies immediately over the veins of lead-ore, in the mines which produce it, for it is not found in all. When the miners ſee this, they know the vein of ore is very near.

BLIND *faith*; ſee FAITH.

BLIND *gut*; ſee COECUM.

BLIND-*worm*; ſee SLOW-*worm*.

BLINDS, or BLINDES, in the *Military Art*, denote every thing ſerving to cover the beſiegers from the enemy, as wool-packs, earth-baſkets, ſand-bags, and the like.

Blinds are ſometimes only canvas ſtretched to take away the ſight of the enemy; ſometimes they are planks ſet up, properly called mantlets; others are of baſkets, others of barrels.

BLINDS more peculiarly denote wooden frames of four pieces, round or flat, two of which are ſix feet long, and pointed at the ends, and the others three or four feet, which ſerve as ſpars to faſten the two firſt together. They are fixed upright in the ground, againſt the ſides of the ſaps, to ſuſtain the earth, and to faſten faſcines on the upper part, or to cover the ſaps, and to lay faſcines over them, to ſecure the troops from ſtones and granades. They are chiefly uſed, where the trenches are carried on in the face of the place, in a right line, ſo as the enemy might ſcour them with their guns from the walls. See *Tab. of Fortification, fig.* 1.

BLIND is ſometimes alſo uſed for ORILLON.

BLINDING, a ſpecies of corporal puniſhment anciently inflicted on thieves, adulterers, perjurers, and others; and from which the ancient Chriſtians were not exempt. Sometimes lime and vinegar, or barely ſcalding vinegar, was poured into the eyes, till their balls were conſumed; ſometimes a rope was twiſted round the head till the eyes ſtarted out. Solin. Polyhiſt. c. 4. Lamprid. in Alex. Sev. c. 17. Val. Max. lib. vi. c. 5. Lactant. de Mort. Perſec. c. 36.

In the middle age, they changed total *blindneſs* for a great darkneſs, or diminution of ſight, which they produced by holding a red-hot iron diſh or baſon before the eyes, till their humours were dried, and their coats ſhrivelled up.

The inhabitants of the city Apollonia executed it on their watch, whom they found aſleep. Democritus, according to Plutarch, Cicero, and A. Gellius, put out his own eyes, that he might be leſs diſturbed in his mental contemplations, when thus freed from the diſtraction of the objects of ſight. Herodot. lib. vi. c. 92. Aul. Gell. Noct. Att. lib. x. c. 71. Cicero Tuſc. Qu. 5.

BLINDING, *obcæcatio*, in the *Black Art*, denotes a ſpecies of NECROMANCY, whereby a viſible body may be concealed, or hidden by an inviſible power.

BLINDING *of a caſemate*, ſignifies erecting a battery againſt it, in order to diſmount its cannon, and render them uſeleſs.

BLINDNESS, a privation of the ſenſe of ſight, ariſing from a total depravation of its organs, or an involuntary obſtruction of their functions.

Blindneſs is of divers kinds. Natural *blindneſs* is that happening according to the ordinary courſe of things; thus that of certain inſects formed without eyes, though it is not eaſy to fix which theſe are, ſince divers animals have been erroneouſly ſuppoſed ſo, on account of their ſmallneſs or imperceptibility; as the CÆCILIA, commonly called the blind-worm, the mole, &c.

Præternatural, or morbid *blindneſs*, is that owing to diſeaſe or accident.

Total *blindneſs*, is that wherein all ſight or perception, even of light, is wanting, as is the caſe of thoſe who are ſaid to be *ſtone-blind*.

A *blind* man by the civil law cannot make a teſtament, except under certain modifications; but in every caſe he is diſabled from being a witneſs to a teſtament, on account of his *blindneſs*.

Partial *blindneſs*, is that wherein ſome faint glimmering is left, as is always the caſe in people who have ripe cataracts, who are never ſo blind, but they can diſcern day from night; and, for the moſt part, in a ſtrong light, diſtinguiſh black, white, and ſcarlet, though they cannot perceive the ſhape of any thing. The reaſon is, that the light by which thoſe perceptions are made, being let in obliquely through the aqueous humour, or the anterior ſurface of the cryſtalline (by which the rays cannot be brought into a focus upon the *retina*), they can diſcern in no other manner, than a ſound eye can through a glaſs of broken jelly, where a great variety of ſurfaces ſo differently refract the light, that the ſeveral diſtinct pencils of rays cannot be collected by the eye into their proper foci; wherefore the ſhape of an object in ſuch a caſe cannot be at all diſcerned, though the colour may. Phil. Tranſ. Nº 402. p. 447.

Perpetual *blindneſs*, is that which remains alike under all the diverſity of ſeaſons, times, ages, &c.

Tranſient *blindneſs*, is that which gives way of itſelf in due time, as that of whelps, which continues for ſeveral days, ſometimes nine, rarely twelve, after they are littered.

The Nogais Tartars, according to father Du Ban the Jeſuit, who lived among them, are born *blind*, and open not their eyes, till ſeveral days.

Periodical *blindneſs*, is that which comes and goes by turns, according to the ſeaſon of the moon, time of day, and the like. Phil. Tranſ. N° 233. p. 728.

Diurnal *blindneſs*, is called *hemera copia*.

Nocturnal *blindneſs*, called alſo *nyctalopia*, that which enſues on the ſetting of the ſun in perſons who ſee perfectly in the day, but become quite blind as ſoon as night comes on. Brigg, in Phil. Tranſ. N° 159. p. 560, where an inſtance of it is given. See a ſingular caſe of this kind, related by Dr. Samuel Pye, in the Medic. Obſerv. and Inquir. vol. i. p. 111. See alſo the Col. Acad. tom. vi. p. 507.

The cauſes of *blindneſs* are either ordinary, as a decay of the optic nerve (an inſtance whereof we have in the Academy of Sciences, where, upon opening the eye of a perſon long blind, the optic nerve was found extremely ſhrunk and decayed, and having no medulla in it); or ſome external violence, vicious conformation, growth of a cataract, *gutta ſerena*, ſmall-pox, or the like. Hiſt. Acad. Scienc. ann. 1713 and 1721.

Extraordinary cauſes of *blindneſs* are malignant ſtenches, poiſonous juices dropped into the eye, baneful vermin, long confinement in the dark, or the like.

The ducks which breed under ground, and break out into the Zirchnitzer ſea in Carniola after all great ſtorms, are blind at their firſt eruption; but, in ſome time, come to their ſight.

The author of the Embaſſy of D. Garcias de Silva Figueroa into Perſia tells us, that in ſeveral parts of that kingdom are found vaſt numbers of blind people of all ages, ſexes, and conditions; by reaſon of a ſpecies of little flies which prick the eyes and lips, and enter the noſtrils, carrying certain *blindneſs* with them when they light on the eyes.

The miſeries of *blindneſs* are feelingly painted by Milton, and may be alſo partly gueſſed at by the extaſies into which perſons have fallen on their recovery from it. Mr. Boyle mentions a gentleman, who having been blind, and brought to ſight at eighteen, was very near going diſtracted with the joy. See a remarkable caſe of this kind, Tatler, N° 55. vol. i. Parad. Loſt, lib. iii. init. Boyle's Works abr. tom. i. p. 4.

We find various recompenſes for *blindneſs*, or ſubſtitutes for the uſe of the eyes, in the wonderful ſagacity of many blind perſons recited by Zahnius in his *Oculus Artificialis*, and others. In ſome, the defect has been ſupplied by a moſt excellent gift of remembering what they had ſeen; others, by a delicate noſe, or the ſenſe of ſmelling; others, by an exquiſite touch, or ſenſe of feeling, which they have had in ſuch perfection, that, as it has been ſaid of ſome, they learned to hear with their eyes; it may be ſaid of theſe, that they taught themſelves to ſee with their hands.

Some have been enabled to perform all ſorts of curious and ſubtile works in the niceſt and moſt dextrous manner. Aldrovandus ſpeaks of a ſculptor, who became *blind* at twenty years of age, and yet ten years after made a perfect marble ſtatue of Coſmo II. de Medicis; and another of clay like Urban VIII. Bartholin tells us of a *blind* ſculptor in Denmark, who diſtinguiſhed perfectly well, by mere touch, not only all kinds of wood, but all the colours; and F. Grimaldi gives an inſtance of the like kind; beſide the *blind* organiſt lately living in Paris, who is ſaid to have done the ſame.

The moſt extraordinary of all is a blind guide, who, according to the report of good writers, uſed to conduct the merchants through the ſands and deſarts of Arabia. James Bernoulli contrived a method of teaching blind perſons to write. Leo Afr. Deſcr. Afr. lib. vi. p. 246. Caſaub. Treat. of Enthuſ. chap. ii. p. 45. Fonten. Elog. des Acad. p. 114.

Yet have not blind perſons any idea of viſible objects, though they can diſtinguiſh them by the touch: thus the gentleman couched by Mr. Cheſelden, though he knew the colours aſunder in a good light during his blind ſtate; yet when he ſaw them after couching, the faint ideas he had of them before, were not ſufficient for him to know them by afterwards. Phil. Tranſ. N° 403. p. 447.

It was even a conſiderable time before he could remember which was the cat, and which the dog, though often informed, without feeling them. All, that he had no idea of diſtance; but thought that all the objects he ſaw touched his eyes, as what he felt did his ſkin.

Blindness, in *Farriery*, is a diſeaſe incident to horſes, eſpecially thoſe of an iron-grey or dapple-grey colour, when ridden too hard, or backed too young. Phil. Tranſ. N° 37.

It may be diſcovered by the walk or ſtep, which, in a blind horſe, is always uncertain and unequal, becauſe he dares not ſet down his feet boldly when led in one's hand; though, if the ſame horſe be mounted by an expert horſeman, and the horſe of himſelf be mettled, the fear of the ſpur will make him go more freely; ſo that his *blindneſs* can hardly be perceived. Another mark whereby a horſe may be known to have loſt his ſight, is, that upon hearing any body enter the ſtable, he will prick up his ears, and move them backwards and forwards, as miſtruſting every thing, and being in continual alarm by the leaſt noiſe.

D. Lower firſt ſhewed the cauſe of the ordinary *blindneſs* in horſes, which is a ſpongy excreſcence, growing in one, ſometimes in two or three places of the *uvea*, which being at length overgrown, covers the pupil when the horſe is brought into the light, though in a dark ſtable it dilates again.

BLINKS, in *Botany*; ſee Montia.

Blinks, among *Ancient Sportſmen*, denoted boughs broken down from trees, and thrown in the way where deer are likely to paſs, to hinder their running, or rather to mark which way a deer runs, in order to guide the hunter.

BLINKING *of beer*, in Lincolnſhire, ſignifies letting the wort ſtand for ſome time in the vat, till it hath acquired ſome degree of acidity, in order to diſpoſe it to fine, and be the ſooner ready for drinking.

BLISSOM, among *Huſbandmen*, corruptly called *bloſſom*, is the act of a ram when coupling with an ewe.

BLISTER, in the *Animal Oeconomy*, denotes a thin bladder raiſed on the ſkin, and full of a watery or other humour.

Bliſters are ſymptoms uſually enſuing on burns, ſcalds, and cauſtic matters applied to the ſkin.

It is diſputed among ſurgeons, whether *bliſters*, in caſe of burns, are to be opened, or not. Some adviſe it, to prevent further ulcerations underneath; others, unleſs they be large, diſſuade it, as creating the patient needleſs pain.

Blister, Epispastic, or Vesicatory, an external medicine, ſerving to raiſe a bliſter; whence alſo it is itſelf, though improperly, called a *bliſter*.

Of *bliſters* there are ſome which act very gently, and others with great violence.

Bliſters are unguents, cataplaſms, or plaſters made of ſharp, irritating medicaments, which have a faculty of drawing the humours from within, outwards; inflaming and ulcerating the ſkin, and raiſing *veſicæ*, or bladders; whence their denomination, *veſicatory*.

We have *veſicatories* made of CANTHARIDES, of EUPHORBIUM, FIGS, SUBLIMATE OF MERCURY, LAPIS INFERNALIS, MUSTARD, ANACARDIUM, SQUILLS, BRIONY, VINEGAR, PEPPER, LEAVEN, *leſſer* SPURGE, &c. which are incorporated and made up with honey, gum, reſins, &c. to bring them to the conſiſtence required.

Bliſtering chiefly takes place in the dropſy, delirious and feveriſh diſorders, apoplexies, pleuriſies, and the like. Some alſo preſcribe it in the *hydrocephalus*, *ophthalmia*, ſuffocative catarrhs, *cephalæa*, &c. Some ſay, that *bliſtering* is generally found hurtful in dropſies.

In the Phil. Tranſ. vol. l. part ii. N° 75. an. 1758, there is a paper by Dr. Whytt, containing caſes of the remarkable effects of *bliſters* in leſſening the quickneſs of the pulſe in coughs, attended with infarction of the lungs, and fever. See alſo ſeveral papers concerning *bliſters* in the Lond. Medic. Obſerv. &c. vol. ii. p. 311. ibid. p. 382. and vol. iii. p. 102. where they are recommended as efficacious in curing an incontinence of urine.

The operation and effect of *bliſters* in curing fevers, are by ſome reſolved into the pain which they excite; by others, into the ingreſs of the particles of the CANTHARIDES into the blood; by others, into the quantity of hot, ſharp, and ſalt lymph diſcharged; by others, into the condenſation of the blood, and ſtoppage of the rarefaction, whereby the ſpirits are diſpoſed to be plentifully ſeparated. Dr. Cockburn, who refutes all theſe ſyſtems, accounts for it from the CANTHARIDES wounding the nerves or canals whereby the ſpirits are conveyed to the heart; Dr. Morgan from the ſubtile, hot, active ſalts of the flies, ſtrongly attracted by the *ſerum*, and carried with it through the ſeveral glands and ſecretory ducts of the body, where they act by diſſolving, attenuating, and rarefying the viſcid coheſions of the lymph and *ſerum*, and ſtimulating the nervous coats of the veſſels, whereby they are induced to throw off their ſtagnating viſcidities, and reſtore the free drain of the lymph from the arteries to the veins; and at the ſame time, by ſcouring and cleanſing the expurgatory glands, bring on critical ſweats and urines. Phil. Tranſ. N° 252. p. 173.

Dr. Morgan endeavours to diſcard the method of dreſſing *bliſters*, by which nothing is gained, but the plaguing and tormenting the patient, and depriving him of the benefit of a much greater diſcharge, which would be at leaſt three to one, were the ſame plaſter left on for four or five days, or as long as it will draw off any thing; and then, when it has done running, taking it off and applying a plaſter of melilot, or rather of diachylum, once, for all, till the part is quite well and healed. Indeed, when a *bliſter* is firſt raiſed, if it doth not break and run of itſelf, it may be proper to raiſe the lower end of the plaſter a little, to ſnip the bladder, and let out the water; but if the ſurgeon has made the plaſter ſtrong enough, this is commonly done of itſelf, without help. It is uſually objected, that a ſtrong epiſpaſtic left on five or ſix days, muſt deeply corrode the fleſh under it, and thereby endanger a mortification. But this, according to the author laſt cited, is ſo far from being true, that, on the contrary, it prevents the worſt accidents uſually happening in *bliſtering*, which are what they call *ſloughs*, or deep ſtrong incruſtations of a ſharp ſalt and adheſive matter, covering the whole ſurface of the fleſh where the plaſter had been applied. Now, this is always occaſioned by an unſeaſonable removal of the epiſpaſtic, while the humour is in full flow, and ſtrongly feeding to the part; and the humour, thus ſuddenly checked and thrown back for want of a ſufficient drain, forms this ſlough. Morg. Mech. Pract. of Phyſ. p. 176.

BLISTERING, in *Farriery*, is uſed in caſes of ſtrains and ſhrunk ſinews in horſes, as ſome maintain, with good effect; but others ſay, with none.

BLITE, *ſtrawberry ſpinage*, *blitum*, in *Botany*, a genus of the *monandria digynia* claſs of plants; the characters of which are theſe: the flower hath no petals, but one briſtly ſtamen, of the length of the empalement. In the centre is ſituated an oval pointed germen; the empalement afterward becomes an oval compreſſed capſule, including one globular compreſſed ſeed, of the ſize of the capſule. There are two ſpecies.

Blite is eſteemed cooling and emollient, and therefore good in dyſenteries and ſpitting of blood.

BLOATED *fiſh* or *herring*, in our *Statutes*, are thoſe which are half-dried. Vid. Stat. ann. 18 Car. II. c. 2.

Bloated herrings are made by ſteeping them in a peculiar brine, and then hanging them in a chimney to dry.

BLOATING, a puffing up or inflation of the exterior habit of the body, lodged chiefly in the adipoſe cells. It is the ſame with what phyſicians call an *emphyſema*.

BLOCK is uſed for a piece of marble, as it comes out of the quarry, before it has aſſumed any form from the hand of a workman.

Block, in the *Mechanic Arts*, a large piece of ſolid wood, whereon to faſten work, or to faſhion it; ſtrength and ſtability being the requiſite properties.

In this ſenſe, we ſay a chopping *block*; a ſugar-finer's *block*; a ſmith's *block*, on which his anvil is faſtened; an executioner's *block*, on which the criminal's head is laid to be ſtruck off.

Block, *mounting*; ſee Anabathra.

Block, among *Cutters in Wood*, is a form made of peartree, box, or other hard and cloſe-grained wood, free from knots, on which they cut their figures in relievo with knives, chiſſels, &c.

The like *blocks* are in uſe for card-making; and from the ſame, firſt aroſe the modern art of printing. Phil. Tranſ. N° 310. p. 2398.

Block, among *Bowlers*, the mark which is aimed at, being a ſmall-ſized bowl laid on the green for this purpoſe; it is called alſo the *jack*.

Block, in *Falconry*, denotes the perch whereon a bird of prey is kept. This is to be covered with cloth.

Blocks, in *Sea-language*, are pieces of wood belonging to ſhips, in which the ſhivers of pullies are placed, and wherein the running-ropes go. Of theſe, ſome are ſingle, ſome double; and ſome have three, four, or five ſhivers in them. They are named and diſtinguiſhed by the ropes they carry, and the uſes they ſerve for. See *Tab. Ship*.

The *cat-block* is employed to draw the anchor up the cathead.

The *clue-garnet blocks* ſerve to draw the clues or lower corners of the courſes up to the yard, and are faſtened to the clues of thoſe ſails.

The *fiſh-block* is hung in a notch at the end of the davit, ſerving to haul up the flooks of the anchor to the ſhip's bow.

The *ſnatch-block* is a large *block* with a ſhiver in it, and a notch cut through one of its cheeks, for the more ready receiving a rope, ſince, by means of this notch, the middle part of the rope may be reeved into the *block*, without paſſing it endwiſe. It is commonly faſtened with a ſtrap about the main-maſt cloſe to the upper-deck, and is chiefly uſed for the fall of the winding tackle, which is reeved into this *block*, and then brought to the capſtan.

The *top-block* is uſed to hoiſt up or lower down the topmaſt, and is hooked in an eye-bolt driven into the cap.

Block and block is a phraſe uſed, when on hauling on any tackle, haulyard, or the like, to which two *blocks* belong, the two meet and touch; ſo that they can haul no farther.

Block, *voyal*; ſee Voyal.

Blocks, *wind-tackle*; ſee Wind.

Block-*wood*, is a name ſometimes given in our laws to logwood. 23 Eliz. c. 9.

BLOCKADE, a ſort of siege of a place, intended to be taken by famine; wherein all the paſſages, and avenues, are ſeized, and ſhut up, ſo that no ſupplies of proviſion can be brought in.

It comes from the German *blochus*, or *blockhauſe*, *a bulwark*, or *houſe of wood*; or from the Gauliſh *blocal*, *barricade:* though others derive it from the Latin *buculare*, *to ſtop a paſſage*.

A *blockade* is no regular siege; inaſmuch as there are no trenches or attacks. *Blockades* are formed by the cavalry.

The word *blockade* is ſometimes alſo uſed in ſpeaking of the beginning of a siege, when forces are ſent to ſeize the principal avenues where the beſiegers intend to fix their quarters.

There are two ways of forming *blockades*. The firſt is ſimply by fortifying or ſeiſing poſts at ſome diſtance from the place, chiefly on the banks of rivers both above and below, and on the great roads and inlets, where bodies of foot and horſe are placed, communicating with each other, till the diſtreſs of the place, for want of neceſſaries, occaſions deſertions of the garriſon, and murmurings or inſurrections of the townſmen, whereby the governor is frequently forced to capitulate.

The other ſort is made nearer the place, by lines of circumvallation, wherein an army is poſted, being chiefly uſed when, after a battle, the vanquiſhed party have ſhut themſelves up in ſome town ill provided, and thereby capable of being ſtarved in a ſhort time.

BLOCK-*battery*, in the *Military Art*, denotes a wooden battery on four wheels, moveable from place to place, whereby to fire *en barbe*, or over the parapet; ſometimes alſo uſed in galleries and caſemates, where room is wanted.

Block-*houſe*, a kind of wooden fort or battery, either mounted on rollers, or on a veſſel, and ſerving either on the water, or in counter-ſcarps and counter-approaches.

The name is ſometimes alſo given to a brick or ſtone fort built on a bridge, or the brink of a river, ſerving not only for its defence, but for the command of the river both above and below. Such was that noted *block-houſe* anciently on the bridge of Dreſden, ſince demoliſhed on enlarging the bridge.

BLOCKING, in *Middle Age Writers*, denotes a kind of burial uſed for perſons dying excommunicated.

Blockings, *circular*, in *Architecture*, are baſes to the dome, repreſented in *Tab. of Archit. fig.* 40. (QQQ); which by their apparent ſolidity ſeem to ſtrengthen the dome, and at the ſame time taking from its height, add a peculiar graceſulneſs to its appearance.

Blockings, *ſquare*, are repreſented at S, *fig.* 40. in *Tab. Archit.* Theſe, when enriched with baſe and cap, obtain the appellation of pedestals.

Blocking-*courſe*; ſee Course.

BLOCKY, among *Jewellers*, a name given to a diamond when its ſides are too upright, by its table and collet being larger than they ought to be.

BLOIS, *bole of*; ſee Blesensis *bolus*.

BLOMARY, or **Bloomary**, the firſt forge in an ironwork, through which the metal paſſes after it is melted out of the ore. See Iron. They are alſo called *blomary-hearths*.

BLOOD, a warm, red liquor in moſt animals, circulating, by means of arteries and veins, through every part of the body, during their life, and the common ſource whence all the neceſſary and ſuperfluous animal liquids are derived.

Blood, *microſcopically examined*.—By the microſcope, the *blood* appears to conſiſt of little red globules, ſwimming in an aqueous liquor, ſuppoſed to be the *cruor* and *ſerum* that appear diſtinct when let out. Mr. Lewenhoeck computes theſe globules to be twenty-five thouſand times ſmaller than the ſmalleſt grains of ſand; and Dr. Jurin makes them ſtill leſs. Upon an accurate menſuration, he found the diameter of one, equal to $\frac{1}{3240}$ of an inch, or leſs than $\frac{1}{324}$ of an ordinary hair of the head.

Blood makes a very common object for microſcopical obſervations. The method of examining it is this: take a ſmall drop of warm *blood* immediately from the vein, with the nib of a pen, or hair-pencil, and ſpread it as thin as poſſible on a plate of glaſs; and applying this to the microſcope with the ſecond, or firſt magnifier, the globules will all be ſeen very diſtinctly, and a little practice will enable us to form a judgment on the alterations that may happen in the ſize, figure, or colour of them. If a little warm water be applied to the *blood*, the globules will be divided, and many of them break into a number of ſmaller globules. If warm milk be added inſtead of water, the larger globules will be ſeen very diſtinct; but the ſmaller will be blended with, and loſt in the milk, which is itſelf no other than a congeries of ſuch globules.

Late writers have induſtriouſly purſued the examination of the globules of the *blood*; and found divers orders of them: thoſe large ones viſible to the eye conſtitute the *globules of the firſt order*; each of which, according to Lewenhoeck, is compoſed of ſix ſmaller ſpheres, cluſtered together in a very regular way; and that ſo nicely, in a perfect globule, that the compoſition comes to be imperceptible. But ſometimes the ſame perſon has ſeen a red globule looſening and breaking into theſe compounding ſpherules; and ſometimes has had the good fortune to perceive theſe running together, and beginning the compoſition of a new red globule. Theſe ſmaller ſpherules are called *globules of the ſecond order*. But Lewenhoeck did not ſtop here; he ſaw in the chyle and *blood* a great many particles ſix times leſs than theſe globules of the ſecond order, and thirty-ſix times leſs than the great red globules. So that the globules of the ſecond order are to be looked on as compounded of theſe ſmaller ones; which therefore are juſtly to be reckoned as another claſs, or *globules of the third order*. Further, he finds innumerable *blood*-veſſels in the body, of ſuch ſmallneſs, that none of thoſe hitherto mentioned globules could paſs through them; ſo that it ſeems neceſſary to ſuppoſe inferior claſſes of *globules of the fourth, fifth, ſixth, &c. orders*. He even ſaw veſſels, the wideneſs of which was leſs than the eighth part of the diameter of a red globule; ſo that the particles paſſing through them, ſhould be upwards of five hundred times leſs than ſuch globules, and conſequently ſmaller than thoſe of the fourth order. Beſides, upon a careful examination, he could perceive ſtill ſmaller veſſels, narrower than the tenth part of the diameter of a red globule, and conſequently not capable of tranſmitting ſpherules greater, than if a red globule were broken into a thouſand parts. On the whole then, the globules of the firſt order are made up of ſix globules of the ſecond, theſe of ſix of the third, theſe of ſix of the fourth, theſe of ſix of the fifth order, and ſo on. And accordingly we find the globules of the higher orders may be broken down into their compounded particles. That the *blood*, in ſome caſes, might be turned into *ſerum*, was obſerved by Ariſtotle. Nor did ſuch a change of the *blood* eſcape the obſervation of the accurate Dr. Harvey. Phil. Tranſ. Nº 102. Nº 106. Nº 109. Nº 165. Nº 263. Nº 380. Med. Eſſ. Edinb. tom. ii. *paſſim*.

Dr. Martine has alſo given us ſome computations of the diameters, magnitudes, weights, &c. of the globules of the *blood*. The doctor's computation of the diameter of a red globule, agrees with Lewenhoeck's and Dr. Jurin's, being about $\frac{1}{1938}$ of an inch.

The *blood*, as already obſerved, is compoſed of globules of different orders and magnitudes. The diameters of thoſe of the tenth order are eſtimated at leſs than $\frac{1}{4000000}$ of an inch.

The particles of *blood* have, ever ſince the time of Lewenhoeck, been generally deemed ſpherical, and therefore called globules; though ſome accurate obſervers have at different times expreſſed their doubts concerning their figure. Lewenhoeck acknowleges, that in fiſh and in the *amphibia* they are flat and elliptical; but thoſe of the human blood, and of the blood of quadrupeds, have generally been reckoned ſpherical. Father de la Torrè, by obſerving them with glaſs ſpherules of a very conſiderable magnifying power, was led to apprehend, that they were flat and annular: Mr. Hewſon has proſecuted the inquiry both into their ſize and ſhape; and he concludes, that ſo far from being of the ſame ſize in all animals, as ſome have ſuppoſed, they differ much in this reſpect; and that this difference bears no regular proportion to the ſize of the animal to which they belong; thoſe of an ox's *blood* not being ſo large as thoſe of the human *blood*, and thoſe of a porpoiſe not being larger than thoſe of ſmaller fiſh: nor are they all of the ſame ſize in the ſame animal. With reſpect to their figure, he obſerves, that they are flat in all animals, the human ſubject not excepted; that a dark ſpot may be ſeen in the middle of one of theſe particles, which F. de la Torrè ſuppoſed to be a perforation, but which Mr. Hewſon ſuppoſes to be a ſolid particle contained in a flat veſicle, and filling only the middle of it, whilſt the edges of this veſicle are hollow, and either empty, or filled with a ſubtile fluid. He ſuppoſes farther, that they are ſolid particles, and not fluid, as has been commonly believed: and he adds, that the uſe of thoſe ſalts which enter into the compoſition of the *blood*, is probably to preſerve the red veſicles in their flat form. See an account of the experiments on which theſe concluſions are founded, in the Phil. Tranſ. vol. lxiii. part ii. p. 303.

Blood, *analyſis of the*.—The *blood*, while in its veſſels, appears to the naked eye uniform and homogeneous; but, when let out and cold, it ſeparates ſpontaneouſly into two different parts: the one red and fibrous, which coheres into a maſs, and is called the *cruor*; the other thin and tranſparent, which retains its fluidity when cold, and, being ſuppoſed ſpecifically heavier than the other, ſuſtains and bears it up, and is called the *ſerum*. The proportion of the *ſerum* to the *cruor*, Dr. Drake makes at a medium, as one and a half to one: but Mr. Boyle, more accurately, makes the *ſerum* $\frac{13}{15}$ of the whole *blood*; and Dr. Jurin, $\frac{15}{17}$ of the whole weight, or $\frac{3}{4}$ of the bulk.

Boerhaave extends the proportion of the *ſerum* of *blood* to $\frac{5}{6}$ parts of the whole maſs; yet Dr. Morgan ſcruples not to depart from this, and makes the *cruor* and *ſerum* equal to each other. Indeed in cold, and ſufficiently coagulated *blood*, the tough *craſſamentum*, and its ſurrounding fluid, *ſerum*, are ordinarily found to the eye pretty nearly equal to one another.

If the red part of the *blood* bears too great a proportion to the *ſerum*, which is the caſe of athletic perſons, and others who do not take a ſufficient quantity of drink with their meat, the fault may be corrected by leſſening the meat, or by increaſing their drink. Dr. Bryan Robinſon tells us of a young man, who, not having for a conſiderable time drank with his meat, had a very florid complexion, and ſcorbutic eruption all over his body, which indicated too great a proportion of the red part of the *blood* to the *ſerum*; he was freed from his diſorder by drinking with his meat, without any farther remedy.

In the beginning of fevers, the proportion of the red part of the *blood* to the *ſerum* is greater, and at the end of them leſs, than it is in health. The change of this proportion is owing to perſons under this diſorder living wholly on drink and liquid nouriſhment. And bodies loaded with ſerous moiſture, an argument of too ſmall a proportion of the red part of the *blood* to the *ſerum*, have been freed from their load, by abſtaining wholly from drink.

There are other cauſes beſides the bare quantities of meat and drink, which vary the proportion of the red part of the *blood* to the *ſerum*; for this proportion is greater in country people than in citizens, in perſons who uſe exerciſe than in perſons who are inactive, and in perſons who live upon fleſh meats, and fermented liquors, than in perſons who live upon vegetables and water. In ſhort, this proportion is increaſed by things which dry the body, and ſtrengthen the fibres; and leſſened by things of a contrary nature.

Too great a proportion of the red part of the *blood* to the *ſerum*, renders bodies ſubject to inflammatory fevers on taking cold.

When extravaſated *blood* is left to itſelf, the red globules run forcibly together, and ſqueeze out the intervening *ſerum* in ſome animals with a greater, in others with a leſs force; which is a proof, that theſe globules are endowed with an attractive power. This force in deer's *blood* is ſo weak, that it ſcarcely coagulates into a firm *craſſamentum*. On the contrary, in ſome great and ſtrong beaſts, it becomes a tough, and almoſt indiſſoluble maſs; ſo that the *blood* of bulls was frequently drank by the ancients, as a moſt effectual poiſon.

Mr. Le Cat thinks, that the *blood* is detained in its fluid ſtate by a cauſtic fluid, and that this forms the red globules. But then it needs the aſſiſtance of the animal fluid, which is the principle that preſerves all from corruption, and to which we owe our ſenſation and motion. See Coagulation, Craſſamentum, and Sensitive *fluid*.

The *blood* is found to conſiſt chiefly of phlegm, as the baſis or vehicle; of volatile ſalts; of oil, which, by ſome nice examiners, has been found of two kinds; and of *caput mortuum*, or earth, which, though it may conſiſt of divers ſubſtances, eſſentially different from each other, yields only a little fixed ſalt.—From the beſt experiments of this kind it appears, that in ſeven ounces of human *blood*, there are five ounces two drachms of phlegm, three drachms of a ſubtile ſpirituous oil, a ſmall quantity of a thicker oil, two drachms of ſalt, and about two of earth.

The *blood*, and other parts of animals, all contain more or leſs of an acid; and this ſeems wholly owing to the effects of their organs of digeſtion upon the aliments they take in, which, in fine, become aſſimilated to, and make part of their fluids and ſolids.

It might be ſuppoſed, that this acid, however, ſhould be only found in ſuch animals as eat vegetables, not in ſuch as feed on other creatures; but this doubt will vaniſh when we conſider, that the carnivorous animals ſwallow theſe acids, at leaſt, at ſecond-hand, in the fleſh of thoſe animals which had fed on vegetables. This, though a very fair way of reaſoning, did not content Mr. Homberg, but he tried the facts themſelves by a number of experiments; convinced by which, that in carnivorous and fructivorous animals, and in ſuch as eat vegetables alone, the acids of thoſe vegetables remained acids in the parts of the animal, Mr. Homberg tried the ſame experiments on the fleſh and *blood* of creatures that eat only fleſh, as well as on thoſe which eat indiſcriminately every ſort of food, and the event proved the ſame in all. All contained a red acid liquor, which had the properties before deſcribed, and in which the alkali and acid were ſo blended together, that they deſtroyed not one another, but each was ready to exert itſelf on occaſion. Mem. Acad. Scienc. 1712.

Dr. Jurin adds, that the *ſerum*, upon a chemical analyſis, exhibits a great deal of phlegm, and of the other principles a ſmall quantity; and, on the contrary, the *cruor* yields leſs phlegm, but the other principles much more copiouſly than the *ſerum*. From which data he concludes, that the globules conſiſt of ſome phlegm united with the oil and ſalts, and a ſmall quantity of earth; but in what proportion, and how, and in what parts they are formed, &c. is not determined. Indeed, it muſt be conſidered, that the principles which the chemiſts thus produce ſeparate, may poſſibly be much altered by the fire. Thus, it is paſt doubt, the oils drawn from the *blood* by fire, are vaſtly different from the natural oil, which circulates with the *blood*. To which may be added, that the *caput mortuum* remaining after diſtillation, may, poſſibly, be a new production, which had no exiſtence under any form reſembling that in the *blood*.

The *origin* of the *blood* is in the chyle, which, paſſing the lacteals, is delivered into the ſubclavian; where, mixing with the *blood*, they proceed together to the right ventricle of the heart; and there, being yet more intimately mixed, they circulate together through the whole body: till, after ſeveral circulations, and ſecretions at the ſeveral ſtrainers of the body, they are aſſimilated, ſo as to make one uniform compound maſs, which appears to be nothing elſe but chyle altered by the artifice of nature, and exalted into *blood*; there being no appearance of any thing extraneous mixed with the liquor circulating in the *blood*-veſſels, but chyle; excepting what had been before ſeparated from it, for ſome particular purpoſes, which being once ſerved, it is returned to it again: unleſs, perhaps, it may receive ſome portion of air in the lungs.

That there is *air mixed* in the *blood*, and circulating with it, is paſt doubt; but, whether any more than was at firſt contained in the food whereof the chyle is formed, is a queſtion not yet decided. The principal arguments urged for it are, the neceſſity of reſpiration; which may be accounted for on another principle: and the florid colour the *blood* receives in the lungs, and firſt ſhews in the *vena pulmonalis*; which is countenanced by an experiment made with the red grumous part of the *blood* after coagulation on *blood*-letting; for, upon turning the under-ſurface, which was before black, upwards, and expoſing it to the air, by its contact therewith it acquires a florid colour, like that of the *blood* in the *vena pulmonalis*. But this effect others account for from the extraordinary agitation and comminution of the *blood* in the lungs. Dr. Lower has confuted this notion, by obſerving, that the attrition of the *blood* is greater in the muſcles, from which, however, it always returns black.

Indeed, Dr. Keil, Bohnius, Bernoulli, and ſome other mathematic phyſiologiſts, go farther. Mr. Boyle having examined the ſpecific gravity of *blood*, and found that of the *ſerum* to be greater than that of *blood*, in the proportion of 1190 to 1040, i. e. nearly as 8 to 7, it followed, that the *cruor*, or *blood*-globules, were ſpecifically lighter than the *ſerum*, and that in a conſiderable degree; which was further confirmed by the globules being ſuſtained in the *ſerum*, both while circulating, and when let out.—Hence it was conjectured, that theſe globules were nothing elſe but thin veſicles filled with a ſubtile aerial ſubſtance: and this opinion was confirmed from its being obſerved, in viewing the circulation by a microſcope, that a *blood*-globule, in paſſing through a very narrow veſſel, would change its ſhape from a globular, to an oval form, and would again recover its former figure, as ſoon as it was got through its narrow paſſage; which appearance was naturally enough aſcribed to the elaſticity of the included air: and, from this conjecture, were accounted for, a great number of the phænomena of the animal œconomy, particularly Dr. Keil's theory of muſcular motion.

But this principle Dr. Jurin has examined, and appears to have overthrown. He made ſeveral experiments, in ſome of which the *cruor* before ſuſpended at the ſurface of the *ſerum*, immediately ſunk, when its adheſion to the ſides of the porringer was cut off, and it was removed to another veſſel of *ſerum*. In others, where the *cruor*, buoyed up in the *ſerum*, even without any adheſion to the ſides of the glaſs, and merely by the bubbles of air adhering to its ſurface, upon being included in a receiver, and exhauſting the air, ſo that the bubbles burſt, would ſink: whence he concludes the globular part of the *blood* to be heavier than the ſerous: and, from other experiments, he aſcertains the proportion of the gravity of *blood* to that of *ſerum*, to be as 1054 to 1030; whence the quantity of the globules being before fixed at $\frac{1}{4}$ of the whole, the preciſe gravity of the globules beyond that of the *ſerum* is eaſily determined.—The *blood*-globules therefore are not veſicles filled with air, or any other fluid ſubſtance lighter than *ſerum*: which is further confirmed from this, that *blood*-globules are not found to dilate, or undergo any alteration, in an exhauſted receiver, when viewed through a microſcope; whereas, were they filled with any elaſtic fluid, they would either burſt, or at leaſt dilate into 70 or 80 times the ſpace.

As to the *heat* of the *blood*, authors are exceedingly divided about the cauſe thereof: the ancients aſcribe it to a vital flame, or innate heat lodged in the heart, and thence communicated to the *blood*. Dr. Willis imagines a kind of accenſion in the *blood*; and thinks its heat reſults from its being, as it were, ſet on fire, and perſevering in that ſtate. Dr. Henſhaw ſolves it from an ebullition conſequent on the mixture of two fluids, ſo diſſimilar as the chyle and *blood*. Others have recourſe to the chemical principles of alcali and acid; others to the mutual action of the principles, or component parts of the *blood*, by means whereof an inteſtine motion, and by that means an inteſtine heat, or incaleſcence, is effected.

Dr. Drake, with more reaſon, attributes the heat of the *blood* to the ſpring of the air incloſed together with it in the veſſels: for, air being incloſed in the *blood*-veſſels, will endeavour to expand itſelf; and, conſequently, if it have force enough, will drive outwards the parts of the body that incloſe it; by which means it cauſes the *blood* to beat againſt the ſides of the veſſels; which, having muſculous, contractile coats, do in their turns compreſs it again, and ſo cauſe a reciprocal æſtus in the *blood*, greater than the mere circulatory motion could; whence the parts of the ſolids, or containing veſſels, being put into a conſtant agitation, a heat is produced in both, which they mutually impart to each other. See ATTRITION, &c.

Laſtly, Dr. Boerhaave accounts for the heat of the *blood* from the action of the heart, and the re-action of the *aorta*: for, the *blood*, driven by the heart obliquely againſt the ſides of the *aorta*, preſſes them, and ſpends almoſt its whole *momentum* againſt the curvity thereof, and is, by the figure and elaſticity of this veſſel, preſſed back again. Every moment of time, therefore, each particle of *blood* acquires a new motion, a new *niſus*, and rotation: hence follows a perpetual attrition, attenuation, rubbing off of angles, and a ſimilitude and homogeneity of all the parts; and hence the maſs derives its fluidity, heat, diviſion into particles accommodated to all veſſels, preſſure into the lateral tubes, &c.

Nor is the cauſe of the *redneſs* of the *blood* leſs obſcure: the chemiſts account for it from the exaltation of its ſulphur; others from the mixture of ſaline and ſubacid juices with ſulphureous ones; and others from the colour of the heart. The French philoſophers attribute this redneſs to the ſmallneſs of the ſize, and roundneſs of the figure, of the particles that compoſe the *cruor*; notwithſtanding that red, being the colour of all others leaſt refrangible, and the globular figure of all others the moſt refrangible, that figure ſeems, of all others, leaſt apt to produce this colour. Others aſcribe the colour of the *blood* to the impregnation of the air in the lungs; for, that air is diſpoſed to produce ſuch an effect, appears from the experiment above.

But others, more reſerved, extend this effect of the air no further than to account for the difference of redneſs between the venal and arterial *blood*; ſuppoſing, that after its colour has been heightened, and rendered more florid, by the mixture of the air in the lungs, it retains it pretty well in the arteries; but that, circulating in the body, and carried through the veins, the air tranſpires, by degrees, through the pores of the veſſels, and leaves the liquor of a paler dye.

There is now little doubt that the redneſs of the *blood* is owing to its contact with air: M. Cigna of Turin found, by putting a little oil on a quantity of *blood*, that it remained black throughout; but that when he took away the red part, and expoſed to the air the lower *laminæ* which were black, they alſo became ſucceſſively red, till the whole maſs acquired that colour. Beccaria, at his requeſt, expoſed *blood in vacuo*, and found that it always continued black; but when he brought it into contact with the air, it became red.

M. Cigna, in his firſt Memoir, publiſhed in the Miſcellanea Taurinenſia, expreſſes his opinion, that the air which is introduced into the *blood* by means of the chyle, contributes to preſerve its redneſs: but in a ſecond Memoir on the ſame ſubject, he doubts whether the change of colour takes place in the lungs; and if it does, he inclines to aſcribe it to the evaporation from the *blood* in the lungs. The ingenious Mr. Hewſon is fully convinced, that the air in the lungs is the immediate cauſe of this change of colour; and to this purpoſe he obſerves, that he has diſtinctly ſeen the *blood* of a more florid red in the left auricle of the heart, than it was in the right: and though ſome have attributed the effect to nitre abſorbed from the air, he conſiders this as a mere hypotheſis, adding rather too haſtily, that air contains no nitre; and that moſt of the neutral ſalts produce the ſame effect in ſome degree.

Dr. Prieſtley, who has purſued his inquiries on the ſubject of reſpiration with very conſiderable ſucceſs, apprehends, that the air we breathe may be ſo far decompoſed, as to communicate a nitrous quality to the *blood*, in its paſſage through the lungs; and this opinion is confirmed by his analyſis of atmoſpherical air, which he has proved to conſiſt of earth and ſpirit of nitre. He has farther demonſtrated, by the moſt accurate and concluſive experiments, that the florid red colour of the *blood* is owing to the effect which the air has upon it; for the blackeſt parts of the *craſſamentum* of coagulated *blood*, ſeparated from the *ſerum*, aſſumed a florid red colour in common air; and the colour was more florid, and the change produced in leſs time in dephlogiſticated air, which is purer and more fit for reſpiration than common air: on the contrary, the brigheſt red *blood* became black in any kind of air, that was unfit for reſpiration, as in fixed air, inflammable air, nitrous air, or phlogiſticated air; but upon expoſing the *blood*, which became black in the phlogiſticated air, to common or dephlogiſticated air, it regained its red colour: and the ſame pieces became alternately black and red by being transferred from phlogiſticated to dephlogiſticated air; and *vice verſâ.* The *blood*, in theſe experiments, he ſays, muſt have parted with its phlogiſton to the common air or dephlogiſticated air; and have imbibed it and have become ſaturated with it, when expoſed to phlogiſticated, nitrous, inflammable, or fixed air. There are, however, he acknowleges, other cauſes to which the blackneſs of the *blood* may ſometimes be owing, beſides its acquiring phlogiſton: nor can it be expected, that, when *blood* has become black without having received phlogiſton *ab extrà*, it will generally recover its florid colour by being expoſed to the air.

Dr. Prieſtley proceeded to examine, whether the quality of the air, to which pieces of *blood* had been expoſed, and in which their colour was changed, was at all affected or altered, during the operation. In this experiment he made uſe of dephlogiſticated air, as its quality is more ſuſceptible of alteration than common air; and he found, that a piece of *craſſamentum*, about the ſize of a walnut, put into the quantity of about five ounce meaſures of this air, and changed about ten or twelve times in the ſpace of twenty-four hours, ſo depraved the air, that a mixture of one meaſure of this, and two of nitrous air, which, at the beginning of the experiment, occupied the ſpace of no more than half a meaſure, afterwards occupied the ſpace of a meaſure and a half. See Air, *nitrous.* Whence he infers, that the black *blood* muſt have communicated phlogiſton to the air; and that its change of colour from black to a florid red, muſt have been occaſioned by the ſeparation of phlogiſton from it. He afterwards ſatisfied himſelf, that *blood* has likewiſe a power of taking phlogiſton from air; for by expoſing *blood* of a very beautiful florid colour to nitrous and to inflammable air, both were conſiderably diminiſhed by the proceſs. And he concludes, upon the whole, that the air becomes phlogiſticated in paſſing through the lungs, by means of the *blood.* Dr. Prieſtley anticipates an objection, which may be urged againſt this concluſion; viz. that the *blood* never comes into actual contact with the air in the lungs, but is ſeparated from it, according to Dr. Hales, at the diſtance of no more than a thouſandth part of an inch; and that the red globules remain in a large quantity of *ſerum*, which is a fluid of a very different nature. In order to reſolve this difficulty, he put a large quantity of black *blood* into a bladder, moiſtened with a little *ſerum*, and tying it very cloſe, hung it in a free expoſure to the air; and the next day he found, that all the lower ſurface of the *blood*, which had been ſeparated from the common air by the intervention of the bladder, and a ſmall quantity of *ſerum*, had acquired a coating of a florid red colour, as thick, in his opinion, as it would have acquired, had it been expoſed to the open air. He alſo found, that a deep covering of *ſerum* did not obſtruct the mutual action of the *blood* and air any more than the bladder had done. From both experiments he infers, that the change of colour cannot be owing, as M. Cigna imagined, to evaporation: nor is the change of colour in the laſt experiment owing to the *ſerum*, but to the air; for two equal portions of black *blood* were put into equal cups, containing equal quantities of *ſerum*, covering them to the depth of half an inch; one cup was expoſed to the open air, and the other placed in an exhauſted receiver; the *blood* in the former preſently acquired a florid colour, but the other continued after twelve hours as black as at firſt.

Dr. Prieſtley infers, from another experiment, that the moſt florid *blood* contains a conſiderable quantity of phlogiſton; and he obſerves, that there is a great difference in the conſtitution of *blood*, with reſpect to its property of being affected by the air. See on this curious ſubject, Hewſon's Experimental Inquiry into the Properties of Blood, or Phil. Tranſ. vol. lx. p. 368, &c. Prieſtley's Exp. and Obſ. on Air, vol. iii. p. 55. or Phil. Tranſ. vol. lxvi. p. 226, &c.

Boerhaave accounts for the colour of the *blood* from the ſame cauſe as for its heat; viz. from the action of the heart, and re-action of the ſides of the *aorta.* Borelli, to aſcertain the cauſe of the redneſs, took a parcel of the *cruor*, after it had ſeparated itſelf as far as ſpontaneouſly it would from the *ſerum*, and, waſhing it frequently in water, found it ſeparable into a viſcous, ſlippery ſubſtance, conſiſting of white or colourleſs fibres (which roſe to the ſurface of the water, and there gathered into a ſkim, or coherent pellicle of a reticular texture), and a deep red powder, which precipitated pretty plentifully to the bottom. Hence it appears, that the red colour of the *blood* is imparted to it by red tinging particles, as in the common caſe of dyers. By examining the red precipitate apart, and finding which of the elements it conſiſted chiefly of, a man who would reaſon about the colour of the *blood* from principles of the chemiſts, might carry that matter nearer an iſſue.

However, this red colour, though generally found in all terreſtrial animals, is not yet abſolutely neceſſary and eſſential; there being whole ſpecies which have their circulating liquor, or *blood*, white and limpid: to which Dr. Drake adds an inſtance of a pure white *blood*, like milk, which he let out of the median vein of a man, and which, when cold, did not ſeparate into a *craſſamentum*, as the red uſually does; nor yield a ſkim or cream, or turn ſour upon keeping, as milk does. Dr. Beal gives us another inſtance of the like kind; and Dr. Lower adds a third, of a perſon who bled ſo long at the noſe, till at laſt the broth he drank flowed, little altered, that way, as *blood.*

Blood, *changes and diſorders of the.*—From the principles, or conſtituent parts of the *blood* above recited, variouſly combined and diſtributed by the circulatory motion impreſſed by the heart, and by the oſcillatory expanſive motion of the interſperſed air, and the re-action of the contractile veſſels, flow all the properties and operations of the *blood.* From this mixture of elements, and their lax compoſition, it becomes ſuſceptible of various alterations and impreſſions; the principal whereof are, *coagulation*, which uſually attends it out of the body, ſometimes in it, and ſcarce ever without an artificial procurement, but always mortal: and *diſſolution*, which is juſt oppoſite to the former, and conſiſts in ſuch a comminution of the fibrous parts of the *blood*, as indiſpoſes it for a ſeparation of the *cruor* from the *ſerum.* This is frequently the conſequence of malignant and peſtilential fevers, &c. and is likewiſe occaſioned by ſome kinds of poiſons.

Theſe two contrary affections of the *blood*, Dr. Drake aſcribes to the oppoſite kinds of ſalts, acids, and volatile alcalies. For though, adds he, in a human body, no ſincere acid is found, nor could it, indeed, be conſiſtent with life; yet it may, and does often, enter the *blood*, ſo compounded as to bridle the volatile, alcalious ſalt of the *blood*, and ſo hinder the due attenuation and mixture of the ſeveral parts; as is the caſe in a *diabetes*, and perhaps in a *chloroſis*, where the *blood* is thick and torpid: on the other hand, where the alcalious ſalts are too redundant, the *blood* is rendered too thin and fluid, ſo that the difference of its conſtituent parts is loſt.

Another affection frequent in the *blood* is, a too great abundance of oils, or oily particles, by means whereof the active parts of the *blood* are too much clogged, and thoſe parts which ſhould be ſecreted, for peculiar uſes in the body, are detained; and perhaps the ſolids, through which it paſſes, too much lubricated, their tone vitiated, ſhrunk, relaxed, &c. whence the ſluggiſhneſs and inactivity of very fat people.

The contrary affection to this is, the defect of oil in the *blood*; which, being, as it were, its balſam, lines and preſerves the parts from being fretted and corroded by the ſalts, whoſe *ſpicula* or edges are, as it were, ſheathed in this ſoft balſamic matter, and their attrition againſt the ſolid parts prevented: this ſtate of the *blood* is uſually attended with a general atrophy, and a fretting and corroſion of ſome particular parts; whence ſerous defluxions, apoſthumations, and ulcers, eſpecially in the lungs, whoſe tender veſiculous ſubſtance is more eaſily annoyed than any other, by the acrimony of the ſaline *ſerum*. See CATARRH, CORPULENCY, &c.

There are other affections of the *blood*, reſulting from its inordinate temperature and mixture, with regard to the earthy parts; the conſequences of which are, the ſtone, &c. and others that do not originally ſpring from any dyſcraſy, or undue mixture of the elements, but from an alteration in its motion; ſuch as an augmentation or diminution of its progreſſive motion, or the like changes in its inteſtine motion; whence ſupernatural fermentations are induced.—The occaſions here may be various; ſometimes fevers, and other diſorders occaſioned by ſurfeits, debauches, catching cold, violent exerciſe, &c. whence atonias; at other times ſome latent malignity of the air, whence epidemical diſeaſes.

To which may be added divers other morbific conſtitutions depending on the different ſtates and diſpoſitions of the *blood*, in reſpect of quantity, velocity, fluidity, denſity, ſeroſity, &c. An exceſs in the quantity of *blood* conſtitutes what we call a *plenitude*, or *plethora*; a defect or want of a competent quantity, a *leiphæmia*.

The ſymptoms of exceſs or defect, of an over-repletion or depletion, in the *blood*-veſſels, are obvious; but caution muſt be uſed not to miſtake every occaſional fluſhing or tide of the *blood* to the head for a general *plethora* of the *blood*-veſſels, ſuch tides and fluſhings being very common in caſes where there is yet no *blood* to ſpare.

The *æquilibrium* of the *blood* is an uniform and proportional diffuſion of it through all the parts of the body.

Any conſiderable *ſtimulus*, it is known, will drive the *blood* in large quantities to the ſtimulated part, which muſt neceſſarily break the *æquilibrium* and uniformity of its circulation; whence congeſtions, ſtagnations, concretions, &c. of the *blood*; and hence it is, that a great part of regular practice conſiſts in driving, revulſing, diſcuſſing, and variouſly directing and determining the *blood*, in order to recover its *æquilibrium*.

The *æquilibrium* of the *blood* againſt any occaſional affluxes and refluxes of this fluid, is preſerved or reſtored, either by raiſing and diffuſing it when too weak and languid by cardiacs; as ſaffron, opium, Virginia ſnake-root, &c. or by depreſſing and repelling it when too much raiſed and diffuſed; which is done by the abſorbents, coolers, purgatives, acids of all ſorts, eſpecially apples.

The morbific exceſs or defect of the *blood's velocity* is as remarkable as that of its quantity; but this cannot be judged from the natural ſtate of the pulſe in health, which is different in different conſtitutions. The ordinary number of pulſations in a minute is from 70 to 80 under a ſtate of waking and moderate heat, and from 80 to 96 during the time of ſleep.

The too great *heat* and *viſcidity* of the *blood* is one of its moſt generally prevailing morbific conſtitutions, eſpecially in a country as ours, abounding with all the temptations to, and proviſions for, eaſe and luxury. This ſtate of the *blood* is brought on generally by drinking too freely hot, ſpirituous, inflammable liquors, and feeding plentifully on things, which contain a large proportion of volatile oily ſalts; as fleſh-meats half-boiled or roaſted, eaten in their bloody gravy, and all hot, ſpicy, and high-ſeaſoned broths, ſauces, and the like. The *blood* being by theſe over-heated and rarefied, the *ſerum* is, in conſequence, thickened into a ſort of jelly, by which means it is rendered unfit for motion, coheres too ſtrongly with the *craſſamentum*, and paſſes but ſlowly through the lymphatics and ſecretory glands. In this ſtate, the thicker and more viſcid parts of the *ſerum*, lodging on the lymphatics and receptacles of the glands, gradually obſtruct or fill them up. From which obſtruction and diminiſhed or intercepted circulation of the animal fluids, the heat and viſcidity of the *blood* ſtill increaſes, till the vital flame, raiſed too high, produces a fever. This ſtate of the *blood*, and its ſymptoms, are aggravated by a ſedentary life, or the want of due motion and exerciſe; for while the natural motion of the muſcular *fibrillæ* is either not at all, or but little promoted by voluntary action, the glands, and their receptacles, muſt be the ſooner ſtuffed up, and the circulation of the lymph, that powerful means by which nature continually cools and dilutes the *blood*, ſooner be ſuſpended.

The *blood* is cooled, diluted, and attenuated by temperance, exerciſe, the uſe of water as beverage, and otherwiſe, and by deobſtruents, eſpecially mercury, in the gentler preparations of it; as *æthiops* or cinnabar given in moderate doſes, ſo as not ſenſibly to affect the ſtomach, nor excite ſalivation, for a long time.

As to the greater or leſs degree of fluidity and viſcidity of the *blood*, it is manifeſt, that this humour may either have its parts too intimately divided and attenuated, or, on the contrary, there may be too cloſe a coheſion between its parts, ſo as to render the maſs too thick and viſcous. The firſt of theſe ſtates diſpoſes the *blood* to a too quick, eaſy, and rapid motion, and ſometimes diſſolves and fuſes it to ſuch a degree, that the globules or *craſſamentum* paſſes, together with the *ſerum*, through the glandular ſtrainers, and occaſions bloody ſecretions; as in malignant and peſtilential fevers, bloody ſweats, and other preternatural hæmorrhages. The latter or viſcid ſtate renders the *blood* unapt for motion, and diſpoſes it to ſtick and lodge in the capillaries and lymphatics. Phil. Tranſ. N° 44. p. 891.

The *ſpecific gravity* of the *blood*, or the various degrees of its rarefaction and condenſation, depend on the degrees of heat; as the natural heat either riſes too high, or ſinks too low, the *blood* will, of conſequence, be either too much rarefied, or too much condenſed. In the former caſe, where the *blood* is overheated and rarefied, the expanſive force of the elementary fire and air contained in the maſs, prevails over the corpuſcular attraction; and then, by the coagulating power of heat upon the *ſerum*, and its too intimate mixture and coheſion with the *craſſamentum*, the lymph, which ſhould form the ſecretions, cannot be ſeparated, but the *ſerum* is, as it were, abſorbed in the *craſſamentum*; in conſequence of which, the ſecretions muſt be diminiſhed, or quite ſuſpended, and a fever enſue, more or leſs inflammatory, according to the degrees of heat in the *blood*, and the conſequent ſuſpenſion or interruption of the lymphatic ſecretions. See FEVER and BUFF.

On the other hand, where the *blood* is immoderately cooled and condenſed, the corpuſcular attraction prevailing over the expanſive force, the *ſerum* will be over-thinned and diluted, and conſequently ſeparated too faſt, and thrown off too plentifully on the glands and lymphatics; ſo that if the urinary drains happen to be obſtructed, a ſurcharge of *ſerum* muſt enſue, and in conſequence of this a dropſy: and in caſe the fluid parts of the urine paſs freely enough, and only the groſſer recrements, ſalts, and *ſabula*, or fine ſands, be kept back, theſe being thrown on the ſeveral organs, will produce the ſymptoms of the ſcurvy.

In order to aſcertain the colour of the different parts of corrupted *blood*, Dr. Pringle made the following experiment. He took a freſh quantity without any inflammatory cruſt, and divided it into the *craſſamentum*, the *ſerum* with a few red globules in it, and the pure *ſerum*. The phials containing theſe ſeveral liquors were put into a furnace, where they ſtood ſome days, till they became thoroughly putrid.

The *craſſamentum* was changed from a deep crimſon to a dark livid colour; ſo that when any portion of it was diluted with water, it appeared of a tawney hue. Of the ſame colour was the *ſerum* in which the red globules remained. But the pure *ſerum*, after becoming turbid, dropped a white purulent ſediment, and changed into a faint olive green.

From this experiment he concludes, that the *ichor* of *ſordes*, and that of dyſentery fluxes, conſiſts of the *ſerum* tinged with a ſmall quantity of red blood putrefied; and that when the ſerous veſſels are of a tawney caſt, we are not to refer that colour to inflammation, but to a ſudden ſolution of ſome of the red globules mixed with the *ſerum*.

A few drops of this putrid *craſſamentum* were mixed with the recent urine of a healthy perſon, which they immediately changed into a flame-coloured water, common in fevers and in the ſcurvy. After ſtanding an hour or two, the ſame gathered a cloud, reſembling what is ſeen in the crude urine of perſons in acute diſtempers.

As to a green *ſerum*, it is perhaps never to be ſeen in the veſſels of a living body, ſince it is not to be ſuppoſed that a perſon could ſurvive ſo great a change of the *blood*. In foul ulcers, indeed, and in other ſores, where the *ſerum* is left to ſtagnate long, the matter is found of a greeniſh colour, and is then always acrimonious. But the effects of a green *ſerum* are, in no caſe, to be ſo much dreaded as in the caſe of an *aſcites*, where it is collected in ſo large a quantity: of which we had, ſome time ſince, almoſt a fatal inſtance in Mr. Cox, ſurgeon at Peterborough; who, upon tapping a woman but a few hours after death, was ſo affected with the poiſonous ſteams of a green *ſerum*, that he was preſently ſeized with a peſtilential fever, and narrowly eſcaped with his life.

In regard to the ſediment which the *ſerum* dropped on becoming turbid, and which reſembled well digeſted matter, the doctor thinks it a terreſtrial ſubſtance, intended for the nouriſhment or reparation of the ſolids; in which opinion he was the more confirmed by obſerving a like ſediment in the urine of men in perfect health: and therefore concludes that the *pus*, or digeſted matter of ſores, is nothing but this ſubſtance ſeparated from the *ſerum* of blood. And hence it is that all large ulcers are extremely weakening, from the great expence of *blood* in furniſhing this ſubſtance. Hence alſo it is, that iſſues are of more conſequence for making drains, than one would expect from the viſible evacuation: as near as the doctor could gueſs, an ounce of *ſerum*, after ſtanding ſome days, not furniſhing more of this matter than what might be produced in the daily diſcharge of a large pea-iſſue, or from a ſeton.

There are frequent inſtances of the tawney colour of the *ſerum*, the reſolution of the *craſſamentum*, and even of the offenſive ſmell of *blood* recently drawn. And, indeed, if we reflect how putreſcent *blood* is in a heat equal to that of the human body, we may be convinced, that no ſooner is the perſpiration by the lungs impeded, than a corruption begins in the whole maſs; which, if not timely prevented, brings on ſome putrid diſeaſe. If the acrimony is great and ſudden, a fever or flux will enſue; but if the accumulation is ſo ſlow that the body grows habituated to the putrefaction, a ſcurvy prevails. This is the caſe in long voyages, on board unventilated ſhips; in marſhy countries; and, in a leſſer degree, in all northerly climates, in moiſt ſituations.

Blood, *thickneſs of the*, is alſo a preternatural concretion, following on a *plethora*, or diminution of its motion, from which ſtagnations and other diſorders draw their riſe. This is either general throughout the whole body; or ſpecial, confined to ſome particular part; as in hypochondriac and hyſteric caſes, where the *blood*, by reaſon of the ſlowneſs of its progreſſion, acquires a *lentor* in the region of the *abdomen*. To the ſame cauſe are alſo owing polypuſes, apoplexies, pleuriſies, infarctions of the *viſcera*, palpitations of the heart, ſuppreſſions of the menſes, &c.

Blood, *ſolubility of the*, is that tendency in the *ſerum* and *craſſamentum*, by which they are diſpoſed to ſeparate and diſengage from each other, when the *blood* comes to cool, and ſtand in a baſon. When *blood* is taken off, it muſt frequently ſtand a long time at reſt, and in a cold place, before its principles can diſunite, ſo as to effect a perfect ſeparation of the *ſerum* from the *craſſamentum*; and yet at laſt, when the ſeparation is made, there may be a ſufficient quantity of *ſerum*, and perhaps a greater proportion than ordinary; whereas, at other times, this ſeparation ſhall be quickly made, and the ſolution effected after a ſhort time of ſtanding in a warmer air. Phil. Tranſ. Nº 44. p. 89.

The red part of the *blood* is readily ſoluble in water, but not in *ſerum*, nor in a ſaturated ſolution of neutral ſalts. See an account of ſome experiments on the *blood* by Dr. Lewis, in Neumann's Works, p. 551. n.

Blood, *ſweetening*, *purifying*, *or cleanſing the*, are terms which ſeem to have ariſen from a miſtake, as if the *blood* were an impure fluid, or capable of receiving impurities with the chyle; which ſeems to be overturned by the extreme fineneſs of the orifices of the lacteals, which will hardly allow any thing impure to paſs.

Blood, *excretions or evacuations of the*, are either ſpontaneous, as in the hæmorrhoids, *hæmoptoe*, hæmorrhages at the noſe, the *lochia*, and menſtrual flux; or artificially produced by medicines, emmenagogues, venæſections, ſcarifications, leeches, &c.

The want of due evacuations of the *blood* produces plethoras. In hypochondriacal caſes, the natural excretions by the *anus*, menſtrual flux, &c. are by all means to be promoted, as the ſureſt means of cure.

Blood, *transfuſion of it*. See TRANSFUSION.

Blood, *injecting liquors into it*. See INJECTION.

Blood, *ſpitting of*.—Spirit of plantain-juice, comfrey-roots, and fine ſugar, are recommended by Mr. Boyle as an approved remedy againſt ſpitting and vomiting of *blood*.

TAR-WATER is ſaid to be a very good remedy in this caſe.

Blood, *orgaſm of the*, denotes an extraordinary *efflatus* or ebullition, obſerved in fevers, phrenzies, *hæmoptoes*, palpitations of the heart, and even by ſome ſuppoſed in cephalalgias, ſcurvies, arthritic pains, &c. It is to be compoſed or allayed by calmers, nitroſe preparations, &c. rather than by opiates.

Blood, *cooling of the*, recommended by lord Bacon as a means of longevity, is to be effected by clyſters, baths, unctions, refrigerating decoctions applied to the belly, &c. Some have vainly imagined the chief office of reſpiration to be, to cool the kindled *blood*, and prevent too great a deflagration. See RESPIRATION.

Blood, *depuration of*. See SECRETION.

Blood, *flux of*, is called an HÆMORRHAGE. The periodical ones of women, MENSES. Thoſe after child-birth, LOCHIA. That ordinarily happening on the firſt coition, is by ſome called and conſidered as the teſt of virginity.

In the Philoſophical Tranſactions we have ſeveral very uncommon inſtances of ſpontaneous hæmorrhages or effuſions of *blood*; particularly of a child that bled at the noſe, ears, and hind part of the head, for three days; from that to the ſixth, ſhe ſweat blood from the head; on the ſixth, bled at the head, ſhoulders, and waiſt; and for three days more continued to bleed at the toes, bend of the arms, joints of the fingers of each hand, and at the fingers ends, till ſhe died: after her death were found, in the places whence the *blood* iſſued, little holes like the prickings of a needle.

About the matter of nutrition, or the ſource whence the nouriſhment is derived, great conteſts have ariſen among phyſicians and anatomiſts; ſome contending for a nutritious juice conveyed through the lungs; ſome ſetting up the lymph, others the chyle, ſome the *ſerum* of the *blood*, ſome the *cruor*, as the univerſal *ſuccus alibilis*, &c. However, all theſe, except they who bring the nutriment through the nerves, make the *blood* the vehicle, that conveys the alimentary parts through the body, whatever they be, and whenceſoever derived: but perhaps it was on the ſcore of its heterogeneity, or compoſition of different elements, that they did not make itſelf the nutritious fluid, without reſtraining that faculty to ſome particular parts of it. But Dr. Drake makes no ſcruple to ſay, that the *blood*, in its largeſt acceptation, as conſiſting of all the parts before deſcribed, is ſimple and homogeneous enough for the purpoſes of nutrition; and that every part thereof contributes ſomething, either materially or inſtrumentally, to the augmentation, or reparation, of the parts through which it paſſes. See NUTRITION.

For the manner in which the *blood* is formed, and how the chyle is aſſimilated into *blood*, ſee SANGUIFICATION.

Blood, *the quantity of*, in a human body, has been variouſly eſtimated by various authors: Dr. Lower computes it in an ordinary man, at about twenty pounds; Dr. Moulin by obſerving the proportion of the weight of ſeveral animals to their *blood*, eſtimates it at about $\frac{1}{20}$ of the weight of the whole man, which may amount to eight or ten pounds. Dr. Keill, from a calculation founded on the proportion of the coats to the diameters of the veſſels, ſhews, that in a body weighing 160 pounds, 100 pounds thereof are *blood*; but then under *blood* he includes the juices of the lympheducts, nerves, and other veſſels which are ſecreted from it.

In reality, it is very difficult to determine the quantity of *blood* in the body. Bleeding to death, the method uſed by Dr. Moulin and others, can never give the eſtimate of its true quantity; becauſe no animal can bleed longer than while the great artery is full, the continuance of which will be longer or ſhorter as the wounded artery is ſmaller or greater; and the *aorta* muſt always be the firſt veſſel that empties. The moſt certain way, in Dr. Keill's opinion, is, by finding what proportion the cavities of the veſſels, of which the whole body is compoſed, bear to the thickneſs of the coat. This, in the veins and arteries, may be exactly found; but, in the other veſſels, we only know the quantity of fluid they contain, by carefully evaporating as much as poſſible.

Some think it probable, that at leaſt two-thirds of the quantity of *blood* contained in an animal body, is continually paſſing the capillaries and ſmall veſſels in the glandular and muſcular parts, which can never be drawn off by any quick diſcharge from cutting the large veſſels; ſince, in that caſe, the larger veſſels being emptied much faſter than they can be ſupplied again from the capillaries, a defect of *blood* will ſoon enſue at the heart, upon which the animal falls into convulſions, and the circulation ſtops, while far the greater part of the *blood* muſt be ſuppoſed ſtagnating in the ſmaller and remoter veſſels.

Blood, *for the ſtanching of*, ſee STYPTIC.

Blood, *circulation of the*, denotes a natural motion of the *blood* in every living animal; whereby that fluid is alternately conveyed from the heart to all the parts of the body, by the arteries, and returned from the ſame parts to the heart by the veins.

The *circulation of the blood* has been generally allowed to have been firſt diſcovered in England, in the year 1628, by Harvey, a phyſician of our own country; though there are ſeveral authors who diſpute it with him.

Janſſon ab Almeloveen, in a treatiſe of New Inventions, printed in 1684, quotes ſeveral paſſages from Hippocrates, to prove that the *circulation* was known to him. Wallæus, ep. ad Barthol. pretends, it was known not only to Hippocrates, but alſo to Plato and Ariſtotle.—It is added, that the Chineſe phyſicians taught it 400 years, before it was ſpoke of in Europe.

Some go back as far as Solomon, and imagine they ſee ſome traces of it in Eccleſiaſtes, chap. xii.—Bern. Genga, in an Italian treatiſe of Anatomy, quotes ſeveral paſſages from Realdus Columbus, and And. Cæſalpinus, whereby by he endeavours to prove that they admitted a *circulation*, long enough before Harvey.

He adds, that Fra. Paolo Sarpi, the famous Venetian, from a conſideration of the ſtructure of the valves of the veins, and other experiments, concluded a *circulation*. See alſo Dutens's Recherches ſur l'Origine des Decouvertes attribuées aux Modernes. Paris. 1766.

Leonicenus adds, that F. Paolo durſt not make known his diſcovery, for fear of the inquiſition; that he therefore only communicated the ſecret to Fab. ab Aquapendente; who, after his death, depoſited the book he had compoſed on it in the library of S. Mark; where it lay hid a long time, till Aquapendente diſcovered the ſecret to Harvey, who then ſtudied under him at Padua; and who, upon his return to England, a country of liberty, publiſhed it as his own.—But much of this is fable.

Sir Geo. Ent has ſhewn that Father Paul received the firſt notice of the circulation of the *blood* from Harvey's book on the ſubject, which was carried to Venice by the embaſſador of the republic at the court of England, who ſhewed it to F. Paul, by whom ſome extracts were made from it, which coming afterwards into the hands of his heirs, gave riſe to an opinion in ſeveral perſons that he was the author of the papers and of the invention.

Servetus firſt announced the *minor circuitus*, or the leſſer *circulation* of the *blood* through the lungs, but the *major circuitus* was undoubtedly the diſcovery of Harvey. Many of the ancients had ſome knowlege of the *motion* of the *blood*; but they were ignorant of its regular *circulation*.

The *circulation* of the *blood* is evinced, from the following conſiderations.—1. All the *blood* of a living animal, upon wounding any one of the larger arteries, is, in a little time, evacuated, and that with a conſiderable force: as appears from the operation of butchers, &c.

Hence, it follows, that the *blood* has a paſſage from every part of the animal body into every artery: and if the whole maſs of *blood* be found to move on this occaſion, it is evident it muſt have moved before.

2. The great quantity of *blood* driven out of the heart into the arteries at every pulſe, makes a *circulation* neceſſary; ſince, without it, an infinitely greater ſtock of *blood* muſt be ſuppoſed in the body of a man, than any obſervation or experiment will allow of.

For though the ancients, who knew not this *circulation*, imagined that only a drop or two was expelled at each *ſyſtole*; which they were neceſſitated to ſuppoſe, to avoid the too great diſtenſion of the arteries, from a more conſiderable influx: yet it is certain, and even demonſtrable, that there muſt needs be an ounce, or more, driven into them at each time; and yet ſome compute that there are five or ſix thouſand pulſations in an hour.

3. Any of the arteries, being tied with a thread, ſwell, and beat, between the bandage and the heart; but they grow flaccid between the bandage and the extremities of the body. If now the artery be cut between the bandage and the heart, blood ſtreams out, even to death: if it be cut between the bandage and the extremities of the body, the quantity of *blood* it yields is very ſmall.

The vital *blood*, therefore, flows through the arteries; and its courſe is from the heart towards the extremes of the body: and this it does in every point of the body, internal and external; ſtill out of a wider part into a narrower; out of the trunk into the branches. And it is on this principle alone, that all the *blood* may be derived into any artery, and evacuated at it.

4. Any one of the larger veins being bound up with a thread, ſwells between the extremes of the body and the bandage, but without beating; and between the bandage and the heart it becomes flaccid.

If opened in the former part, it bleeds largely; if in the latter, it ſcarce bleeds at all. The *blood*, therefore, flows briſkly from every part of the body into this vein; and its courſe is from the extremes of the body towards the heart; from the narrower parts of the vein towards the wider parts; from the branches to the trunk.

From the whole, it is evident, that all the arteries of the body are continually bringing the *blood* from the left part of the heart, through the trunks of the arteries, into the branches; and from thoſe to all parts of the body, internal and external: and on the contrary, that all the veins, excepting the *porta*, are perpetually bringing back the *blood* from the extreme parts into the ſmaller branches; from thoſe it paſſes into the larger, at length into the trunks, and thence into the *cava*; and through the *ſinus venoſus*, or trunk of that vein (which ends in the cavity of the right auricle) into the heart.

The *blood* being arrived here, its motion, or *circulation*, is continued as follows.

The auricles of the heart being large hollow muſcles, are furniſhed with a double ſeries of ſtrong fibres proceeding with a contrary direction to two oppoſite tendons, the one adhering to the right ventricle, the other to the *ſinus venoſus*; as alſo with innumerable veins and arteries; by the contractile force of theſe auricles, the *blood* will be vigorouſly expreſſed, and drove into the right ventricle; which, upon this contraction, is rendered flaccid, empty, and diſpoſed to admit it.

If now the right ventricle, thus full of *blood*, by the contraction of its fibres preſs the *blood* towards the aperture again, the venous *blood* at the ſame time pouring in, will drive it back again into the cavity, and mix it more intimately; till riſing up againſt the *parietes*, it raiſes the *valvulæ tricuſpides*, which are ſo connected to the fleſhy columns extended on the oppoſite ſide, as that when laid quite down they cannot cloſe the *parietes* of the right ventricle: theſe it thruſts towards the right auricle, till being there joined, they ſtop the paſſage very cloſely, and prevent any return.

By the ſame means, the ſame *blood* riſes up into the three ſemilunar valves, placed in the extremity of the other mouth, and lying open to the pulmonary artery: theſe it ſhuts cloſe againſt the ſides of the artery, and leaves a paſſage into the artery alone. The venous *blood* therefore, that is, the *blood* of the whole body, continually moves out of the *ſinus*, or trunk of the *vena cava*, through the right auricle, and right ventricle, into the pulmonary artery, in a continued and forcible ſtream.

The *blood* carried by this artery into the lungs, and diſtributed by its branches through the whole ſubſtance thereof, is firſt admitted into the extremities of the pulmonary vein, called *arteria venoſa*; whence paſſing into four large veſſels, which unite together, it is brought to the left *ſinus venoſus*, or trunk of the pulmonary vein; by the force of whoſe muſculous ſtructure it is driven into the left ventricle, which, on this occaſion, is relaxed, and by that means prepared to receive it.

Hence, as before, it is driven into the left ventricle, which is relaxed by the ſame means; and the *valvulæ mitrales* opening, admit it into the left ventricle, and hinder its reflux into the pulmonary vein.

From hence it is forced into the *aorta*; at whoſe orifice there are three ſemilunar valves, which alſo prevent a reflux by cloſing the ſame.

And thus is *circulation* effected; all the *blood* ſent into the lungs, and received into the *arteria venoſa*, *ſinus venoſus*, left auricle and ventricle, being here continually propelled into the *aorta*, whoſe ramifications are ſpread throughout all the reſt of the body, with a violent motion.

This motion, in living animals, is attended with the following *phænomena*.

1. Both the venous ſinuſes are filled, and grow turgid at the ſame time. 2. Both auricles grow flaccid at the ſame time, and both are filled at the ſame time, with *blood* impelled by the contractile force of its correſpondent muſcular venous ſinus. 3. Each ventricle contracts, and empties itſelf of *blood* at the ſame time; and the two great arteries are filled and dilated at the ſame time. 4. As ſoon as the *blood*, by this contraction, is expelled, both ventricles being empty, the heart grows longer and broader; and conſequently more flaccid and capacious. 5. Upon which, the muſcular fibres of both venous ſinuſes contract, and expreſs the *blood* contained in them into the ventricles of the heart. 6. In the mean time, the venous ſinuſes are again filled, as before; and the auricles, &c. return into their former habitude. 7. And this alternation continues till the animal begins to languiſh, under the approach of death; at which time the auricles and venous ſinuſes make ſeveral palpitations, for one contraction of the ventricle.

Thus is all the *blood*, in its return from every point of the body, internal and external, and from every point of the heart and its auricles, impelled into the right ventricle; out of that into the lungs; thence into the left ventricle; and thence through the whole extent of the body; and thence again is brought back to the heart.

As to the manner of the *blood's* paſſing out of the arteries into the veins, in order to its being returned to the heart, there are two opinions.

In the firſt, the veins and arteries are ſuppoſed to open into each other, or to be continued from each other, by ANASTOMASES, or inoſculations of their extremities.

In the latter, the extreme capillary arteries are ſuppoſed to let out their *blood* into the pores of the ſubſtances of the parts; on whoſe nutrition part is ſpent, and the reſt is received in at the mouths of the capillary veins.

Each of theſe opinions muſt be allowed to have its reaſon: for without the firſt, it were difficult to account for ſo quick a return of the *blood* to the heart, as in effect we find; beſides, that in ſome of the larger veſſels, there is a confeſſed anaſtomaſis, v. g. in the ſplenic artery with the ſplenic vein, &c. whence authors conclude the ſame contrivance to hold in the leſſer veſſels; even in the ſmalleſt twigs in the extreme parts of the body, though not diſcovered by the eye; nature being ordinarily found very uniform, and conſiſtent with herſelf.

Riolanus, however, who will allow of no *circulation* but by anaſtomaſes, allows of none, neither, but by the larger veſſels.

The reaſon of the latter opinion is deduced hence, that if part of the arterial *blood* did not ooze out into the ſubſtance of the parts, they could not be nouriſhed thereby: for the *blood*, while contained in the veſſels, may indeed convey warmth thereto, but no nutriment; the very veſſels themſelves being not nouriſhed by the fluid running in their cavity, but by capillaries paſſing their coats.

If then the *blood* be driven out of the veſſels in a greater quantity than is required for NUTRITION, the redundancy muſt be imbibed by the capillary veins.

M. Leewenhoeck ſeemed to have put this matter out of doubt by his microſcopes, with which he diſcovered the inoſculations, or continuations of the extremities of the veins and arteries in fiſhes, frogs, &c. See ANASTOMASIS.

But doubts ariſing, whether the veins and arteries in human bodies and quadrupeds were of ſimilar ſtructure, Mr. Cowper made experiments, which evinced the inoſculations in the *omentum* of a cat, and alſo in the meſentery of a dog. He found, that the extremities of the veſſels are not equally leſſened, in the inoſculations in different animals.

In the tail of the tadpole, he frequently obſerved ſeveral communications between the veins and the arteries; through each of which two globules of *blood* might paſs together. In young fiſh, particularly *grigs*, the communicant branch is ſo ſmall, that one globule of *blood* can ſcarce paſs in the ſpace of three ſeconds.

The tail of a newt, or water-lizard, affords alſo a very entertaining proſpect of the *circulation* of the *blood* through almoſt numberleſs ſmall veſſels; but no object ſhews it ſo agreeably as one of theſe animals while ſo young as not to be above an inch long; for then the whole body is ſo very tranſparent, that the *circulation* may be ſeen in every part of it, as well as in the tail; and, in theſe objects, nothing is more beautiful than the courſe of the *blood* into the toes, and back again, where it may be traced all the way with great eaſe. Near the head there are alſo found three ſmall fins, which afford a very delightful proſpect: theſe are all divided like the leaves of polypody, and, in every one of the branches of theſe, the *blood* may be very accurately traced, running to the end through the artery, and there returning back again by a vein of the ſame ſize, and laid in the ſame direction; and as the veſſels are very numerous and large in this part, and the third or fourth magnifyer may be uſed, there are ſometimes ſeen thirty or forty channels of the running *blood* at once; and this the more as the globules of *blood* in the newt are large, and are fewer in number, in proportion to the quantity of *ſerum*, than in any other animal, and their figure, as they are protruded through the veſſels, changes in a very ſurpriſing manner.

In a *fœtus*, the *apparatus* for the *circulation* is ſomewhat different from that above deſcribed.—The *ſeptum*, which ſeparates the two auricles of the heart, is pierced through with an aperture, called the FORAMEN *ovale*; and the trunk of the pulmonary artery, a little after it has left the heart, ſends out a tube in the deſcending aorta, called the *communicating canal*.

The *fœtus* being born, the *foramen ovale* cloſes, by degrees, and the canal of communication dries up, and becomes a ſimple ligament. Though in ſome inſtances it has been known to remain open.

This mechaniſm once known, it was eaſy to perceive its uſe.—For while the *fœtus* is incloſed in the *uterus*, it receives no air, but that little furniſhed it by the umbilical vein: its lungs, therefore, cannot ſwell and ſubſide as they do after the birth, and after the free admiſſion of the air. They continue almoſt at reſt, and without any motion; their veſſels are, as it were, full of themſelves, and do not allow the *blood* to circulate, either in abundance, or with eaſe.

Nature, therefore, has excuſed the lungs from the paſſage of the greateſt part of the *blood*; and has contrived the *foramen ovale*, by which part of the *blood* of the *vena cava*, received into the right auricle, paſſes into the left auricle, as the mouth of the pulmonary veins; and by this means it is found as far in its journey as if it had paſſed the lungs.

But this is not all: for the *blood* of the *cava*, which, miſſing the *foramen ovale*, paſſes from the right auricle into the right ventricle; being ſtill in too great quantity to paſs by the lungs, whither it is driven through the pulmonary artery; is, partly, intercepted in the way by the communicant canal, and poured immediately into the deſcending aorta.

This is the doctrine of Harvey, Lower, and moſt other anatomiſts; but M. Mery, of the Royal Academy, has made an innovation in it.

He aſſigns another uſe for the *foramen ovale*; and maintains, that the whole maſs of *blood* brought from the *cava* to the right ventricle, paſſes, as in adults, into the pulmonary artery; whence part of it is conveyed by the communicant canal into the aorta; and the reſt brought from the lungs by the pulmonary vein into the left auricle, where it is divided into two parts; the one paſſing through the *foramen ovale* into the right ventricle, without circulating through the aorta, and the reſt of the body; the other part puſhed, as in adults, by the contraction of the left ventricle, into the aorta, and the whole body of the *fœtus*.

The whole queſtion, then, turns upon this, viz. whether the *blood* paſs through the *foramen ovale* from the right to the left ventricle, or from the left to the right?

M. Du Verney aſſerts the ancient opinion, againſt M. Mery; and maintains, that the *foramen ovale* has a valve ſo diſpoſed, as to be opened by the *blood* driving into the right ventricle; but ſhut the more firmly, by its puſhing towards the left. But M. Mery denies the exiſtence of any ſuch valve.

Again, in an adult, the aorta, being to receive all the *blood* of the pulmonary artery, is found of the ſame bigneſs. In a *fœtus*, the two arteries are to receive unequal quantities, which of the two ſyſtems ſoever be followed. According to the common opinion, the aorta, receiving more *blood* than the pulmonary, ſhould be bigger: according to the opinion of M. Mery, the pulmonary artery ſhould be the bigger, as being eſteemed to receive a greater quantity of *blood*.

To judge of the two ſyſtems, therefore, it ſhould ſeem, there needed nothing but to determine which of the two veſſels were biggeſt in a *fœtus*.

M. Mery always found the pulmonary artery half as big again as the aorta; and, on the other hand, M. Tauvry, who ſeconded M. Du Verney, produces caſes where the pulmonary is leſs than the aorta: the facts on both ſides being examined by the French Royal Academy.

M. Tauvry adds, that though the pulmonary artery ſhould be greater than the aorta, yet this does not prove, that more *blood* paſſes the firſt than the ſecond; ſince it may be accounted for from the *blood's* preſſing more ſlowly towards the lungs, which it finds ſome difficulty to penetrate, and accordingly ſwells, and is driven back.

M. Littre, upon diſſecting an adult, in whom the *foramen ovale* was ſtill open, and meaſuring the capacities of the veſſels on each ſide, declares for M. Mery.

As to the force of the *circulation* in the *fœtus*, anatomiſts are again divided.—The popular opinion is, that, during geſtation, the arteries of the *uterus* convey their *blood* into the *placenta*, which is nouriſhed by it, and that the ſurplus is conveyed into the roots of the umbilical vein, which makes part of the navel-ſtring: thence it is carried to the liver of the *fœtus*, where it enters the *vena cava*, and is thence conveyed to the right ventricle of the heart, and diſtributed as before.

Again, the *blood*, brought from the iliac arteries of the *fœtus*, enters the navel-ſtring by the umbilical arteries; then paſſes into the *placenta*, where it is reſumed by the veins of the *uterus*, which carry it back again to the mother; and perhaps, alſo, by the roots of the umbilical vein, which mix it afreſh with the *blood* of the mother.

According to this ſyſtem, therefore, it is the *blood* of the mother that ſupplies the child; which is here only regarded as a diſtinct member, or part, of her frame.

The beating of her heart ſends to it a portion of her *blood*; and ſo much of the impulſe is preſerved, as ſuffices to maintain that languid *circulation* which a *fœtus* enjoys; and, in all probability, gives that feeble pulſation obſerved in the heart.

Other anatomiſts maintain, that the *fœtus* is only ſupplied with chyle from the glands of the *uterus*; which is further elaborated, and turned into *blood*, in the veſſels of the *fœtus*; and *circulates* therein, without any further communication with the mother.—Theſe allow of no reciprocal *circulation*, excepting between the *placenta* and the *fœtus*.

But the former opinion ſeems beſt ſupported: for the *placenta*, being ſeparated from the *uterus*, during the time of geſtation, neither yields any chyle, nor any other thing but *blood*. Beſides, M. Mery has ſhewn, that the *uterus* has no glands to furniſh any chyle.

Two other obſervations of the ſame author, confirm the popular ſyſtem: the inner ſurface of the *uterus* is lined with veins; and the outer ſurface of the *placenta* is not lined with any membrane: now as it is by theſe two ſurfaces that the two ſeem, in ſome meaſure, glued together, it looks as if they were only left without membranes, for an immediate communication between their blood-veſſels.

Add to theſe a fact, whereof M. Mery was an eye-witneſs: a woman, big with child, was killed by a fall; in the cavity of her belly were found ſeven or eight pints of *blood*; all the *blood*-veſſels being emptied: the child, too, was found dead; but without the leaſt appearance of any wound, or contuſion; all its *blood*-veſſels being empty of *blood*, like thoſe of the mother. The body of the *placenta* ſtill adhered to the whole inner ſurface of the *uterus*; nor was there any extravaſated *blood* there.

Now the *blood* here had no other way to diſcharge itſelf, but by the veins of the *uterus*: whence it follows, that thoſe veins bring back to the mother the *blood* of the *fœtus*; which, alone, eſtabliſhes the whole ſyſtem. If the *circulation* were only from the *fœtus* to the *placenta*, and not alſo to the mother, the dead child would have had all its *blood*.

Upon the whole, the *blood* in the lungs of the *fœtus* has none of the advantages of *air*, or reſpiration; which yet being neceſſary, nature, it is ſuppoſed, takes care that it receives a portion of air, mixed together with its mother's *blood*, and tranſmitted to it by the umbilical veſſels, to be diffuſed through the body.

This is confirmed hence; that, by conſtringing the navel-ſtring very tight, the child dies like a man ſtrangled: which appears to be owing to nothing but the want of air. Add to this, that as ſoon as the mother ceaſes to reſpire, the *fœtus* expires.

As to the velocity of the circulating *blood*, and the time wherein a *circulation* is completed, ſeveral computations have been made. By Dr. Keill's account, the *blood* is driven out of the heart into the aorta, with a velocity which would carry it 52 feet in a minute; but this velocity is continually abated in the progreſs of the *blood* through the numerous ſections, or branches, of the arteries; ſo that before it arrives at the extremities of the body, its motion is infinitely diminiſhed.

But Dr. Jurin ſhews, that in any two arteries tranſmitting equal quantities of *blood*, the *momentum* of the *blood* is greater in the artery more remote from the heart than in that nearer; and that its *momentum* is greater in all the capillary arteries together, than in the aorta; and that the *momentum* of the *blood* is greater in any of the veins than in the artery correſponding to it; and therefore greater in the *vena cava* than in the aorta. Laſtly, he ſhews, that the *momentum* of the *blood* in the *vena cava* is equal to that of the quantity of *blood* thrown out into the aorta at each ſyſtole, whoſe velocity is ſuch as would paſs the whole length of the arteries and veins in the interval of time between two pulſes, and that the abſolute *momentum* of the *blood* in the *cava*, without any regard to the reſiſtance, is equal to the *momentum* of the weight of thirty pounds paſſing over the ſpace of an inch in a ſecond. He ſuppoſes the motion of the *blood* to be equable, which in reality it is not.

Dr. Keill, upon a moderate *ratio* of the branches of the arteries to the trunks, ſhews, that the greateſt velocity of the *blood* is to the leaſt, in a greater proportion than that of 10000,00000,00000,00000,00000,00000,00000, 00000 to 1.

The ſpace of time wherein the whole maſs of *blood* may ordinarily circulate, is variouſly determined.—Some of the lateſt writers ſtate it thus: ſuppoſing the heart to make 2000 pulſes in an hour, and that at every pulſe there is expelled an ounce of *blood*; as the whole maſs is not ordinarily computed to exceed 24 pounds, it muſt be circulated ſeven or eight times over, in the ſpace of an hour. See HEART.

The *impetus*, occaſioning the *circulation*, is great enough in ſome animals to raiſe the *blood* ſix, ſeven, or eight feet high from the orifice it ſpins out at; which, however, is far exceeded by that of the ſap of a vine in bleeding-time, which will ſometimes riſe upwards of forty feet high. Phil. Tranſ. Nº 398. p. 274.

The heat and motion of the *blood* are always greater from a greater activity in the ſoul, in the day than in the night; and they are likewiſe ever greater from the food taken in the day-time, for the pulſe is always quicker after eating than before it; after a full meal, than after a ſpare one; and after a meal of drier and ſtronger food, than after a meal of food that is moiſter and weaker.

BLOOD, *vitality and aſcenſion of the*.—Dr. Willis endeavours to ſhew that the *blood* being animate, this animation or life depends on its being kindled; inaſmuch as the common affections of fire and flame belong to the *blood*, though this vital flame doth not appear to ſight, becauſe its form is ſubordinate to another ſuperior form, viz. the ſoul of the animal. Phil. Tranſ. Nº 57. p. 1178. See BIOLYCHNIUM.

BLOOD, *inflammability of the*.—Mr. Boyle having held a piece of human *blood*, dried till it was almoſt pulverable, in the flame of a candle, found it would take fire, and afford a flame much like that which excited it, burning with a crackling noiſe, and here and there melting. But this inflammability much better appeared, when putting together four or five thoroughly kindled coals, he laid on them a piece of dried *blood* of the bigneſs of a ſmall nutmeg; for this yielded a large and very yellow flame, and if it were ſeaſonably and warily blown from time to time, as the *effluvia* degenerated into ſmoak, it would long continue to yield clear and yellow flames. The ſame author having cauſed ſome *blood* to be dried till it was reducible to fine powder, took part of the powder, which had paſſed a fine ſearce, and caſting it on the flame of a good candle, the grains, in their quick paſſage through it, took fire; and the powder flaſhed not without noiſe, as if it had been roſin.

BLOOD, *uſes of the*, are either in the animal œconomy, or in medicine, religion, diet, arts, manufactures, &c.

In the animal œconomy, the *blood* ſerves as the ſource or fund from which all the humours of the body are ſecreted, whether neceſſary for nutrition, digeſtion, muſcular motion, ſenſation, or the like. Some alſo make it the principle of life and heat. And others hold it to do the office of a *pondus* in the alternate motion of the heart. Phil. Tranſ. Nº 281.

Dr. Prieſtley has ſhewn, that one great uſe of the *blood* muſt be to diſcharge the phlogiſton with which the animal ſyſtem abounds; imbibing it in the courſe of its circulation, and imparting it to the air, with which it is nearly brought into contact, in the lungs; the air thus acting as the great menſtruum for this purpoſe. Exp. and Obſ. on Air, vol. iii. p. 71.

BLOOD, *mechanical and commercial uſes of*, are chiefly in agriculture, where it is found an excellent manure for fruit-trees; among lapidaries, among whom, it is pretended, rabbits *blood* will ſoften glaſs and flint; and goats *blood* diſſolves diamonds; in building, boards are ſometimes rubbed with *blood* to turn them brown. Some alſo pretend it has anciently been uſed in the mortar of old walls.

Blood is the baſis of that noble colour, called by painters PRUSSIAN BLUE; and it is to vitriol, that is, to iron diſſolved, and formed into a ſalt, that it owes its change into that colour.

On this principle, Mr. Brown, an excellent chemiſt among us, tried the effect of ſolutions of other metals mixed with *blood*, the reſult of which may be a *baſis* for many valuable diſcoveries. The *blood*, in all theſe experiments, was prepared into a *lixivium*, in the ſame manner as in the making the PRUSSIAN BLUE, that is, by calcining it with an equal weight of ſalt of tartar, and then diſſolving it in boiling water.

This *lixivium* of *blood* being poured into a ſolution of ſilver in *aqua fortis*, produces a *coagulum* of a pure fleſh-colour. The like *lixivium* made with fleſh inſtead of *blood*, produces, in this caſe, a white *coagulum*; and ſimple oil of tartar being uſed in the ſame experiment, by way of compariſon with theſe *lixivia*, afforded a much whiter ſediment. Spirit of ſalt being added ſeverally to all the three mixtures, the bloom of the fleſh-colour was taken off in the firſt; but it ſuffered no other change. In the ſecond, the *coagulum* was tinged a little blue; and in the third, the whiteneſs was evidently improved. The bluiſh tinge in the ſecond caſe, is not wholly to be attributed to the fleſh, but perhaps might be owing to an alloy of copper in the ſilver, from which it is ſeldom entirely freed.

The ſame liquors were made uſe of to form a precipitate from corroſive ſublimate of mercury diſſolved in water, the conſequence of which was, that the *lixivium* with the *blood* produced a pure yellow; that with fleſh, an orange colour; and the ſimple oil of tartar, a dingy red. The addition of ſpirit of ſalt afterwards to theſe made ſome very odd alterations; for the firſt changed its yellow into an orange colour; and the ſecond, its orange colour to a blue; while the third became without any colour. The blue colour in the *lixivium* with the fleſh, when mixed with this ſolution, may be accounted for from the vitriol in this preparation; but it is not ſo eaſy to ſay, why the ſame vitriol ſhould not have produced alſo a blue in a *lixivium* with *blood*.

Copper, when diſſolved in *aqua fortis*, makes the water of a green colour; and, on pouring to this the two *lixivia* of *blood*, and of fleſh, the *coagula* are much alike; that is, they are white, tinged with green; but, on adding ſpirit of ſalt to them, they become of a colour not unlike that of copper before the ſolution. Oil of tartar gives a pale green ſolution, and the ſpirit of ſalt clears up the liquor, and reſtores it to its former colour.

Biſmuth diſſolved in *aqua fortis*, and mixed with a *lixivium* of *blood*, produces a milky *coagulum*, which, after a ſmall time ſtanding, with the addition of ſome ſpirit of ſalt, becomes of a pale blue. The *lixivia* of fleſh, and of crude ſalt of tartar, produced both white *coagula*, which the ſpirit of ſalt made no alteration in. From theſe experiments it appears, that not any of theſe metallic bodies would produce a fine blue colour, with the *lixivium* of the *blood*; but a ſolution of iron anſwers all the experiments that are made with the ſolution of vitriol, and produces as fine a blue colour, as that made in the common way. Phil. Tranſ. N° 381. p. 25.

Blood, *medicinal uſes of*.—We find a great number of theſe enumerated by ancient and modern writers; but moſt of them, we doubt, on falſe and inſufficient grounds.

Blood, *eating of*.—This practice appears to have been prohibited to Noah, which prohibition was renewed by Moſes, and obſerved by the Jews, principally with a view to the uſe of ſacrifices in divine worſhip, and as a token of reſpect to the altar, at which the *blood* of every victim was preſented before God. The prohibition was repeated by the apoſtles at the council of Jeruſalem, confirmed and defended by all the fathers, except St. Auguſtin, and the univerſal practice, both of the eaſtern and weſtern church, till his time; and, in many churches, even of the weſt, much longer, as low as the middle of the tenth, ſome ſay the eleventh century. The queſtion is, whether the apoſtolical precept to abſtain from *blood*, be to be conſidered as only temporal and occaſional, a ſort of accommodation to the weakneſs of the Jewiſh converts; or perpetual, founded on moral principles, and conſequently ſtill obligatory.

The former opinion ſeems the more probable: though the advocates of the latter urge, that *blood* is prohibited, becauſe it tends to make men ſavage; that the prohibition is joined with that of fornication, which is an immorality; and that God has enjoined abſtinence from *blood* on all Chriſtians, in order to manifeſt his ſupreme power over all their enjoyments.

Blood, *religious uſes of*.—Among the ancients, *blood* was uſed for the ſealing and ratifying covenants and alliances, which was done by the contracting parties drinking a little of each other's *blood*; for appeaſing the *manes* of the dead, in order to which *blood* was offered on their tombs, as part of the funeral ceremony. Thus we read, that twelve youths were ſacrificed at the funeral of Patroclus; and eight at that of Pallas. Homer Il. φ ver. 27. Virgil Æn. lib. x. ver. 518.

The *blood* of victims was the portion of the gods, both among Jews and heathens; and accordingly was poured, or ſprinkled on the altars in oblation to them.

Some have aſſerted, that the Romans offered human *blood* to appeaſe their deities, which is denied by others.

The prieſts made another uſe of *blood*, viz. for divination: the ſtreaming of *blood* from the earth, fire, and the like, was held a prodigy, or omen of evil.

The Roman prieſts were not unacquainted with the uſe of *blood* in miracles; they had their fluxes of *blood* from images, ready to ſerve a turn; witneſs that ſaid to have ſtreamed from the ſtatue of Minerva at Modena, before the battle at that place. But in this their ſucceſſors have gone beyond them. How many relations in eccleſiaſtical writers of madonas, crucifixes, and wafers bleeding! At leaſt the liquefaction of the *blood* of St. Januarius at Naples, repeated annually for ſo many ages, ſeems to tranſcend by far, all the frauds of the Grecian or Roman prieſthood. But the chemiſts are got into the ſecret, and we find M. Neumann at Berlin performed the miracle of the liquefaction of dried *blood*, with all the circumſtances of the Neapolitan experiment.

Blood, in the *Romiſh Church*, is uſed in ſpeaking of the wine in the EUCHARIST; which they ſuppoſe miraculouſly converted, by the prieſt's conſecration, into the real *blood* of Chriſt. See TRANSUBSTANTIATION, &c.

Blood is alſo uſed abuſively for the SAP of plants; as having much the ſame office in the vegetable, as the other in the animal œconomy.

In a ſenſe, not unlike this, wine is ſometimes alſo denominated the *blood of the grape*.

Blood is alſo applied, in *Pharmacy*, to certain vegetable juices, tears, &c. as DRAGONS *blood*, a ſort of eaſtern gum.

Blood, *dragon's*, *ſanguis draconis*, is alſo uſed by the Arabs for the juice of the ANCHUSA.

Blood, *ſatyrion*, a ruddy liquor produced from the roots of *ſatyrium*, baked with bread; and liquified, as it were, into *blood*, by a long digeſtion.

Blood, in *Chemiſtry* and *Alchemy*, is a denomination given to ſeveral artificial compoſitions, chiefly on account of their red colour.

Blood is more peculiarly uſed by the alchemiſts for the tincture of a thing.

In which ſenſe we meet with *blood of mercury*, denoting the tincture of it; *dragons blood*, denoting the tincture of ANTIMONY.

Blood, or *ſanguis veri ruffi*, denotes the ſulphur of MARCASITE.

Blood is alſo uſed, in *Middle Age Writers*, for ſupreme juriſdiction, exerciſed by the lord of the fee, in caſes where *blood* is ſpilt.

This is alſo called *judgment of blood*, *juſtice of blood*, ſometimes *cognizance of blood*.

Blood, *avenger of*, among the Jews, was the next of kin to the perſon murdered, who was to proſecute the murderer.

Eccleſiaſtical judges retire, when judgment is to be given in *caſes of blood*, becauſe the church is ſuppoſed to abhor *blood*: it condemns no perſon to death; and its members become irregular, or diſabled from their functions, by the effuſion of *blood*.

Blood *of Chriſt* is the denomination of a military order inſtituted at Mantua in 1608, by Vinc. Gonzagua IV. Its device was, *Domine probaſti me*; or, *Nihil hoc triſte recepto*.

Hermant ſpeaks of this order, and obſerves that it took its name from ſome drops of the *blood of Chriſt* ſaid to have been preſerved in the cathedral church of Mantua.

The number of knights was reſtrained to twenty, beſides the grand maſter; the office whereof was annexed to himſelf, and his ſucceſſors.

Blood, in *Farriery*, denotes a diſtemper in cattle's backs, which makes them in going draw their heads aſide, or after them: the cure is by ſlitting the length of two joints under the tail, and thus letting the beaſt bleed plentifully. If he bleed too much, the farriers knit his tail next the body, and then bind ſalt and nettles bruiſed on the part.

Blood-*running itch*, is a ſpecies of itch in a horſe, proceeding from an inflammation of the *blood* by over heating, hard riding, or other ſore labour; which, getting between the ſkin and fleſh, makes the beaſt rub and bite himſelf; and, if let alone, ſometimes turns to a grievous mange, highly infectious to all nigh him.

Blood, *field of*, in Syriac *aceldama*, was a field purchaſed by the Jews, with the thirty pieces of ſilver, which had been given to Judas for betraying his maſter, and which he had reſtored.

It ſtill ſerves for a burial-ground, in which all pilgrims, who die in their pilgrimage at Jeruſalem, are interred.

Blood-*flower*, *Hæmanthus*, in *Botany*, a genus of the *hexandria monogynia* claſs: its characters are theſe: the flower has a permanent empalement of ſix leaves, ſhaped like an umbel. It hath one erect petal, cut into ſix parts; and ſix awl-ſhaped ſtamina, which are inſerted in the petal. The germen is ſituated under the flower, and afterward becomes a roundiſh berry with three cells, each containing one triangular ſeed. There are four ſpecies.

The ſeaſon for tranſplanting the bulbs of this plant is in May or June, when the leaves are decayed; they may be kept out of the earth at this ſeaſon three or four months, but it is more adviſeable to plant them ſooner, as they always flower the ſtronger for it. Their ſoil is half a fine hazel-earth, and half old rotten dung; in September they muſt be removed into a moderate ſtove, and watered gently at times. They flower in the depth of winter.

Blood-*hound*. See HOUND.

Blood-*letting*. See BLEEDING.

Blood *of the philoſophers*, in the *Hermetic Art*, denotes a mercurial ſpirit, inherent in all metals, but chiefly in gold and ſilver.

Blood, *precious*, a denomination given to a reformed congregation of Bernardine nuns at Paris, firſt eſtabliſhed under that name in 1661.

Blood, *princes of the*, in France, are thoſe deſcended from the *blood* royal.

Blood, *ſalamander's*, ſignifies the redneſs remaining in the receiver, after diſtilling the ſpirit of nitre.

Blood-*ſhotten*, a diſtemper of the eyes, wherein the blood-veſſels are greatly diſtended, ſo as to make the eyes appear red. See OPHTHALMIA.

Blood-*ſtone*. See HÆMATITES and SANGUINE.

Blood *of ſulphur*, *ſanguis ſulphuris*, is a preparation of liver of ſulphur, ground with oil of tartar *per deliquium*, then digeſted with dulcified ſpirit of nitre. It is reputed a good pectoral and diuretic, but rarely preſcribed.

Blood-*veſſels*, in *Anatomy*, uſually include only the veins and arteries; though, in a larger ſenſe, all the veſſels in the body; as the nerves, lymphatics, &c. to the very hair, may be comprehended under the denomination.

Mr. Boyle obſerved an actual *blood*-veſſel, and full of red *blood* in the middle of a NERVE.

In the PLICA POLONICA, each hair is ſenſibly a *blood*-veſſel; and, when cut, will bleed like a ſmall vein. Boyle's Phil. Works abr. tom. i. p. 173. 449.

Blood-*ſnake*. See *Blood*-SNAKE.

Blood-*wite*, in *Ancient Law Writers*, ſignifies *blood*, and a cuſtomary amercement paid as a compoſition for the ſhedding or drawing of *blood*.

The word is alſo written *blodwite*, *blodwita*, *blodwyta*, *bloodwit*, *blodwit*, *bloudwit*, and *bluidweit*.

It is formed from the ancient Saxon *blud*, *blood*, and *vite*, or *wite*, a *fine* or *penalty*.

The word alſo denotes an exemption from this penalty, granted by the king to certain perſons and communities, as a ſpecial favour.

King Henry II. granted to all tenants within the honour of Wallingford—*Ut quieti ſint de hidagio* & blodwite & *bredwite.*

Blood-*wood*, *Hæmatoxylon*. See Log-*wood*.

Blood-*wort*, in *Botany*. See Sanguinaria and Dock.

Blood, *corruption of*, in *Law*. See Corruption *of Blood*.

Blood, *inheritable*, denotes ſuch a regular deſcent, as gives a perſon legal right to inherit the eſtate of an anceſtor. See Attainder, Escheat, Inheritance, &c.

Blood *royal*, is applied to the regular deſcendants of the royal family.

Blood, *whole* and *half*; a kinſman of the *whole blood* is he that is derived from the ſame couple of anceſtors; whereas a perſon of *half blood* deſcends from either of them ſingly by a ſecond marriage. Blackſt. Com. vol. ii. p. 227.

BLOODY *crime*, *ſanguineum crimen*, in *Writers of the Middle and Barbarous Age*, that which is puniſhed with the *blood*, or life of the offender.

Bloody *hand*, one of the four kinds of treſpaſſes in the king's foreſt, by which the offender being taken with his hands or other part bloody, is judged to have killed the deer, though he be not found either hunting or chaſing.

Bloody *heel-cock*. See Heeler.

Bloody *rains*. See Rain.

Bloody *ſweat*. Many inſtances of this are recorded, in which it has been owing to bodily diſorder, or extreme mental agitation and agony. See particularly Ariſtotle's Hiſt. Animal. lib. iii. cap. 19. apud Oper. tom. ii. Thuanus Hiſt. Temp. &c. lib. ii. apud Oper. tom. i. Melanges d'Hiſtoire & de Literature, &c. par M. V. Marville, tom. iii. p. 149. Acta Phyſico-Med. Norimbergæ, vol. i. p. 84. and vol. viii. p. 428.

Bloody *flux*. See Flux and Dysentery.

Bloody *urine*, a diſorder wherein the urine comes away mixed with blood, in greater or leſs quantity.

The blood here voided uſually comes from the kidneys, though ſometimes from the bladder or ureters.—It is ſometimes occaſioned by violent motion, or a fall on the back, cauſing a rupture of ſome of the blood-veſſels of the urinary parts: ſometimes it ſucceeds ſudden ſuppreſſions of the hæmorrhoids or *menſes*. The ſtone, eſpecially in the kidneys, will alſo occaſion frequent paroxyſms of this diſeaſe: and *cantharides* taken internally, or even applied externally without acids, will ſometimes have the ſame effect.—Bloody urine is a terrible ſymptom in the ſmall-pox, and malignant fevers; though on ſome occaſions it has proved critical, and carried off the diſtemper.

BLOOM, in the *Iron Works*, a term uſed by the miners for a four ſquare maſs of hammered iron, of about two foot long, and three quarters of a hundred weight, made from part of a ſow of caſt iron. The *bloom*, however, is not yet become iron fit for the ſmith's uſe, but muſt undergo many hammerings, and be firſt made what they call the ancony.

Bloom, *half*, a round maſs of metal, which comes out of the finery of an iron-*work*. See Blomary.

BLOSSOM, in a general ſenſe, denotes the flower of any plant.

In a more proper ſenſe, the word is reſtrained to the flowers of trees, which they put forth in the ſpring, as the forerunners of their fruit, otherwiſe called their *bloom*.

The office of the *bloſſom* is partly to protect, and partly to draw nouriſhment to the embryo fruit, or ſeed. Phil. Tranſ. N° 399. p. 329.

As eſſential as *bloſſoms* may ſeem to be to fruits, being, according to Malpighi, both the *uterus*, and the egg, or *fœtus* of the plant; yet we are told of trees bearing fruit without *bloſſoms*, as was done by the maple-tree in New England, mentioned by Mr. Dudley, and is always done by the polonic tree in China, which, according to Kircher's relation, produces its fruit immediately from the ſtock, without the intervention of any *bloſſoms*. Phil. Tranſ. N° 117. N° 385. p. 199. N° 26. p. 486.

In ſome plants the male and female parts of generation are remote from each other; e. gr. in the *gourd*, *pumkin*, *melon*, *cucumber*, and all of that race; to which may be added the nut bearing, and perhaps moſt bearing trees, which have all *bloſſoms* diſtinctly, male and female, on the ſame plant.

The *male bloſſoms*, called alſo catkins, may be diſtinguiſhed from the others, in that they have not any piſtil, or rudiment of fruit about them, but have only a large thrum, covered with duſt in their middle.

The *female bloſſom* has a piſtil within the *petala*, or flower-leaves, and the rudiment of their fruit is always apparent at the bottom of the flower before it opens.

Some ſorts of willows appear to change their ſex every year, and produce only male *bloſſoms*, or catkins, one year; and the year following ſtrings of female *bloſſoms*, which, if they happen to be near enough ſome flowering male, will produce ſeed, not much unlike thoſe of an *apocinum*.

Blossom is alſo uſed in the *Manege* for the colour of a horſe, which has his hair white, but intermixed all over with ſorrel and bay hairs, called alſo *peach-coloured*.

Horſes of this colour generally are hard and inſenſible, both in the mouth and the flanks; ſo that they are little valued; beſides they are apt to turn blind.

Blossom, in reſpect of ſheep. See Blissom.

BLOTED *china ware*, a name given by ſome to a ſort of china that is loaded with colours in an irregular manner. This pleaſes ſome people, but it is a defective ſort of ware, the large blotches of colours having been only laid on to cover the blemiſhes or faults in the firſt baking.

BLOTTING *paper*, a ſpecies of *paper* made without ſize or ſtiffening, ſerving to imbibe the wet ink in books of accounts, and prevent its ſetting off, or blotting the oppoſite page.

Blotting *book*, a ſort of minute book, or memorandum book, uſed by ſome merchants, for making imperfect entries in a preſent hurry, which are to be copied out fairer and fuller at night into the journal.

BLOW, in a general ſenſe, denotes a ſtroke given either with the hand, a weapon or inſtrument.

In fencing, *blows* differ from thruſts, as the former are given by ſtriking, the latter by puſhing.

We ſay to give, to return, to parry a *blow*. See Parrying.

Blows on the ſword make a ſpecies of purſuit, called beating.

Blow, *blind*, *ictus orbus* or *cæcus*, is that which does not appear, or is not attended with effuſion of blood; in contradiſtinction from that followed by a wound, diſcolouring, *tumor*, or the like, called *ictus apertus* or *apparens*, an open *blow*.

In the ancient laws, we find *blows* for remembrance, given to make perſons remember ſome tranſaction, and enable them to become better witneſſes of it in future times.

Blow, *military*, *alapa militaris*, that given with the ſword on the neck or ſhoulder of a candidate for knighthood, in the ceremony of dubbing him.

The cuſtom ſeems to have taken its riſe from the ancient ceremony of manumiſſion.

In giving the *blow*, the prince uſed this form: *eſto bonus miles*; upon which the party roſe a complete knight, and qualified to bear arms in his own right. Sometimes a double or even triple *blow* was given, called *trinapercuſſio.*

Blows, in *Common Law*. See Battery.

Blows and contuſions on the head, and about the *larynx*, are dangerous; thoſe in the epigaſtric region, eſpecially about the *ſcrobiculus cordis*, are frequently mortal.

Blows, *fly*, the *ova* of flies depoſited on fleſh, or other bodies proper for hatching them.

Blow-*pipe*, among jewellers and other artificers, is a glaſs-tube, of a length and thickneſs at diſcretion, wherewith they quicken the flame of their lamp, by blowing through it with their mouth. It is uſed in works of quicker diſpatch, which do not need the bellows, for concentrating flame and various uſes.

Though the wind blown out at a ſmall bent tube of glaſs, called a *blow-pipe*, ſeems not to have any great celerity, in compariſon of the parts of flame, and is itſelf of little force; yet, when the flame of a lamp or candle is directed by it, ſo as to beat upon a body at a convenient diſtance, it may be made to melt ſilver, or even copper itſelf, which yet may be kept, for many hours, unmelted in a red-hot crucible, or the flame of the lamp or candle unaſſiſted by the blaſt.

The enamellers have alſo tubes of divers ſizes, wherewith to *blow* their enamel, anſwering to the ſame purpoſe as the *ponteglio*, or *blow-pipe*, of glaſſmen.

BLOWER, *ſouffleur*, an appellation of contempt ſometimes given to an alchemist.

In the French king's kitchen, there was anciently an officer under the denomination of *ſufflator*, or *fire-blower*. The Roman mint-men were diſtinguiſhed by the appellation of *blowers* of gold, ſilver, and braſs, &c. *flatores auri*, *argenti*.

Blower, among dealers in horſes, a term uſed for ſuch horſes as wheeze much, without wanting wind. See Wheezing.

BLOWING *of glaſs*, one of the methods of forming the divers kinds of works in the glaſs manufacture.—It is performed by dipping the end of an iron ponteglo, or blowing-pipe, in the melted glaſs, and *blowing* through it with the mouth, according to the circumſtances of the glaſs to be blown.

Blowing *machines.* See Bellows.

Blowing, in *Medicine.* One method of adminiſtering medicines is by inflation, or *blowing* them into the part by a tube: thus it is they ſometimes convey powders into the eye, and ſometimes up the noſe, for the cure of a Polypus.

Blowing, *exſufflatio*, was alſo a ceremony in the ancient adminiſtration of baptiſm, whereby the *catechumen*, upon rehearſing the renunciation, *blew* three blaſts with his mouth, to ſignify that he rejected or caſt the devil abſolutely off.

Something like this is ſtill retained in the Ruſſian church. In the ſacramentary of St. Gregory, the prieſt who adminiſters baptiſm, is enjoined to *blow* thrice on the child's face, making the ſign of the croſs with his head, and pronouncing the words *exi ab eo ſatan.* Juſtin Martyr, Tertullian, St. Cyril, and St. Auguſtin, ſpeak of this ceremony as uſed in their times.

Blowing *of tin*, the running or melting the ore, after firſt burning it in a kiln, to deſtroy the mundic. Phil. Tranſ. N° 69. p. 2111, ſeq. See Tin.

Blowing *of a fire-arm*, is when the touch-hole is gulled, ſo that the powder will flame out.

Blowing is alſo uſed in ſpeaking of the natural motion or courſe of the wind.

In the ſea-language, the wind is ſaid to *blow home*, or *blow through*, when it does not ceaſe, or grow leſs, till it comes paſt the place where the ſpeaker is. To *blow through* is ſometimes alſo uſed to denote, that the wind will be ſo great as to *blow* aſunder the ſails. When a wind increaſes ſo much that they cannot bear any top-ſails, they ſay, they were *blown into their courſes*, i. e. they could only have out the ſails ſo called. To expreſs an extraordinary great wind, they ſometimes ſay, it will *blow the ſail* out of the bolt-ropes.

Blowing is alſo uſed in ſpeaking of the force and effect of kindled Gun-*powder*, on bodies which happen to be over it.

In this ſenſe we ſay to *blow* up a houſe. Engineers at ſieges make Mines wherewith to *blow* up walls, baſtions, and other defences.

Powder-mills are apt to *blow* up by the iron-gudgeon's growing hot, and ſetting fire to the powder-duſt flying about.

Blowing, among *Gardeners*, denotes the action of flowers, whereby they open and diſplay their leaves.

In which ſenſe, *blowing* amounts to much the ſame with Flowering and Bloſſoming.

Blowing *of a flower*, among *Floriſts*, an artificial proceſs, in order to bring a flower to diſplay itſelf with greater perfection and beauty than it would arrive to in the natural way of *blowing*. The uſual method is thus: about April, when the flower-ſtems begin to put forth or *ſpindle*, as the gardeners call it, they place by each flower a ſtraight ſtick four feet long, and tie the ſpindles to it as they ſhoot. As ſoon as the flower-buds appear, they leave only one of the largeſt on each flower-ſtem to bloſſom. About ten days before the flowers open themſelves, the round podded kinds will begin to crack their huſks on one ſide, when the careful gardener, with a fine needle, ſplits or opens the huſk on the oppoſite ſide to the natural fraction; and about three or four days before the complete opening of the flower, cuts off with a pair of ſciſſars the points on the top of the flower-pod, and ſupplies the vacancies or openings on each ſide the huſk with two ſmall pieces of vellum, or oil-cloth, ſlipped in between the flower-leaves and the inſide of the huſk; by ſuch means, the bloſſom will diſplay its parts equally on all ſides, and be of a regular figure. Beſides this care, when the bloſſom begins to ſhew its colours, they uſe to ſhade it from the extreme heat of the ſun with a trencher-like board, or other device of the like nature, faſtened to the ſtick which ſupports it; for the flowers, as well as fruits, grow larger in the ſhade, and ripen and decay ſooneſt in the ſun.

In *Heraldry*, a *fleur-de-lys* is ſaid to be *blown*, *eſpanoui*, when its leaves are opened, ſo that buds appear among the *fleurons*. The arms of the city of Florence are *argent*, a *fleur-de-lys blown, gules.*

Blowing-*ſnake*, in *Zoology*, a name given by the people of Virginia to a ſpecies of ſerpent much reſembling the European viper, but conſiderably larger, and very remarkable for its inflating and extending the ſurface of its head before it bites. Its wound is very fatal.

BLOWN-*red*, in the manufacture of porcelane. See Red.

BLUBBER, in *Phyſiology* and *Trade*, the fat which inveſts the bodies of all large cetaceous fiſh, ſerving to furniſh an oil.

The *blubber* is properly the *adeps* of the animal: it lies immediately under the ſkin, and over the muſcular fleſh. In the porpoiſe, it is firm and full of fibres, and inveſts the body about an inch thick. In the whale, its thickneſs is ordinarily ſix inches; but, about the under lip, it is found two or three feet thick. The whole quantity yielded by one of theſe animals ordinarily amounts to forty or fifty, ſometimes to eighty or more, hundred weight. Phil. Tranſ. N° 77. p. 2275.

The uſe of *blubber* to the animal ſeems to be partly to poiſe the body, and render it equiponderant to the water; partly to keep off the water at ſome diſtance from the blood, the immediate contact whereof would be apt to chill it; and partly alſo for the ſame uſe that cloaths ſerve us, to keep the fiſh warm, by reflecting or reverberating the hot ſteams of the body, and ſo redoubling the heat; ſince all fat bodies are, by experience, found leſs ſenſible of the impreſſions of cold than lean ones.

Its uſe in trade and manufactures is to furniſh train-oil, which it does by boiling down. Formerly this was performed aſhore in the countries where the whales were caught; but of late the fiſhers do not go aſhore, they bring the *blubber* home ſtowed in caſks, and boil it down there.

Blubber-*livers.*—The livers of cods, which having been barrelled, yield ſpontaneouſly a conſiderable quantity of oil, which being ſkimmed off, the reſidue are called *blubber-livers*, to be boiled down for more oil.

Blubber, *ſea*, a denomination given by our navigators to the Urtica Marina, or ſea-nettle. Phil. Tranſ. N° 349.

BLUE, one of the primitive colours of the rays of light.

Anciently, *blue* was the ſymbol of the ſea; for which reaſon, in the Circenſian games the combatants who repreſented the ſea were clad in *blue*; and thoſe who had diſtinguiſhed themſelves by any notable exploit at ſea, were rewarded with a *blue* enſign.

Mr. Boyle has given us the following method of making tranſparent *blue*, nearly equal to ultramarine. The principal ingredient of this beautiful colour is the *cyanus*, or *blue* corn-bottle-flower, which abounds almoſt in every corn-field, and may eaſily be had during four of the ſummer months. It may be gathered by children about the verges of corn fields, without doing any damage to the corn.

This flower has two *blues* in it, one of a pale colour in the large outer leaves; and the other of a deeper *blue*, that lies in the middle of the flower. Both theſe will do, being ſeparated from the buttons or caſes in which they grow; but the deep *blue* leaves in the middle produce much the beſt colour: this may be obſerved by rubbing the leaves while they are freſh upon a piece of writing paper, ſo hard as to expreſs the juice, which will yield an excellent colour, that by the experience of two or three years has not been found to fade.

A ſufficient quantity of theſe middle leaves being procured, let the juice be preſſed from them; to which a little alum being added, will give a laſting tranſparent *blue*, ſcarcely inferior in brightneſs to ultramarine.

It is very probable, that if the chives of theſe flowers were cured in the ſame manner with ſaffron, they would produce a much greater body of colour, from which a tincture might be drawn with more eaſe than when preſſed freſh from the field.

Mr. Boyle alſo recommends another fine *blue*, produced from the *blue* leaves of rue, beaten in a ſtone mortar with a wooden peſtle, and then put in water for fourteen days or more, waſhing them every day until they are rotten. Theſe beaten up at laſt, water and all, until they become a pulp, and then dried in the ſun, will make a fine *blue* for ſhading.

Blue *aſhes*, *Cendre bleu*, and by corruption from the French, *Sanders blue.*—Theſe are very much uſed in water colours, and ſome are very lively; but in oil they grow dull and greeniſh, being ſomewhat of the nature of verdigriſe; and the more oil is put to them, the weaker they become. They are found in the form of a ſoft ſtone, in places where there are copper mines, and water only is made uſe of in levigating them, to reduce them to a fine powder. This kind of *blue* ought to be uſed in works to be ſeen by candle light, as in ſcene painting; for though a great deal of white be mixed with it, it appears very beautiful, notwithſtanding it has a greeniſh caſt; quite contrary to enamel, which looks bright by day, and dull by candle light.

Some of theſe *blue aſhes* look as beautiful as ultramarine, but by mixing them with a little oil, the difference is eaſily diſcovered: for whereas ultramarine becomes much higher on being mixed with oil, theſe acquire no body of colour from the mixture.

There is nothing to be found in the ſhops under this name but common *verditer*, or ſome ſpecies of it. See Verditer.

Blue *bice*, is a colour of good brightneſs, next to *Pruſſian blue*; it is alſo a colour of a body, and flows well from the pencil. See Bice.

Blue, *azure*, in *Chemiſtry*.—This colour may be drawn from ſilver: but Boyle and Henckel juſtly obſerve, that this happens only according to the proportion of copper found mixed in this metal. The following is the ſhorteſt proceſs for making it. Diſſolve ſal gem, ſalt of tartar, and roche alum, in the ſtrongeſt double diſtilled vinegar; ſuſpend over the vinegar ſo prepared, thin plates of ſilver; and bury the veſſel in the huſks of grapes. Every three days remove the plates, and wipe off the *blue* which will be formed on them. Otherwiſe, put *laminæ* of ſilver as thin as paper into a pint of the ſtrongeſt vinegar, add to it two ounces of *ſal ammoniac* well pulveriſed; put this into a glazed earthen pot carefully ſtopped; bury this in horſe-dung for fifteen or twenty days, at the end of which time you will find the plates covered with a fine *azure blue*.

Blue, *dyers*, is one of their ſimple or mother colours, uſed in the compoſition of others: it is given chiefly with woad, and indigo. Some dyers heighten their *blue*, by adding madder, braſil, and other woods. The way of brightening *blues* is by paſſing the ſtuff, when dyed and well waſhed, through luke-warm water; or, which is much better, by working and fulling the dyed ſtuff with melted ſoap, and then ſcouring it well.—*Blues* are dyed immediately from the whites, without any other preparation than ſcouring. See Dying.

Blue and yellow compoſe green when blended together. Hellot ſuſpects that ſuch a *blue fecula* as is procured from INDIGO and WOAD is procurable from many other vegetables. He ſuppoſes the natural greens of vegetables to be compounded in like manner of thoſe two colours, *blue* and yellow; and that the *blue* is oftentimes the moſt permanent, ſo as to remain entire after the putrefaction or deſtruction of the yellow. The theory is ſpecious, and perhaps juſt. Neumann.

Blue *black*. See Black.

Blue *enamel*. See *Azure* Enamel.

Blue, *Flanders*, is a colour ſeldom uſed but in landſcapes, as being apt to turn green. The French call it *cendre verte*, or green aſhes.

Blue *for painting or ſtaining glaſs*. See Glass.

Blue *Japan*. See Japanning.

Blue *Indigo*. See Indigo.

Blue *Litmus*, or *Lacmus*. See Litmus.

Blue, *painters*, is made differently, according to the different kinds of paintings. In limning, freſco, and miniature, they uſe indifferently ultramarine, *blue* aſhes, and ſmalt; theſe are the natural *blues*, excepting the laſt, which is partly natural, partly artificial. See each under its proper head.

In oil and miniature they uſe indigo, *blue* bice, *blue* verditer, *lapis armenus*, ſmalt, and litmus; alſo a counterfeit ultramarine.

Enamellers and painters on glaſs have *blues* peculiar to themſelves; each preparing them after their own manner. See Enamelling, *Painting on* Glass, and Neumann's Chem. Works, by Dr. Lewis.

Blue, *Pruſſian*, or *Berlin* Blue, is a modern invention, conſiderably in uſe among painters, though inferior to the ultramarine *blue*. It was diſcovered by accident, about the beginning of this century. A chemiſt of Berlin, having ſucceſſively thrown upon the ground ſeveral liquors from his laboratory, was ſurpriſed to ſee it ſuddenly ſtained with a moſt beautiful colour. Recollecting the liquors he had thrown on each other, he made a ſimilar mixture in a veſſel, and produced the ſame colour. He did not publiſh his proceſs, but prepared and ſold his BLUE, which was ſubſtituted for ULTRAMARINE. The account of it was firſt publiſhed in the Berlin Memoirs, 1710; but without the deſcription of its proceſs.

In a paper of Dr Woodward's, communicated to the Royal Society in the year 1724, there is given a ſhort way of making the *Pruſſian blue*, which when tried over again by Mr. Brown the chemiſt, was found to anſwer perfectly well; and gave hints and occaſions to ſeveral experiments, which gave great light into the true nature of the bodies uſed in that preparation.

The method was this. Four ounces of bullock's blood dried, and four ounces of ſalt of tartar prepared from four ounces of crude tartar and as much nitre, were calcined together; two hours after which, a black ſpungy ſubſtance remained in the crucible, weighing four ounces; a ſolution of which being made in boiling water, and afterwards filtered, left a remainder which when dried weighed nine drams. An ounce of Engliſh vitriol was diſſolved in ſix ounces of rain water, and eight ounces of crude alum in two quarts of water. Theſe being mixed hot with the blood, became green; and on adding two or three ounces of ſpirit of ſalt, they become of a fine *blue*, which will ſubſide, and leave the water clear at top. Mr. Brown found the proceſs exactly anſwer, and the product was an ounce of a very fine colour, and perfectly fit for the painter's uſe.

Among the ſeveral experiments which were made by mixing, in different manners and proportions, the ſeveral liquors of which this colour was to be prepared, all produced a *blue*; but that in different degrees, ſome being deeper, and others much paler. In one experiment the alum was wholly left out, and a very pale *blue* was produced; in another, the alum and vitriol were uſed in equal quantities, and then the product was an extremely deep *blue*.

Upon the whole, the preſcription ſeems to be given after repeated trials, and appears to be that very combination of the ſeveral ingredients, which muſt give the very fineſt colour they are capable of giving.

It is curious to know what gave the firſt hint for the production of ſo fine a colour from a combination of ſuch materials, eſpecially when we come to conſider, that the blood has the principal ſhare in this ſurpriſing change. Blood of any kind, or fleſh of any kind, would produce the ſame effects; but it is probable that fleſh would not yield ſo ſtrong or fine a colour. Beef has been tried, and found to yield a *blue*, but not ſo fine as the blood. Phil. Tranſ. abr. vol. vii. p. 747, &c.

In all the recipes which have been given for making the *Pruſſian blue*, the liquors are ordered to be mixed together boiling hot, except the ſpirit of ſalt; and experience ſhews, that the colour is moſt readily and beautifully made that way: but in experiments made with all the liquors cold, the colours have been very well produced, only in leſs beauty; and they have required waſhing ſeveral times in freſh water, to bring them to their beauty.

Mr. Brown thinks, that this *blue* is the phlogiſtic part of iron, diſengaged by the lixivium of bullock's blood, and applied to the earth of alum: and this opinion has been adopted by M. Geoffroy. The abbé Menon ſuppoſes that *Pruſſian blue* is nothing but iron entirely freed from all ſaline matter by the phlogiſton of the alkaline lixivium, and precipitated with its natural colour, which, he ſays, is *blue*: the alum ſerving to diminiſh the intenſity of the colour, by the whiteneſs of its earth. M. Macquer concludes, from many experiments, that it is nothing but iron impregnated with a ſuperabundant quantity of phlogiſton, which it receives from the phlogiſticated alkaline precipitant. He has likewiſe applied the preparation of this pigment to the dying of wool and ſilk, and found means of fixing the colour. The cloth muſt firſt be dipped in a diluted ſolution of vitriol and alum, then in the ley diluted, and afterwards in water acidulated with ſpirit of vitriol; it acquires hereby a light *blue* colour, which becomes deeper and deeper by repeating the dippings as before, and adding to the liquors each time a little more of the reſpective ſaline matters. M. Macquer obſerves, that this *blue* dye exceeds in beauty and luſtre that of indigo and woad; that it penetrates the whole ſubſtance of fulled cloth, without weakening it; that it is durable in the air, and bears boiling in alum water, but is diſcharged by ſoap. Phil. Tranſ. abr. vol. vii. p 747, &c. Mem. Acad. Scienc. for the years 1725, 1749, 1752.

The method of making this *Pruſſian blue* in perfection, has been purchaſed as a very valuable ſecret. Its proceſs is very extraordinary, and could ſcarce be derived *a priori* from any reaſoning about the nature of colours. It is allowed to be an excellent *blue* pigment, and is by ſome preferred to ULTRAMARINE; though its durability might have been ſuſpected, from the vegetable and animal matters uſed in its preparation, if the colour did not ſeem extraordinarily fixed by the operation.

The goodneſs of *Pruſſian blue* muſt be diſtinguiſhed by its brightneſs, deepneſs, and coolneſs.

There are four different proceſſes given for making the fineſt ſort of *Pruſſian blue* with quick-lime, given in the Hiſt. of the Acad. of Scienc. at Paris, for the year 1756.

Proceſs I. Take 3lb. of ox's blood, dried and reduced into a kind of ſmall ſcales, an equal quantity of quick-lime newly baked, 2lb. of red tartar, and 1lb. 8oz. of ſalt petre; pulveriſe the whole groſsly, and put it into a crucible, placed in the midſt of a great furnace, and give it a gradual fire. After four hours, when the matter is reduced into a kind of paſte which emits no more ſmoke, and is equally red, throw it by ſpoonfuls into two pails of boiling water; and, having filtrated the lixivium, mix it with a ſolution of 6lb. of alum, and 1lb. 8oz. of green vitriol. This operation will yield but 7oz. of *fecula*; but its beauty will make ſufficient amends for the ſmall quantity, as it will ſurpaſs in this reſpect all the *blues* of Pruſſia, which are prepared by other methods. It has alſo as good an effect as the fineſt *ultra-marine*; and has, beſides, the advantage of reſiſting the impreſſion of the air.

Proceſs II. Take 3lb. of dried ox's blood, an equal quantity of quick-lime, 2lb. of red tartar, and 2lb. of nitre; let them be calcined and lixiviated, as in the former proceſs: pour the lixivium into a ſolution of 4lb of alum, and 1lb. of green vitriol. This operation will yield more of the *blue fecula* than the other, but the colour will be leſs beautiful.

Proceſs III. Take 3lb. of dried ox's blood, 4lb. 8oz. of quick-lime, 2lb. of red tartar, 1lb. 8oz. of ſalt-petre. Proceed as before. This operation will produce the moſt beautiful *blue*; but the quantity will be only about 8oz. and 4 drams.

Proceſs IV. Take 3lb. of dried ox's blood, 6lb. of quick-lime, 2lb. of red tartar, and 1lb. 8oz. of nitre. Calcine and lixiviate as before; pour the warm lixivium into a ſolution of 4lb. of alum, and 1lb. of green vitriol; the *fecula* precipitated in this way will be as beautiful as thoſe of the firſt proceſs, and the quantity 26 ounces.

Blue, *Saxon*.—This dye has been known for ſome time, and is made by diſſolving indigo in oil of vitriol, by which the indigo becomes of a much more lively colour, and is extended to ſuch a degree, that it will go very far in dying. The following receipt for making it, produces a very fine colour, and never fails of ſucceſs.

Mix 1oz. of the beſt powdered indigo with 4oz. of oil of vitriol, in a glaſs body or matraſs; digeſt it an hour with the heat of boiling water, ſhaking the mixture at different times. Add 12oz. of water to it, ſtir the whole well, and when cold filter it; a very rich deep colour will be produced, and if a paler *blue* be required, it may be had by the addition of water. The heat of boiling water is ſufficient for this operation, and can never ſpoil the colour. A ſand heat, not uncommonly uſed for this purpoſe, is often found to damage the colour.

Indigo, digeſted with a large quantity of ſpirit of wine, and dried, will produce a finer colour than the former, if treated in the ſame manner with oil of vitriol.

For an account of the proceſſes for obtaining BLUE *liquors* from oak-duſt and vitriol, from logwood and verdegris, from logwood and blue vitriol, from an eſſential oil and volatile ſpirit; ſee Dr Lewis's Commercium Philoſophico-Technicum, ed. 4to. ann. 1773. p. 382, 407, 436.

Blue, *ſtone* or *powder*, uſed in waſhing of linen, is the ſame with SMALT, either in the lump or powdered.

When the SMALT is taken from the pot, it is thrown into a large veſſel of cold water: this makes it more tractable, and eaſily powdered. Afterwards, when examined after cooling, it is found to be mixed with a greyiſh matter reſembling aſhes, which they call *eſchel*. This grey matter is ſeparated by waſhing, and then the *blue* ſubſtance is powdered and ſifted through fine ſieves, to bring it to what we call *powder-blue*. Phil. Tranſ. N° 396.

Blue, *turnſol*, is a *blue* uſed in painting on wood, made of the ſeed of that plant. It is prepared by boiling four ounces of turnſol in a pint and a half of water wherein lime has been ſlacked. See Turnsol.

Blue, *ultramarine*, a beautiful blue colour, uſed by the painters, prepared from *lapis lazuli*.

Some derive its name, *ultramarine*, q. d. *beyond ſea*, from its being firſt brought into Europe out of India, and Perſia. Others ſay, it is becauſe its colour is deeper than that of the ſea.

This *blue* is one of the richeſt, and moſt valuable colours, uſed in painting.—The preparation conſiſts in firſt calcining the ſtone in an iron pot or crucible, then grinding it very fine on a porphyry; then mixing it up with a paſte made of wax, pitch, maſtick, turpentine, and oil; and at laſt waſhing the paſte well in clear water, to ſeparate the colouring part from the reſt, which precipitates to the bottom, in form of a ſubtile, beautiful, *blue* powder. The water is then poured off, and the powder at bottom is dried in the ſun; and is the true *ultramarine*.

Thoſe who prepare this colour, make uſually four kinds, which they procure by ſo many different lotions: the firſt is always the beſt; and the reſt worſe and worſe to the laſt.—There is *ultramarine* of the firſt kind, ſold for 11*l*. ſterling *per* ounce; and of the laſt, for about 12 or 15*s*.

The common opinion concerning its origin is, that the method of making it was firſt diſcovered in England; and that a member of the Eaſt India company, having a quarrel with his aſſociates, to be revenged of them, made the ſecret public.

Ultramarine muſt be choſen of a high colour, and well ground, which is known by putting it between the teeth, where, if it feel gritty, it is a ſign the triture is not ſufficient.

To know whether it be pure and unmixed, put a little of it in a crucible, and heating it red hot, if the powder has not changed its colour after this trial, it is certainly pure: on the contrary, if you perceive any change, or any black ſpecks in it, it is falſified.

Beſides this, there is another kind, called *common*, or *Dutch ultramarine*; which is only the crude *lapis armenus* and ſmalt well ground, and pulveriſed; the colour whereof, when uſed by the painters, is ſomething like that of the true *ultramarine*, though much leſs valued.

Ultramarine, on account of its high price, is frequently adulterated, either by a precipitation or magiſtery of copper made by alkaline ſalt, or by fine ſmalt. The adulteration in the former way may be diſcovered by pouring ſome diluted ſpirit of nitre on a ſmall quantity of the *ultramarine*; which, if there be any copper, will ſoon diſſolve, and form a greeniſh *blue* ſolution. The other kind of adulteration may be detected by waſhing the ſubſtance in water; the particles of the ſmalt being much groſſer than thoſe of the *ultramarine*: beſides, ſmalt will not mix ſo readily with oil, and in enamel painting they may be eaſily diſtinguiſhed, becauſe ſmalt will flux without any addition, whereas the other requires the addition of ſome vitreous body.

There is a *blue ſubſtance*, ſomething like what Kentman mentions under the name of *cæruleum patavinum*. It was diſcovered in a peat-moſs in Scotland. This earth is at firſt of a white colour, and only grows *blue* by being expoſed to the air. It has alſo ſome reſemblance to what Mr. Da Coſta in his Nat. Hiſt. of Foſſ. p. 103, calls *ochra friabilis cærulea*. It is deſcribed very minutely by Mr. Douglas, who gives an account of his various experiments upon it, and recommends it as a cheap paint in gum-water, particularly as it is levigated and prepared by nature. See Phil. Tranſ. vol. lviii. N° 27. an. 1768.

Many ſimilar ſpecimens of *blue* earth have been diſcovered in England and Ireland, and ſeveral parts of the continent.

Blue-*ball*, a name given in ſome countries to the *Cone*-Wheat.

Blue-*bottle*, in *Botany*, is the Engliſh name of the CYANUS. It is a ſmall plant, with beautiful blue flowers, common in our corn-fields, and of which many beautiful ſpecies are kept in gardens. See Centaury.

The common wild *blue-bottle* of our corn-fields, is eſteemed a cardiac and alexipharmic. Conſerves and ſyrups are prepared from it in ſome places, and ſerve very properly for the making other more efficacious medicines of the ſame intention into form. Schroder and ſome others, have greatly extolled the diſtilled water of the flowers in inflammations, and many other diſorders of the eyes; but this ſeems a leſs warranted matter. The flowers of the large garden kind, are ſaid to be particularly good in diſorders of the womb, and the leaves of either in infuſion in dropſies.

There are ſeveral ſpecies of this plant, commonly cultivated in gardens, for the beauty of their flowers They are almoſt all annuals, periſhing as ſoon as they have ripened their ſeed. In order to have them flower early, their ſeeds ſhould be ſown in July, or the beginning of Auguſt, and when the plants have once got ſtrength, they ſhould be tranſplanted into warm borders, and will endure the cold very well, and will flower very early the next ſummer.

Blue-*cap*, in *Ichthyology*. See Blew-*cap*.

Blue-*mantle*, in *Heraldry*, the title of a purſuivant at arms.

Blue-*nuns*, *filles blues*, thoſe of the order of the Annunciation.

BLUENESS, that quality which denominates a body *blue*; or, ſuch a ſize and texture of the parts that compoſe the ſurface of a body, as diſpoſes them to reflect the blue or azure rays of light, and thoſe only, to the eye.

With reſpect to the *blueneſs* of the ſky, M. de la Hire, after Leonardo da Vinci, obſerves, that any black body, viewed through a thin white one, gives the ſenſation of blue; and this he aſſigns as the reaſon of the *blueneſs* of the ſky, the immenſe depth whereof being wholly devoid of light, is viewed through the air illuminated and whitened by the ſun. For the ſame reaſon, he adds, it is, that ſoot mixed with white makes a blue; for white bodies, being always a little tranſparent, and mixing themſelves with a black behind, give the perception of blue. From the ſame principle he accounts for the *blueneſs* of the veins on the ſurface of the ſkin, though the blood they are filled with be a deep red; for red, he obſerves, unleſs viewed in a clear, ſtrong light, appears a dark brown, bordering on black: being then in a kind of obſcurity in the veins, it muſt have the effect of a black; and this, viewed through the membrane of the vein, and the white ſkin, will produce the perception of *blueneſs*.

In the ſame way did many of the early writers account for the phænomenon of a *blue* ſky; ſuch as Fromondus, Funceius, Otto Guericke, and many others: their opinion long prevailed, and has been adopted by ſome in more modern times, eſpecially by Wolf, and Muſchenbroek. But in the explication of this phænomenon, Sir Iſaac Newton obſerves, that all the vapours, when they begin to condenſe and coaleſce into natural particles, become firſt of ſuch a bigneſs as to reflect the azure rays, before they can conſtitute clouds of any other colour. This, therefore, being the firſt colour they begin to reflect, muſt be that of the fineſt and moſt tranſparent ſkies, in which the vapours are not arrived to a groſſneſs ſufficient to reflect other colours.

M. Bouguer, without having recourſe to the vapours diffuſed through the atmoſphere, in order to account for the reflection of the *blue*-making rays, aſcribes it to the conſtitution of the air itſelf, whereby theſe fainter-coloured rays are incapable of making their way through any conſiderable tract of it. And he accounts for thoſe *blue* ſhadows, which were firſt obſerved by M. Buffon in the year 1742, by the aerial colour of the atmoſphere, which enlightens theſe ſhadows, and in which the *blue* rays prevail; whilſt the red rays are not reflected ſo ſoon, but paſs on to the remoter regions of the atmoſphere. The abbé Mazeas accounts for the phænomenon of *blue* ſhadows by the diminution of light; having obſerved that, of two ſhadows which were caſt upon a white wall from an opaque body illuminated by the moon, and by a candle at the ſame time, that which was enlightened by a candle was reddiſh, and that which was enlightened by the moon was *blue*. However, the true cauſe of this appearance ſeems to be that aſſigned by M. Bouguer, which agrees with the ſolution given of it about the ſame time by Mr. Melville. But inſtead of attributing the different colours of the clouds, as Sir Iſaac Newton does, to the different ſize of thoſe globules into which the vapours are condenſed, Mr. Melville ſuppoſes, that the clouds only reflect and tranſmit the ſun's light; and that, according to their different altitudes, they may aſſume all the variety of colours at ſun-riſing and ſetting, by barely reflecting the ſun's incident light, as they receive it through a ſhorter or longer tract of air: and the change produced in the ſun's rays by the quantity of air through which they paſs, from white to yellow, from yellow to orange, and laſtly, to red, may be underſtood agreeably to his hypotheſis, by applying to the atmoſphere what Sir Iſaac Newton ſays concerning the colour of tranſparent liquors in general, and that of the infuſion of *lignum nephriticum* in particular. Edinb. Eſſ. vol. ii. p. 75. Bouguer Traité d' Optique, p. 368. Newton's Opticks, p. 228; or Prieſtley's Hiſt. of Viſion, &c. p. 436—449.

BLUFF-*head*, or **BLUFF**-*headed*, in the *Sea-language*, is when a ſhip has but a ſmall RAKE forward on, being built with her ſtem too ſtraight up.

Bluff-headed ſhips are oppoſed to thoſe that are ſharp-headed. They are ſhorter, leſs maſted, and ſail cheaper.

BLUING *of iron*, a method of beautifying that metal ſometimes practiſed; as for mourning buckles, ſwords, or the like. The manner is thus: take a piece of grindſtone, and whet-ſtone, and rub hard on the work, to take off the black ſcurf from it; then heat it in the fire, and as it grows hot, the colour changes by degrees, coming firſt to a light, then to a dark gold colour, and laſtly to a blue. Sometimes alſo they grind indigo and ſallad-oil together; and rub the mixture on the work with a woollen rag, while it is heating, leaving it to cool of itſelf.

Among ſculptors we alſo find mention of *bluing* a figure of bronze, by which is meant the heating of it, to prepare it for the application of gold-leaf, becauſe of the bluiſh caſt it acquires in the operation.

BLUNDERBUSS, in the *Military Art*, a ſhort ſort of fire-arm, with a large bore, contrived to carry a number of muſket or piſtol-bullets at once.

The *blunderbuſs* is proper to do execution in a crowd, or to make good a narrow paſſage, as the door of a houſe, ſtair-caſe, or the like.

BLUNT, in *Fencing*.—To fight with *blunts*, is to exerciſe or parade with weapons without points or edges.

BLUNTING *the angles of a battalion*, in the *Military Art*, ſignifies to retrench the four corners, and turn the ſquare into an octagon.

This is done in order to give an opportunity for preſenting the pikes, or firing on all ſides, and was a military evolution formerly much in uſe; but now diſuſed.

BLUSHING, a ſuffuſion, or redneſs of the cheeks, excited by a ſenſe of ſhame, on account of conſciouſneſs of ſome failing, or imperfection.

Bluſhing is ſuppoſed to be produced from a kind of conſent, or ſympathy, between ſeveral parts of the body, occaſioned by the ſame nerve being extended to them all. Thus the fifth pair of nerves being branched from the brain to the eye, ear, muſcles of the lips, cheeks, palate, tongue, and noſe; a thing ſeen, or heard, that is ſhameful, affects the cheeks with *bluſhes*, driving the blood into the minute veſſels thereof; at the ſame time that it affects the eye, and ear. For the ſame reaſon it is, as Mr. Derham obſerves, that a ſavoury thing ſeen or ſmelt affects the glands and parts of the mouth: if a thing heard be pleaſing, it affects the muſcles of the face with laughter; if melancholy, it exerts itſelf on the glands of the eyes, and occaſions weeping, &c. And to the ſame cauſe Dr. Willis aſcribes the pleaſure of kiſſing.

BMI, in *Muſic*. See GAMMUT.

BOA, in *Natural Hiſtory*, an aquatic ſerpent of prodigious ſize, which follows herds of oxen, from which it takes its name. It ſucks the cow's teats, and is found ſometimes in Calabria. One of theſe was killed in the reign of the emperor Claudius, in the belly of which they found a child, which had been ſwallowed whole. The bite cauſes an inflammation of the part bitten.

BOA is a genus of ſerpents in the Linnæan ſyſtem, with abdominal and ſubcaudal *ſcuta*, and without a rattle.

BOADODA *Baſhaw*, in the *Turkiſh Military Orders*, an officer of the *janizaries*, whoſe buſineſs it is to walk every day about the principal parts of the city, with a number of *janizaries* to attend him, to keep order, and ſee that all things are regular, even to the dreſs. This office is for three months, and from this the perſon is uſually advanced to be a *ſerach*.

BOAR, in *Zoology*, *ſus agreſtis*, the *wild boar*. This creature differs from the common domeſtic *hog*, in that the grown animal is not different in colour in the different individuals of the ſame ſpecies, but is always of a ruſty iron-grey. His ſnout is much longer alſo than that of the other; his ears ſhorter and rounder; and both theſe, and his tail and feet, are always black. It differs alſo, in that it is covered with two ſorts of hairs, the one kind long, the other ſhort: theſe laſt ſerve the creature to the ſame purpoſes, as the downy fur which the beaver and otter have under their long hair. It is very commonly wild in Italy, and its fleſh frequently brought to market. Ray.

The *wild* BOAR, among the *Huntſmen*, has ſeveral names, according to its different ages: the firſt year it is called *a pig of the ſaunder*; the ſecond, it is called *a hog*; the third, *a hog-ſteer*; and the fourth, *a boar*; when leaving the ſaunder, he is called a *ſingler* or *ſangler*.

The *boar* generally lives to twenty-five or thirty years, if he eſcapes accidents. The time of going to rut is in December, and laſts about three weeks. They feed on all ſorts of fruits, and on the roots of many plants; the root of fern in particular ſeems a great favourite with them: and when they frequent places near the ſea coaſts, they will deſcend to the ſhores, and demoliſh the tenderer ſhell-fiſh in very great numbers. Their general places of reſt are among the thickeſt buſhes that can be found, and they are not eaſily put up out of them, but will ſtand the bay a long time. In April and May they ſleep more ſound than at any other time of the year, and this is therefore the ſucceſsful time for the taking them in the toils. When a *boar* is rouzed out of the thicket, he always goes from it, if poſſible, the ſame way by which he came to it; and when he is once up, he will never ſtop till he comes to ſome place of greater ſecurity. If it happens that a *ſaunder* of them are found together, when any one breaks away, the reſt all follow the ſame way. When the *boar* is hunted into the wood, where he was bred, he will ſcarce ever be brought to quit it; he will ſometimes make towards the ſides to liſten to the noiſe of the dogs, but retires into the middle again, and uſually dies or eſcapes there. When it happens that a *boar* runs a-head, he will not be ſtopt, or put out of his way by man or beaſt, ſo long as he has any ſtrength left. He makes no doubles or croſſings when chaſed; and when killed makes no noiſe, if an old *boar*; but the ſows and pigs will ſqueak, when wounded.

The ſeaſon for hunting the wild *boar* begins in September, and ends in December, when they go to rut. If it be a large *boar*, and one that has lain long at reſt, he muſt be hunted with a great number of dogs, and thoſe ſuch as will keep cloſe to him; and the huntſman, with his ſpear, ſhould always be riding in among them, and charging the *boar* as often as he can, to diſcourage him: ſuch a *boar* as this, with five or ſix couple of dogs, will run to the firſt convenient place of ſhelter, and there ſtand at bay, and make at them as they attempt to come up with him.

There ought always to be relays alſo ſet of the beſt and ſtauncheſt hounds in the kennel; for if they are of young eager dogs, they will be apt to ſeize him, and be killed or ſpoiled before the reſt come up. The putting collars with bells about the dogs necks, is a great ſecurity for them; for the *boar* will not ſo ſoon ſtrike at them when they have theſe, but will rather run before them. The huntſmen generally kill the *boar* with their ſwords or ſpears; but great caution is neceſſary in making the blows, for he is very apt to catch them upon his ſnout or tuſks, and if wounded and not killed, he will attack the huntſmen in the moſt furious manner. The places in which the wound is to be given with the ſpear, are either between the eyes in the middle of the forehead, or in the ſhoulders; both theſe places make the wound mortal. When this creature makes at the hunter, his ſafety conſiſts merely in courage and addreſs; if he flies for it, he is ſurely overtaken and killed: if the *boar* comes ſtrait up, he is to be received at the point of the ſpear; but if he makes doubles and windings, he is to be watched very cautiouſly, for he will attempt getting hold of the ſpear in his mouth, and if he does ſo, nothing can ſave the huntſman but another perſon's attacking him behind; he will on this attack the ſecond perſon, and the firſt muſt then attack him again; two people will thus have enough to do with him, and were it not for the forks of the *boar*-ſpears that make it impoſſible to preſs forward upon them, the huntſman who gives the creature his death's wound, would ſeldom eſcape falling a ſacrifice to his revenge for it.

The modern way of *boar*-hunting is generally to diſpatch the creature by all the huntſmen ſtriking him at once; but the ancient Roman way was, for a perſon on foot, armed with a ſpear, to keep the creature at bay, and in this caſe the *boar* would run of himſelf upon the ſpear to come at the huntſman, and puſh forward till the ſpear pierced him through.

The wild *boar* was formerly a native of Britain, as appears from the laws of Hoel Dda, Leges Wallicæ, 41. William the Conqueror puniſhed with the loſs of their eyes, any that were convicted of killing him: Charles I. turned out wild *boars* in the New Foreſt, but they were deſtroyed in the civil wars.

The hinder claws of a *boar* are called *guards*.

In the corn he is ſaid to *feed*; in the meadows or fallow fields, to *rout*, *worm*, or *fern*; in a cloſe, to *graze*.

The *boar* is farrowed with as many teeth as he will ever have, his teeth increaſing only in bigneſs, not in number; among theſe there are four called *tuſhes* or *tuſks*, the two biggeſt of which do not hurt when he ſtrikes, but ſerve only to whet the other two loweſt, with which the beaſt defends himſelf, and frequently kills, as being greater and longer than the reſt.

It is very remarkable, that theſe creatures in the Weſt Indies are ſubject to the ſtone: few of them are abſolutely free from it, yet ſcarce any have the ſtones of any conſiderable ſize. It is common to find a great number in the ſame bladder, and they are uſually of about a ſcruple weight, and are angular, and that with great regularity, each having five angles. Phil. Tranſ. N° 36.

Among the ancient Romans, *boar*'s fleſh was a delicacy; a *boar* ſerved up whole was a diſh of ſtate.

The *boar* was ſometimes alſo the military enſign borne by the Roman armies, in lieu of the eagle.

Among phyſicians, a *boar*'s bladder has been reputed a ſpecific for the epilepſy.

The tuſh of the wild *boar* ſtill paſſes with ſome as of great efficacy in quinſies and pleuriſies. See an analyſis of it in Dr. Lewis's edition of Neumann's Works, p. 521.

Boar, in the *Manege*. A horſe is ſaid to *boar*, when he ſhoots out his noſe as high as his ears, and toſſes in the wind.

BOARD, a piece of timber ſawed thin, for the purpoſes of building. See Timber.

We ſay, a *deal-board*, an *oak-board*, &c.—*Boards* thicker than ordinary are called *planks*.—*Boards* formed ready for the coopers uſe are called *clap-boards*.—We have alſo *mill-board*, and *ſcale-board*, ſhaved very thin, for caſes, band-boxes, &c.

Deal-*boards* are generally imported into England ready ſawed, becauſe they are prepared cheaper abroad, by means of ſaw-mills.

Clap-*boards* are imported from Sweden and Dantzic.

Oak-*boards* chiefly from Sweden and Holland; ſome from Dantzic.

Pipe-*boards* are brought from Dantzic. We alſo import white *boards* for ſhoe-makers; mill and ſcale-*boards*, paſt-*boards*, &c. for divers artificers.

Scale-*board* is a thinner ſort, uſed for the covers of primers, thin boxes, and the like. It is ſawed with mills, and imported from Hamburgh.

Board, *feather-edged*, *graining*, *log*, *paſt*, *ſound*, *trail*, *waſte*, *weather*. See the ſeveral adjectives.

Board is alſo uſed for a kind of table or bench, whereon ſeveral artificers perform their work.

In this ſenſe, we ſay a work-*board*, a ſhop-*board*, a taylor's *board*, &c.

Board is alſo uſed for a flat machine, or frame, uſed in certain games, and the like.

In this ſenſe, we ſay a draught-*board*, a cheſs-*board*, a ſhovel-*board*, and the like.

Boards, in *Book-binding*. See Book-binding.

Board, *bureau*, is alſo uſed for an office where accounts are taken, payments ordered, and the like.

In this ſenſe, we ſay the *board* of works, *board* of ordnance, *board* of treaſury, and the like.

Board *of green-cloth*. See Green-cloth.

Board *of trade and plantations*, was eſtabliſhed in its preſent form by king William, in the year 1696. Commercial matters had before this time been generally referred to a fluctuating committee of the privy council: the obvious inconveniences attending this mode of management, induced king Charles II. to erect a ſpecial council of trade in the year 1668, which was ſoon after laid aſide: it was renewed again in 1672, but ſoon diſcontinued; and the former method of reference to committees of the privy council revived. In 1696, a regular and permanent *board* was eſtabliſhed, for ſettling all diſputes and regulations relating to commerce and colonies. This *board*, beſide ſuch of our miniſters of ſtate, who only attend on extraordinary occaſions, conſiſts of a firſt lord commiſſioner, and of ſeven other commiſſioners, with an annual ſalary of one thouſand pounds each.

Board *of trade*, *bureau de commerce*, an office in the French polity, eſtabliſhed in 1723, compoſed of eight perſons of experience in commerce and navigation, where all papers and propoſals relating to the improvement of trade are examined, and all difficulties which occur in affairs of navigation and commerce, either within or without the realm, are diſcuſſed.

Board-*wages* denotes a certain annual ſum allowed to houſhold ſervants for maintenance. *Board-wages*, granted to the menial officers and ſervants of the crown, commenced in 1629, when the neceſſities of king Charles obliged him to retrench the expence of his houſhold, by aboliſhing the greateſt part of the daily tables in his palace, which were eighty in number, and ſubſtituting this annual allowance in their room.

Board, or **Aboard**, in the *Sea-language*, is uſed in ſpeaking of things within a ſhip, or other veſſel.

Hence, to go *aboard* ſignifies to go into the ſhip; to heave over *board*, is to throw a thing out of the veſſel into the ſea; to ſlip by the *board*, is to ſlip down by the ſhip's ſide; *board* and *board*, is when two ſhips come ſo near as to touch one another, or when they lie ſide by ſide.

Weather-board, is that ſide of a ſhip which is to windward.

To *board a ſhip*, is to enter an enemy's ſhip in a fight. See Boarding, *infra*.

To *make a board*, or, as it is otherwiſe expreſſed, to *board it up* to a place, is to turn to windward; and to beat ſometimes upon one tack, and ſometimes upon another. In which it is to be noted, that the farther you ſtand off to one point of the compaſs, the better *board* you will make; and that it is better making *long boards* than ſhort ones, if you have ſea-room. A *long board* is when you ſtand a great way off before you tack or turn; a *ſhort board* is when you ſtand off a little; a *good board* is when we have got up much to windward, or when a ſhip advances much at one tack, and ſails upon a ſtrait line.

To leave a land on *back-board*, is to leave it a-ſtern or behind; the *back-board* being that which, in boats or ſhips, we lean our backs againſt.

BOARDED *floor*. See Floor.

BOARDING *of a ſhip*, an attack made to take her, by entering her decks with a detachment of armed men.

In order to *board* a ſhip, it is beſt to bear directly up with her, and cauſe all your ports to leeward to be beat open, and bring as many guns from the weather-ſide thither as you have ports for; and then lay the enemy's ſhip on board loof for loof, and order your tops and yards to be manned and furniſhed with neceſſaries, and let all your ſmall ſhot be in readineſs; then charge at once with both ſmall and great, and at the ſame time enter your men in the ſmoke, occaſioned by the firing, or by lighted powder-flaſks and an earthen ſhell, called a ſtink-pot, thrown on the enemy's deck, either on the bow of the ſhip, or bring your mid-ſhip cloſe up with her quarter, and ſo enter your men by the ſhrouds, or, if you would uſe your ordnance, it is beſt to board the enemy's ſhip athwart her hawſe, for then you uſe moſt of your great guns, and ſhe only thoſe of the prow. Let ſome of your men endeavour to cut down the enemy's yards and tackle, whilſt others clear the decks, and beat the enemy from aloft; then let the ſkuttles and hatches be broke open with all ſpeed, to avoid trains, and the danger of being blown up by barrels of powder placed under the decks. Thus, your men being in poſſeſſion of the ſails and helm, and the enemy every way ſtowed below the decks, the ſhip is taken, and all lies at your diſcretion.

BOARIA *Lappa*, a name given by the ancient Romans to the fruit or rough balls of the common aparine or cleavers. Pliny calls this plant ſometimes *lappa*, ſometimes *lappago*; and the fruit by the names of *lappæ boariæ*, or *lappæ caninæ*, and ſometimes *canariæ*.

BOAROLA, or **Boarina**, in *Zoology*, the name of a very ſmall bird, deſcribed by Aldrovandus, and ſome others, and ſeemingly the ſame ſpecies with the FLY-*catcher*, or MUSCICAPA.

BOAT, a ſmall, open, floating veſſel, commonly wrought or moved only by rowing; intended chiefly for the navigation of rivers, lakes, and the like.

The *boat* acquires various names, according to its various ſtructure, and the various uſes it is appointed for, and the places where it is to be uſed.—The ſeveral *boats*, and their names are,

A *jolly-boat*, a *long-boat*, a *ſkiffe*, a *pinnace*, a *cutter*, a *lanch*, a *water-boat*, a *yawl*, which are *boats* for ſhips; a *gondola*, a *Greenland-boat*, a *Bermudas-boat*, a *balloon of Siam*, a *horſe-boat*, a *periagua*, a *pleaſure-boat*, a *ponton*, a *canoe*, a *crucle*, a *currycurry*, a *deal-hooker*, a *felucca*, a *ferry-boat*, a *pram*, a *punt*, a *ſhallop*, a *Moſes*, a *tilt-boat*, a *tod-boat*, a *well-boat*, a *wherry*, &c.

The *boats*, or wherries, allowed to ply about London, are either *ſkullers*, wrought by a ſingle perſon with two oars; or *oars*, wrought by two perſons, with each an oar.

De Chales propoſes the conſtruction of a *boat*, which, what burden ſoever it bear, ſhall not only move againſt the current, without either ſails or oars, but alſo advance ſo much the faſter, as the rapidity of the water is greater. Its make is the ſame with that of the others, excepting only a wheel added to its ſide, with a cord, which winds round a roller as faſt as the wheel turns.

Something of the like kind has alſo been ſince done by M. Pitot. Vid. Mem. Acad. R. Scienc. an. 1729. p. 359, and p. 540.

A new attempt, and with great ſucceſs, is alſo ſaid to have been lately made at Vienna.

M. de la Hire has given us an examination of the force neceſſary to move *boats*, both in ſtagnant and running water, either with ropes faſtened to them, or with oars, or with any other machine: wherein, he ſhews, that the larger the ſurface of the oars plunged in the water, and the ſmaller that of the *boat* preſented to the water, is; and again, the longer that part of the oar between the hand and the places where the oar reſts on the *boat*, and the ſhorter that between this laſt point and the water; the freer will the *boat* move, and the greater effect will the oar have. See Oar.

Hence it is eaſy to calculate the force of any machine that ſhall be applied to rowing; v. gr. if we know the abſolute force of all the men who row, it muſt be changed into a relative force, according to the proportion of the two parts of the oar; i. e. if the part out of the veſſel be double the other, and all the men together can act with the force of 900 pounds, we compute firſt, that they will exert 300: which 300, multiplied by the ſurface which the veſſel preſents to the water, gives a ſolid water of a certain weight; which weight may be found, and of conſequence the velocity impreſſed on the veſſel by the oars. Or, the velocity of the oars may be found in the ſame manner, by multiplying the 300 pounds by the ſurface of all the parts of the oars plunged in the water. Nor would there be any difficulty in finding firſt the relative forces, then the abſolute ones; the velocities either of the oars, or of the veſſel, being given, or the proportion of the two parts of the oar.

Boats ſail more ſlowly and heavily over ſhallow, than over deep waters. See an account of experiments for explaining this, in Dr. Franklin's Letter to Sir John Pringle. Experiments, &c. 4to. 5th ed. p. 510.

Boat, *long*, called alſo the *ſhip's boat*, is the largeſt and ſtrongeſt *boat* belonging to a ſhip that can be hoiſted aboard of her. It has a maſt, ſail, and oars, as other *boats*; alſo a tiller to the rudder, which anſwers to the helm of a ſhip.

Her thaughts are the ſeats where the rowers ſit; and her thowls the ſmall pins between which the oars are put when they row.

Inſtead of a *long-boat*, merchant-ſhips in the Mediterranean uſe a LANCH.

A ſhip's *boat* is the very model of a ſhip, and is built in parts in all things anſwerable to thoſe which a ſhip requires, both for ſailing and bearing a ſail; and they bear the ſame names as to all the parts of a ſhip under water, as rake, run, ſtem, ſtern, bow, bildge, &c.

Its uſe is to weigh the anchor, bring goods, proviſion, &c. to or from the ſhip, and other ſervices, as occaſion requires.

The *long-boat* of a man of war may be decked, armed, and equipped for cruiſing ſhort diſtances againſt merchant-ſhips of the enemy, or ſmugglers, or for impreſſing ſeamen, &c.

The terms uſed in navigating a *boat* are, to *trim the boat*, that is, to keep her even; to *wind the boat*, i. e. to bring her head the other way; *free* or *bale the boat*, i. e. to fling out the water; *man the boat*, i. e. let ſome men go to row the *boat*; to *moor the boat*, i. e. to faſten it with two ropes, ſo that one ſhall counteract the other; *fend the boat*, i. e. ſave her from beating againſt the ſhip's ſides.

The *boat*'s gang includes thoſe who uſe to row in the *boat*, which are the cockſwain and his gang, to whom the charge of the *boat* immediately belongs.

A *bold boat* is that which will endure a rough ſea well.

A good *long-boat* will live in any grown ſea, if the water be ſometimes freed, unleſs the ſea break very much. The rope by which it is towed at the ſhip's ſtern, is called the *boat-rope*, to which, in order to keep the *boat* from ſheering, they add another, called a *geſt-rope*.

To ſave the bows of the *boat*, which would be torn out with the twitches which the ſhip under ſail gives it, they ſwite her, i. e. make faſt a rope round by the gunwale, and to that faſten the *boat*.

Boats, *train of*, a number of ſmall veſſels faſtened to each other, aſcending up the Loir in France, by ſails when the wind ſerves, otherwiſe towed by men, ſometimes to the number of ſeventy or eighty to a ſingle rope.

Boat, *coach*, *bateaux coches*, more frequently called *water-coaches*, are large covered *boats*, uſed chiefly on the river Seine, for the convenience of paſſengers, and conveyance of all ſorts of goods.

Boat, *ſcapha*, in *Surgery*, a ſpecies of BANDAGE, uſed when the crown of the head and the part between that and the forehead are to be bound. It is likewiſe called *tholus diocleus*.

Boat-*fly*, a water-inſect, whoſe back is ſhaped much like the bottom of a *boat*; the hind-legs, which are thrice as long as the fore, aptly enough reſembling a pair of oars. Accordingly, contrary to all other creatures, he ſwims, ſays Moufet, on his back.

Boat-*hook*, an iron hook, with a ſharp point on the hinder part of it, fixed on a long pole, uſed in bringing it to, or puſhing it from any other *boat*, ſhip, &c.

BOATING, a kind of puniſhment in uſe among the ancient Perſians for capital offenders.

The manner of *boating* was thus: the perſon condemned to it being laid on his back in a *boat*, and having his hands ſtretched out, and tied faſt on each ſide of it, had another *boat* put over him, his head being left out through a place fit for it. In this poſture they fed him, till the worms, which were bred in the excrements he voided as he thus lay, eat out his bowels, and ſo cauſed his death, which was uſually twenty days in effecting, the criminal lying all this while in moſt exquiſite torments. Prid. Connect. tom. ii. p. 368.

BOATSWAIN, an officer on board a ſhip, who has charge of her rigging, ropes, cables, anchors, ſails, flags, colours, and pendants; and is alſo to take care of the long-boat, and its furniture, and to ſteer her, either by himſelf, or his mate.

He calls out the ſeveral gangs aboard, to the due execution of their watches, works, &c.—He is likewiſe a kind of a PROVOST-marſhal, who ſees and puniſhes all offenders ſentenced by the captain, or a court-marſhal of the fleet.

Boatswain's *mate* is an aſſiſtant of that officer, who has the peculiar command of the long-boat for the ſetting forth of anchors, weighing or fetching home an anchor, warping, towing, or mooring. He is alſo to give an account of his ſtore.

This officer is the ſame with what the Dutch called *boots-man's mael*; the Germans, *unter boots-mann*; and the French, *boſſeman*, or *ſecond contre-maitre*.

BOB *of a pendulum*, the ſame with its ball; except that the former is uſed in ſpeaking of ſhort PENDULUMS, the latter of long ones.

Bob, in *Ringing*, denotes a peal conſiſting of ſeveral courſes, or ſets of changes.

Bob-*ſtay*, in *Sea-language*, a rope uſed to confine the bowſprit of a ſhip downward to the ſtem.

BOBARTIA, in *Botany*, a genus of the *triandria digynia* claſs of plants, the *calyx* of which is imbricated, and contains only a ſingle flower; the corolla is a glume, bivalve, and placed on the germen; the ſeed is ſingle, of an oval figure, and contained in the cup.

BOBBING, or **Bobbin**, a little piece of wood turned into a cylindric form, whereon thread is wound, to be uſed in the weaving of bone-lace.

The French alſo give the denomination *bobine* to what among us is more properly called a *ſpool* or *quill.* In which they are alſo followed by ſeveral Engliſh.

In this general ſenſe, *bobbins* are uſed to wind thread, worſted, hair, cotton, ſilk, gold, and ſilver; and they are of different lengths and ſizes, according to the materials which are ſpun or wound.

BOBBING, among *Fiſhermen*, a particular manner of FISHING for eels different from *ſniggling*.

Bobbing for eels is thus performed: they ſcour well ſome large lobs, and with a needle run a twiſted ſilk through them from end to end, taking ſo many that they may wrap them about a board a dozen times at leaſt: then they tie them faſt with the two ends of the ſilk, that they may hang in ſo many hanks; which done, they faſten all to a ſtrong cord, and, about an hand-breadth and an half above the worms, fix a plummet three quarters of a pound weight, and make the cord faſt to a ſtrong pole. With this apparatus fiſhing in muddy water, they feel the eels tug luſtily at the bait; when they think they have ſwallowed it ſufficiently, gently draw up the rope to the top, and bring them aſhore.

BOBISATIO, or BOCEDISATIO, in *Muſic*, denotes the uſing the ſeven ſyllables *bo*, *ce*, *di*, *ga*, *lo*, *ma*, *ni*, to expreſs the ſeven muſical notes, in lieu of the ſix uſual ones introduced by Aretine, *ut*, *re*, *mi*, *fa*, *ſol*, *la*, as has been ſometimes done by the Netherland and German muſicians ſince the beginning of the ſeventeenth century, to avoid the mutation neceſſary in the uſe of theſe latter.

BOCA, in *Ichthyology*, the name given by Paulus Jovius to the *boce* of Ariſtotle, called the *boops*, from the largeneſs of its eyes. It is a ſpecies of the SPARUS, and is diſtinguiſhed by having four parallel longitudinal gold and ſilver-coloured lines on each ſide. Gaza and ſome others call it *voca*; and the Italians, *boga*.

BOCAMOLLE, in *Zoology*, a name given by ſome to a very large and long Braſilian fiſh, more uſually called by its Braſilian name, *pira-jurumenbeca*.

BOCARDO, in *Logic*, the fifth mode of the firſt figure of ſyllogiſms, wherein the firſt propoſition is particular and negative; the ſecond, univerſal and affirmative; and the third, or concluſion, particular and negative. Thus:

BOC *Some animal is not man.*
AR *Every animal has a principle of ſenſation.*
DO *Therefore ſomething has a principle of ſenſation, that is not man.*

BOCCA, in *Zoology*, a name by which ſome authors have called the fiſh, more commonly known by the name of the URANOSCOPUS, or STAR-*gazer*.

It is a ſpecies of the TRACHINUS, diſtinguiſhed from the other kinds by having a great number of beards on the lower-jaw.

BOCCA, in *Glaſs-making*, the round hole in the working furnace, by which the metal is taken out of the great pots, and by which the pots are put into the furnace. This is to be ſtopped with a cover made of earth and brick, and removeable at pleaſure, to preſerve the eyes of the workmen from the violence of the heat.

BOCCALE, or BOCAL, a liquid meaſure uſed at Rome, anſwering to what among us is called a bottle, being equivalent to about an Engliſh quart. Seven *boccales* and an half make the *rubbia*.

BOCCARELLA, in the *Glaſs-manufacture*, a ſmall hole or aperture of the furnace, one of which is placed on each ſide the BOCCA, almoſt horizontally with it. Out of them the ſervitors take coloured or finer metal from the piling pot.

BOCCONIA, in *Botany*, ſo called after Paul Boccone, a conſiderable botanical writer in Sicily; the name of a genus of the *dodecandria monogynia* claſs of plants; the characters of which are theſe: the flower hath four narrow petals, with a great number of very ſhort ſtamina: in the centre is ſituated a roundiſh germen, contracted at both ends, which afterward becomes an oval fruit, contracted at both ends, having one cell, full of pulp, including a ſingle round ſeed. There is but one ſpecies of this genus known at preſent, which is the branching *bocconia*, with a woolly cow-parſnip leaf; or, as it is called by Sir Hans Sloane, the greater tree-celandine, with oak leaves.

It is very common in Jamaica, and ſeveral other parts of America, where it grows to the height of ten or twelve feet; having a ſtrait trunk as large as a man's arm, which is covered with a white ſmooth bark. The whole plant abounds with a yellow juice, like the greater celandine, which is of an acrid nature; ſo that it is uſed by the Americans, to take off warts and ſpots from the eyes.

The ſingular beauty of this plant renders it worthy a place in every curious collection; and the Indians are very fond of it, for Hernandez tells us, their kings planted it in their gardens.

BOCE, in *Ichthyology*; ſee BOCA.

BOCKING *herring*, in the *Dutch Trade*, ſignifies the ſame with BLOATED herring among us.

BOCK-LAND, or BOOK-LAND, formerly denoted that which we now call FREEHOLD-*land*, or CHARTER-*land*; and it was by that name diſtinguiſhed from FOLK-*land*, which was COPYHOLD-*land*.

In *Ancient Law Writers*, it denotes a poſſeſſion or inheritance held by evidence in writing.

The word was doubtleſs written *bock-land*, quaſi *book-land*, anſwering to free land. It ſtood oppoſed to FOLK-LAND, which was that held without writing.

BODIANO, in *Zoology*, the name of an American fiſh, of the ſize of a perch, with a purple back, and yellow ſides and belly. It is more uſually known among authors by the name PUDIANO.

BODLEIAN *Library*. See LIBRARY.

BODTY, in *Zoology*, the name of a ſpecies of American ſnake of the *amphiſbæna* kind, called alſo IBIJARA.

BODY, in *Phyſics*, a ſolid, extended, palpable ſubſtance; of itſelf merely paſſive, and indifferent either to motion or reſt, but capable of any ſort of motion, and of all figures and forms.

The word alludes to the Saxon *bodige*, *ſtature*; and to the Belgic *boode*, *a cover*, q. d. *the tabernacle of the ſoul*.

Body is compoſed, according to the Peripatetics, of *matter*, *form*, and *privation*; according to the Epicureans and Corpuſcularians, of an aſſemblage of hooked, heavy *atoms*; according to the Carteſians, of a certain quantity of *extenſion*; according to the Newtonians, of a ſyſtem, or aſſociation of ſolid, maſſy, hard, impenetrable, moveable *particles*, ranged or diſpoſed in this or that manner; whence reſult *bodies* of this or that form; diſtinguiſhed by this or that name.

Theſe elementary or component particles of *bodies* muſt be infinitely hard; vaſtly harder than the *bodies* compounded of them; nay, ſo hard as never to wear, or break in pieces. “This, Sir Iſaac Newton obſerves, is “ neceſſary, in order to the world's perſiſting in the “ ſame ſtate, and *bodies* continuing of the ſame nature “ and texture in ſeveral ages.”

BODIES, *motion of*. See MOTION.

BODY, *affections of*. See AFFECTION.

BODY, *modes of*. See MODE.

BODY, *elements of*. See ELEMENT.

BODIES, *the exiſtence of*, is a thing incapable of being demonſtrated: the order in which we arrive at the knowledge of their exiſtence, ſeems to be this.—We firſt find we have ſenſations; we then obſerve we have not thoſe ſenſations when we pleaſe: and thence conclude, we are not the abſolute cauſe thereof, but that there is required ſome other cauſe for their production. Thus we begin to know, that we do not exiſt alone, but that there are ſeveral other things in the world together with us.—But this, Dr. Clarke owns, comes far ſhort of a demonſtration of the exiſtence of a corporeal world: he adds, that all the proof we have of it is this; that God would not create us ſuch, as that all the judgments we make about things exiſting without us, muſt neceſſarily be falſe. If there be no external bodies, it follows, that it is God who repreſents the appearance of *bodies* to us; and that he does it in ſuch a manner as to deceive us.—Some think this has the force of a demonſtration: “It “ is evident God cannot deceive us; it is evident he “ does deceive and delude us every moment, if there be “ no *bodies*; it is evident, therefore, there muſt be *bodies*.”—But the minor of this argument may be denied without any ſuſpicion of ſcepticiſm.

“In effect, were it poſſible for *bodies*, i. e. ſolid, figured, &c. ſubſtances to exiſt without the mind, “ correſponding to thoſe ideas we have of external objects, yet how were it poſſible for us to know it? “ Either we muſt know it by ſenſe, or reaſon; as for “ our ſenſes, by them we have only the knowledge of “ our ſenſations or ideas: they do not inform us, that “ things exiſt without the mind, or unperceived, like “ thoſe which are perceived. It remains, therefore, that “ if we have any knowledge at all of external things, it “ muſt be by reaſon inferring their exiſtence from what “ is immediately perceived by ſenſe. But how ſhall “ reaſon induce us to believe the exiſtence of *bodies* “ without the mind, when the patrons of matter themſelves deny, that there is any neceſſary connexion betwixt them and our ideas? In effect, it is granted “ on all hands, and what happens in dreams, phrenſies, “ deliriums, extaſies, &c. puts it beyond diſpute, that “ we might be affected with all the ideas we have now, “ though there were no *bodies* exiſting without, reſembling them. Hence, it is evident, the ſuppoſition of “ external *bodies* is not neceſſary for the production of “ our ideas.” Berkley's Princ. of Human Knowledge, p. 59. See ABSTRACTION and EXISTENCE.

Body generally ſtands contradiſtinguiſhed from *ſpirit*;

though, in Spinoſa's and the Chineſe ſyſtem, this difference is ſet aſide, and *body* and *ſpirit* ſuppoſed to be the ſame ſubſtance under different modifications. Mr. Hobbes likewiſe affirms *ſpirits* to be *bodies*, the exiſtence of any ſubſtance not corporeal being rejected by him. See alſo Dr. Prieſtley on Matter and Spirit.

The Chineſe philoſophers reaſon thus: among an infinite number of properties, all equally contained in the nature of being, we are ſometimes affected with its extenſion, mobility, ſolidity, figure, and colour; in which caſe we call it ſimply *body*, or MATTER. Sometimes we add moving force to the former, which conſtitutes what we call a living being. Sometimes, again, we conſider it as poſſeſſed with ſenſe, will, and underſtanding; in which caſe we allow it a ſoul, mind, or ſpirit. On this footing, the ſeveral properties of being, however different from each other in the impreſſions they make on us, are no ways different as to their real nature; ſince they all exiſt neceſſarily with an infinity of others, and partake alike of one and the ſame infinite and unalterable exiſtence. Mem. Acad. Inſcript. tom. ix. p. 364.

The true notion of *body* is hard to frame, and philoſophers are not yet agreed on it; the rather as the purſuit leads to the perplexing controverſy *de compoſitione continui*. Some place the eſſence of *body* in ſolidity, or impenetrability; others in weight or gravity; others in extenſion; others in mobility. According to the firſt of theſe, *body* is defined as ſomewhat that perfectly fills a determinate quantity of ſpace or extenſion, ſo as neceſſarily to exclude all other *bodies* from being comprehended within the ſame dimenſions. According to the ſecond, *body* is defined as a thing which is receptive and communicative of motion or progreſſion. Sir W. Petty repreſents *body* as matter under ſome figure. The Carteſians define it any thing extended every way, or towards all ſides. According to Wolfius, the eſſence of *body* conſiſts in its compoſition, or mechaniſm of parts, from which all its other properties reſult, even extenſion itſelf, ſince we cannot conceive a compounded *body* otherwiſe than as extended, or conſiſting of parts, at leaſt poſſible if not actual ones.

The firſt or internal PRINCIPLES of *bodies*, which are not reſolvable into others, are called ELEMENTS.

LIGHT or FIRE is found an ingredient in all *bodies*; which ſome indeed, eſpecially among the chemiſts, make to be the ſame with the principle SULPHUR.

The Peripatetics maintain, that beſides the common matter of all *bodies*, there is ſomething in every ſpecies, which diſcriminates it from every other, and makes it what it is: this they call *form*; which, becauſe all the qualities, and other accidents of the *body*, muſt depend on it, they alſo imagine to be a ſubſtance, and indeed a kind of ſoul, that, united to the groſs matter, with it compoſes a natural *body*.

The motion of *bodies* is either *local* or *inteſtine*. The latter is not ſenſible; but may be inferred from a great number of operations. Dr. Hook does not deſpair, but that, under further helps and improvements of the organ of hearing, we may come at length to diſcern the inteſtine motions of *bodies* by the ear.

As to the *colours* of *bodies*, Sir Iſaac Newton ſhews, that *bodies* appear of this or that colour, as they are diſpoſed to reflect moſt copiouſly the rays of light originally endued with ſuch colours. But the particular conſtitutions, whereby they reflect ſome rays more copiouſly than others, remain yet to be diſcovered. However, ſome of the laws and circumſtances thereof he delivers in the following propoſitions.

1. Thoſe ſurfaces of tranſparent *bodies* reflect the greateſt quantity of light, which have the greateſt refracting power; i. e. which intercede mediums, that differ moſt in their refractive denſities: and in the confines of equally refracting mediums, there is no reflexion. 2. The leaſt parts of almoſt all natural *bodies* are in ſome meaſure tranſparent; and the opacity of thoſe *bodies* ariſes from the multitude of reflexions cauſed in their internal parts. 3. Between the parts of opake and coloured *bodies* are many ſpaces, either empty, or replete with mediums of different denſities; as water between the tinging corpuſcles wherewith a liquor is impregnated, air between the aqueous globules that conſtitute clouds or miſts: and even ſpaces void both of air and water, between the parts of hard *bodies*, are not wholly void of all ſubſtance. 4. The parts of the *bodies*, and their interſtices, muſt be leſs than of ſome definite bigneſs, to render them opake and coloured. 5. The tranſparent parts of *bodies*, according to their ſeveral ſizes, reflect rays of one colour, and tranſmit thoſe of another, for the ſame reaſon that thin plates or bubbles do reflect or tranſmit thoſe rays; and this appears to be the ground of all their colour. 6. The parts of *bodies*, on which their colours depend, are denſer than the medium which pervades their interſtices. 7. The bigneſs of the component parts of natural *bodies*, may be conjectured from their colours; on this principle, that tranſparent corpuſcles, of the ſame thickneſs and denſity with a plate, do exhibit the ſame colour. 8. The cauſe of reflexion is not the impinging of light on the ſolid or impervious parts of *bodies*, as commonly believed. 9. *Bodies* reflect and refract light, by one and the ſame power variouſly exerciſed, in various circumſtances. See COLOUR.

BODY, *ſolid*, that whoſe particles cohere, or are ſome way connected to each other. See SOLID.

BODY, *fluid*, that whoſe particles eaſily ſlide over each other, and are of a fit ſize to be agitated by heat; or that whoſe particles do not cohere, but are eaſily put in motion by the ſmalleſt force.

BODY, *rough*, that whoſe ſurface is beſet alternately with eminences and cavities, in contradiſtinction from a ſmooth *body*.

BODIES, *ductile*, thoſe which being ſtretched, do not break, but extend one way as much as they ſhrink another. Of theſe ſome are hard and malleable, as metals; others ſoft or viſcid, as glues, gums, &c. Mem. Acad. Scien. an. 1713. p. 268.

BODIES, *flexible*, thoſe which admit of being bent without breaking: ſuch are thread, wire, fibres, and even glaſs, when ſpun very fine. Theſe are contradiſtinguiſhed from brittle *bodies*.

BODIES, *ſpecific gravity of*. See GRAVITY, and WEIGHT.

BODY, *denſe*. See DENSITY.

BODY, *rare*. See RARE.

BODY, *luminous* or *lucid*, that which emits its own rays, or ſhines by its own light.

BODY, *illuminated*, that which diffuſes the light of another by reflexion, or which ſhines by borrowed light.

BODY, *opake*, that which intercepts the rays of light, or prevents their paſſage through it.

BODY, *tranſparent*, *diaphanous*, or *pellucid*, that which tranſmits the rays of light. See TRANSPARENCY.

BODY, *the inertia of*, denotes that power whereby it reſiſts motion. See VIS *inertiæ*.

The mutual ACTION of *bodies* on each other, is by Bacon reſolved into a principle of aſſimilation; by Hook, into congruity and incongruity; by Newton, into that of attraction and repulſion; and by others, into that of affinity, or ſimilarity and diſſimilarity, &c. See Mem. Acad. des Scien. an. 1718. p. 2560.

BODIES, *ſimple*, thoſe which are not compounded of others: ſuch are the four elements, and the celeſtial *bodies*, ſuppoſed to be. See SIMPLE.

BODIES, *mixt*, thoſe formed of a mixture of the ELEMENTS. Theſe are divided by philoſophers into perfectly and imperfectly *mixt*.

Others divide mixt *bodies* into *ſimple* and *organical* MIXTS.

BODIES, *inorganical* or *ſimply mixt*, are thoſe, whoſe properties, powers, and actions depend ſolely on the temperature of the elements they are compoſed of: ſuch are minerals.

BODIES, *organical mixt*, thoſe whoſe functions are performed by means of the mechanical ſtructure of the parts: ſuch are vegetables and animals.

BODY, *ſimple organical*, that which is not compoſed of any other organical *bodies* or parts.

BODY, *compound organical*, that whoſe component parts are organical *bodies*, being compound beings; and every compound being a machine, it follows, that every *body* is a machine. On which principle is founded the modern mechanical philoſophy.

We may add, that what the Peripatetics call *mixt bodies*, ſome late writers, after Becker and Stahl, call *compound bodies*; which they ſubdivide into *aggregates*, *mixts*, and *compounds* properly ſo called.

Thus, *mixed bodies*, according to theſe writers, are thoſe compoſed merely of principles; *compound bodies*, thoſe formed immediately of mixts into any determinate ſingle things; *aggregate bodies*, thoſe formed of ſeveral compounds into any entire parcel or ſyſtem. See AGGREGATE *bodies*.

BODIES, *homogeneous*. See HOMOGENEOUS.

BODIES, *congruous*, thoſe whoſe particles have the ſame magnitude and velocity, or at leaſt harmonical proportions of magnitude and velocity.

BODIES, *incongruous*, thoſe which have neither the ſame magnitude, nor the ſame degree of velocity, nor an harmonical proportion of magnitude and velocity.

BODY, *hard*. See HARD.

BODY, *volatile*, that which riſes by the force of heat. See VOLATILE.

BODIES are divided into *animate* and *inanimate*; i. e. into thoſe informed by a ſoul, and thoſe which are not; or thoſe that have life, and thoſe that have none.

Some conſider *bodies*, either as *natural* and *ſenſible*; viz. as formed by phyſical cauſes, and cloathed with phyſical qualities (in which ſenſe, *body* makes the object of PHYSICS);

PHYSICS): or, as *intellectual* or *quantitative*, in the general or abſtract; and according to three dimenſions: in which ſenſe, *body* makes the ſubject of geometry.

Bodies, *alkaline*, *conſiſtent*, *elaſtic*, *fixt*, *heterogeneous*, *atmoſphere of*, *deſcent of*, *mercury of*. See the ſeveral articles.

Body, with regard to animals, is uſed in oppoſition to *ſoul*; viz. for that part of an animal, compoſed of bones, muſcles, canals, juices, nerves, &c.

In which ſenſe, *body* makes the ſubject of comparative anatomy.

Body, *the human*, conſidered with regard to the various voluntary motions it is capable of performing, is an aſſemblage of an infinite number of levers, drawn by cords: if conſidered with regard to the motions of the fluids it contains, it is another aſſemblage of an infinity of tubes, and hydraulic machines. Laſtly, if conſidered with regard to the generation of thoſe ſame fluids, it is another infinite aſſemblage of chemical inſtruments and veſſels; as, philtres, alembics, recipients, ſerpentines, &c. and the whole is a compound which we can only admire, and whereof the greateſt part eſcapes our admiration itſelf.—The principal chemical apparatus in the whole *body*, is that wonderful laboratory the brain: it is in this, that precious extract, called animal ſpirits, the only material mover of the whole fabric, is ſecreted from the blood.

In the machine of the *animal body*, the retainers to the doctrine of trituration maintain the brain to do the office of the beam of a preſs; the heart, of a piſton; the lungs, of a bellows; the mouth, of a mill-ſtone; and the teeth, of peſtles; the ſtomach, of a preſs; the inteſtines, of a reſervoir; the veſſels, of ſieves or ſtrainers; and the air, of a *pondus*, or ſpring, that ſets the machine a going.

The ſoul, Rohault obſerves, is not the form of the human *body*, as the Peripatetics aſſert. So far is animal life from depending on the ſoul, becauſe of its ceaſing when the ſoul is ſeparated, that, on the contrary, the continuance of the ſoul depends entirely on the ſtate of the *body*; the former never quitting the latter, till its œconomy or order is interrupted.

The Carteſians maintain the ſoul and *body* to be too diſproportionate, for thoughts or ideas of the ſoul to be cauſed by the motions of the *body*, and *vice verſa*: thus their reciprocal motions, not being able to be the direct cauſe of the one and the other, are only deemed the occaſion, or occaſional cauſe. God, on occaſion of the motion of a *body*, impreſſes an idea or ſenſation on the ſoul; and again, on occaſion of an idea of the ſoul, communicates a motion to the *body*: of conſequence, God is the only agent in the whole intercourſe between ſoul and *body*.

According to Mr. Locke, there is no contradiction in ſuppoſing, that the firſt eternal thinking Being, ſhould, if he pleaſed, give to certain ſyſtems of created ſenſeleſs matter, put together as he thinks fit, ſome degrees of ſenſe, perception, and thought: though it is no leſs than a contradiction, to ſuppoſe that matter (which is evidently in its own nature void of ſenſe and thought), ſhould be that eternal firſt thinking Being. Eſſay on Hum. Underſtand. book iv. chap. 3. § 6.

Phyſicians divide the *body* into ſolids, and fluids.—Alſo into venters, or cavities, the head, *thorax*, and lower venter.

The reſt of the *body* they call members, or extremities.

It appears that both the height and the breadth of the human *body* are actually different in different parts of the day; ordinarily it is an inch more in the morning than at night. The *body* ceaſes to grow in height, when the bones are arrived at a degree of firmneſs and rigidity, which will not allow of farther extenſion by the effort of the heart, and motion of the blood. Phil. Tranſ. abr. vol. vii. N° 383.

This alternate increaſe and decreaſe of our *bodies* depends very much upon ſleep, meals, exerciſe, &c. and is greatly *involuntary*; but M. L'Abbé de Fontenu, diſcovered by attention, that there are alſo alternate increaſes and diminutions both of the height and breadth of our *bodies*, that may be ſaid to be *voluntary*, becauſe they do not depend ſo much on ſleep, eating, &c. but only on the different poſtures into which we put ourſelves V. *ut ſupra*; and Mem. of the A. D. S. an. 1725. H. 16.

Body, *faculties of the*. See Faculty.

Body is alſo applied by anatomiſts to ſeveral particular parts of the animal fabric.—As, the callous *body* of the brain, the cavernous or ſpongeous *bodies* of the *penis*, &c. See Corpus *calloſum*, Corpora *cavernoſa*, &c.

Body, *reticular*. See Reticular.

Body, in ſpeaking of a horſe, denotes the cheſt, but chiefly the flanks.

A horſe is ſaid to have a good *body*, when he is full in the flank; a light *body*, when he is thin or ſlender in the flank. If the laſt of the ſhort ribs be at a conſiderable diſtance from the haunch-bone, though ſuch a horſe may have a tolerable *body* for a time, if he be much laboured, he will loſe it. It is a general rule never to buy a horſe that is light-bodied and fiery, becauſe he will preſently deſtroy himſelf.

Body *of a piece of ordnance*, that part comprehended between the center of the trunnions and the caſcabel. It ought always to be more fortified than the reſt. See Cannon.

Body *of a pump*, the thickeſt part of the barrel or pipe of a pump, within which the piſton moves.

Body, in *Geometry*, denotes the ſame with solid.

Bodies, *regular* or *platonic*, are thoſe which have all their ſides, angles, and planes, ſimilar and equal.

Of theſe there are only five; viz. the *tetrahedron*, conſiſting of four angles; the *octahedron*, of eight; the *icoſahedron*, of twenty; the *dodecahedron*, of twelve pentagons; and the cube, of ſix ſquares. See Tetrahedron, &c.

Bodies, *celeſtial*, are by ſome divided into two kinds, *ſolid* and *fluid*. See obſervations on their figures, by M. Mapertuis, in the Mem. of the A. D. S. an. 1734. p. 55.

Celeſtial ſolid bodies, are thoſe which appear or are ſenſible to us, either by their own light, or the light of others reflected from them.

Celeſtial fluid bodies, are only different kinds of Æther, of which Hook makes ſeveral, ſome more fluid and ſubtile than others.

Body, *ſpiritual* or *pneumatic*, that which is not palpable or groſs enough for our feeling, as the air, light, &c.

Body, in *Law*.—A man is ſaid to be bound or held in *body and goods*; that is, he is liable to remain in priſon, in default of payment.

In France, by an ordonnance of 1667, all reſtraints of the *body*, for civil debts, are null after four months, unleſs the ſums exceed two hundred livres.

A woman, though in other reſpects ſhe cannot engage her perſon but to her huſband, may be *taken by the body*, when ſhe carries on a ſeparate trade.

Body *of the place*, in *Fortification*, denotes either the buildings incloſed, or more generally the incloſure itſelf. Thus, to conſtruct the *body* of the place, is to fortify or incloſe the place with baſtions and curtains.

Body is alſo uſed for an aſſemblage of ſeveral different things collected into one; more particularly a number of perſons united into a company or college.

A ſtate or nation, under the adminiſtration of one ſovereign, is called a *body politic*. All large empires are unnatural, becauſe the relation between the head and limbs is here too remote. No *body*, either natural or politic, can long remain ſound without exerciſe. See Corporation.

Body, *corps*, in *War*, is an aggregate or aſſemblage of forces, horſe and foot, united and marching under ſome chief.

An army, ranged in form of battle, is divided into three *bodies*: the van-guard, the rear-guard, and the main *body*; which laſt is ordinarily the general's poſt.

Body *of reſerve*, in the *Military Art*, a draught or detachment of a number of forces out of an army, who are only to engage in caſe of neceſſity.

Body, in matters of *Literature*, a name given to a collection of whatever relates to any particular ſcience: thus we ſay, the *body* of the canon law; the *body* of the Saxon law. King James I. had a deſign to compile a *body* of the Engliſh law.

The *body* of the civil law conſiſts chiefly of the Inſtitutes, Pandects, Code, and Novels. A *gloſſated* body, is that to which gloſſes are added in the margin, compoſed by ſeveral lawyers.

Body is alſo uſed figuratively for conſiſtence, ſolidity, and ſtrength. In this ſenſe, we ſay the *body* of a cloth, wine, &c.

Vintners have divers arts of increaſing or diminiſhing the *body* of wine.

Body, among *Painters*.—A colour is ſaid to *bear a body*, when it is capable of being ground ſo fine, and mixing with the oil ſo entirely, as to ſeem only a thick oil of that colour; as white lead, lamp black, vermillion, lake, indigo, &c. But verditers, ſmalts, &c. will not embody with the oil, but are ſtill apt to ſeparate from it in working.

BOEDROMIA, in *Antiquity*, from βοηδρομος, *helper*, derived from βοαω, *I cry*, and δρεμω, *I run*; ſolemn feaſts held at Athens, in memory of the ſuccour brought by Ion to the Athenians, when invaded by Eumolpus ſon of Neptune, in the reign of Erectheus.

Plutarch gives another account of the *Boedromia*, which, according to him, were celebrated in memory of the victory obtained by Theſeus over the Amazons, in the month *Boedromion*; which was, in the ancient chronology, the third month of the Athenian year. It conſiſted of thirty days, and anſwered to the latter part of our Auguſt and beginning of September.

BOERHAAVIA, in *Botany*. See HOG-WEED.

BOG, a moiſt, rotten ſpot of earth, which ſinks and gives way to the weight of the body, formed of graſs and plants putrified by ſome ſpring; frequent, eſpecially in Ireland.

The word may be derived from the Italian *buca*, *a hole*; or rather from the Belgic *boogen*, *to bend*; on account of its giving way when trod upon.

In this ſenſe, *bog* amounts to much the ſame with what in other places are called *moſſes*, *marſhes*, *fens*, &c.

In Ireland they diſtinguiſh between a *turf-bog*, called alſo *red-bog*, out of which turf or peat is dug; and a *quaking-bog*, which will ſink under a man in the place where he ſtands to a conſiderable depth, and riſe before and behind proportionably: underneath, is frequently clear water, into which a perſon often ſlips to the middle, upon breaking the ſurface.—*Quaking-bogs* frequently turn into *turf-bogs*.

Every *red-bog* is encompaſſed with a deep marſhy ſloughy ground, called the *bounds of the bog*.—Horns and ſkeletons of mooſe-deer are ſometimes found in *bogs* fourteen feet deep.

The inconveniences of *bogs* are, that a conſiderable part of the kingdom is rendered uſeleſs by them: they alſo keep people at a diſtance from each other, and thus hinder buſineſs from going forward. They occaſion the roads to be crooked and circuitous to avoid them: they are a great deſtruction to cattle, the chief commodity of Ireland; which are encouraged by the graſs growing on the edges of the *bogs* to venture in, where they are loſt. The ſmell and vapour ariſing from them is accounted unwholſome, and the fogs putrid and ſtinking. Add, that they corrupt the water, both as to its colour and taſte.

Bogs have alſo their uſes: moſt of the people in Ireland have their firing from them; the wood being impolitickly deſtroyed, and little pit-coal yet diſcovered. The Iriſh could hardly do without ſome *bogs*.—The natives had anciently another advantage from *bogs*; viz. that by means of them they were preſerved from the conqueſt of the Engliſh: and it ſeems to be from the remembrance of this that they ſtill chooſe to build near *bogs*.

As to the origin and formation of *bogs*, it is to be obſerved, that there are few places, in the northern world, which have not formerly been as famous for them as Ireland now is: every wild, ill-inhabited country has them: the *loca paluſtria*, or *paludes*, to which the ancient Gauls, Germans, and Britons retired when beaten, appear to be no other than what we now call *bogs*. The like may even ſtill be found in the barren parts of Italy, as Liguria.

Boggy lands upon levels are generally called *fens* with us; and what our farmers particularly underſtand by the term *bog-land*, is that ſort of *bog* which lies among hills, or between two eminences, and has deſcent enough to drain it, if the water could get off.

The true cauſe of *bogs*, then, ſeems to be the want of induſtry; at leaſt it is certain induſtry may remove, and much more prevent them. There are many *bogs* of late ſtanding in Ireland, formed through the miſeries of the times, and the deſolation of civil war.—It is no wonder if a country remarkable for lazineſs ſhould abound with them.

To ſhew how want of induſtry cauſes *bogs*, it muſt be remembered, that Ireland abounds with ſprings; that theſe ſprings are dry, or nearly ſo, in the ſummer-time; and that the graſs and weeds grow thick about the places where they burſt out: in the winter the ſame ſprings ſwell again, and run, and ſoften and looſen the earth about them; and the ſwerd or ſcurf of the earth, which conſiſts of the roots of graſs, being lifted up and made fuzzy by the water, becomes dried againſt the ſpring; and does not fall together, but withers in a tuft, and new graſs ſprings through it; which, the next winter, is again lifted up: thus the ſpring is more and more ſtopt, and the ſcurf grows thicker and thicker, till it firſt makes what we call a *quaking-bog*: and as it grows higher and drier, and the graſs-roots and other vegetables become more putrid, together with the mud and ſlime of the water, it acquires a blackneſs, and grows into what we call a *turf-bog*.

What confirms this account is, that *bogs* are generally found higher than the land about them, and the higheſt in the middle: the chief ſprings which cauſe them being commonly about the middle; from whence they dilate themſelves by degrees, as one would blow a bladder; but not always equally, becauſe they ſometimes meet with greater obſtacles on one ſide, than on the other.—Add, that if a deep trench be cut through a *bog*, you will find the original ſpring, and vaſt quantities of water will run from it, and the *bog* will ſubſide; ſometimes a dozen or fifteen, ſome even ſay, thirty feet.—Laſtly, thoſe hills which have no ſprings, have no *bogs*; and thoſe which have ſprings, and want culture, are never without them. In brief, wherever *bogs* are, there are great ſprings: the turf generally diſcovers a vegetable ſubſtance; it is light, and impervious to water, while the ground under it is very pervious.

It is true, there are ſome *quaking-bogs* cauſed otherwiſe: as, when a ſtream or ſpring runs through a flat; if the paſſage be not tended, it is filled with weeds in ſummer, trees fall acroſs it, and dam it up; then, in winter, the water ſtagnates farther and farther every year, till the whole flat be covered; next, there riſes a coarſe kind of graſs peculiar to theſe *bogs*; it grows in tufts, and the roots conſolidate together, and yearly grow higher, inſomuch as ſometimes to reach the height of a man: this graſs rots in winter, and falls on the tufts, and the ſeed with it, which ſprings up next year, and thus makes a new addition: ſometimes the tops of flags and graſs are interwoven on the ſurface of the water, and become by degrees thicker, till they lie like a cover on the water; other herbs take root in it, and by a plexus of thoſe roots it becomes ſtrong enough to bear the weight of a man.

Another cauſe of *bogs* is moſs, with which Ireland abounds extremely.—That which grows in *bogs* is remarkable; the light ſpongy turf above mentioned being nothing but a congeries of the threads of this moſs, which is ſometimes in ſuch quantities, and ſo tough, that the turf-ſpades cannot cut it. In the north of Ireland they call it old wives tow; not being much unlike flax. The turf-holes in time grow up with it again, and all the little gutters in *bogs* are generally filled with it. In reality, to this the *red* or *turf-bogs* ſeem to be chiefly owing.

For the draining of *bogs*, to render them fit for paſture or arable, it is not impoſſible; the ſame having been performed in England, France, Germany, &c.—People commonly diſtinguiſh between *bogs* which have no fall to carry away the water from them, and thoſe which have: the laſt are reputed drainable, the former not. But Mr. King aſſures, he never obſerved one *bog* without a fall ſufficient to drain it, nor does he believe there is any. In reality, the great objection againſt draining is the charge; which, it is commonly reckoned, will amount to much more than would purchaſe an equal quantity of good ground: for an acre of this laſt, in moſt parts of Ireland, is not worth above 4 *s. per annum*, and fourteen or fifteen years purchaſe; ſo that three pounds will buy an acre of good land: and it is very doubtful with moſt, whether that ſum will reduce a *bog*: this reaſoning paſſes current, and is the great impediment of this work.

To this it is anſwered, that *quaking-bogs*, though land be ever ſo cheap, never fail to be worth draining: one trench will drain many acres; and when dry, it is generally meadow, or the beſt grazing ground. Again, the bounds of a *red-bog* never fail to be worth the draining; being done by one deep trench drawn round the *bog*: by this, cattle are kept out of the *bog*, and the bounds turned into meadow.—Add, that even *red-bogs* might be made fit for grazing at a much cheaper rate than has hitherto been done, by a proper conduct in the digging of trenches, particularly deſcribed by Mr. King, Phil. Tranſ. N° 170. p. 948. See alſo N° 330. p. 305; and N° 314. p. 59. Plott's Hiſt. Oxf. chap. ix. § 81, &c.

In ruſhy grounds, the ſprings are commonly found to lie within a foot or two of the ſurface, when any thing of ſtonineſs or ſmall gravel is to be found, and ſometimes conſiderably lower in a hungry gravel; but it is always lower in *boggy* ground than in ruſhy, and is deep, according to the weight of earth that pens it in. The beſt way is to begin the drain at the loweſt place, and ſo carry it in towards the ſpring-head, where there muſt be made ſuch trenches, either round or croſs the *bog*, as ſhall be found neceſſary to the draining of it thoroughly.

If it be neceſſary to make ſuch large and deep drains, that there is danger of the cattle's falling into them, they may be filled up with ſtones or brick-batts, and theſe covered with boards, and the turf laid over them. The cavities among the ſtones will give paſſage to the water, and the turf will grow at top, as if nothing had been done.

It is a common practice to make a bank with the earth dug out of the trench, laying it on the ſide; but this is extremely wrong. If the trench be ſmall, the earth dug out of it ſhould be carried away in wheel-barrows; and if large, it ſhould be ſpread upon the loweſt places of the *bog*, where there is room for it.

Another excellent method is to make the trenches about a yard deep, and two feet wide, laying at the bottom of them green black-thorn-buſhes, and over theſe a ſtratum of large and round ſtones, or at leaſt of ſuch as cannot lie cloſe; over theſe lay another *ſtratum* of thorn-buſhes, and then place a quantity of ſtraw, to keep the dirt from falling in, and filling them up. By this means the trench will be kept open, which otherwiſe will naturally ſwell, and fill up of itſelf.

Bog, *moving*, or *migrating*. Theſe ſoft maſſes of earth have been ſometimes known to move out of their place. An inſtance of this there was in Ireland, in the year 1697, about Charleville, in the county of Limerick. There was heard for ſome time a noiſe under-ground like that of thunder at a great diſtance, or almoſt ſpent; and ſoon after this the earth of a large *bog* in the neighbourhood began to move, and a hill or riſing ſituated in the middle of it ſtood no longer above the level of the reſt, but ſunk flat.

The *bog* not only moved itſelf, but moved with the neighbouring paſture-lands, though ſeparated by a large and deep ditch; the motion continued a conſiderable time, and the ſurface of the moving earth roſe into a ſort of waves, but without breaking up or burſting any where. The paſture-land roſe very high, and was carried on in the ſame motion till it reſted upon a neighbouring meadow, the whole ſurface of which it covered, remaining ſixteen feet deep upon its ſurface. The whole quantity of the *bog* was torn from its former ſeat, and left great gaps in the earth where it had joined, which threw up foul water, and very ſtinking vapours. Phil. Tranſ. N° 233.

All the country came in to ſee ſo ſtrange a ſight as this, for it continued moving a long time; but few gueſſed the true cauſe of it, which was this: a more than ordinary wet ſpring occaſioned the riſing of the *bog* to a great height in one part, and thence propogated itſelf through the whole *bog*; ſo that the hill in the midſt was undermined, and naturally ſunk flat; this and the more than ordinary weight of this large *bog* preſſing upon the adjoining paſture-land, forced up its foundations, which were only a looſe ſand. This was puſhed on ſideways where there was a deſcent from the *bog*, and at length having given the *bog* more room, all was quiet and remained in that ſtate. The *bog* was more than forty acres of ground.

Bog-*bean*. See Bog-Bean.

Bog-*berry*. See Whortle-*berry*.

Bog-*wood*. See Wood *ſubterraneous*.

BOGA, in *Zoology*, a name given by many to a fiſh caught in the Mediterranean, and ſold at Naples and Meſſina, called among authors BOOPS. It is a ſpecies of the SPARUS.

BOGOMILI, or Bogarmitæ, a ſect ſprung from the Manichees, or rather from the Maſſalians, toward the cloſe of the twelfth century; whoſe chief, Baſil, was burnt alive by order of the emperor Alexius Comnenus.

Du-Cange derives the name from two words in the Bulgarian language; *Bog*, *Deus*, and *milvi*, *miſerere*, *have mercy*.

The *Bogomili* denied the Trinity; maintaining, that God had a human form; that the world was created by evil angels; and that it was the archangel Gabriel that became incarnate. They rejected the books of Moſes, and only admitted ſeven books of Scripture: they maintained the Lord's Prayer to be the only euchariſt; that the baptiſm of the Catholics was only that of St. John, and theirs that of Jeſus Chriſt; and that all thoſe of their ſect conceived the Word, or *Logos*, as much as the Virgin, denying the reality of Chriſt's body. Laſtly, that there was no other reſurrection but repentance.

BOHEA. See Tea.

BOHEMIAN *Brethren*, is an appellation anciently given to the proteſtants of Bohemia.

Laſitius has a treatiſe De Geſtis Fratrum Bohemicorum. Camerarius has alſo given the hiſtory of the *Bohemian brethren*, from whom eccleſiaſtical hiſtorians have derived a large train of ſects, as the Huſſites, Adamites, Taborites, Calixtins, &c.

Bohemian *chatterer*, in *Ornithology*, a bird that viſits this iſland perhaps once in twenty years. See Phil. Tranſ. vol. lxii. N° 20. p. 315. an. 1772.

It is alſo called AMPELIS, GARRULUS, and ROLLER.

BOJA, in *Antiquity*, a collar or chain faſtened about the necks of criminals, to prevent their eſcape.

The word is alſo written *boga*, *bodia*, and *baga*.

BOICININGA, in *Zoology*, a name by which the Braſilians call the RATTLE-SNAKE.

BOIGUACU, in *Zoology*, the name of a ſpecies of ſerpent, called alſo *iiboia*, and by the Portugueſe *cobra de veado*.

This is the largeſt of all ſerpents, growing to twenty-four feet long and more, and preying on large animals. It is very thick in the middle of the body, and ſmaller both at the head and tail. It is of a very beautifully variegated colour. Down the middle of the back runs a chain of black ſpots, a hand's breadth diſtant from one another, each having a ſpot of white in its middle; and below theſe are two other rows of ſmaller black ſpots towards the belly. It has in each jaw two rows of very ſharp teeth, white as pearl. Its head is very broad, over the eyes it riſes into two protuberances; and in ſome of this ſpecies there are two claws, like thoſe of birds, behind the *anus*, towards the tail.

This is a very terrible creature, and will ſeize on a man, and either lies in ambuſh in thickets, or on the branches of large trees, from which it throws itſelf on its prey. It has no venom in its bite; and its fleſh is eaten, and eſteemed a great delicacy.

This ſerpent is common in the Braſils. Authors give ſurpriſing accounts of its ſize: Borritius preſerved the ſkin of one which himſelf had killed, which was twelve yards long; and relates, that there was once a ſerpent of this kind killed in Java, which was thirteen yards and a half long, and had, when killed, a boar in its belly. And De Laet relates, that in the Rio de la Plata, there are ſome of them ſo large, that they will ſwallow a ſtag whole, horns and all. The natives and the Hollanders make them a part of their food.

BOIL, or Furuncle, in *Medicine*, is a ſmall reſiſting *tumor*, with inflammation, redneſs, and great pain ariſing in the *membrana adipoſa* under the ſkin. As there is no part of the body free from being the ſubject of this *tumor*, ſo the whole body is ſometimes ſo miſerably infeſted with them, that the patient knows not how to ſtir, or on what part to lie. Young infants, and adults, are equally liable to this diſorder; and though in adults there is ſeldom any great danger in it, yet it ſometimes happens when they are very numerous in tender infants, that they not only excite violent pains, reſtleſſneſs and toſſings, with great weakneſs, convulſions and epilepſies, but death itſelf ſometimes follows them.

The principal cauſe of *boils*, is a too glutinous and inſpiſſated ſtate of the blood, and the cure of them principally depends upon the reſtoring the blood to its due conſiſtence and proper circulation. People who are very ſubject to theſe tumors ſhould bleed and take purging medicines at proper intervals, and drink plentifully of warm and weak liquors, abſtaining from wine, ſtrong ſpirituous liquors, and from the uſe of tobacco.

When the diſorder is recent or not habitual, external remedies alone are ſufficient for the cure: honey mixed to a proper ſharpneſs with ſpirit of vitriol is a very good external application. The touching the *boils* with ſpirit of vitriol alone, is often alſo of great ſervice; and ſometimes the diſcutient plaſters are to be applied, as the diachylon, ſpermaceti, and ſoap-plaſter. If theſe applications, however, do not prove ſucceſsful in the diſperſing a *boil*, the only method to be taken, is that of bringing it to ſuppuration. This, however, in ſome caſes is no eaſy taſk, but the tumor remains ſometimes very hard and troubleſome, even after a proper treatment of many weeks, and ſometimes the humour that occaſions it becomes ſo acrimonious, by its long tenſion, and great inſpiſſation, that it produces ulcers, which grow gradually worſe and worſe, till at length they end in incurable *fiſtulæ*. To promote and quicken the ſuppuration, it is generally found of great ſervice to apply plaſters of diachylon with the gums, and of honey and flour mixed, and made to a proper conſiſtence; and where theſe prove inſufficient, maturating cataplaſms are to be applied, and very frequently repeated. When the *boil* is ſufficiently maturated by one or other means, which will be known from the ſoftneſs and yellowneſs of its head, it muſt be opened by inciſion, and when the matter it contained is diſcharged, the ulcer muſt be daily cleanſed, till perfectly freed from all malignity, and then healed with the vulnerary balſams.

When infants which ſuck are afflicted with *boils*, the proper method is to give cooling medicines and purges to the nurſe, and enjoin her a due regimen in diet; and the infant ſhould at the ſame time be got to take ſome gentle laxative, and the abſorbent powders, as thoſe of crabs-eyes and the like, to allay the acrimony of its juices.

Boils, *gum*. See Gum.

BOILED, or Boyled *ſilks*, thoſe which have been put, while in the balls, into hot water, to make them wind the better.

In which ſenſe, *boiled ſilk* ſtands oppoſed to *raw*.

BOILER, or **Boyler**, a large copper-veſſel, wherein things are expoſed over the fire to be boiled.

The *boiler* in the alum-works is a veſſel, in which the liquor is evaporated to a conſiſtence, and is made of lead. The general ſize is about eight feet ſquare, and they contain about twelve tuns each.

They make them in this manner: firſt they lay long pieces of caſt-iron, twelve inches ſquare, as long as the breadth of the *boiler*, and at about twelve inches diſtance from one another. Theſe are placed twenty-four inches above the ſurface of the fire. On theſe maſſy bars of iron they lay, croſs-wiſe, the common flat bars of iron, as cloſe as they can lie together, and then make up the ſides with brick-work. In the middle of the bottom of this *boiler* is laid a trough of lead, wherein they put at firſt about a hundred pound weight of the rock. They uſe Newcaſtle coals in the BOILING; and if they find the liquor not ſtrong enough, they add more of the rock at times, as it boils. Phil. Tranſ. N° 142.

The *boiler* for making colours, &c. muſt be made of pewter; becauſe iron and copper will be corroded by the ſaline ſubſtances uſed in the manufacture of them.

BOILERY, or **Boilary**, in the *Salt Works*, denotes a ſalt-houſe, pit, or other place, where SALT is made.

BOILING, or **Boyling**, *ebullition*, in *Phyſics*, the agitation of a fluid body, ariſing from the application of fire, &c.

The *phænomenon* of *boiling* may be thus accounted for: the minute particles of the fuel being detached from each other, and impelled in orbem, with a great velocity (i. e. being converted into fire), paſs the pores of the containing veſſel, and mix with the liquid. By the reſiſtance they here meet withal, their motion is deſtroyed; i. e. they communicate it wholly to the quieſcent water: hence ariſes, at firſt, a ſmall inteſtine motion in the water, and from the continued action of the firſt cauſe, the effect is increaſed, and the motion of the water continually accelerated: ſo that the water, by degrees, becomes ſenſibly agitated. But now the particles of the fire ſtriking on thoſe in the loweſt ſurface of the water, will not only give them an impulſe upwards, contrary to the laws of *æquilibrium*, but will likewiſe render them ſpecifically lighter than before, ſo as to determine them to aſcend according to the laws of *æquilibrium*; and this, either by inflating them into little veſicles, by the attraction of the particles of water around them; or by breaking and ſeparating the little ſpherules of water, and ſo increaſing the *ratio* of their ſurface to their ſolid content. There will therefore be a conſtant flux of water from the bottom of the veſſel to the top, and conſequently a reciprocal flux from the top to the bottom; i. e. the upper and under water will change places; and hence we have the reaſon of that *phænomenon*, of the water's being hot at top ſooner than at bottom.

Again, an intenſe heat will diminiſh the ſpecific gravity of water, ſo as not only to make it mount in water, but alſo in air; whence ariſe the *phænomena* of vapour and ſmoak; though the air incloſed in the interſtices of the water muſt be allowed a good ſhare in this appearance: for that air being dilated, and its ſpring ſtrengthened by the action of the fire, breaks its priſon, and aſcends through the water into the air; carrying with it ſome of the contiguous ſpherules of water, ſo many as ſhall hang in its *villi*, or can adhere immediately to it.

The particles of air in the ſeveral interſtices of the fluid maſs thus expanded, and moving upwards, will meet and coaleſce in their paſſage; by which means great quantities of the water will be heaved up, and let fall again alternately, as the air riſes up, and again paſſes from the water: for the air, after coalition, though it may buoy up a great heap of water, by its elaſticity while in the water; yet cannot carry it up, together with itſelf, into the atmoſphere; ſince, when once got free from the upper ſurface of the water in the veſſel, it will unbend itſelf in the atmoſphere, and ſo its ſpring and force will become juſt equal to that of the common unheated air. Add to this, that were the ſpring and motion of the air ſufficient to carry up the water with it, yet it would not have that effect; but the water would run off at the extremities of the air; all, except ſo much as ſhould be either entangled in its *villi*, or immediately adhere to its ſurface by attraction: and hence we ſee the reaſon of the principal *phænomenon* of *boiling*, viz. the fluctuating of the ſurface of the water. *Boiling* water diſpoſes it to freeze more readily. See WATER.

We generally annex the idea of a certain very great degree of heat to the *boiling* of liquids; but this does not ſeem to be a connection of nature's making, but of our own. It is reported by many, that a veſſel of tar being ſet over the fire till it *boils*, a perſon may, while it is *boiling*, put his hand into it without any injury; and that the artificers who uſe and prepare this commodity, know this property of it ſo well, that they uſually take the ſkum from their pots off it, while *boiling*, with their naked hands.

Water, in the receiver of an air-pump, when exhauſted, will *boil* without any great heat. The receiver ſhould, for this experiment, be one part full of water, and three empty: in this caſe, the flame of a candle being placed under the veſſel, the water will *boil* violently, while the glaſs itſelf is ſcarce warm; and when the water has been thus kept *boiling* a quarter of an hour, the glaſs will ſcarce be any thing the hotter for it. When the candle is taken away, the water will ſtill continue a great while *boiling*, and when it ceaſes firſt, will renew itſelf again from time to time to a very great ebullition. All the bubbles that riſe out of the water on this occaſion, do not raiſe the mercury in a gage to any ſenſible height. Spirit of wine, in the ſame manner, *boils* much ſooner *in vacuo* than the water, and in this ſtate will raiſe the mercury in the gage to an inch higher than its former ſtandard. If the receiver containing it in this *boiling* ſtate, be plunged into cold water, the liquor, inſtead of becoming calm, *boils* more ſtrongly than before. It might be ſuppoſed, that this *phænomenon* was owing to a *periſtaſis*; but we have more ground to ſay it came from hence, that the vapours of the ſpirit were more condenſed, and ſo made the receiver more empty, which is ſufficient to make the ſpirit of wine *boil*, though it were not hot, as liquors uſually do when put into the engine, and the air exhauſted. In all theſe, and many other caſes, *boiling* is induced without that heat, which is ſuppoſed a neceſſary concomitant of it. Phil. Tranſ. N° 122.

ALABASTER, in *boiling*, will ſwell a ſixth or eighth part above the top of the pot.

Different fluids require different degrees of heat to make them *boil*. Dr. Freind gives a table of the different times required to make ſeveral fluids *boil* by the ſame heat.

WATER, when once brought to *boil*, is not ſuſceptible of any further degree of HEAT, however the fire be increaſed: but this differs according to the weight of the atmoſphere, and the purity of the water.

Boiling *of ſilk with ſoap* is the firſt preparation in order to dying it. Thread is alſo *boiled* in a ſtrong *lixivium* of aſhes, to prepare it for DYING.

Boiling is alſo part of the proceſs of BLEACHING warp linen.

Boiling *to death*, *caldariis decoquere*, in the *Middle Age*, a kind of puniſhment inflicted on falſe coiners, thieves, and ſome other criminals.

This puniſhment was inflicted on thoſe who were guilty of murder by poiſon, 22 Hen. VIII. cap. 29. but this act was repealed by 1 Edw. VI. cap. 12.

Boiling is alſo a method of trying or aſſaying the goodneſs or falſeneſs of a colour or a dye, by *boiling* the ſtuff in water with certain drugs, different according to the kind or quality of the colour, to try whether or no it will diſcharge, and give a tincture to the water.

With this intention, red crimſon ſilks are *boiled* with alum, and ſcarlets with ſoap, in quantity equal to the weight of the ſilk.

Boiling *waters*, in *Natural Hiſtory*. See SPRING, and WATER.

BOIOBI, in *Zoology*, the name of a ſpecies of ſerpent found in America, and called by the Portugueſe *cobra de verd*. It is about an ell in length, and of the thickneſs of a man's thumb, and is all over of a very beautiful and ſhining green. Its mouth is very large, and its tongue black. It loves to be about houſes, and never injures any creature unleſs provoked or hurt; but it will then bite, and its poiſon is very fatal. The natives take, as a remedy againſt its poiſon, the root CAA-APIA bruiſed, and taken in water.

BOIQUIRA, in *Zoology*, a name by which the natives of ſome parts of America call the RATTLE-SNAKE.

BOITIAPO, in *Zoology*, is a ſerpent of Braſil, called by the Portugueſe *cobra de cipo*. It is ſeven or eight feet long, as thick as a man's arm, round, and pointed toward the tail, like a ſhoemaker's awl. It is covered with fine, and, as it were, triangular ſcales; and is of an olive colour, and yellowiſh. It lives upon frogs, &c. and its bite is dangerous, like that of many other ſerpents.

Its fleſh might be as effectually uſed as that of the viper, for purifying the blood; and as an alexipharmic.

BOLBONACH, in *Botany*. See HONESTY.

BOLE, in *Medicine*, is applied to ſeveral kinds of earths that enter ſome of the Galenical compoſitions.

Boles are native foſſile earths, uſually ſomewhat unctuous; ſo that when mixed up with water, they may be wrought into a paſte; but are not ſoluble either by water or fire: ſuch are argill, or white clay, *axungia terræ*, or *axungia lunæ*, *cimolia*, fuller's earth, *boles* white and Armenian, the Chian, Eretrian, Lemnian, and Malteſe earths, ruddle, Samian, Sileſian, Toccavian, Bohemian, French, and all the ſealed earths. But there are others of a drier and leaner kind, as chalk, ochre, and marle.

The *boles* are ſlightly ductile but not viſcid, nor do they burn to ſuch a ſtony ſubſtance as the clays, which are the diſtinguiſhing characteriſtics between the *boles* and the CLAYS. Mr. Da Coſta diſtributes them according to their colour, into the white, the aſh-coloured, the red, the yellow, the brown, and the green; and he again ſubdivides each ſort into ſuch as are not acted upon by acids and the alkaline *boles*.

The chief medicinal uſes of *boles* are as aſtringents to ſtop bleedings. They are generally hurtful in fevers, eſpecially epidemical ones, and externally in the hæmorrhoids, &c.

Bole earths ſeem diviſible into two ſpecies, according as they are more or leſs tenacious; in which view loam and clay may repreſent them all. Even theſe two ſeem only to differ in reſpect of the fineneſs or coarſeneſs of their component parts, which renders them more or leſs tenacious, clinging, or adheſive. To make a true judgment of the quality of this kind of earth, the following experiment may be uſeful.

Common loam was mixed into a maſs with water, and then dried; to ſhew that compared with clay, it would eaſily break, crumble, and fall to powder; but beating ſome loam fine in a mortar, and mixing it well with water, it clung like clay; and when dried, adhered more tenaciouſly than before.

This ſhews that not only loam and clay, or all the *bolar* earths, are nearly the ſame thing, when their component parts, or gravelly and ſandy matters, are reduced to the ſame degree of fineneſs; but alſo ſupplies us with a plain and ſimple rule for the improvement of the art of pottery, and the imitation of China ware; and perhaps certain curious *boles* may afford very delicate matters for pottery wares; and that of variety of colours not leſs curious than the white: nor is it altogether clear, why that colour alone ſhould be made the chief *baſis* of this art. The rule is, to grind or beat the earths employed, to an extreme degree of fineneſs; and accordingly porcelane has been imitated in Europe by tobacco-pipe clay, and other earths, exceedingly fine ground, mixed into a paſte with water, and properly baked and burnt.

Marles, or *boles*, alſo afford a fit matter for the making of crucibles, retorts, &c. They likewiſe ſerve to procure the diſcontinuation and diviſion of certain ſalts, and other materials, that would otherwiſe riſe, and boil over in the operation. Theſe are therefore employed in the diſtillation of NITRE, TURPENTINE, WAX, &c.

They contribute likewiſe more materially, more intimately, and eſſentially as to quantity, in the fixation of certain bodies in chemiſtry; as of oils, for example, of common ſulphur, and even of mercury: for which, ſee Becher's firſt Supplement to his Phyſica Subterranea.

There are chiefly two ſorts of *bole* uſed in medicine the *Armenian*, and the *common*.

BOLE *Armoniac*, or the *Armenian* BOLE, is a ſoft, friable, fatty earth, uſually of a pale red colour; though there are two other kinds, a yellow and a white. They are all eaſily pulverized, and adhere to the tongue.

This, popularly, though corruptly, called in Engliſh, *bole Armoniac*, is called, by the naturaliſts, *Armenia terra*, or *Armenian clay*.

The true hiſtory of this ſubſtance is this: there are three kinds of it; the *white*, the *yellow*, and the *red*, which have been all in repute in different ages of medicine, but of which the laſt only is now thought of. The firſt or *white* BOLE *Armenic* was in uſe very early in the world, though under a different name, the ancients calling it the *white Eretrian* EARTH. This was uſed in the times of Dioſcorides. The ſecond or *yellow* was introduced by Galen, and given in the great plague at Rome in his time. The third or red kind is the BOLE *Armenic* of Avicenna, which we alſo pretend at this time to uſe; but very little of it is to be found genuine among us.

The *white* BOLE *Armenic*, called *white Eretrian* EARTH by Dioſcorides, to diſtinguiſh it from the grey earth of the ſame place, which was recommended as a noble aſtringent and ſudorific, and highly valued on account of its peculiar alkaline quality, is a fine, ſoft, and pure earth, moderately heavy, and of a cloſe, compact texture, of a clear, bright-white colour, adhering firmly to the tongue, inſipid to the taſte, and melting, like butter, in the mouth. It burns to a ſtony hardneſs without changing colour, and makes no efferveſcence with acid menſtrua. This ſeems, of all foſſile ſubſtances, to approach the neareſt to the nature of pure earth. This *bole* was in high eſteem among the Greek and Roman painters: it is now dug in the eaſtern part of Armenia; but is found in no great plenty, there being only one *ſtratum* known of it, and that not very thick. It is now chiefly ſupplied from Norway, and places nearer of acceſs.

This is eſteemed a ſudorific, and by ſome aſtringent, but without foundation; for, as it appears from Neumann's experiments, that it differs from the two other kinds, in containing no irony matters, it muſt want alſo their aſtringency; and from the ſame experiments it appears, that it can be no more abſorbent than the other *boles*; and juſt as little pretence have any of them all to the antipeſtilential and alexipharmic qualities, for which they have been celebrated. See an account of their examination, both by acids and diſtillation, in Neumann's Works, p. 22, & ſeq.

Some have a method of recovering the luſtre of pearls, eſpecially the Scotch ones, by warming them a little over the fire, and rubbing them with powdered *white* BOLE. Neumann.

The *yellow* BOLE *of Armenia*, or the BOLE *Armenic* of Galen, is a very fine and beautiful earth, of a cloſe, compact texture, naturally of a ſmooth ſurface, and very hard. It is heavier than any other of the yellow earths, and is very ſoft to the touch. It is readily diffuſible in water, and remains long ſuſpended in it, adheres firmly to the tongue, melts ſlowly in the mouth, and is of a very manifeſtly aſtringent taſte. It ferments very briſkly with acid *menſtrua*, and does not become red on burning. There have been many diſputes about the place whence this excellent drug was brought: Aëtius will have it to be from the mountain Bagonoſa in Armenia; Cardan, only from the iſland of Samos; and others, from other places: but it is found to this day in Armenia, to the north-eaſt of Erzeron, in vaſt abundance. It ſeems the moſt valuable of all the medicinal earths. Experience proves it to be a very noble aſtringent. Many authors extol it highly as a ſudorific and alexipharmic; and Galen reports of it, that it often ſuddenly cured the plague, and that thoſe whom it did not cure, were relieved by no other medicines. It would be extremely worth while to encourage the uſe of this drug, as it may be had in any quantities; for much of it is carried to Germany every year, and ſometimes a little of it is brought to us; and when this is the caſe, our druggiſts, not being uſed to a *yellow* BOLE *Armenic*, ſell it under the name of BOLE of *Blois*.

The *red* BOLE *of Armenia*, or BOLE *Armenic* of Avicenna, and of moſt authors ſince his time, is the hardeſt of all the earths of this kind. It is very pure and fine, and in colour is of a ſtrong, but ſomewhat yellowiſh red, much approaching to that of ſaffron in the cake. It is of a ſurface the leaſt ſmooth and gloſſy of all the *boles*. It ſtains the fingers in handling, and is not readily diffuſible in water. It adheres firmly to the tongue, melts readily in the mouth, and is of a very manifeſtly aſtringent taſte. It does not ferment with acids, and becomes harder and of a brighter colour in burning. Theſe are the ſeveral characters, by which the *Armenian* BOLES may be diſtinguiſhed from all other earths of the ſame colours. This laſt ſpecies is what we now pretend to uſe. It is found in vaſt plenty in the north-eaſt parts of Armenia, and is ſometimes uſed in Germany, but ſcarce ever ſeen in England. What is called *bole Armenic* in our ſhops being no other than a bad compoſition of no better materials than common tobacco-pipe clay, and an ochre known among painters by the name of Spaniſh brown.

BOLE, *Armenian*, is uſed in diarrhœas, dyſenteries, catarrhs, &c. Some alſo give it an alexipharmic virtue, efficacious in peſtilential diſeaſes; but its uſe, in this intention, is at beſt dubious. See above.

The Germans, for the *Armenian* BOLE, uſe that of Tockay, in Upper Hungary, which Crato holds preferable to it. The French uſe a like clay, found in divers provinces of that kingdom; and the Engliſh, *Fullers*-EARTH.

BOLE, *common*. This is a ponderous brittle earth, of a colour between yellow and red, of an aſtringent taſte, and is found in many parts of France. It has the ſame virtues with the former, and is to be met with in the ſhops. As both theſe *boles* are frequently mixed with ſand and grit, the apothecaries prepare them in the following manner. They diſſolve them in water; and after the ſand is ſubſided, they pour the turbid ſolution into another veſſel, where it remains till the water is clear; being poured off, the ſediment is dried in little cakes, and kept for uſe.

They may be preſcribed to be taken inwardly, either alone, or mixed with the ſealed earths.

BOLE *of the Levant* is a medicinal earth brought from the Levant; nearly of the ſame nature, and having the ſame uſes with the *bole Armeniac*.

BOLE is alſo uſed for the body or trunk of a tree; and hence *boling* trees are thoſe whoſe heads and branches are cut off.

BOLE, *Bolus Bleſenſis*. See BLESENSIS.

BOLE, *Bohemic*, *Bolus Bohemica*, is a medicinal earth dug in many parts of the kingdom whoſe name it bears. It is a pure and fine *bole*, of a denſe and compact texture, of a yellowiſh pale red colour, with ſome yellowiſh veins, heavy, of a ſmooth ſhining ſurface; it eaſily breaks between the fingers, does not readily melt in the mouth, leaves no grit when melted, and is of an aſtringent taſte. It does not efferveſce with acids, and in the fire acquires a little hardneſs without change of colour. In the German practice it is uſed for hæmorrhages, &c. and eſteemed to poſſeſs an alexipharmic virtue.

Bole, *Bolus Etruſca*, the ſame with ETRUSCA TERRA.

Bole, *Bolus Goltbergenſis*, the ſame with *terra* GOLTBERGENSIS.

Bole, *Bolus Lemnia*, the ſame with LEMNIAN *earth*.

Bole, *Bolus Livonica*, the ſame with the LIVONICA *terra*.

Bole, *Bolus Luſitanica*. See LUSITANICA.

Bole, *Bolus Noceriana*, the ſame with NOCERIANA *terra*.

Bole, *Bolus Veneta*. See VENETA *bolus*. See alſo TERRA and the references under that article.

Bole *of Virginia*, *Bolus Virginiana*. See VIRGINIANA.

BOLENIÆ, or **Bolæ**, in *Natural Hiſtory*, a name given by ancient writers to a ſort of ſtones of a roundiſh figure, and marked with ſeveral ridges and lines. They are ſuppoſed to be the ſame with thoſe called BRONTIÆ and OMBRIÆ, both being imagined to fall from the clouds in time of thunder-ſtorms; but they are really no other than a common ſpecies of ECHINITÆ.

BOLETO Lichen, a name given by M. Juſſieu to a plant, which partakes of the nature of the *moreille* and of the *liverwort*, and which he has accurately deſcribed in the Memoirs of the Academy of Sciences at Paris, 1728.

The whole plant has the ſmell of the common muſhroom, and, when young, has a viſcous liquid contained under the foldings of its head, which finally, when the plant is arrived at maturity, dries into the form of an extremely ſubtle yellow powder, which is the ſeed.

BOLETUS, in *Botany*, a word uſed by Linnæus to expreſs a genus of FUNGUSES, belonging to the claſs of *cryptogamia*, uſually comprehended by authors under the name of AGARICS, though very different from them. The AGARICS and *boleti* are both horizontal muſhrooms; that is, they have no pedicle, but grow to trees, &c. by their ſide; but the firſt are lamellated underneath, in the manner of the common muſhrooms; the *boleti* are all porous underneath.

The ſpecies of *boletus*, enumerated by Mr. Tournefort, are ſeven.

The *boletus* is a kind of wood-muſhroom, almoſt round, of a white colour, ſpotted with yellow and brown marks; by ſome naturaliſts called FUNGUS *nemorum*.

The *boletus* is the moſt exquiſite of all the FUNGUS-kind. The Roman epicures were particularly fond of it. Nero uſed to call it the food of the gods. The emperor Claudius is ſaid to have been poiſoned with a medicated *boletus*, given him by his wife.

BOLINTHOS, in *Natural Hiſtory*, a name given by Ariſtotle, and ſome of the other ancient Greeks, to the *monops* of Ælian, that is, the BONASUS.

BOLLANDISTS, in *Literary Hiſtory*, a denomination given to certain Jeſuits of Antwerp, who have been a conſiderable time employed in collecting the lives and acts of the ſaints.—Thus called from F. Bollandus, one of the firſt and chief of the aſſociation.

BOLLARDS, large poſts ſet in the ground on each ſide a dock. On docking or undocking ſhips, large blocks are laſhed to them; and through theſe blocks are reeved the tranſporting hawſers to be brought to the capſtans.

BOLLITO, in the *Glaſs Works*, a name by which the Italians call a ſea-green colour of artificial cryſtal.

To prepare this colour you muſt have in the furnace a pot filled with forty pounds of good cryſtal, firſt carefully ſkimmed, boiled, and purified, without any mangeneſe; you muſt then have twelve ounces of the powder of ſmall leaves of copper thrice calcined, half an ounce of zaffer in powder; mix them together, and put them at four times into the pot, that they may the better mix with the glaſs; ſtirring them well at each time of putting in the powder, leſt they ſhould ſwell too much, and run over.

BOLLOS, in the mines of Peru, a denomination given to the ingots or bars of ſilver procured there from the ore by the operation of the fire, and the uſe of *aqua fortis*.

BOLOGNA-*bottles*. See UNANNEALED *bottles*.

BOLOGNIAN *ſtone*. See BONONIAN.

BOLSTER, among *Surgeons*, a ſoft yielding ſubſtance, either laid under the head, or a broken limb.

Bolster is alſo uſed for a ſtuffing, intended to fill out or raiſe a flat, ſinking, or hollow part.

In which ſenſe, *bolſters* are contrived for crooked, bunched, and otherwiſe diſtorted backs, ſhoulders, &c.

Bolsters *of a ſaddle*, in the *Manege*, thoſe parts which are raiſed on the bows, both before and behind, to reſt the rider's thighs, and keep him in a poſture of withſtanding the diſorders which the horſe may occaſion.

Common ſaddles have no *bolſters* behind, or even before.

Bolsters, in *Sea Language*, ſmall cuſhions or bags, filled with tarred canvas, and laid between the collars of the ſtays, and the edge of ſome piece of wood on which they lie; they are deſigned to preſerve the ſtays from being chafed by the motion of the maſts, as the ſhip rocks at ſea.

BOLT, in *Building*, an iron faſtening for a door, moved with the hand, and catching in a ſtaple or notch made to receive it.

Bolts are chiefly of three kinds; *plate*, *round*, and *ſpring-bolts*.

Bolt *of a lock* is the piece of iron, which entering the ſtaple, faſtens the door; being the part which is moved backwards and forwards by turning the KEY.

Of theſe there are two ſorts; one ſhuts of itſelf by only putting to the door, and is called a *ſpring-bolt*; the other, which only moves when the key opens or ſhuts it, is called a *dormant* BOLT.

Bolt is alſo uſed for a large iron pin, having a round head at one end, and at the other a key-hole or ſlit, wherein to put a pin or faſtening, ſerving to make faſt the bar of a door, window-ſhutter, or the like.

This is more particularly called a *round* BOLT, or *window*-BOLT.

Bolts, in *Gunnery*, are of ſeveral ſorts; thoſe which go betwixt the cheeks of a carriage to ſtrengthen the tranſoms, are called *tranſom*-BOLTS. The large iron *bolts* or knobs on the cheeks of a carriage, which keep the handſpike from ſliding when it is poiſing up the breech of the piece. The two ſhort *bolts*, that being put one in each end of an Engliſh mortar-carriage, ſerve to traverſe her, are called *traverſe-bolts*. The *bolts* that go through the cheeks of a mortar, and, by the help of quoins, keep her fixed at the elevation given her, are called *bracket-bolts*. And the four *bolts* that faſten the bracket or cheeks of a mortar to the bed, are called *bed-bolts*.

Bolts, in *Carpentry*, denote pieces of wood cleft with wedges, in order to be ſplit into laths.

Bolts, or iron pins, in a ſhip, are of ſeveral ſorts, frequently diſtinguiſhed according to the places where they are uſed; as, *chain-bolts*, *bolts for carriages*, &c. *ring-bolts*, ſerving for the bringing to of the planks, &c. *drive-bolts*, uſed to drive out others; *ſet-bolts*, employed for forcing the planks and other works, and bringing them cloſe to one another; *rag-bolts*, on each ſide full of jags or barbs, to keep them from flying out of their holes; *clench-bolts*, thoſe which are clenched or faſtened at the ends where they come through; *fore-lock-bolts*, made like locks with an eye at each end, whereinto a fore-lock of iron is driven to prevent ſtarting out; *fend*, or *fender-bolts*, made with long and thick heads, ſtruck into the outermoſt bends or wales of a ſhip, to ſave her ſides from bruiſes and hurts

Bolt is alſo uſed for a meaſure or certain quantity of canvas, amounting to twenty-eight ells.

Bolt of ſilk or ſtuff denotes a long narrow piece, of indefinite meaſure.

Bolt, *peaſe*, in Eſſex, denotes the peaſe-ſtraw, when the grain is thraſhed out of it.

Bolt, *thunder*. See THUNDER-*bolt*.

Bolt-*rope*, in *Sea Language*, is that to which the edges or ſkirts of the ſails are ſewed, to ſtrengthen and prevent them from rending.

BOLTED *flour*, that which has paſſed through the BOLTER.

BOLTEL, in *Building*, any prominence or jutting out, as of a piece of timber, end of a beam, or the like, advancing beyond the naked of the wall.

BOLTERS, or **Boulters**, a kind of ſieves for meal, having the bottoms made of woollen, hair, or even wire.

The word ſeems derived from the German *beutel*, a *ſieve*; whence alſo *beutelen*, *to bolt*.

The bakers uſe *bolters*, which are worked by the hand; millers have a large ſort, wrought by the motion of the mill.

BOLT-HEAD, the ſame as MATRASS; a veſſel uſed by the chemiſts.

BOLTING, or **Boulting**, the act of ſeparating the flour from the bran, by means of a ſieve or BOLTER.

Bolting-*cloth*, or **Bolter**-*cloth*, ſometimes alſo called *bulting-cloth*, denotes a linen or hair-cloth for ſifting of meal or flour.

Bolting-*mill*, a verſatile engine for ſifting with more eaſe and expedition. The cloth round this is called the BOLTER.

Bolting, or **Boulting**, among *Sportſmen*, ſignifies rouſing or diſlodging a coney from its reſting place.

They ſay to *bolt* a coney, *ſtart* a hare, *rouſe* a buck, &c.

Bolting, a method of pleading, or arguing, in uſe in the inns of courts; inferior to mooting. The caſe is argued firſt by three ſtudents, then by two barriſters; a *ſenior* ſitting judge.

The word comes from the Saxon *bolt*, a *houſe*; becauſe done privately within doors, for inſtruction.

BOLUC *baſſi*, in the *Turkiſh Affairs*, denotes the chief of a company, or a captain who has the command of an hundred janizaries.

BOLUS, in *Medicine*, an extemporaneous form of remedy, of a ſoft conſiſtence, ſomewhat more ſo than that of an electary, and of the quantity of one doſe, or morſel, to be ſwallowed down; contrived principally for the ſake of ſuch as have an averſion to potable medicines; as alſo for the better conveyance of certain preparations of mercury, antimony, &c. which, by their weight, would ſink to the bottom of the glaſs, were they given in draughts.

There are *boluſes* of various kinds, made with electaries, confections, conſerves, pulps, powders, ſalts, oils, eſſences, extracts, ſyrups, &c. ſome of which ingredients muſt always have ſolidity or drineſs enough to give a conſiſtence to thoſe that are liquid.

Boluſes are chiefly denominated from their intentions, as emetic *boluſes*, purgative *boluſes*, aſtringent, anodyne, antifebrile, alexipharmic, &c. *boluſes*.

The choice of the proper ingredients for a *bolus* is regulated by the following conſiderations: a due coheſion, ſoftneſs, and equable mixture, are eſſentially neceſſary to a *bolus*; for this reaſon, dry ſubſtances muſt be put to liquid ones, and liquid ones to dry, to produce the proper conſiſtence; but the thicker electaries, conſerves, and robs, are themſelves naturally in form of a *bolus*.

Acrid ſubſtances, and ſuch as are offenſive either to the ſmell or taſte, or are of a very viſcid nature, are much more properly exhibited in form of *boluſes* than of powders; ſince their offenſive qualities are by this means concealed. The draſtic purges, and mercurial preparations, are therefore very properly given in *boluſes*.

Balſams, and other ſuch liquid ſubſtances, are beſt mixed into a *bolus* with ſugar, becauſe it not only is the means of their going down eaſily, but it aſſiſts their diſſolution in the ſtomach. The alkaline, fixed and volatile ſalts, and all other ſubſtances which ſoon become liquid, are very improperly made ingredients in *boluſes* which are to ſtand any time; ſince they ſpoil the form of the medicine, and looſe their own virtues; and for the ſame reaſon, ſuch ſubſtances as will ferment when brought together, are very improper for *boluſes*, unleſs they are to be ſwallowed as ſoon as made up. To this it may be added, that the number of ingredients in a *bolus* ſhould never exceed three, or at the moſt four.

The number of *boluſes* made up at once ought only to be one, or at the utmoſt two; but the apothecaries have got an almoſt univerſal cuſtom at preſent of ſending in four at a time; by which means, the laſt which are taken, are uſually too hard to be ſwallowed, and often have loſt all their virtues.

It is the common cuſtom to wrap up *boluſes* in leaf-gold, or in a wafer; but ſome chooſe neither of theſe, but will diſſolve them in ſome liquor before they are taken. The ſignature on each *bolus* is to expreſs its nature and deſign, the liquor to be taken with or after it, and the regimen to be uſed; and it is highly neceſſary to give a convenient liquor after ſome of them, if we ſuſpect they are made of ingredients which will not eaſily diſſolve in the ſtomach: and this caution is to be regarded principally in thoſe of the terebinthinous and other balſamic kinds.

Boluſes are a form of medicines almoſt univerſally uſeful. All we have to conſider in regard to the taking them is whether the patient is in a condition to ſwallow a ſolid morſel, or not; and from hence it is eaſily inferred, that they are not to be given in quinſies, or in ulcers of the *fauces*; apoplexies, epilepſies, and ſyncopes, alſo render them very improper.

BOM, in *Zoology*, the name of an American ſerpent, remarkable for its noiſe, which is like the ſound of the word uſed as its name. It grows to a vaſt ſize, and is perfectly harmleſs, never hurting any one.

BOMARIN, in *Zoology*, a name uſed by ſome for the *hippopotamus*, or river-horſe.

BOMB, in the *Military Art*, a hollow iron ball, or ſhell, filled with gun-powder, and furniſhed with a vent for a fuſee, or wooden tube filled with combuſtible matter; to be thrown out from a mortar.

The word *bomb* comes from the Latin *bombus*, *crepitus*, or *ſibilus ani*: by reaſon of the noiſe it makes.

The method of preparing a *bomb* is as follows: a hollow iron globe AB (*Tab. Gunnery*, *fig.* 4. & 5.), is caſt pretty thick, having a round aperture A, by which it may be filled and lighted; and circular *anſæ* C, D, of hammered iron fixed in the mould when they are caſt, for the commodious putting it into the mortar. In France the handles are caſt iron.

It has been uſual to make the lower part of the *bomb* the thickeſt, that it may fall on that ſide and never on the fuſee, and that it may alſo better reſiſt the impreſſion of the powder, by which it is diſcharged from the mortar; but Mr. Muller thinks that neither of theſe conſiderations is of any great importance, and recommends rather to make them everywhere equally thick, becauſe they would thus burſt into a greater number of pieces. Artillery, p. 151. in his Syſtem, &c. Vol. v.

To prove whether it be ſtaunch, after heating it red-hot on the coals, it is expoſed to the air, ſo that it may cool gently: for ſince fire dilates iron, if there be any hidden chinks or perforations, they will thus be opened and enlarged; and the rather, becauſe of the ſpring of the included air continually acting from within. This done, the cavity of the globe is filled with hot water, and the aperture well ſtopped, and the outer ſurface waſhed with cold water and ſoap; ſo that if there be the ſmalleſt leak, the air, rarified by the heat, will now perſpire, and form bubbles on the ſurface.

If no defect be thus found on the globe, its cavity is filled with whole gunpowder; the moſt proper quantity of powder is probably two-thirds of the weight which would fill the cavity. A little ſpace or liberty is left, that when a fuſee or wooden tube *a e*, of the figure of a truncated cone, is driven through the aperture, and faſtened with a cement made of quick-lime, aſhes, brick-duſt, and ſteel-filings, worked together in a glutinous water; or of four parts of pitch, two of colophony, one of turpentine, and one of wax; the powder may not be bruiſed. This tube is filled with a combuſtible matter, made of two ounces of nitre, one of ſulphur, and three of gunpowder-duſt, well rammed.

This fuſee, ſet on fire, burns ſlowly till it reach the gunpowder, which goes off at once, burſting the ſhell to pieces with incredible violence: whence the uſe of *bombs* in beſieging towns.

Special care, however, muſt be taken, that the FUSEE be ſo proportioned, as that the gunpowder do not take fire before the ſhell arrives at the deſtined place; to prevent which, the fuſee is frequently wound round with a wet clammy thread.

The fuſees are driven into the ſhell ſo as that only about an inch and a half comes out beyond the fuſee-hole; and then the ſhell is ſaid to be fixed. They are charged long before there is occaſion to uſe them; and in order to ſecure the compoſition with which they are filled, the two ends are covered with a compoſition of tallow, mixed either with pitch or bees-wax. When the fuſee is to be put into the ſhell, the little end is opened or cut off; but the great end is never opened till the MORTAR is to be fired.

Bombs being made of different magnitudes, it may be proper to exhibit ſome of their dimenſions; as in the following table.

Diam. of Bomb.	Thickneſs of Metal		Diam. of Apert.	Quant. of Gunpow.	Weight of Bomb.
17, In. 10	2 In.	2,10	,20	48lb.	490lb.
11, 8	1	,18	,16	15	130
8	0.10	,13	,10	4	40

Others make the thickneſs of the *bomb* $\frac{1}{8}$, or $\frac{1}{9}$, or $\frac{1}{10}$, of the whole diameter; and the diameter of the aperture $\frac{1}{9}$ or $\frac{1}{7}$ of the ſame.

Mr. Muller gives the following proportions, from the 13 inch *bombs* now commonly uſed, and obſerves that they may be eaſily adjuſted to any other calibre by making the diameter of the ſhell to 30, as any part expreſſed in inches, to the ſame part expreſſed in parts of the diameter divided into 30 equal parts.

Diameter of the bore — —	30
Diameter of the ſhell — —	29.5
Diameter of the hollow ſphere —	21
Thickneſs of the metal at the fuſee-hole	3.5
Thickneſs at the oppoſite part —	5
Diameter of the fuſee-hole — —	4
Weight of the ſhell unloaded, —	$\frac{d}{11.7}$
Weight of powder contained in the ſhell	$\frac{d}{236.5}$

N. B. The letter *d* denotes the cube of the diameter of the bore.

Bombs only differ from GRANADOS, in that the latter are much leſs; and, inſtead of mortars, are thrown out of the hand.

Bombs may be uſed without mortar pieces, as was done by the Venetians at Candia, when the Turks had poſſeſſed themſelves of the ditch, rolling down *bombs* upon them along a plank ſet ſloping towards their works, with ledges on the ſides to keep the *bomb* right forwards. They are ſometimes alſo buried under ground to blow up. See CAISSON.

M. Blondel, who has wrote on the art of throwing *bombs*, obſerves, that the firſt *bombs* were thoſe thrown into the city of Watchtendonch in Guelderland, in 1588. though others pretend they were in uſe a century before, viz. at the ſiege of Naples by Charles VIII. in 1495. But they came not into common uſe before the year 1634, and then only in the Dutch and Spaniſh armies. One Malthus, an Engliſh engineer, is ſaid to have firſt carried them into France, where they were put in uſe at the ſiege of Collioufe, in 1642.

The art of throwing *bombs* makes a branch of GUNNERY, founded on the theory of PROJECTILES, and the laws and quantities of GUNPOWDER.

Meſſ. Blondel, Guiſnee, de Reſſons, de la Hire, and others, have written expreſly on the art of throwing *bombs*.

Bomb *battery*. See Battery.

Bomb-*cheſt*, is a kind of cheſt filled uſually with *bombs*, ſometimes only with gunpowder, placed under-ground, to tear and blow it up in the air, with thoſe who ſtand on it.

Bomb-cheſts were formerly much uſed to drive enemies from a poſt they had ſeized, or were about to take poſſeſſion of: they were ſet on fire by means of a *ſauciſſee* faſtened at one end, but they are now much diſuſed.

Bomb, *water*. See Water-*bomb*.

Bomb-*veſſels*, which are ſmall ſhips formed for throwing *bombs* into a fortreſs, are ſaid to be the invention of M. Reyneau, and to have been firſt uſed at the bombardment of Algiers. Till then, it had been judged impracticable to bombard a place from the ſea. See Ketch.

BOMBARD, Bombarda, a piece of artillery anciently in uſe, exceedingly ſhort and thick, and with a very large mouth, by ſome alſo called *baſiliſk*, by the Dutch *donderbuſs*. Some derive the word, by corruption, from *Lombard*, as ſuppoſing this piece firſt uſed in Lombardy. Du-Cange, after Voſſius, derives it from *bombus*, and *ardeo*; Menage, from the German *bombarden*, the plural of *bomber*, *baliſta*. But we doubt whether the Germans knew any ſuch word. It is no unuſual thing with Menage, and many other etymologiſts, to give derivations from words of their own making.

There were ſome of theſe pieces ſaid to have carried balls of 300 pounds weight: Froiſſart mentions one of fifty foot long. To load them, they made uſe of cranes, &c. The *bombard* is ſuppoſed to have been in uſe before the invention of cannons.

Bombards can hardly be ſuppoſed to have been of metal, nor charged with gunpowder. They were rather a ſort of *baliſtæ* for throwing ſtones, and were played with ropes.

BOMBARDIER, an engineer, or perſon, whoſe buſineſs is to take care of the firing and throwing *bombs* out of mortars.—He firſt drives the fuſee, then fixes the ſhell, points, loads, and fires.

Bombardier, in *Zoology*, a name given to a ſpecies of the inſect called BUPRESTIS; the wings of which are incloſed in a kind of caſe to cover and wrap them up. It keeps itſelf concealed among the ſtones, and ſeems to make little uſe of its wings; it moves by a ſort of jump, and when touched makes a noiſe reſembling the diſcharge of a muſquet in miniature, during which, a blue ſmoke may be ſeen to proceed from its *anus*. It may be made at any time to play off its little artillery, by ſcratching its back with a needle. Rolander, who firſt made theſe obſervations upon it, ſays it can give twenty diſcharges ſucceſſively. A bladder placed near the *anus*, is the arſenal whence it derives its ſtore, and this proviſion and furniture affords its chief defence againſt an enemy; although the ſmoke emitted ſeems to be altogether inoffenſive, excepting it be by cauſing a fright, or concealing its courſe.

BOMBARDING, the art or act of attacking a city or fortreſs, by throwing bombs into it, in order to ruin or ſet on fire the houſes and magazines, and do other miſchiefs.

Bombarding is not reckoned the moſt honourable method of making war, as it rather tends to do miſchief to the inhabitants than to the works.

BOMBASINE, in *Commerce*, a kind of ſilk-ſtuff manufactured at Milan, and thence ſent into France and other countries. The French alſo uſe the word *bombaſine* for ſtuff made of cotton, more properly called dimity.

BOMBAST, in *Rhetoric*, denotes a STYLE too high and pompous for the ſubject and occaſion; or a certain manner of elocution and action, which is grand when ſupported by dignity in the ſentiment, and force in the expreſſion, but never fails to appear ridiculous, where the ſentiment is mean, and the expreſſion flat.

BOMBAX, in *Botany*, a genus of the *polyandria monogynia* claſs of plants; the ſilk cotton-tree. The characters are, that the flower is quinquefid and ſpreading; that it hath many ſtamina which are the length of the petal; that a round germen is ſituated in the centre; and that the empalement afterward becomes a large, oblong, turbinated capſule, having five cells which are lignous, containing many roundiſh ſeeds, wrapped in a ſoft down. There are three ſpecies, which grow naturally in both the Indies.

Theſe plants require a large ſtove, where they may have room to grow; but as they are ſeveral years old before they flower in the countries where they grow naturally, there is little hope of their producing any in England. The ſeed is the only part uſed in medicine, which is of a balſamic nature, uſed in coughs, ſhortneſs of breath, and ſoreneſs of the lungs, cauſing expectoration, and freeing them from tough phlegm. It is alſo reſtringent, and good to ſtop fluxes of all ſorts.

BOMBINA, in *Zoology*, a ſpecies of the RANA belonging to the order of *reptiles*.

BOMBUS, in *Muſic*, an artificial motion with the hands, imitating, in cadence and harmony, the buzzing of bees. The word is originally Greek, and ſignifies the buz or noiſe of bees, gnats, and the like.

In this ſenſe, *bombus* made one of the ſpecies of applauſe uſed by the ancient auditories.

Bombus, in *Medicine*, denotes a murmuring noiſe, as of wind breaking out of a narrow into a larger cavity, frequently heard in the thick inteſtines.

The *bombus* heard in the ears, in acute diſeaſes, is laid down by Hippocrates as a ſign of death.

BOMBYCINUM, in *Ancient Writers*, properly denoted a ſpecies of ſilk, brought from Aſſyria and the iſland of Cos. In which ſenſe, it ſtood diſtinguiſhed from SERICUM, another ſort of ſilk brought from the Indies.

Bombycinum *velamentum*. See Velamentum.

BOMBYLIUS, in *Natural Hiſtory*, the name of the common *humble*-BEE, of which we have a great variety of ſpecies, many of them very beautiful.

Mr. Ray, in his Hiſtory of Inſects, mentions no leſs than nineteen ſpecies, all wholly different from one another.

In the Linnæan ſyſtem, it is a genus of the order of *diptera*.

BOMBYLOPHAGES, *humble-bee eater*, in *Natural Hiſtory*, the name of a fly of the TIPULA, or father-long-legs kind, which is larger and ſtronger than the common kinds; and loving honey, without knowing how to extract it from the flowers, it ſeizes on the *humble-bees*, and deſtroys them, in order to get at the bag of honey which they contain. It is of a blackiſh colour in the body; its head is of a bright red, and the eyes very large and prominent. It is chiefly found in mountainous places.

BOMBYLUS *teredo*, in *Natural Hiſtory*, the name of a ſpecies of *humble-bee*, which eats its way into wood, and there makes its neſt.

BOMBYX, in *Natural Hiſtory*, a name given by ſome authors to a ſpecies of winged inſect, armed with a ſting in the manner of the bees and waſps. It is of the ſhape of a waſp, but all over black in colour; it ſtings very ſeverely, always leaving the ſting in the wound. It builds its neſt of clay, which it works up to a very hard conſiſtence, and finally faſtens to a ſtone.

Bombyx is alſo a name given to the SILK-*worm*.

Bombyx, in the *Ancient Muſic*, a kind of inſtrument, which, in Ariſtotle's time, was made of a reed, *calamus*; and, by reaſon of its length, was difficult to play on.

The word ſeems alſo to have been uſed for a contrivance of horn, for ſhutting and opening the holes of wind inſtruments.

Bombyx, in the *Ancient Naturaliſts*, ſignifies indifferently either ſilk or cotton.

BOMONICA, in *Antiquity*, an appellation given, at Sparta, to the children, who, in the ſacrifices of Diana, ſtrove who ſhould receive the greateſt number of ſtripes with rods, which they ſometimes continued to do the whole day, and even, as Plutarch relates, to death itſelf.

The word is formed from *βωμος*, *altar*, and *νικη*, *victory*; importing as much as *victor ad aras*, or *conqueror at the altars*.

BON, or Ban, in *Botany*, a name given by ſome authors to the tree, the kernel of whoſe fruit is the coffee. The fruit is, by the ſame authors, called *buna*.

Bon is alſo the name of a yearly feaſt celebrated by the Japoneſe is honour of the dead.

BONA *fides*, or Bona *fide*, is uſed in ſpeaking of things done with an honeſt intention, in oppoſition to thoſe done with a deſign of fraud and deceit, ſaid to be *mala fide*.

In this ſenſe, we ſay, a grant, a conveyance, *bona fide*.

In many caſes, in the civil law, the *bona fide* of an action excuſes the want of ſome of the cuſtomary forms.

Contracts *bonæ fidei*, among *Civilians*, ſtand contradiſtinguiſhed from thoſe *ſtricti juris*; the former being gained by plain honeſty and conſcience, which ſometimes include ſeveral things not expreſly mentioned; whereas the latter are reſtrained to the expreſs terms of the deed.

A buyer *bonæ fidei*, is he who really believed the thing to belong to the ſeller at the time when he purchaſed it.

A poſſeſſor *bonæ fidei*, is he who is in poſſeſſion of a thing belonging to another, but which he truly believes is his own.

To be entitled to the benefits of next acceſſion, it is requiſite the perſons have poſſeſſed the thing *bona fide*, or really thought themſelves the proprietors.

PRESCRIPTION cannot ariſe from acts done *mala fide*; ſince what was unjuſt in its origin, can never be made juſt by time and continuance.

Bonæ *fidei*, *Actions*, thoſe wherein, for farther light, the judge might take cognizance of things not mentioned between the parties.

Bona *fide, Judgment*, that wherein the parties are obliged to pay each other what is due *bona fide*, i. e. juſtly and equitably; and the judge has a power of eſtimating what is thus due to the actor or plaintiff; a power given him by the *formula* of the *prætor*, viz. *Ex fide bona, vel quantum æquius melius.*

Bona *gratia*, a phraſe anciently uſed in ſpeaking of divorces, which were brought amicably about for ſome juſt reaſon, with the conſent of both parties, and without any crime on the part of either, as in caſe of old age, diſeaſe, barrenneſs, monachiſm, captivity, or the like.

Bona *defuncti ad colligendum.* See Colligendum.

Bona *mobilia.* See Mobilia.

Bona *notabilia*, in *Law.* Where a perſon dying has goods, or good debts, in another dioceſe, but within the ſame province, beſides his goods in the dioceſe where he dies, amounting to the value of five pounds, at leaſt; he is ſaid to have *bona notabilia:* in which caſe, the probate of his will, &c. belongs not to the biſhop of the dioceſe where he dies, whoſe juriſdiction cannot extend beyond the bounds of his own dioceſe, but to the archbiſhop of the province.

Though if a perſon happens to die in another dioceſe, than that wherein he lives, on a journey; what he hath about him above the value of five pounds, &c. ſhall not be *bona notabilia.*

Bona *patria*, a JURY or ASSISE of countrymen, or good neighbours.

Bona *peritura*, periſhable goods. By ſtat. 13 Ed. I. cap. 4. the cargo of a ſhip that has been caſt away ſhall be kept for a year and a day, and reſtored to the rightful owner; but if the goods be ſuch as will not endure ſo long, they are *bona peritura*, which the ſheriff is allowed to ſell, and to account in money for the value.

Bona *vacantia*, goods; ſuch as royal fiſh, ſhipwrecks, treaſure-trove, waifs, and eſtrays, in which no one can claim a property. Theſe goods by the law of nature, and by the imperial law, belonged to the firſt occupant or finder; but in the modern conſtitutions of European governments, they are annexed to the ſupreme power by the poſitive laws of the ſtate.

Bonis *arreſtandis, ne diſſipentur.* See Arrestandis.

Bonis, *non amovendis*, a writ directed to the ſheriffs of London, &c. where a writ of error is brought, to charge them that the perſon againſt whom judgment is obtained be not ſuffered to remove his goods, till the error is tried and determined.

Bonis, *Terris, & catallis rehabendis poſt purgationem.* See Terris.

Arreſto facto ſuper **Bonis** *mercatorum.* See Arresto.

Bonorum *attachiamenta.* See Attachiamenta.

Summum **Bonum**. See Summum.

BONASIA, in *Ornithology*, a ſpecies of the TETRAO.

BONASUS, in *Zoology*, the name of a ſpecies of wild-ox, of the ſize of the tame kind common with us, but of a thicker body, and having on its neck a mane like that of a horſe, and horns very ſhort and crooked, ſo as to be of no uſe to him in fighting.

When he is urged, he is able to throw out his dung a great way, and it is then of a hot and corroſive nature, though not ſo at other times; and this is the method of defending himſelf: a thing hardly credible, as Mr. Ray juſtly obſerves, if we had not inſtances of other animals, which poſſeſs the like faculty. See Glama.

BOND. See Counter-bond, and Obligation.

Bond-*tenants*, are the ſame in reſpect to the nature of their tenure with *copy-holders* and *cuſtomary-tenants.* Blackſtone's Comm. vol. ii. p. 148.

Bond, in Masonry and *Brick-laying*, is when bricks or ſtones are, as it were, knit and interwoven; and when they ſay, make *good bond*, they mean that the joints are not made over, or upon other joints; but reach at leaſt ſix inches, both within the wall and on the ſurface, as the art of building requires.

BONDAGE properly denotes a ſtate of ſervitude or ſlavery.

Bondage, *bondagium*, in *Engliſh Law Writers*, the ſame with VILLENAGE.

Tenants in *bondage* paid heriots, and did fealty; they were not to fell trees in their own garden, without licence of the lord.

The widow of a *tenant in bondage* held her huſband's eſtate, *quamdiu vixerit ſine marito.*

Bondage *by the forelock*, or *bondagium per anteriores crines capitis*, was when a freeman renounced his liberty, and became ſlave to ſome great man; which was done by the ceremony of cutting off a lock of hair on the forehead, and delivering it to his lord; denoting, that he was to be maintained by him for the future.

Such a *bondman*, if he reclaimed his liberty, or were fugitive from his maſter, might be drawn again to his ſervitude by the noſe; whence the origin of the popular menace, *to pull a man by the noſe.*

BONDMAN, *bondus*, in the *Engliſh Law*, is uſed for a VILLAIN, or tenant in VILLENAGE.

The Romans had two kinds of *bondmen*; one called *ſervi*, who were thoſe either bought for money, taken in war, left by ſucceſſion, or purchaſed by ſome other lawful acquiſition; or elſe born of their *bondwomen*, and called *vernæ.* Both are called in our law *villains in groſs*, as being immediately bound to the perſon and his heirs. We may add a third kind of *bondmen* mentioned by Juſtinian, called *adſcriptitii glebæ*, or *agricenſiti*; who were not bound to the perſon, but to the ground or place, and followed him who had the land. Theſe, in our law, are called *villains regardants*, as belonging to the manor or place.

In the Engliſh as well as Scottiſh laws, thoſe called by the Romans *vernæ*, are ſometimes alſo denominated *nativi*, as being born on the land.

The word is formed from the Saxon *bond*, ſignifying a *fetter.*

BONDUC, in *Botany*, the name given by Plumier to a genus of plants, afterwards characteriſed by Linnæus under the name of GUILANDINA.

BONDUCH, in the *Materia Medica*, a name by which many authors have called the Molucca, Marſao, or Bezoar nuts.

BONE, in *Anatomy*, a white, hard, brittle, inſenſible part of the BODY, framed for the defence of the ſoft parts, and the ſupport of the whole ſabric. See Body, Part, &c.

Bones are divided according to the parts wherein they are found, into the *bones* of the head, the feet, the *thorax*, &c. From their offices, figures, &c. many have likewiſe proper names, as the *os ſacrum*, *jugale*, *lacrymale*, *coccendix*, *pubis*, &c. Spongeous *bones*, *oſſa ſpongeoſa*, are thoſe full of large pores, formed like honey-combs.

Bones have their veſſels and circulating fluids, and, in ſhort, the ſame general texture which other parts have; ſolidity, and the ſtronger coheſion of parts, are the only evident diſtinguiſhing characters of the compoſition of *bones.* Monro. Med. Eſſ. Ed. vol. v. art. 24.

There is at leaſt one artery for each *bone*, ſeveral having more, for the conveyance and ſecretion of the medullary matter. After the ingreſs of the artery into the *bone*, it divides into a number of branches, which are diſtributed *quaqua verſum* on the internal membrane. The blood, which remains after the ſecretion of the marrow, is returned by proper veins, ſome of which paſs out of the *bone* either at the ſame hole whereby the artery entered it, or very near it.

In a *bone* we conſider divers things; the body, which is the middle or greater part, called by Galen *diophyſis*; the heads, which are the great protuberances at the ends; the neck, the part immediately under the head; *ſupercilia*, the extremities of the ſides of a cavity at the end of a *bone*; ridges, the prominent, ſalient parts in the length of the body of the *bone.*

Some cavities are formed for articulation, called *cotyles* and *glews*, which contain a mucilaginous humour, ſeparated from the glands of that name; others, not ſubſervient to articulation, receive different names, according to their figures; ſome being called *foramina*, or holes; others, *foſſæ*, or trenches; others, *ſulci*, or furrows, &c. Heiſter. Comp. Anat. § 45, &c.

Bones, with regard to their form and ſtructure, may be divided into flat or broad, which have thin ſolid ſides, and a thick intermediate ſpongy part; and round, which are more hollow, having the ſolid part thicker and ſtronger.

Bones may be divided with regard to their conſiſtence, 1. Into rocky, *oſſa petroſa*, which are hardeſt of all; as the temple-*bones*, thoſe of the ear, the thigh-*bone*, *tibia*, &c. 2. Soft *bones*, *oſſa mollia*; as the *ethmoides*, *vertebræ*, *carpus*, *tarſus*, and the *epiphyſes.* 3. Solid *bones*, *oſſa ſolida*, thoſe without any cavities; as the *omoplata*, *iſchion*, the teeth, &c.

The *bones*, in reſpect of their internal ſtructure, may be divided into thoſe which have a conſiderable cavity within, filled with marrow, as the *bones* of the arms and legs; and thoſe which have no ſuch cavity, or marrow, as the *bones* of the ſkull and ribs, &c.

Little *bones* are denominated OSSICLES.

The *bones* are all covered with a peculiar membrane, called the *perioſteum*; and are moſt of them hollow, and filled with an oily ſubſtance called *marrow.*

Dr. Havers, deſcribing the texture of the *bones*, obſerves, that they conſiſt of *lamellæ*, or plates lying one upon another; and thoſe, again, of fibres running lengthwiſe, ſome to the extremities of the *bones*, others not ſo far; but none of them terminating there in diſtinct ends, as they ſeem to do; but, in lieu of that, continued tranſverſely, and as it were arched: the fibres of one ſide meeting and uniting with thoſe of the other; and this at each extremity. So that the fibres are a continuation of each other; though not in the ſame uniform order, but in very long ellipſes; not all of a length, however, but in each plate ſhorter and ſhorter than in another.

Theſe *lamellæ*, or plates, are differently diſpoſed in different *bones*; v. gr. in thoſe that have a large cavity they are contiguous on each ſide, and very cloſely united; in thoſe again, whoſe cavities are ſmall, or which are altogether ſpongeous within, many of the internal *laminæ* are placed at a diſtance from each other, having betwixt them little *bony* cells; and even in *bones* that have a larger cavity, ſome of theſe leſſer cells are uſually found at each extremity. In ſuch *bones* as have their plates contiguous, there are pores through and between the plates, beſides thoſe made for the paſſage of the blood-veſſels: the firſt penetrate the *laminæ* tranſverſely, and look from the cavity to the external ſurface of the *bone*; the ſecond run longitudinally between the plates: the firſt are found in every one of the *laminæ*; though the nearer the cavity, the greater the number of pores; but they do not lie directly over one another, ſo as to form any continued paſſage from the cavity to the ſurface: the ſecond are ſeldom found but by good glaſſes; a medullary oil is diffuſed by theſe, throughout the plates; and to thoſe, the firſt kind ſeems only ſubordinate, ſerving to bring the oil into them.

On viewing the *bones* with the aſſiſtance of good glaſſes, their ſuperficial part is found to conſiſt of a great many ſmall veſſels, and ſome few of a larger ſize; which laſt, when they come to the ſurface of the *bone*, appear inveſted with either a membrane or a bony ſubſtance, perfectly tranſparent. The inſide of the *bone* is a ſpongy or cellular ſubſtance, conſiſting of long particles, cloſely united; and theſe are compoſed of numberleſs ſmall veſſels, cloſely united, and ſome running lengthways, others taking their courſe toward the ſide of the bony fibres; which, notwithſtanding their great number of apertures, are extremely hard, and lie ſome parallel, and others perpendicular to the length of the *bone*. Mr. Lewenhoeck diſcovered once, in a ſmall bit of a ſhin-*bone*, four or five veſſels, with apertures large enough for a ſilk to paſs through, each whereof ſeemed furniſhed with a valve, diſpoſed in ſuch a manner as to let out what was contained in the veſſel, but ſuffer nothing to return into it.

The way to examine the *bones*, is to ſhave off, with a very ſharp pen-knife, extremely thin pieces, lengthwiſe, croſſwiſe, and obliquely, and theſe from the outſide, inſide, and middle of the *bone*, and apply theſe, ſome dry, others moiſtened with water, to the *focus* of the double microſcope; and thus the veſſels will be ſeen in all directions: but the beſt way of ſeeing the bony ſtructure, is by putting the *bones* in a very clear fire till they are red hot, and then taking them out carefully, you will find the bony cells, though tender, perfect and entire; and, being now quite empty, they may be viewed with eaſe and pleaſure. Baker's Microſc. p. 143.

The marrow in the cavity of the *bones* is inveſted with a membrane, wherein are included little bags, or lobules; and in theſe bags are *veſiculæ*, or glandulous bladders, ſerving both for the ſecretion of the medullary oil from the blood, and for the reception and conſervation of the ſame. They ſeem to have paſſages into each other, as have alſo the bags; whereby the oil has a freer courſe to the joints and ſubſtance of the *bone*. The uſe of the marrow is to oil the ſubſtance of the *bone*, and to prevent its being too dry and brittle; it alſo lubricates the articulation of the *bones*, and hinders their ends from being worn, or overheated with motion; and it moiſtens the ligaments by which they are tied to each other: in which it is aſſiſted by the mucilaginous glands, found in all the articulations of the *bones*.

The *bones* are generally bigger at their extremities than in the middle; that the articulations might be firm, and the *bones* not ſo eaſily diſlocated: but to render the middle of the *bone* ſtrong withal, ſo as to ſuſtain its allotted weight, and reſiſt accidents, the fibres are there more cloſely compacted together, and ſupport one another; to which it may be added, that the *bone*, being hollow, is not ſo eaſily broken, as if it had been ſolid, and ſmaller; for of two *bones* of equal length, and of equal numbers of fibres, the ſtrength of the one to the ſtrength of the other, will be as their diameters.

The *bones* are joined and connected together various ways, according to the various purpoſes they are to ſerve: ſome being intended for motion, others for reſt, and the ſupport of the incumbent parts only.—That jointure intended for motion, is called DIARTHROSIS, or articulation ſeparated; that for reſt, SYNARTHROSIS, or articulation conjoined; and each of theſe again is ſubdivided into ſeveral others. See ARTICULATION.

Beſides the articulation of the *bones*, there is alſo their union or connection, called by the ancients SYMPHYSIS.

The number of the *bones* is various in various ſubjects: ordinarily it is about 242; ſome ſay 300; others, 307; others, 318: but the later writers fix it at 249 or 250; 61 of which are in the head, 67 in the trunk, 62 in the arms and hands, and 60 in the legs and feet: the variations are in the number of the *ſeſamoidea*, the teeth, and the *ſternum*.

The *bones* of the human ſkeleton, enumerated by Winſlow, are 54 in the head, without reckoning the *os hyoides*, and *bones* of the ear; 54 in the trunk, taking the *coccyx* for one *bone*, and the *ſternum* for two; 124 in the extremities, leaving out all the *ſeſamoidal bones*; ſo that the whole number is 232, to which adding the eight *bones* of the ear, and the five principal pieces of the *os hyoides*, we ſhall have in all 245, the *ſeſamoidal bones* being ſtill omitted. Winſlow's Anat. vol. i. p. 4.

The names of the ſeveral *bones* are given in the following table; their figures and places are repreſented in *Tab. Anat.* P. 1. (*Oſteol.*) and particular deſcriptions of each are given under their proper heads.

Os Frontis	1	*Vertebræ Cervicis*	7	The *Os Femoris*	2
— *Occipitis*	1	——— *Dorſi*	12	*Patella*	2
Oſſa Parietalia	2	——— *Lumborum*	5	*Tibia*	2
— *Temporum*	2	——— *Oſſis Sacri*	6	*Fibula*	2
Oſſicula Auditus	8	*Os Coccygis*	3	*Oſſa Tarſi*	14
Os Ethmoides	1	*Scapula*	2	— *Metatarſi*	10
— *Sphenoides*	1	*Clavicula*	2	— *Digitorum*	28
Oſſa Malæ	2	*Coſtæ*	24		
— *Maxillaria*	2	*Sternum*	1		60
— *Unguis*	2	*Oſſa Innominata*	2		
— *Naſi*	2			In all	245
— *Palati*	2		64		
Vomer	1				
Maxilla Inferior	1	The *Humerus*	2		
Dentes Inciſivi	8	*Ulna*	2		
—— *Canini*	4	*Radius*	2		
—— *Molares*	20	*Oſſa Carpi*	16		
Os Hyoides *	1	— *Metacarpi*	8		
		— *Digitorum*	30		
	61		60		

Beſide the *Oſſa Seſamoidea*, which are ſaid to be found to the number of 48.

Of the bones, the leaſt is the ORBICULARE; the biggeſt, the FEMUR.

* To which may be added the two *oſſa convoluta*, or lower ſhells of the noſe. See CONCHÆ *Narium*.

The blood-veſſels of the *bones* Dr. Havers divides into nutritious and medullary; the one furniſhing matter for the nutrition, the other for the lubrication of the *bones*. The chief of the nutritious enter the ends of the *bone*, viz. the arteries at one end, and the veins at the other. The medullary commonly enter the ſides of the *bone*, and that obliquely; but both by the ſame foramen.

The medullary oil is diſpenſed from the cavity where it is depoſited, throughout the whole ſubſtance of the *bone*; paſſing firſt through the tranſverſe pores of the firſt internal *laminæ* into the longitudinal ones; where it proceeds till it finds other tranſverſe pores, when it alters its courſe again, and exudes farther: thus it paſſes alternately through and between the plates, till it is diffuſed throughout. This is the method of its conveyance in *bones*, whoſe plates are contiguous: where the plates are at a diſtance, as in *bones* that have no great cavity, the ſmall caverns above mentioned contain medullary glands; whence the plates have the benefit of the marrow without the former method of conveyance.

Thus are all the *bones* ſtocked with pores, &c. excepting the TEETH; which have this further diſtinction, that they have nerves inſerted into them: whereas, in all the other *bones*, the nerves go no farther than the *perioſteum*.

Beſides the large cavities in the inſide, moſt *bones* have ſuperficial cavities, or *ſinuſes*, which may be diſtinguiſhed into *ſulci*, or furrows, the longer ſort; and *foveæ*, pits, the ſhorter ones.

On the outſide are alſo obſerved prominences, whereof there are two kinds; the one a continued part of the *bones*, jutting apparently above its plain ſurface, for the more commodious inſertion of the muſcles, &c. called *apophyſis*, or *proceſſus*; the other an additional *bone*, growing to another by mere contiguity, being generally more ſoft and porous than the other, and called an *epiphyſis*, or *appendage*. If the protuberance be round, it is called the *caput*, under which is the *cervix*; if flat, *condylus*; if ſharp, *corona*.

The natural colour of the freſh *bones* of an adult human *body* is whitiſh, with a ſmall mixture of pale red. This red colour is more conſiderable in children, but decreaſes by degrees as they grow up, and is loſt in old age. It is owing to the blood-veſſels of the *bones*, which are larger, and leſs ſurrounded by the bony juices in infancy than in age; ſo that the colour of the blood appears through the ſubſtance of the *bones*. Winſlow.

The general uſe of the *bones* is to ſupport and ſtrengthen the body, like beams and pillars in a building; to defend ſome of the more eſſential parts, as the brain, &c. to give ſhape to the body, and to aſſiſt in motion.

It is demonſtrable, that of whatever figure *bones* are, and in whatever manner their fibres are diſpoſed, their ſtrength muſt always be in a *ratio* compounded of their quantity of bony matter, and of the diſtance of their center of gravity from the center of motion.

Hence, on a double account, the part of a *bone*, formerly fractured, muſt be ſtronger than any other part of that ſame *bone*, becauſe the diameter is enlarged, and the quantity of matter is increaſed.

The human *bones* have been ſometimes known to grow ſoft and flexible, ſo as to bend any way with leſs difficulty than the muſcular parts of a healthy perſon's leg. Phil. Tranſ. N° 470. ſect. 3.

Bartholin gives an inſtance of an *anoſteus*, or boneleſs child, ſhewn at Briſtol, whoſe arms and legs were flexible like a glove

Bones have ſometimes been found incruſted with ſtone, which has given riſe to accounts of ſkeletons petrified. Phil. Tranſ. N° 477. p. 55, &c.

Bones are totally ſoluble in concentrated acids of vitriol, nitre, and ſea-ſalt, and may be ſoftened by theſe or acetous acids diluted. Gradual heat renders them opake, white, and friable; but if they are firſt urged with a ſtrong fire, ſuch as is ſufficient to melt iron or copper, they become hard, ſemi-tranſparent, and ſonorous.

By diſtillation in a retort, the *bones* reſolve into phlegm, ſpirit, volatile ſalt, fetid oil, and *caput mortuum*, which, calcined in an open fire, leaves a white earth, without any fixed ſalt. This laſt appears to be the proper conſtituent part of the *bones*, ſince after the other principles are ſeparated, the earth ſtill retains the former ſhape of the *bone*, though it be ſo brittle, that, on the leaſt touch, it moulders into duſt. When moiſtened with a little water or oil, it recovers ſome degree of tenacity again; but cannot be reſtored to its former firmneſs.

The *origin* and *formation* of *bones* is generally traced from cartilages, which all *bones* are ſuppoſed once to have been; or, according to others, membranous tendons. Some deduce theſe further from gellies; and others from mere fluids; which ſucceſſively arriving at greater and greater conſiſtency, become firſt gelatinous, then tendinous, then cartilaginous, and laſtly bony. Phil. Tranſ. N° 54. N° 71. and N° 81.

Hence the different ſtates of the *bones* in different ages, ſexes, and the like; which, in children, are found ſoft, moiſt, and cartilaginous; in aged people, hard, dry, and inflexible; the very cartilages in theſe frequently becoming bony.

Bones have been regenerated. See Phil. Tranſ. vol. lix. N° 6. an. 1769. p. 41, &c.

Dr. Niſbet, in his Human Oſteology, undertakes to demonſtrate, that the notion of all, or any *bones*, being originally cartilaginous, is without foundation in nature.

Some conſider the membrane wherewith the *bones* are lined, as a kind of *perioſteum internum*, if the expreſſion may be allowed; which, according to Havers, takes its origin from the muſcular coat of the medullary artery. Be this as it will, it is contiguous with the whole internal ſurface of the *bones*, and enters the tranſverſe pores, as the external *perioſteum* does the ſinuoſities of the *bones*; though it does not adhere ſo cloſe thereto as the external does. Monro, Oſteology, p. 19, &c. &c.

The *bones* are uſually capped at the ends with CARTILAGES, and to them are alſo annexed LIGAMENTS.

The doctrine of the *bones* makes a particular branch of *Anatomy*, under the denomination of OSTEOLOGY, or OSTEOGRAPHY.

The formation or geneſis of the *bones* is called OSSIFICATION, or OSTEOGONY.

A ſyſtem of the ſeveral *bones* of a body, dried, whitened, and joined together in their natural order by art, is called a SKELETON.

Animals without *bones*, are ſaid to be *anoſtei*; ſuch are all the ſpecies of reptiles, inſects, &c.

BONES, *extraneous* or *preternatural*, have been found in the *meninges*, the duplicatures of the *dura mater*, between the *cerebrum* and *cerebellum*, in the *matrices* of women, does, hares, cows, *omentum* of ſows, &c. Hiſt. Acad. Sc. an. 1711. 1713. Plott's Hiſt. Staff. ch. vii. § 56. 63. and 74.

BONES, *diſeaſes and injuries of the*.—Thoſe to which the *bones* are ſubject, are fractures, luxations, fiſſures, caries, cancers, nodes, rickets, tophi, exoſtoſes, or excreſcences, &c. To which may be added other leſs uſual diſorders, as preternatural hardneſſes, almoſt to a degree of petrefaction, and ſtiffneſſes to the condition of wax, unions or coalitions of all the *bones* of the body into one, creaking of the *bones* in ſcorbutic caſes, worms in the cavities of the *bones*, &c. Mr. Petit gives an inſtance of the carnification of the *bones*; wherein, by a change contrary to that of their firſt formation, they were reconverted from *bones* to fleſh, or cartilages. Phil. Tranſ. N° 251. N° 379. Mem. Acad. Scien. an. 1720.

The operations practiſed in diſeaſes of the *bones*, are excision, amputation, perforation, trepanation, ſetting or replacing, exfoliation, ſhaving, filing, &c.

BONES, *wounds of*.—As blunt inſtruments uſually make fractures of the *bones*, ſo ſharp ones, ſuch as ſwords, ſpears, &c. do, properly ſpeaking, ſometimes wound them; and theſe wounds cannot be ſuffered, without a great variety of ſymptoms, which are often very dangerous, according to the ſize and depth of the wound, and the nature of the wounded part. Such ſlight wounds as do not penetrate deep into the *bone*, are often attended with no great danger, eſpecially if proper care be taken in the dreſſing of them, and the injured *bone* be as much as poſſible kept covered with its integuments, from the injuries of the external air. All fat and oily medicines muſt be wholly rejected in wounds of this kind, as great enemies to the *bones*. But when wounds of this kind penetrate deep, and wholly divide the *bone* and its adjacent parts, or violently affect any of the organs neceſſary to life, in the head, neck, back-*bone*, or breaſt, with a puncture or diviſion of the longer veins, arteries, nerves, and tendons of the upper and lower limbs, the danger is always great, the cure difficult, and death too often the conſequence. Petit has adviſed, that, in wounds of the *bones*, if the ſolution be inflicted lengthwiſe, the lips of the wound are to be cloſed and united by the uniting bandage; but if the wounds are very oblique, or wholly tranſverſe, then they are to be joined together by ſuture, and the eighteen-headed bandage; but this is certainly a wrong method in many caſes of this kind. Indeed, in the firſt kind of theſe wounds, and when they are very ſlight, as when the ſkull is not wholly, nor indeed very deeply penetrated, and that without contuſion, nor the brain much hurt, this method may do very well; but when the contrary of theſe mild ſymptoms are the caſe, a very different method of cure is to be attempted; the wound is to be kept open with lint, and not healed up till thoroughly cleanſed; for, by a too ſpeedy cloſure of ſuch wounds, the very worſt ſymptoms, and even death very often, are brought on.

So alſo, in ſlight, oblique, or tranſverſe wounds of the *bones*, the ſuture, or the eighteen-headed bandage, may be uſed with ſafety and ſucceſs; but theſe are ſeldom neceſſary; and in oblique wounds of the head, forehead, and *cranium*, if not violent ones, the parts may be much eaſier cloſed and retained by a common bandage and plaſter, than by ſutures with the needle, or the eighteen-headed bandage; but when the divided part hangs down, the ſuture may indeed be neceſſary.

If the *bones* of the fingers are thus wounded, or wholly divided by a ſword, they may be happily cured without the ſuture, by the following method. Firſt, accurately replace the divided *bone*, then ſecure it in its place, by winding round a ſlip of plaſter, and, over this, applying a compreſs dipped in ſpirit of wine, and laying over all little ſlips of paſt-board, by way of ſplints; then binding up the whole with a proper narrow bandage, and hanging the arm in a ſling from the neck. Once, in about three days, the dreſſing is to be removed, and the wound treated with a vulnerary eſſence; and in a month the cure will be perfected.

If either of the *bones* of the *cubitus* be divided, it uſually is the *ulna*, as that is moſt expoſed to the ſword in fighting. This caſe requires neither the ſuture nor eighteen-headed bandage; but the wound being cleanſed, is to be treated with ſome vulnerary eſſence or balſam, and with lint dipped in the ſame eſſence; after which are to be laid on, in order, the plaſter, compreſs, and paſt-board ſplints, wetted with ſpirit of wine, which are to be bound round the thick part of the *cubitus* near the wound, with a long bandage, that, as they dry, they may accommodate themſelves the better to the figure of the part; and, laſtly, the arm is to be ſuſpended in a ſling hung round the neck: after this, the wound is to be dreſſed every day, or every other day, in proportion to the diſcharge, and a cure without the help of the ſuture will be eaſily effected; the ſuture, in ſuch caſes, being not only unneceſſary but pernicious. But if both *bones* are divided, then indeed the eighteen-headed bandage may be neceſſary, and uſed with advantage; but, even in this caſe, the ſuture is much better let alone: for it is always to be avoided, except when perfectly neceſſary, from the dangers of inflammation, convulſions, and other bad ſymptoms that too naturally attend it.

If the thigh-*bone*, however, ſhould be cut with a ſword, in that caſe the bloody ſuture will be of ſervice, and is even neceſſary to cloſe and retain thoſe very ſtrong muſcles: the wound is, in this caſe, to be carefully treated, and the limb laid up in a caſe of ſtraw, as in other fractures. So alſo, if the *bone* of the *humerus*, or arm, ſhould be penetrated with a ſword, that wound alſo ſhould, for the ſame reaſon, be treated by the ſuture; but then it is not to be dreſſed with the eighteen-headed bandage, but with the common long and narrow bandage uſed in other fractures of the arm; the limb is afterwards to be ſupported by a ſhort napkin, faſtened about the neck, by which means the muſcles will be brought to a more ready union, and the cure ſooner perfected.

If it ſhould happen that both *bones* of the *cubitus* or leg ſhould be divided by a ſword, ſo as to leave the limb hanging only by the fleſh, ſkin, and blood-veſſels, which is a caſe that very rarely happens, without wholly amputating the limb, then alſo the ſuture, with the eighteen-headed bandage, are the neceſſary applications; the ſuture, however, can be of no ſervice in a caſe of this kind, when the fleſh and blood-veſſels are divided, and the limb ſo far cut off, as to hang only by a ſkin, eſpecially when the part is ſo conſiderable as the leg or arm; for, in theſe caſes, the limb muſt be taken off, and the ſtump dreſſed as in other amputations.

When the lower-jaw is ſo cut by a ſword, that the piece ſeparates, and cannot be otherwiſe retained, then alſo the ſuture may be uſed, adding a proper compreſs, plaſters, and the ſuitable bandage. If the clavicle, or *acromion ſcapulæ*, ſhould in like manner be wounded by a ſword, the treatment and bandage are to be of the ſame kind, gently unbending, cleanſing, and dreſſing the part either every day, or every other day, as the diſcharge ſhall require, till the cure is perfected. Heiſter.

No medicines ſo effectually prevent the corruption of *bones* laid bare, and aſſiſt to cover them ſo ſoon with fleſh, as ointments, balſams, and dreſſing ſeldom, in order to have the aſſiſtance of the moſt effectual balſam of all, *pus*. With theſe we ſee the extremities of amputated *bones* covered over with fleſh, part of the ſkull, *tibia*, and other ſolid *bones*, covered in a little time with granulated fleſh, after they had been laid quite bare by wounds made even with bruiſing inſtruments; and likewiſe after their carious ſurface had been cut off, and a complete cure made, without the leaſt exfoliation. Monro, Med. Eſſ. Edin. vol. v. art. 24

Bone-*ſetting*, the art or act of replacing diſlocated *bones*, and the parts of fractured ones.

The Spaniards call their *bone*-ſetters *algebriſts*.

Bone-ſetting, by ſome called *συνθετισμος*, *ſynthetiſmus*, includes the four operations of extenſion, coaptation, deligation, and REDUCTION or repoſition.

FRACTURES and DISLOCATIONS of *bones* are ſo frequent, that it ſeems ſurpriſing the ſetting them ſhould ſo long have been left to quacks and ignorant perſons. It is about 150 years ſince the methodical ſurgeons have applied themſelves to this art; which they have carried to a degree of perfection beyond what it ever arrived at among the Greeks.

A *bone*-ſetter ſhould poſſeſs a perfect knowledge of anatomy, and mechanics; the former, to inform him of the ſtate and ſituation of the fractured or diſlocated *bones*; the latter, to furniſh machines, whereby to reinſtate them. The famous bench of Hippocrates was once held the moſt perfect engine of this kind. See AMBE.

M. Petit has contrived another, which not only ſeems more handy and portable, but more powerful, as well as leſs painful to the patient. By means of it, the operator is fully maſter of the powers that pull it, and may proportion them to the ſtrength and weakneſs of the ſubject. and that of the muſcles or tendons which are to be replaced. Add, that as it is neceſſary, the power which retains the body be equal to that which pulls the diſlocated member: in this machine, the ſame rope which pulls the limb, repels the body; and that the machines hitherto contrived, have only ſerved for luxations of the ſhoulder, and that of the hip, which are made upwards, and where the members are ſhortened; whereas this ſerves for FRACTURES as well as LUXATIONS, and not only where the members are ſhortened, but where they are longer. Mem. Acad. Scienc. ann. 1716, p. 330, &c.

The replacing a diſlocated *bone* of a horſe, is a work of much difficulty, and requires great force: they uſually caſt the beaſt on a ſoft place, put four ſtrong paſterns on his feet, and draw him from the ground, that his whole weight may, in a manner, reſt on the disjointed member. Some tie a leathern thong about the paſtern, faſtening the other end of it to a yielding ſhrub, and thus whip the creature to make him ſtrain with all his force, till the *bone* fly into its place.

Bones, *boiling and whitening them*, are neceſſary operations in making SKELETONS: the method of doing which is thus deſcribed by Simon Pauli. They muſt firſt be well boiled, and afterwards expoſed day and night in the open air for a conſiderable time. The beſt ſeaſon for this operation is in wet ſtormy weather, eſpecially in the months of January, February, March, &c. the air being then impregnated with a nitrous ſalt, which contributes much to give them a bright white colour. If it does not rain, they muſt be ſprinkled with a bruſh dipt in rain water; and even rubbing them gently with the bruſh may be of uſe.

In expoſing them, care muſt be taken to place them on a fir-board, by no means an oak one, which ſhould be covered with a ſtratum of ſlate-ſtone, firſt well ſoaked in water; next, fine ſea-ſand is to be ſprinkled on, an inch or two deep. The uſe of the ſand is to imbibe what marrow or fat remains in the *bones* after boiling.

Bones, *colouring and ſtaining of*.—The *bones* of living animals are capable of acquiring colour by the circulation of the blood and juices from their aliment; many inſtances of this kind, in which they have been changed into a deep red by madder-root, are recorded both in the Philoſophical Tranſactions, and in the Memoirs of the French Academy. *Bones* and horns may be likewiſe artificially ſtained with a variety of colours, by ſteeping or boiling them in decoctions of the vegetable or animal ſubſtances which are uſed for dying. They may be ſtained alſo, without heat, by metallic ſolutions, and in this way may be ſpotted or variegated at pleaſure. Thus ſolution of ſilver in *aqua fortis* gives a brown or a black, according to its quantity; ſolution of gold in *aquo regia*, or in ſpirit of ſalt, a fine purple; ſolution of copper in the acetous acid, a fine green; and ſolutions of the ſame metal in volatile alcalies, a blue, which is at firſt deep and beautiful, but changes on being expoſed to the air into a green or bluiſh-green. If the *bone* or horn is only touched with the two firſt ſolutions, and expoſed to the air, it does not fail to acquire the colour in a few hours: in the two latter, it requires to be ſteeped for a day or longer, in order to its imbibing the colour. In theſe and other caſes, where immerſion is neceſſary, the *bone* may be variegated, by covering ſuch parts as are intended to remain white, with wax, or any other matter, which the liquor will not penetrate and diſſolve. Phil. Tranſ. abr. vol. ix. p. 104, &c. Neumann's Works, by Dr. Lewis, p. 519. Lewis's Com. Phil. Techn. p. 97. 435. See DYING and IVORY.

Bones, *in the funeral ſolemnities of the ancients*.—Divers uſages and ceremonies relating to the *bones* of the dead, have obtained in different ages; as gathering them from the funeral pile, waſhing, anointing, and depoſiting them in urns, and thence into tombs; tranſlating them, which was not to be done without the authority of the pontiffs; not to ſay worſhipping of them, ſtill practiſed to the *bones* of the ſaints in the Romiſh church. Among the ancients, the *bones* of travellers and ſoldiers, dying in foreign countries, were brought home to be buried, till, by an expreſs S. C. made during the Italic war, it was forbid, and the ſoldiers *bones* ordered to be buried where they died: the reaſon was, leſt the melancholy ſight ſhould diſcourage the people from venturing their lives. Antiquaries are divided as to the manner of diſtinguiſhing the *bones* of the deceaſed, from thoſe of the beaſts and ſlaves who were ſacrificed at his funeral, and thrown into the ſame fire: probably it was done by diſpoſing the body of the dead in the middle of the pile, and the others towards the ſides. Potter's Archæol. tom. ii. lib. iv. cap. 6.

The Romans had a peculiar deity, under the denomination *Oſſilago*, to whom the care of the induration and knitting of the human *bones* was committed; and who, on that account, was the object of the adoration of all breeding women. Pitiſc. Ant. tom. ii. p. 341.

Bones, in *Commerce*, are very uſeful articles, for making different kinds of toys; and alſo in ſeveral of the chemical arts; as for making caſt iron malleable, for abſorbing the ſulphur of ſulphureous ores, for forming teſts and COPPELS, or veſſels for refining gold and ſilver with lead; for burnt *bones* compoſe a maſs of a porous texture, which abſorbs vitrified lead and other metals, while the unvitreſcible gold and ſilver remain entire behind. They are uſed for the preparation of milky glaſſes and porcelains, for the rectification of volatile ſalts, and of empyreumatic oils, and for making glue. The *bones* of different animals are not equally fit for different uſes; even the glue or gelatinous part of the *bones* of one animal, is notably different both in quantity and coheſiveneſs, from that of another. Neumann's Works, p. 518.

The *bone* of the cuttle-fiſh is uſed by goldſmiths for making moulds; thoſe of bullocks for painters black; alſo, in lieu of ivory, for toys and cutlers work; where, if they be leſs white than ivory at firſt, they do not ſo ſoon turn yellow.

Papin has given a method of turning *bones* to food. Phil. Tranſ. Nº 187. p. 329.

The Turks are ſaid to have applied *bones* to building, and to have built a wall with the *bones* of the Chriſtians killed at the ſiege of Philadelphia.

A piece of this *bone* wall was ſent to Dr. Woodward, who found the tradition to be an error; the ſubſtance not being *bone*, but a looſe, ſoft, porous earth, formed in an old aqueduct, now in the wall; or rather, an incruſtation of ſeveral bodies, chiefly vegetable, cemented together by ſpar̄y and ſtony matters, found in the ſpring.

Bones, *foſſile*, or *petrified*, are thoſe found in the earth, frequently at great depths, in all the *ſtrata*, even in the bodies of ſtones, and rocks.

There are divers ſorts of foſſile *bones*; ſome of a huge ſize, uſually ſuppoſed to be the *bones* of giants, but more truly of elephants, or hippopotami; other ſmaller, as *vertebræ*, teeth, and the like.

It has been diſputed whether theſe be really animal ſubſtances, or mineral; that is, ſtones thus figured. Modern naturaliſts generally allow them to be animal, not merely on account of their figure and reſemblance, but of their chemical principles, which are found to be wholly of the animal kind. It is ſuppoſed they were repoſited in thoſe *ſtrata* at a time when all things were in a ſtate of ſolution, and that they incorporated and petrified with the bodies where they happened to be lodged.

Bone is alſo applied abuſively in ſpeaking of other matters which bear ſome analogy either in reſpect of ſtructure or office, to the *bones* of animals.

In this ſenſe, rocks are ſometimes called the *bones* of the earth. Divers ſpecies of figured ſtones, as the *cephalites*, *cardites*, &c. are denominated mineral *bones*, *enoſta*, *oſteocolla*, &c. Some naturaliſts conſider ſhells as a ſpecies of *bones*. The lobſter, according to Fontenelle, is an animal which carries its *bones* on its outſide.

Bones, *Giants*. See Giants *bones*.

Bones, *Mammout*. See Mammoth.

Bon-*fire*. See *Bon*-Fire.

Bone-*lace*. See Lace.

Bone, *hurle*, *Neper's*, *quitter*, *ring*, *whale*. See the ſeveral articles.

BONGO *pala*, in *Botany*, a name by which ſome authors have called the tree which produces the nutmeg.

BONIFACIA, in *Botany*, a name uſed by John Bauhine, and ſome others, to expreſs the broad-leaved Ruscus, or Butcher's-*broom*, commonly called the Alexandrian bay.

BONITO, in *Zoology*, the name of a fiſh, of the tunny or Trachurus kind, and called by ſome *curvata pinima*.

It is a large ſea-fiſh, with a long, broad, and thick body: its eyes are large, as are alſo its gills, and the greater part of its body is free from ſcales. It is a fiſh of very great beauty. It is an extremely common fiſh in ſome ſeas; our Eaſt India ſhips uſually fall in with immenſe ſhoals of them.

BONNA, in *Natural Hiſtory*, a name given by Pliny, and ſome other of the ancient Latin writers, to the Bonasus.

BONNET, in a general ſenſe. See Cap, Hat, &c.

Bonnet, in *Fortification*, a kind of little ravelin, without a ditch, having a parapet three feet high; anciently placed before the points of the ſaliant angles of the *glacis*; being paliſadoed round: of late alſo uſed before the angles of baſtions, and the points of ravelins, and fauſſebrayes. See *Tab. Fortif. fig.* 21. *lit. m.*

The *bonnet* has two faces, from ten to fifteen, or more rods long: the parapet is made of earth, from thirty to thirty-ſix feet thick, and from nine to twelve feet high: it is environed with a double row of paliſadoes ten or twelve paces diſtant from each other; hath a parapet three feet high, and is like a little advanced *corps du guard*.

Bonnet *à prêtre*, or *prieſt's* cap, is an outwork, having at the head three ſaliant angles, and two inwards.

It differs from the *double* Tenaille only in this, that its ſides, inſtead of being parallel, grow narrower, or cloſer at the gorge, and open wider at the front; on which account it is alſo denominated Queue d'aronde, or ſwallow's tail.

Bonnets, in *Sea-language*, ſmall ſails, ſet on the courſes, on the mizen, main-ſail, and fore-ſail of a ſhip, when theſe are too narrow, or ſhallow to clothe the maſt; or in order to make more way in calm weather.

Bonnets are commonly one third of the depth of the ſails they belong to.

What the *bonnet* is to the courſe, that is the drabler to the *bonnet*; being only in uſe when the courſe and *bonnet* are too ſhallow to clothe the maſt: there are alſo *bonnets* in form of ſheaths, being ſmall ſails faſtened by the narrow end to each extremity of the yards, wider at bottom than at top, of good uſe when the ſea is ſmooth.

The words are, *lace on the bonnet*, that is, faſten it to the courſe; *ſhake off the bonnet*, that is, take it off the courſe.

Bonnet *pepper*. See Capsicum.

BONNY, in *Mineralogy*, a name given by our miners to a bed of ore found in many places in hills, not forming a vein, nor communicating with any other vein, nor terminating in ſtrings, as the true veins do: it is a bed of ore of five or ſix fathoms deep, and two or ſomewhat leſs than that, in thickneſs, in the largeſt ſort; but there are ſmaller, to thoſe of a foot long. They have their trains of shoad-*ſtones* from them, and often deceive the miners with the expectation of a rich lead vein. They differ from the squatts only in being round beds of ore, whereas thoſe are flat. Phil. Tranſ. Nº 69. p. 2098.

BONO *et malo*, *Writ de*; a ſpecial writ of gaol-delivery was anciently iſſued for each particular priſoner under this title: but theſe being found inconvenient and oppreſſive, a general commiſſion for all the priſoners has long been eſtabliſhed in their ſtead. 2 Inſt. 43.

BONONIAN *ſtone*, a ſmall, grey, ſoft, gloſſy, fibrous, ponderous, ſulphureous ſtone, about the bigneſs of a large walnut: when broken, having a kind of cryſtal, or ſparry talc within; found in the neighbourhood of Bologna, or Bononia in Italy; and, when duly prepared, making a ſpecies of Phosphorus.

This ſtone is found in divers parts of that country, particularly in a river at the foot of Mont Peterno; where a chemiſt, one Vincenzo Caſciarolo, having gathered ſome pieces, and carried them home, in hopes by the fire to draw ſilver out of them, inſtead of what he expected, found that admirable phænomenon they exhibit, which conſiſts in this, that having been expoſed to the light, they retain it, and ſhine for the ſpace of ſix or eight hours in the dark. This diſcovery was made about the year 1630.

M. Homberg is ſaid to be the perſon who firſt taught us the true manner of preparing and calcining the *Bononian ſtone*, having made a journey to Italy on purpoſe to learn it.—Though others allege, that the true art of preparing and calcining the ſtone is loſt; there having been but one, an eccleſiaſtic, who had the true ſecret, and who is ſince dead, without communicating it to any perſon. See Phil. Tranſ. Nº 21.

This property of affording a phoſphorus by calcination, is common to the other gypſums, when pure from metallic or other heterogeneous mixtures; the artificial gypſums ſucceed equally with the natural, and it is found to belong to a variety of other ſubſtances. M. Marcgraaf obſerves, that all ſubſtances which have this property, contain a vitriolic acid, united to an alkaline or calcareous earth.

M. Elpigni obſerves, that one Zagonius had a method of making ſtatues and pictures of the *Bononian ſtone*, which would ſhine variouſly in the dark; but he adds, the perſon died without diſcovering his ſecret. See Phil. Tranſ. Nº 134.

For the method of preparing this phoſphorus, and other obſervations upon it, ſee Lapis *Bononienſis*. See alſo the articles Light, and Phosphorus.

BONOSIANI, or **Bonosiaci**, an ancient branch of Adoptiani, in the fourth century, denominated from their leader Bonoſus, a biſhop of Macedonia.

BONPOURNIKEL, a denomination given to a coarſe kind of bread uſed in Weſtphalia.

BONS-*hommes*, or **Bon-***hommes*, a ſort of hermits of St Auguſtin, founded by F. de Paula. They were brought over into England in 1283, by Edmund earl of Cornwall, and ſettled at Aſhorug in Bucks, beſides which they had only one houſe more at Edingdon in Wiltſhire. They followed the rule of St. Auſtin, and wore a blue habit.

The name is ſaid to have ariſen from Lewis XI. of France, who uſed to call F. de Paula, prior of the order, *le bon homme*. Till then they had been called the *Minimi*, or the order of Grammont. See Albigenses.

BONT-*viſch*, in *Zoology*, the name given by the Dutch to an Eaſt Indian fiſh, ſeeming to approach to the nature of the European Turdus, but that it has no ſcales. See *Tab. of Fiſh*, Nº 64.

BONTIA, in *Botany*. See *Barbadoes wild* Olive.

BONZES, or **Bonzus**, a name given to the prieſts and religious of China, Japan, and Tonquin.

The *bonzes* are the great adverſaries of the miſſionaries; and to their influence are attributed the perſecutions which have been raiſed in thoſe countries againſt the Chriſtians.

They generally live in a ſort of community, in places apart, or conſigned wholly to them. The iſland Pou-to, near Chuſan, is a famous ſeat of *bonzes*, being wholly inhabited by them, to the number of 3000, all of the ſect of Hoſhang, or unmarried *bonzes*.

They live a kind of Pythagorean life, and have not leſs than 400 pagods, or temples, in this little iſland. They have alſo female *bonzes*, a ſort of nuns. Phil. Tranſ. Nº 280.

In order to diſtinguiſh themſelves from the laity, they wear a chaplet round their necks, conſiſting of an hundred beads, and carry a ſtaff, at the end of which is a wooden bird; they live upon the alms of the people, and yet are very charitably diſpoſed, maintaining ſeveral orphans and widows out of their own collections.

The *bonzes* of China are the prieſts of the Fohiſts, or ſects of Fohi; and it is one of their eſtabliſhed tenets, that there are rewards allotted for the righteous, and puniſhments for the wicked, in the other world; and that there are various manſions, in which the ſouls of men will reſide, according to their different degrees of merit. The *bonzes* of Pegu are generally gentlemen of the higheſt extraction.

BOOBY, in *Natural Hiſtory*, the name of a bird common about Jamaica, and in ſeveral other parts of the world. It is deſcribed by Sir Hans Sloan, in his Hiſtory of Jamaica, under the name of *avis fuſca anſeri baſſano affinis*. It feeds upon fiſh, and dives under water after them, but is often robbed of its prey by another voracious bird, called the *albatroſſe*, or the man of war bird. The frequent conteſts between theſe two birds are very diverting, the one being as unwilling to part with the prey it has ſo dearly earned, as the other reſolute to have it; but the ALBATROSSE generally ſucceeds.

BOOK, a writing compoſed on ſome point of knowlege by a perſon intelligent therein, for the inſtruction or amuſement of the reader.

The word is formed from the Saxon *boc*, which comes from the Northern *buech*, of *buechaus*, *a beech* or *ſervice-tree*, on the bark of which our anceſtors uſed to write.

Book may be defined more preciſely, a compoſition of ſome man of wit or learning, deſigned to communicate, to prove, or illuſtrate ſome ſcience, art, truth, or invention.

Book is diſtinguiſhed from PAMPHLET, or ſingle paper, by its greater length; and from TOME or VOLUME, by its containing the whole writing.—Iſidore makes this diſtinction between *liber* and *codex*; that the former denotes a ſingle book, the latter a collection of ſeveral: though, according to Scipio Maffei, *codex* ſignifies a *book* in the ſquare form; *liber*, a *book* in the roll form.

We ſay, an old *book*, a new *book*; a Latin, a Greek *book*; to read, to write, to publiſh a *book*; the PREFACE, the TITLE, the DEDICATION, the INDEX of a *book*.—To *collate a book*, is to ſee that it be perfect, and that none of the ſheets be either wanting, or tranſpoſed.—Bookbinders ſpeak of *folding*, *ſewing*, *beating*, *preſſing*, *covering*, *gilding*, and *lettering* of *books*. See BOOK-BINDING. A large collection of *books*, is called a LIBRARY.—An inventory of a library, in order for the reader's finding any *book*, is called a CATALOGUE.

The *hiſtory*, or *notitia* of *books* makes the firſt part, according to ſome, the whole, of the literary ſcience.—The principal points in the notitia of a *book*, are, its *author*, *date*, *printer*, *edition*, *verſions*, *comments*, *epitomes*, *ſucceſs*, *eulogies*, *cenſures*, *condemnation*, *ſuppreſſion*, *adverſaries*, *vindicators*, *continuators*, and the like.

The hiſtory of a *book* is either of its *contents*, which is given by analyſing it, as is done by journaliſts; or of its *appendages* and *accidents*, which is the more immediate province of thoſe called *literators*, and *bibliothecarians*.

The *contents* of a *book* are the matters delivered in it; which make the province of the author.—Of theſe there is one principal matter, called the *ſubject*; in reſpect of which the reſt are only *incidents*.

The *appendages* of a *book* are, the *title*, *preface*, *epiſtle dedicatory*, *ſummaries*, *table of contents*, *index*, and the like, which are the proper province of the editor, unleſs perhaps the title page, which is frequently uſurped by the bookſeller.

In the *compoſition* of a *book*, there occur *ſentiments*, which are alſo the materials of it; *method*, the order wherein theſe are diſpoſed; and *ſtyle*, or *expreſſion*, which is the language wherein they are clothed.

The giving hiſtories, catalogues, and bibliothecas of *books*, is ſaid to have been firſt introduced by the Germans: we may add, that they have beſt ſucceeded in them; and to them the chief works of this kind are owing.—J. Alb. Fabricius has given us the hiſtory of the Greek and Latin *books*; Wolfius, that of the Hebrew *books*; Boecler, of the principal *books* in each ſcience and faculty; Struvius, of the *books* of hiſtory, law, and philoſophy; the abbot Fabricius, of the *books* of his own library; Lambecius, of thoſe in the Vienna library; Le Long, of the *books* of Scripture; Mattaire, of the *books* printed before the year 1550; and Morhoff, a general literary hiſtory of this kind, under the title of Polyhiſtor. The various catalogues of choice libraries are uſeful and neceſſary for the ſame purpoſes: ſo are likewiſe the Relationes, &c. and the Reviews, which have been periodically publiſhed.

As to the *materials* of *books*, they were firſt written on ſtones, witneſs the Decalogue given to Moſes (which is the oldeſt *book* we have any warranted account of); then, on the parts of plants, e. gr. the leaves, chiefly of the palm-tree; the rinds and barks, eſpecially of the *tilia*, or *philyra*, and the Egyptian PAPYRUS. By degrees, wax, then leather, were introduced, eſpecially the ſkins of goats and ſheep, of which, at length, parchment was prepared: then lead came in uſe; alſo linen, ſilk, horn, and, laſtly, PAPER itſelf.

The parts of vegetables continued long the common matter of *books*; inſomuch that moſt of the names and terms belonging to *books*, in moſt languages, are taken thence; as the Greek *biblos*, the Latin *liber*, *codex*, *folium*, *tabula*, and the Engliſh *book* itſelf.—We may add, that vegetable barks appear ſtill in ſome meaſure retained for *books* in certain of the Northern countries, as among the Calmuc Tartars, where a library was diſcovered by the Ruſſians, of an unuſual form as well as matter; the *books* were exceedingly long, but of no breadth; the leaves very thick, and made of barks of trees, ſmeared over with a double varniſh; the ink or writing being white on a black ground. Hiſt. Acad. R. Inſcr. T. 3 p. 6.

BOOK, *everlaſting*.—We find in ſignior Caſtagnatta's account of the ASBESTOS, a ſcheme for the making a *book*, which from its imperiſhable nature, he is for calling the *book of eternity*. The leaves of this *book* were to be of the ASBESTOS paper, the covers of a thicker ſort of work of the ſame matter, and the whole ſewed together with thread ſpun from the ſame ſubſtance. The things to be commemorated in this *book* were to be written in letters of gold, ſo that the whole matter of the *book* being incombuſtible and everlaſtingly permanent againſt the force of all the elements, and ſubject to no changes from fire, water, or air, muſt remain for ever, and always preſerve the writing committed to it.

BOOKS, *form of*.—The firſt *books* were in form of blocks and tables, of which we find frequent mention in Scripture, under the appellation *ſepher*, which the Septuagint render αξονες, q. d. *ſquare tables*: of which form the *book* of the covenant, *book* of the law, *book* or bill of divorce, *book* of curſes, &c. appear to have been.—As flexible matters came to be wrote on, they found it more convenient to make their *books* in form of rolls, called by the Greeks κοντακια, by the Latins *volumina*, which appear to have been in uſe among the ancient Jews, as well as Grecians, Romans, Perſians, and even Indians. And of ſuch did the libraries chiefly conſiſt, till ſome centuries after Chriſt.—The form which obtains among us is the ſquare, compoſed of ſeparate leaves; which was alſo known, though little uſed, among the ancients; having been invented by Attalus, king of Pergamus, the ſame alſo who invented parchment: but it has now been ſo long in poſſeſſion, that the oldeſt manuſcripts are found in it. Montfaucon aſſures us, that of all the ancient Greek manuſcripts he has ſeen, there are but two in the roll form; the reſt being made up much after the manner of the modern *books*. See BOOK-BINDING.

The rolls, or volumes, were compoſed of ſeveral ſheets, faſtened to each other, and rolled upon a ſtick, or *umbilicus*; the whole making a kind of column, or cylinder, which was to be managed by the *umbilicus*, as a handle; it being reputed a kind of crime to take hold of the roll itſelf. The outſide of the volume was called *front*; the ends of the *umbilicus* were called *cornua*, *horns*; which were uſually carved, and adorned likewiſe with bits of ſilver, ivory, or even gold and precious ſtones. The title Συλλαβος, was ſtuck on the outſide. The whole volume, when extended, might make a yard and half wide, and fifty long. Fabric. Bibl. Antiq. c. 19. § 7. p. 607.

To the form of *books* belongs alſo the *œconomy of the inſide*, or the order and arrangement of points and letters into lines and pages, with margins, and other appurtenances. This has undergone many varieties: at firſt, the letters were only divided into lines, then into ſeparate words; which, by degrees, were noted with accents, and diſtributed by points and ſtops into periods, paragraphs, chapters, and other diviſions. In ſome countries, as among the Orientals, the lines began from the right, and ran to the left; in others, as in Northern and Weſtern nations, from the left to the right: others, as the Grecians, followed both directions alternately, going in the one, and returning in the other, called *bouſtrophedon*. In the Chineſe *books*, the lines ran from top to bottom. Again, the page in ſome is entire, and uniform; in others, divided into columns; in others, diſtinguiſhed into text and notes, either marginal, or at the bottom: uſually it is furniſhed with ſignatures and catch-words; alſo with a regiſter to diſcover whether the *book* be complete.—To theſe are occaſionally added the apparatus of ſummaries, or ſide-notes; the embelliſhments of red, gold, or figured initial letters, head-pieces, tail-pieces, effigies, ſchemes, maps, and the like.—The end of the *book*, now denoted by *finis*, was anciently marked with a ◁, called *coronis*; and the whole frequently waſhed with an oil drawn from cedar, or citron chips, ſtrewed between the leaves to preſerve it from rotting.—There alſo occur certain *formulæ* at the beginning and end of *books*: as, among the Jews, the word חזק, *eſto fortis*, which we find at the end of the *books* of Exodus, Leviticus, Numbers, Ezekiel, &c. to exhort the reader to be courageous, and proceed on to the following *book*.—The concluſions were alſo often guarded with imprecations againſt ſuch as ſhould falſify them; of which we have an inſtance in the Apocalypſe. The Mahometans, for the like reaſon, place the name of God at the beginning of all their *books*, which cannot fail to procure them protection, on account of the infinite regard had among them to that name. wherever found For the like reaſon it is, that divers of the laws of the ancient emperors begin with the *formula*, *In nomine Dei*. At the end of each *book* the Jews alſo added the number of verſes contained in it, and at the end of the Pentateuch the number of ſections; that it might be tranſmitted to poſterity entire. The Maſoretes, and Mahometan doctors, have gone farther; ſo as to number the ſeveral words and letters in each book, chapter, verſe, &c. of the Old Teſtament, and the Alcoran. See ALCORAN, MASSORA, &c.

The kinds and denominations of *books* are various. With regard to their uſe and authority, *books* may be divided into *human*, and *divine*, alſo called *ſacred* and *inſpired books*.

BOOKS, *Sibylline*, thoſe compoſed by certain pretended propheteſſes, depoſited in the Capitol, under the care of *duumviri*. See SIBYLS.

BOOKS, *Canonical*, thoſe received and allowed by the church, as parts of Holy Scripture.—Such are the *books* of the Old and New Teſtament, as commonly bound up together.

BOOKS, *Apocryphal*, thoſe excluded out of the canon, yet received and read in ſome churches.

BOOKS, *Authentic*, thoſe which are deciſive, and of authority: ſuch, in the civil law, are the Code, Digeſt, &c. in our law, the Statutes, &c. Bacon, de Augm. Sc. l. 8. c. 3.

BOOKS, *Auxiliary*, thoſe leſs eſſential, yet of uſe, as ſubſervient to the others: as, in the ſtudy of the law, *books* of Inſtitutes, *Formulæ*, Maxims, Reports, &c.

BOOKS, *Elementary*, thoſe which deliver the firſt principles of ſciences: ſuch are thoſe under the titles of Rudiments, Methods, Grammars, &c. by which they ſtand contradiſtinguiſhed from *books of a ſuperior order*, which aim at making further advances in the ſcience.

BOOKS, *Library*, ſuch as are not ordinarily read over, but turned to, and conſulted occaſionally: ſuch are Dictionaries, &c.

BOOKS, *Exoteric*, thoſe intended for the uſe of popular and ordinary readers.

BOOKS, *Acroamatic*, thoſe containing more ſecret and ſublime matters, calculated for adepts and proficients in the ſubject.

BOOKS, *Public*, the records of paſt times and tranſactions kept by public authority.

BOOKS, *Church*, or *Eccleſiaſtical*, thoſe uſed in the public offices of religion.

BOOKS, again, with regard to their ſcope and ſubject, may be divided into *hiſtorical*, thoſe which relate facts, either of nature or mankind; *dogmatical*, thoſe which lay down doctrines, or general truths; *miſcellaneous*, thoſe of a neutral kind, containing both facts and doctrines; *hiſtorico-dogmatical*, thoſe which only rehearſe doctrines, or, at moſt, indicate the arguments by which they are proved, as Mallet's Geometry; *ſcientifico-dogmatical*, thoſe which not only recite the doctrines, but demonſtrate them, as Euclid's Elements. Wolf. Phil. Rat. § 3. c. 1. § 744, 750, 751, &c.

BOOKS, *Pontifical*, among the Romans, were thoſe appointed by Numa to be kept by the *pontifex maximus*; deſcribing all the ceremonies, ſacrifices, feaſts, prayers, and other religious matters, with the manner, and circumſtances, wherewith each was to be celebrated: theſe were alſo called *indigitamenta*, as containing the names of all the gods, and the occaſions, and *formulæ* of invoking each. Liv. 1. p. 23.

BOOKS, *Ritual*, thoſe which directed the order and manner of founding, building, and conſecrating cities, temples, and altars; the ceremonies belonging to walls, gates, tribes, *curiæ*, camps, and the like.

BOOKS, *Augural*, called by Cicero, *reconditi*, were thoſe wherein the ſcience of foretelling futurity from the flight and chattering of birds was contained. Cicer. Orat. pro domo ſua ad pontif. Serv. ad Æn. l. 5. v. 738. Lomei de Bibl. c. 6.

BOOKS, *Aruſpicine*, thoſe wherein the myſteries of divining from the entrails of victims were preſcribed.

BOOKS, *Acherontic*, thoſe wherein the ceremonies and diſcipline of Acheron were contained; ſometimes alſo called *libri Etruſci*, as being ſuppoſed to have been compoſed by Tages the Hetrurian, though others pretend, that he had received them from Jupiter himſelf: ſome ſuppoſe theſe to have been the ſame with the *libri fatales*; others, with the *libri aruſpicini*. Serv. ad Æn. l. 8. v. 398. Lomei, ubi ſupra.

BOOKS, *Fulgural*, thoſe written touching thunder, and lightning, and their interpretation. As that compoſed by the Tuſcan nymph Bigois, preſerved in the temple of Apollo. Serv. ad Æn. l 6. v. 72.

BOOKS, *Fatal*, thoſe wherein the ages, or terms of the life of men were written, according to the Hetrurian diſcipline. Theſe were conſulted by the Romans in all public calamities; and inſtructions taken from them, how to expiate the offended deities. Cenſor. de Die Natal. c 14.

BOOKS, *Black*, thoſe which treat of necromancy and witchcraft; or thoſe which are printed in the old black letter, the Celtic character, now only retained by the Germans. The ſame denomination is alſo given to ſome other *books*, on account of the colour of their backs, or the diſmalneſs of their contents; whence alſo *Red book*, and *Domeſday book*.

BOOKS, *Good*, in the common uſage, are thoſe of devotion and piety; as ſoliloquies, meditations, prayers, &c.—Vid. Shafteſb. Charact. tom i. p. 165. Item, tom. iii. p. 327.

A *good book*, in the bookſellers language, is a ſaleable one; in the language of the curious, a ſcarce one; in that of men of ſenſe, an uſeful and inſtructive one.

Among five principal things which Rabbi Akiba recommended to his ſon, one was, that if he ſtudied the law, he ſhould take care to do it in a *good book*, leſt he ſhould be obliged to unlearn all again.—Vid. Cren. de Furib. Librar. See alſo, further on, the head of judging and chooſing of BOOKS.

BOOKS, *Spiritual*, thoſe which treat more expreſly of the ſpiritual or chriſtian life, and their exerciſes, as contemplation, &c.

BOOKS, *Profane*, ſuch as do not treat of matters of religion.

BOOKS, with regard to their authors, may be divided into *anonymous*, thoſe without any author's name; *cryptonymous*, thoſe whoſe authors names are concealed in ſome anagram, or the like; *pſeudonymous*, thoſe which bear falſe names of authors; *poſthumous*, thoſe publiſhed after the author's death; *genuine*, thoſe really written by the perſons whom they pretend for their authors, and ſtill remaining in the ſtate wherein they were left by them; *ſpurious*, or *ſuppoſititious*, thoſe pretending to be written by others than their real authors; *interpolated*, thoſe which ſince their compoſition have been corrupted by ſpurious additions, or inſertions.

BOOKS, with regard to their qualities, may be divided into *clear* or *perſpicuous*, which, in the dogmatical kind, are thoſe where the authors define all their terms accurately, and keep ſtrictly to thoſe definitions in the courſe of their works: *obſcure*, thoſe where words are uſed vaguely, and without defining: *prolix*, thoſe which contain more things than were neceſſary to the author's deſign; as if, in a *book* of ſurveying, a man ſhould give all Euclid: *uſeful*, thoſe which deliver things neceſſary to be known, either in other ſciences, or in the buſineſs of life: *complete*, thoſe which contain all that is known concerning the ſubject: *relatively complete*, thoſe which contain all that was known concerning the ſubject, at a certain time; or, if a *book* were written with any particular deſign, or view, it may be ſaid to be *complete*, if it contain neither more nor leſs than is neceſſary for the accompliſhing that end: in the contrary caſes, *books* are ſaid to be *incomplete*.

BOOKS, with regard to the matter they conſiſt of, may be divided into *Paper-books*, thoſe written either on linen and cotton paper, or on the PAPYRUS, of which laſt kind few are now remaining. Montfaucon Pal. Græc. l. 1. c. 2. p 13.—*Parchment-books*, *libri in membrana*, thoſe written on ſkins, or pelts, chiefly of ſheep.—*Linen-books*, *libri lintei*, among the Romans, were thoſe written on blocks, or tables, covered with a linen cloth. Such were the Sibylline *books*, and divers ancient laws, epiſtles of princes, leagues, annals, &c. Plin. Hiſt. Nat. l. 13. c. 2.—*Leathern-books*, *libri in corio*, mentioned by Ulpian, are by Guilandinus taken for ſuch as were written on barks, different from that uſually written on; which was the *tilia*: by Scaliger, with more probability, for ſuch as were written on certain ſkins, or certain parts of ſkins, different from thoſe commonly uſed, which were the pelts, or back-parts of ſheep. Ulp. l. 52. Guiland Papyr Membr. 3. n 50. Scaliger, ad Guiland.—*Black-books*, *libri in ſchedis*, thoſe written on wooden planks, or tablets, ſmoothed for that purpoſe with an *aſcia*, and a plane. Such were the ordinary *books* among the Romans.—*Waxen-books*, *libri in ceris*, mentioned by Pliny, have occaſioned ſome diſpute.

Herm. Barbarus ſuſpects the term to be a corruption, and inclines to read *in ſchedis* inſtead of *in ceris*, on the authority of ſome ancient MSS. Others ſee no need of the emendation, ſince it is known the Romans ſometimes covered their planks, or *ſchedæ*, with a thin ſkin of wax, to make them ſuſceptible of eraſements, and amendments, which the *libri in ſchedis* were not, and conſequently, were leſs fit for works that required elegance and accuracy than the waxen ones, which are alſo called *ceræ*, or *libri cerei*.—*Elephantine-books*, according to Turnebus, were thoſe written on thin ſlices, or leaves of ivory; according to Scaliger, thoſe made of the guts of elephants; according to others, thoſe wherein the acts of the ſenate, relating to the emperors, were written; according to others, certain huge, or bulky *books*, conſiſting of 35 volumes, containing all the names of the 35 tribes. Salmuth. ad. Panciroll. P. 2. p. 255. Guiland. Pap. Mem. 2. n. 48. Scal. ad. Guil. p. 16. Calv. Lex Jur. p 534. Fabr. Deſcrip. urb. c. 6.

Books, with regard to their manufacture and commerce, may be divided into *Manuſcript*, thoſe written with the hand, whether originally by the authors, called *autographs*, or at ſecond hand by *librarii*, or *copiſts*.—*Printed*, thoſe wrought off from the preſs.—*Books in quires*, or *ſheets*, thoſe not bound, or ſtitched.—*Books in folio*, thoſe wherein a ſheet is folded but once, or makes two leaves, or four pages: *books in* 4°, where it makes four leaves; *in* 8°, where eight; *in duodecimo*, where twelve; *in* 16°, where ſixteen; *in* 24°, where twenty-four.

Books, with regard to circumſtances and accidents, may be divided into *Loſt*, thoſe which have periſhed by the injuries of time, or the malice or zeal of enemies. Such are divers even of the ancient *books* of Scripture, written by Solomon, and others of the prophets. Fabr. Cod. Pſeud. Vet. Teſt. t. ii. p. 171. p. 247.—*Books Promiſed*, thoſe which authors have given expectations of, which they have never accompliſhed.—Janſ. ab Almeloveen has given a Bibliotheca of *books* promiſed, but ſtill latent, or not publiſhed.—*Books Fictitious*, thoſe which never exiſted: to which may be added, divers feigned titles of *books*. Loeſcher has publiſhed a great number of plans, or projects of *books*, many of them good and uſeful enough, if there were but *books* written correſponding to them. M. Dugono has a whole volume of *ſchemes*, or *projects of books*, containing no leſs than 3000.

Books *in Ana*, *Anti*, *&c.* See Ana, Anti, &c.

The *ſcope* or *deſign* of *books* is various; that of ſome is, to trace the origin of things diſcovered; of others, to fix and eſtabliſh ſome truth, or raiſe ſome doctrine to a higher pitch of ſubtility; of others, to remove ſome ſcruple, or prejudice, which had before obtained, or fix more accurate and preciſe ideas of things; of others, to explain the names and words uſed in different nations, ages, and ſects; of others, to improve our knowlege of facts, and events, and ſhew the order and ways of Providence: laſtly, others aim at divers, or all of theſe ends.

The *uſes* of *books* are numerous: they make one of the chief inſtruments, or means of acquiring knowlege: they are the repoſitories of laws, and the vehicles of learning of every kind: our religion itſelf is founded on books: "Without them," ſays Bartholin, "God is ſilent, "juſtice dormant, phyſic at a ſtand, philoſophy lame, "letters dumb, and all things involved in Cimmerian "darkneſs." De Libr. Legend. Diſſ. 1. p. 5.

The eulogiums which have been beſtowed on *books* are infinite: they are repreſented, "as the refuge of truth, "which is baniſhed out of converſation; as ſtanding "counſellors, and preachers, always at hand, and al-"ways diſintereſted; having this advantage over oral "inſtructors, that they are ready to repeat their leſſon, "as oft as we pleaſe."—*Books* ſupply the want of maſters, and even, in ſome meaſure, the want of genius and invention; and can raiſe the dulleſt perſons, who have memory, above the level of the brighteſt, without them.

An author, who wrote not inelegantly, though in a barbarous age, ſums up all their praiſes. Vid. Lucas de Penna ap. Morhoff Polyhiſt. lib. i. cap. 3. p. 27. *Liber eſt lumen cordis, ſpeculum corporis, virtutum magiſter, vitiorum depulſor, corona prudentum, comes itineris, domeſticus amicus, congerro tacentis, collega & conſiliarius præſidentis, myrothecium eloquentiæ, hortus plenus fructibus, pratum floribus diſtinctum, memoriæ penus, vita recordationis; vocatus properat, juſſus feſtinat, ſemper præſto eſt, nunquam non morigerus, rogatus confeſtim reſpondet: arcana revelat, obſcura illuſtrat, ambigua certiorat, perplexa reſolvit, contra adverſam fortunam defenſor, ſecundæ moderator, opes adauget, jacturam propulſat, &c.*

Perhaps their greateſt glory is, the affection borne them by many of the greateſt men in all ages: M. Cato, the elder Pliny, the emperor Julian, and others, are on record for an exceſſive devotion to *books*. The laſt has perpetuated his paſſion by ſome Greek epigrams in their praiſe. Richard Bury, biſhop of Durham, and lord chancellor of England, has a treatiſe expreſs on the Love of *Books*. Philobiblion, ſive de Amore Librorum. Vid. Plin. Epiſt. vii. lib. iii.—Cato's attachment to *books* may be obſerved in the following paragraph.

M. Catonem vidi in bibliotheca ſedentem multis circumfuſum Stoicorum libris. Erat enim, ut ſcis, in eo inexhauſta aviditas legendi, nec ſatiari poterat: quippe qui, ne reprehenſionem vulgi inanem reformidans, in ipſa curia ſoleret legere, ſæpe dum ſenatus cogeretur, nihil operæ reipublicæ detrahens. Vid. Cic. de Divin. lib. iii. n. 11. See alſo Cic. Orat. pro Arch. tom. iv. p. 2182.

The *ill effects* objected to *books* are, that they employ too much of our time and attention; engage us in purſuits of no uſe to the commonwealth, and indiſpoſe us for the functions of civil life; that they render men lazy, and prevent their exerting their own talents, by furniſhing them, on every occaſion, with things of the growth of others; and that our natural lights become weakened and extinguiſhed, by inuring ourſelves to ſee only with foreign lights: beſides, that ill men are hereby furniſhed with means of poiſoning the people, and propagating ſuperſtition, immorality, enthuſiaſm, or irreligion, which will always ſpread faſter, and be received more greedily than leſſons of truth and virtue.—Many other things are added concerning the emptineſs of *books*, and the errors, fables, and follies they are fraught with; which, together with the multitude and perplexity of them, are ſuch, that it may ſeem eaſier to diſcover truth in the nature and reaſon of things, than in the uncertainty and confuſion of *books*.—Add, that *books* have turned the other inſtruments of knowlege out of doors, as experiments, obſervations, furnaces, and the like, without which the natural ſciences can never be cultivated to purpoſe; and that, in mathematics, *books* have ſo far ſuperſeded the exerciſe of invention, that the generality of mathematicians are now contented to learn the ſolution of problems from others; which is to relinquiſh the chief end of their ſcience: ſince what is contained in mathematical *books* is properly the hiſtory only of mathematics, not the ſcience, art, or talent of ſolving queſtions; which is hardly to be had from *books*, but only from nature and meditation.

For the art of *writing* or *compoſing books*, we have much fewer helps and inſtructions than for the art of ſpeaking; though the former be the more difficult of the two; as a reader is not ſo eaſy to be impoſed upon, but has better opportunities of detecting faults than a hearer.—A great cardinal, indeed, reduces an author's buſineſs to a few heads; were they but as eaſily practiſed as preſcribed: "Let him conſider who it is writes, what, how, why, "and to whom." Auguſt. Valer. di Caut. in edend. lib.

The conditions required in a book are, according to Salden, "Solidity, perſpicuity, and brevity:" the firſt will be beſt attained, by keeping the piece long by us, often reviewing and correcting it by the advice of friends: the *ſecond*, by diſpoſing the ſentiments in a due order, and delivering them under proper and uſual expreſſions: the *third*, by throwing every thing aſide that does not immediately concern the ſubject.

Were theſe rules obſerved, it would ſcarce be poſſible for any, except an angel from heaven, to write many *books*. *Vix totidem quot Thebarum portæ vel divitiis oſtia Nili.*

The cuſtom is much altered ſince the times of the ancients, who carried their ſcrupulouſneſs in what relates to the compoſition of *books* beyond all that has been above expreſſed: ſo auguſt was the idea they formed of a *book*, that nothing would ſuffice leſs than its being a treaſure: *theſauros oportet eſſe, non libros*: no labour, no aſſiduity and exactneſs, were thought enough to fit a work for the public view: every ſentiment and expreſſion were to be maturely weighed, and turned on all ſides; and not ſuffered to paſs, unleſs every word were a pearl, and every page beſet with gems. So that they put the reader in poſſeſſion in a ſingle hour, of what had coſt them perhaps ten years intenſe thought and application.—Such were thoſe *books*, which were reputed *cedro digni*, fit to be anointed with cedar-juice, and thus rendered incorruptible, for the inſtruction of all future ages.

Books, *for the origin of*, we have nothing that is clear: the *books* of Moſes are doubtleſs the oldeſt of all that are extant: but there were *books* before them, for Moſes cites ſeveral.

A *book* of Enoch is cited in the Epiſtle of Jude, v. 14, and 15. from which ſome endeavour to prove the reality of antediluvian writings; but the *book* cited by that apoſtle is generally allowed both by ancient and modern writers to be ſpurious.

Of profane *books*, the oldeſt extant are Homer's poems, which were even ſo in the time of Sextus Empiricus; though we find mention in Greek writers of about ſeventy others prior to Homer; as Hermes, Orpheus, Daphne, Horus, Linus, Muſæus, Palamedes, Zoroaſter, &

&c. but of the greater part of theſe, there is not the leaſt fragment remaining; and of the others, the pieces which go under their names are generally held by the learned ſuppoſititious.—F. Hardouin goes farther; charging all the ancient *books*, both Greek and Latin, except Cicero, Pliny, Virgil's Georgics, Horace's Satires and Epiſtles, Herodotus, and Homer, as ſpurious, and forged in the thirteenth century, by a club of perſons under the direction of one Severus Arcontius. Fabr. Bib. Græc. lib. i. cap. 1. § 1. § 6. tom. i. Hardouin. de Num. Herod. in Proluſ. Act. Erud. Lipſ. an. 1710, p. 70.

Among the Greeks, it is to be obſerved, the oldeſt *books* were in verſe, which was prior to proſe: Herodotus's hiſtory is the oldeſt book extant of the proſaic kind. Strabo, Geog. lib. i. Heuman. Via ad Hiſt. Liter. § 20. p. 50. § 21. p. 52.

Books, *the multitude of*, has been long complained of: the complaint is as old as Solomon, who lived three thouſand years ago: they are grown too numerous, not only to procure and read, but to ſee, to learn the names of, or even to number. England has more to fear on this ſcore than other countries; ſince, beſides our own produce, we have, for ſome years paſt, drained our neighbours. However, as biſhop Caramuel's ſcheme miſcarried, which was, to write about an hundred volumes in folio, and then prevail on the civil and military powers to oblige all their ſubjects to read them, we need not much regret the multitude of *books*.

In reality, there are few of the immenſe number of *books*, which deſerve ſeriouſly to be ſtudied: for the reſt, part of them, like this, are only to be occaſionally conſulted, and the reſt read for amuſement. A mathematician, for inſtance, ought not to be entirely ignorant of what is contained in the mathematical *books*; but then a general knowledge is ſufficient, which may eaſily be had by running over the chief authors; out of whom references may be made, directing to the places where they may be found, when wanted. For there are many things which are much better preſerved in *books* than in the memory: as aſtronomical obſervations, tables, rules, theorems, proportions, and, in fine, whatever does not ſpontaneouſly adhere to the memory, when once known. For the leſs we croud that faculty, the readier and freer will the genius remain for inventing.

Thus, a few *books* well choſen, and thoroughly ſtudied, may ſuffice. It may be added, that as knowledge is naturally advantageous, and as every man ought to be in the way of information, even a ſuperfluity of *books* is not without its uſe, ſince hereby they are brought to obtrude themſelves on us, and engage us when we had leaſt deſign.—This advantage, an ancient father obſerves, we owe to the multiplicity of *books* on the ſame ſubject, that one falls in the way of one man, and another beſt ſuits the level, or the apprehenſion, of another.—"Every "thing that is written, ſays he, does not come into the "hands of all perſons: perhaps ſome may meet with "my *books*, who may hear nothing of others which have "treated better of the ſame ſubject. It is of ſervice, "therefore, that the ſame queſtions be handled by ſe"veral perſons, and after different methods, though all "on the ſame principles, that the explications of diffi"culties, and arguments for the truth, may come to the "knowledge of every one, by one way or other."—Add, that the multitude is the only ſecurity againſt the total loſs, or deſtruction of *books*: it is this that has preſerved them againſt the injuries of time, the rage of tyrants, the zeal of proſecutors, and the ravages of barbarians; and handed them down, through long intervals of darkneſs, and ignorance, ſafe to our days. *Solaque non norunt hæc monumenta mori.* Bac. de Augm. Sc. lib. i. Auguſt. de Trin. lib. i. cap. 3. Barthol. lib. cit. Diſſ. i. p. 8. &c.

To *judge of a book*, thoſe who have treated of the ſubject, direct us to obſerve the title, the author's or editor's name, the number of the edition, the place where, and year when it was printed (which in old *books* is frequently marked at the end) and the printer's name, eſpecially if it be a celebrated one: proceed then to the preface, and look for the author's deſign, and the occaſion of his writing: conſider alſo his country (each nation having its peculiar genius), which may ſometimes be learned from the dedication: if his life be annexed, run it over, and note his profeſſion, what rank he was of, and any thing remarkable that attended his education, ſtudies, converſation, or correſpondences with learned men: not forgetting the elogies which have been given the author, which often occur at the beginning, or even any critique or cenſure, eſpecially if made by a man of judgment. If the preface does not give an account of the method of the work, run briefly over the order and diſpoſition of it, and note what points the author has handled; obſerve whether the things and ſentiments he produces be trite and vulgar, or ſolid, and fetched from greater depths. Note, whether he go in the common road, or make any innovation, and introduce any new principle.

But it is a ſmall number of *books*, we have opportunity of thus judging of, by peruſing them; beſides, when we have read a *book* over, the judgment comes too late for many purpoſes: it ſeems neceſſary therefore to have other indications, whereby to prevent our being at the charge of procuring, or the pains of peruſing a worthleſs *book*. Divers rules of this kind are given by Baillet, Struvius, Stollius, and others; which though, in reality, no more than preſumptions, and frequently liable to be falſified, are not without their uſe. The journaliſts de Trevoux objected to them all: "The ſhorteſt way, ſay "they, to judge of a *book* is to read it, if you be quali"fied in the ſubject; otherwiſe to refer yourſelf to thoſe "who are ſo." Heuman is ſomewhat more explicit; making it a mark that "a *book* is good, when it is "eſteemed by perſons intelligent in the ſubject it treats "of; and when thoſe who commend it receive no "advantage from the applauſe they beſtow on it, nor "are leagued with the author in any cabal, for eſpouſ"ing any particular principle, ſyſtem, or party, in reli"gion or learning." Baillet. Jugem. des Sçav. tom. i. b. 2. p. 121. Struv. Introd. at Not. Rei Liter. cap. 5. § 3. p. 390. Stoll. Introd. Hiſt. Liter. P. i. § 11. p. 9. Budd. de Criteriis boni Libri, paſſim. Mem. de Trev. an. 1712. Art. 17. Heuman. Conſp. Reipubl. Liter. cap. vi. § 11. p. 280.

But more particularly, it is an indication that a *book* is good, 1. If the author be known to excel in that talent more immediately neceſſary for ſuch a ſubject; or have already publiſhed any thing on the ſame that is eſteemed. Thus we may conclude, that Julius Cæſar will teach us the art of war better than Peter Ramus; Cato, Palladius, and Columella, agriculture better than Ariſtotle; and Cicero, oratory better than M. Varro: add, that it is not enough the author be ſkilled in the faculty, but that he be ſo in the particular branches of it he treats of; ſome, for inſtance, excel in the civil law, yet not in the public law: Salmaſius proved himſelf an excellent critic in his Exercitat. Plinian. but was much inferior to Milton in his Defenſio Regia. 2. If the *book* be on a ſubject that requires great reading, it may be preſumed good, if the author hath a copious library, or can have acceſs to one; or if he lived in a place where *books* were not wanting; though here is danger too of running into exceſs in quotations; eſpecially, ſays Struvius, if the author be a lawyer. 3. A *book* which took up a long time in compoſing, cannot often fail of being good. 4. *Books* on points of doctrine by eclectic writers, are to be preſumed better than thoſe writ by the retainers to particular ſects. 5. The age of a writer may alſo give us ſome indication: *books*, which require labour, are uſually better performed by younger perſons, than thoſe who are far advanced in years. 6. Another indication may be taken from the author's ſtate and condition: thus hiſtory written by a perſon who was an eye-witneſs of what he relates, or is concerned in public affairs, or has acceſs to the public records, or other monuments, from whence intelligence may be drawn; who is not biaſſed by party, or any other indirect or ſiniſter motive, will be ſuppoſed to be good. Thus Salluſt and Cicero were well able to write the hiſtory of Catiline's conſpiracy. D'Avila, de Comines, Guicciardin, Clarendon, &c. were preſent in the civil wars they deſcribe: Xenophon, having an employment in the Spartan ſtate, has treated excellently of that commonwealth; and Amelot de la Houſſaye, by living long at Venice, was enabled to explain the ſecrets of their policy. Camden wrote annals of the affairs of his own time; Thuanus had correſpondence with the beſt writers in every country; and Puffendorf had acceſs to the public archives. So, in literary matters, we give credit to thoſe who have the direction of libraries. 7. The time or age wherein the author lived may give ſome light; every age having, according to Barclay, its peculiar genius and excellency. See Bartholin. Struv. Budd. Heuman. Baill. lib. cit.

Some judge by the bulk or ſize of *books*; following the grammarian Callimachus's rule, that every great *book* is of courſe an ill one, μεγα βιβλιον, μεγα κακον: a ſingle leaf of the Sibyl was doubtleſs preferable to the vaſt annals of Voluſius; yet Pliny's obſervation will nevertheleſs hold true, that "a good *book* is ſo much the better "by how much it is bigger." Plin. Epiſt. 20. lib. 1. Martial preſcribes a remedy againſt the largeneſs of a *book*, when that is the only complaint, read but a little of it,

Si nimius videar, ſeraque coronide longus
Eſſe liber, legito pauca, libellus ero.

Yet is the ſmallneſs of a *book* a real preſumption in its favour: he muſt be a poor author who cannot furniſh a pamphlet, or looſe ſheet, with things curious, and written with ſpirit: but to ſupport the ſame through a volume in folio, requires very extraordinary abilities indeed. Addiſ. in Spect. N°. 124.

See further concerning *books*, in the writers on literary hiſtory, libraries, ſtudies, learning, arts, and ſciences; more eſpecially in Salden, Bartholin, Hodannus, Sacchinus, Baillet, Buddeus, Saalbach, Putherbeus, Raynaud, Schufner, Lauffer, Schwartzius, Crenius, Morhoff, and others, who have written treatiſes expreſs concerning *books*.—Chriſt. Liberius, i. e. Gul. Saldenus, *βιϐλιοφιλια, ſive de libris ſcribendis & legendis*. Ultraj. 1681. 12°. & Amſtel. 1688. 8°. Struv. Introd. ad Hiſt. Liter. c. 5. § 21. p. 454. Th. Bartholini. de Libris Legendis, 1678, 8°. & Francof. 1711. 12°. Struv. loc. cit. Jo. Fred. Hodanni Diſſert. de Libris Legendis, Hanov. 1705. 8°. Fr. Sacchini de Ratione Libros cum profectu legendi, Lipſ. 1711. 12°. Baillet Jugemens des Sçavans ſur lex principaux Ouvrages des Auteurs, tom. i. Car. Frid. Buddeus, de Criteriis boni Libri, Jen. 1714. Chr. Saalbach. Schediaſma de Libris veterum. Gryphis, 1705. 4°. Fabric. Bibl. Ant. cap. 19. § 7. p. 607. Reimm. Idea Syſt. Antiq. Liter. p. 229. ſeq. Gab. Putherbeus, De tollendis & expurgandis malis Libris, Par. 1549. 8°. Theoph. Raynaud Erotemata de bonis ac malis Libris, Lugd. 1653. 4°. Morhof. Polyhiſt. Liter. lib. i. cap. 16. n. 28. p. 177. Schufner Diſſert. Acad. de Multitudine Librorum. Jenæ 1702. 4°. Lauffer Diſſert. adverſ. nimiam Librorum Multitudinem. Vid. Jour. des Sçav. tom. lxxv. p. 572. Chr. Got. Schwartzius de Ornamentis Librorum apud Veteres, Lipſ. 1705. & 1707 Tho. Crenius de Libris Scriptorum optimis & utiliſſimis. Ludg. Bat. 1704. 8°. an extract of which is given in Act. Erud. Lipſ. an. 1704. p. 526. ſeq.

The importation of *books* firſt printed in this kingdom, and reprinted abroad, is prohibited. Vid. Stat. 12 Geo. II. c. 36. § 1.

There was a clauſe in the ſtatute of the 8th of Q. Anne, ch. 19. impowering the chancellor, and ſome other great officers of ſtate, to ſet the price of *books*; but this is now repealed by 12 Geo. II. ch. 36. ſect. 2.

Books, *burning of*, was a kind of puniſhment much in uſe among the Romans, by legal ſentence: ſometimes the care of the execution was committed to *triumviri* appointed on purpoſe; ſometimes to the prætors, and ſometimes to the ædiles; Labienus, whom from his ſatirical ſpirit ſome have called *Rabienus*, is ſaid to have been the firſt who underwent the ſeverity of it. His enemies procured a *ſenatuſconſultum*, whereby all his *books*, publiſhed during ſeveral years, were ordered to be collected and burnt: "The thing (ſays Seneca) then appeared new "and ſtrange, to take revenge on learning!" *Res nova & inſueta! Supplicium de ſtudiis ſumi.* Caſſius Servius, a friend of Labienus, hearing the ſentence pronounced, cried aloud, "That they muſt burn him too, ſince he "had got all the *books* by heart:" *Nunc me vivum uri oportet, quia illos didici.* Labienus could not ſurvive his *books*, but ſhutting himſelf up in the tomb of his anceſtors, pined away, and was buried alive.

Divers other ancient teſtimonies concerning the burning of *books* are given in Reimm. Idea Syſt. Antiq. Liter. p. 389.

Books, *cenſors of*. See Censor.

Books, *privileges of*. See Privilege.

Book, *common place*. See Common-Place.

Book, *text*. See Text.

Book is alſo uſed for a part or diviſion of a volume, or large work.

In this ſenſe we ſay the *book* of Geneſis, the firſt *book* of Kings, the five *books* of Moſes, &c.—The Digeſt is contained in fifty *books*, the Code in twelve *books*.

Books are uſually ſubdivided into chapters, ſometimes into ſections, or paragraphs: accurate writers quote chapter and *book*.

Book is alſo uſed for a liſt or catalogue of perſons names.—Such among the ancients were the *cenſorial* books, being tables or regiſters containing the names of all thoſe who were cenſed or taxed under Auguſtus. Tertullian aſſures us, that our Saviour's name was found in the cenſorial *books* of Auguſtus. Adv. Marcion. lib. iv. cap. 7. See Census.

Books, in *Matters of Commerce*, denote the ſeveral regiſters wherein merchants and other dealers keep their accounts.

We ſay, ſuch a perſon's *books* are in good order: merchants cannot poſſibly do without *books*; they are even obliged by the laws to keep *books*. But more or fewer are required, according to the nature and extent of their dealings, or the preciſion and exactneſs they deſire therein.

The ancients had alſo their *books* of accounts; witneſs the *codex accepti & expenſi*, ſo often mentioned in Roman writers; and the *patrimonial books*, which were rentals, containing an account of the lands, goods, and chattels, and other effects belonging to each perſon.

Book-*Keeping*, the art of keeping accounts; that is, of recording the tranſactions of a perſon's affairs in ſuch a manner, that the true ſtate of any part, or of the whole, may be thereby known with the greateſt clearneſs, exactneſs, and eaſe.

By the *tranſactions of one's affairs* are meant, either ſuch as relate to the perſons with whom we deal, or the things in which we deal; which laſt are either money, the principal means of commerce, or goods, comprehending all other effects.

All authors agree, that the Italians, particularly thoſe of Venice, Genoa, and Florence, firſt introduced the method of *keeping books* double, or in two parts, probably about the middle of the fifteenth century; hence, among us, it is called *The Italian method:* though it was not introduced into England till a century later; the firſt *book* on this art having been publiſhed at London in 1569, by James Peele.—Stevin apprehends, that the art of *book-keeping*, by double entry, was known to the Romans, and originally received from the Greeks.

Books, *merchants*, may be generally divided into *eſſential* and *auxiliary*.—*Eſſential*, or *neceſſary*, are thoſe without which regular accounts cannot be kept; in which number ſome include the *journal*, *waſte-book*, and *ledger*; others only the two latter.—Vid. Malc. Treat. of Book-Keeping, ch. i. ſect. 2. p. 3.

Subſidiary or *auxiliary*, are ſeparate *books*, wherein particular accounts are kept more diſtinctly, for eaſing the ledger.—Such are the *caſh-book*, *debt-book*, *book of expences*, &c.

Theſe *books* are kept in the ſame manner, in effect, in moſt trading cities in Europe; but not as to coin: each being regulated by that ſort of coin which has courſe in the ſtate where they are.

In England, *books* are kept in *pounds*, *ſhillings*, and *pence*: in France, in *livres*, *ſols*, and *deniers*: in Holland, Flanders, Zealand, and Brabant, in *ponden*, pounds, *ſchellingen*, ſhillings, and *groſs*, *groot*; they alſo keep them in *guilders*, *ſtivers*, and *penningen*: at Dantzick, and in all Poland, in *rixdollars*, *groſs*, and *deniers*; they are likewiſe kept in *florins*, *groſs*, and *deniers*: through moſt parts of Germany, in *florins*, *cruitzers*, and *pennings*: at Hamburgh, in *marks*, *ſols*, and *deniers lubs*: at Liſbon, in *rees*: at Florence, in *gold crowns*, *ſols*, and *deniers*: in Spain, in *maravedis*; ſometimes in *rials*, or *pieces of eight*: at Meſſina, and through Sicily, in *ounces*, *tarins*, *grains*, and *piccolis*: at Venice, in *ducats*: in Muſcovy, in *rubles*, *altins*, and *grives*: through all the ſtates of the Grand Signior, in *piaſters*, *abouquels*, and *aſpers*.

Book, *waſte*, is the firſt, and moſt eſſential: in this, all kinds of matters are mixed together; no order but that of time being preſerved; it being a diurnal regiſter of occurrences in buſineſs, to be afterwards ſeparated and transferred into the others; ſo that this may be ſaid to contain the elements of all the reſt.—It may be kept two ways; the firſt, by entering things down ſimply as they happen; v. gr. *Bought of ſuch a one, ſold to ſuch a one, paid ſuch a one, lent ſo much, &c.* the ſecond, by entering at once, each article, debtor and creditor: this laſt is eſteemed the beſt; becauſe, forming a kind of little journal, it ſaves the keeping any other.

The *waſte-book* begins with the inventory of a merchant's effects and debts; the difference between theſe is what the merchant calls his neat ſtock; and contains a complete record of every tranſaction of his affairs, with all the circumſtances, in a plain narration of matter of fact; every tranſaction following another in the order of the dates.

This *book* is in reality a journal, or day-book; but that name being applied to another, the name *waſte-book* is given to this by way of diſtinction: though what relation the word *waſte* bears to the nature of this *book*, is not very obvious.—Some authors better call it the *memorial-book*, or *memorandum-book*, as its principal uſe is for taking memorandums.

Book, *journal*, or *Day*-**Book**, is that wherein the affairs of each day are entered orderly down, as they happen, from the *waſte-book*.—Each article in this *book* is to conſiſt of ſeven parts; viz. the date, debtor, creditor, ſum, quantity and quality, how payable, and the price.

The journal, ſo far as it differs from the *waſte-book*, is only a *book* of aid to the ledger.—There are two different methods of keeping it: in the firſt, which is that hitherto chiefly in uſe, the journal is a complete tranſcript of the *waſte-book*, in the ſame order of time, but in a different ſtile; becauſe the *waſte-book* expreſſes every tranſaction in a ſimple narration of what is done; whereas the *journal* diſtinguiſhes the debtors and creditors, as a preparation for the ledger; thus, when any tranſaction is to be transferred from the *waſte-book* into the *journal*, they examine it by the rules of the ledger, as if it were to be entered immediately there; and, finding the debtors and creditors to which it belongs, theſe are diſtinctly marked by their denominations of *debtor* and *creditor*, in the ſtile of the journal; at leaſt, the accounts that are debtors are expreſly ſo named; and by their being directly connected debtor to ſome other accounts, theſe are ſufficiently determined to be the creditors, though the word *creditor* be not written.

Model of an article in the Journal.

	l.	s.	d.
15th July, 1723. Wine Dr. *to* Caſh——*L.* 160 : — : — *Bought of* Duval, *ready Money*, 16 *Pipes of Burgundy, at* —— —— *L.* 10. —— ——	160	0	0

The other form of a journal, which Mr. Malcolm judges preferable in certain reſpects to the former, makes the journal a complete tranſcript of the waſte-book, without any alteration, leaving on the left ſide of every page a large margin, about a third part of the page; on which againſt every tranſaction, are to be written the names of the debtors and creditors of that tranſaction, with their titles of debtor and creditor, and ſums of money; obſerving, that where there are ſundry debtors or creditors to one creditor or debtor, they write their names next each other, and the name of the one correſponding debtor or creditor, againſt the total of the other ſums; by which means the balance and connexion appears at ſight. Then, when the tranſaction is transferred to the ledger, they write on this margin the numbers of the folios where the accounts ſtand in the ledger; for the purpoſes already mentioned in ſpeaking of the former method.

This *book* may be called either the *waſte-book*, or *journal*, being in reality both; not only as every *waſte-book* is a *journal*, but as there is here alſo that which diſtinguiſhes both a *waſte-book*, and a *journal*.

By an ordonnance of the year 1673, all traders in France, whether by wholeſale or retail, are obliged to keep a journal, containing all their affairs, debts, active and paſſive, bills of exchange, &c. For want of keeping this, and ſurrendering it on a failure, they are to be reputed fraudulent bankrupts, and ſubjected to the penalties thereof.

Ledger, or *Ledger*-Book, ſometimes alſo called the *great-book*, and the *poſt-book*, is a large volume, containing all the tranſactions of a man's affairs in ſuch order, as that thoſe belonging to every different ſubject lie together in one place; making ſo many diſtinct or ſeveral accounts. The ledger is only the waſte-book ſtill further digeſted; being extracted either immediately from it, or from the journal. It is uſually ruled in ſix columns. In it all the accounts diſperſed in the journal are drawn out and ſtated in debtor and creditor. To form each account, two pages are required oppoſite to each other; that on the left ſerving for debtor, the other for creditor: each article to conſiſt of five parts, or members; the date, the perſon whom we credit, or are credited by; the ſubject, i. e. the thing credited or indebted for; the page where it is found; and the ſum or amount of the article.—Two inſtances, the one of an article of credit, the other of debt, will illuſtrate the form and uſe of this *book*.

Model of an article in debtor.

			l.	s	d.
May 14. 1701.	Antony Roberts *Dr.* *To* Caſh, *paid by his order to* Wilks.	*Fo.* 16.	1900	0	0

Model of an article in creditor.

		l.	s	d
Cr. *By* Caſh, *for his remittance on* James	*Fo.* 16.	1900	0	0

The management of the ledger being of great importance in accounts, we will ſubjoin from Mr. Malcolm the following caſes relating to it.

1. That for every diſtinct ſubject, with which you have an account (i. e. for every perſon with whom you deal on mutual truſt and credit, or who, by any means, becomes your debtor, or you his) as well as for every thing you deal in, there muſt be a certain ſeparate ſpace, or portion, allowed; wherein are to be written all, and only, the tranſactions relating to that ſubject, whoſe *Name* is to be inſcribed, or written on the head thereof; making thereby diſtinct particular accounts.

2. Every account is to be diſtinguiſhed into two parts, taking for each an equal portion (leſs or more, as you think fit) of right and left pages, of one *folio* or opening; the name of the ſubject being written on the head of the account, on both ſides, which are diſtinguiſhed by the words *debtor* on the left ſide, and *creditor* on the right, for the uſes following: to which the columns explained below are ſubſervient.

3. Every perſonal account to contain, on the debtor ſide, all the articles which that perſon owes you, and the payments you make of your debts to him: and, on the creditor ſide, all that you owe to him, and the payments he makes of his debts to you. Or, becauſe this rule conſiders payments under the notion of mutual oppoſite debts upon the receiver, if this be once ſuppoſed, the rule may be briefly expreſſed thus: every perſon is debtor for what he owes me, and creditor for what I owe him.

4. Every real account ought to contain, on the debtor ſide, the quantity and value of what was upon hand at the beginning of the account, and what was afterwards received, with all coſts and charges: and, on the creditor ſide, the quantity and value of what is diſpoſed of, or any way taken away, or gone out of it, with all the returns that ſubject makes me. Or, more briefly, thus: it is debtor for all received, firſt coſt and charges; and creditor for all gone out of it, with the returns.

5. Every tranſaction muſt be entered in the *ledger-book*, with a balance of debt and credit, i. e. ſo as that every article be placed on the debtor ſide of one account, and the creditor ſide of ſome other, making thereby equal debt and credit in the ledger; and where the perſonal and real accounts concerned in the tranſaction do not, in the articles belonging to them, make this balance (as they will in moſt caſes), then ſome imaginary account muſt be uſed to ſupply the defect.

6. Thoſe accounts, whoſe articles of debt and credit, in any tranſaction, balance one another, are, in the ledger, to be connected together in the ſtile of every article, as mutual and correſpondent debtors and creditors; by writing in each of the correſponding accounts the name of the other, after the particle *to* in the debtor's account, and *by* in the creditor's, which connects the two; the name of the account, in which the articles are written, with its quality of debtor and creditor, being underſtood as joined to, and ſo is read before the word *to*, or *by*, in every article (though it be written only once for all upon the head of the account.) Then, after the name of the correſponding creditor or debtor, follows a brief narration of the fact; the date and other numbers being placed in their proper columns.—Hence we find the uſe of the column that ſtands next to the money-columns, which is this, to write in it the number of the folio where ſtands the correſponding account, with which the account, in which you write, is connected in every article.

To facilitate the uſe of the ledger, there is an alphabet to ſerve as an index, or repertory, conſiſting of twenty-four leaves, each cut on the edge, and marked with one of the twenty-four letters; wherein the initial letters of the perſons names, with whom you have accompts, are inſerted, with the folio of the ledger, where the account is ſtated.

The more exact *book*-keepers extend the index to the things or commodities a man has dealings in, as well as the perſons he deals with. Generally, it is a letter of a man's ſurname, and the proper name of the thing, that directs its place in the index: thus John Gordon is put under G; and claret wine under C, unleſs all ſorts of wines be comprehended in one account, in which caſe it is put under W.

Book, *debt*, Book *of payments*, or *Bill*-Book, a *book* wherein is entered the day whereon all ſums fall due, whether to be paid, or received by bills of exchange, merchandizes, or otherwiſe: to the end that, by comparing receipts and payments, proviſion may be made, in time, of a fund for payment; by receiving bills, &c. due, or taking other precautions.

Two models will ſuffice for the uſe and form of this *book*: it is only to be obſerved, that, like the ledger, it muſt be on two oppoſite pages; moneys to be received on the left hand, thoſe to be paid on the right.

Model of the page of payment.

Jan. 1708.	To pay	l.	s.	d.
1	*To* Charles Horn, *for a purchaſe of the 1ſt of* July.	700	0	0
	To R. Hart, *a note under hand of the 5th of* Auguſt.	400	0	0
2	*Remittance of* Lucas, *of 15th of* December, *to* Hall.	1700	0	0
	My own bill of 25th of October, *to bearer.* —	100	0	0

Model of the page of receit.

May 1708.	To receive.	*l.*	*s.*	*d.*
1	*Remittance of* J. Vaſſor, *of the* 10*th of* March, *on* Pits.	600	0	0
	Of Cade, *for wool ſold the* 6*th of* July. —	150	0	0
2	*Of* Dykes *by bond of* 23*d of* May *laſt.* —	2000	0	0
	Remittance of Price, *of* 23*d of* October *on* Page.	270	0	0

Book, *caſh*, is the moſt important of all the auxiliary ones: it is ſo called, becauſe it contains, in debtor and creditor, all the caſh that comes in, or goes out, of the merchant's ſtock.—In this are entered all the ſums received and paid daily; thoſe received on the left hand, with the perſon's name, of whom received, for what, for whom, and in what ſpecies: thoſe paid on the ſide of creditor; mentioning likewiſe the ſpecies, the reaſon why, the perſon to whom, and for whom, the payment is made.—For inſtance:

Model of an article in debt.
Caſh. Dr.

	l.	*s.*	*d.*
June 29th, 1708. Reced. *of* Paul Simon, *for* 2 *tons of wax, ſold the* 6*th inſtant,* *A purſe of*——L. 1000 : — : — *Pieces of eight,* L. 108 : — : — L. 1108 : — : —	1108	0	0

Model of an article in Credit.
Cr.

	l.	*s.*	*d.*
May 14th, 1711. Paid. *To* Tim. Hall, *for* 2 *tons of wax, bought the* 2*d inſtant,* *A purſe of*——L. 1000 : — : — *Pieces of eight,* L. 300 : — : — L. 1300 : — : —	1300	0	0

The better to conceive the nature of this *book*, it is to be obſerved, that in buſineſs, where caſh happens to be an account which has numerous articles, it is convenient to keep a particular account thereof, in a *book* diſtinct from the ledger; and for this reaſon called the *caſh-book*. This is formed, in all reſpects, like the caſh account in the ledger, with a debtor and creditor ſide; in which all the caſh received and given out is entered; either in a ſimple ſtile, or in that of the ledger: but which way ſoever the narration is made, every article muſt be duly entered on the oppoſite ſide of the correſponding account in the ledger; with a reference to the ledger account of caſh: for ſuch an account there muſt alſo be, into which the ſums of the debtor and creditor ſides of the particular account muſt be transferred once a week or month, as is found convenient: thus, in the *caſh-book*, the ſums being written down againſt them, write, transferred to the ledger, and mark the folio; and in the ledger account, enter the ſum with the date of the transfer, debtor *to*, and creditor *by*, ſundry accounts, as *per caſh-book*. The caſh account in the ledger is neceſſary for the balance of the whole; and the convenience of the ſeparate account of all the particulars is, that we have them all together, in one continued account: whereas, the rule of the ledger being not to allow more than one folio for one account, till that be filled up, the account might hereby lie in ſeveral different folios.

Book *of invoices*, a *book* to ſave the journal from the eraſures inevitable in taking accompts or invoices of the ſeveral goods received, ſent, or ſold; where it is neceſſary to be very particular, and to render thoſe invoices eaſier to find than they can be in the *waſte-book* or *journal*. The invoices here entered are to be thoſe of goods bought, and ſet to account of ſome other; thoſe of goods ſold by commiſſion; of goods ſent away to be ſold on our own account; and thoſe of goods ſold in partnerſhip, whereof we have the direction, or whereof others have the direction.

This *book* contains an account or invoice of all the goods which a perſon ſhips off, either for his own account, or for others in commiſſion, according to the bills of lading; with the whole charges till on board; every invoice following after another, in order as they happen.

The invoice *book* is only a copy of what is written in the *waſte-book*, in thoſe caſes.—After the date, the narration is to begin thus:—Shipped aboard the ſhip—A. B. maſter, bound for ——, the following goods; conſigned to—for my account, or by order, and the account of.—Or, it may be begun thus:—Invoice of goods ſhipped aboard—&c.

The deſign of this *book* is for the more ready finding out theſe invoices, than can be done in the *waſte-book*.

Book, *factor*, or *Book of Sales*, is an account of what a perſon receives to ſell in commiſſion for others, and of the diſpoſal thereof.—It is numbered and diſtinguiſhed into folios, like the ledger; on the left-hand ſide is written, in a plain narrative ſtile, an account of the goods received, with all charges: and, on the oppoſite ſide, an account of all the ſales and diſpoſals of thoſe goods.—So that this is only a copy of the employer's account of goods in the ledger, in the ſtile of the *waſte-book*. Where a perſon does little in commiſſion, a ſeparate *book* for this purpoſe is needleſs.

Book *of accounts current* is kept in the form of debtor and creditor, like the ledger; and ſerves for accounts ſent to correſpondents, to be regulated in concert with them, before they are entered in the ledger. This is properly a duplicate of the accounts current, kept to have recourſe to on occaſion.

Book *of commiſſions, orders*, or *advices*, is a *book*, in which are entered all the commiſſions, orders, and advices, which a perſon receives from his correſpondents. This ſhould have a broad margin for receiving the entry of remarks concerning their execution.

Book *of acceptances* is deſtined for the regiſtering all bills of exchange, notified by letters of advice from correſpondents; ſo that the merchants may know, when the bills are preſented, whether they have orders to accept them or not.—When they chooſe to decline accepting a bill, againſt the article thereof in the *book*, they put P, i. e. proteſt; that, on offering the bill, the bearer may be told he may proteſt it: on the contrary, if they accept it, they write againſt it an A; adding the date, or day of acceptance. And this, upon being transferred to the debt-*book*, is cancelled.

Book *of remittances* ſerves to regiſter bills of exchange, as they are remitted by correſpondents, to require the payment thereof.—If they be proteſted for want of acceptance, and returned to thoſe who remitted them, mention is made thereof againſt each article, by adding a P in the margin, and the date of the day when they were returned, then cancelled.

The *books* of acceptances and remittances have ſo near a relation to each other, that many merchants, &c. make but one of the two, which they keep in the form of debtor and creditor; putting acceptances on the ſide of debt, and remittances on that of credit.

Book *of copies of letters*, ſerves to keep copies of letters, which a merchant writes to his correſpondents, that he may have recourſe to them, as occaſion requires.

Book *of expences*, a detail of the petty expences, both domeſtic and mercantile; which at the end of each month are ſummed up, and make an article for the caſh-*book*.

This *book*, being a ſeparate account of all the expences of living, ſerves to keep both the profit and loſs account, and alſo the caſh-*book*, more diſtinct: the greater and more conſiderable articles are to be placed here particularly; but the ſeveral ſmall articles, of daily diſburſements, only in totals: though under what denominations, and how general or particular the articles of this *book* are to be made, muſt be left to every one's choice. All that is neceſſary to obſerve here is, that the caſh paid out, on ſuch accounts, muſt be carefully entered here; and thence, once a week or month, be transferred to the caſh-*book*, and to the profit and loſs account in the ledger; which is debtor to caſh for it.

Book *of numero's* or *wares* is kept for the eaſy knowledge of all the goods brought in, ſent out, or remaining in a warehouſe.—On the left-hand page are entered the quantity, quality, and number or mark, of the goods brought in; on the right, the diſcharge of the goods out of the warehouſe, againſt the reſpective articles of the firſt. Thus,

N° 1	*A bale of white pepper* —— *weighing*	400*lb.*
2	*A piece of crimſon damaſk* —— *ells*	63

March 1	*Sold to* Charles Mitchell.
Apr. 10	*Sent to* Nichols *of* Briſtol.

Book, *month*, is numbered in folios like the ledger, and divided into ſpaces, on the top of each of which are the names of the 12 months of the year; January, February, &c. allowing a whole folio, or what you pleaſe, to each month; and a different ſet of 12 ſpaces for every different year.—On the left-hand page enter the payments to be made to you, in that month; and on the right-hand page the payments you are to make. Make a column likewiſe on the left-hand of every page; in which, write the day of payment; and after this, the name of the debtor or creditor; and draw the ſum into the money-columns.

There are alſo *pocket memorandum-books*, publiſhed annually, digeſted into *weeks* and *days*, properly divided, for the clear and methodical entry of occaſional memorandums.

Book *of veſſels* is kept in the form of debtor and creditor; a particular account being kept for each veſſel. To the ſide of debtor, are put victualling, fitting out, wages, &c. To the ſide of creditor, are put every thing the veſſel has produced; whether by way of freight or otherwiſe. Laſtly, the total of each is entered in the journal, upon balancing the accounts of each veſſel.

Book *of workmen* is particularly in uſe among manufacturers, who have conſiderable works in their hands. It is kept in form of debtor and creditor for each workman employed. On the ſide of debt are put the matters given them to work; and on that of credit, the work they return.

Book *of cargo*, or *loading*, *livre de bord*, is kept by the clerk or purſer of a ſhip; wherein are entered all the goods aboard the veſſel, whether thoſe only for freight, or for ſale, or exchange; the whole according to the ſpecification in the maſter's bills of loading.

Book, *bank*. In cities, where there are public banks, or bankers, as at Venice, Amſterdam, Hamburgh, and London, a *book* is neceſſary wherein to keep an account of the ſums paid to, or received from the bank, or bankers.

Book, abſolutely uſed, denotes the waſte-book, ſometimes the journal, or day-book.

In this ſenſe it is, they ſay, I have put down ſuch a ſum in my *book*; you ſhall have an extract of my *book*, &c.

Book-keeping, though chiefly in uſe among merchants and great dealers, is yet applicable with advantage to perſons of all other conditions; as retailers, ſtewards, gentlemen of land-eſtates, &c. with this only difference, that the narrower their affairs and tranſactions are, the fewer *books* they need to keep, and *vice verſa.* The ſame ways of accounting, which in great and diffuſed trade prevent confuſion, by an artful and regular diſpoſing of things, if applied to mean and narrow dealings, will create confuſion, at leaſt will be attended with needleſs trouble; ſince a few things ſhew themſelves readily, and are examined by mere inſpection: ſuppoſing no other method but a waſte-book record; every corner whereof, in very ſmall dealings, the owner's eye is acquainted with, ſo that he can readily turn to what he wants: but this, in larger accounts, is impoſſible; which makes order, the ſtricteſt form, and much writing, abſolutely neceſſary.—Yet this one rule muſt be indiſpenſably obſerved in all caſes; viz. That a true and exact memorial of every thing belonging to the account be made, juſt as things occur; and if buſineſs increaſe, ſo that a nearer approach to the perfection of accounting be neceſſary, this will ſerve as a ground-work, on which you may raiſe the account to what form you pleaſe. But the leaſt a man can do, will be ſome part of the method explained under the article **Books**; of which all methods whatever are a part; as comprehending the greateſt ſimplicity in the waſte-book, and art in the ledger.

For a perſon in a ſingle ſtate, who has no buſineſs, but the receiving at certain times in the year a ſum of money, which he lays out again for his private and perſonal expences, a pocket-book is ſufficient.

For one in a married ſtate, whoſe fortune conſiſts alſo of money, as he has a greater variety of expences, he muſt be careful to keep an exact account of what caſh he receives and pays: and, to make this account more diſtinct and orderly, it will be beſt to keep the particulars of the payments in a ſeparate book, and, to bring them into a caſh-book once a week, in totals, digeſted under ſuch denominations as he thinks fit, as *bread*, *beer*, *fleſh*, *coals*, *candles*, &c.—Things thus brought into the caſh-account, may be again drawn into an abſtract, ſhewing the total of each kind of expences for every month, by dividing a page into twelve columns, with the names of the twelve months; and then in ſo many articles on the margin ſetting the names of the ſeveral heads of expences, and againſt each, under the reſpective month, the ſum of that kind of expences in that month; then will the ſum of the money in the columns under each month be the total expence of that month, and the aggregate of theſe ſums the year's expences.—For artificers, handicrafts-men, and the like, they may keep accounts of the expences of living, as above; but it will alſo be neceſſary to make a diſtinct account of the charges and profit of their buſineſs, which may eaſily be done, by an exact account of all they pay or owe for the materials and inſtruments of their work, with ſervants wages, and taxes upon their trade; and of all they receive or that is due for their work. They may conveniently keep accounts for the materials of their work, to ſatisfy them of the diſpoſal thereof, and to ſerve as a check on ſervants who have acceſs to thoſe things; and they muſt keep accounts for the perſons they deal with, both in buying and ſelling.—As for petty traders, who deal in ſome hundreds of trifling wares, and make ſales to the value of a farthing or halfpenny, theſe cannot pretend to keep orderly accounts; the beſt they can do is, to be careful that ſervants do not wrong them; for they have no account of goods; and if you aſk what of any kind remains with them, they muſt examine, if their memory fails.—Theſe can only have a caſh-account, which they are to charge once a week with the money received, and diſcharge for what they give out: it is not convenient that they ſhould touch the caſh-box or till, oftener than once a week, when it is compleated; but if they do, they muſt keep a ſeparate account of what they take out, to know what was received. Beſides which, they ſhould have a

Book, *Memorandum*, or *Day*-**Book**, wherein all things delivered on credit are to be entered, and from thence transferred to a ledger; in which an account is opened for every debtor or creditor, with a debt and credit both on one ſide with a double money column.

As for more conſiderable ſhop-keepers, who commonly deal in only a few different ſpecies of goods, as drapers, mercers, &c. they uſually keep a ledger for perſons and wares diſtinct, without any formal connection or reference of the accounts, in their ſeveral articles; whereby there can no regular balance be made. In the accounts of perſons, they uſe the formality of a debtor and creditor ſtyle, which is mere ſhew, without the real value of a regular account; there being no oppoſite correſponding debtors and creditors to be found. For their ledger of wares, as they call it, contains nothing of this; and is but an imperfect contrivance, which they ſatisfy themſelves with, to know how much remains. But the worſt is, that in allotting ſpaces for the accounts of wares, they frequently allow no more than they ſuppoſe may ſerve for the retail of the quantity firſt entered on that ſpace; and when this is diſpoſed of, take a new ſpace for a new parcel; which, in a quick trade, is not only troubleſome but confuſed, if there be any of the old parcels remaining; unleſs they carry it to the new account. In reality, dealers in retail, if conſiderable in their way, ought not to come ſhort of the utmoſt pitch of art: at leaſt, they ſhould keep three grand books, a *waſte*, *journal*, and *ledger*; unleſs they ſhall think fit to join the firſt two into one. The *waſte-book* is to contain every thing done in the ſhop, both what is ſold on truſt, and for caſh. This and the *journal* may be made in one, by marking the debtors and creditors on the margin, againſt every tranſaction of value. For the *ledger-book*, becauſe there are commonly many articles of debt to one of credit, on men's accounts with whom they deal, and many articles of credit for one of debt, upon account of wares, they may keep the debt and credit both on one ſide, by double money columns; in one of which let the debt, and in the other the credit be ſet.

For gentlemen of landed eſtates, the books neceſſary to be kept are, 1. A great *waſte-book*, containing a plain narrative of all things as they occur; as receits, and payments, every thing given and received; and, in ſhort, whatever is done relating to any thing or perſon they are concerned with: out of which are to be made up, 2. A *caſh-book*, containing in a plain narrative ſtyle, upon the debtor-ſide, all receits of money; and upon the creditor-ſide, all payments; and though there be ſeveral articles received or paid together belonging to the ſame account, which are entered particularly in the waſte, yet they may be ſet down here in a total ſum: for example, there is paid 26*l.* for divers pieces of houſhold furniture, all particularly mentioned in the *waſte-book*, yet in the *caſh-book* there needs no more than to ſay, *paid for houſhold furniture*, *&c.* 3. A book of accounts with tenants, where, in diſtinct places, every one's charge and diſcharge may be fairly written, without any great formality of ſtyle; and if it hath a ſhow of debtor and creditor ſide, it will be the more diſtinct: 4. A book of petty accounts with ſervants and workmen, &c. 5. A book of real accounts; containing an account of cattle, corn, and other ſtock or furniture, to know at all times what you have, and how it is diſpoſed of. If a gentleman advances no nearer to the artificial part of accounting, he muſt keep an account with every perſon, with whom he has dealings; which may be done in the ſame book with his tenants accounts, only allotting diſtinct parts for them; the laſt will take no great room compared with the other: theſe books of accounts muſt have indexes.

For factors or ſtewards on land-eſtates, a general *waſte-book* will be neceſſary, to contain all matters tranſacted, relating to their maſter's concerns, under their management. Out of which let them make a *caſh-book*, in the manner above directed; alſo a *book* of real accounts, that they may know what real effects, beſides money, they have the charge of, and how it is diſpoſed of; particularly the corn-rents, which have been delivered by the tenants, and put in the granaries under their charge, to be diſpoſed and given out according to order. Malcolm's Treat. of *Book-keeping*, Append. p. 7. 30.

Book *of Rates*, is a *Book* eſtabliſhed in parliament, ſhewing at what value goods, which pay POUNDAGE, are to be reckoned at the CUSTOM-houſe. See CUSTOM, DUTY, POUNDAGE, and TONNAGE.

The *book of rates* annexed to the act of TONNAGE and POUNDAGE made in the 12th year of king Charles II. is ſubſcribed with the hand of Sir Harbottle Grimſtone, then ſpeaker of the houſe of commons.—An additional *book of rates* of goods and merchandizes uſually imported, and not particularly rated in the former, with rules, orders, &c. is ſigned by Spencer Compton, Eſq. ſpeaker of the houſe of commons, 11 Geo. I. c. 7.

Book-binding, the art of ſewing together the ſheets of a *book*, and ſecuring them with a back, and ſtrong paſte-board ſides, covered with leather, &c.

Binding is diſtinguiſhed from *ſtitching*, as, in the latter, the leaves are only ſewed, without bands, or backs.

We ſay, French-*binding*, law-*binding*, marble-*binding*, *binding* in parchment, in ſheep, in calves leather, &c. alſo half-*binding*, wherein the leaves are generally left uncut, and only the back covered with leather, the paſte-board ſides being covered with marbled, or blue paper.

Dutch-*binding* is, where the backs are of vellum.—The Italians are ſtill contented to bind in a coarſe, thick paper, called *binding alla Ruſtica*, the inconvenience of which is its being liable to wear out without careful uſe.

Without doubt, the art of *binding* is almoſt as ancient as the ſcience of compoſing *books*; and both the one and the other followed immediately the firſt invention of letters. Whatever the matter might be, on which men firſt wrote, there was a neceſſity of uniting the ſeveral parts together; as well for the making them of one piece, as for the better preſerving them: hence the origin of *book-binding*.

According to Olympiodorus *(apud Phot.)* it was one Phillatius, a learned man at Athens, who firſt taught the uſe of a kind of glue, to faſten the ſeveral leaves together: on which account a ſtatue was erected to him.

Books, *the manner of binding in volumes*, i. e. of gluing the leaves together; that of rolling them on round pieces, or cylinders of wood, appears the moſt ancient; though that of binding them ſquare, and of ſewing ſeveral quires one over another, lays claim to conſiderable antiquity. The firſt of the two, which we call *Egyptian-binding*, held a long time after the age of Auguſtus; but it is now diſuſed, excepting in the Jewiſh ſynagogues, where they continue to write the *books* of the law on vellum ſewed together; making, as it were, only one long page, with two rollers, and their claſps of gold or ſilver, at each extremity.

The form now in uſe is the ſquare *binding*, which is ſaid to have been invented by one of the Attali, kings of Pergamus; to whom we likewiſe owe the manner of preparing parchment; called in Latin, from the name of his capital, *Pergamena*, or *Charta Pergamea*.

Books, *manner of binding*.—The firſt operation is to fold the ſheets according to the form, viz. into two for folios, four for quartos, eight for octavos, &c. which the workmen do with a ſlip of ivory or box, called a *folding-ſtick*: in this they are directed by the catch-words and ſignatures at the bottom of the pages. The leaves thus folded, and laid over each other in the order of the ſignatures, are beaten on a ſtone with a heavy *hammer*, to make them ſolid and ſmooth, and then preſſed. Being thus prepared, they are ſewed in a *ſewing-preſs*, upon pack-threads or cords, which are called *bands*, at a proper diſtance from each other, and in a convenient number; which is done by drawing a thread through the middle of each ſheet, and giving it a turn round each band, beginning with the firſt, and proceeding to the laſt. The common number of bands are ſix in folios, and five in quartos, octavos, &c. Sometimes they uſe a ſaw to make places for the bands, which are ſunk into the paper, ſo that the back of the book when bound is ſmooth, without any appearance of bands. After this the backs are glued, the ends of the bands being opened, and ſcraped with a knife, for the more convenient fixing the paſte-boards; then the back is turned with a hammer, the book being fixed in a preſs between boards, called *backing-boards*, in order to make a groove for admitting the paſte-boards. The boards being then applied, holes are made for drawing the bands through, the ſuperfluous ends being cut off, and the parts hammered ſmooth. Then the book is preſſed, in order for cutting; which is performed by a particular machine called a *plough*, to which is fixed a knife. After this the book is put into a preſs called a *cutting-preſs*, betwixt two boards, the one lying even with the preſs, for the knife to run upon; the other above it, for the knife to cut againſt. The book being cut, the paſte-boards are ſquared with a proper pair of iron ſhears; and it is then ready for ſprinkling, gilding, blacking, or marbling the leaves. The colours with which it is ſprinkled, are uſually vermilion, or ſap-green; which is done by a bruſh made with hog's briſtles, holding the bruſh in one hand, and moving the hair with the other.

In the French-*binding*, a *book* is put in parchment, i. e a ſlip of parchment is applied over the back, between each band, and the ends paſted on the inſide of each paſte-board. This preparation, called *indorſing*, ſeems peculiar to the French binders; who are enjoined by ordonnance to back their *books* with parchment, on the penalty of 30 livres, and the re-binding of the *book*: it is done in the preſs, where the back being grated to make the paſte take hold, the parchment is applied; and they afterwards add glue to fortify it.

Manner of gilding books on the edges.—The *book*, being put tight into the preſs, between two boards, is ſcraped with a knife called a *ſcraper*; and after that with another called a *ſmoother*, in order to take out all ſcratches. Being thus made ſmooth, they ſcrape a little yellow OCHRE upon the *book*, wet it with a little ſize-water, and rub it off with ſome clean ſhavings. The gilding-ſize is made with the white of an egg, mixed with water, and beat well together. The leaves being wetted with the ſize-water, with a bruſh, the gold is then laid upon it, and afterwards dried before the fire. When dried, it is burniſhed off with a dog's tooth ſet in a handle. Blacking the leaves is done with fine antimony, the leaves being wet, and the antimony rubbed upon them until quite dry, when it is burniſhed like the gold.

The head-band is now added; which is an ornament of thread or ſilk of two or three colours, placed at each extreme of the back, acroſs the leaves; and woven or twiſted, ſometimes about a ſingle, and ſometimes a double piece of rolled paper, or, what is more laſting, of glued pack-thread.

For the covers; the ſkins uſed undergo ſeveral preparations, which we ſhall explain, in calf, as being the leather moſt uſed; and as being that to which all the reſt, with a little variation, may be referred.—The calf-ſkin being moiſtened in water, is cut to the ſize of the *book*, and the thickneſs of the edges pared off on a marble ſtone kept for that purpoſe. The cover is next ſmeared over with paſte made of wheat-flour; then ſtretched over the paſte-board on the outſide, and doubled over the edges withinſide. They then *cord the book*, or *bind* it firmly between two boards, to make the cover ſtick the ſtronger to the paſte-boards, and the back; on the exact performance of which depends a great part of the truth and neatneſs of the *book*. The back is then warmed at the fire to ſoften the glue, and the leather of the back is rubbed down with a folding-ſtick or bodkin, to ſet and fix it cloſe to the back of the *book*. It is now ſet to dry; and when dry, uncorded: the *book* is then waſhed over with a little paſte and water, the edges and ſquares blacked with ink, and then ſprinkled fine with a bruſh, by ſtriking it either againſt the hand, or a ſtick; or with larger ſpots mixed with vitriol, which is called *marbling*. Two blank leaves on each ſide, are then to be paſted down to the cover; and when dry, the leaves are BURNISHED in the preſs, and the cover rolled on the edges.

The cover is now glazed twice with the white of an egg; it is then filleted, plain, or with gold; and at laſt poliſhed with a poliſhing iron, paſſed hot over the glazed colour.

If the *book* be required to be lettered, they paſte a piece of red morocco on the back, between the firſt and ſecond band, to receive the title in gold letters; and ſometimes a ſecond between the next bands underneath, to receive the number of the volume.

The plain *binding*, properly ſo called, is now complete; the gilding on the back and cover, as it makes a part of the *book-binder's* buſineſs among us (though, with the French, &c. it is a diſtinct profeſſion), we ſhall here ſubjoin.

Manner of gilding books on the backs and covers.—In ordinary *binding*, they gild little elſe but the backs, and the outward edges of the cover. On the backs are gilt the title of the *book*, &c. with flowers, roſes, knots, ſtars, &c. between the bands: on the covers are ſometimes added compartments, arms, &c. All theſe ornaments are made with each its ſeveral gilding-tool, engraved in *relievo*; either on the points of puncheons, as thoſe of letters, roſes, ſtars, &c. or around little cylinders of braſs, as the lines, embroideries, &c. The puncheons make their impreſſion by being preſſed flat down; and the cylinders by being rolled along by a handle, to which they are fitted on an iron ſtay, or axis.

To apply the gold, they glaze thoſe parts of the leather, whereon the tools are to be applied, three or four times with a liquor made of the whites of eggs diluted with water by means of a ſponge; and, when near dry, they ſlightly oil them, and then lay on pieces of leaf-gold, and on theſe apply the tools, with a careful even preſſure of the hand, or roll the cylinders, both the one and the other reaſonably hot. If the figures be large, and require a great *relievo*, as arms, &c. they are beat or preſſed down. The gilding thus finiſhed, they rub off the ſuperfluous gold, and poliſh the whole; the gloſs of which is greatly aſſiſted by a final preſſing between horns peculiar for the purpoſe.

Our *book-binders*, for gilding on rough leather, make uſe of reſin, dried and powdered, inſtead of whites of eggs; and the gold leaf, firſt cut to a proper ſize, is laid on a hot ſomewhat oiled ſtamp, and preſſed down: and thus the reſin melts only in thoſe parts where the hot ſtamp is applied and the gold fixes on it, whilſt the other parts of the leather remain rough as at firſt. Dr. Lewis's Com. Phil. Techn. p. 615. See **Gilding**.

Ahaſ. Fritſch, chancellor of the univerſity of Jena, has a diſſertation expreſs concerning **book-binders**, *De Bibliopegis*; wherein he treats of the laws preſcribed by theſe artificers, and the tax or price ſettled by the magiſtrate for *binding books*, of every ſort, in ſheep-ſkin, vellum, &c.—The rates fixed for *binding* in ſheep, throughout the electorate of Saxony, are, for large folios, 1 guilder or florin, 3 groſſes; common folio, 1 florin; large quarto, 12 groſſes; common quarto, 8 groſſes; large octavo, 5 groſſes; common octavo, 4 groſſes; duodecimo, 3 groſſes; ſedecimo, 2 groſſes.

Book-land. See **Bock**-*land*.

Book-seller, a profeſſed trader in *books*; whether he prints them himſelf, or procures them to be printed by others, for ſale.

Book-ſellers, among us, are the ſame with *bibliopolæ* among the ancients, whoſe office was diſtinct from that of *librarii*. Petty dealers, or venders of ſmall ware, like our publiſhers, were more particularly denominated *libelliones*. At Rome, the Argiletum was the mart of *books*, as Paul's Church-yard, or Fleet-ſtreet, and Paternoſter row, have been among us: whence that of Martial,

Argiletanas mavis habitare tabernas,
Cum tibi, parve liber, ſcrinia noſtra vacent.

Book-ſellers are a kind of agents, or curators in the republic of letters: in many places, they are ranked among the members of univerſities, and entitled to the privileges of ſtudents: as at Tubingen, Saliſburg, and Paris, where they have always been diſtinguiſhed from the vulgar and mechanical traders, and exempted from divers taxes and impoſitions laid on other companies.

Formerly, the offices of *book-ſellers* and printers were united in the ſame perſons. Labbe gives a liſt of learned *book-ſellers*; moſt of whom were alſo authors.—Of late days, *book-ſellers* have drawn their buſineſs into leſs compaſs, and leaving the labour of compoſing *books* to one ſet of perſons, and that of printing them to another, content themſelves with the gainful part; thus miniſtering to the republic of letters not with the head, or the hand, but the purſe only.

In this view, they have been very important and uſeful agents between authors and the public; and have contributed, in no ſmall degree, to the encouragement of genius and literary induſtry, and the ſpread of ſcience. There are few authors, who have undertaken the printing and publiſhing of any work likely to be tranſmitted to poſterity, without being connected with ſome *book-ſeller*, or *book-ſellers*, eminent in their profeſſion.

The fairs of Francfort and Leipſic are famous for the reſort of *book-ſellers*, not only from all parts of the empire, but Holland, Flanders, &c. They have each their ſhop or warehouſe, over which is inſcribed the name of ſome celebrated *book-ſeller* of former times; *officina Elzeviriana*, *Frobeniana*, *Morelliana*, *Janſoniaua*, &c.

An acquaintance with the *book-ſellers* marks or ſigns, frequently expreſſed on the title-pages of their *books*, is of ſome uſe; becauſe many *books*, eſpecially in the laſt century, have no other deſignation either of printer, *book-ſeller*, or even city.—The *anchor* is the mark of Raphelengius at Leyden; and the ſame with a *dolphin* twiſted round it, of the Manutii at Venice and Rome; the *Arion* denotes a *book* printed by Oporinus at Baſil; the *caduceus*, or *pegaſus*, by the Wecheliuſes at Paris and Francfort; the *cranes*, by Cramoiſy; the *compaſs*, by Plantin at Antwerp; the *fountain*, by Vaſcoſan at Paris; the *ſphere* in a balance, by Janſon or Blaew, at Amſterdam; the *lily*, by the Juntas at Venice, Florence, Lyons, and Rome; the *mulberry-tree*, by Morel at Paris; the *olive-tree*, by the Stephenſes at Paris and Geneva; and the Elzevirs at Amſterdam and Leyden; the *bird between two ſerpents*, by the Frobeniuſes at Baſil; the *truth*, by the Commelins at Heidelberg and Paris; the *Saturn*, by Colinæus; the *printing-preſs*, by Badius Aſcenſius, &c.

Chevillier ſhews, that the univerſity of Paris had formerly the ſole power of creating and appointing *book-ſellers*, who were to take an oath to the univerſity; and were reputed part of the academical body, and as ſuch entitled to the exemptions of the other members thereof. They were to give ſecurity to the univerſity for their behaviour, and produce atteſtations of their capacity for the diſcharge of their office: the univerſity alſo depoſed and expelled them at diſcretion: they were obliged to appear at all aſſemblies of the univerſity, when ſummoned, and aſſiſt at the public proceſſions thereof: they were obliged to lend their *books* to be read, or even copied by ſuch as were diſpoſed to borrow, on certain conditions, preſcribed by the univerſity. If they kept any *books* by them which were not correct, the univerſity puniſhed them: they were not allowed to buy any *book* of a ſtudent, without leave of the rector: nor were they allowed to gain above four *deniers* in a *livre*, by any copies ſold to the members of the univerſity. Every *book-ſeller* was obliged to have a catalogue of all his *books* hung up in the ſhop, with the prices, as rated by the univerſity: no *book-ſeller*, who had not taken the oaths to the univerſity, might ſell a book of above ten *ſols* value. Diſſ. de l'Orig. de l'Imprim. l. 4.

This ſtate laſted from the thirteenth century till the invention of printing, and even till the end of the fifteenth century; during which time there were only allowed twenty-four *book-ſellers*, two binders, two illuminers, and two ſworn *book*-writers, or copiſts.—But from that time the kings of France began to take cognizance of them: Lewis XI. thought fit to preſcribe ſome new regulations in 1467: under Francis I. the *book-ſellers* were brought wholly under the royal authority, and received ſtatutes from the king.

The chief ſcience of *book-ſellers*, is the knowlege of the titles, different editions, prices, and ſcarcity of *books*, without regard to their contents, or qualities, otherwiſe than as theſe affect the ſale of them.

Book-worm, is an inſect of the mite kind, which afterwards becomes a fly, bred from eggs depoſited in the month of Auguſt in *books*, eſpecially in the leaves neareſt the covers. It is not unlike the mite or **blatta** found in corn. When the time of its transformation approaches, the inſect ſeeks to get into the air, and eats every thing which it finds in its way, till it gets to the extremity of the *book*. The mixture of juice of wormwood and other bitter ingredients in their paſte, which is an expedient uſed by book-binders for this purpoſe, is no ſecurity to books againſt *book-worms*. The beſt and the only ſecurity is from mineral ſalts, which all inſects hate. For this purpoſe, book-binders ought to mix with the paſte employed in binding, the ſalt which is known under the name of **arcanum** *duplicatum*, alum, and vitriol; with this precaution, *books* may be perfectly guarded from all injury and inſult from this miſchievous little creature. We cannot take too much care to preſerve what only can tranſmit our knowlege to poſterity. M. Prediger, among other inſtructions to German book-binders, printed at Leipſic in 1741, recommends their making paſte of ſtarch, inſtead of flour: he wiſhes them to powder ſlightly the books, their covers, and the ſhelves on which they ſtand, with a mixture of powder of alum, and fine pepper; and is alſo of opinion, that in the months of March, July, and September, books ſhould be rubbed with a piece of woollen cloth ſteeped in powdered alum. Melanges D'Hiſt. Nat. tom. v. p. 296.

BOOKING, among *Merchants*, &c. the making an entry of any matter in the Journal. See **Book**, **Book-keeping**, and **Journal**.

BOOM, in the *Sea-language*, a long pole, wherewith they ſpread out the clue of the ſtudding-ſail, ſometimes alſo that of the main-ſail and fore-ſail, to make them broader, and receive more wind.

Booming of the ſails is never uſed but in quarter winds, or before a wind. By a wind, ſtudding ſails, and *booming* the ſails is not proper.

When a ſhip is ſaid to come *booming* towards us, it imports as much, as that ſhe comes with all the ſail ſhe can make.

Boom alſo denotes a pole with a buſh or baſket on the top, placed to direct ſhips how to ſteer into a channel; otherwiſe called a *beacon*.

Boom likewiſe is uſed, in *Marine Fortification*, to denote a cable or cables ſtretched athwart the mouth of a river, or harbour, with yards, top-maſts, battlings, or ſpars of wood, laſhed to it, and girded with iron hoops rivetted together, and nailed to the ſpars, to prevent an enemy's entering. Such a *boom* M. Chateau Renault had with diligence and art prepared at Vigo, for the defence of the plate fleet lying there in 1702; but how ſtrong ſoever, it was forced by Sir Thomas Hobſon. The cables of which the *boom* is formed, are bent to a pair of ſheet anchors on each ſide of the channel. Other cables are ſometimes faſtened to that within the *boom*, and bent to anchors laid down the ſtream; and theſe cables are prepared with ſpars like the other: where wood is ſcarce, the *boom* is prepared with old ropes, &c. and iron hoops; every part of it being well covered with pitch ſtrewed with gravel. The *boom* is generally ſo contrived, as to open at one end for the paſſage of veſſels.

BOOMITES, a term uſed by ſome authors to expreſs a kind of agate, of a very remarkable brightneſs and tranſparence, which repreſents the figures of ſhrubs, trees, moſſes, &c in the manner of the *dendrachates*, a common *mocho-ſtone*. This is however very different in the degree of tranſparence and brightneſs.

BOOMKIN. See BUMKIN.

BOOPHTHALMUS, derived from βȣς, *an ox*, and οφθαλμος, *eye*, *Ox-eye* STONE, in *Natural Hiſtory*, a name given by Scheuchzer to a peculiar AGATE, in which there frequently appear circles of conſiderable ſize, reſembling ſome large animal's eyes. The ground colour of the ſtone is grey, and the circles of a deep bluiſh black.

BOOPS, in *Zoology*, the name of a fiſh caught in the Mediterranean, and ſold at Naples, Meſſina, and Genoa. It is a ſmall fiſh, ſeldom exceeding five inches in length, and very remarkable for the largeneſs of its eyes; and a ſpecies of the SPARUS. It is of a rounded, not flat ſhape. and its ſcales are large. See *Tab. of Fiſh*, N° 56. Beſides this, which is the common ſpecies of the *boops*, there are two other kinds, the one commonly called BOUGE-*ravel*. The other a ſmall kind, not above three inches in length, and without ſcales. Its mouth is ſmall, and its eyes extremely large. Its tail is broad and thick. This, in the taſte and conſiſtence of its fleſh, no way differs from the common *boops*.

BOOPS is alſo the name of a ſpecies of the WHALE.

BOOK-*worm*, in *Natural Hiſtory*, a name given by Rumphius to the *ſolen lignorum*, a ſea-worm, which bores the bottoms of ſhips.

BOOT, a leathern cover or defence for the leg, uſed on horſe-back, both to keep the body more firm, and defend the part from the injuries of the weather.

Boots ſeem to have been called thus, from their reſemblance to a ſort of jacks, or leathern bottles, formerly in uſe, and called *bottæ*, in the old French *bouts*. Borel derives the name from the ancient French word *bot*, *a ſtump*, becauſe the *boot* gives the leg this appearance.

It is not long that the *boots* uſed on horſe-back have been called by this name. In the reign of Charles VII. of France, they were called *houſes*, *hoſe*.

The ancient monks uſually wore *boots*; that is, the denomination *bottæ*, or *botti*, was given to their buſkins.

The Chineſe had a kind of *boots* made of ſilk, or fine ſtuff, lined with cotton, a full inch thick, which they always wear at home and abroad.

There are alſo chirurgical *boots*, for the cure of *vari & valgi*, or crooked and diſtorted legs.

The *boot* was much uſed among the ancients, by the foot, as well as horſemen.

The *boot* is the ſame with what was called by the ancient Romans, *ocrea*; in middle-age writers, *greva*, *gamberia*, *bainberga*, *bembarga*, or *benberga*. Du-Cange Lat. Gloſſ.

The *boot* is ſaid to have been the invention of the Carians: it was at firſt made of leather, afterwards of braſs and iron, and was proof both againſt cuts and thruſts. It was from this that Homer calls the Greeks *brazen-booted*. Plin. Hiſt. Nat lib vii. cap. 56. Homer. Il. vii v. 41.

The *boot* only covered half the leg; ſome ſay only the right leg, which was more expoſed than the left, it being advanced forwards in an attack with the ſword; but in reality it appears to have been uſed on either leg, and ſometimes on both. Thoſe who fought with darts, or miſſive weapons, advanced the left leg foremoſt; ſo that this only was *booted*. Veget lib i. cap. 20. Pitiſc. Lex. Ant. tom. ii. p. 309. and Aquin. Lex. Mil. tom. ii. p. 102.

BOOTS, *Fiſhing*, are a thick ſtrong ſort, uſed in dragging ponds, and the like.—*Hunting-boots*, a thinner kind, uſed by ſportſmen.—*Jack-boots*, a kind of very ſtrong *boots*, uſed by the troopers.

BOOT, *brodequin*, is likewiſe a kind of torture for criminals; to extort a confeſſion, by means of a *boot*, ſtocking, or buſkin of parchment; which being put on the leg moiſt, and brought near the fire, in ſhrinking ſqueezes the leg violently, and occaſions intolerable pain.

There is alſo another kind of *boot*; conſiſting of four thick ſtrong boards bound round with cords: two of theſe are put between the criminal's legs, and the two others placed one on the outſide of one leg, and the other on the other; then, ſqueezing the legs againſt the boards by the cords, the criminal's bones are ſeverely pinched, or even broken, &c.

The *boot* is now diſuſed in England; but it ſubſiſts ſtill in ſome other countries.

BOOT-*houſing*. See HOUSING.

BOOT-*laſt*, a wooden cylindric inſtrument, uſed by ſhoemakers for widening the leg of a *boot*. It is ſlit in two parts, between which a wedge is driven when it is put into the *boot*.

BOOT-*topping*, in *Sea-language*, the act of cleaning the upper part of a ſhip's bottom, or that part which lies immediately under the ſurface of the water, and daubing it over with tallow, or with a coat or mixture of tallow, ſulphur, reſin, &c.

BOOTES, in *Aſtronomy*, a conſtellation of the northern hemiſphere, whoſe ſtars, in Ptolemy's catalogue, are 23; in Tycho's, 28; in Bayer's, 34; in Hevelius's, 52; and in Mr. Flamſtead's catalogue, 54. Their longitudes, latitudes, magnitudes, &c. are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
		♎	10	51	56	28	11	26	6
			9	43	34	30	22	0	6
			9	29	53	33	59	20	6
Middle of three in the fore-leg.	τ		13	37	30	26	32	8	4
Southern.	υ		14	51	57	25	12	47	4
5.									
			12	26	17	30	14	28	5.6
			14	50	20	27	31	38	7
Northern of the leg.	η		14	58	32	28	7	35	3
			11	0	38	36	33	10	5
	e		14	27	1	31	28	30	7
10.									
			12	13	5	36	53	16	7.6
	d		15	43	4	35	41	3	5
		♍	27	9	24	56	34	48	6
		♎	22	8	42	24	51	0	6
			23	26	33	22	15	30	6
15.									
Bright one betwixt the thighs, *Arcturus*.	α		19	53	52	30	57	0	1
Preced. in the north hand.	κ	♍	25	36	39	58	54	44	4
		♎	23	23	52	25	10	15	6
In the preced. arm.	λ		2	37	58	54	39	20	4
			21	11	11	28	27	0	5
20.									
Middle one in the hand.	ι	♍	26	46	0	58	51	50	4
	f	♎	22	38	0	31	45	14	5
Laſt of the three in the hand.	θ	♍	28	14	0	60	10	4	4
	g	♎	1	35	46	58	55	5	6.7
Preced. of the two in the girdle.	ς		18	25	50	42	27	57	4
25.									
			22	49	58	35	6	13	7
In the left ſhoulder.	γ		13	18	18	49	33	0	3
Second of two in the girdle.	σ		19	31	33	42	8	24	5
	π		27	30	6	30	23	18	4.3
In the right heel.	ζ		28	40	21	27	53	42	3
30.									
		♏	0	53	28	22	41	32	5
		♎	29	37	33	25	59	55	6
	1 b		9	58	2	55	27	39	6
			23	36	22	40	0	9	6
	ο		28	27	45	31	17	7	4.5
35.									
Againſt poſterior thigh, under the girdle.	ε		23	44	35	40	38	21	3
	ξ		29	10	33	33	47	28	4
	2 b		11	2	48	57	54	1	6
			8	17	10	60	4	0	6
			20	6	1	52	58	40	6.7
40.									
In the right hand.	ω		29	26	43	40	11	33	5
In the head.	β		19	53	41	54	10	38	3
Firſt of the two in the wriſt.	ψ		29	10	20	42	11	40	5
			13	26	11	60	32	37	6
In the extremity of the handle of the ſtaff.	c	♏	0	54	38	40	29	15	5
45.									
Second of the two in the wriſt.	b		0	34	22	41	54	43	6
			One, long.&			lat.	undeter.		
Northern of two in the ſtaff.	χ		0	51	10	45	4	7	5
In the right ſhoulder.	δ	♎	28	48	8	49	0	10	3
Under the ſhoulder, in the ſtaff.		♏	0	54	25	49	10	10	5
50.									
North of the middle ones in the ſtaff.	μ	♎	28	51	13	53	26	56	4
	1		28	9	25	57	5	54	6
In the extremity of the ſtaff.	2 ν		28	22	27	57	14	17	6
	φ	♏	0	45	23	57	14	46	

This conſtellation is called by divers other names, as *Arctophylax*, *Bubulcus*, *Bubulus*, *Thegnis*, *Clamator*, *Vociferator*, *Piorans*, *Plauſtri-Cuſtos*, *Philometus*, *Arcas*, *Icarus*, *Lycaon*, and *Arcturus-Minor*; by others, *Septentrio*, *Lanceator*, *Ceginus*; by Heſychius, *Orion*; by others, *Canis-Latrans*; by the Arabs, *Aramech*, or *Arcamech*. Schiller, inſtead of *bootes*, makes the figure of St. Sylveſter; Schickhard, that of Nimrod; and Weigelius, the three Swediſh crowns. Wolf. Lex. Math. p. 266.

BOOTH, *Botha*, denotes a ſtall, or ſtanding in a fair or market: the term is alſo applied to any temporary ſtructure formed of boards and boughs, and deſigned for ſhade and ſhelter.

BOOTY, the moveables taken from an enemy in war.

Among the Greeks, the *booty* was divided in common among the army, the general only claiming a larger ſhare. By the military diſcipline of the Romans, ſpoils taken from the enemy belonged to the republic, particular perſons had no right to them. The generals who piqued themſelves on their probity, carried it wholly to the public treaſury. Sometimes, indeed, they divided it among the ſoldiery, to animate them, and ſerve in lieu of reward. But this diſtribution depended on the generals, who were to conduct themſelves herein with great equity and moderation; otherwiſe it became a crime of peculate to lay hands on the pillage, as regularly belonging only to the ſtate. The conſuls Romulius and Veturius, were condemned for having ſold the *booty* taken from the Æqui. Liv. lib. iii.

Among the Jews, the *booty* was divided equally between the army and the people, though under the kings a different kind of diſtribution obtained. Numb. xxxi. 27.

Among the Mahometans, two thirds of the ſpoils are allowed to the army; the other third to God, to Mahomet, and his relations, and to the orphans, the poor, and the pilgrims. Calmet. Dict. Bib. tom. i. p. 321.

Among us, formerly, the *booty* was ſometimes divided among the ſoldiery. If the general be in the field, every body takes what he can lay hold on: if the general be abſent, the *booty* is diſtributed among the ſoldiery, two parts being allowed to the cavalry, and one to the infantry. A captain is allowed ten ſhares, a lieutenant ſix, and a cornet four. See PRIZE.

BOQUINII, a ſort of ſacramentarians, who aſſerted that the body of Chriſt was preſent only in the euchariſt to thoſe for whom he died, that is the elect.

They took the denomination from one Boquinus, a Lutheran divine, who was one of the chief of the party.

BORA, in *Natural Hiſtory*, the name of the BUFONITE, in ſome authors; theſe are ſuppoſed by many to be real ſtones, but are truly the teeth of a fiſh.

BORAGO, in *Botany*. See BORRAGE.

BORAK, among *Mahometans*, a fabulous animal, ſuppoſed to be of a middle kind, between an aſs and a mule, whereon their prophet was carried in his nocturnal flight from Jeruſalem into the Heavens.

This animal the Arabs called *Al Borak*, q. d. *ſhining*. The night when the journey was performed is called *Leilat al Meerage*, i. e. *the night of aſcenſion*; and the flight itſelf *Al Meſra*; concerning which, there are a multitude of traditions.

BORAMETZ. See ZOOPHYTE.

BORASSUS, in *Botany*, the name of a genus of plants deſcribed by Linnæus, but not claſſed, and called in the Hortus Malabaricus *ampana*, and *carimpana*. The characters are theſe: the male and female flowers grow on ſeparate plants, and give the plant ſuch a different figure, that they are called by the two names before mentioned: the male being the *ampana*, and the female the *carimpana*. The male, or *ampana*, has for the cup of its flower the whole compound *ſpatha*, which is amentaceous and imbricated: the flower is divided into three ſegments, the petals being hollowed, and of an oval figure: the ſtamina are ſix thick filaments, and the *antheræ* are thick and ſtriated. In the female, the cup is the ſame as in the male, but the petals of the flower, which is divided into three parts, in the manner of the male, are very ſmall, of a roundiſh figure, and remain when the piſtil, &c. fall off. The germen of the piſtil is roundiſh; the ſtyles are three in number and ſmall, and the ſtigmata are ſimple: the fruit is a roundiſh obtuſe berry, of a rigid ſtructure, and containing only one cell: the ſeeds are three in number, and are of an oval compreſſed figure.

BORAX, a ſaline matter with all the properties of a neutral ſalt, chiefly uſed in ſoldering, and fuſing of metals; ſometimes alſo in medicine, as an emetic, and promoter of delivery.

The word *borax* is formed from the modern Greek, βορακιον, and this, probably, from the Arabic, *bauracon*, nitre, as being reputed a ſpecies of that ſalt.

The *borax* now uſed in Europe, is prepared or refined from the TINCAL that is brought from the Eaſt Indies. Dr. Lindolff thinks it might be made in Europe without tincal, by alum, ſoap, and a ſtrong alcaline lye. D. W. Linden thinks that Dr. Lindolff is well acquainted with the nature of *borax*, and that it might be made after his method; but that it would be too expenſive, and not ſuperſede the importation of tincal. He therefore recommends the ſour and acid water that comes out of coal mines, train oil, or any other fiſh oil, or indeed any fat that could be had cheap; the ſtrongeſt alkali of kelp; and all theſe ingredients to be worked in a liquid ſtate, till they are well mixed, and cryſtallize like a ſalt, which he thinks would anſwer all the ends of *borax*.

Borax is ſoluble with difficulty, in water, and cryſtallizable as alum, only that it requires more water for its ſolution, and retains leſs of it, in its cryſtallization. It ſuffers no decompoſition by fire; but may be decompoſed by vitriolic, nitrous, and marine acids, which unite with the ſaline alcaline matter that is its baſis, and form with it the ſame neutral ſalts exactly, as thoſe that are produced from the union of theſe acids with the marine alkali; i. e. the vitriolic acid forms Glauber's ſalt, the nitrous acid forms cubic nitre, and the marine acid forms ſea-ſalt. Acids thus combining with the baſis of *borax*, ſeparate from it a ſaline ſubſtance, ſingular and little underſtood, called SEDATIVE ſalt.

This was firſt diſcovered by Homberg, who obtained the ſedative ſalt by diſſolving it with vitriol; but the younger Lemery diſcovered that the ſame ſalt might be alſo obtained by the nitrous and marine acids: theſe chemiſts uſed, for this purpoſe, the embarraſſing and tedious operations of diſtillation and ſublimation; but Mr. Geoffroy has ſhewn the method of obtaining the ſame ſalt from *borax* by acids with evaporation and cryſtallization only, in greater quantity and with leſs trouble. He has alſo demonſtrated that *borax* contains the baſis of ſea-ſalt. M. Baron has ſhewn, that *borax* yields the ſedative ſalt by means of vegetable acids; and that the ſalt is a conſtituent part of the *borax* and only diſengaged from the alkaline matter with which it is united by the acids, and that it may be reunited with its alkali and again form *borax*. Macquer. Dict. Chem. and Mem. Acad. Sc. An. 1728, 1729, 1732.

Borax is uſually ſuppoſed to have been known to the ancients under the denomination *chryſocolla*: though Mr. Geoffroy gives good reaſons for believing the modern *borax* a different thing from the CHRYSOCOLLA of the ancients.

Pliny divides the ancient *borax* or *chryſocolla* into *natural* and *artificial*: the *natural*, according to him, is only a ſlimy humour running in mines of gold, ſilver, copper, and even lead; which, being congealed and hardened by the winter's cold, becomes of the conſiſtence of pumice-ſtone. See BAURAC.

For the *artificial*, it is made by letting water run in the veins of the mine, all the winter long, till June; and letting the mine dry the reſt of the year.—So that artificial *borax* is no more than the mineral putrified and corrupted.

The ſame naturaliſt diſtinguiſhes it into *black*, *green*, *yellow*, and *white*; which aſſume their ſeveral colours, as well as values, from the different mines wherein they are formed. The moderns alſo diſtinguiſh two kinds of *borax*; *natural*, which is crude; and *artificial*, which is purified and refined. Crude, or natural *borax*, *borace non rifatto*, is a mineral ſalt, dug out of the earth in ſeveral parts of Perſia; and found alſo at the bottom of a torrent, running in the mountains of Purbeth, near the frontiers of White Tartary: when taken up, it is expoſed to the air; where it acquires a reddiſh fatneſs, which ſerves to feed it, and prevent its calcining. When in its perfection, it is ſent to Amadayat, in the territories of the Great Mogul, where the European merchants buy it.

In thoſe places whence it is brought, it is ſaid that there oozes out of the ſides of the hills, containing metals, and particularly copper, a thick turbid water, of a bluiſh grey colour, and of a brackiſh bitter taſte. The courſe of this water is directed into wide and ſhallow pits, lined with a ſtiff clay; here it is left expoſed, in order to evaporate; and the grey fine mud left in its paſſage is daily mixed with it; till it acquires the conſiſtence of a ſoft pap; and then a large quantity of ſome animal fat melted over the fire is thrown into it, in the middle of a hot day: it is then well ſtirred, and covered with ſticks and branches of trees; and over theſe is laid a cruſt of any common clay. In this ſtate it is left, till it becomes quite dry: it is then ſifted, and what remains in the ſieves is ſent to us under the name of *rough borax*; however, it is not yet certainly known whether this matter be a natural or an artificial ſubſtance, nor whence, nor how it is obtained. Dict. Chem.

There is alſo another kind of natural *borax*, drier, and of a greeniſh colour, like Engliſh copperas; only differing from the former, by its being longer expoſed to the air.

For *artificial* or *refined borax*, *borace riſatto*, it was the Venetians who firſt found out the art of preparing it; or rather, of purifying the natural: it is ſaid to be done by diſſolving it in water; then filtrating and cryſtallizing it; uſing, for that purpoſe, cotton matches; about which the *borax* cryſtaliizes, like ſugar-candy and verdegris on wood.—The Dutch, who are now the only maſters of this manufacture, after refining it, reduce it into little pieces, like tagged points; and it is thus commonly uſed. It is ſaid to be refined by lime-water.

Borax, refined, either in the Dutch or Venetian manner, ſhould be clear and tranſparent, almoſt inſipid to the taſte; and above all, care muſt be taken it have no mixture of Engliſh alum. In this ſtate it conſiſts of large, white, eight-ſided cryſtals, each of which is compoſed of ſmall, ſoft, bitteriſh ſcales.

Borax is of great uſe in collecting the particles of any metal over the fire, and running them into a maſs; and this, with very little diminution of their weight. Dirt or aſhes, though in ever ſo ſmall a quantity, will certainly hinder ſome ſmall particles of gold or ſilver from running together into a maſs over the fire; but if they are ſo diſpoſed by a very ſtrong fire as to meet into a regulus, a great part of the metal will always adhere to the dirt that is thrown away. The leſs perfect metals not only ſuffer the above mentioned accidents, but their ſurfaces being greatly increaſed, copper and iron turn entirely into *ſcoriæ*, and are deſtroyed, and lead and tin are ſo in great part. It is therefore very detrimental when theſe baſer metals are mixed in any, even in ever ſo ſmall a quantity, with gold or ſilver; for in the melting, there come upon the ſurfaces, light *ſcoriæ*, in which part of the gold or ſilver are retained, as in the pores of a ſpunge, and prevented from running into a regulus.

To remedy this miſchief, *borax* is added, becauſe as it helps the melting of metals and of all bodies by fire, its bringing the whole maſs into a quick fuſion, gives the metals an opportunity to ſink together in a maſs to the bottom, and vitrifies the lighteſt *ſcoriæ*, throwing them off to the ſurface; and the uſe of this ſalt is not reſtrained to gold and ſilver, but takes place as well in regard to iron as copper.

This ſalt alſo cauſes metals to melt in a much leſs fire than they otherwiſe would, and is of very ſingular uſe in preſerving the leſs perfect metals while in fuſion. It flows over them, and covers their ſurface while tortured in the fire, as if it were with a kind of very thin glaſs, which defends them againſt the combined force of the fire and air, ſo deſtructive of the imperfect metals.

The aſſayers have a cuſtom of rubbing with *borax* the inſides of veſſels, in which the more precious metals are to be melted, which always fills up the ſmall cavities in their ſides, that might otherwiſe take in a part of the metals. When gold is melted with *borax* alone, it makes it pale; but this is obviated by the adding a ſmall quantity of nitre, or of *ſal ammoniac*. Care muſt be taken, however, not to add both theſe ſalts together, becauſe they would cauſe a detonation. The above mentioned uſe of *borax* has cauſed it to be reckoned, by ſome writers, among the reducing bodies; that is, ſuch bodies as reſtore metals, however deſtroyed, to their priſtine form: but this is an error; for *borax* does not reduce the deſtroyed metals, but only the ſcattered particles of them, while they yet retain their true metallic form.

Borax is alſo uſed by the dyers to give a gloſs to ſilks; in Italy by the ladies as a coſmetic; and in making GLAUBER's *ſalt*. See A. D. S. an. 1732. p. 398. H. 52.

A principal uſe of *borax* is to facilitate the ſoldering of metals, by accelerating the fuſion of the ſurfaces of the metals to be joined, and clearing them of any calx or other matter by which they might be prevented from being perfectly applied to each other.

Borax, in *Medicine*, is uſed to promote delivery. Med. Eſſ. Edinb. vol. i. p. 341.

The uſe of *borax* is that of an inciſive and aperient ſalt, by virtue of which it is effectual againſt diſeaſes which proceed from an inſpiſſation of the humours, and obſtructions thence ariſing. The doſe is a dram.

Its ſtimulus, however, is too weak to be depended upon for preſent relief in a difficult birth, unleſs it be joined with other ingredients of more efficacy. For this reaſon, *borax* is commonly given in powder mixed with ſaffron, myrrh, oil of cinnamon, caſtor, the volatile ſalt of amber, and the like.

Some adviſe a few grains of it to be taken in a poached egg, as a provocative to venery.

Borax calcined, is reckoned of ſpecific virtue in fluxes of the belly, or the *ſemen*, as being a kind of ſtyptic earth. The doſe is from a ſcruple to half a dram.

Borax is of ſome further uſe in medicine, as it enters the compoſition of the *unguentum citrinum*. It is alſo uſed in the preparation of a *fucus* for the ladies.

Borax, *glaſs of*, is obtained by melting the cryſtals of this ſalt; and it is the only ſalt that aſſumes a vitreous appearance from fire without addition. The glaſs becomes opake, and pulveriſes in the air. *Borax* forms with earths different ſorts of glaſs, which are in general very hard and compact, and at firſt extremely tranſparent; but they are liable to become cloudy and opake by being long expoſed to the air.

It is alſo uſed in preparing the imitations of precious ſtones.

Borax is alſo a name given by ſome to the BUFONITES, or toad-ſtone; a kind of BEZOARD ſaid to be found in the head of the TOAD.

BORBONIA, in *Botany*, a genus of the *diadelphia decandria* claſs of plants. The characters are theſe: the flower hath five leaves, and is of the butter-fly ſhape. The ſtandard is obtuſe and reflexed; the wings are heart-ſhaped, and ſhorter than the ſtandard: the keel hath two obtuſe lunulated leaves. It hath nine ſtamina joined in a cylinder, and one upper ſtanding ſingle. In the centre is ſituated a germen, which afterward becomes a round pointed pod terminated with a ſpine, having one cell incloſing a kidney-ſhaped ſeed. There are three ſpecies, which are natives of the Cape of Good Hope; and as they do not perfect their ſeeds in this country, are with difficulty propagated here.

Borbonia *Aſtra*, a denomination formerly given by ſome writers to the *ſolar* FACULÆ, on a ſuppoſition that they were ſatellites, or ſecondary planets.

Fromundus mentions a Frenchman, named Tarde, who had written a book expreſs under the title ASTRA BORBONIA. Phil. Tranſ. N° 330. p. 287.

BORBORITÆ, or **Borboriani**, a branch of the ancient Gnoſtics, in the 11th century, who, to the other errors of that ſect, added this, of denying a future judgment. Their name is derived from βορϐορος, *filth*, on account, as it is ſaid, of a cuſtom they had of beſmearing their faces and bodies with it. Epiphan. Hereſ. 25, and 26. Auguſt. de Hereſ. c. 5.

Some alſo have given this appellation, by way of reproach, to the MENNONITES.

BORBOTHA, in *Ichthyology*, a name given by ſome authors to the MUSTELA *fluviatilis*, or eel-pout. See GADUS.

BORDAGE, the condition or ſervice of the *bordarii*. Du-Cange. Gloſſ. Lat.

BORDARII, often mentioned in the Domeſday inquiſition, were diſtinct from the *ſervi* and *villani*, and ſeem to be thoſe of a leſs ſervile condition, who had a *bord* or cottage, with a ſmall parcel of land, allowed to them, on condition they ſhould ſupply the lord with poultry and eggs, and other ſmall proviſions for his board and entertainment. Though, according to Spelman, the *bordarii* were inferior to *villani*, as being limited to a ſmall number of acres.

Bordarii alſo denote ſervants, or workmen, employed about the houſe in the neceſſary offices of fetching wood, drawing water, grinding corn, cleaning yards, and the like: by which they ſtand diſtinguiſhed from VILLANI, employed in the tillage of the lands. See VILLAIN.

BORDAT, a ſmall narrow ſtuff, which is manufactured in ſome parts of Egypt, particularly at Cairo, Alexandria, and Damieta.

BORDER, in *Gardening*, denotes a narrow bed adjoining to a walk, ſerving to bound and incloſe the parterres, and prevent their being injured by the feet.

The uſe of *borders* is to incloſe parterres. They ought always to be laid with a riſing in the middle, by which they will have a better effect to the eye than if quite flat, and their breadth ſhould be between four and ſix feet.

Some are continued about parterres, and are wrought with a ſharp riſing in the middle, and planted with low ſhrubs and flowers. Others have only a verge of graſs in the middle, being edged with two ſmall paths, raked ſmooth and ſanded; theſe are ſometimes adorned with vaſes of flowers, of large growth, or flowering ſhrubs, along the middle verge of graſs. Others are quite plain, and are only ſanded, as in the parterres of orangeries; and are filled with caſes ranged in regular order along thoſe *borders*, which are edged with box on the ſides next the walks, and on the other with verges, and graſs-work next the parterre. Sometimes a yew is planted between each caſe, which makes the *border* appear richer, and the parterres handſomer during the winter ſeaſon.

The floriſts make *borders* in any part of their gardens, which they uſually edge with green boards; and this gives them a very neat look: in large parterres, all that is to be expected, is to ſtock them well with flowers, that will ſucceed one another during the ſummer ſeaſon. Miller.

Border, in *Heraldry*. See BORDURE.

BORDERS, among *Floriſts*, are ſuch leaves as ſtand about the middle-thrum of a FLOWER.

BORD-FREE. See FREE.

BORD-HALFPENNY, or BROD-HALFPENNY, money paid in markets, and fairs, for ſetting up boards, tables, and ſtalls, for the ſale of wares.

BORD-LANDS, the demeſnes anciently kept by the lords in their hands for the maintenance of their *board* or table. This was alſo anciently called *bordage*.

BORD-SERVICE, called alſo BORDAGE, the tenure of lands, on condition of furniſhing proviſion for the lord's board or table.

Some lands in the manor of Fulham, and elſewhere, are ſtill held of the biſhop of London, by the ſervice, that the tenants pay ſix pence per acre in lieu of finding proviſion for their lord's table.

BORDURE, or BORDER, in *Heraldry*, a kind of addition on the limb of a ſhield, in form of a hem, or girdle, encompaſſing it all round, and parallel to the boundary of the eſcutcheon, and ſerving as a DIFFERENCE. See *Tab. Herald. fig.* 10.

The *bordure* muſt be about one fifth part of the breadth of the field.

Simple bordure is that which is of the ſame colour or metal throughout; and is the firſt addition of younger brothers.—There are others, *componed*, *countered*, *ingrailed*, *indented*, and *charged* with other pieces; which make different additions for younger brothers, in ſeveral degrees.

If the line which conſtitutes the *bordure* be ſtrait, and the *bordure* plain, as they call it in blazoning, the colour of the *bordure* alone is named: as, he beareth gules, a *bordure* or.—If a *bordure* be charged with any parts of plants or flowers, they ſay, *verdoy* of trefoils, or of ſuch vegetables and flowers, whatever they be. If it conſiſts of ermines, vairy, or any of the furs, the term is, *perflew* of ermines: if the *bordure* be charged with martlets, the word is, *charged* with an *enaluron* of martlets: *enurny* is uſed for beaſts; and *entoyre* for things inanimate. A *bordure* is never of metal upon metal, and ſeldom of colour upon colour; but of the ſame tincture with the principal bearing or charge.

BORE.—The *bore* of a gun or piece of ordnance is uſed for the chaſe or barrel; though it ſeems rather to denote the diameter of the chaſe. See CALIBER, and CANNON.

BORE, *ſquare*, in *Smithery*, denotes a ſquare ſteel point, or ſhank well tempered, fitted in a ſquare ſocket in an iron wimble, ſerving to widen holes, and make them truly round and ſmooth within.

BOREA, an ancient name for a ſpecies of JASPER, of a bluiſh green colour.

BOREAL *Signs*, in *Aſtronomy*, the firſt ſix ſigns of the zodiac, or thoſe on the northern ſide of the equinoctial.

BOREALIS *Aurora*. See AURORA *Borealis*.

BOREAS, a Greek name now in popular uſe, for the north wind. Etymologiſts uſually derive the word from βοη, *clamor*, *noiſe*; or from βορα, *food*, becauſe it creates an appetite.

Pezron obſerves, that anciently, and with much greater propriety, *Boreas* ſignified the north-eaſt wind, blowing at the time of the ſummer ſolſtice: he adds, that the word comes from the Celtic *bore*, *morning*; becauſe their principal light, in that ſeaſon, came from that quarter, whence alſo the winds then uſually blew.

The Greeks erected an altar to *Boreas*. He is repreſented on the temple at Athens with his robe before his mouth, as if he felt the cold of the climate over which he preſides, agreeably to the deſcription of Ovid, who calls him *gelidus tyrannus*, *the ſhivering tyrant*. Met. vi. ver. 711. But he is uſually deſcribed by the Roman poets as violent and impetuous. Ibid. ver. 686—ver. 707.

The qualities allowed by naturaliſts to this wind are coldneſs and dryneſs.

BOREASMI, were feaſts inſtituted at Athens in honour of BOREAS.

BORECH, in *Natural Hiſtory*, a kind of ſalt brought from Perſia.

BORECOLE, in *Botany*, a ſpecies of the BRASSICA, or cabbage. Of this there are three ſorts; the common, the green, and the Siberian or curled colewort, called by ſome Scotch kale. The two former are ſown about the middle of April, and are fit for tranſplanting about two months after. The latter kind may be ſown in the middle of July, and will be fit for uſe from Chriſtmas till April.

Borecole has lately been found to be an excellent food for cattle. See CABBAGE.

BOREE, or BOUREE, a kind of dance, compoſed of three ſteps joined together by two motions; and begun with a crochet, riſing. The firſt couplet contains twice four meaſures, and the ſecond twice eight. It conſiſts of a balance-ſtep and a coupee: it is ſuppoſed to come from Auvergne; others ſay from Biſcay.

BORING, the act of perforating a ſolid body, or making a hole throughout its whole length or thickneſs.

Surgeons ſpeak of *boring* the bones of the ſkull, properly called TREPANNING.

BORING *birch*, and other trees, is practiſed in the ſpring for their juice, called alſo TAPPING and *bleeding*. Phil. Tranſ. N° 44. p. 880.

BORING, in *Farriery*, an operation ſometimes practiſed for the cure of horſes whoſe ſhoulders are wrenched. The method is thus: they cut a hole through the ſkin in the middle of the ſhoulder, and, with the ſhank of a tobacco-pipe, blow it as a butcher does a ſhoulder of veal; then they run a cold flat iron, like a horſeman's ſword-blade, eight or ten inches up, between the ſhoulder-blade and the ribs, which they call *boring*; after that, they burn him round his ſhoulder with a hot iron. This, ſays Bartlett, is an abſurd and uſeleſs, as well as a cruel practice.

BORING *of cannon*, in *Foundery*. See CANNON.

BORING *of maſts*, from top to bottom, is propoſed by Dr. Hook as a means of ſtrengthening and preſerving them; as this would make them dry and harden the better, and prevent their cleaving and cracking: for want of this, the outſide drying, when the inſide does not, the former ſhrinks faſter than the latter; the conſequence of which is prejudicial.

BORING, in *Mineralogy*, a method of piercing the earth by a ſet of ſcooping irons, made with joints ſo as to be lengthened at pleaſure. The ſkilful mineraliſt will be able to gueſs where a vein of ore may lie, though there are none of the common outward ſigns of it upon the ſurface of the earth; and in this caſe, he has recourſe to *boring*, the ſcooping irons are drawn back at proper times, and the ſamples of earth and mineral matter they bring up, are examined; and hence it is known whether it will be worth while or not to open a mine in the place.

BORING *of water-pipes*. The method of *boring* alder-poles for water-pipes is thus: being furniſhed with poles of a fit ſize, horſes, or truſſels, are procured of a due height, both to lay the poles, and reſt the auger on in *boring*; they alſo ſet up a lath, whereby to turn the leſſer ends of the poles, and adapt them to the cavities of the greater ends of others, in order to make the joint ſhut each pair of poles together. The outer or concave part is called the female, and the other, or inner, the male part of the joint. In turning the male part, they make a channel or ſmall groove in it, at a proper diſtance from the end; and, in the female part, bore a ſmall hole to fit over this channel; they then bore through their poles, ſticking up great nails at each end, to guide them right: but they commonly bore a pole at both ends; ſo that if it be crooked one way, they can nevertheleſs bore it through, and not ſpoil it. Neve Build Dict. in voc. Alder.

This operation is now performed with a horſe-mill, as at *Paul's Wharf* for the New River company.

Belidor, in his Hydraulics, has deſcribed a machine, in which a water-wheel is made uſe of both to turn the auger, and to bring forward the carriage on which the pipe to be *bored* reſts. This machine (See *Tab. II. Mechanics*, *fig.* 67.) is put into motion by the water-wheel A, in the axis of which there is a cog-wheel B, that turns the lanterns C and D; the trundles of D turn two ſmall wheels E and F; the firſt of which is vertical and turns the auger; the other is horizontal and moves the carriage by means of the two arms H and I. H draws the wheel G towards F, and I puſhes it in a contrary direction; and theſe combined actions cauſe the carriage to advance towards F and the auger to bore the pipe. The auger being about 12 feet long and proportionally heavy is ſupported by the pieces L, L; and they are prepared ſo as to give no obſtruction in the following manner: C, C, *fig.* 68, are two planks of wood which are faſtened to the timber-work of the mill; theſe encompaſs another plank hung by a cord, at the bottom of which are fixed the pieces *b*, *b*, with joints at *e* and *e*: and, that they may not move out of the vertical plane, they are joined by tennons to the plank *a*, in which they may work freely: on the ſide of one of theſe pieces is fixed a ſpring *g*, in order to hinder them from uniting, by forcing them into a mortiſe in *d*; in this ſituation the two pieces are penetrated with a hole through which the auger is to paſs. The cord is faſtened to the plank *a*, as in *fig.* 69, and goes over the two pullies *b*, *b*: at the other end of the cord there is hung a weight *e*, reſting on the piece N, which is ſupported at one end by the piece O, and fixed at the other by a joint to the lever K, which has its centre of motion in the piece of wood H; ſo that, leaning againſt the extremity M of the lever, N quits the ſupport O, the weight ſinks down, and draws up the piece *a*; then the ſides *b*, *b*, *fig.* 68. quit the mortiſe *d*, and the ſpring *g* ſeparates them: and thus the ſupporter does not in the leaſt hinder the motion of the auger.

BORITH, in the Holy Scriptures, an herb thought to be the *kali* or ſaltwort; of the aſhes of which ſome make ſoap, and a very good lye to waſh linen with. It is mentioned in Jeremiah, chap. ii. ver. 22.

BOROLYBICUS, the wind which blows in the middle between the north and weſt points; called alſo the north-weſt wind.

BOROUGH, **BURROUGH**, **BOROW**, or **BURGH**, is frequently uſed for a town, or corporation which is not a city.

Borough, in its original Saxon *borge*, or *borgh*, is by ſome ſuppoſed to have been primarily meant of a tithing or company conſiſting of ten families, who were bound and combined together as each others pledge.

Afterwards, as Verſtegan informs us, *borough* came to ſignify a town that had ſomething of a wall or incloſure about it: ſo that all places which among our anceſtors had the denomination *borough*, were one way or other fenced or fortified.

But, in later times, the ſame appellation was alſo beſtowed on ſeveral of the *villæ inſigniores*, or country towns of more than ordinary note, though not walled.

The ancient Saxons, according to Spelman, gave the name *burgh* to thoſe called, in other countries, cities. But divers canons being made for removing the epiſcopal ſees from villages and ſmall towns to the chief cities, the name CITY became attributed to epiſcopal towns, and that of *borough* retained to all the reſt; though theſe too had the appearance of cities, as being governed by their mayors, and having laws of their own making, and ſending repreſentatives to parliament, and being fortified with a wall and caſtle, and the like.

BOROUGH, or *burgh*, is now particularly appropriated to ſuch towns, and villages, as ſend burgeſſes or repreſentatives to parliament.

Boroughs are equally ſuch, whether they be incorporate or not; there being great numbers of our Engliſh *boroughs* not incorporated; and, on the contrary, ſeveral corporations that are not *boroughs*; e. gr. Kingſton, Deal, Kendal, &c.

Boroughs are diſtinguiſhed into thoſe by *charter*, or *ſtatute*; and thoſe by *preſcription*, or *cuſtom*.

The number of *boroughs* in England and Wales, including cities and cinque ports, which elect members is 215; ſome whereof ſend one, ſome two repreſentatives.

BOROUGHS, *Royal*, in Scotland, are corporations made for the advantage of trade, by charters granted by ſeveral of their kings; having the privilege of ſending commiſſioners to repreſent them in parliament, beſides other peculiar privileges.

Theſe form a body of themſelves, and ſend commiſſioners, each, to an annual convention at Edinburgh, to conſult the benefit of trade, and the general intereſt of the *boroughs*.

According to Chamberlayne, they have the ſole power of trade and merchandize, excluſive of all others, a power of holding courts, exerciſing the JURISDICTION of ſheriffs, making by-laws, &c.

The company of merchants in a *royal borough* make what is called a GILD; the chief of which is a dean of GILD, who is next magiſtrate to the bailiff.

The *royal boroughs* are not only ſo many diſtinct corporations, but do alſo conſtitute one entire body, governed by, and accountable to one general court, anciently called *the court of four boroughs*, held yearly to treat and determine concerning matters relating to the common advantage of all *boroughs*.

The *four boroughs* which compoſed this court were, Edinburgh, Stirling, Roxburgh, and Berwick; which two laſt falling into the hands of the Engliſh, Linlithgow and Lanerk were put in their places; with a ſaving to the former, whenever they ſhould return to their allegiance.

But this court not being ſufficient to anſwer the neceſſities of the *royal boroughs*, they were all empowered, under James III. in 1487, to ſend commiſſioners to a yearly convention of their own, which was then appointed to be held at Inverkeithing, and is now held at Edinburgh, under the denomination of the *convention of boroughs*, veſted with great power.

BOROUGH-*Courts* are certain courts held in *boroughs*, by preſcription, charter, or act of parliament: ſuch are the ſheriff's court, and court of huſtings in London.

BOROUGH-*Engliſh*, denotes a cuſtomary deſcent of lands or tenements in certain places, whereby they come to the youngeſt, inſtead of the eldeſt ſon; or if the owner hath no iſſue, to the youngeſt, inſtead of the eldeſt brother; for that the youngeſt is ſuppoſed, in law, the leaſt able to ſhift for himſelf. 1 Inſt. 140. b. And in ſupport of this reaſon, other uſages in favour of the youngeſt are alleged, as that in Kent, where the lands being equally divided among all the ſons, the youngeſt is to have the privilege of aſtre or hearth in the manſion-houſe, in his ſhare, as being ſuppoſed the tendereſt, and more in need of warming. Others, notwithſtanding, ſuſpect a different reaſon for the riſe of *Borough-Engliſh*, viz. the places where this cuſtom now obtains, were anciently liable to that cuſtom granted the lords of manors in Scotland by king Eugenius, who had the privilege of enjoying the firſt night of their tenants brides; ſo that the eldeſt ſon being preſumed to be the lord's, they uſually ſettled their lands on the youngeſt ſon, whom they thought their own; which being practiſed a long time, grew at length into a cuſtom. This cuſtom, however, never obtained in England, though it did in Scotland, till it was aboliſhed by Malcolm III. Perhaps, ſays judge Blackſtone, the origin of this practice may be illuſtrated by that of the Tartars, mentioned by Du-Halde, among whom the ſame cuſtom of deſcent to the youngeſt ſon prevails. As the nation is compoſed of ſhepherds and herdſmen, the elder ſons migrate from their father with an allotment of cattle, to ſeek a new habitation. The youngeſt ſon, continuing lateſt with his father, is naturally the heir of his houſe. This cuſtom of migrating obtained in many other northern nations; and *Borough-Engliſh* may be a remnant of that paſtoral ſtate of our Britiſh and German anceſtors, which Cæſar and Tacitus deſcribe. Blackſtone's Comm. vol. ii. p. 83, 84.

Borough-Engliſh obtains only in ſome ancient boroughs and copyhold manors.

BOROUGH-*Head*, or *Head*-**BOROUGH**, is the chief man of the *decenna* or *hundred*; choſen by the reſt to ſpeak and act in their behalf.

In many pariſhes, *head-borough* alſo ſignifies a kind of head-CONSTABLE, where there are ſeveral choſen as his aſſiſtants, to ſerve warrants, &c.

BOROUGH-*Holder*, in *Ancient Law Writers*, the head-man or chief pledge of a tithing, choſen by the reſt to ſpeak and act in their common behalf.

The word is formed from *boroe-ealder*, as being the ſenior man of the borough or tithing.

Borough-holders are the ſame with what are otherwiſe written, *borſholders*, *burſholders*, *boſholders*, *borow-holders*, *borghealders*, *burgheſaldi*, and *borgeſaldrii*; of later days, *borough-heads*, and HEAD-BOROUGHS.

BOROUGH, or *Borgh*, denotes a pledge of ſecurity for another's keeping the peace, and conforming to the laws.

The word is Saxon, and is ſometimes alſo written *borough*; in Latin writers, *borgha* and *burgha*.

BORGH-*breach*, *Borgi fractura*, in *Ancient Law Writers*, denotes a breaking of the pledge or ſecurity given by the members of tithings for the behaviour of each other.

This is the ſame with what is otherwiſe called *borg-brege*, *borgh-brege*, *barg-breche*, and *borghi-fractura*.

BOROUGHS, *Law*, or *Borrows*, in the law of Scotland, the ſame with what in England is called *binding to the* PEACE.

In caſe of a contravention of *law-borrows*, the ſurety or cautioner is equally liable with the principal for the penalty ſpecified therein; the one half to the king, and the other to the complainer.

BOROW-*holes*, the holes, in the remoteſt corner of which the female rabbits depoſite their young, to prevent the males from eating them.

BORRAGE, *borrago*, in *Botany*, a genus of the *pentandria monogynia* claſs of plants. Its characters are theſe: the flower is of one leaf, having a ſhort tube, and ſpread wide open above. The chaps of the flower are crowned by five prominences. It hath five ſtamina, which are joined together; and four germina ſituated in the centre, which afterward become ſo many roundiſh rough ſeeds, inſerted in the cavities of the receptacle. There are four ſpecies; the firſt of which is the common *borrage*, whoſe flowers are uſed in medicine, and the herb for cool tankards in ſummer. If the ſeeds are permitted to ſcatter, plants will come up in plenty. See *Tab. of Botany*, *Claſs* 2.

The common *borrage* has long held its rank as a cordial of the firſt claſs, though perhaps it would not be eaſy to ſay on what foundation. Its flowers are of the number of the four cordial ones of the ſhops, and it has been recommended as a medicine of great efficacy in malignant and peſtilential fevers, and againſt the bites of poiſonous animals. By the experiments of M. Marcgraaf, Mem. de Berlin, 1747, it appears that the juice affords a true nitre.

BORRELISTS, a ſect or ſort of Anabaptiſts in Holland, who allow of no uſe of ſacraments, public prayers, or other external worſhip, nor of any human gloſs or explication of Scripture; but profeſs to adhere to the faith and manners of the New Teſtament times in all their ſimplicity.

They took their denomination from their founder, *Borrel*, a perſon of great learning in the Hebrew, Greek, and Latin tongues, and brother of M. Borrel, ambaſſador of the States to the French king.

BORSELLA, in the *Glaſs-Works*, an inſtrument wherewith they extend or contract the glaſſes at pleaſure; alſo ſmooth and levigate them.

BOS, the *ox*, in the Linnæan ſyſtem of *Zoology*, a genus of quadrupeds of the order of *pecora*; the characters of which are, that the horns are hollow and turned forward, bent like creſcents, and ſmooth on the ſurface; the fore-teeth are eight in number, and there are no canine teeth. Of this genus, beſides the common tame one, there are four ſorts naturally wild; the BISON, BONASUS, BUBALUS, and URUS.

Bos *grunniens*, or *grunting ox*, ſo called becauſe it grunts like a hog, is a ſpecies of the ox, with a mane on the neck, and the whole body covered with long hair, a hunched back, and tail like that of a horſe; it is found in the country of the Calmucs. Pennant.

Bos *Indicus*, or *Indian ox*, is another ſpecies, with a large lump on the ſhoulders, and ſhort horns, bending cloſe to the neck in ſome of the ſpecies, and almoſt upright bending a little forward in others. In Surat there is a ſmall kind, not bigger than a great dog, with a fierce look, which is uſed for drawing children in ſmall carts. See *tab. Quadrupeds, fig.* 6.

Bos, in *Antiquity*, was peculiarly uſed for an ancient Greek ſilver coin, which was *didrachmus*, or equivalent to two drams.

BOSA, in the *Egyptian Medicine*, denoted a maſs prepared of the flower of the lolium, hemp-ſeed, and water; of the ſame inebriating virtue with the *aſſis*, or opium.

BOSCAGE, denotes a place ſet with trees, a grove, or thicket.

Boscage, *boſcagium*, in a *Law ſenſe*, ſignifies *maſt*, or ſuch ſuſtenance as woods and trees yield to cattle.

Boscage, among *Painters*, is ſaid to denote a picture or landſcape, repreſenting much wood and trees.

Boscage ſometimes denoted a tax or duty laid on wood brought into the city.

BOSCHAS, in *Zoology*, the name of our common wild DUCK, called alſo by ſome *anas torquata minor*, or the ſmaller ring-DUCK.

BOSCO. See ATTACHIAMENTA *de boſco & ſpinis*.

BOSCOI, or **Bosci**, in *Eccleſiaſtical Hiſtory*, denotes a ſpecies or tribe of monks in Paleſtine, who fed on graſs like the beaſts of the field.

The word is Greek, βοσκοι, q. d. *grazers*; formed from βοσκω, *poſco*, *I feed*.

The *boſcoi* are ranked among the number of Adamites, not ſo much on account of their habit, as food. They took no care about proviſion; but when eating-time came, or any of them was hungry, went into the fields, with each his knife in his hand, and gathered and eat what he could find.

BOSCUS, in *Ancient Law Writers*, ſignifies a wood of any kind. The word is alſo written corruptly *buſcus*, *buſcaria*, and *buſcale*. It is formed from the Greek, βοσκω, *I feed*, as ſerving for paſture. In which ſenſe, *boſcus* amounts to the ſame with the Italian *boſco*, and French *bois*. *Boſcus* is divided into high wood, or timber, called alſo *ſaltus*, and *haut-bois*; and *copice*, or underwood, *ſub-boſcus*, or *ſub-bois*.

BOSEA, in *Botany*, or *yerva-mora*, a genus of the *pentandria digynia* claſs of plants; commonly called the golden-rod tree. Its characters are theſe: the flower hath no petals, but five ſtamina, which are as long as the empalement: in the centre is ſituated an oval, oblong, pointed germen, which afterward becomes a globular berry with one cell, including one pointed ſeed. We have but one ſort of this plant, which is a native of the Canary iſlands. They have not been known to flower in this country, nor will they endure the open air through the winter.

BOSPHORICUM *Marmor*, a name given by the ancients to a ſpecies of marble, of a yellowiſh white colour, with beautiful veins of a ſomewhat darker hue; called alſo, from its tranſparency, *phengites*.

BOSPHORUS, or **Bosporus**, in *Geography*, a long and narrow ſea, which it is ſuppoſed a bullock may ſwim over; in a more general ſenſe, a long narrow ſea running in between two lands, or ſeparating two continents, and by which, two ſeas, or a gulph and a ſea, are made to communicate with each other.

In which ſenſe, *boſphorus* amounts to the ſame with what we otherwiſe call an arm of the ſea, channel, or ſtrait; the Italians, *faro*; the Latins, *fretum*; and the French, *pas*, *manche*.

The word is Greek, βοσπορος, formed from βȣς, *bos*, and πορος, *paſſage*.

The name *boſphorus*, is chiefly confined to two ſtreights, in the Mediterranean ſea, viz. the *boſphorus of Thrace*, commonly called the *ſtreights of Conſtantinople*, or *channel of the Black ſea*; and the *Cimmerian* or *Scythian boſphorus*, ſo called, it ſeems, from its reſemblance to the Thracian; now more commonly the *ſtreights of Kapha*, or *Kiderleri*, from two cities ſtanding on it.

The origin of the name is better agreed on, than the reaſon why it was firſt given to the Thracian *boſphorus*: Nymphius tells us, on the authority of Accarion, that the Phrygians, deſiring to paſs the Thracian ſtreight, built a veſſel, on whoſe prow was the figure of a bullock; and which was hence called βȣς, *bullock*; and ſerved them for a ferry-boat.—Dionyſius, Val. Flaccus, Callimachus, Apollodorus, Marcellinus, &c. ſay, that Iö, being transformed into a cow by Juno, paſſed this ſtreight ſwimming, which hence was called *boſphorus*.—Arrian tells us, that the Phrygians were enjoined by the oracle, to follow the route which a bullock ſhould mark out to them; and that, upon ſtirring one up, it jumped into the ſea to avoid their purſuit, and ſwam over this ſtreight. Others ſay, that an ox, tormented by a gad-fly, threw itſelf in, and ſwam over: and others, that anciently the inhabitants of theſe coaſts, when they would paſs over, joined little boats together, and had them drawn over by bullocks, &c.

Some late writers rather ſuppoſe *boſphorus* to have been ſo called, becauſe here was anciently the beaſt-market. Tournef. Voyag. tom. ii. Let. 12. and Let. 14.

BOSQUETS, in *Gardening*, a term for groves included in gardens.

The word is derived from the Italian, *boſchetto*, which is a diminutive of *boſco*, *a wood* or *grove*.

Theſe are ſmall compartments of gardens, which are formed of trees, ſhrubs, and tall flowering plants, ſet in quarters, and either placed regularly in rows, or diſpoſed in a more irregular manner. Theſe quarters ſhould be ſurrounded with ever-green hedges, and the entrances made into porticos with yews. In the inſide there muſt be ſome walks, either ſtraight or winding. Theſe, if the quarters are large, ſhould be eight feet wide, and laid with turf, and kept well mowed and rolled. The hedges of theſe quarters ſhould be kept low, that the heads of the ſhrubs may be ſeen from the outſide. There is a great deal of fancy to be employed in the planting theſe *boſquets*, which ſhould be ſhewed in ſetting to view at once ſuch ſhrubs as have the moſt differently ſhaped, and differently coloured leaves that may be; as the long, the round, and the jagged, and the various ſhades of deep and lighter green, and the mealy or hoary white leaves. Beſides, there is alſo a very great variety of beautiful fruits, which theſe ſhrubs produce in autumn, which give a very elegant and pleaſant proſpect even after the leaves are fallen. The ſhrubs which produce theſe, are, 1. The euonymus, or ſpindle-tree. 2. The opulus, or water-elder. 3. The cock-ſpur hawthorn. And, 4. The flowering-aſh, as it is called; beſides a great number of others. But it is a good rule in this kind of plantation, never to mix the ever-green trees with thoſe which loſe their leaves in winter. Theſe *boſquets* are only fit for large gardens. Miller.

Boſquets are generally laid out into ſome regular figure, as a circle, ſquare, polygon, or the like, and make a conſiderable article in the decoration of a fine GARDEN.

BOSS, or **Bosse**, in *Sculpture*, ſignifies RELIEVO, or prominency.

The word is French, *boſſe*, which ſignifies the ſame; whence alſo to emboſs. See EMBOSSING.

Boss *of a buckler*, among the *Ancients*, the *umbo*, or ομφαλος, which juts out in the middle.

Boss, among *Bricklayers*, denotes a wooden utenſil wherein the labourers put the mortar to be uſed in tiling. It has an iron hook, whereby it may be hung on the laths, or on a ladder.

BOSSAGE, a projecting ſtone in *Architecture*, laid rough in building, to be afterwards carved into mouldings, capitals, arms, or the like.

Bossages alſo denote ſtones which ſeem to advance beyond the naked of a building, by reaſon of indentures, or channels left in the joinings; uſed chiefly in the corners of buildings, and thence called *ruſtic quoins*.

The cavities or indentures are ſometimes round, ſometimes ſquare, ſometimes chamfrained, or bevelled, ſometimes in the diamond form: ſometimes they are incloſed with a cavetto, ſometimes with a liſtel.

BOSTANGI-*Baſchi*, in the *Turkiſh Affairs*, an officer in the grand ſignior's houſhold, who has the ſuperintendance of all the gardens, water-works, and houſes of pleaſure, with the workmen employed therein. The poſt of *boſtangi-baſchi*, or chief gardener, is one of the moſt conſiderable in the Turkiſh court. He has the emperor's ear, and, on that account, is much courted by all who have buſineſs depending at the Port; he is governor of all the villages on the channel of the Black ſea, and has the command of above ten thouſand *boſtangis*, or gardeners, in the ſeraglio, and other places about Conſtantinople. But that which gives him the greateſt eclat, is the honour he has of holding the rudder whenever the ſultan takes his pleaſure on the water.

BOSTRYCHITES *lapis*, derived from βοςρυχιζω, *I fold the hair in braids*, in *Natural Hiſtory*, a name given by ſome to a ſtone ſuppoſed to contain women's hair included in it: ſome have underſtood by it, thoſe pieces of cryſtal which have accidental foulneſſes in them, reſembling hair, or pieces of hair, cauſed by earthy or metalline matter; others call by this name thoſe German agates, which contain either the confervæ or other capillary water-plants, or other foulneſſes running into their form: the firſt of theſe very frequently have the confervæ of a great length, and variouſly undulated and turned about, ſo as very elegantly to repreſent a looſely flowing lock of hair.

BOSTRYCHITES is alſo a name given by ſome authors to a ſpecies of pyrites, whoſe irradiations were ſuppoſed to imitate hair.

BOTABOTA, in *Natural Hiſtory*, a name given by ſome writers to that ſpecies of ſea-ſwallow, whoſe neſts are ſo famous for ſoups in China, and in ſome parts of Europe. The neſts are ſuppoſed to be reſtorative, and greatly provocative to venery; for which laſt quality it is, that the eaſtern nations in general are ſo fond of them.

BOTAGIUM, in *Middle Age Writers*, a fee paid for wine ſold in *botæ*, or *butts*.

Wine that taſtes of the caſk is called *vinum botatum*.

BOTALE *foramen*, in *Anatomy*, an aperture in the heart of a FOETUS, whereby the blood is enabled to circulate, without going into the lungs, or the left ventricle of the heart. See FOETUS, CIRCULATION, and HEART.

BOTANIST, a perſon who underſtands the nature, hiſtory, and diſtinctions of vegetables, on ſettled and certain principles, and can call every plant by a diſtinct, proper, and intelligible name. Linnæi Fundam. Botan. p. 1. See BOTANY.

BOTANOPHILI, among the writers on the ſubject of vegetables, thoſe who have treated of them, not as botaniſts, on their natural and eſtabliſhed diſtinctions, but in regard to different operations, as gardeners, phyſicians, &c.

BOTANY, the ſcience of plants; or that part of phyſiology which treats of plants, their ſeveral kinds, forms, virtues, and uſes.

The word comes from βοτανη, *herb*; and that from βοτος, of βοω, *I feed*; becauſe moſt animals feed on herbs. See PHYTOLOGY, &c.

Authors are divided about the preciſe object and extent of *Botany*, which ſome will have to include the whole province of plants, in all their ſtates, uſes, and relations; others reſtrain it to the knowlege of the claſſes, genera, ſpecies, external figures, and deſcription of plants, excluſive of their origin and generation, which belong to *Phyſiology*; of their culture and propagation, which belong to *Gardening* and *Agriculture*; and of their virtues, which are objects of conſideration in *Phyſic* and *Pharmacy*.

This ſcience was cultivated in ſome degree among the ancients; but chiefly with reſpect to its medical application and uſe. However, as they adopted no regular ſyſtem of diſtribution and arrangement, they made a ſlow progreſs, and the knowlege they gained was ſoon and eaſily loſt. If we except Solomon, of whom we read that *he ſpake of trees from the cedar-tree that is in Lebanon, even unto the hyſſop that ſpringeth out of the wall.* 1 Kings, chap. iv. ver. 33. and begin only with thoſe writers on the ſubject of *botany*, any of whoſe writings now remain; the firſt, in order of time, is Hippocrates, who flouriſhed in the fifth century before Chriſt, and who has enumerated about 250 different plants. Ariſtotle alſo may be mentioned, though there is reaſon to doubt whether the books concerning the generation of plants, which ſome have aſcribed to him, are *his*, or a collection by ſome late writer from the works of Theophraſtus. Theophraſtus, the diſciple of Ariſtotle, is therefore properly the next to Hippocrates, on the genuineneſs of whoſe writings we can depend; he flouriſhed about 300 years before Chriſt; there remain nine books of his on the hiſtory of plants, and ſix on the cauſes of them: he reckons about 500 plants.

Among the Romans, Cato, Varro, Virgil, and Columella might be mentioned; but the moſt eminent were Dioſcorides, who lived under Anthony and Cleopatra; he is called the prince of botaniſts, and yet the number of plants which he has deſcribed amount only to 600; and C. Plinius Secundus, under Veſpaſian and Titus, who enumerates more than 1000 plants. Galen, of Pergama in Aſia, who lived at Rome about the year 133, though he did not write profeſſedly on *Botany*, has introduced many incidental obſervations on this ſubject: and other phyſicians proſecuted this ſtudy, as far as it was immediately connected with that of their profeſſion, from the ſecond to the ſixth century of the Chriſtian æra; ſuch as Oribaſius, Aëtius, Trallianus, and P. Ægineta. The principal Arabian *Botaniſts*, who moſtly with the ſame views cultivated this ſcience, from the eighth to the twelfth century, were Meſue, Serapio, Razis, Avicenna, and Averrhoes. The ſucceeding period, till the fifteenth century, was very unfavourable to every kind of ſcience; however, in this century, and eſpecially in the next, *botany* was induſtriouſly revived by means of numerous and laboured commentaries on Theophraſtus, Dioſcorides, Pliny, Cato, Avicenna, and Meſue: and the principal perſons who were employed in this way were Leonicenus, Braſavolus, Cordus, Fuchſius, Bodæus, Matthiolus, and Dalechampius. Turner, Gerrard, and Tradeſcant were the firſt *botaniſts* in England; they applied themſelves to the culture of medical and rare plants towards the cloſe of the ſixteenth century. It was after this period that *botany* began to acquire a conſiderable degree of importance and reputation; and that ingenuity and induſtry were employed in collecting and claſſing new ſpecies of plants. It would be tedious ſo much as to recount all the names of thoſe who are diſtinguiſhed in this reſpect; let it ſuffice to mention Geſner, Dodonæus, Cæſalpinus, Proſper Alpinus, the two Bauhins, Columna, Parkinſon, Plukenet, Moriſon, Malpighi, Grew, Hermannus, Ray, Magnol, Tournefort, Sloan, Sherrard, Linnæus, and Miller. In a word, *botany* is arrived at a degree of perfection among the moderns, to which the ancients were ſtrangers; not only as to the method of claſſing, diſtributing, and characteriſing plants, but alſo as to the *copia* or number of plants known and deſcribed. The numerous travels and voyages of *botaniſts* have very much contributed to the extent of this ſcience.

This article will terminate with a brief account of the principal ſyſtems, that have been eſtabliſhed by *botanical* writers. Nothing has been more conducive to the ſucceſsful cultivation of this ſcience, than a clear and diſtinct method of arrangement, whereby the ſeveral claſſes, genera, ſpecies, and varieties may be readily diſtinguiſhed; and it is eaſy to foreſee, that in proportion as the Linnæan ſyſtem prevails, and different writers agree in adopting the ſame language, the ſtudy of *botany* muſt be greatly facilitated and promoted. Linnæus diſtributes the ſyſtems which have already obtained into *heterodox* and *orthodox*. The former are founded in an alphabetical arrangement; in the ſtructure of the root; in the different ſpecies of flowers; in the *habit* of plants; their time of flowering; their native ſoil and climate; their medicinal uſe, and the order of the diſpenſaries. The *orthodox* ſyſtems, as he calls them, are either univerſal or partial; ſuch as belong to plants in general, or ſuch as are accommodated to the nomenclature and arrangement of particular kinds. The univerſal ſyſtems are four; though, by various modifications, this number has been conſiderably augmented. Linnæus has diſtinguiſhed the ſeveral patrons of them under the claſſes and appellations of *Fructiſtæ*, *Corolliſtæ*, *Calyciſtæ*, and *Sexualiſtæ*. The *Fructiſtæ* are ſuch as form the ſeveral claſſes of vegetables from the *pericarpium*, the *ſeed*, and the *receptacle*: of this number are Cæſalpinus, Moriſon, Ray, Knaut, Hermann, and Boerhaave. The *Corolliſtæ* diſtinguiſh the ſeveral claſſes by means of the *corolla* and *petals*; ſuch are Rivinus and Tournefort, and their diſciples. The *Calyciſtæ* diſtribute them from the *calyx*, as Magnol; and the *Sexualiſts* found their ſyſtem on the different ſexes of plants. To this compendious abſtract of the hiſtory and principal ſyſtems of *botany*, it may be proper to add, that Cæſalpine, who was an Italian phyſician in 1583, was the firſt ſyſtematical writer, and he diſtributed plants into claſſes, according to the form of their ſeeds: Ray, from being firſt a *Fructiſt*, became afterwards a *Corolliſt*: Boerhaave endeavoured to combine the ſyſtems of Hermann, Ray, and Tournefort; but as the ſyſtem of the latter was at one time very generally received, and notwithſtanding the prevalence of the Linnæan or ſexual ſyſtem, has ſtill ſome advocates, it may be proper to obſerve, that Tournefort conſiders plants as compoſed of five parts, viz. roots, ſtalks, leaves, flowers, and fruit; neglecting the three former parts, he diſtributes them into various *claſſes*, according to the diſpoſition and ſtructure of the flower; and in reſolving them into genera, he takes into conſideration both the flower and fruit. Mr. Ray, urged chiefly by the ſhort duration of the flower, ſought the characters of the ſeveral genera, not merely in the flower and fruit, but in the figure of the organical parts, as the leaves, ſtalks, and roots, and in their colour, ſmell, taſte, and the outward ſurface of the whole plant. See FACE *of a plant*.

See a further account of theſe ſyſtems under PLANTS, and PETAL.

The claſſes, according to Tournefort's diſtribution, are
the

the following twenty-four; viz. 1. Plants with monopetalous, campaniform, or bell-faſhioned flowers. 2. Thoſe with monopetalous, infundibuliform, or funnel-like flowers. 3. Plants with anomalous, monopetalous flowers. 4. Plants with monopetalous, labiated flowers. 5. Plants with polypetalous, cruciform flowers. 6. Plants with polypetalous, roſaceous flowers. 7. Plants with polypetalous, roſaceous, and umbellated flowers. 8. Plants with caryophyllous, or pink-like, polypetalous flowers. 9. Plants with liliaceous, or lily-like flowers. 10. Plants with polypetalous, papilionaceous flowers. 11. Plants with polypetalous, anomalous flowers. 12. Plants with floſculous flowers. 13. Plants with ſemi-floſculous flowers. 14. Plants with radiated flowers. 15. Plants with ſtamineous flowers. 16. Plants without flowers, but having viſible ſeeds. 17. Plants with neither viſible flowers nor ſeeds. 18. Trees with apetalous flowers. 19. Trees with apetalous, amentaceous flowers. 20. Trees with monopetalous flowers. 21. Trees with roſaceous flowers. 22. Trees with papilionaceous flowers. For a deſcription of which, ſee the ſeveral articles AMENTACEOUS, APETALOUS, &c.

Each claſs in this ſyſtem contains ſeveral *genera*, amounting in the whole number to 673, and comprehending 8846 ſpecies, to which the author afterwards added 1300 more, referring them to their proper genera in his ſyſtem. Thoſe who are deſirous of farther information with regard to the hiſtory and various ſyſtems of *Botany*, are referred to the preface of Johnſon's Herball, fol. 1636; Linnæus's Philoſophica Botanica, 1751; Tournefort's Iſagoge in Rem Herbarium apud Inſtitutiones, &c. tom. i. ed. Pariſ. 1719. For a particular account of the Linnæan ſexual ſyſtem, ſee FRUCTIFICATION and SEXUAL *Syſtem*. See alſo PLANTS, VEGETATION, &c. &c.

BOTANY, *terreſtrial*, that employed about the plants growing on the ſurface of the earth.

BOTANY, *marine*, that concerned in the conſideration of ſea-plants, as fucuſes, *alcyonia*, *algæ*, &c.

BOTANY, *ſubterranean*, that about the plants under ground, as the *tubera terræ*, or truffles, &c.

BOTARGO, a ſort of ſauſage, made of the roes of the mullet-fiſh; much uſed on the coaſts of the Mediterranean, as an incentive to drink.

The manner of preparing *botargo*, as practiſed at Martegue in Provence, is deſcribed by Mr. Ray.—The mullets, *mugiles*, are taken in *burdigoes*, which are places in the ſhallows, incloſed with hedges of reeds. The male mullets are called *alletants*; the female *boter*, of the roes or ſpawn of which the *botargo* is made, thus.

They firſt take out the ſpawn entire, and cover it round with ſalt for four or five hours; then they preſs it a little between two boards or ſtones; then they waſh it, and at laſt dry it in the ſun for thirteen or fourteen days, taking it in at night. Ray. Trav. p. 396. ſeq.

The people of Provence call it *bou-argues*. The beſt is brought from Alexandria and Tunis. There is alſo a manufacture of it near Marſeilles. It is much uſed throughout all the Levant.

BOTATRISSA, in *Ichthyology*, a name given by Bellonius, Geſner, and other authors, to that ſpecies of the GADUS called by authors the *lota*, and *muſtela fluviatilis*; by us, the EEL-*pout*. It is diſtinguiſhed from the other *gadi*, by having two fins on the back, and the two jaws of equal length, with beards at the mouth.

BOTAURUS, in *Zoology*, a name by which ſeveral have called the bird known among us by the name of *butter-bump*, BITTERN, or *mire-drum*.

BOTE, BOTA, in our old *Law Books*, ſignifies *compenſation*, *recompenſe*, or *amends*, for any injury done. See ESTOVERS.

Hence *man-bote*, ſatisfaction due for a man ſlain.

Hence alſo *boteleſs*, where no judgment or favour will acquit a man; as, v. gr. for ſacrilege, &c. And hence our common phraſe to *boot*, ſpeaking of ſomething given by way of compenſation.

BOTE, *cart*, *fire-bote*, *hay-bote*, *houſe-bote*, *kin-bote*, *plough-bote*, *theft-bote*. See the adjectives.

BOTENALKAITOS, a ſtar in the conſtellation CETUS, called alſo BATENKETOS.

BOTESCART, in *Ancient Engliſh Writers*, the ſame with BOATSWAIN.

BOTHAGIUM, *bothage*, or *boothage*, cuſtomary dues to the lord of the market, for the liberty of pitching and ſtanding of BOOTHS.

BOTHNA, *buthna*, or *bothena*, in the Scotch *Law*, a park or field wherein cattle are incloſed, and fed.

The word is alſo written *barthena*; formed from the ancient Scottiſh *buth*, a *flock of ſheep*.

BOTHENA is alſo uſed for a barony, lordſhip, or ſheriffdom.

In which ſenſe, it is ordained by ſtatute, that the king's moot or court of each *bothena*, that is, each ſheriffdom, ſhall be held within forty days.

BOTHRION, βοθριον, denotes the ALVEOLUS or ſocket of a tooth.

BOTHRION is alſo uſed to denote a ſmall, narrow, but deepiſh ulcer of the CORNEA of the eye, reſembling a round puncture.

The word is alſo written *bothrias*; by others corruptly, *botryon*. In Latin writers it is ſometimes called *foſſula*.

BOTIA, *bocia*, or *botus*, among *Chemiſts*, a glaſs veſſel with a round belly and long narrow neck, otherwiſe called *egg*, *ovum ſublimatorium*, *cucurbita*, and *urinale*.

BOTIA, in *Medicine*, the ſame with STRUMÆ and SCROPHULÆ.

BOTIN, or BUTINE, among *Alchemiſts*, denotes turpentine, or balſam of turpentine, when gathered under the proper influence.

BOTONOMANCY, from βοτανη, *herb*, and μαντεια, *divination*, an ancient ſpecies of divination, by means of plants; eſpecially ſage, and fig-leaves.

The manner of performing it was thus: the perſons who conſulted, wrote their own names, and their queſtions, on leaves, which they expoſed to the wind; and as many of the letters as remained in their own places, were taken up, and being joined together, contained an anſwer to the queſtion. Potter. Arch. Græc. lib. ii. cap. 18. tom. i.

BOTONTINI, in *Middle Age Writers*, denote mounts or hillocks, raiſed to ſerve as land-marks or boundaries of grounds.

The word is alſo written *botontones*, *botones*, and *bodones*. Du-Cange Gloſſ. Lat.

BOTOTOE, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a very beautiful bird of the parrot kind; it is ſomewhat ſmaller than the common parrot, and is all over of a fine deep blue colour.

BOTRYITES, in *Natural Hiſtory*, a ſtone of the gem kind, reſembling a branch of young grapes.

The word is formed from βοτρυς, a *grape*. In Engliſh writers, it is ſometimes called the *grape-ſtone*.

BOTYRITES, or BOTRITES, alſo denotes a ſort of burnt CADMIA, found ſomewhat in the form of a bunch of grapes adhering to the upper parts of furnaces, where that mineral is calcined.

It differs from the *placites*, which is that gathered on the lower part of the furnace; though Schroder gives a different diſtinction, viz. into *botrites*, found in the middle of the furnace, *placites* in the upper, and *oſtracites* in the loweſt part.

BOTT, among *Bone-lace Weavers*, a kind of round cuſhion of light matter placed on the knee, whereon they work or weave their LACE with bobbins, &c.

Among the French, the *bott*, called *oreiller*, is a little ſquare wooden frame or deſk, covered ordinarily with green ſtuff.

BOTTLE, a ſmall veſſel proper for holding liquors.

The word is formed from *butellus*, or *botellus*, uſed in barbarous Latin writers, for a leſſer veſſel of wine; being a diminutive of *bota*, which denoted a butt or caſk of that liquor.

We ſay a glaſs *bottle*, a ſtone *bottle*, a leathern *bottle*, a wooden *bottle*, a ſucking *bottle*.

The ancient Jewiſh *bottles* were cags made of goats or other wild beaſts ſkins, with the hair on the inſide, well ſewed and pitched together; an aperture in one of the animal's paws ſerving for the mouth of the veſſel. Calmet. Dict. Bib. tom. i. p. 323.

Glaſs *bottles* are better for cyder than thoſe of ſtone. Foul glaſs *bottles* are cured by rolling ſand or ſmall ſhot in them; muſty *bottles*, by boiling them. See GLASS.

Bottles are chiefly made of thick coarſe glaſs; though there are likewiſe *bottles* of boiled leather made and ſold by the caſe-makers.

Fine glaſs *bottles* covered with ſtraw or wicker, are called *flaſks* or *bettees*.

The quality of the glaſs has been ſometimes found to affect the liquor in the *bottle*. Mem. Acad. Scienc. 1704.

BOTTLE is alſo a meaſure at Amſterdam, the ſame with the MINGLE.

BOTTLE-*flower*, in *Botany*. See CENTAURY.

BOTTLE-*head*, a ſpecies of whale.

BOTTLE-*noſe*, in *Zoology*, a name by which the people in ſome parts of England call the *anas arctica Cluſii*.

BOTTLING, or BOTTELING, the operation of putting up liquors in bottles corked, to keep, ripen, and improve.

The writers on good huſbandry give divers rules concerning the *bottling* of beer, cyder, and the like. The virtues of Spaw, Pyrmont, Scarborough, and other waters, depend on their being well bottled and corked, otherwiſe they loſe both their taſte and ſmell. To preſerve them, it is neceſſary the bottles be filled up to the mouth, that all the air may be excluded, which is the great enemy of bottled liquors. The cork is alſo further ſecured by a cement. Some improve their bottled beer, by putting cryſtals of tartar and wine, or malt ſpirits; and others, by putting ſugar boiled up with the eſſence of ſome herb, and cloves, into each bottle.

Cyder requires ſpecial precautions in the *bottling*; being more apt to fly, and burſt the bottle, than other liquors. The beſt way to ſecure them, is to have the liquor thoroughly fine before it be bottled. For want of this, ſome leave the bottles open a while, or open them after two or three days *bottling*, to give them vent. If one bottle break, through fermentation, it is beſt to give them all vent, and cork them up again. Mean cyder is apter to break the bottles than rich. Some ſoak the corks in ſcalding water, to render them more pliant and ſerviceable. See CYDER.

Another particular to be obſerved is, to lay the bottles ſo as that the liquor may always keep the cork wet and ſwelled. Something alſo depends on the place where the bottles are ſet, which ought to be ſuch as expoſes them as little as poſſible to the alterations and impreſſions of the air: the ground is better for this purpoſe than a frame; ſand better than the bare ground, and a running water, or a ſpring often changed, beſt of all.

To haſten the ripening of bottled liquors, they are ſometimes ſet in a warm place, or even expoſed to the ſun, when a few days will bring them to maturity.

BOTTOM, the loweſt part of a thing, as contradiſtinguiſhed from the top.

Hydroſtatical writers ſpeak of the preſſure of fluids, on the *bottom* of veſſels; in which caſe, the law of gravitation is, that the altitude remaining the ſame, the preſſure will be as the *bottom*. M. Leibnitz has aſſerted, that a body in falling through a fluid, does not preſs on the *bottom*, that is, does not encreaſe the preſſure on it; which is found to be falſe. Phil. Tranſ. Nº 351. p. 570. A. D. S. an. 1692. p. 16.

When water boils, the *bottom* of the veſſel is found conſiderably colder than it was ſome time before boiling; inſomuch that the hand may bear it in the former caſe, not in the latter. Hiſt. Ac. Sc. ann. 1703. p. 29.

BOTTOM, in *Navigation*, denotes the ground or ſurface of the earth under the water.

They ſay, a rocky, ſandy, gravelly, clayey *bottom*; a *bottom* with good hold, with a bad hold, &c.

The *bottom* of the ſea, Ray obſerves, is level, i. e. the deſcent from the ſhore to the deep is equable and uniform: but the *bottoms* of ſome ſeas are found higher than of others. Count Marſigli has made divers enquiries into the ſtructure of the *bottom* of the ſea, and its beds of ſtones, ſalt, bitumen, &c. Ray, Wiſd. of Creat. part i. p. 84.

Over the natural *bottom* of the ſea is formed an accidental *bottom*, by the mixture of different matters, ſand, ſhells, mud, &c. ſtrongly compacted by the glutinous quality of the ſea-waters, almoſt to a degree of petrefaction. Theſe incruſtations being neceſſarily formed in *ſtrata*, there are ſome places wherein the fiſhermen can diſtinguiſh the annual augmentations. Hiſt. Acad. Sc. 1710.

BOTTOM *of a ſhip*.—Merchant ſhips are much broader *bottomed* than frigates; men of war are a mean between the two. Sir William Petty preſented the model of a double *bottomed* ſhip.

BOTTOM is alſo uſed to denote the whole ſhip, or other veſſel.

In this ſenſe we ſay, Engliſh *bottoms*, foreign *bottoms*. By the act of navigation, certain commodities imported in foreign *bottoms*, pay a duty called petty cuſtom; from which they are exempt, if imported in Engliſh *bottoms*.

BOTTOM is alſo uſed for what remains at the *bottom* of a veſſel. In this ſenſe, Paracelſus calls the ſediment of urine, *fundus urinæ*.

BOTTOM-*ſtone*, a kind of iron-ſtone, or ore, in the Staffordſhire mines.

BOTTOM-*nails*. See NAIL.

BOTTOMRY, in *Navigation* and *Commerce*, the act of borrowing money on a ſhip's *bottom*; that is, by engaging the veſſel for the repayment of it, ſo as that, if the ſhip miſcarry, the lender loſes the money advanced; but if it arrives ſafe at the end of the voyage, the borrower is to repay the money lent with a certain premium or intereſt agreed on; and this on pain of forfeiting the ſhip. See ASSURANCE and POLICY.

The rate or intereſt of money, taken on *bottomry*, follows that of inſurance. In queen Anne's war, when inſurance to the Eaſt Indies and back was 16 *per cent. bottomry* was 45 *per cent.* And in king William's war, when inſurance to the ſame place was 22 *per cent. bottomry* was 55.

Bottomry, if conſidered only as hiring money, would be illegal, and fall under charge of uſury, on account of the exceſſive intereſt: but it is not a mere hiring of money, ſince the lender likewiſe ſtands to the hazard of the voyage. The money here advanced is called *pecunia trajectitia*, as being carried on the lender's hazard, or adventure, beyond the ſeas; ſo that, if the ſhip be loſt, the lender loſes all; whereas, when money is lent at intereſt, it is delivered at the peril of the borrower. And the profit here is merely the price of the loan; but the profit of the other is a reward for the danger and adventure of the ſea, which the lender takes on himſelf, and makes the intereſt lawful.

If money be lent on ſhip-board by a merchant or paſſenger, and before the day of payment the ſhip happens to be caſt away; if there be ſuch a ſaver as will admit of a contribution, the party lending is not to have his whole money, but it ſhall come into the average; becauſe if that money had been ſo lent, it would have been in common danger with the reſt: but, if the time appointed were paſt, before the misfortune happened, then the borrower muſt repay the lender his whole money, free from contribution. Therefore by the maritime laws, in caſe the borrower detains any money thus lent, beyond the appointed time for the repayment, he ſhall at his return from the voyage, not only pay the profit agreed on before, but be obliged alſo to augment the ſame, according to the longer time accrued ſince the day of payment.

A maſter of a ſhip hath no power to take up money on *bottomry* in places where his owners dwell, unleſs he is a part owner, and in that caſe he may take up ſo much only, as his part will anſwer in the ſaid ſhip: for if he exceeds that, his own eſtate ſhall ſtand liable to make ſatisfaction. But when a maſter is in a ſtrange place, where he hath no owners, nor any goods of theirs or of his own; and for want of money, which he cannot procure by exchange or otherwiſe, his voyage might be retarded, there money may be taken upon *bottomry*, and all the owners are liable for it; that is, they are anſwerable by their veſſel, but not in their perſons, by the act of the maſter: and the owners may have their remedy againſt ſuch maſter, whom they put in truſt.

When a maſter or owner of a ſhip takes up money on *bottomry*, and buys in lading, but endeavours to defraud the prince or ſtate of their cuſtoms, or puts ſuch goods on board as incur a forfeiture of the ſhip; in ſuch caſe the borrower only runs the hazard, not the lender. And where bonds or bills of *bottomry* are ſealed, and the money is paid, if the ſhip receives injury by ſtorm, fire, enemy, or any other accident, before the commencement of the voyage; then the perſon borrowing ſhall only run the hazard, unleſs it be otherwiſe provided, by particular words, that the contract is to have its beginning from the time of the ſealing. But if the condition be, that if ſuch ſhall ſail from London to a port abroad, and ſhall not arrive there, &c. then, &c. here the contingency begins not until the departure.

BOTTOMRY, *bill of*, is a contract between two perſons, the one borrowing, and the other lending a ſum of money, by which the borrower ſetting forth his intention to make a voyage in a certain ſhip therein named, acknowleges the receipt of a certain ſum of money from the lender, on this condition, that if the ſhip does happily perform her voyage, without any diſaſter by enemies or otherwiſe, then he is to reſtore that ſum to the lender, with an additional ſum, therein expreſſed, for the intereſt, within a certain time after his return; but that if the ſhip be loſt, or taken by enemies or pirates, then the perſon of the borrower to be for ever diſcharged, and the lender to bear the loſs.

BOTTONY, or BOTONE, in *Heraldry*, is uſed in ſpeaking of a CROSS, which terminates at each end in three knots or buttons, reſembling, in ſome meaſure, three-leaved graſs.

A *croſs bottony*, is the ſame with what Segion terms *croix trefflée*; and Baron, *globoſa crux*. Gibbon, the better to explain the form, renders it, *Crux ad ſingulas ejus extremitates in tres gemmas, vel nodos, pro trifolii ſpecie terminata*. He bears argent a croſs *bottony* ſable, by the name of *Winwood*. Vid. *Tab. Herald. fig.* 11.

BOTTRYS, in *Botany*, a name given to a ſpecies of the *chenopodium*. See GOOSE-*foot*.

BOTRYTIS, in *Botany*. See BYSSUS.

BOTTS, in *Zoology*, a ſpecies of worms which infeſt horſes and other cattle. See HORSE-*worms*.

The name is alſo given to a ſort of grubs which deſtroy the graſs in bowling-greens, &c.

BOVATA *terræ*, in *Ancient Law-writers*, ſignifies an oxgate of land, or ſo much as may be ploughed in a year with one ox; by ſome reckoned at fifteen acres, by others at eighteen, by others at twenty, and by others at thirteen or twenty ſhillings yearly rent.

This is otherwiſe called *bovatus*, and *bovariata terræ*.

BOVEY *coal*. See COAL.

BOUCHE *of court*, the privilege of having meat and drink at court ſcot-free.

The word is alſo written *bowge, bouge,* and *budge*; it is mere French, where it ſignifies *mouth.*—The French ſtill uſe the phraſe, *Avoir bouche à la cour*; that is, *to have table or diet at court.*

This privilege is ſometimes only extended to bread, beer, and wine: it was a cuſtom anciently in uſe, as well in the houſes of noblemen as in the king's court.

Thomas earl of Lancaſter retained Sir John de Ewre, to ſerve him with ten men at arms in time of war, allowing them *bouge of court*, with livery of hay and oats, horſe-ſhoes and nails. Sir Hugh Merrill had the ſame privilege for life, on condition of ſerving king Edward II. Kennet. Gloſſ. ad Paroch. Ant. p. 378.

BOUDS, a name given in ſome countries to the WEEVILS.

BOUGE-*ravel*, in *Zoology*, the name of a fiſh of the BOOPS kind, caught in the Mediterranean, and brought to ſome of the Italian markets. Its noſe is long and pointed; its back is of a reddiſh blue, its tail red, and its belly of a fine ſilvery white. Its whole body is ſhorter and broader than the common kind of *boops* Willughby.

BOUGH, in *Antiquity.*—Green *boughs* made part of the decoration of altars and temples, eſpecially on feſtival occaſions.

Oaken *boughs* were offered to Jupiter; thoſe of laurel to Apollo; of olive to Minerva; myrtle to Venus; ivy to Bacchus; pine to Pan; and cypreſs to Pluto.

BOUGEOIR, the French name for wax candleſticks.

BOUGIE, in *Surgery*, a kind of large medicated tent, worn in the urethra, for the cure of a gonorrhœa, &c.

There was no occaſion for *bougies* till towards the middle of the ſixteenth century, when the *gonorrhœa virulenta* appeared as a ſymptom of the *lues venerea.* An. 1551, Andreas Lacuna of Caſtile, publiſhed at Rome, in twelve pages, the Method of knowing and extirpating Caruncles in the Neck of the Bladder, which he owns he learned from a Portugueſe quack of the name of Philippus; he believed him to be the inventor of the *bougies* ſo employed, and that he had cured ſome people of faſhion in Rome by means of them. Dr. Fordyce. See Review of the Venereal Diſeaſe, Edit. 3. and Dr. Aſtruc, &c. De Morbis Ven. 2d Edit. 4to. Lat. Par. an. 1740.

The properties requiſite in the *bougie*, are a ſufficient degree of firmneſs, that it may be introduced with ſome force; a ſuppleneſs and tenacity, that it may conform to the motions of the body without breaking; a lenient ſuppurative diſpoſition, to bring on a diſcharge without pain; and laſtly, a ſmoothneſs of ſurface, that it may not only be introduced with more eaſe, but that it may lie eaſy in the paſſage, until it begins to diſſolve.

The beſt baſis of ſuch a *bougie*, is *diachylon ſimplex*, which may be rendered efficacious by a great variety of mixtures; but though an addition of certain gums, or of the mucilage plaſter, will alone anſwer the purpoſe in ſome diſorders of the urethra; yet, as a long uſe of mercurial applications is almoſt a ſpecific for venereal ulcers, and has alſo a powerful effect on every other ſpecies of ſtubborn ulcers, our experiments are naturally directed to mercurial preparations.

Perhaps we may diſcover hereafter the due proportion of quickſilver to the plaſter; at preſent, half an ounce to every ounce of plaſter, renders it much more mercurial than any plaſter now in uſe. The *diachylon* muſt be made with oil, and a little *pix Burgundica* added to it, that it may be ſufficiently tenacious: to every ounce of plaſter, it is proper to add two drams of crude antimony, finely levigated, which greatly conduces to the ſmoothneſs and good conſiſtence of the *bougie*; beſide that it may poſſibly have other virtues. Upon this plan the preſcription ſtands thus:

> Diach cum pice Burgund. ℥ii.
> Argent. viv. ℥i.
> Antim. crud pulv. ℥ß.

The quickſilver, whether it be divided in balſams, ſulphur, or honey, muſt not be put into the plaſter until the moment before the *bougies* are made; nor muſt the plaſter be boiling hot at that time, leſt by the heat the quickſilver ſhould ſeparate from the body it is divided in, and fall down to the bottom in form of globules. When the quickſilver is mingled with the plaſter, moderately hot, ſlips of fine rag muſt lie ready to dip in the compoſition. Theſe ſlips muſt be of different lengths, from ſix to nine or ten inches, and about three inches broad; roll them up looſely, and taking hold of one extremity with the left hand, let it fall upon the ſurface of the plaſter, and then draw it out gently. As it is drawn out it will unroll, and take up a quantity of plaſter on the ſurface, equal to the thickneſs of a ſilver groat; though to facilitate the unrolling of the rag, it will be proper to aſſiſt its motion with the end of the *ſpatula*, or ſome other inſtrument. The plaſter, however, muſt be hot enough to ſoak through, and diſcolour the rag, otherwiſe it will not make ſo good a *bougie*.

If the cloth be exactly three inches broad, it will make ſix *bougies* of a moderate ſize; but their ſize may be ſuited to the occaſion. It is generally adviſeable that the *bougie* ſhould be ſmaller at the end which is introduced through the ſtrictures, than at that which is left out at the *penis.* For that purpoſe many cut off a part of the oblong ſquare before mentioned, in ſuch manner as to reduce it almoſt into the ſhape of a long right angled triangle: but as this way of cutting it weakens the *bougie* exceedingly, and as it is not at all neceſſary that the *bougie* ſhould be taper from one extremity to the other, it is much better to cut off a little ſlope of about an inch and a half long from the end that is to be paſſed into the urethra, which will leſſen it where it is neceſſary to be ſmall, and leave it ſtrong in the other part, where the diminution is not neceſſary.

The plaſter taken up by the cloth, when dipped, will have little bubbles upon its ſurface, and not be ſo ſmooth as if it had been ſpread: therefore an iron *ſpatula* a little warmed, may be paſſed over the plaſter before it be cut into *bougies*, which will render it more compact and even. It is a much more exact and ſpeedy method to cut the *bougies* off with a knife and ruler, than with ſciſſars. When they are rolled up, it muſt be with that ſide outward which is covered with plaſter; and they muſt firſt be rolled by hand as cloſe as poſſible, before they are rolled upon a board or marble; for upon this circumſtance the neatneſs of the *bougie* depends.

BOUILLON, among *Farriers*, a lump or excreſcence of fleſh, growing either on or juſt by a horſe's fruſh, and making him halt.

BOVINA *affectio.* See AFFECTIO.

BOVISTA, in *Botany*, a term uſed by ſome authors to expreſs puff-ball, or duſty muſhrooms. which are ſometimes vulgarly called the devil's ſnuff-boxes.

BOULCOLACA, among the modern Greeks, denotes the ſpectre of ſome wicked perſon who died excommunicated by the patriarch, re-animated by the devil, and cauſing great diſturbance among the people; of which many ſtrange ſtories are told.

The word is Greek, and is ſometimes written βρȣκολακος, *broukolakos*; and ſuppoſed to be derived from βȣρκος, or βȣρκα, *mud*, and λακκος, a *ditch*, on account of the filthineſs of the ſight.

BOULDER-*walls*, a kind of walls built of round flints or pebbles, laid in a ſtrong mortar; uſed where the ſea has a beach caſt up, or where there are plenty of flints.

BOULIMY, in *Medicine.* See BULIMY.

BOULINIS, or BOULIGNIS, a copper coin ſtruck at Bologna in Italy, equivalent to the BAIOCCO.

BOULTINE, or BOLTEL, in *Architecture*, the workman's term for a convex moulding, whoſe periphery is juſt ¼ of a circle placed next below the plinth, in the Tuſcan and Doric capitals.—See *Tab. Archit. fig.* 5.

BOULUKE, in the *Military Orders of the Turks*, a body of the janizaries, with an officer in the place of a colonel at their head, ſent upon ſome particular enterprize; they are ſelected out of the body for this, and, as ſoon as the buſineſs is over, are received again into their former companies.

BOUNCE, in *Ichthyology*, a name given by the people of the weſtern parts of England to a ſpecies of the SQUALUS, diſtinguiſhed by Artedi by the name of the reddiſh variegated *ſqualus*, with the *pinna ani* in the middle ſpace between the *anus* and tail. This is the fiſh called *ſcymnos* and *ſcylius* by the old writers, and CATULUS *major* by the later writers. The Italians call it *ſcorzone.*

BOUND, in *Dancing*, a ſpring from one foot to the other; by which it differs from a hop, where the ſpring is from one foot to the ſame. It alſo differs from a half *coupée*, as, in the latter, the body always bears on the floor, either on one foot or the other; whereas, in the *bound*, it is thrown quite from the floor.

BOUND-*maſonry.* See MASONRY.

BOUND, *hide.* See HIDE-*bound.*

BOUND, *hoof.* See HOOF-*bound.*

BOUND-*bailiffs.* See BAILIFF.

BOUNDS *of an eclipſe.* See ECLIPSE.

BOUNDS *of lands.* See ABUTTALS.

BOUNDARY-*column.* See COLUMN.

BOUNTY, in *Commerce*, denotes a premium paid by the government to the exporters of certain commodities, on their taking oath, or in ſome caſes, giving bond, not to reland the ſame in England.

There are divers *bounties* ſettled by act of parliament, as a *bounty* of one penny *per* ell on the EXPORTATION of Britiſh ſail-cloth; and the like on ſilk ribbands and ſtuffs, on ſilk ſtockings, on fiſh and fleſh, on gold and ſilver lace of Britiſh manufacture; and on ſeveral ſpecies of corn, when not exceeding certain prices, at the port of exportation.

BOUNTY, *Queen Anne's*, for augmenting poor livings under 50*l. per annum*, conſiſts of the produce of the firſt-fruits and tenths, after the charges and penſions payable out of the ſame are defrayed. A corporation for management of the ſame was ſettled, &c. in 1704. See AUGMENTATION.

BOURDIN, with the epithet *grand*, a name given by Bellonius to a genus of univalve ſhell-fiſh, commonly known among authors by the name of *auris marina*. See EAR-*ſhell*.

BOURDONNE', in *Heraldry*, is underſtood of a croſs, whoſe extremities are turned round like the ends of a pilgrim's ſtaff; more frequently called *pommeté*, *globatus*.

BOURGER-*meſters*. See BURGHER-*maſters*.

BOURGUIGNOTTE, a defenſive weapon wherewith to cover the head; being a kind of caſk, open before, and proof againſt either pike or muſket: its name aroſe from the *Bourguignons*, who firſt introduced it.

BOURIGNONISTS, a name given the followers of Antoinette Bourignon, who ſet up a kind of QUIETISM in the Low Countries; pretending to be guided by an immediate revelation.

BOURREE. See BOREE.

BOUSTROPHEDON, in *Literature*, is uſed in ſpeaking of the ancient method of writing among the Greeks, wherein the lines were continued forwards and backwards, like the furrows in ploughing.

The word is compounded of βυς, *bullock*, and ϛρεφω, *I turn*.

Pauſanias mentions ſeveral ancient inſcriptions written in this manner: the laws of Solon are alſo ſaid to have been thus written; which, as the author laſt cited explains it, is when the ſecond line is turned on the contrary ſide, beginning at the end of the former, thus:

ΕΚ ΔΙΟΣ ΑΡ
VΘΞƎWUX

Potter. Arch. Græc. lib. i. cap. 26. tom. i.

BOUTADE, in *Muſic*, an irregular flight or movement, without art or ſtudy.

The word was alſo formerly uſed for a *ſolo* on the *viol di gamba*, thus called as being ſuppoſed to be extemporary.

Richelet ſpeaks of a dance called *boutade*, invented by the famous Bocan, in the reign of Lewis XIII. ſo called from the briſk humorous manner of its beginning; but now out of uſe.

BOUTAEL, in *Zoology*, the name of an Eaſt Indian fiſh, of the LAMPREY kind, called alſo *neegen oogen*, and, by Mr. Ray, *lampetra Indica*. It is caught in lakes, ponds, and other ſtanding waters, and is a very wholeſome and well-taſted fiſh.

Its general deſcription ſeems to make it rather of the *muſtela* than the *lampetra* kind; but if, as its name expreſſes, it has ſeveral apertures for the gills, its Dutch name ſignifying nine eyes, it is abſolutely a new GENUS of fiſhes.

BOUTANT, in *Architecture*.—An *Arc*-BOUTANT is an arch or buttreſs, ſerving to ſuſtain a vault; and which is itſelf ſuſtained by ſome ſtrong wall, or maſſive pile.

The word is French, and comes from the verb *bouter*, *to but*, or *abut*.

A pillar BOUTANT is a large chain or pile of ſtone, made to ſupport a wall, terrace, or vault.

BOUTE, in the *Manege*. A horſe is called *bouté*, when his legs are in a ſtrait line from the knee to the coronet; ſhort-jointed horſes are moſt apt to be *bouté*.

BOUTS-*rimes*, a popular term in the French poetry; ſignifying certain *rhymes*, diſpoſed in order, and given to a poet together with a ſubject, to be filled up with verſes ending in the ſame words, and the ſame order.

The invention of the *bouts-rimes* is owing to one Du Lot, a poet, in the year 1649. In fixing the *bouts*, it is uſual to chooſe ſuch as ſeem the remoteſt, and have the leaſt connexion.

Some good authors fancy, that theſe rhymes are of all others the eaſieſt, that they aſſiſt the invention, and furniſh the moſt new thoughts of all others. Sarraſin has a poem on the defeat of the *bouts-rimes*.

The academy of Lanterniſts at Tholouſe have contributed towards keeping in countenance the *bouts-rimez*; by propoſing each year a ſet of fourteen, to be filled up on the glories of the grand monarque: the victorious ſonnet to be rewarded with a fine medal.—An inſtance hereof may be given in the following one, filled up by P. Commire.

Tout eſt grand dans le roi, l'aſpect ſeul de ſon buſte
Rend nos fiers ennemis plus freids que des glaçons.
Et Guillaume n' attend que le tems des moiſſons,
Pour ſe voir ſoccomber ſous un bras ſi robuſte.
Qu'on ne nous vante plus les miracles d' Auguſte;
Louis de bien regner lui feroit des leçons:
Horace en vain l'egale aux dieux dans ſes chanſons:
Moins que mon heros il étoit ſage & juſte, &c.

BOUVIERA, in *Zoology*, a name given by ſome to a ſmall, broad, and flat freſh-water fiſh, called more uſually BUBULCA.

BOW, *Arcus*, a weapon of offence made of wood, horn, or other elaſtic matter, which, after being ſtrongly bent, by means of a ſtring faſtened to its two ends, in returning to its natural ſtate, throws out an arrow with great force.

It is alſo called the *long-bow*; by way of diſtinction from the *croſs-bow*, or *arbalet*.

The *bow* is the moſt ancient, and the moſt univerſal of all weapons. It has been found to obtain among the moſt barbarous and remote people, and who had the leaſt communication with the reſt of mankind.

The uſe of the *bow* and arrow was firſt aboliſhed in France under Lewis XI. in 1481, and in their place was introduced the Swiſs ARMS, that is, the halbard, pike, and broad-ſword.

The *long-bow* was formerly in great vogue in England; moſt of our victories in France were acquired by it; and many laws were made to regulate and encourage its uſe. The parliament under Henry VIII. complain, "of the "diſuſe of the *long-bow*, heretofore the ſafe-guard and "defence of this kingdom, and the dread and terror of "its enemies." 33 Hen. VIII. cap. 6.

By this act, all men under ſixty years of age, are commanded to exerciſe ſhooting with *long-bows*, and to have a *bow* and arrows always ready. Children from ſeven years old to ſeventeen, are alſo enjoined to be bred up in ſhooting. Servants were not excuſed, but to be ſupplied with a *bow* by their maſters, and the price to be deducted out of their wages. Aliens were forbid the uſe of the *long-bow*, without a ſpecial licence from the king.

The art of uſing *bows* is called ARCHERY, and thoſe practiſed therein, ARCHERS, or *bowmen*.

The two ends or extremities of a *bow*, to which the ſtring is faſtened, are called its horns, *cornua*.

The ſtrength of a *bow* may be calculated on this principle, that its SPRING, i. e. the power whereby it reſtores itſelf to its natural poſition, is always proportionate to the diſtance or ſpace it is removed therefrom.

The moſt barbarous nations often excel in the fabric of the particular things which they have the greateſt neceſſity for in the common offices of life. The Laplanders, who ſupport themſelves almoſt entirely by hunting, have an art of making *bows*, which we, in theſe improved parts of the world, have never arrived at.

Their *bow* is made of two pieces of tough and ſtrong wood, ſhaved down to the ſame ſize, and flatted on each ſide; the two flat ſides of the pieces are brought cloſely and evenly together, and then joined by means of a glue made of the ſkins of pearch, which they have in great plenty, and of which they make a glue ſuperior in ſtrength to any which we have.

The two pieces, when once united in this manner, will never ſeparate, and the *bow* is of much more force to expel the arrow, than it could poſſibly have been under the ſame dimenſions, if made of only one piece.

Among the ancients, the *bow*-ſtring, called τριχωσις, was made of horſes hair, and hence alſo called ιππεια; though Homer's *bow*-ſtrings are frequently made of hides cut into ſmall thongs; whence τοξα βοεια. The uppermoſt part of the *bow* to which the ſtring was faſtened, was called κορωνη, being commonly made of gold, and the laſt thing towards finiſhing the *bow*. The Grecian *bows* were frequently beautified with gold or ſilver; whence we have mention of *aurei arcus*; and Apollo is called Αργυροτοξος. But the matter of which they were ordinarily compoſed, ſeems to have been wood; though they were anciently, Scythian like, made of horn, as appears from that of Pandarus in Homer. Iliad. δ. v. 105. Potter. Arch. Græc. tom. ii. cap. 4.

There are two kinds of *bows*, different in ſtructure and manner of uſe, viz. 1. The common or long *bow* among us, beſt made of Spaniſh or Engliſh yew, ſometimes of withen or elm, which is inferior to the former; the ſhaft is made of birch or brazil, with grey or white feathers. 2. The croſs-*bow*, chiefly uſed when, through any imbecility of the arm or back, the former cannot be managed.

The invention of the *bow* is uſually aſcribed to Apollo, and was firſt communicated to the primitive inhabitants of Crete, who are ſaid to have been the firſt of mortals who underſtood the uſe of *bows* and arrows. And hence, even in latter ages, the Cretan *bows* were famous, and preferred by the Greeks to all others. Some, however, rather chooſe to honour Perſes, the ſon of Perſeus, with the invention of the *bow*; while others aſcribe it to Scythes, ſon of Jupiter, and progenitor to the Scythians, who were excellent at this art, and by many reputed the firſt maſters of it. From them it was derived to the Grecians, ſome of whoſe ancient nobility were inſtructed by the Scythians in the uſe of the *bow*, which in thoſe days paſſed for a moſt princely education. It was firſt introduced into the Roman army, in the ſecond Punic war. Potter. Arch. Græc. tom. ii. lib. iii. cap. 4. Aquin. Lex. Milit. tom. ii. p. 260.

The Indians ſtill retain the *bow*. In the repoſitory of the Royal Society, we ſee a Weſt Indian *bow* two yards long.

The Scythian *bow* was famous for its incurvation, which diſtinguiſhed it from the *bows* of Greece and other nations; being ſo great as to form an half-moon, or ſemicircle: whence the ſhepherd in Athenæus, being to deſcribe the letters in Theſeus's name, and expreſſing each of them by ſome appoſite reſemblance, compares the third to the Scythian *bow*; meaning not the more modern character Σ, but the ancient C, which is ſemicircular, and bears the third place in ΘHCEVC.

Bow, *croſs*, is alſo called ARBALET; which word is derived from *arbaliſta*, i. e. *arcubaliſta*, a *bow with a ſling*.

The *arbalet* conſiſts of a ſteel-bow, ſet in a ſhaft of wood, furniſhed with a ſtring and a trigger; and is bent with a piece of iron fitted for that purpoſe.—It ſerves to throw bullets, large arrows, darts, &c.

The ancients had large machines uſed for throwing many arrows at once, called *arbalets*, or BALLISTÆ.

Bow, in *Muſic*, denotes a machine that ſerves to play, or give the ſound to VIOLS, VIOLINS, and other inſtruments of that kind, by drawing it gently over the ſtrings thereof.

The *bow* conſiſts of three parts; the firſt is the ſtick, or wood, to which the hair is faſtened; the ſecond is compoſed of about eighty or an hundred horſe-hairs, or filaments of ſilk; the third is the nut, a ſort of half wheel, which ſerves to keep the hairs in the due degree of tenſion.

The ancients do not appear to have been acquainted with *bows* of hair: in lieu of theſe, they ſtruck their inſtruments with a PLECTRUM; over which our *bows* have great advantage, for giving long and ſhort ſounds, and other modifications, which a plectrum cannot produce.

Bow, in *Trade* and *Manufactures*, denotes a flexible inſtrument, conſiſting of a piece of ſteel or iron, to the two ends of which is faſtened a cat-gut, uſed by ſmiths, watchmakers, and other artificers, for the piercing and turning of divers ſorts of works.

This is more peculiarly called a DRILL-*bow*.

It is ſometimes alſo made of wood, whalebone, and the like.

Operators in moſaic have a ſort of *bow* made of a piece of elaſtic wood, with a braſs wire faſtened to the ends of it, which ſerves to ſaw hard and precious ſtones.

Letter-caſters have alſo a *bow*, wherewith to keep the *matrix* even. See FOUNDERY.

Bow, among *Builders*, denotes a beam of wood, or braſs, with three long ſcrews, that govern or direct a lath of wood or ſteel to any arch; chiefly uſed in drawing draughts of ſhips, and projections of the ſphere, or wherever it is requiſite to draw large arches.

Bow is alſo the name of an inſtrument formerly uſed at ſea for taking the ſun's altitude; conſiſting of a large arch of 90 degrees graduated, three vanes, a ſhank or ſtaff, a ſhade-vane, a ſight-vane, and an horizon-vane.—But it is now out of uſe.

Bow-*bearer*, an under-officer of the foreſt, who is to obſerve and take notice of all manner of treſpaſs againſt vert or veniſon; and to attach, or cauſe to be attached, the offenders, in the next court of attachment.

Bow-*cap*, among *Botaniſts*, one of the forms or poſitions of the LEAVES of FLOWERS, wherein the leaves are laid ſomewhat converſely over each other, but not plaited.

Bow-*compaſs*. See COMPASS.

Bow-*dye*, a new kind of ſcarlet red, ſuperior to madder; but inferior to the true ſcarlet grain for fixedneſs and duration. It was brought into England, and firſt practiſed at the village of Bow, near London, by Kephler, a Dutchman, in the year 1643.

Bow *of the gills*, a term uſed by ſome *Ichthyologiſts*, to expreſs the convex part of each GILL, each being a long ſemicircle, terminated by many *laminæ*, which form what is called the *leaf*.

Bow-*grace*, in the *Sea Language*, a frame or compoſition of old ropes, or junks of cables, uſed to be laid out at the *bows*, ſtems, and ſides of ſhips, to preſerve them from great flakes of ice, chiefly when they ſail in high north or ſouth latitudes.

Bow-*net*, or *wheel*, an engine for catching fiſh, chiefly lobſters and craw-fiſh, made of two round wicker-baſkets, pointed at the end, one of which is thruſt into the other; at the mouth is a little rim, four or five inches broad, ſomewhat bent inwards. It is alſo uſed for catching ſparrows.

Bow, *rain*. See RAIN-*bow*.

Bows *of a ſaddle*, are two pieces of wood laid archwiſe, to receive the upper part of a horſe's back, to give the ſaddle its due form, and to keep it tight.

The fore-*bow*, which ſuſtains the pommel, is compoſed of the WITHERS, the BREASTS, the POINTS or toes, and the CORKING.

The hind-*bow* bears the TROUSSEQUIN, or quilted roll.

The *bows* are covered with ſinews, that is, with bulls pizzles beaten, and ſo run all over the *bows*, to make them ſtronger. They are likewiſe ſtrengthened with bands of iron, to keep them tight. It is on the lower ſide of the *bows* that the ſaddle-ſtraps are nailed; the uſe of which is to make faſt the girths.

Bow *of a ſhip* is the rounding part of a ſhip's ſide forward, or that part of her which is broadeſt before: it begins at the place where the planks arch inwards, and compaſſing about towards the ſtem, ends where they cloſe at the ſtem or prow.

If a ſhip has a broad round *bow*, they call it *a bold* or *bluff bow*; if ſhe has a narrow thin *bow*, they ſay ſhe has *a lean bow*.

The proportioning of the *bow* is of great importance to the ſailing of the ſhip; it being this part that firſt breaks off the ſea, and on which is, in a manner, all the bearing of the ſhip. If the *bow* be too broad, the veſſel will not make her way eaſily through the water, but carry a great load of dead water before her; and if it be too lean or thin, ſhe will pitch or beat much into a hollow ſea, for want of breadth to bear her up.

Bouguer obſerves, that a *bow* which meets with the leaſt reſiſtance in a direct and oblique courſe, has alſo the additional property of driving the leaſt to leeward. Traité du Navire.

The piece of ordnance that lies in this place is alſo called the *bow-piece*; and the ANCHORS that hang there, are called her *great and little* BOWER.

Bow, *on the*, in the *Sea Language*, denotes an arch of the horizon, comprehended between ſome diſtant object, and that point of the compaſs which is right a-head, and to which the ſhip's ſtem is directed.

Bow-sprit, or Bolt-sprit, a kind of maſt in a veſſel, ſtanding foremoſt on the prow, and projecting ſlopeways over the ſtem: its lower end is faſtened to the partners of the fore-maſt, and farther ſupported by the fore-ſtay: it ſerves to carry the ſprit-ſail, ſprit-top-ſail, and jack-ſtaff.—*Vid. Tab. Ship. fig. 1. n. 124. fig. 2. n. 16.*

The *bow-ſprit* ſhould be two thirds of the length of the main-maſt, and its thickneſs equal to the mizen-maſt: when it is twelve fathoms five foot long, its yard muſt be eight fathoms two foot long; and the top-maſt of the *bow-ſprit*, three fathoms one foot.

To the *bolt-ſprit* are faſtened all the ſtays belonging to the fore-maſt, fore-top-maſt, and fore-top-gallant, &c. with their bowlines and jacks, beſides the riggings which belongs to its own ſails.

If a ſhip ſpends her *bolt-ſprit*, or, as the term is, if the *bolt-ſprit drop by the board*, the fore-maſt will quickly follow, if it be a rough ſea, eſpecially in ſailing by a wind.

Bow-*ſtaves*. See GARBLING *of Bow-ſtaves*.

Bow-*ſaw*. See SAW.

BOWELLING, *exenteratio*, the act of pulling out the intrails of an animal.

Bowelling makes part of the progreſs of EMBALMING.

BOWELLING is alſo a part of the puniſhment of traitors in England, who are to have their *bowels* ripped open, torn forth, and burnt before them. *Fractioni, ſuſpendio, decollationi, exenterationi, & quaterizationi adjudicavit.* Knyght. ſub Edw. II. in the ſentence of Hugh Spencer.

BOWER. See ANCHOR.

BOWER, in *Gardening*, a ſhady place, under covert of trees or branches interwoven.

A *bower* differs from an ARBOUR, in that the latter is always built long and arched, but a *bower* either round or ſquare at the bottom, and made with a ſort of dome or cieling at the top.

BOWER, *Lady's*, in *Botany*. See VIRGIN's *Bower*.

BOWET, or BOWESS, among *Falconers*, denotes a young hawk when ſhe draws things out of her neſt, and covets to clamber on the boughs.

BOWGE *of court*. See BOUCHE *of Court*.

BOWL, denotes either a ball of wood for the uſe of BOWLING; or a veſſel of capacity for holding liquors.

BOWL-*waſſel*. See WASSEL-*Bowl*.

BOWLDER-*ſtones*, a ſpecies of ſmall ſtones, of an indeterminate texture and figure, generally roundiſh, found on the ſhores of the ſea and banks of rivers.

Bowlders, or *bowlder*-ſtones, are only lumps and fragments of ſtones or marble, broken from the adjacent cliffs, and rounded by being bowled, and tumbling to and again by the action of the water; whence the name *bowlder*-ſtones, as being formed by an action like that of a bowl, and thereby reduced to the ſhape of one.

Neither the *bowlders* nor rubble ſtones are ever inveſted with an exterior ſtrong cruſt or ſkin: it is plain from the manner of their formation they cannot. This is one mark by which they are diſtinguiſhed from flints, pebbles, or the other native nodules, which were formed before the ſubſiding of the matter of the *ſtrata*, and are always covered with ſuch a cruſt or ſkin, unleſs it has been worn off.

BOWLING, or BOW-LINE, in *Sea-language*, a rope faſtened to the middle of the leech, or perpendicular edge of the ſquare ſails of a ſhip, ſerving to make the ſail ſtand ſharper or cloſer by a wind.

The *bow-line* is faſtened by two, three, or four ropes, called bridles, like a crow's foot, to as many parts of the ſail; only the mizen-*bow-line* is faſtened to the lower end of the yard.

The *bow-line* belongs to all ſails, except the ſprit-ſail, and ſprit-top-ſail; where it is omitted for want of room to hale it forwards by; and thence it is, that thoſe ſails cannot be uſed cloſe by a wind.

The ancients appear to have been acquainted with the uſe of the *bow-line*; which is the reaſon they always ſailed before the wind.

By means of this rope, a ſail may be drawn away, and the wind, when received ſideways, prevented from ſwelling it too much, which would hinder the ſhip's run inſtead of forwarding it: it alſo ſerves to hinder the wind from eſcaping or blowing by on the ſide they are drawn on.

The phraſes peculiar to this rope are; *ſharp the bow-line*; i. e. hale it taught, or pull it hard; *hale up the bow-line*, i. e. pull it harder forward on; *check, eaſe*, or *run up the bow-line*; i e. let it be more ſlack.

BOW-LINE *bridles*, are the ropes by which the *bow-line* is faſtened to the leech of the ſail.

BOW-LINE-*knot*, denotes a knot that will not ſlip, by which the *bow-line-bridle* is faſtened to the crengles.

BOWLING, among *Gameſters*, the act or art of throwing bowls.

Bowling, among us, is chiefly the name of a game or exerciſe, practiſed either in open places, as bares and *bowling-greens*, or in cloſe *bowling-alleys*.

The ſkill of *bowling* depends much on a knowledge of the ground, and the right choice of a bowl ſuitable to it: for cloſe alleys the flat bowl; for green ſwards plain and level, the bowl as round as a ball, is preferred.

The terms uſed in *bowling*, are, to *bowl wide*, which is when the bias does not hold, or is not ſtrong enough; *narrow*, when it is too ſtrong, or holds too much; *finely bowled*, is when the ground is well choſen, and the bowl paſſes near the block, even though it goes much beyond it; *bowling through*, or a *yard over*, is done in order to move the block; an *over bowl*, that which goes beyond it; a *bowl laid at hand*, is that put down within the gameſter's reach, to be in the way of the next bowler, and hinder his having the advantage of the beſt ground; *bowling at length*, neither *bowling* through nor ſhort; *a dead length*, a juſt or exact one; *throwing* or *flinging*, is diſcharging a bowl with a ſtrength purpoſely too great for a length, in order to carry off either the block or ſome near bowl; *bowl-room*, or *miſſing-wood*, is when a bowl has free paſſage, without ſtriking on any other; *get off*, is when a bowl being narrow, is wanted to be wider; *bowl beſt at block*, that neareſt the block; *drawing a caſt or bowl*, is to win it by *bowling* nearer, without ſtirring either the bowl or block; a bowl is ſaid to *rub*, when it meets with ſome obſtacle in the ground, which retards its motion, and weakens its force; *it is gone*, when far beyond the block.

Block ſignifies a little bowl laid for a mark, alſo called a JACK.

Mark, is a proper *bowling* diſtance, not under ſo many yards; and being at leaſt a yard and a half from the edge of the green.

Ground, a bag or handkerchief laid down to mark where a bowl is to go.

Lead, the advantage of throwing the block, and *bowling* firſt.

Caſt, is one beſt bowl at an end.

End, a hit, or when all the bowls are out.

The *game*, or *up*, is five caſts, or beſt bowls.

BOWLING-*green*, in *Gardening*, a kind of parterre in a grove, laid with fine turf, requiring to be frequently mowed, laid out in compartments of divers figures, with dwarf-trees, and other decorations.

Bowling-greens are of Engliſh origin, but have been adopted by the French and Italians, who have them only for ornament; being unacquainted with, or not fancying the exerciſe, on account of which they were firſt made in England.

BOWSE, a ſea-term, ſignifying as much as *hale*, or *pull* together.

Thus, haling upon a tack is called *bowſing upon a tack*; and when they would have the men pull all together, they cry, *bowſe away*.

Bowſe is chiefly uſed by the gunners when they hale upon their tackles, to thruſt a piece out of a port; in which caſe they cry, *bowſe hoa*, i. e. pull more upon the tackle; alſo when there is occaſion to pull more on the tackle than otherwiſe, they ſay, *bowſe upon the tackle*.

BOWYERS, artificers whoſe buſineſs is to make bows.

In which ſenſe, *bowyers* ſtand diſtinguiſhed from fletchers, who made arrows.

The *bowyers* company was incorporated in 1620, and conſiſts of a maſter, two wardens, twelve aſſiſtants, and thirty on the livery.

BOX, *Buxus*, in *Botany*, the *box-tree*; a genus of the *monoecia tetrandria* claſs of plants, the characters of which are theſe. It hath male and female flowers on the ſame plant; the male flowers having a three-leaved, and the female, a four-leaved empalement. The male flowers have two, and the female three, concave petals. The male flowers have four upright ſtamina, with the rudiment of a germen, but no ſtile or ſtigma: the female flowers have a roundiſh, blunt, three-cornered germen. The empalement afterward becomes a roundiſh capſule, ſhaped like an inverted pottage-pot, opening in three cells, each having two oblong ſeeds There are three ſpecies; the *box-tree* with oval leaves, the narrow-leaved *box*, and the dwarf, or Dutch *box*.

The two firſt ſorts have been frequently raiſed from ſeeds, and conſtantly produced plants of the ſame kinds with thoſe, from which the ſeeds were taken. The dwarf *box* will never riſe to conſiderable height with any culture; nor has it been ſeen to flower, where the plants have been encouraged to grow many years in the greateſt luxuriancy.

The ſeaſons for planting this are the autumn, and very early in the ſpring. And the beſt ſpecies for this purpoſe, is the dwarf Dutch *box*. The edgings of *box* are now only planted on the ſides of borders next walls, and not as was ſome time ſince the faſhion, all round borders or fruit-beds, in the middle of gardens, unleſs they have a gravel walk between them, in which caſe it ſerves to keep the earth of the borders from waſhing down on the walks in hard rains, and fouling the gravel.

In the laſt age, it was alſo a very common practice to plant borders, or edgings, of aromatic herbs, as thyme, ſavory, hyſſop, lavender, and the like: but theſe are all apt to grow woody, and to be in part, or wholly, deſtroyed in hard winters. Daiſies, thrift, or ſea-july-flower, and chamomile, are alſo uſed by ſome for this purpoſe; but they require yearly tranſplanting, and a great deal of trouble, elſe they grow out of form; and theſe are alſo ſubject to periſh in very hard ſeaſons.

Box is cultivated for the ornament of gardens, chiefly for hedges and borders, the ſmallneſs of its leaf making it cut very cloſe and even. Its wood is yellow, hard, cloſe, even, very heavy, and eaſily taking a poliſh: whence its uſe in making muſical inſtruments, combs, ſpoons, toothpick-caſes, and other Tunbridge ware. It does not ſwim in water, nor is it liable to rot or to be worm-eaten; whence its uſes for the axle-trees of wheels. It yields a chemical oil and ſpirit by diſtillation, of ſome uſe in medicine, and its decoction is by ſome held equal in virtue to *guaiacum*.

Among the ancients, the *box-tree* was conſecrated to Cybele, becauſe flutes were then made of its wood, as is done to this day. Pitiſcus imagines it was alſo ſacred to Bacchus, from a paſſage in Statius, *Cum Bacchia mugit buxus*; but without much foundation, the word *buxus* here only denoting flutes, as being the matter they were uſually made of; not that the tree was conſecrated to Bacchus.

The honourable Daines Barrington is of opinion, that it is not indigenous in Great Britain. See his paper on this ſubject, Phil. Tranſ. vol. lix. N° 5. an. 1769.

BOX-*tree, ſand, Hura*, in *Botany*, a genus of the *monoecia adelphia* claſs of plants. Its characters are theſe: it hath male and female flowers on the ſame plant; the male flowers have no petals, but a column of ſtamina, which are joined at bottom into a cylinder. The female flowers have a ſwelling empalement of one leaf, with one tubulous petal; the roundiſh germen is ſituated in the bottom of the empalement, which afterward becomes an orbicular ligneous fruit, depreſſed at top and bottom, having twelve deep furrows, with ſo many cells, which open at the top with an elaſticity, each containing one round flat ſeed. We know but one ſpecies of this genus, which grows naturally in the Spaniſh Weſt Indies. The fruit of this plant, if it remains on until it be fully ripe, will burſt in the heat of the day, with an exploſion like the report of a piſtol; by which the ſeeds are caſt round to a conſiderable diſtance: theſe ſeeds, when green vomit and purge, and are ſuppoſed to be ſomewhat akin to the *nux vomica*.

This fruit is by the inhabitants of the Weſt Indies cut open on the ſide where the footſtalk grew, and the ſeed carefully taken out; the ſhell is uſed as a ſtandiſh to contain ſand for writing, which gave occaſion for the name of *ſand-box* tree.

As this plant has ample leaves, which are of a beautiful green colour, it makes an agreeable variety among other tender exotic plants in the ſtove; for where they are kept warm, and duly refreſhed with water, they retain their leaves all the year in verdure. Miller.

Box-*tree*, African, *Myrſine*, a genus of the *pentandria monogynia* claſs of plants, the corolla of which has five petals; the filaments are joined to the top of the petals; and the capſule is muricated, and contains five cells, with a ſingle ſeed in each.

Box is alſo uſed to denote a caſe for holding things; of which there are ſeveral kinds, as a ſalve *box*, *pyxis unguentaria*, that uſed by ſurgeons to carry with them.

Box is ſometimes alſo uſed for a kind of meaſure, though variable according to the commodity. Thus the *box* of quickſilver contains from one to two hundred weight; of prunellas, about fourteen hundred; of rings for keys, two groſs, &c.

Box, *coach*, a place under the coachman's ſeat, wherein he puts what may be wanted for the ſervice of the coach or horſes.

Box, *dice*, a narrow deep cornet, channelled within, wherein the dice are ſhaken and thrown.

This anſwers to what the Romans called *fritillus*; whence *crepitantes fritilli*, and, in Seneca, *reſonante fritillo*. The ſame author alſo uſes *concutere fritillum*, figuratively for playing.

Beſides the *fritillus*, the Romans, for greater ſecurity, had another kind of *dice-box*, called *pyrgus*, and ſometimes *turricula* It was placed immoveable in the middle of the table, being perforated or open at both ends, and channelled alſo within: over the top was put a kind of funnel, into which the dice were caſt out of the *fritillus*; whence deſcending, they fell through the bottom on the table; by which all practiſing on them with the fingers was effectually prevented. For want of ſome contrivance of this kind, our ſharpers have opportunities of playing divers tricks with the *box*, as palming, topping, ſlabbing. Hyde. Hiſt. Nerdilud. § 5. p. 27, 28.

Box-*iron*, a kind of caſe wherein the heaters are incloſed for ironing linen.

Box-*money*, at *Hazard*, is that which is paid the box-keeper, or him who furniſhes the *box* and dice. Betters have the advantage over caſters, as they have no *box*-money to pay, which at long run would beggar the moſt fortunate player. Hence ſome gameſters will never caſt, to ſave the expence of *box*-money.

Box *of a plough*, a name by which the farmers call that croſs piece in the head of the plough, through which the ſpindle of the two wheels paſſes, and to which are faſtened the two crow-ſtaves, ſerving, by their holes, to regulate the height of the beam, the tow-chain below, the ſtake which ſupports the bridle-chain above, and the gallows behind, into which are fixed the wilds with the crooks of iron, for the drawing the whole plough along. This part of the plough is placed croſs-wiſe with the beam, and ſtands much below it, and not far from the ground.

Box, *ſtrong*, a coffer of iron, or of thick wood, ſecured with iron plates, and a lock with ſeveral bolts, difficult either to be opened or forced; chiefly uſed for putting money in.

Box, in *Zoology*, a name given by ſome authors to a ſmall fiſh caught in the Mediterranean, and more uſually known by the name of Boops, from the largeneſs of its eyes.

Box *and needle*, in *Navigation*, is the ſame with the compass.

Box *of a watch*, the outer caſe or cover.

Box *of a wheel*, the aperture wherein the axis turns.

Box-*galls*. See Galls *of the box*.

Box-*puceron*. See Grub *of the box*.

Box-*thorn*, in *Botany*. See Box Thorn and Lycium.

Box-*hauling*, in *Sea Language*, a particular method of veering a ſhip, when the ſwell of the ſea renders tacking impracticable. It is performed by putting the helm *a-lee*, to throw the head up to windward, when by the action of the waves on the weather-bow, it falls off or turns to leeward; the after-ſails are at this time diminiſhed, that they may not prevent the ſhip from turning: but they are again extended as ſoon as the ſhip, in veering, brings the wind on the oppoſite quarter, in order to aſſiſt her motion of wheeling. See Veering.

Boxes in a play-houſe, are little apartments behind and aſide of the pit. We ſay, the front-*boxes*, the ſtage-*boxes*, &c.

BOXERS, a kind of *athletæ*, who combat or contend for victory with their fiſts.

Boxers amount to the ſame with what, among the Romans, were called *pugiles*.

The ſtrange disfigurements theſe *boxers* underwent were ſuch, that frequently they could not be known, and rendered them the object of many railleries. In the Greek anthology, there are four epigrams of the poet Lucilius, and one of Lucian; wherein their disfigurements are pleaſantly enough expoſed. Anthol. Græc. lib. ii. Ep. 1, 2, 3, 10, 14.

BOXING, the exerciſe of fighting with the fiſts, either naked, or with a ſtone, or leaden ball graſped in them.

In which ſenſe, *boxing* coincides with the *pugiliatus* of the Romans, and what, on our amphitheatres, is ſometimes called *trial of manhood*.

When the champions had σφαιρας, or balls, whether of lead or ſtone, it was properly denominated σφαιρομαχια. Potter. Arch. Græc. lib. ii. cap. 21. vol. I.

The ancient *boxing* differed from the *pugna cæſtuum*, in which the combatants had leathern thongs on their hands, and balls to offend their antagoniſts; though this diſtinction is frequently overlooked, and fighting with the *cæſtus* ranked as a part of the buſineſs of *pugiles*.

We may diſtinguiſh three ſpecies of *boxing*; viz. where both the head and hands were naked; where the hands were armed and the head naked; and where the head was covered with a kind of cap called amphotides, and the hands alſo furniſhed with the *cæſtus*.

Boxing is an ancient exerciſe, having been in uſe in the heroic times, before the invention of iron or weapons.

Thoſe who prepared themſelves for it, uſed all the means that could be contrived to render themſelves fat and fleſhy, that they might be better able to endure blows: whence corpulent men or women were uſually called *pugiles*, according to Terence: *Siqua eſt habitior paulo, pugilem eſſe aiunt.* M. Burette has given the hiſtory of the ancient pugilate, or *boxing*, with great exactneſs. Mem. Acad. Inſcript. tom. iv. p. 353, &c.

Boxing, among *Sailors*, is uſed to denote the rehearſing the ſeveral points of the compaſs in their proper order.

Boxing likewiſe denotes an operation performed, by laying the head ſails aback, in order to receive the wind in a direction perpendicular to their ſurfaces, that the ſhip's head may hereby be thrown back into the line of her courſe, after ſhe had inclined to windward of it by neglect of the helmſman, or otherwiſe. Falcon. Mar. Dict.

Boxing is alſo uſed for the tapping of a tree, to make it yield its juice. See Bleeding and Sap.

The *boxing* of maple is performed by making a hole with an ax or chiſſel into the ſide of the tree, about a foot from the ground; out of it flows a liquor from which sugar is made. Phil. Tranſ. N° 364.

BOXUS, in *Natural Hiſtory*, a name given by ſome authors to the common misletoe.

BOYAR, or Boiar, a term uſed for a Ruſſian lord, or grandee. According to Becman, *boyars* are what, in other countries, are called the upper nobility: he adds, that the czar of Muſcovy, in his diplomas, names *boyars* before waywodes.

BOYAU, in *Fortification*, a branch of the trenches; or a line or cut, which runs from the trenches to cover ſome ſpot of ground; being drawn parallel to the defence of the place, that it may not be enfiladed, that is, that the ſhot from the town may not ſcour along it.

BOYER, in *Navigation*, a kind of Flemiſh ſloop, or ſmall veſſel of burden, having a boltſprit, a caſtle at each end, and a tall maſt; chiefly fit for the navigation of rivers, and, in many of its parts, reſembling a smack.

The *boyer* has a double bottom, and a forked maſt, that it may run better with the bowling-line, without driving.

BOYES, an order of American prieſts, or magicians, uſed by the ſavages for calling up their gods, either to be revenged on thoſe who have done them any injury, or to be cured of ſome diſeaſe, wherewith they are infeſted, or to drive out ſome devil.

They are alſo conſulted with regard to the event of their wars. Each *boye* has his peculiar duty: who is invoked by certain forms of words, ſung in a quaint tone, accompanied with the fumes of tobacco.

BOYEUPECANGA, in *Zoology*, the name of a very large ſerpent, diſtinguiſhed by this name on account of certain prominences on its back. It is a very large and remarkably thick ſerpent, and of very fatal poiſon. Ray.

BOYLE's *Lectures*, a courſe of eight ſermons or lectures, preached annually, ſet on foot by the honourable Robert Boyle, eſq. by a codicil annexed to his will in 1691; whoſe deſign, as expreſſed by the inſtitutor, is, to prove the truth of the Chriſtian religion againſt infidels, without deſcending to any controverſies among Chriſtians; and to anſwer new difficulties, ſcruples, &c.

For the ſupport of this lecture, he aſſigned the rent of his houſe in Crooked-lane, to ſome learned divine within the bills of mortality, to be elected for a term not exceeding three years, by the late archbiſhop Tenniſon, and others. But the fund proving precarious, the ſalary was ill paid: to remedy which inconveniencies, the ſaid archbiſhop procured a yearly ſtipend of 50 pounds, for ever, to be paid quarterly; charged on a farm in the pariſh of Brill, in the county of Bucks.

To this appointment we are indebted for many elaborate defences both of natural and revealed religion.

BOYLING. See BOILING and EBULLITION.

BOYUNA, in *Zoology*, the name of an American ſpecies of ſerpent. It is very long and ſlender, and all over of a black colour. It has exactly the ſmell of a fox, but ſo ſtrong, that no body can endure to be near it. Ray.

BRABANCIONES, in *Middle Age Writers*, a kind of Netherland ſoldiery, infamous for rapine, being little better than commiſſioned *banditti*, who hired themſelves to fight for any that could pay them beſt.

The word is variouſly written by the hiſtorians of thoſe days; all given them from the country of Brabant, which was the chief nurſery of thoſe troops. They are alſo frequently confounded with the *Routiers*, *Roturiers*, *Ruptarii*, *Ruterarii*, *Coteraux*, &c. Daniel. Hiſt. de la Mil. Franc. liv. iii. chap. 8.

BRABE, an herb mentioned by Oribaſius; the deſcription he gives of which is, that it grows a cubit high, ſhooting forth branches on each ſide, with leaves reſembling thoſe of the *lepidium* in ſhape, but ſofter and whiter, and at the top bearing an umbel of flowers like the elder.

BRABEJUM, in *Botany*; *African almond*, a genus of the *tetrandria monogynia* claſs of plants. Its characters are theſe: the flower is compoſed of four narrow obtuſe petals, which are erect, and hath four ſlender ſtamina. In the centre is a ſmall hairy germen, which afterward becomes an oval, hairy, dry berry, encloſing an oval nut. We have but one ſpecies of this plant, which is a native of the country about the Cape of Good Hope.

In Europe it ſeldom grows above eight or nine feet high; but in its native ſoil, it is a tree of a middling growth: as it is too tender to live through the winter in the open air, ſo we cannot expect to ſee it grow to a great ſize.

BRABEUTES, or BRABEUTA, in *Antiquity*, an officer who preſided at the public games, and decreed the prizes to the victors.

The word is formed from βραϐειον, *prize* or *reward*.

The Latins called him *deſignator* and *munerarius*.

The generality of writers confound the *brabeutes* with the AGONOTHETA, between whom there however appears to have been this difference, that the former preſided at the gymnic combats, the latter at the ſacred ones.

BRACE, in *Writing*, a term uſed to ſignify a certain crooked ſtroke or figure of a pen, made at the end of two or more lines in an account, which expreſs two or more articles charged with one and the ſame ſum at the end, which is uſually placed in the center of the *brace*.

Debts due to me, ſome of which are good, others dubious.

Good Debts.			*Bad Debts.*		
From Mr. James *	300	500	From Mr. John * *	400	900
From Mr. Peter *	200		From Mr. Nicolas*	500	

BRACE is commonly taken for a couple, or pair; and in this ſenſe is applied by huntſmen to ſeveral beaſts of game; as a brace of bucks, foxes, hares, &c.—They alſo ſay, a *brace* of greyhounds.

BRACE, in *Architecture*, denotes a piece of timber framed in with bevel-joints; ſerving to keep the building from ſwerving either way.

When a *brace* is framed into a king-piece, or principal rafter, it is called by ſome a *ſtrut*.

BRACE, BRACCHIO, or BRASSE, alſo denotes a foreign long meaſure, anſwering to our FATHOM.

BRACE is alſo uſed for a meaſure taken from the length of the arm, when extended; and is uſed in divers cities of Italy, in lieu of the foot or yard. Its length is various; the *brace* of Bergamo, according to Scamozzi, is nineteen Paris royal inches, and a half; according to M. Petit, ſixteen inches two thirds; the *brace* of Bologna is fourteen inches; that of Breſſe, ſeventeen inches ſeven lines and a half, according to Scamozzi; and according to M. Petit, ſeventeen inches five lines; the Mantuan *brace* is ſeventeen inches four lines; that of Milan, twenty-two inches; thoſe of Parma, twenty inches one third; of Sienna, twenty-one inches two thirds; of Florence, twenty inches two thirds, according to Maggi; twenty-one inches four lines and a half, according to Lorini; twenty-two inches two thirds, according to Scamozzi, and twenty-one inches one third, according to Picart.

BRACED, in *Heraldry*, is uſed in ſpeaking of chevronels which are intermingled. He bears azure a chief or, and three chevronels *braced*, in the baſe of the eſcutcheon, by the name of *Fitz-Hugh*.—*V. Tab. Heraldry*, *fig.* 17.

BRACELET, an ornament uſually worn round the wriſt.

The word is French, *bracelet*; which Menage derives further from *braceletum*, a diminutive of *bracile*, a word occurring in writers of the Juſtinian age; all formed from the Latin *brachium*, *arm*.

Bracelet amounts to the ſame with what was called by the ancients, *armilla*, *brachiale*, *occabus*; in the middle-age, *boga*, *bauga*, *armiſpatha*.

Among the ancient Romans, the men as well as the women, wore *bracelets*; but the latter, it is to be obſerved, never wore them till they were betrothed.

Bracelets were at firſt properly military ornaments or rewards, frequently conferred among the ancients, by generals and princes, on thoſe who behaved gallantly in fight. They became afterwards arbitrary decorations, aſſumed at pleaſure; and are ſometimes ſaid to have been worn for health as well as ornament; and particularly as AMULETS, to break the force of charms and faſcinations.

Among the Romans we meet with divers ſpecies and denominations of *bracelets*; as the *brachiale*, which covered the whole length of the arm; the *dextrale*, or *dextrocherium*, only the wriſt, and that only of the right arm; *viria*, or *viriola*, peculiar to the male ſex; *ſpinther*, to the women, being worn on the left arm; *viruo*, uſed as an AMULET; *amphidion*, worn either on the arm or about the neck; *calbeum*, or *galbeum*, worn by generals in their triumphs. Pitiſc. Lex. Ant. tom. i. & ii. Du-Cange. Gloſſ. Lat. tom. i. & ii. Kennet. Rom. Ant. Not. P. II. lib. iv. cap. 16.

Bartholin has a treatiſe on the *bracelets* of the ancients. The northern people uſed alſo to ſwear on their *bracelets*, to render contracts more inviolable.

Bracelets are ſtill much uſed by the ſavages of Africa and America, made of metal, glaſs-beads, ſhells, and the like.

BRACELET is alſo uſed, in *Anatomy*, to denote the circular ligament which inveſts the *carpus*, called alſo *ligamentum annulare*.

BRACELETS, in ſome *Ancient Law Books*, denote beagles, or hounds of the ſmaller kind.

BRACES, in the *Sea Language*, are ropes belonging to all the yards of a ſhip, except the mizen, two to each yard, except thoſe of the top-gallant, and ſprit-ſail top-ſail yards: being reeved through blocks faſtened to pendants ſeized to the yard-arms.—See *Tab. Ship. fig.* 1. *n.* 11. 21. 50. 68. 89. 11. 130. 139.

The uſe of *braces* is, to *ſquare the yard*; that is, to ſet it ſquare.—Hence, *to brace the yard*, is to bring it to either ſide. *To traverſe the yard*, is to ſet it any way overthwart.—*To right the yard*, is to bring it ſo as it may ſtand at right angles with the length of the ſhip.

All *braces* come aftward on; the main *brace* comes to the poop, the main-top-ſail *brace* to the mizen-top, and thence to the main-ſhrouds; the fore and fore-top-ſail *braces* come down by the main, and main-top-ſail ſtays, and ſo of the reſt.

The mizen-bowline ſerves for a brace to that yard; and the croſs-jack *braces* are brought forward to the main-ſhrouds, whenever a ſhip ſails cloſe by a wind.

BRACHERIUM, or BRACHERIOLUM, a kind of ſteel-bandage worn about the hips, and uſed for the retention and cure of ruptures. Du-Cange Gloſſ. Lat.

BRACHIÆUS, or BRACHIALIS, a name given to two muſcles of the arm, the one external, the other internal.

Brachiæus is a name given by Spigelius and others to a muſcle of the arm, now generally known under the name of *brachialis*, or *brachiæus internus*.

BRACHIÆUS *externus* ariſes about the middle and poſterior part of the *humerus*. It joins its fibres with the *muſculus longus* and *brevis*; and being externally tendinous, they, together, cover all the elbow, and are inſerted into the *olecranum*.—See *Tab. Anat.* (*Myol.*) *fig.* 7. *n.* 12. ANCONÆUS *externus*, and ſometimes the *internus*, is called by this name.

BRACHIÆUS *internus* lies partly under the *biceps*; it riſes by a fleſhy beginning from the middle and internal part of the *humerus*; and is inſerted into the upper and fore-part of the *cubitus*, by a very ſhort, but ſtrong tendon: it ſerves to bend the arm.—See *Tab. Anat.* (*Myol.*) *fig.* 1. *n.* 25. *fig.* 2. *n.* 14. *fig.* 7. *n.* 11.

The upper part of this muſcle is forked, or ſloped, and, at the bending of the joint of the elbow, the lower part of it contracts. It is fixed to the ſurface of the *os humeri* by a great number of fleſhy fibres, from the lower inſertion of the *deltoides* almoſt down to the two *foſſæ* at the lower extremity of the bone, and from one edge of the foreſide of this lower extremity to the other. The fibres are for the moſt part longitudinal; thoſe neareſt the ſurface of the muſcle being longeſt, the more internal grow gradually ſhorter.

The lateral fibres are a little oblique, and this obliquity increaſes as they deſcend lower. Theſe lateral fibres are partly fixed in the intermuſcular ligaments of the *os humeri*; of which ligaments, that which lies toward the internal condyle, is longer and broader than that toward the external. The loweſt of theſe fibres are very oblique, and form on each ſide a kind of ſmall ſeparate *faſciculus*. In paſſing over the joint, all theſe fibres contract in breadth, and afterwards end in a ſtrong flat tendon, inſerted in the muſcular impreſſion, which is directly below the *coronoide apophyſis* of the *ulna*.

The ſloped or forked extremity of this muſcle embraces the large tendon of the *deltoides*; the internal part of the fork meets the inferior inſertion of the *coraco-brachialis*, and the foreſide of the whole muſcle is covered by the two fleſhy bodies of the *biceps*. Winſlow.

BRACHIAL *nerves*. See Nerve.

BRACHIALIS, *coraco*. See Coraco-Brachialis.

BRACHIONUS, in *Zoology*, the name of a genus of ANIMALCULES of the ARTHRODIA kind, containing all the WHEEL animals.

BRACHITÆ, a branch of Manichees, who appeared in the third century.

BRACHIUM, in *Anatomy*. See Arm, and Humerus.

Brachium, the *arm*, in *Botany*, is the tenth degree in the Linnæan ſcale for meaſuring plants, being twenty-four Paris inches.

Brachium *moventium ſecundus*, in *Anatomy*, a name given by Veſalius, and other of the old writers, to the muſcle now generally called *deltoides*.

Brachium *movens quartus*, in *Anatomy*, the name by which Veſalius calls the muſcle now generally known under the name of *latiſſimus dorſi*. Fallopius, and many others, have alſo called it *quartus humeri*.

Brachii *tertius*, in *Anatomy*, a name given by Veſalius and others to a muſcle ſince called, from its ſhape, *teres major*, and *rotundus major*.

BRACHMANS, a branch of the ancient gymnoſophiſts, or philoſophers of India, remarkable for the ſeverity of their lives and manners.

The Greeks uſually give them the name *gymnoſophiſts*; though Clemens, Porphyry, &c. make the *brachmans* only a branch of the gymnoſophiſts, whom they divide into two ſects, *Brachmanes*, and *Samanæi*.

There are ſome in the Indies who ſtill bear the name, and live in the ſame manner as the ancient *brachmans*: the Portugueſe call them *bramanes*, or *bramenes*; we uſually, bramins.

Some ſay, they derive their name from the patriarch Abraham, whom, in their language, they call *bachma*, or *brama*. Others deduce it from the name of their God, *Brachma*; which ſome again take to be the ſame with Abraham; whence Poſtel calls them *abrachmanes*. F. Thomaſin derives the word from the Hebrew *barach*, *to fly* or *eſcape*; becauſe the *brachmans* retire into the country, and live in deſarts. The ſame author gives us another derivation, viz. from the Hebrew *barach*, *benedicere*, *orare*, to *bleſs*, *pray*; becauſe this is their principal occupation.

Porphyry obſerves that the ancient *brachmans* ſucceeded into the order, by right of family; whereas the Samanæans were elected into it: the former therefore were all of the ſame family, the latter of various.

The *brachmans* were perfectly at liberty, paid no taxes, nor were under the command of any perſon: they lived on herbs, pulſe, and fruits; abſtaining from all animals, and thinking it an impiety to touch them. The greateſt part of the day and night they ſpent in ſinging hymns in honour of the deity; praying and faſting continually. The greateſt part of them lived in ſolitude, without marrying, or poſſeſſing any eſtates. There was nothing they appeared to wiſh for ſo earneſtly as death; looking on life as a burdenſome thing, and waiting with impatience for the ſeparation of their ſoul and body. This is the account Porphyry gives of them.

Kircher obſerves, that the *brachmans* held the opinion of Pythagoras, relating to the ſoul and its tranſmigration; and led a life in all reſpects agreeable to his: or rather, it was from the *brachmans*, that Pythagoras borrowed his opinions, his manner of living, &c.

The modern *brachmans* are the ſucceſſors of the ancient, and the prieſts or divines of the idolatrous Indians.

Rogers diſtinguiſhes ſix ſorts of them; the *Weiſtnowa*, the *Seivia*, the *Smaerta*, the *Schaerwaecka*, the *Paſenda*, and the *Tſchectea*.

Theſe are much converſant in aſtrology and aſtronomy.

They have ſo great a veneration for cows, that it is ſaid, they look on themſelves as bleſſed, if they can but die with the tail of one of them in their hand. They ſometimes make a proceſſion of four hundred leagues, drawing after them whole cities and towns; feeding the people, when ſtopped at the paſſages of rivers overflowed, in a manner which is ſaid to be miraculous; by giving them every thing they deſire, without making any proviſion.

Mr. Marſhal obſerves, that whenever they write any thing, they put a figure of 1 in the firſt place; to ſhew, as they ſay, that they acknowledge but ONE GOD. They account the world the body of God, the higheſt heavens his head, the fire his mouth, the air his breath, the water his ſeed, and the earth his legs and feet. They maintain a pre-exiſtent ſtate; and, from that, account for the tempers and manners of men in this: they alſo maintain the *metempſychoſis*, but in a groſſer ſenſe than Pythagoras; believing that the ſouls of ill men paſs into reptiles, inſects, and vegetables, for their puniſhment and purgation.—They compute the world to be about 3892850 years old; and ſeem to have ſome obſcure traditions of the Moſaic paradiſe, Adam, Eve, and the deluge. They have alſo a notion of God's being incarnate, and living ſome time among men.

Their religion conſiſts in leading a pure life, waſhing away their ſins in the river Ganges, muttering over divers prayers, and doing ſtrange and incredible penances. —They burn their dead with much ceremony; and ſtrewing the aſhes on the place where the deceaſed firſt lay after his death, they judge from ſome figure or impreſſions pretended to be made on it, into what body his ſoul is gone; viz. if the impreſſion of the foot of a dog or ox, &c. appear, they give out he is tranſmigrated into one of thoſe animals; if there be no impreſſion, he is then gone to the ſtarry region.

They have alſo abundance of cabbaliſtic notions; v. gr. ſay they, if the numbers 28,35,2,7—6,3,32,31—34,29,8,1,—4,5,30,33, be written in the ſame order in the ſquares of a ſquare figure, and your enemy's name written under it, while you wear it, he cannot hurt you, &c. Phil. Tranſ. N° 268.

The *brachmans* of Indoſtan have a language peculiar to themſelves, which they call *hanſcbrit*; in which they have ſeveral ancient books, written, as is alledged, by their great prophet *Brahma*; as the *ſhaſtram*, which is their bible, and *porane*, a hiſtory which they eſteem ſacred, and pretend to have been dictated by God himſelf.

The *brachmans* of Siam and Coromandel maintain, that the earth will be deſtroyed by fire; and the former aſſert, that another will ariſe out of its aſhes, in which there ſhall be no ſea, nor any change of ſeaſons, but an eternal ſpring; and the latter maintain a plurality of worlds, which are alternately deſtroyed and renewed.

Robert de Nobili, an Italian Jeſuit, and one of the Indian miſſionaries, in the beginning of the ſeventeenth century, in order to ſecure ſucceſs to his miſſion, aſſumed the title and appearance of a *brachman*, and at length perſuaded the credulous people, that he was, in reality, a member of that venerable order. He forged a deed in the ancient Indian characters, ſhewing that the *brachmans* of Rome were older than thoſe of India, and that the Jeſuits of Rome deſcended, in a direct line, from the god *Brahma*. He farther declared on oath, that he derived his origin from this Indian deity. By this impoſture he proſelyted twelve eminent *brachmans*, whoſe influence proved very favourable to his miſſion. After his death, the Portugueſe Jeſuits carried on the impoſture with very conſiderable ſucceſs. Theſe miſſions, however, were ſuſpended and abandoned, in conſequence of a papal mandate, iſſued out in the year 1744, by Benedict XIV. who declared his diſapprobation of the artifices that had been uſed in the converſion of the Indians. Moſheim's Eccleſ. Hiſt. vol. iv. p. 211, &c. 8vo. edit.

The modern *brachmans* own a Supreme Being, who created *Brahma*, and gave him a power to create the world. They have alſo their ſubaltern deities, their pagods or temples, and idols, whom they fan to defend from flies, dancing before them, &c.

They hold a feaſt in honour of the ſun, conſidered as the ſource of heat and light, whereby all nature is fecundified.

BRACHURI, in *Zoology*, a name given by Dr. Hill to a genus of ANIMALCULES of the tailed kind.

Theſe *animalcules* are of a roundiſh figure, with tails ſhorter than their bodies; their ſkin is perfectly ſmooth, thin, and colourleſs. They are frequent in water-ponds, in pepper-water, and many other infuſions of vegetable ſubſtances.

BRACHYCOLON, from βραχυς, *ſhort*, and κολον, *member*, is when one member of a period is ſhorter than another.

In which ſenſe, the word ſtands contradiſtinguiſhed from *iſocolon*, where the members are equal, or conſiſt of the ſame number of ſyllables.

BRACHYGRAPHY (from βραχυς, *ſhort*, and γραφω, *ſcribo*, *I write*) denotes the art of ſhort-hand writing, called alſo TACHYGRAPHY.

BRACHYLOGY, from βραχυς and λογος, *expreſſion*, in *Rhetoric*, BREVITY, the expreſſing any thing in the moſt conciſe manner. This, ſo far as conſiſtent with perſpicuity, is a virtue and beauty of ſtyle; but if obſcurity be the conſequence, which is often the caſe, it becomes a blemiſh and inexcuſable defect.

Quintilian gives us an inſtance of *brachylogy* from Salluſt: *Mithridates corpore ingenti perinde armatus*; Mithridates, as it were, armed with the hugeneſs of his ſtature. Inſt. Or. lib. viii. cap. 3.

BRACHYPOTÆ, or Brachypoti, from βραχυς and ποτης, *drinker*, thoſe who drink but little and at long intervals.

The word ſometimes alſo ſignifies thoſe who drink ſeldom, though in greater quantity.

BRACHYPTERA, in *Zoology*, the name of a genus of birds, of the claſs of the hawks, diſtinguiſhed by the ſhortneſs of their wings.

The word is derived from βραχυς, *ſhort*, and πτερον, a *wing*.

The hawks of this genus have their wings ſo ſhort, that, when folded, they do not nearly reach to the end of the tail. Of this genus are the goſs-hawk, the ſparrow-hawk, and the three kinds of the butcher-bird. Willughby, Ornith. p. 36.

BRACHYPYRENIA, from βλαχυς and πυρην, *nucleus*, in *Natural Hiſtory*, a genus of foſſils of the claſs of SEPTARIÆ.

The *brachypyrenia* have a ſhort roundiſh *nucleus*, incloſed by and contained within the body of the maſs.

BRACHYTELOSTYLA, in *Natural Hiſtory*, the name of a genus of cryſtals.

The word is derived from βραχυς, *ſhort*, τελειος, *perfect*, and ϛυλος, a *column*, and expreſſes a perfect cryſtal, with a ſhort intermediate column.

The bodies of this genus are cryſtals compoſed of a ſhort hexangular column, terminated at each end by an hexangular pyramid. Of this genus there are ſix known ſpecies. Hill's Hiſt. Foſſils, p. 163.

BRACKET, in *Building*, denotes a kind of wooden ſtay, in form of a knee or ſhoulder, ſerving for the ſupport of ſhelves, &c. or a cramping iron, which ſerves as a ſtay in timber-work.

The word is alſo written *braget*, and ſeems derived from the Italian *brachetto*, a diminutive of *brachio, arm*.

MODILLIONS are a ſort of *brackets* to the *corona* of an entablature.

BRACKETS, in *Artillery*. See CHEEKS *of a Mortar*.

BRACKETS, in a ſhip, are ſmall knees uſually carved, and ſerving to ſupport the GALLERY.

The timbers which ſupport the gratings in the head, are alſo called *brackets*. See CHEEKS.

BRACTEA, a thin flake or ſpangle of any ſubſtance; it is uſed by many authors in the ſame ſenſe with the word *lamina*, but uſually in a ſort of diminutive ſenſe, expreſſing a ſmall plate.

BRACTEA, in *Botany*, denotes the floral leaf.

BRACTEARIA, in *Natural Hiſtory*, the name of a genus of foſſils, of the talc claſs; the characters of which are, that they are compoſed of ſmall plates in form of ſpangles, and each of theſe, naturally very thin or fiſſile, into very thin ones.

The word is derived from the Latin *bractea*, a *ſpangle*, or ſmall and thin glittering particle of any thing.

There are many ſpecies of this genus denominated from the variety of their colours; as MICA *aurea*, or gold-glimmer, and MICA *argentea*, ſilver-glimmer, cat's-ſilver, &c.

BRACTEATED, among *Antiquaries*, denotes a coin covered over with a thin plate, or leaf of ſome richer metal. See MEDAL.

Bracteated coins, or medals, *nummi bracteati*, are uſually made of iron, copper, or braſs, plated over, and edged with gold or ſilver-leaf, and then ſtamped with the hammer or mill.

Medaliſts find ſome *bracteated* pieces even among the truly ancient coins. The French call them *fourrées*.

BRADS, a ſlender kind of NAIL, uſed in building, having no ſpreading heads as other nails have.

Of theſe, ſome are called *joiners brads*, and are for hard wainſcots; others *batten-brads*, for ſoft wainſcot; and ſome *bill-brads*, or *quarter-heads*, uſed when a floor is laid in haſte, or for ſhallow joiſts ſubject to warp.

BRADYPEPSIA, from βραδυς, *ſlow*, and πεπτω, *I digeſt*, in the *Medical Writings of the Ancients*, the name of a diſtemper, which conſiſted in a ſlow, weak, and languid concoction of the food.

It is cauſed by a diminution of the force or heat of the ſtomach, or a defect in the gaſtric liquors. See DIGESTION.

BRADYPUS, in *Zoology*, the name given to a genus of quadrupeds of the order of Linnæus, called ANTHROPOMORPHA, otherwiſe termed *ignavus*, and in Engliſh the SLOTH. Its characters are, a mouth without fore-teeth, the canine teeth are obtuſe and longer than the grinders, of which there are five on each ſide; the body is covered with hair; the feet have no great toe, and are made for climbing; and only two paps upon the breaſt. Of this genus there are known two ſpecies; the one is called the American SLOTH, with a ſhort tail, and three toes on each foot; the other is named the Ceylon SLOTH, with only two toes to each foot, and no tail.

BRAG, a name given to a game at cards, from the nature of it; the principal ſtake being won by him who *brags* with moſt confidence and addreſs; i. e. who challenges the other gameſters to produce cards equal to his. In this game a pair of aces is the beſt *brag*, a pair of kings the next, and ſo on: and a pair of any ſort wins the ſtake from the moſt valuable ſingle card. The knave of clubs pairs with any other card in hand: but a hand of cards of leſs value in this game has ſometimes gained the ſtake from one of ſuperior value, by the confidence and art of *bragging*: the conteſt being given up on the part of the latter through fear of loſing. One ſtake is gained by the higheſt card, that is turned up in dealing, three cards being dealt round to each perſon and the laſt turned up; the higheſt card is the ace of diamonds: the other ſtake is won by the perſon, who firſt makes up the cards in his hands one and thirty; each dignified card paſſing for ten, and drawing from the pack. Each gameſter depoſits three ſtakes, one for each card.

BRAGGOT, a ſort of drink made in ſome parts of England, of malt, with honey, ſpices, and other ingredients.

It is derived from the old Britiſh word *brag*, which ſignifies *malt*, and *gots*, *a honey-comb*.

BRAILS *in a ſhip*, ſmall ropes uſed in furling the ſails acroſs. The *brails* are reeved through blocks, which are ſeized on either ſide the ties, a little diſtance off upon the yard, ſo that they come down before the ſails of a ſhip, and are faſtened at the ſkirt of the ſail to the crengles.—Their uſe is, when the ſail is furled acroſs, to hale up its bunt, that it may the more readily be taken up, or let fall. See *Tab. Ship. fig.* 5. *n.* 6.

Theſe *brails* belong only to the two courſes and the mizen-ſail.

They ſay, *hale up the brails*, or, which is all one, *brail up the ſails*; the meaning of which is, that the ſail is to be haled up, in order to be furled, or bound cloſe to the yard.

BRAIN, in a general ſenſe, is that large, ſoft, whitiſh maſs, incloſed in the *cranium*, or ſkull; wherein all the organs of ſenſe terminate, and the ſoul is ſuppoſed principally to reſide. See *Tab. Anat.* (*Oſteol.*) *fig.* 4. *lit. a. a. a. d. d. d. fig.* 5. *lit. a. a. b. b.*

The *brain* is encompaſſed with two *meninges*, or membranes, called *dura* and *pia mater*.

Its figure is the ſame with that of the bones that contain it, viz. roundiſh, oblong, and flat on the ſides: it is divided into three principal parts; viz. the *cerebrum*, or *brain ſtrictly ſo called*, the CEREBELLUM, and the MEDULLA OBLONGATA; to which ſome add a fourth, viz. the MEDULLA *ſpinalis*, which is a continuation of the latter.

BRAIN, in a more proper ſenſe, is that large globulous part which fills the fore and upper part of the ſkull.

It is divided by a duplicature of the *dura mater*, called from its figure *falx*, into two equal parts, called *right* and *left hemiſpheres*; though the figure of the *brain* be pretty far from a ſphere; and theſe parts are more like quarters of an oblong ſpheroid. It is alſo ſeparated from the CEREBELLUM by another duplicature of the ſame *dura mater*.

It conſiſts of two kinds of ſubſtance; the one cineritious, or aſh-coloured, ſoft and moiſt; which, being the exterior, is alſo called the *cortex*, or CORTICAL part of the *brain*: the thickneſs of this is about half an inch, though by reaſon of the ſinuſes and futures in the *brain* it appears more.—The other, or inner ſubſtance, is white, more ſolid, as well as more dry than the *cortex*, and is called the *marrow* or *medullary*, and ſometimes the *fibrous* part, in contradiſtinction to the other, which is alſo called the *glandulous* part.

The *cortex*, according to Malpighi, is formed from the minute branches of the carotid and vertebral arteries; which, being woven together in the *pia mater*, ſend from each point thereof, as from a baſis, little branches, which, being twiſted together into the form of a gland, incloſe the *medulla*, ordinarily to the thickneſs of half an inch; but in ſome places make deeper ſinuſes and furrows within it. Theſe branches make circumvolutions like the inteſtines; each of which may be reſolved into others, like, but leſs than the firſt.

This part, therefore, moſt authors take to be glandulous; or an aſſemblage of innumerable minute glands, contiguous to each other, deſtined for the ſecretion of animal ſpirits from the blood, brought hither by the carotids, &c. Theſe glandules, Malphigi obſerves, are of themſelves oval, but by their mutual compreſſure they become angular; and run waving within each other: ſeveral of theſe connected form others larger, and theſe again unite into others, from the aggregate whereof are formed tubes, of which the outer *cortex* is compoſed. Theſe little glands conſiſt of the branches of the arteries which bring the blood; of the veins ariſing at their extremities, which carry it back again; of ſecretory tubes ſecerning the animal ſpirits, and of excretory ducts for diſcharging them into the *medulla*: though theſe are too minute to have ever been ſeen.

The inner, or medullary part of the *brain*, conſiſts of a number of infinitely fine fibres, ariſing from the leaſt and minuteſt branches or filaments of the glands of the *cortex*;

cortex; as is diſtinctly ſeen in the CEREBELLUM, though ſcarce viſible in the *cerebrum:* theſe receive the fluid ſeparated and ſubtilized, from the glands of the *cortex*; and by means of the nerves, which are no more than productions of this part, diſtribute it all over the body. Authors here, however, are divided; the generality, with Malpighi, making the ſubſtance of the *cortex* glandulous, as above; others, with Ruyſch and Leewenhoeck, deny any thing like glands in it; and allow nothing but little *cryptæ*, or ſinks, opening laterally to the arteries; and thence receiving a juice already ſecerned from the blood, and tranſmitting it to the MEDULLA. This doctrine, it ſeems, is the reſult of anatomical injections, and microſcopical obſervations; but the other, appearing the moſt conſiſtent with the œconomy of nature in other things, is generally adhered to.

The *cortex* covers the whole medullary ſubſtance both of the *brain* and CEREBELLUM; ſo that wherever the cortical ſubſtance ends, there the medullary commences; and this in the appendices, ventricles, interſtices, and ſinuſes of the MEDULLA, as well as in the external ſurface. Something medullary, therefore, ariſes from every point of the *cortex*; at its firſt riſe, it muſt needs be exceedingly fine and ſlender: but, being joined with other parts of the ſame kind, it gradually thickens, and at length becoming ſenſible, conſtitutes the *medulla cerebri*, the *corpus calloſum*, the MEDULLA *oblongata*, and its *crura*, the *thalami* of the optic nerves, the MEDULLA *cerebelli*, and its production into the MEDULLA *oblongata*; which, with theſe additions, forms the *corpora pyramidalia* and *olivaria*, and is extended into the ſpinal marrow. And from the ſame medullary ſubſtance, both in the *cranium*, and in the caſe formed by the union of the *vertebræ*, ariſe all the nerves.

Though the primary *fibrillæ*, or filaments, when united, ſeem to form one compact body or maſs; yet Boerhaave ſhews, they are really diſtinct and ſeparate from each other: that thus ariſing from each part of the *cortex*, and tending, as it were, to the centre of the ſphere, they firſt form the *medulla*; that others, reflected hence and collected above, form the *corpus calloſum* and *fornix*; and below, form the *corpus calloſum* and legs, of the MEDULLA *oblongata*; that the like *fibrillæ*, ariſing from the CEREBELLUM, join with them: the reſult of which juncture is the MEDULLA *ſpinalis*. And laſtly, that the like *fibrillæ* ariſing from the *cortex*, continued within the cavities of the MEDULLA, join with them, and add freſh conſiſtence to them.

Hence we ſee the reaſon of the bulk, figure, and poſition of the *cortex* of the *brain*, as well as the uſe and neceſſity of the cavities called *ventricles* of the *brain:* of theſe ventricles there are four; one in each hemiſphere, ſeparated by a thin tranſparent ſubſtance, running all along from the FORNIX under the *corpus calloſum*, and diſtinguiſhed by the name of the *ſeptum lucidum:* theſe two are called the *lateral ventricles*.

The third is under the FORNIX, and called *rima:* the fourth between the CEREBELLUM and MEDULLA *oblongata*.

From the whole, it appears paſt doubt, that the fibres of the *brain* are exceedingly minute canals; that they receive an humour, infinitely the moſt ſubtile, fluid, and moveable, of any in the whole body; prepared and ſecreted by the artful ſtructure of the *cortex*, driven into theſe tubules by the force of the heart, and from every part hereof collected into the MEDULLA *oblongata*. And this is what ſome call *animal ſpirits*, others the *nervous juice*; the great inſtrument of ſenſation, muſcular motion, &c.

In the ſpace between the two hemiſpheres of the *brain*. under the *falx*, or rather under the longitudinal ſinus of the *dura mater*, is a white ſubſtance, of a texture more compact than the reſt of the *medulla* of the *brain*; and for that reaſon called *corpus calloſum*; which runs along the whole tract of the *falx*, and receives from each ſide the terminations of the MEDULLA, interſperſed between the ſeveral windings of the *cortex*, and ſuppoſed by ſome to be a kind of baſe or ſupport to it. The manner wherein this is formed is ſhewn above: we ſhall only add, that, on occaſion hereof, ſome authors, M. Aſtruc for inſtance, inſtead of two ſubſtances, viz. the CORTEX and MEDULLA, divide the *brain* into three; viz. the uppermoſt, or *cineritious*, which conſtitutes the *cortex*; the middle, which is whiter and denſer than the firſt, and therefore called the *callous*; and the loweſt or inmoſt, which, being intermixed with *radii* or *ſtriæ* of the white and cineritious ſubſtance, he calls the *ſtriated* part: Aſtruc adds, that the fluid ſecreted in the *cortex* is conveyed into innumerable minute hollow medullary *fibrillæ*, of the ſame nature with the callous ſubſtance, and contiguous thereto. This middle, or callous part, he obſerves, is not diſtinguiſhed by any appearance of fibres, but is uniform, homogeneous, elaſtic, and not unlike the pith of the elder-tree: for which reaſon, he thinks, it may be probably conjectured to conſiſt of innumerable cells, communicating with each other, divided by the interpoſition of membranaceous, flexible, elaſtic, vibrative parietes or columns; which being flowed over by the ſpirits, and continually expoſed to the ſhakings thereof, conſtitute the fibres of the *brain*.

Now the ſecreted fluid flowing equally from each point of the cineritious ſubſtance into the callous, muſt equally fill and diſtend the cells thereof: and leſt any place ſhould want its ſhare, proviſion is made for a ſtrict communication; not only by the apertures of the cells into each other, but alſo by the ſtructure of the *brain*; the upper part communicating with the under, by the *ſeptum lucidum*; the lateral with the lateral, by the *lata commiſſura*; laſtly, the fore-parts with the hind-parts, by the *crura*, *brachia*, and roots of the *fornix*. Theſe cells, he continues, being filled, the ſpirits will proceed to the contiguous *ſtriæ* of the medullary ſubſtance; which, ariſing from the *cortex*, compoſe the ſtriated part of the *brain:* and theſe *ſtriæ* rendered narrower and ſlenderer, and paſſing without the ſurface of the *brain*, conſtitute the firſt principles of the nerves, &c.

The other parts of the *brain* are the FORNIX, a production of the MEDULLA: which, at its extremity next the CEREBELLUM, ſends out two proceſſes or legs, by whoſe juncture is formed a kind of arch, thence called *fornix*, which ſeparates the third ventricle from the two upper ones. At the bottom of the *fornix* are two holes, by which the third ventricle has a communication with the others; that before is called *vulva*, and that behind *anus*. The third ventricle, or *rima*, which is in the MEDULLA *oblongata*, has likewiſe two apertures; the one the orifice of the *infundibulum*, or funnel, which is a canal reaching to the *glandula pituitaria:* the other is a duct, whereby the third ventricle communicates with the fourth in the MEDULLA *oblongata*, under the CEREBELLUM. That fourth ventricle is in the form of a quill, whence it is ſometimes called *calamus ſcriptorius*.

In the lateral ventricles are found the *plexus choroides*, which is an aſſemblage of minute veins and arteries; and four eminences, the firſt the *corpora ſtriata*, the others the *thalami nervorum opticorum*.

At the entrance of the canal reaching from the third ventricle to the fourth, is ſituated the *pineal gland*; ſo called from the figure of a pine-apple, which it reſembles: this gland Des Cartes ſuppoſes to be the ſeat of the ſoul. Behind the pineal gland are four eminences; two upper and greater, called NATES; and two ſmaller and lower, called TESTES. See MEDULLA *oblongata*, to which all theſe parts properly belong.

The veſſels of the *brain* are nerves, arteries, and veins. By turning up the *brain*, the origin of the nerves proceeding from it is diſtinctly ſeen: theſe are in number ten pair, viz. the olfactory, optic, movers of the eyes, pathetic; the fifth pair, called *nervi innominati*, or *trigemini*, and ſixth pair, called alſo the *motores oculorum externi*, or *oculares externi*, the auditory nerves, PAR VAGUM, and the ninth pair. See NERVE.

The blood-veſſels of the *brain* are the two internal carotid, and the vertebral arteries. The firſt, piercing the *dura mater*, communicate with the cervicals, and proceeding thence ſend a branch to the *plexus choroides*; till arriving at the *pia mater*, and making ſeveral turns and circumvolutions thereon, they terminate, at laſt, in the little glands that conſtitute the *cortex*. The vertebral arteries, paſſing the *dura mater*, go along the under-ſide of the MEDULLA *oblongata*; till giving branches to the ſpinal arteries, they join in one branch called the cervical artery, which communicates with the *carotides* by two branches, as before. The veins of the *brain* do not run along by the ſides of the arteries, as in other parts of the body, but riſe from their extremities in the *cortex*; whence they diſcharge themſelves into the ſinus of the *dura mater*.

For the great bulk of the *brain*, this reaſon may be aſſigned; viz. that on account of the exceeding ſubtility and fineneſs of the animal ſpirits, and the ſlowneſs in which their ſecretion muſt be effected; together with the great quantity of them required in diſcharging the animal functions; there muſt of neceſſity be an infinite number of glands to ſeparate and prepare them. From the ſame principle, we ſee why the *brain* is much bigger in men than in other animals; and in other animals, why, *cæteris paribus*, it is generally biggeſt in thoſe which diſcover the greateſt ſhare of ſagacity, v. gr. in monkeys; becauſe a conſiderable ſtock of animal ſpirits is to be employed in the affairs of cogitation, memory, &c. Accordingly, anatomiſts obſerve, that in fools the *brain* is ſmaller (*cæteris paribus*) than in men of ſenſe: this ſome may account for, by ſuppoſing it the cauſe of the folly; a ſufficient ſtock of ſpirits being wanting to reaſon ſtrongly: and others from the œconomy of nature,

ture, which proportioned the ſtock of ſpirits to the expence that would be required.

From the texture, diſpoſition, and tone of the fibres of the *brain*, philoſophers ordinarily account for the phænomena of ſenſation and imagination. Dr. Aſtruc goes farther, and from the analogy between the fibres of the *brain*, and thoſe of muſical inſtruments, ſolves the phænomena of judgment and reaſoning, and the defects and perfections of both. He lays it down as an axiom, that every ſimple idea is produced by the oſcillation of one determinate fibre; and every compound idea from contemporary vibrations of ſeveral fibres: that the greater or leſs degree of evidence follows the greater or leſs force where the fibre oſcillates.

He takes occaſion to obſerve, that the fibres of the *brain*, from their natural analogy to thoſe of muſical inſtruments, may be perverted ſeveral ways; viz. by being rendered too dry or too moiſt, too ſtiff or too lax, &c. In a phrenſy, he thinks the fibres too dry, and too much diſtended by the heat of the blood, &c. In a *mania*, theſe fibres he thinks too rigid, as well as too dry and diſtended. In a lethargy, they are too much ſoftened by phlegm; in idiocy, or fooliſhneſs, they are ſometimes too ſoft, and ſometimes too hard. Laſtly, he thinks that in melancholy, by the repeated ſucceſſive vibrations which the attentive meditation of a thing induces, two or more fibres, which of themſelves exhibit diſſimilar and unequal ideas, are (the other parts remaining ſound) ſenſibly brought to an iſochroniſm: ſo that the ſoul, judging well in other reſpects, yet in this always makes a falſe judgment.

Dr. Hartley has likewiſe founded his theory on vibrations excited in the medullary ſubſtance of the *brain*, ſpinal marrow, and nerves. Obſervations on Man, &c. vol. i. See ASSOCIATION, and VIBRATION.

The generality make wit and genius to depend on the conformation, magnitude, and qualities of the *brain*. Des Cartes ſuppoſes the pineal gland, Vieuſſens the *centrum ovale*, to be the part of the *brain* where the ſoul more immediately reſides. Willis lodges common ſenſe in the *corpora ſtriata*, the imagination in the *corpus calloſum*, and the memory in the *cortical* ſubſtance. Dr. Hook endeavours to ſhew how all ideas may be diſpoſed and mechanically laid up in the *brain*, for the uſe of the MEMORY. Phil. Tranſ. Nº 67. Hook. Poſth. Works, p. 140.

We find great diverſities in reſpect of figure, ſtructure, bulk, &c. in the *brains* of different animals. The *brains* are divided into two parts, with an interval between, as is well known to mountebanks, who, in virtue thereof, ſometimes raiſe an opinion of their ſkill in the vulgar, by running a pin through the middle of a cock's head, without damage to the bird.

Through the whole bird kind, the cortical part of the *brain* is extremely over-proportioned to the medullary; ten times more in proportion than in men; add, that it is uſually alſo ſmooth, and without ſinuoſities. Dr. Willis, who diſſected a great variety of *brains*, obſerved a near reſemblance between the *brains* of men and quadrupeds, and between thoſe of birds and fiſhes: though M. Steno obſerves, that the *brains* of birds and fiſhes are not at all like thoſe of men. Winſlow.

The *brain* is ſubject to divers diſorders, as wounds, contuſions, depreſſions, conſtipations, inflammations, petrifactions, diſruptions, &c. Phil. Tranſ. Nº 228. Med. Eſſ. Edinb. tom. ii. p. 245. Hiſt. Acad. Scienc. an. 1703. 1710. 1722.

A watery *brain* appears to be the cauſe of the epilepſy; and an extremely dry or rigid one, of the phrenzy; and theſe have been found to be the ſtates of the *brain*, in diſſections of perſons affected with thoſe diſeaſes. Paracelſus even attributes leproſies, conſumptions, and jaundices, to diſorders of the *brain*. Hiſt. Ac. Sc. an. 1705, 1706. Caſt. Lex. Med. p. 159.

Bartholin ſpeaks of divers extraneous bodies found in the *brain*; particularly a point of a dart, an inch long, which remained there, without much inconvenience, fourteen years, and was at length expelled by ſuppuration at the *fauces*. Act. Med. Hafn. tom. ii. art. 132.

Anatomiſts, in their figure and deſcriptions of the *brain*, only repreſent the cavities which are ſeen upon ſeparating the hemiſpheres, and taking away the *corpus calloſum*, without obſerving that the *crura fornicis* ſink down, and then turn forwards on each ſide of the *medulla oblongata*, in cavities which are extended far forwards, under the commonly known anterior ventricles. In theſe inferior cavities, the *crura fornicis* are of a beautiful form, reſembling a white ſilk-worm, or ſea-horſe; on which account they were called *hippocampi* by Julius Cæſar Arantius, who is the only author that has given any deſcription of them, till lately Mr. Du Verney has revived them, by an exact deſcription and delineation. He obſerves likewiſe, that the *ſeptum lucidum* between the anterior ventricles, has a cavity between the two *lamellæ* of which it is compoſed, in which he has often found water; and that the internal ſide of the *ſeptum* is made rough, by a great many ſmall grains and *papillulæ*. Comm. Acad. Petrop. tom. iv. p. 130.

Some are of opinion, that the motion of the *brain* is owing to the air entering by the olfactory nerves into the ventricles of the *brain*; which air, rarefied by the heat, loſes its ſpring, and is expelled by the elaſtic contracting *dura mater*. Med. Eſſ. Edinb. vol. ii. p. 481.

The *brain* does not appear abſolutely neceſſary to animal life. We have ſeveral inſtances in authors, of children brought forth alive, and ſurviving their birth for ſome time, without any *brain*: and there are ſome anatomical inſtances, of animals ſurviving the loſs of their *brain*. To which may be added, many inſtances given by Mr. Boyle, not only of animals living a long time after the ſeparation of the head from the body, but even of the copulation and impregnation of ſome inſects under thoſe circumſtances: whence it appears, that the ſpinal marrow is ſufficient, on occaſion, for the buſineſs of ſenſation, motion, ſecretion of animal ſpirits, &c.

The *brain* of birds were a great delicacy among the ancients, who yet never touched thoſe of other animals. Some vainly preſcribe hares *brains*, as a remedy againſt difficult dentition. Among the Greeks, calves *brains* were uſed as a ſort of charm to excite love.

The accurate Mr. Lewenhoek examined, on ſeveral occaſions, the *brains* of different creatures by his microſcope; as that of the Indian hen, the ſheep, the ox, the ſparrow, &c. He could there always diſtinguiſh multitudes of veſſels ſo extremely ſmall, that if a globule of blood (a million whereof exceed not a grain of ſand in bigneſs) were divided into five hundred parts, thoſe parts would be too large to paſs into ſuch veſſels. He obſerved alſo, that theſe veſſels in the *brain* of a ſparrow, were as large as in that of an ox; and argues from thence, that there is really no other difference between the *brain* of a large animal and that of a ſmall one, but only that the one contains a much greater number of theſe veſſels than the others, and that the globules of the fluid paſſing through them, are in all animals of the ſame ſize.

In examining the *brain* of ſeveral ſorts of fowls, particularly the turkey, what is commonly called the cortical part of the *brain*, conſiſts of a very clear and tranſparent oily matter, which would be much better denoted by the term vitreous than cortical, but a great number of ſmall blood-veſſels are found ſpread through every part of this; and where a ſmall parcel of it is cut for a microſcopic examination, there flows a ſmall globule of a pellucid fluid from it. And Mr. Lewenhoek thinks, that, notwithſtanding the minuteneſs of theſe veſſels, there is a circulation carried on through them, and that of a red fluid; for wherever they lie three or four together, without any intervening matter, the congeries of them always appears red.

The medullary part of the *brain* of the ſame animal appears like a fiſher's net, between all the meſhes of which there is placed a very pliable ball-like ſubſtance, which changes its figure into a round or oval, according as the meſhes happen to be pulled or relaxed: theſe balls ſeemed to conſiſt of a clear and watery fluid, contained in a caſe or capſule of a membranous matter. Phil. Tranſ. Nº 168. p. 884.

See further concerning the *brain* in anatomical and medical writers, particularly Steno, Ridley, Willis, and Vieuſſens, who have treatiſes expreſs on this ſubject. Phil. Tranſ. Nº 215. Nº 51. p. 1034.

BRAIN, *fungus of the*. See FUNGUS.

BRAIN, *traces of the*. See TRACE.

BRAKE, in the *Country Language*, denotes a place where female FERN grows, and ſometimes the FERN itſelf.

BRAKE is alſo uſed for a farrier's inſtrument, otherwiſe called BARNACLES.

The word alſo occurs for a baker's treading-trough.

BRAKE, in the *Hempen Manufacture*, denotes a wooden toothed implement, wherewith to bruiſe and break the bun of hemp, and ſeparate it from the rind.

BRAKE *of a pump*, ſignifies the handle whereby it is wrought.

BRAMA, BREAM, in *Ichthyology*, a river-fiſh of the leather-mouthed kind, eſteemed a ſpecies of carp, and called by the generality of authors *cyprinus latus*.

It is a very broad and thin fiſh; the head is ſmall, the back of it broad and flat, and the back riſing from the head and tail toward the middle, like that of a hog.

BRAMA *Saxatilis*, in *Ichthyology*, the name of a ſea-fiſh, reſembling the common freſh-water BREAM in ſhape, but growing to three or four feet long. Its eyes are large; its ſnout of a pale red, as are alſo its belly-fins and its tail. It is caught among the rocks in deep water, and ſeldom is taken any other way than by hooks, and is a very well taſted fiſh. It is found in Surinam. This fiſh is a ſpecies of the SPARUS.

BRAMBAS, in *Natural Hiſtory*, a name given by the people of Guinea, and ſome other parts of Africa, to a peculiar ſpecies of lemon-tree. The leaves of this are of a deep green, and of an admirable fragrancy, when rubbed between the hands. The fruit is very ſmall, and has a remarkable thin ſkin. The juice is uſed in dying. Phil. Tranſ. Nº 108.

BRAMBLE, or **BRAMBLING**, in *Ornithology*, the common Engliſh name of the MONTIFRINGILLA, or *oroſpiza*, called in ſome places the mountain-finch; a ſmall bird, ſomewhat reſembling the chaffinch. Ray.

BRAMBLE-*buſh*, in *Botany*, a ſpecies of the *rubus*. See RASPBERRY-*buſh*.

BRAMBLE-*galls*. See GALLS *of the bramble*.

BRAMBLE-*net*, otherwiſe called *hallier*, is a net uſed by bird-catchers of ſeveral ſizes.

BRAMICIDE, the crime of killing a bramin, reputed in the Eaſt Indies one of the five moſt enormous ſins.

BRAMINS. See BRACHMANS.

BRAN, the ſkins or huſks of corn, eſpecially wheat, ground, ſeparated from the *farina* or flour, by a ſieve or boulter.

Of *wheat-bran* it is that ſtarch-makers make their ſtarch; which is nothing elſe but the *fæcula* remaining at the bottom of the veſſels, wherein the *bran* has been ſteeped in water.

Bran is held detergent, and, on that account, is of ſome medicinal uſe in gargariſms and glyſters. It is alſo a chief ingredient in the compoſition of cataplaſms. Some apply it hot againſt the pleuriſy; boiled, it purges ſcurf and dandriff, and cleanſes the hands in lieu of ſoap. Among the ancients, it was alſo uſed as an erotic, to excite love.

Dyers rank *bran* in the number of non-colouring drugs; becauſe it yields no colour of itſelf. It ſerves for the making of their four waters, uſed in preparing ſtuffs to take the dye.

This water is made by boiling wheaten *bran*, and into the decoction putting a little leaven.

BRANC *urſine*, in *Botany*. See BEAR'S-*breech*.

BRANCA, in *Middle Age Writers*, the paw, or extreme part of the foot of a wild beaſt, or bird of prey. Du-Cange.

BRANCA, or **BRANCHIA**, alſo denotes a right of lopping, or cutting off branches of trees in the foreſt for firing. Du-Cange.

BRANCH, in *Botany*, an arm of a tree, or a part which, ſprouting out from the trunk, helps to form the head, or crown thereof.

The word, according to Salmaſius, comes from the Latin *branca*; in the lower Latin, they ſaid *barga*. Others derive it from *brachium, an arm*; and others, from *branchia, the gills of fiſhes*.

The *branches* of trees, ſome have obſerved almoſt conſtantly to ſhoot from the trunk at an angle of 45 degrees: the reaſon is, that the whole ſpreading being generally confined within an angle of 90 degrees, as the moſt becoming and uſeful diſpoſition; that ſpace could not be well filled up any other way, than by forming all the interſections which the ſhoots and *branches* make, with angles of 45 degrees only.

According to M. Dodart, however, the *branches* generally ſprout out of the trunk horizontally, or at right angles with the trunk: but, in their aſcent, they affect perpendicularity as much as poſſible, though not in the ſame degree with trunks.

Branches are diſtinguiſhed into various kinds:

BRANCH, *wood*, according to Quintiny, is ſuch an one as, ſhooting out from a cut of the preceding year, is naturally of a conſiderable thickneſs.

BRANCH, *fruit*, is that which ſhoots out, of a moderate length and breadth, from the ſame cut, or pruning.—*Fruit-branches*, he adds, have large eyes, and are very near each other.

BRANCH, *half wood*, is that which, being too ſlender for a *wood-branch*, and too big for a *fruit-branch*, is cut off, at the length of two or three inches, to make it produce a better ſhoot, whether wood, or fruit.

BRANCHES, *ſpurious wood*, are ſuch as come contrary to the order of nature; or otherwiſe than from cuts of the preceding year; or which, coming on ſuch cuts, are big in the place where they ſhould be ſmall.

To underſtand this order of nature, it muſt be obſerved, 1. That *branches* ſhould never come, except on thoſe of the laſt cut; ſuch, therefore, as ſhoot from other parts, are ſpurious. 2. The order of the new *branches* is, if there be more than one, that the extreme *branch* be thicker and longer than that immediately under it; and this bigger and longer, again, than the third, &c Hence, if any be big where it ſhould be ſmall, it is called *ſpurious*.

There are, however, ſome exceptions: in trees that are vigorous, and yet bear a handſome figure, there cannot well be too many *fruit-branches*, provided they make no confuſion; but for *wood-branches*, there ſhould not ordinarily be above one ſuffered to grow, of the ſeveral which ſhoot from each cut of the preceding year. See PRUNING.

BRANCHES, *engrafting of*. See ENGRAFTING.

Branches of trees bear a near analogy to limbs of animals; and, in certain caſes, the amputation of them is found neceſſary. A. D. S. an. 1707, p. 366.

Some conſider *branches* as a ſort of roots in the air: in reality, they are only prolongations of the roots; but, being united in the trunk, are redivided in the *branches*. What ſhews the conformity between the two ſpecies of roots, is, that the ends of *branches* being ſet in the ground, while yet adhering to the mother-tree, they will take root, grow on their own bottom; and what is more, there are divers trees, which, if planted upſide down, the roots turn to *branches*, with leaves and fruit, and the *branches* to roots and fibres: but whether the *branches*, while ſuch, do the office of roots, and receive any fine kind of nutriment from the air, Mr. De la Hire, Mr. Brotherſon, and others, have aſſerted, is a queſtion not yet fully decided. Mr. Perrault ſuppoſes the *branches* to convey a ſap for the nouriſhment of the root, as the root does for the reſt of the plant. Phil. Tranſ. Nº 43, and Nº 187.

Branches do not ſpring out of the mere ſurface of the trunk, but are profoundly rooted therein, ſo as not only to penetrate the cortical, but alſo the woody ſubſtance, and even the pith.

Anciently, *branches* were carried in the hands at the proceſſions and ceremonies of the gods; whence the *thallophori*, or *branch*-bearers.

The Theſpians adored a *branch*. The olive-*branch* was the ſymbol or enſign of peace. The natives of the iſlands in the South ſeas uſe green boughs, &c. for the ſame purpoſe at this day.

BRANCH is alſo applied to the parts or ramifications of divers other bodies, which, in reſpect hereof, are conſidered as ſtems. Thus chemiſts ſpeak of the *branches* of their metalline vegetation, *branches* of the *arbor Dianæ*, *arbor Martis*, &c. Phil. Tranſ. Nº 286. Mem. Acad. Sc. 1692. 1710.

BRANCH, in *Anatomy*, denotes a diviſion of a vein, artery, or nerve. All the veins in the body are only *branches* of the *vena cava*.

BRANCH is alſo uſed in the *Military Art*, in ſpeaking of trenches, mines, and their ſeveral ducts, ways, returns, and the like, between one well and another. See GALLERY.

BRANCH is alſo uſed in ſpeaking of the veins in mines of gold, ſilver, or other metals, which divide like the veins in the body.

BRANCH, in *Genealogy*, is applied to the ſeveral lines or ſucceſſions ariſing out of the ſame ſtock or origin.

In which ſenſe, *branches* amount to much the ſame with cadets.

BRANCH alſo denotes a complex metalline kind of candleſtick, contrived for the reception of a number of candles. Theſe, in ancient writers, are called *phari*, *cantharæ*, JESSE; when made of glaſs, *luſtres*; the richer ſort, *girandoles*.

BRANCH *of the trenches*, in *Fortification*. See BOYAU.

BRANCH-*ſtand*, in *Falconry*, ſignifies to make a hawk leap from tree to tree, till the dog ſprings the partridge.

BRANCH, in *Scripture*, is an appellation peculiarly given to the Meſſiah, as being of the *branch* or houſe of David.

BRANCHES *of vaults*, are ſometimes uſed to denote the ARCHES of them.

BRANCHES *of arches*, denote ſeveral portions of arches ſpringing all from the ſame ſummer.

BRANCHES *of ogives*, in *Architecture*, the reins or arches of Gothic vaults; which traverſing from one angle to another, diagonal-wiſe, form a croſs between the other arches which make the ſides of the ſquare, whereof thoſe arches are diagonals.

BRANCHES *of a bridle*, in the *Manege*, are two crooked pieces of iron which ſupport the mouth-bit, the chain, and the curb; and which are faſtened on one ſide to the head-ſtall, on the other to the reins; ſerving to keep the horſe's head under command.

What way ſoever the *branches* of the bit incline, the horſe's mouth goes to the contrary. The duke of Newcaſtle is very particular on the head of *branches*; explaining their ſeveral kinds, and their effects, which are reducible to thoſe of a lever.—The *branch* is always to be accommodated to the deſign, either of bringing in, or raiſing a horſe's head, and to the neceſſary degree: accordingly, we have ſtrong and hardy *branches*, gentle *branches*, rude *branches*, &c.

With regard to their form and ſtructure, *branches* are either ſtrait, in form of a piſtol, for young horſes to form their mouth; or, after the conſtable of France's faſhion, for horſes that already carry the head well: others are in form of a gigot, or leg; others of a bent knee; others in the French faſhion, &c.

Theſe are laws in the *Manege:* 1. That the farther the *branch* is from the horſe's neck, the more effect it will have. 2. That ſhort *branches, cæteris paribus,* are ruder, and their effects more ſudden, than thoſe of longer. 3. That the *branch* is to be proportioned to the length of the horſe's neck.

That part of the *branch* of a bridle, whereby we judge of its effects, and which diſcovers its ſtrength or weakneſs, is called the *line of the banquet.*

A ſtrong and hardy *branch,* is that whoſe ſevil hole, at the lower end of it, is placed on the outſide of the line of the banquet.

A gentle *branch* is that, the ſevil-hole of which is ſet on the inſide of the ſaid line.

A rude and hardy *branch* will bring in a horſe's head, proportionably as it is more or leſs hardy; whereas a gentle *branch,* by diminiſhing the effect of the bit-mouth, makes a horſe more eaſily to bear the preſſure thereof, who before could hardly endure it.

BRANCHED *velvet.* See VELVET.

BRANCHER, among *Fowlers* and *Falconers,* denotes a young bird well fledged, which having quitted the neſt, is not yet in a condition to fly far, or ſhift for itſelf, but ſtill keeps in the buſhes and branches about its native dwelling, where it is fed by the dam.

The *branchers* of hawks are alſo called *ramage falcons;* thoſe of nightingales, *puſhers;* becauſe, as ſome ſay, they are thruſt out of the neſt by the old ones. Canary birds of the firſt year are called *branchers;* when juſt flown, and unable to feed themſelves, *puſhers.*

BRANCHERY, in the *Anatomy of Vegetables,* denotes the vaſcular parts of divers fruits, as apples, pears, plums, and berries.

In which ſenſe, the *branchery* ſtands contradiſtinguiſhed from the acetary, ſkin, pulp, &c.

The *branchery* of an apple is only the ramifications of the ligneous body through all the parts of the *parenchyma;* the greater branches being likewiſe, by the inoſculations of the leſſer, united together. Grew. Anat. of Plants, lib. i. cap. 6. § 2.

BRANCHIA, βραγχια, a name given, by the *Ancient Naturaliſts,* to the GILLS of fiſhes; which are parts compoſed of cartilages and membranes, in form of leaves; and ſerving inſtead of lungs to perſpire by.—See *Tab. Anat. (Splanch.) fig.* 14.

The *branchia,* Galen obſerves, are full of little *foramina,* big enough to admit air and vapours, but too fine to give paſſage to water. Pliny held, that fiſhes reſpired by their gills; but he obſerves, that Ariſtotle was of another opinion: to whom we may add, among the moderns, Dr. Needham.

The cetaceous fiſhes, as they have lungs, have none of theſe apertures of the *branchiæ;* and in all thoſe fiſhes that have them, the larger they are, the ſooner the fiſh dies, on being taken out of the water. See GILLS.

BRANCHIALE, in *Natural Hiſtory,* a name given by Mr. Lhuyd to a peculiar ſpecies of FUNGITÆ, which being of a deeply ſtriated texture, is ſuppoſed to reſemble the gills of a fiſh.

BRANCHIDÆ, in *Antiquity,* prieſts of Apollo ſerving in his temple at Didyma in Miletus; which was famous for its oracle.

The denomination is taken from *Branchus,* or *Branchides,* an epithet given to Apollo as worſhipped here; though on what account the title was given, is not agreed on.

In the time of the Perſian war, the *branchidæ* betrayed the temple and its oracle into the hands of the Perſians, who pillaged it. They tranſported themſelves into the fartheſt parts of Aſia, to be out of the reach of puniſhment from the Greeks; which yet they are ſaid to have met with from Alexander, who demoliſhed their city, and put all the inhabitants to the ſword. Strabo, lib. xiv. Potter. Arch. Græc. lib. ii. cap. 9.

BRANCHING, the *ramification* or *ſprouting* of the HORNS of deer, &c. which bears an analogy with the vegetation of plants. Phil. Tranſ. N° 227.

The HAIR at the ends is apt to *branch,* or ſplit, and divide into whole bruſhes, which are eaſily viſible by a microſcope.

BRANCHIOSTEGI, in *Ichthyology,* a term uſed to expreſs one of the general claſſes of fiſhes; the characters of which are, that the rays of the fins are of a bony ſubſtance; but theſe fiſh have no bones or *oſſicula* at the *branchiæ,* as the malacopterygious and acanthopterygious fiſhes all have.

The word is derived from βραγχια, *gills,* and οστεον, *a bone.*

BRANCHUS, βραγχος, in *Medicine,* a ſpecies of CATARRH, affecting chiefly the jaws, throat, and *aſpera arteria.* *Branchus* amounts to the ſame with what is called, by the Latins, RAUCEDO, *raucitas,* ſometimes alſo *ravis.* See HOARSENESS.

BRANCHUS, or *branchæ,* alſo denotes a kind of glandular tumor in the *fauces,* reſembling two almonds, which render the breathing and hawking difficult.

BRAND-*herring,* a kind of herring caught by the Dutch.

BRAND-*Sunday, Dimanche des Brandons,* in *French Eccleſiaſtical Writers,* denotes the firſt Sunday in Lent; which is thus called on account of an ancient practice in the Lyonnois, where the peaſants, in the night of this day, walked about their orchards, gardens, &c. with torches lighted, or fire-*brands* in their hands; in which plight they viſited every tree, and addreſſing themſelves to them one after another, threatened that if they did not bear fruit well the enſuing ſeaſon, they ſhould be cut down to the ground, and burnt. This is evidently a relict of paganiſm; the like of which was practiſed by the ancient idolaters in the month of February; hence called *Februarius, à februando.* Meneſtr. Hiſt. de Lyon. p. 279. Menag. Orig. p. 126; & Du-Cange Gloſſ. Lat. tom. i. p. 610.

BRANDARIS, a ſpecies of the *ſtrombus* in the order of *teſtacea.*

BRANDEUM, in *Eccleſiaſtical Writers,* a linen cloth or veil put over the tombs of the apoſtles St. Peter and St. Paul, and left there for ſome time; by which it is ſuppoſed to acquire a degree of ſanctity, ſo as to be worſhipped as a relic; and for that purpoſe frequently ſent by the pope as a preſent to ſome prince. Fleur. Hiſt. Eccl. lib. xxxv. p. 93. Du-Cange Gloſſ. Lat. tom. i. p. 609.

In this ſenſe, *brandeum* amounts to the ſame with what was otherwiſe called *ſanctuarium, ſudarium, orarium,* and *velum.*

The uſe of *brandea* was introduced as a means of diffuſing and propagating the virtues and influences of RELICS, without moving, or any way impairing the ſubſtance of them; the tranſlation of RELICS in early days being forbidden.

BRANDING *in the face,* or *hand,* denotes a puniſhment inflicted by law on various offences, by burning with a hot iron, after the offender hath been once admitted to benefit of clergy. Blackſtone's Comm. vol. iv. p. 360.

BRANDRITH, denotes a trevet or other iron ſtand, whereon to ſet a veſſel over the fire.

BRANDRITH, among *Builders,* denotes a fence or rail about the mouth of a well.

BRANDY properly denotes a proof-ſpirit, obtained by ſimple diſtillation from real wines, or fermented juices of grapes. The veſſels uſed herein, are uſually of copper; and diſtillers, to cool the liquor more readily, make the neck of the mattraſs, which is very long, and winding like a ſerpent, paſs through a veſſel of cold water.

Brandy differs from wine ſpirit, in that the former is drawn from the poorer and thinner ſorts of wines, the latter from the richer and fuller bodied wines.

Brandy alſo differs from ſpirit of wine, as the former is only what they call proof high, or half pure ſpirit, half phlegm; whereas ſpirit of wine is raiſed higher, or carried by rectification to a further degree of purity.

Brandy alſo differs from ſtrong waters, as the latter is a compound, whereof the former, or pure ſpirit of wine, is only one ingredient.

The Portugueze are lately coming into the way of making *brandy.* The Greek *brandies* are the worſt, though made of the beſt wines.

The too free and frequent uſe of *brandy* is attended with ill effects, as it attenuates the body, and impairs the ſtrength, and ſtupifies the brain. In perſons who have died hereof, the blood has been found thick and coagulated; the *pancreas* dried; the liver ſchirrhous, and almoſt petrified; the glands tumefied beyond their natural bulk, &c. But what ſhall we ſay to the Pariſian woman, who was burnt to aſhes with a fire only kindled from the *brandy* in her body? Conringius even attributes the degeneracy of the modern from the ancient Germans, to the prevalency of drinking this liquor. Phil. Tranſ. N° 97.

In the hot climates of America, they are ſaid to make clyſters of *brandy.* A perſon who had experienced the uſe of one of theſe fiery *enemata,* made of a pint of *brandy,* aſſures us, it not only made him dead drunk, but raving mad. Phil. Tranſ. N° 37.

Brandy is alſo applied, in a leſs proper ſenſe, to all ſpiritous inflammable liquors, drawn from vegetables by diſtillation. In which ſenſe *brandy* includes all ardent, or inflammable ſpirits, uſed in the way of beverage. Dr. Shaw adds a further limitation to *brandy* ſpirits, viz. that they be proof high, or conſiſt of equal quantities of water and alcohol. On which footing, ſpirits, either above or below proof, do not come under the appellation of *brandies.* But in the popular uſe this diſtinction is not obſerved.

Arac, rum, malt and melaſſes ſpirit, in this ſenſe, are *brandies*, though under another denomination.

In the iſland of Andros, they make *brandies* from the fruits of the arbutus and mulberry-trees.

A patent was ſome time ago obtained for making *brandy* from carrots and parſneps; the latter of which is ſaid to have nearly reſembled French *brandy*. Of late we meet with frequent advertiſements of raiſin-*brandy*, which, if really made of that fruit, is neareſt akin to wine-*brandy*.

Apple, or cider-*brandy*, is alſo praiſed by ſome.

Cider is found to yield an eighth part of good ſpirits, and if cloſe kept a year or two in a cool place, much more.

Brandy is alſo uſed to denote certain compound liquors, whereof *brandies* are the baſis. Such are raſpberry-*brandy*, cherry-*brandy*, gooſeberry-*brandy*, &c.

The French method of diſtilling *brandies* is the ſame with that practiſed by our diſtillers, in working from waſh or wines; only that the former throws a little of the natural lee into the ſtill along with the wine, which gives the ſpirit a flavour, on which a great part of its merit depends.

When *brandies* prove foul, ſeedy, or retain the taſte of certain weeds apt to grow among the vines, they draw them over again, in order to cleanſe them of that adventitious flavour: in which operation they leave out the faints, or rather change the receiver, as ſoon as the ſtream begins to run proof. Then mixing together all that run off before, they call it *trois cinque*, that is, *brandy* conſiſting of five parts alcohol, and three of phlegm; beyond which the French *bruleurs*, or common diſtillers, rarely go.

The yearly export of *brandies* from France is ſaid to amount to 25000 tons; an article of itſelf ſufficient to enrich a moderate country. While the duty on French *brandy* continued at 9*l.* the ton, the Engliſh alone took ten or eleven thouſand tons off their hands; but now that the duty is raiſed to 52*l.* the ton, the importation is greatly reduced, to the advantage of the Engliſh diſtillery, except that ſmuggling ſtill intervenes.

The colour of their *brandies* is acquired from the caſk, and the length of time they uſually lie in them, which is ſometimes twelve or eighteen months, and often two or three years; during which, it is no wonder if they acquire a yellow or browniſh caſt. Their lying thus long, as it were, in a ſtate of ſlow digeſtion, wonderfully takes off from that hot, acrid, and foul taſte, peculiar to all ſpirits, or *brandies*, newly diſtilled; and gives them a coolneſs and a ſoftneſs, not eaſily introduced by art. And on theſe properties are founded ſeveral methods of trying their goodneſs, or diſcovering whether they are debaſed or adulterated by the admixture of coarſer ſpirits. Phil. Tranſ. N° 391.

Brandies are rarely adulterated in France, where they have no cheaper ſpirits with which to debaſe them; and the like holds, in great meaſure, in favour of the Dutch, though otherwiſe ſuſpected to be great adulterators. The chief temptations for adulterating are in England, where the duties are high, and where there are various kinds of ſpirits in plenty to mix with them, as malt, melaſſes, cider, and ſugar ſpirits, with all which they are often ſophiſticated, and ſo dextrouſly, as frequently to eſcape all the ways of detection. *Brandy* may be imitated, by adding to very pure malt ſpirits, ſome dulcified ſpirit of nitre.

The chief uſe of *brandy*, is as a drink; eſpecially in the cold northern countries; among the negroes in Guinea, who ſell one another for a few bottles of *brandy*; and among the ſavages of Canada, and other parts of North America, who are extremely fond of it. It is of ſome uſe too in medicine; being ſaid to ſtrengthen the nerves: and in dying, when raiſed into rectified ſpirit of wine, being one of the dyers non-colouring drugs.

BRANDY, *to diſtil*, they fill the cucurbit half full of the liquor from which it is to be drawn; and raiſe it, with a little fire, till about one ſixth part be diſtilled, or till they perceive, that what falls into the receiver is not at all inflammable.

For this operation they uſe ſtoves built with bricks or ſtone, which are made either round or ſquare: when they uſe bricks, they bind them with a ſtrong fine clay, mixed with horſe dung or cow's hair.

Theſe ſtoves muſt always have two bottoms, the uppermoſt to put the fuel on, and the lowermoſt to receive the aſhes. They have alſo the precaution to contrive three or four vents round the copper, which they open or ſhut, as they would forward or retard the diſtillation For want of a ſtove, they ſometimes uſe an iron trivet to ſet the copper on, and only put wood under it: but this method is very defective; nor can good diſtillations ever be made, if the operator is not maſter of the fire, to manage it with judgment and dexterity, which cannot be done in this laſt method in the open air.

In order to make good *brandy*, there muſt be uſed a large copper cucurbit, to which the head muſt be properly adapted; and having filled it half full with wine, which muſt be neither ſour, nor vented, nor corrupted, the cucurbit muſt be covered with its head, which muſt be exactly luted to it with paper and paſte, or rather with a wet bladder folded ſeveral times. Then the cucurbit muſt be put into the ſtove, and the branch or neck through which the *brandy* is to diſtil, muſt be made to paſs through a tun with one bottom only, filled with freſh water; for which purpoſe the neck muſt be three or four feet long, compoſed of a long tube which muſt paſs obliquely through the tun, and winding again, muſt meet a tube which iſſues out of the head of the cucurbit: theſe two tubes entering one into the other, muſt alſo be luted together with paper and paſte, or a wet bladder as above, to prevent the evaporation of the ſpirits during diſtillation. Care muſt alſo be taken to keep upon the head of the cucurbit a wet cloth, to make the ſpirit condenſe. As ſoon as you obſerve that ſome drops begin to fall at the end of the long tube, you muſt ſuffer about fifty to fall down, after which a recipient muſt be adapted to that end of the tube, capable of receiving the *brandy* which is going to diſtil. The diſtillation muſt not be haſtened by too fierce a fire.

The liquor, thus diſtilled the firſt time, is called *brandy*; which ſpirit, purified by another, or ſeveral more diſtillations, is what we call SPIRIT *of wine rectified*.—The ſecond diſtillation is made in *balneo mariæ*, and in a glaſs cucurbit; and the liquor put therein is diſtilled to about one half the quantity; which half is further rectified, as long as the operator thinks fit.

To abridge theſe ſeveral diſtillations, which are long and troubleſome, they have invented a chemical inſtrument, whereby the rectification of ſpirit of wine is performed, at one ſingle diſtillation: the deſcription and figure of which inſtrument may be ſeen in Glaſer's Chemiſtry.

To try the goodneſs of rectified ſpirit of wine, it muſt be lighted into a blaze: if then it conſumes wholly, without leaving any impurity behind; or, which is ſurer ſtill, if after putting a little gunpowder in the bottom of the ſpirit, the gunpowder take fire when the ſpirit is conſumed; the liquor is good.

Thoſe who deal in *brandy* (we ſpeak only of that made with wine), chooſe it white, clear, of a good taſte, and ſuch as will bear the teſt, or proof; i. e. ſuch as in pouring into a glaſs, forms on the top of it a little white lather, which, as it diminiſhes, makes a circle, called by the French *brandy* merchants the *chapelet*, by the Engliſh the *bead*, or *bubble*; there being no *brandy* but that which is well dephlegmated, and which retains no ſuperfluous humidity, wherein the bead will be entirely formed. For various methods of aſcertaining the ſtrength and goodneſs of *brandy* and other ſpirits, ſee *Proof* SPIRITS.

Before we finiſh this article, we ſhall give an account of the manner of extracting *brandy* from the huſks or ſkins of grapes, after the preſſing; becauſe the benefits that ariſe from this diſtillation, deſerve ſome attention.

After the grapes have been preſſed, what remains in the preſs is coarſely ſeparated into ſmall particles with the hand, and afterward thrown into large tubs, where they preſs it very hard, mix a little water with it, and cover it very cloſely with clay: in that condition they leave it to ferment during four or five weeks, obſerving however to ſhut the crevices which might happen to open in the clay, to prevent the evaporation.

After that time they fill a very large copper half full with that mixture, cover it with its head, lute it, and diſtil the whole after the ſame manner as they do *brandy*. By this work they make a great advantage of a matter which they were uſed to caſt on a dunghill. If this *brandy* be not ſo palatable as that which is made of wine, it is excellent for making ſpirit of wine. Both theſe liquors are a conſiderable branch of trade.

The greateſt part of the *brandies* in uſe, and thoſe too the beſt, are prepared in France: of the French *brandies*, thoſe of Nantes and Poictou are the moſt eſteemed; as being of a better taſte, finer and ſtronger, and enduring the bubble-proof longer than any of the reſt: thoſe of Anjou, Touraine, Orleans, Bourdeaux, Rochelle, Cognac, &c. claim the ſecond place. They are chiefly ſent to Paris and Flanders by the river Loire.

Brandy, in *Law-language*, is denominated either ſingle or double, when it is under or above *proof*. By the ſeveral acts 12 Car. II. c. 23. c. 24. 4 and 5 W. c. 3. 4 Ann, c. 6. 6 Geo. II. c. 17. every gallon of ſpirituous liquors imported is charged exciſe as follows: ſingle *brandy*, ſpirits, or *aqua vitæ*, 4*s.* 8*d.* double *brandy*, ſpirits, or *aqua vitæ*, 8*s.* 8*d.* And by the 32 Geo. II. c. 10. an additional duty of 12*d.* in the pound, according to the value in the BOOK *of rates*, is laid on all foreign *brandy* and ſpirits, rum from the produce of the Britiſh ſugar plantations excepted. And by the 33 Geo. II.

c. 9. and 6 Geo. III. c. 47, a duty of 1*s.* 6*d.* on every gallon of ſingle *brandy*, &c. and of 3*s.* on every gallon of double *brandy*, &c.

Of *brandy*, both plain and rectified, are prepared various kinds of ſtrong liquors, with the addition of other ingredients, ſugars, ſpices, flowers, fruits, &c. which are afterwards clarified, by paſſing them through a ſtraining-bag, or filtering them through brown paper.—Such are cinnamon waters, aniſeed waters, fennel waters, celery waters, citron waters, &c. A great part of theſe are brought from Montpelier; where they are ſuppoſed to be better prepared than any where elſe. Savar. Dict. Commerce.

Brandy, *Cherry.* See Cherry.

BRANK, the ſame with *buck-wheat.*

BRANLIN, an Engliſh name for a ſpecies of fiſh of the ſalmon kind, called alſo in ſome places *fingery*.

They obtained this laſt name from ſome ſingular marks they have, which are five or ſix tranſverſe black ſtreaks upon each ſide, appearing as if made by the impreſſion of ſo many fingers, and each marked with a ſingle red ſpot. The tail of this fiſh is forked like that of the common ſalmon, and it is ſuppoſed they are all males; they ſeem to impregnate the ſpawn of the common ſalmon, and are found in waters of ſo rapid a current, that ſcarce any other fiſh could live in them. They never grow to any great ſize. Willughby, Hiſt. Piſc. p. 193.

BRASEM, in *Zoology*, a name by which ſome have called an American fiſh of the Smaris kind, more commonly known among authors by its Braſilian name of *acaropeba*.

BRASIDIA, in *Antiquity*, anniverſary feaſts held at Sparta in honour of Braſidas, the ſon of Tellus, famous for his great atchievements in favour of that ſtate.

The *Braſidia* were celebrated with ſacrifices and games, at which none were allowed to contend but free-born Spartans. To be abſent from theſe ſolemnities, is ſaid by ſome to have been held criminal, and puniſhed with fines. Meurſ. Græc. Ferial. Potter. Arch. Græc. lib. ii. cap. 20.

BRASIL, and **BRAZILETTO**. See Brazil, and Cæsalpinia.

BRASMA, in the *Medical Writings of the Ancients*, a name given by Dioſcorides and others to a light, empty, and good for nothing kind of black pepper. This was no peculiar ſpecies of pepper, but, as John Bauhine has well obſerved, it was the ſame with the pepper we now frequently meet with, which has decayed upon the plant. Dioſc. lib. ii. cap. 189.

BRASS, a factitious metal, compoſed of copper fuſed with *lapis calaminaris*, which gives it a hardneſs, and yellowneſs. The manner of making *braſs* is ſaid to have been kept a ſecret in Germany for many ages.—The method of preparation among us is as follows. The *lapis* Calaminaris being calcined, and ground as fine as flour, is mixed with a third or fourth part of ground charcoal; and incorporated, by means of water, into a maſs. To this compoſition of calamine and coal, ſome manufacturers add common ſalt, by which the proceſs of making braſs is ſaid to be haſtened: thus prepared, about ſeven pounds of the calamine is put into a melting-pot of about a gallon; and over it, about five pounds of copper, either in plates or grains, which is let down into a *wind*-Furnace eight feet deep, remaining there about eleven hours; in which time it is converted into *braſs*.—After melting, it is caſt into plates, or lumps: forty-five pounds of crude calamine produce thirty pounds burnt, or calcined; and ſixty pounds of copper make, with calamine, an hundred pounds of *braſs*.

The proportion of calamine, and the increaſe which the copper receives from it, are different in different works; and hence ariſes the deeper or paler colour of *braſs*. The quantity of *braſs* obtained by the proceſs for making it, has been conſiderably augmented ſince the introduction of the method now commonly practiſed, of uſing granulated copper. See Granulation.

The finer and more malleable kinds of *braſs* are made of the pureſt calamine and copper, by cementing the *braſs* a ſecond time with calamine and charcoal, and ſometimes adding to it old *braſs*, by which the new is ſaid to be meliorated.

The word *braſs* ſeems to have been formed from *bracium*, a cant term among alchemiſts for *copper*.

They ſometimes uſe *braſs-ſhruff* inſtead of copper; but that is not always to be procured in quantities ſufficient; being no more than a collection of pieces of old *braſs*.

Braſs may be cleanſed, firſt, by rubbing it with a cloth dipped in equal quantities of *aqua fortis* and common water; then with an oily cloth, and laſtly with a dry one dipped in *lapis calaminaris*.

The beſt *braſs* guns are not made of pure copper and calamine alone; but it is neceſſary to add coarſer metals, to make it run cloſe and ſounder; ſuch as lead, and pot-metal. The beſt proportion for gun-metal, it is ſaid, is, for eleven or twelve thouſand weight of metal, to uſe ten thouſand pounds of copper, nine hundred pounds of tin, and ſix hundred pounds of *braſs*; but the proportion is variable, according to the quality and goodneſs of the copper.

Braſs is ſomewhat lighter, harder, and more ſonorous than pure copper. It melts more eaſily, and does not ſcorify ſo ſoon in a moderate red heat. It is ductile only whilſt cold; heated a little, it cracks; and ignited, it falls in pieces under the hammer. This imperfection it derives from the zinc of the calamine; pure copper being malleable when hot, as well as when cold. The beautiful colour of *braſs*, its hardneſs, its malleability, its fuſibility, and its quality of being leſs ſubject to ruſt or verdigris than copper, render it fit for the fabrication of many utenſils.

Braſs is tinged of a gold colour, firſt, by burning, then diſſolving it in *aqua fortis*, and, laſtly, reducing it to its metalline ſtate. It may be whitened by heating it red hot, and quenching it in water diſtilled from *ſal ammoniac*, and egg-ſhells. It is ſilvered, or coloured ſuperficially white, by rubbing it with balls made of ſilver diſſolved in *aqua fortis*, with powder of white tartar, ſufficient to abſorb all the moiſture thereof.

Brass, in *Antiquity*. See Æs.

Brass, in a more extenſive ſenſe, includes copper, and all the mixtures or alloys of copper with other minerals. In which ſenſe, *braſs* amounts nearly to the ſame with the Roman æs, and the French *airain*.

Brass, in the *Glaſs Trade*.—Thrice calcined *braſs* is a preparation which ſerves the glaſs-men to give many very beautiful colours to their metal. The manner of preparing it is this: place thin plates of *braſs* on tiles on the leet of the furnace near the occhio; let it ſtand to be calcined there for four days, and it will become a black powder ſticking together in lumps. Powder this, and ſift it fine, and recalcine it four or five days more; it will not then ſtick together, but remain a looſe powder, of a ruſſet colour. This is to be calcined a third time, in the ſame manner; but great care muſt be taken, in the third calcination, that it be not over-done, nor under-done; the way to be certain of making it right, is to try it ſeveral times in glaſs while melting. If it makes the glaſs, when well purified, to ſwell, boil, and riſe, it is properly calcined; if not, it requires longer time. This makes, according to the different proportions in which it is uſed, a ſea green, an emerald green, or a turquoiſe colour.

Braſs, by a long calcination alone, and without any mixture, affords a fine blue or green colour for glaſs; but they have a method of calcining it alſo with powdered brimſtone, ſo as to make it afford a red, a yellow, or a chalcedony colour, according to the quantity, and other variations in the uſing it. The method of making the calcination is this: cut thin plates of *braſs* into ſmall pieces with ſhears, and lay them *ſtratum ſuper ſtratum*, with alternate beds of powdered ſulphur, in a crucible; calcine this for twenty-four hours in a ſtrong fire, then powder and ſift the whole; and, finally, expoſe this powder upon tiles, for twelve days, to a reverberating furnace; at the end of this time, powder it fine, and keep it for uſe.

The glaſs-makers have alſo a method of procuring a red powder from *braſs*, by a more ſimple calcination, which ſerves them for many colours. The method of preparing it is this: they put ſmall and thin plates of *braſs* into the arches of the glaſs-furnaces, and leave them there till they are ſufficiently calcined, which the heat in that place, not being enough to melt them, does in great perfection. The calcined matter, powdered, is of a duſky red, and requires no farther preparation. Neri's Art of Glaſs.

Brass-*lumps*, in *Mineralogy*, a common name given by the miners and diggers of coal, &c. to the globular pyrites. This ſtone, when kept in the air, often ſends forth its efflorescences of ſalt, in form of ſmall and ſlender fibres, perfectly tranſparent, and ſometimes near an inch long. The place where theſe ſtones are expoſed to the air, will greatly alter the figures and colours of their efflorescences; if they are laid in a cellar, the ſhoots will be ſhorter, and green, like the common copperas; and if laid in the way of the ſunſhine, they will be white and duſty. Both are the ſame ſalt, which is true green vitriol or copperas, and both will, in the ſame manner, turn a decoction of galls into ink. The white ſalt is only the green powdered and calcined by the ſun's heat. The figure of the fibres of theſe efflorescences is not eaſy to be determined; ſometimes they ſeem round, ſometimes angular. Theſe, however, are the natural figures of the ſalts of theſe ſtones; and the other ſhoots into which they form themſelves after ſolution, and bringing them together in a body by water, are rather their accidental forms, though, under a like courſe of accidents, they generally appear the ſame. Phil. Tranſ. N° 110.

Brass-*wire*. See Wire.

BRASSATELLA, Brassadella, or Brassidella, in *Botany*, a name given by many authors to the plant more uſually known by that of OPHIOGLOSSUM, or ADDER'*s tongue*.

BRASSE. Seee Pearch.

BRASSICA, in *Botany*, the cabbage; a genus of the *tetradynamia ſiliquoſa* claſs of plants, the characters of which are theſe: the flower is croſs-ſhaped, having four petals, and four oval nectarious glands. It hath ſix ſtamina, which are erect, two of which are oppoſite, and the other four are longer. It hath a taper germen, of the length of the ſtamina, which afterward becomes a long taper pod depreſſed on each ſide, and is terminated by the apex of the intermediate partition, which divides it into two cells filled with round ſeeds. See Broccoli, Cabbage, Cauliflower, Savoy, &c.

BRASSIDELIC *art*, a term uſed by Paracelſus, to denote a method of curing wounds by the application of the herb *braſſidella*, or *ophiogloſſum*, on the freſh wound.

BRAVA *Pareira*. See Pareira *brava*.

BRAURONIA, in *Antiquity*, a feaſt held every fifth year in honour of Diana, ſurnamed *Brauronia*, from *Brauron*, a village near Athens, where the famous ſtatue of that goddeſs, brought from Scythia Taurica, was preſerved.

The ceremony of the *Brauronia* was managed by ten men, from their office called Ιεροποιοι; the victim offered was a goat, and it was cuſtomary for certain men to ſing one of Homer's Iliads, during the ſervice: other miniſters at the ſolemnity were young virgins, from five to ten years of age, habited in yellow, and conſecrated to Diana, under the denomination of Αρκτοι. Potter. Arch. Græc. lib. ii. cap. 20.

BRAWN, in the *Culinary Art*, ſignifies the fleſh of a boar, boned, rolled up, or collared, boiled, and, laſtly, pickled, for the winter's uſe.

Brawn is made only of the flitches, without the legs; the oldeſt boars are choſen for this uſe; it being a rule that the older the boar, the more horney the *brawn*.

There is alſo *brawn* of pig, which is made by ſcalding, drawing, and boning the beaſt whole, except the head; then cutting it in two collars, ſoaking it in brine, ſeaſoning, rolling, putting it into a cloth, binding it up, boiling it, and, when boiled, hooping it up in a frame.

BRAZED, in *Heraldry*, is uſed in ſpeaking of three cheverons claſping or folding each other.

The word is doubtleſs formed by corruption from the French word *bras*, *arm*.

BRAZEN *age*, is uſed by the poets to expreſs the third AGE of the world.

Brazen *diſh*, among *Miners*, is the ſtandard by which the other diſhes are gauged, and is kept in the king's hall.

BRAZIER, an artificer who makes and ſells pans, pots, kettles, and other kitchen utenſils and braſs ware.

Itinerant *braziers*, who go about with their tools and knapſacks, are called *tinkers*; by the French, *braziers of the whiſtle*, *chauderonniers au ſifflet*.

BRAZIL, or Brasil, an American wood, commonly ſuppoſed to have been thus denominated, becauſe firſt brought from Brazil: though Huet ſhews, it had been known by that name many years before the diſcovery of that country. Vide Huetiana, p. 268.

It is denominated variouſly, according to the places whence it is brought. Thus, we have *brazil* from Fernambuc, *brazil* of Japon, of Lamon, of St. Martha; and, laſtly, *braziletto*, or Jamaica wood, brought from the Antilles.

The *brazil* tree ordinarily grows in dry barren places, and in the middle of rocks; it is very thick and large, uſually crooked, and knotty: its flowers, which are of a beautiful red, exhale a very agreeable ſmell, which ſtrengthens the brain. Though the tree be very thick, it is covered with ſo groſs a bark, that when the ſavages have taken it off the wood, or trunk, which before was the thickneſs of a man, it is ſcarce left equal to that of his leg.

Brazil wood is very heavy and dry; it crackles much in the fire, and ſcarce raiſes any ſmoke, by reaſon of its extreme dryneſs. None of the ſeveral kinds have any pith, except that of Japon: that of Fernambuc is eſteemed the beſt. It muſt be choſen in thick pieces, cloſe, ſound, without any bark on it; and ſuch as, upon ſplitting, from pale becomes reddiſh; and, when chewed, has a ſaccharine taſte.—It is much uſed in turned works, and takes a good poliſh; but its chief uſe is in dying, where it ſerves for a red colour: it is a ſpurious colour, however, which it gives; and eaſily evaporates, and fades: nor is the wood to be uſed without alum and tartar. Red ink is made of it, boiled in beer, wine, or vinegar, and the colour fixed with alum.

Hellot has given a remarkable proceſs, by which both the beauty and permanency of the dye are improved. He likewiſe directs to fix the colour of *brazil* by aſtringents; for this purpoſe the ſtale decoction of *brazil* is diluted with twice its quantity of water; to which are added, for every pound of cloth, about one ounce of powdered galls, and half an ounce of gum Arabic. The cloth, prepared with alum and tartar, and kept moiſt for fifteen days, is boiled in this liquor for an hour or two, as the colour is wanted lighter or deeper, and ſuffered thoroughly to cool before it is waſhed. Dr. Lewis's edit. 4to. of Neumann's Works, p. 136.

From the *brazil* of Fernambuc is drawn a kind of carmine, by means of acids: there is alſo a liquid lacca made of it, for miniature.

Carnation is dyed with *brazil*, and violets are raiſed with *brazil*. Acids turn *brazil* yellow, but, by adding an alkali, it becomes purple; ſo that if we put lemon juice, or ſpirit of vinegar, in a decoction of *brazil* wood, it becomes yellow, and, if we add oil of tartar, violet.

Brazil wood differs very obviouſly from the SAUNDERS *wood*; the former gives out its red colour to water, the latter gives no red tinge to any aqueous liquor. Neumann.

Brazil wood is of ſome uſe in medicine; being reputed a ſpecies of the SAUNDERS, and poſſeſſed of the ſame phyſical virtues, though rarely preſcribed.

BRAZING, the ſoldering or joining of two pieces of iron by means of thin plates of braſs, melted between the two pieces to be joined.

If the work be very fine, as when the two leaves of broken ſaws are to be joined, it is to be covered with beaten borax, moiſtened with water, that it may incorporate with the braſs-duſt which is here added; and the piece is expoſed to the fire without touching the coals, till the braſs be obſerved to run. To *braze* with a ſtill greater degree of nicety, they uſe a ſolder made of braſs, with a tenth part of tin; or another, one third braſs, and two thirds ſilver; or borax and roſin: obſerving, in all theſe ways of *brazing*, that the pieces be joined cloſe throughout; the ſolder only holding in thoſe places that touch.

The method of *brazing*, among ſmiths, farriers, &c. is, by beating the two pieces, when hot, over one another: this is more properly called *welding*.

BREACH, in a general ſenſe, denotes a break or rupture in ſome part of a fence or incloſure, whether owing to time or violence.

The word is formed from the French *breche*, which ſignifies the ſame; formed of the German *brechen*, *to break*.

Inundations, or overflowings of lands, are frequently owing to *breaches* in the dikes, or ſea-banks. Dagenham *breach* is famous; it was made in 1707, by a failure of the Thames wall, in a very high tide. The force wherewith it burſt in upon the neighbouring level, tore up a large channel or paſſage for water an hundred yards wide, and in ſome places twenty feet deep, by which a multitude of ſubterranean trees, which had been buried many ages before, were laid bare. Phil. Tranſ. N° 335. p. 478.

Breach, in *Fortification*, is a hole, gap, or aperture, made in any part of the works of a town, either by playing cannon, or ſpringing mines; in order to ſtorm the place, or take it by aſſault.

They ſay, make good the *breach*; fortify the *breach*; make a lodgment on the *breach*: to clear the *breach*, is to remove the ruins, that it may be the better defended.

A practicable *breach*, is that where the men may mount, and make a lodgment.—A *breach* ought to be fifteen or twenty fathoms wide.—The aſſailants make their way to it, by covering themſelves with gabions, earth-bags, &c.

When a *breach* in the rampart is practicable, the governor uſually capitulates, to prevent the effects of a ſtorm.

Before they mount the *breach*, they frequently widen or enlarge it with fourneaux, and render the acceſs to it practicable, even for cannon, which it is ſometimes neceſſary to plant on the *breach*, in order to ruin the enemies retrenchments on the gorge and epaules of the baſtions.

Breach *of cloſe*, in *Law*. See Close.

Breach, *to batter in*, *battre en brêche*. See Batter.

Breach, *mounting the*. See Mounting.

BREAD ordinarily is made of the flour or meal of ſome farinaceous vegetable, ground, and kneaded with water and yeaſt.

Bread is uſually made of the ſeeds, ſometimes alſo of the roots, and even of the piths of plants. The Greeks attribute the invention of *bread* to Ceres, the Egyptians to Iſis, others to Menes. The firſt *bread* is ſuppoſed to have been made of the plant *lotus*. The poor Tartars, near

Sherazoul, ſtill live upon *acorn-bread.* Phil. Tranſ. Nº 300. and Nº 138. p. 2033, and 943.

In the iſlands of Banda and Amboyna, they make a kind of *bread* called *ſaegem*, or *ſagoe*, of the pith of a farinaceous tree, whoſe trunk is the thickneſs of a man's thigh, ten foot high, and having a round head a-top like a cabbage; in the middle whereof is a white mealy ſubſtance, which being kneaded with water, fermented and baked on the coals, ſerves the poorer ſort for *bread.* Phil. Tranſ. Nº 26. p. 485.

In the Caribbee iſlands, they make *bread* of the root of a poiſonous plant called *manioc*; probably the ſame with the CASSADA *bread*, which is made of the root of the *yucca Mexicana.* Phil. Tranſ. Nº 33. p. 635. and Nº 3,1. p. 2434.

In Benzoni's time, all the ſhips bound from Spain to Mexico, when they returned, were victualled with CASSADA *bread*, inſtead of biſcuit.

To the claſs of *breads* made of roots may alſo be added *potatoe-bread*, frequent in Ireland, and *turnep-bread*, uſed in ſome parts of England. It is made by boiling the roots, and expreſſing the juice, till they become dry, then beating them in a mortar, and adding wheat-flour, aniſeeds, and yeaſt, moulding up the dough in the uſual form, and baking it. It looks and taſtes like other *bread*, and is uſed by ſome againſt conſumptions. Phil. Tranſ. Nº 205. p. 970.

Among us, *bread* is chiefly divided into *white*, *wheaten*, and *houſhold*; differing only in degrees of purity. In the firſt, all the bran is ſeparated; in the ſecond, only the coarſer; in the third, none at all: ſo that *fine bread* is made only of flour; *wheaten bread*, of flour, with a mixture of the finer bran; and *houſhold*, of the whole ſubſtance of the grain, without taking out either the coarſe bran or fine flour. Stat. 8 Ann. cap. 18.

We alſo meet with *ſymnel bread*, manchet or roll *bread*, and French *bread*; which are only ſo many denominations of the fineſt or whiteſt *bread*, made of the pureſt flour; except that in roll *bread* there is an addition of milk, and, in French *bread*, of eggs and butter alſo. To which may be added, *ginger-bread*, made of white *bread*, with almonds, liquorice, aniſeed, roſe-water, and ſugar; and *maſlin-bread*, *panis mixtus*, made of wheat and rye, or ſometimes of wheat and barley.

The proceſs of making houſhold *bread* among us, is thus; to a peck of meal they add an handful of ſalt, a pint of yeaſt, and three quarts of water, cold in ſummer, hot in winter, and temperate between the two; the whole being kneaded in a bowl or trough by the fire in winter, from it in ſummer, will riſe in about an hour; they then mould it into loaves, and put it into an oven to bake.

For unleavened *bread*, part of the flour intended for it, being made into dough with warm water and a little ſalt, is laid in the reſt of the flour an hour or more, in which time it riſes to three times the bulk; then they mix and knead the whole with more water, till it be brought into a ſtiff dough; which being formed into loaves, is baked in the oven; though the more uſual way is to take a piece of dough kneaded, and leave it in the tub till next time, when they break it ſmall, and mix it with the meal, adding ſome yeaſt. Hought. Collect. tom. i. Nº 90. p. 241.

For French *bread*, they take half a buſhel of fine flour, ten eggs, and a pound and an half of freſh butter, into which they put as much yeaſt, with a manchet; and tempering the whole maſs with new milk, pretty hot, let it lie half an hour to riſe; which done, they make it into loaves or rolls, and waſh it over with an egg beaten with milk: care is taken, the oven be not too hot.

In Lancaſhire, and ſeveral other northern counties of England, the people have ſeveral ſorts of *oaten bread*; as, 1. The *bannock*, which is an oat-cake, kneaded only with water, and baked in the embers. 2. *Clap-bread*, which is made into thin hard cakes. 3. *Bitchineſs bread*, which is made of thin batter, and formed into thin ſoft oat-cakes. 4. *Riddle-cakes*, which are thick and ſour, and very little different from the band-hover *bread*, which has but little leaven, and kneaded ſtiff; and, 5. *Jannock*, which is oaten *bread* made up into loaves.

In the ſtatute of aſſize of *bread* and ale, 51 Hen. III. mention is made of *waſtel-bread*, *cocket-bread*, and *bread* of *treet*; which anſwers to the three ſorts of *bread* now in uſe, called *white*, *wheaten*, and *houſhold-bread.*

In religious houſes, they heretofore diſtinguiſhed *bread* by the names, *eſquires bread*, *monks bread*, *boys bread*, and *ſervants bread.*

A like diſtribution obtained in the houſholds of nobles and princes; where, however, we find ſome other denominations, as *meſſengers bread*, that given to meſſengers, as a reward of their labour; *court bread*, that allowed by the lord for the maintenance of his houſhold; *eleemoſynary bread*, that diſtributed to the poor in the way of alms. Du-Cange Gloſſ. Lat. tom. iv.

The quantity of *bread* allowed a ſoldier for his day's ſubſiſtence is called a RATION.

For armies the *bread* is either baked in the park of proviſions in the camp, or in the town neareſt the army; for the conveniency of ovens, an army ought always to have at leaſt four days *bread* before-hand. In ſome caſes, the diſtance of the places, from whence *bread* is to be had, or the army's march from one country to another, obliges the general to diſtribute *bread* for ſix or even for eight days; a thing never done without abſolute neceſſity, by reaſon of the abuſe which ſome ſoldiers make of it, who ſell their *bread* without regard to future ſubſiſtence. For long marches through an enemy's country, they ſometimes, inſtead of *bread*, make BISKET.

Bread, *horſe*, is made of wheat, oats, and beans; to which ſometimes are added aniſeed, gentian, liquorice, fenugreek, eggs, and ale; and ſometimes rye and white wine are uſed.

For race-horſes, three ſorts of *bread* are uſually given with ſucceſs, for the ſecond, third, and fourth fortnights feeding; they are all made of beans and wheat, worked with barm, the difference conſiſting chiefly in the proportion of the two former. In the firſt kind, three times the quantity of beans is uſed to one of wheat; in the ſecond, equal quantities of both; in the third, three times the quantity of wheat to one of beans.

Bread, *ſacramental*, in the proteſtant churches, is common leavened *bread*, agreeable to the ancient practice. In the Romiſh maſs, AZYMUS, or unleavened *bread*, is uſed, particularly in the Gallican church, where a ſort is provided for this purpoſe, called *pain a chanter*, made of the pureſt wheaten flour, preſſed between two iron plates, graven like wafer-moulds, being firſt rubbed with white wax, to prevent the paſte ſticking.

Eccleſiaſtical writers enumerate other ſpecies of *bread*, allotted for purpoſes of religion; as, 1. *Calendarius*, that anciently offered to the prieſts at the calends. 2. *Prebendarius*, the ſame with *capitularis*, that diſtributed daily to each prebendary or canon. 3. *Benedictus*, that anciently given to catechumens before baptiſm, in lieu of the euchariſtic *bread*, which they were incapable of partaking of. 4. Conſecrated *bread* is a piece of wax, paſte, or even earth, over which ſeveral ceremonies have been performed with benedictions, &c. to be ſet up in an *agnus dei*, or a relic box, and preſented for veneration. 5. Unleavened *bread*, AZYMUS. The Jews eat no other *bread* during their paſſover; and exact ſearch was made in every houſe, to ſee that no leavened *bread* was left. The uſage was introduced in memory of their haſty departure from Egypt, when they had not leiſure to bake leavened. 6. *Shew-bread* was that offered to God every Sabbath-day, being placed on the golden table, in the holy of holies.

Bread *of St. Hubert*, *St. Genevieve*, *St. Nicholas*, &c. denote cakes ſanctified with certain prayers and invocations of thoſe ſaints, held by the ſuperſtitious to be of great efficacy in the cure of hydrophobias, agues, and other diſeaſes.

Bread is alſo uſed to denote certain foods made of animal, or even mineral matters, ſerving to ſupply the place of *bread.*

In divers parts of the North we read of *fiſh-bread*, particularly in Iceland, where dried cod is uſed for *bread*, being firſt beaten to powder, and made up into cakes. The like obtains among the Laplanders, whoſe country affords no corn; and even among the Crim Tartars. Phil. Tranſ. Nº 102. p. 35. Sheff. Hiſt. of Lapl. chap. 14.

Bread, in a more extenſive ſenſe, includes all the neceſſaries of life, as food, raiment, lodging, &c.

Hence alſo the ſabbath is ſometimes called, in ancient writers, the *day of bread*, by reaſon the euchariſt was then adminiſtered every Lord's day.

Bread, *ſwine*, *panis porcinus*, a denomination given to TRUFFLES.

Bread, *ſow's*, is alſo applied to the herb CYCLAMEN.

Bread, *aſſize of.*—The price and weight of *bread* is regulated by the magiſtrates according to the price of wheat; and, in order to direct them in their allowance to the baker, they are to take notice, that the peck-loaf of each ſort of *bread* is to weigh, when well baked, 17lb. 6 oz. avoirdupois weight, and the reſt in proportion; and that every ſack of meal, or flour, is to weigh two hundred weight and two quarters, neat; and that from every ſack there ought to be made, at an average, twenty ſuch peck-loaves of bread.

We have divers tables of the weights of the loaves both of *wheaten* and *houſhold bread*, at every price of wheat. If *bread* wants one ounce in thirty-ſix, the baker formerly was to ſuffer the pillory; now to forfeit not more than five ſhillings, nor leſs than one, for every ounce wanting; and for every defect leſs than an ounce, not more than two ſhillings and ſix pence, nor leſs than ſix pence; ſuch *bread* being complained of and weighed before a magiſtrate within twenty-four hours after it is baked or expoſed to ſale, within the bills of mortality, or within three days in any other place. Bakers are obliged, under a penalty, to mark their *wheaten-bread* with a large Roman W, and their *houſhold-bread* with an H. See BAKING.

It is to be obſerved, *bread* loſes weight by keeping; in ſome experiments recited by Bartholin, the diminution was near one-fourth in ſix months.

By 13 Geo. III. cap. 62. a ſtandard *wheaten-bread* was ordered to be made of ſuch flour as is the whole produce of the grain, the hull only excepted, and to be marked SW, but it is little uſed.

TABLE of the Aſſize and Price of *Bread* made of WHEAT.

Price of the buſhel of wheat, and baking.	Weight.		Price.					
	The penny loaf.		Quartern Loaf.		Half Peck.		Peck Loaf.	
	Wheat.	Houſh.	Wheat.	Houſh.	Wheat.	Houſh.	Wheat.	Houſh.
s. d.	oz. dr.	oz. dr.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
2 9	22 4	29 4	0 3½	0 2½	0 6½	0 4¾	1 0½	0 9½
3 0	20 4	27 1	0 3½	0 2½	0 7	0 5¼	1 1¼	0 10¼
3 3	18 9	25 4	0 3¾	0 2¾	0 7½	0 5½	1 3	0 11
3 6	17 6	23 [illegible]	0 4	0 3	0 8	0 6	1 4	1 0
3 9	16 6	21 6	0 4¼	0 3¼	0 8½	0 6½	1 5	1 1
4 0	15 4	20 4	0 4½	0 3½	0 9	0 6¾	1 6¼	1 1¾
4 3	14 4	19 1	0 4¾	0 3¾	0 9½	0 7½	1 7½	1 2½
4 6	13 9	17 15	0 5	0 3¾	0 10¼	0 7¾	1 8½	1 3½
4 9	12 12	17 1	0 5½	0 4	0 10¾	0 8	1 9½	1 4½
5 0	12 1	16 6	0 5¾	0 4¼	0 11½	0 8½	1 11	1 5
5 3	11 [illegible]	15 7	0 6	0 4½	1 0	0 9	2 0	1 6
5 6	11 2	14 10	0 6¼	0 4¾	1 0½	0 9½	2 1	1 7
5 9	10 8	14 4	0 6½	0 5	1 1½	0 9¾	2 2½	1 7½
6 0	10 2	13 9	0 7	0 5¼	1 1¾	0 10¼	2 3½	1 8½
6 3	9 11	13 1	0 7¼	0 5½	1 2½	0 10¾	2 4	1 9¼
6 6	9 4	12 10	0 7½	0 5½	1 3	0 11	2 6	1 10
6 9	9 0	12 1	0 7¾	0 5¾	1 3½	0 11½	2 7	1 11
7 0	8 11	11 9	0 8	0 6	1 4	1 0	2 8	2 0
7 3	8 7	11 2	0 8¼	0 6	1 4½	1 0½	2 9	2 1
7 6	8 3	10 11	0 8½	0 6½	1 5	1 1	2 10	2 2
7 9	7 14	10 6	0 8¾	0 6¾	1 5½	1 1½	2 11¼	2 2¾
8 0	7 10	10 2	0 9¼	0 6¾	1 6¼	1 1¾	3 0½	2 3½
8 3	7 5	9 15	0 9½	0 7	1 7	1 2	3 2	2 4
8 6	7 2	9 9	0 9¾	0 7¼	1 7½	1 2½	3 3	2 5
8 9	6 15	9 4	0 10	0 7½	1 8	1 3	3 4	2 6
9 0	6 13	8 15	0 10¼	0 7¾	1 8½	1 3½	3 5	2 7
9 3	6 9	8 12	0 10½	0 8	1 9	1 3¾	3 6¼	2 7¾
9 6	6 7	8 8	0 10¾	0 8¼	1 9¾	1 4¼	3 7¼	2 8¾
9 9	6 4	8 5	0 11	0 8¼	1 10¼	1 4¾	3 8½	2 9½
10 0	6 1	8 2	0 11½	0 8½	1 11	1 5	3 10	2 10
10 3	5 15	7 15	0 11¾	0 8¾	1 11½	1 5½	3 11	2 11
10 6	5 13	7 12	1 0	0 9	2 0	1 6	4 0	3 0
10 9	5 11	7 9	1 0½	0 9¼	2 0½	1 6½	4 1	3 1
11 0	5 9	7 5	1 0½	0 9½	2 1	1 7	4 2	3 2
11 3	5 6	7 3	1 0¾	0 9¾	2 1½	1 7½	4 3¼	3 2½
11 6	5 5	7 2	1 1	0 10	2 2½	1 7¾	4 4½	3 3½
11 9	5 2	6 15	1 1½	0 10	2 3	1 8	4 5	3 4
12 0	5 1	6 13	1 1¾	0 10¼	2 3½	1 8½	4 7	3 5
12 3	4 15	6 10	1 2	0 10½	2 4	1 9	4 8	3 6
12 6	4 14	6 8	1 2¼	0 10¾	2 4½	1 9½	4 9	3 7
12 9	4 13	6 5	1 2½	0 11	2 5	1 10	4 10	3 8
13 0	4 12	6 4	1 3	0 11¼	2 5½	1 10½	4 11½	3 8½
13 3	4 9	6 3	1 3¼	0 11½	2 6½	1 10½	5 1	3 9
13 6	4 8	6 1	1 3½	0 11½	2 7	1 11	5 2	3 10
13 9	4 7	5 15	1 3¾	0 11¾	2 7½	1 11½	5 3	3 11
14 0	4 5	5 13	1 4	1 0	2 8	2 0	5 4	4 0
14 3	4 4	5 11	1 4½	1 0¼	2 8½	2 0½	5 5	4 1
14 6	4 3	5 9	1 5	1 0½	2 9	2 1	5 6	4 2

Note: The weight of loaves of any ſize may be eſtimated from thoſe of the penny loaf, by ſimple addition; e. g. the ſix-penny loaf weighs ſix times as much, &c. and the wheaten loaves are three-fourths of the weight of the houſhold loaves. See Burn's Juſtice, vol. i. p. 220.

BREAD, in *Medicine*.—Beſides alimentary, *bread* has alſo medical qualities; decoctions, creams, and gellies of *bread*, are directed in ſome diſpenſaries.

There are certain medicated *breads*, appropriated to the intentions of phyſic; as, aniſeed-*bread*, turnep-*bread*, and vipers-*bread*; which laſt is made of the fleſh of that animal, with wheat-flour, yolks of eggs, ſarſaparilla, yeaſt, and milk, commended in ſcorbutic habits. Some direct acorn-*bread*, dipped in red wine, to be thruſt up the *anus*, in prolapſuſes of that part.

Mr. Boyle aſſures us, he drew a *menſtruum* from *bread* ſtronger than *aqua fortis*, and which would act even upon glaſs itſelf. Phil. Works abr. tom. i. p. 34. 49.

Bread made of good wheat, well leavened, and thoroughly baked, with a little ſalt, is the beſt; that which is not thoroughly baked, ill kneaded, and without ſalt, is hurtful and unwholeſome, eſpecially in ſmoaky cities; ſo are unleavened *bread* and cakes baked under the aſhes.

In general, the lighter the *bread*, the better and more agreeable it is; coarſe and barley *bread* is deterſive, and gently purgative, at leaſt to thoſe not uſed to it. Some recommend it for perſons in the gout.

See further concerning *bread* in the writers on foods and cookery; eſpecially in Hen. Nicolaus, who has a treatiſe expreſs on *bread*. Hen. Nicolai Tract. de Pane Dantiſc. 1651. See alſo Fabr. Bibl. Antiq. cap. 19. § 6.

BREAD, in *Chemiſtry*.—The chemiſt's art can extract from ſo mild a ſubject as *bread*, an acid, which is a powerful *menſtruum*. It is done in this manner: put two pounds of coarſe *bread*, cut into ſmall pieces, into a glaſs retort; place this in a ſand-heat, and, luting on a receiver, diſtil with a gentle fire, and there will be produced a liquor appearing like water, with a ſmall quantity of oil; ſeparate the oil, and filtre and rectify the liquor by a ſecond diſtillation in *balneo mariæ*, and afterwards diſtil it again in a ſand-heat, and there will be produced a moderately ſtrong, clear, acid liquor. This is a *menſtruum* capable of extracting the red colour from coral, and even from garnets. Common *bread* affords it, but coarſe rye-*bread* yields the greateſt quantity. Shaw's Lect. p. 104. Oil of vitriol, poured upon crumbs of *bread*, will excite a ſurpriſing degree of heat. Boyle's Works abr. vol. i. p. 569.

BREAD, *bonpournichole*, or *bonpournickel*, the name of a very coarſe *bread* eaten in Weſtphalia, and many other places. This *bread* of the Weſtphalians ſtill retains the opprobrious name once given it by a French traveller, of *bonpournichole, good for his horſe Nichole*, but is by no means a contemptible kind.

It is far from being peculiar to this age or country; it has been known in diſtant places, and in different ages, and was called by the ancients *panis furfuraceus*, or *panis impurus*, from its not being ſo thoroughly cleanſed from the huſk or bran, as the fine ſorts of *bread* are.

The wreſtlers of old eat only this ſort of *bread*, to preſerve them in their ſtrength of limbs; and we may learn from Pliny, that the Romans for three hundred years knew no other *bread*: unqueſtionably, this coarſe *bread* nouriſhes more, aſſuages hunger better, and generates humours leſs ſubject to corruption, than the white.

The inhabitants of Weſtphalia, who are a hardy and robuſt people, and capable of enduring the greateſt fatigues, are a living teſtimony of the ſalutary effects of this ſort of *bread*; and it is remarkable, that they are very ſeldom attacked by acute fevers, and thoſe other diſeaſes which ariſe from an ebullition of the humours, and a malignant colliquation of the blood, and of the humours of which it is compoſed.

It is certain, that a leſs ſtrong diet is more proper to weakly conſtitutions, and people of ſedentary lives, than this; but for thoſe who will uſe the neceſſary exerciſe with it, it is eaſy to ſee that it is preferable to all other kinds of *bread*; ſince it remarkably reſtores ſtrength, and has another ſalutary effect, which is, that it renders the belly ſoluble: this was a quality remarked in coarſe *bread*, and highly commended in it, ſo early as in the days of Hippocrates.

The Germans make two ſorts of waters by diſtillation from this *bread*; the one with, the other without, the addition of a ſpirituous liquor: to both which great virtues are aſcribed. That without any thing ſpirituous, is made of the juice of craw-fiſh, may-dew, roſe-water, nutmegs, and ſaffron, diſtilled from a large quantity of this *bread*. This is eſteemed a great reſtorative, and given in hectic habits. The other is diſtilled from this *bread* and Rheniſh wine, with nutmegs and cinnamon. This is given in all the diſorders of the ſtomach, vomiting, and loſs of appetite, and other complaints of the ſame kind; and beſides theſe, there is a ſpirit diſtilled from it by the retort, in the dry way, which, when ſeparated from its fetid oil, is eſteemed a powerful ſudorific, and very valuable medicine, in removing impurities of the blood. Hoffman.

BREAD, *Indian*, or *Caſſada*. See CASSADA.

BREAD, *St John's*. See CAROB.

BREAD-*room*, in a ſhip, that in which the *bread* or BISKET is kept.

BREAD-*fruit*, at Otaheite, in the South-ſea, grows on a tree about the ſize of a middling oak: it is about the ſize and ſhape of a child's head; the ſurface is reticulated, and covered with a thin ſkin; the eatable part lies between the ſkin and the core; it is white as ſnow, and of the conſiſtence of new bread. It has an inſipid, ſweetiſh taſte, reſembling that of the crumb of wheaten bread, mixed with a Jeruſalem artichoke. It is roaſted and baked before it is eaten. Three different diſhes are prepared from this fruit, by beating it into a paſte with water, or the milk of the cocoa-nut, and mixing it with ripe plantains, bananas, or the ſour paſte which they call *mahie*. Hawkeſworth's Voyages, &c. vol. ii. p. 80, and 198.

BREADTH. See LATITUDE, DIMENSION, AREA, &c.

BREADTH, *hair's*. See HAIR.

BREADTH, *finger's*. See FINGER.

BREADTH, *hand's*. See HAND.

BREADTH *of a ſhip* is the meaſure of it from ſide to ſide in any particular place: accordingly the *main-breadth* is that part of every timber which incloſes the greateſt ſpace from the middle line of the ſhip's length; *top-timber breadth* is the diſtance between the upper part of the ſame timber, and the ſaid middle line; and the *extreme breadth* is the diſtance between her ſides in the *main-breadth* of the midſhip-frame.

Breadth-*ſweep*, in *Sea-language*, denotes the radius of the arch which forms part of the curve of a ſhip's timber in the horizontal plane.

BREAK, in Norfolk, denotes land ploughed or broke up the firſt year after it has lain fallow in the ſheep-walks.

In *Architecture*, it denotes a receſs, or giving back of a part behind its ordinary range or projecture.

In which ſenſe, they ſay, a *break* of a PEDIMENT; a *break* of ENTABLATURES, whereby it ſhrinks, as it were, between the columns, is reputed a fault.

Break-*in*, among *Carpenters*, is when they break a hole in brick-walls with their ripping-chiſſel.

Break-*neck*, *Briſe-cou*, in *Building*, a fault in a ſtair-caſe, as when a ſtep is made higher or lower than the reſt, and landing-place too narrow, or the like.

Break-*water*, the hulk or hull of ſome old ſhip, ſunk at the entrance of a ſmall harbour, to *break* the force of the waves in their paſſage to the veſſels moored within. It is alſo uſed for a ſmall buoy faſtened to a large one in the water, and deſigned to ſhew where it ſwims. See Buoy.

BREAKERS, in *Sea-language*, ſignify billows that break violently over rocks, lying under the ſurface of the ſea.

BREAKING, in *Agriculture*, denotes the ploughing up of grounds, eſpecially ſuch as have lain ſome time fallow.

Breaking *ground*, in the *Military Art*, the beginning of works for carrying on the SIEGE of a place; more eſpecially the beginning to dig TRENCHES, or approaches.

Breaking *the angles of a battalion*, denotes a military evolution, whereby the four angles turn, and make ſo many fronts towards the enemy; ſo that the battalion, which before was only a ſquare, becomes an octangle, and can fire on all ſides.

This is otherwiſe called *blunting the angles of a battalion*; by the French, *emouſſer les angles d'un bataillon.*

Breaking *of meaſure*, in *Fencing*, denotes a moderate retiring, or giving of ground, in order to avoid the adverſary's thruſt.

Breaking of meaſure differs much from going back, and loſing or yielding of ground; the latter being reputed a great reproach, the former a mark of judgment and adroitneſs. Some pretend, that a man retiring is obliged to forbear, if his adverſary call him to ſtand.

Breaking *of the ſea*, **Breaking** *of a wave*, or the like, on a rock, a bank, or the like, are a ſufficient indication to the pilots, that it is not ſafe mooring there.

Divers machines and ſtructures have been contrived for *breaking* the force of wind, the ſtream of water, and the like.

Breaking is alſo uſed for the taming of animals, or reducing them from a wild to a tractable ſtate.

Breaking *of a horſe to the ſaddle*. See Backing and Travice.

To *break* a horſe for hunting, is to make him acquire the diſpoſition and habit of running. It is a great fatigue to run horſes full ſpeed before they are *broken*.

Breaking *herd*, among *Sportſmen*, denotes a deer's quitting the herd, and running by itſelf.

In which ſenſe, the word ſtands oppoſed to *herding*.

A deer, when cloſe purſued, is loth to *break* herd. When a hart *breaks* herd, and draws to the thickets or coverts, he is ſaid to *harbour* or take hold.

Breaking *up a deer*, ſignifies the opening or cutting it up.

Breaking *of priſon*. See Prison.

Breaking *the legs*, *crurifragium*, was an appendage of cruciſixion, uſed no where but among the Jews. See Cross.

Breaking *bulk*, in the *Sea-language*, ſignifies taking part of the ſhip's loading or cargo out of the hold.

Breaking *of hemp*. See Brake.

Breaking *of bread*, is ſometimes uſed, in *Eccleſiaſtical Writers*, for celebrating the EUCHARIST.

Breaking *of wine*, among *Vintners*.—Wine is ſaid to *break*, when being left ſome time in the air, in an open glaſs, it changes colour; an indication that it will not keep.

This is the uſual method of trying the goodneſs of wine, among the merchants and vintners of Paris.

Breaking is alſo uſed in trade, for a perſon's failing or ſtopping payment.

In which ſenſe, *breaking* differs from becoming BANKRUPT.

Breaking betimes, while there is ſomething left to pay withal, is a mark of honeſty; and, generally, entitles the unhappy perſon to compaſſion and gentler uſage from his creditors, ſaves his credit, and facilitates his retrieving. A late ſenſible writer on trade takes great pains to inculcate this precept, Break early. Compl. Eng. Tradeſman, vol. i. p. 77. 80, &c.

BREAM, in *Ichthyology*, the Engliſh name of the CYPRINUS *latus*.

This is but a coarſe fiſh for the table, but it affords great ſport to the angler. The beſt time of angling for *bream* is from St. James's day to Bartholomew-tide; as being then exceeding fat; and the moſt proper bait is the largeſt red garden-worms that can be got. See Sparus.

BREAMING. See Brooming.

BREAST, *Mamma*, in *Anatomy*, a prominent fleſhy part of the human body, on the outſide of the *thorax*, ſerving to ſeparate the milk.

Anatomiſts ſometimes divide *breaſts* into perfect, which are compoſed of a multitude of glands, interwoven with veins, arteries, and nerves; ſuch as are thoſe of women; and imperfect *breaſts*, compoſed chiefly of fat, with a few glands; ſuch are thoſe of men.

The internal ſubſtance of the *breaſt* is compoſed of a great number of glands, of various ſizes, and an oval figure, intermixed with globules and veſſels of fat. Their excretory ducts, as they approach the nipple, join and unite together, till at laſt they form ſeven, eight, or more, ſmall pipes, called *tubuli lactiferi*, which have ſeveral croſs canals, by which they communicate with one another, to obviate the inconveniencies that might accrue from the caſual obſtruction of one or more of them.—Theſe tubes are not every where of equal capacity, but in ſome places more, in others leſs, dilated; ſo as to form cells, which ſeem contrived to hinder the ſpontaneous efflux, and to create a neceſſity of ſucking, to fetch out the contents.

Of the concurrence of theſe *tubuli*, or pipes, is the ſubſtance of the *papillæ*, in great meaſure, formed; among which is interſperſed a glandulous ſubſtance, ſerving to keep them from preſſing too cloſe on each other: and with it are intermixed abundance of fibres derived from the external teguments of the *papillæ*; by means whereof, the lacteal tubes are conſtringed, and the motion of the milk is modified.

Beſides theſe veſſels, are abundance of fatty globules, called *ductus adipoſi*, which ſome would have only to fill up the interſtices of the glands: but Dr. Drake, after Malpighi, thinks they contribute to the compoſition of the MILK; which ſeems nothing elſe but water and oil artfully united.

The office of the *breaſts* is to ſecrete the milk from the arteries in their glandulous ſubſtance, to collect it in their lacteal tubes, and, at proper ſeaſons, to yield it to the infant through the nipple.

Some, however, aſſert, that the milk is not formed from the blood, but from the chyle, which is immediately conveyed thither by the thoracic, or Pecquet's ducts. And what confirms the ſuggeſtion, is the quick ſupply of milk in nurſes, after a draught of cow's milk. The difficulty is to prove, that the thoracic duct reaches to the *breaſts*, which ſome abſolutely deny. Phil. Tranſ. Nº 65. and Nº 40. p. 1357, and 805.

Swelling *breaſts*, eſpecially if there be milk found in them, is generally judged a mark of the loſs of VIRGINITY, and a proof that a woman has been with child; though, it is ſaid, it does not hold univerſally.

The ſwelling of the *breaſts* during the time of geſtation, is owing to the conſent between the *breaſts* and the UTERUS; there being ſo near a communication between the mammary veſſels, and the hypogaſtric veſſels of the womb, that dilatation in the latter is attended with a ſimilar one in the former. See Pregnancy, &c.

In virgins, the tubes which compoſe the glands of the *breaſt*, like ſphincter-muſcles, contract ſo cloſely, that no part of the blood can enter them: but when the womb grows big with a FOETUS, and compreſſes the deſcending trunk of the great artery, the blood flows in greater quantity, and with a greater force, through the arteries of the *breaſts*, and forces a paſſage into their glands; which, being at firſt narrow, admits only of a thin water; but growing wider by degrees, as the womb grows bigger, the glands receive a thicker *ſerum*; and after birth they run with a thick milk; becauſe that blood which before flowed to the *fœtus*, and for three or four days afterwards by the *uterus*, beginning then to ſtop, does more dilate the mamillary glands.

The *breaſts*, eſpecially after delivery, are liable to divers diſeaſes; as inflammations, excoriations, indurations, tumefactions, nodes, abſceſſes, ſchirrhuſes, and cancers; to which may be added certain peculiar diſorders, as the *ſparganoſis*, *ſtrangalides*, and *gynæcomaſton*. See Cancer, Schirrhus, &c.

In men, the *breaſts* are very ſmall, and are chiefly for ornament; though phyſical hiſtories give inſtances of thoſe who have had milk in them.

The ancients repreſented Diana of Epheſus with many *breaſts*, as appears from ſeveral medals of that city;

whence ſhe had the epithet *Mammoſa*; q. d. having many *breaſts*; an appellation which is alſo given to Iſis and to Ceres.

BREAST, applied to the correſpondent parts of other animals, is more properly called *udders*, *dugs*, *ubera*, &c.

BREAST alſo denotes that cavity or region of the body, by anatomiſts more frequently called THORAX. Though, in propriety, the *breaſt* is rather reſtrained to the anterior part of the *thorax* where the ribs meet; called alſo *ſternum*, and *pectus*; in Engliſh, popularly, the *boſom*.

We ſay, a flat, a narrow, or ſtrait *breaſt*; a broad *breaſt*, not high, is ranked among the ſigns of longevity. Defluxions on the *breaſt* and lungs are dangerous.

Smiting the *breaſt* is one of the expreſſions of penitence. In the Romiſh church, the prieſt beats his *breaſt* in rehearſing the general confeſſion at the beginning of maſs. Coughs, catarrhs, aſthmas, phthiſes, peripneumonies, &c. are diſeaſes of the *breaſt*. See COUGH, and ASTHMA.

Phyſicians alſo ſpeak of a dropſy of the *breaſt*, *hydrops pectoris*. See DROPSY.

Medicines for diſorders of the *breaſt* are called *pectorals*. See PECTORAL.

BREAST-*bone*. See STERNUM.

BREAST *of a* CHIMNEY, denotes the fore-part under the mantle or chimney-piece, commonly made inclined.

BREAST-*faſt*, or **BREST-*faſt***, denotes a rope or hawſer employed to confine a ſhip ſideways to a wharf or key, or ſome other ſhip.

BREAST-*hooks*, the compaſſing timbers before, in a ſhip, which help to ſtrengthen her ſtem, and all her fore-part.

BREAST-*pain*, called by the Italians *grandezza di petto*, is a diſtemper in horſes proceeding from ſuperfluity of blood and other groſs humours, which being diſſolved by ſome extreme and diſorderly heat, reſort downward to the *breaſt*, and pain them extremely.

The ſigns of the *breaſt*-pain are, a ſtiff, ſtaggering, and weak-going with his fore-legs; beſides, that he can hardly, if at all, bow his head to the ground.

BREAST-*plate*, a piece of defenſive armour, wherewith to cover the *breaſt*.

The *breaſt*-plate is ſaid to be the invention of Jaſon. It was originally made of leather, afterwards of mail, and laſtly, of a brazen or iron-plate. When made of this laſt matter, it is more particularly called *clibanus*, by the moderns CUIRASS; when made of braſs, with a Gorgon's head in the middle, it is denominated ÆGIS.

The *breaſt*-plate, called alſo by the Romans *pectorale*, is frequently confounded with the *thorax* and *lorica*; from both which it ought to be diſtinguiſhed, as being properly a half-*thorax*, or half-*lorica*, covering only the breaſt; whereas the *thorax* inveſted the body.

As the whole *thorax* might be a temptation to the ſoldiery to turn their backs, when equally guarded with their *breaſts*, the *thorax* was thrown away, and the *hemi-thoracion*, or *breaſt*-plate, only retained. Polyæn. Stratag. lib. vii.

BREAST-*plate*, in the *Manege*, denotes a leathern ſtrap running from one ſide of the ſaddle, croſs the horſe's *breaſt*, to the other; intended to keep the ſaddle from ſlipping backwards in mounting up riſing-grounds. It is otherwiſe called *tee*; ſometimes the *poitrail*.

BREAST-*plate*, among *Artificers*, denotes a drill-plate, againſt which to ſet the blunt end of the drill.

BREAST-*plough*, in *Agriculture*, a ſmall plough, ſo conſtructed, that a man may puſh it before him. It conſiſts of a cutting-iron about eight or nine inches long, with one of its ſides turned up to cut the turf, which is fixed to a pole about five or ſix feet long, forked at the upper end, with a croſs handle. It is uſed in the operation called BURN-BAKING.

BREASTS *of a ſaddle*, are part of the BOW, being the two ſides of it down from the arch or upper part.

BREAST-*work*, in the *Military Art*. See LORICA, and PARAPET.

BREAST-*work of a ſhip*, is a ſort of baluſtrade or fence, compoſed of rails or mouldings, and often decorated with ſculpture; it terminates the quarter-deck and poop at the fore-ends, and incloſes the fore-caſtle both before and behind.

BREATH, the WIND or AIR which is received and expelled by the mouth and noſtrils, in the act of RESPIRATION.

In which ſenſe, the word amounts to the ſame with the Greek πνευμα, and Latin *ſpiritus*.

A ſtinking *breath*, is one of the ſymptoms uſually preceding the acceſs of an intermitting fever.

In ſome perſons, a ſtinking *breath* is an indication of the *menſes* being at hand.

It is diſputed among the civilians, whether a ſtinking *breath*, called *ſcabies*, owing to rotten teeth or gums, ſhould be reputed a diſeaſe. Calvin. Lex. Jur.

BREATH is more particularly uſed to denote a ſtrength of lungs, whereby a man is enabled to hold out without taking wind ſo often.

In this ſenſe, we ſay, a long, a ſhort *breath*. The ordinary term of holding the *breath* does not exceed one third of a minute. Bacon. Hiſt. of Life and Death. Ap. Works, tom. ii. p. 176.

For the pearl fiſhery, they chooſe ſlaves who have the beſt *breath*, or can continue the longeſt under water without fetching their *breath*. Pechlin has a diſſertation expreſs on living long without *breathing*. J. Nic. Pechlin De Aeris & Alimenti Defectu, & Vita ſub Aquis diuturna, Meditatio ad Joel Langelot, 1676.

The ancients were very watchful over the laſt *breath* of dying perſons; which the neareſt relations, as the mother, father, brother, or the like, received in their mouths. Pitiſc. Lex. Antiq. voc. *Spiritus*.

BREATH is alſo ſometimes extended to the odorous EFFLUVIA of plants, and even exhalations of minerals.

BREATHING. See RESPIRATION.

Fighting a cock to *breathe* him, is called SPARING.

To *breathe* a running-horſe, and bring him to his wind, they give him a HEAT.

BREATHING, *exſufflatio*, a ceremony in BAPTISM.

BREATHING, *difficulty of*, in *Medicine*, a diſeaſe called by phyſicians DYSPNOEA.

BREDEWITE, in *Ancient Law Writers*, an amercement ariſing from ſome default in the aſſiſe of bread.

BREECH *of a gun*, in *Artillery*, denotes the diſtance from the hind part of the baſe ring to the beginning of the bore, and is always equal to the thickneſs of the metal at the vent. See AC, *fig.* 1. *Tab. Gunnery.*

Engineers have contrived a ſort of cannons, which are charged by the *breech*.

BREECH-*mouldings*. See MOULDINGS.

BREECHES, a garment worn by males, reaching from the girdle to the knees, and ſerving to cover the hips, thighs, &c.

The ancient Romans had nothing in their dreſs anſwering to our *breeches* and ſtockings; inſtead of which, under their lower tunics and waiſtcoats, they ſometimes bound their thighs and legs round with ſilken ſcarves, or *faſciæ*, called *tibialia* and *femoralia*. Salmuth. ad Panciroll. p. i. p. 161. Kennet. Rom. Ant. Not. p. ii. lib. v. cap. 8.

Breeches appear to be a habit peculiar to the barbarous nations, eſpecially thoſe inhabiting the colder countries of the North; whence Tacitus calls them *barbarum tegmen*. We find mention made of them among the ancient Getæ, Sarmatæ, Gauls, Germans, and Britons; they alſo obtained among the Medes and Perſians, as being a people of Scythian origin: they alſo afterwards got footing in Italy, ſome pretend as early as the time of Auguſtus; but without much foundation, that emperor's *breeches*, mentioned by Suetonius, being apparently only ſwaths tied over his thighs. Tacit. Hiſt. lib. ii. cap. 20. Perſ. Sat. iii. ver. 51. Ovid. Triſt. lib. v. Eleg. 11. Suet. in Auguſt. cap. 82.

However this be, *breeches* were at length received into Italy, and grew ſo highly into faſhion, that it was thought neceſſary, under Honorius and Arcadius, to reſtrain them by law, and expel the *braccarii*, or *breeches*-makers, out of the city; it appearing a thing unworthy, that a nation, which commanded the world, ſhould wear the habit of barbarians.

We find frequent mention of *bracæ*, *braccæ*, or *bracchæ*, in claſſic writers; but the form of this habit is not agreed on: ſome will have it to have been a rough party-coloured coat.

BREECHINGS, in the *Sea-language*, thoſe ropes with which the great guns are laſhed, or faſtened to the ſhip's ſide.

They are thus called, becauſe brought about the *breech* of the piece; they prevent the cannon from recoiling too much in time of battle, and are employed for ſecuring it during the courſe of a voyage.

BREEDING is uſed for the care of rearing or bringing up the young of divers animals.

BREEDING, in a moral ſenſe, denotes a perſon's deportment or behaviour in the external offices and decorums of ſocial life.

In this ſenſe, we ſay, well-*bred*, ill-*bred*, a man of *breeding*, &c.

Good-*breeding* amounts to much the ſame with what is otherwiſe called *politeneſs*, among the ancient Romans, *urbanity*. Good-*breeding* is near to virtue, and will of itſelf lead a man a great part of the way towards the ſame; it teaches him to rejoice in acts of civility, to ſeek out objects of compaſſion, and be pleaſed with every occaſion of doing good offices.

Lord Shafteſbury compares the well-*bred* man with the real philoſopher: both characters aim at what is excellent, aſpire to a juſt taſte, and carry in view the model of what is beautiful and becoming. The conduct and manners of the one are formed according to the moſt perfect eaſe, and good entertainment of company; of the other, according to the ſtricteſt intereſt of mankind; the one according to his rank and quality in his private ſtation, the other according to his rank and dignity in nature. Horace ſeems to have united both characters.

Quid verum atque decens curo & rogo, & omnis in hoc ſum.

Shaftſ. Charact. vol. i. p. 64. vol. ii. p. 242. vol. iii. p. 161. Hor. lib. i. ep. i. ver. 11.

BREEDING-*ſtone*, in *Mineralogy*, a ſort of maſs of pebbles, joined by a ſparry cement; frequent in divers parts of Hertfordſhire. See PEBBLE.

BREEDING *of fiſh*. See FISH-*pond*.

BREEDING *of horſes, dogs, &c.* See HORSE, *&c.*

BREEF-*cards*, denote a kind of falſe cards, either longer or broader than the reſt, whereby they may be known and diſtinguiſhed.

BREEZE, a ſhifting wind, blowing from the ſea and land alternately, during certain hours of the day or night; only ſenſible near the coaſts.

The ſea-*breeze*, Dampier obſerves, commonly riſes in the morning about nine, proceeding ſlowly in a fine ſmall black curl on the water towards the ſhore: it increaſes gradually till twelve, and dies about five.—Upon its ceaſing, the land-*breeze* commences, which increaſes till twelve; and is ſucceeded in the morning by the ſea-*breeze* again.

The ſea-*breezes* rule by day, and the land-*breezes* by night; ſo that, dividing their empire, they remain as conſtant as the ſeaſons of the year, or courſe of the ſun, on which they ſeem alone to depend; not but that they appear ſooner or later, ſtronger or weaker, in ſome places than others, and vary the alternative according to the ſeveral latitudes, ſituations, ſoils, mountains, valleys, woods, and other circumſtances of the countries where they are found.

In ſome countries, the ſea-*breezes* appear only to be efforts of the general or trade-wind, as at Barbadoes, and in many places between the tropics, where the general wind, if not impeded by mountains or iſlands, blows freſh in the day time, but, after ſun-ſet, the terreſtrial exhalations becoming precipitated, beget a new wind, which is not only able to make head againſt the trade-wind, but to repel it from their coaſts.

The ſea-*breezes* do not all come from the ſame point of the compaſs, but from different points, as the land lies.

In Brazil, and many of the Caribbee iſlands, they have no land-*breeze*, eſpecially if the ſhores lie low, as at Barbadoes, where the general or eaſtern wind blows from one end of the iſle to the other, and ſerves inſtead of the land-*breeze*. In other places they want the ſea-*breeze*, eſpecially between the tropics, in coaſts which lie weſterly, as in the weſtern kingdoms of Africa.

If either the eaſterly or weſterly winds blow freſh, they hinder both the land and ſea-*breezes* in the Mediterranean; of which thoſe are always found the weakeſt which riſe lateſt. In England, in very hot days, and when no other winds are ſtirring, the like alternation of land and ſea-*breezes* may be obſerved on our coaſts, though with little certitude, any where to the northward of Portugal.

Breezes are more conſtant in ſummer than in winter, and more between the tropics than in the temperate zones.

The general cauſe of thoſe alternate *breezes* which ſet on and off the coaſts in hot countries, is the greater rarefaction of the air by reflected heat, and by fermenting exhalations over the land, than over the water: the denſer air from the water becomes a ſea-*breeze* in the day; but this air condenſed again by the cold of the night, may then occaſion a land-*breeze*.

Breezes differ from *eteſiæ*, or TRADE-WINDS, as the former are diurnal, or have their periods each day, and, beſides, they are only perceived near the ſhore or coaſt; whereas the latter are anniverſary, and blow at a diſtance from land. Phil. Tranſ. N° 183, p. 158.

BREEZE, in *Brick-making*, are ſmall aſhes and cinders ſometimes made uſe of, inſtead of coals, for the burning of bricks. But as this does not ſo well anſwer the end, the uſe of it was prohibited by 12 Geo. I. cap. 35; but allowed by 3 Geo. II. cap. 22. 10 Geo. III. cap. 49.

BREEZE-*fly*. See OESTRUM and GAD-*bee*.

BREGMA, in *Anatomy*, the ſame with SINCIPUT.

The *bregma* conſiſts chiefly of two bones, hence alſo called *bregma*, or *bregmatis oſſa*, which are two bones of the *cranium*, otherwiſe called *oſſa parietalia*.

Bregma properly denotes the middle and fore-part of the head, ſituate over the forehead, and extending on both ſides to the temples.

The origin of the word is obſcure, and has been much controverted between Hoffman and Lindenius.

BREHONS, the provincial judges among the ancient Iriſh, by whom juſtice was adminiſtered, and controverſies decided.

Theſe ſages were a diſtinct tribe or family, to whom competent lands were allowed in inheritance. In criminal caſes, the *brehon* had the eleventh part of all fines; which could not be but conſiderable, at a time when murders, rapes, robberies, and the like offences, were only ſubject to pecuniary commutations.

BREHON-*laws*, denote the general maxims, or rules of law, obſerved by the *brehons*, and having the force of laws throughout all the provinces of Ireland.

Several fragments of the *leges brehonicæ* are ſtill extant in public and private libraries. The moſt complete collection is that belonging to the duke of Chandos, containing twenty-two ſheets and an half cloſe written, full of abbreviated words, and not very legible. The publication of theſe laws has been much wiſhed for.

By the ſtatute of Kilkenny, 40 Edward III. it is enacted, that no Engliſh ſubject ſhall ſubmit to a trial by the *brehon* law, on the penalty of high treaſon. Notwithſtanding which, many were ſtill under a neceſſity of being concluded by the Iriſh laws and cuſtoms, till the whole kingdom was ſettled on an Engliſh foundation under king James I.

BRENNAGE, *Brennagium*, in *Middle Age Writers*, a kind of tribute paid, in lieu of bran, or bran itſelf, which the tenants were obliged to furniſh for ſupport of the lord's hounds.

The word is alſo written *brenage*, *brenagium*, and *brenaige*, *bernagium*, *brenaticum*, and *brennaticum*. Du-Cange Lat. Gloſſ.

BRENNING. See BURNING.

BRENTA, in *Zoology*, the name of a fowl of the gooſe-kind, known among us by that of the *Brent-gooſe*, and, by ſome, ſuppoſed to differ from the barnacle no other way than in ſex; but this is erroneous. It is ſomewhat larger than the barnacle, and is longer bodied. Ray. See *Tab. of Birds*, N° 49.

BREPHOTROPHIUM, from βρεφος, *infant*, and τρεφω, *I nouriſh*, an hoſpital for FOUNDLINGS, or a place wherein children, expoſed by their parents, are brought up at the public charge.

BRESILIA, in *Ornithology*, a ſpecies of *tanagra*, in the order of *paſſeres*.

BRESMA, in *Ichthyology*, a name given by Hildegard, and ſeveral other writers on fiſh, to the BREAM, a ſpecies of CYPRINUS.

BREST, or **BREAST**, in *Architecture*, a term uſed by ſome, for that member of a column otherwiſe called the *Tore*.

BREST-SUMMERS, or **BRESSUMERS**, in *Building*, are pieces of timber deſigned for the ſupport of the brick-work in the front or rear wall of a building, for carrying arches, &c.

In the inner parts of a building, the pieces into which the girders are framed are called SUMMERS.

BRET, a name which the people on the coaſts of Lincolnſhire give to the common turbot, a fiſh extremely plentiful with them, and taken in vaſt abundance. The way of catching them is in a net, trailed on the ground by two horſes; the one going up to the middle of his body in the water, the other on the ſhore.

BRETACHIÆ, in *Middle Age Writers*, denote wooden towers or caſtles, wherewith towns or camps were defended. Du-Cange Gloſſ. Lat.

BRETESSE, in *Heraldry*, a term uſed to expreſs a line in ſome coats of arms, of the ſame nature with what is uſually called the *crenelle*, or EMBATTLED *line*; except that this laſt is only embattled on one ſide, and the *breteſſe* or *crenelle* on both ſides. Some authors ſeem, however, to have underſtood the terms *breteſſe* and *crenelle* as ſynonymous words, and when they would expreſs ſuch a line, they call it, if embattled on both ſides, *contre-breteſſe*.

BRETHREN *and Siſters of the Free Spirit*, in *Eccleſiaſtical Hiſtory*, an appellation aſſumed by a new ſect which ſprung up towards the cloſe of the thirteenth century, and gained many adherents in Italy, France, and Germany. They took their denomination from the words of St. Paul, Rom. chap. viii. ver. 2, 14. and maintained, that the true children of God were inveſted with the privilege of a full and perfect freedom from the juriſdiction of the law. They were enthuſiaſts to a degree of diſtraction, both in their principles and practice. They reſembled the BEGHARDS, by which name they were ſometimes called, in their aſpect, apparel, and manner of living. Some of their profeſſed principles reſembled thoſe of the *Pantheiſts*; for they held, that all things flowed by emanation from God; that rational ſouls were portions of the Deity, and that the univerſe was God; and that, by the power of contemplation, they were united to the Deity, and acquired hereby a glorious and ſublime liberty, both from the ſinful luſts and the common inſtincts of nature: and hence they concluded, that the perſon, who was thus abſorbed in the abyſs of the Deity, became a part of the Godhead, and was the ſon of God in the ſame ſenſe and manner that Chriſt was, and that he was freed from the obligation of all laws human and divine. They treated with contempt all Chriſtian ordinances, and all external acts of religion, as unſuitable to the ſtate of perfection at which they were arrived. Some of them were honeſt but deluded enthuſiaſts; and they endured the torments inflicted upon them by the inquiſitors with aſtoniſhing calmneſs and triumph. Others proceeded to the moſt extravagant licentiouſneſs of conduct. They held their ſecret aſſemblies ſtark naked, and lay in the ſame beds with their ſpiritual ſiſters, and indiſcriminately with other women, without the leaſt ſcruple or heſitation: modeſty and decency being, according to their creed, marks of inward corruption. And ſome of them proceeded ſtill farther, and maintained, that the *divine man*, or believer, could not ſin, let his conduct be ever ſo horrible or atrocious. Many edicts were publiſhed againſt them; but, notwithſtanding the ſeverities they ſuffered, they continued till about the middle of the fifteenth century. They were called by ſeveral other names, ſuch as Schweſtriones, Picards, Adamites, and Turlupins. Moſheim's Eccl. Hiſt. vol. iii. p. 122, &c. 202, &c. 273, &c.

Brethren *and Clerks of the Common Life*, a denomination aſſumed by a religious fraternity towards the latter end of the fifteenth century. They lived under the rule of St. Auguſtin, and were eminently uſeful in promoting the cauſe of religion and learning. Their ſociety was firſt formed, in the preceding century, by Gerard de Groote, a native of Deventer; but did not flouriſh till about the period above mentioned, when it obtained the approbation of the council of Conſtance, and became very reſpectable in Holland, the Lower Germany, and the adjacent provinces. It was divided into two claſſes, the *lettered brethren* or *clerks*, and the *illiterate*: they lived in ſeparate habitations, but maintained the cloſeſt fraternal union. The former applied to the ſtudy of polite literature, and the education of youth; whilſt the latter were employed in manual labour, and the mechanic arts. They were frequently called *Beghards* and *Lollards*, by way of reproach. Moſheim, vol. iii. p. 253.

Brethren, *White*, *fratres albati*, were the followers of a leader about the beginning of the fifteenth century, who was arrayed in a white garment; and as they were alſo cloathed in white linen, they were diſtinguiſhed by this title. Their leader was a prieſt from the Alps, who carried about a croſs, like a ſtandard, and whoſe apparent ſanctity and devotion drew together a number of followers. This deluded enthuſiaſt practiſed many acts of mortification and penance, endeavoured to perſuade the European nations to renew the holy war, and pretended that he was favoured with divine viſions. Boniface IX. ordered him to be apprehended, and committed to the flames, upon which his followers diſperſed. Moſheim, vol. iii. p. 275.

Brethren *of the Obſervance.* See Observance.

BRETOYSE, or **Bretois**, the law of the marches of Wales; in uſe among the ancient Britons.

BREVE, **Brevis**, *ſhort*, in *Grammar.*—Syllables are diſtinguiſhed into *longæ* and *breves*, according as they are pronounced quicker or more ſlow: the time of a *breve* is half that of a *long*, or, as the grammarians expreſs it, a *breve* is one time, and a *long* two. See Accent.

Breve, in *Muſic*, is a note or character of time, formed ſquare, without any tail; and equivalent to two meaſures, or ſemibreves. See Characters *of muſic*, and Semibreve.

Breve is uſed in the *Civil Law* for a ſhort note or minute.

In which ſenſe, the word is alſo written *brevis* (ſubaude *libellus*) and in Engliſh brief or *breve*; amounting to much the ſame with what is otherwiſe called *ſchedula* and *brevicula.*

Breve more particularly denotes a liſt or regiſter of the names of the ſoldiers under the command of a general.

Breve is more particularly uſed in *Common Law* for a writ or brief. Hence

Breve *perquirere*, is to purchaſe a writ or licence of trial in the king's courts by the plaintiff; and on this depends the uſage of paying to the king in ſuits for money due on bond, 6*s.* 8*d.* when the debt is 40*l.* and 10*s.* when it is 100*l.*

Fitzherbert has given a new Natura Brevium; thus called by way of diſtinction from an old Natura Brevium, compoſed about the time of Henry III. There is a copy of this book of Fitzherbert's filled with manuſcript notes by Sir M. Hales, in Dr. Williams's Library in Red Croſs Street.

Breve *de recto.* See Recto.

Breve *vas.* See Vas *breve.*

BREVET, in the *French Laws*, denotes an act iſſued by a ſecretary of ſtate, importing a grant of ſome favour or donation from the king.

The word is formed from the middle age Latin, *brevettum*, of *breve*, *ſhort.*

In which ſenſe, *brevet* amounts to much the ſame with our warrant.

They ſay, a *brevet* of nomination, a duke by *brevet*; ſuch a perſon had a *brevet* of a marſhal of France.

Brevet more particularly denotes the commiſſion of a ſubaltern officer, being only written on parchment, and without ſeal.

Brevet, in the *Sea-language*, is ſometimes uſed for a bill of loading.

BREVIA *teſtata*, mentioned by *Feodal Writers*, were written memorandums, introduced to perpetuate the tenor of the conveyance and inveſtiture of lands, when grants by parol only became the occaſion of diſpute and uncertainty. To this end they regiſtered in the deed the perſons who attended as witneſſes, and heard it read without ſigning their names; the clerk adding their names in a ſort of memorandum. Modern *deeds* are an improvement and amplification of theſe. Blackſtone's Com. vol. ii. p. 307.

BREVIARE, to abbreviate or reduce a thing into a ſhorter compaſs.

This is otherwiſe called *abbreviare* and *inbreviare.*

BREVIARIUM is more particularly uſed among Roman writers, to denote a book introduced by Auguſtus, containing the accounts of the empire.

The deſign of it was for giving an account to the people how the monies levied on them were applied. The emperor Tiberius laid aſide the *breviarium*, but it was reſumed by Caligula.

BREVIARY, is an epitome, an abridgment, or ſhort ſtate of a thing.

The word is Latin, *breviarium*, though not pure, as appears from Seneca, who obſerves, that the ancients, in lieu of it, uſed *ſummarium.*

Breviary was alſo uſed among the ancients for the place where the briefs, or what was written abbreviately, were preſerved.

Breviary, among *Eccleſiaſtical Writers*, denotes the office, or ſervice both for day and night, as performed in the Romiſh churches.

Breviary is more frequently uſed for a church-book, containing the office of the *breviary*, that is, the prayers, and other parts of the ſervice, with the ſeveral variations to be made therein, according to the ſeveral days, canonical hours, feaſts, and the like.

D. Mege derives the name *breviary* from hence, that the ancient monks in their journeys, &c. had little books, wherein were the pſalms and leſſons, read in the choir, collected out of large volumes: and F. Mabillon tells us, he has ſeen two ſuch books in the archives of Ciſteaux; they were not above three fingers broad: their letter was exceedingly ſmall, and conſiſted moſtly in abbreviations, expreſſing a whole period in a few ſyllables: whence they had a good title to the appellation of *breviaries*, q. d. *abridgments.*

Some deduce the appellation *breviary* hence, that when the popes reſided in the Lateran palace, the office read in the papal palace was much ſhorter than that ſaid in the other churches of Rome; which office, thus abbreviated, was compiled by Innocent III. and called *officium capellare*, till ſuch time as the Franciſcan friars adopting the ſame, in conformity to the papal chapel, it became denominated *breviarium*, and ſhortly after was in general uſe. Magr. Vocab. Eccleſ. p. 38. Menag. Orig. Franc.

The firſt time the word *breviary* occurs, in the ſenſe of a church-book, is in a letter of the archbiſhop of Lyons to the biſhop of Langres, in 1099; or rather by Micrologus, who lived in 1080.

The Roman *breviary* is general, and may be uſed in every place: but on the model of this have been formed various others, peculiarly appropriated to each dioceſe, and each order of religious.

The *breviary* conſiſts of the ſervices of matins, lauds, prime, third, ſixth, nones, veſpers, and the complines, or *poſt-communio*; that is, of ſeven different hours: on account of that ſaying of David, *Septies in die laudem dixi tibi.*

The obligation of reciting the *breviary* every day, which was at firſt univerſal, by degrees was reduced to the beneficiary clergy alone, who are bound to do it on pain of mortal ſin, and of refunding their revenues, in proportion as they are delinquent herein. In the fourteenth century, there was a particular reſervation in favour of biſhops, for paſſing, on occaſion, three days without rehearſing the *breviary.*

The inſtitution of the *breviary* not being very ancient, the lives of the ſaints were inſerted in it, agreeable to the opinions of the times; i. e. full of ridiculous ill-atteſted facts; which gave a handle to ſeveral purgations, or reformations thereof, by ſeveral councils, particularly thoſe of Trent and Cologne; by ſeveral popes, as Pius V. Clement VIII. and Urban VIII. as alſo by ſeveral cardinals and biſhops, each of whom lopped off ſome of the extravagancies, and brought the work nearer to the ſimplicity of the primitive offices; as acknowledging, that in the ancient church there was nothing read, but ſcripture itſelf.—Cardinal Quignon carried the reformation the fartheſt; leaving out the little office of the Virgin, the verſes, reſponſes, and a great part of the lives of the ſaints.

The *breviaries* now in uſe are almoſt innumerable: the difference between them conſiſts principally in the number and order of the pſalms, hymns, pater-noſters, ave-mary's, credo's, magnificats, cantemus's, benedictus's, canticamus's, nunc dimittis's, miſerere's, halleluja's, gloria patri's, &c.

The moſt eminent, after the Roman *breviary*, are, that of the Benedictins, that of the Bernardines, of the Chartreux, of the Præmonſtratenſes, of the Dominicans, the Carmelites, the Franciſcans, and Jeſuits; alſo that of Cluny, of the church of Lyons, the church of Milan, and the Mozarabic *breviary* uſed in Spain.—But in reality there is ſcarce a church in the communion of Rome, in France, Flanders, Spain, Germany, &c. that has not ſomething particular in the form and manner of its *breviary:* though the differences are generally inconſiderable. See AMBROSIAN, GALLICAN, &c.

The *breviary* of the Greeks, which they call ὡρολογιον, *horolologium*, q. d. *dial*, is nearly the ſame, in almoſt all the churches and monaſteries that follow the Greek rite. The Greeks divide the pſalter into twenty parts, καθισματα; which are a kind of reſts, pauſes, or ſtations: and each pauſe is again ſubdivided into three parts.—In general, the Greek *breviary* conſiſts of two parts; the one containing the office for the evening, called μεσονυκτιον; the other that for the morning, conſiſting of matins, lauds, prime, tierce, ſixth, none, veſpers, and complines.—The *breviary* of the Maronites contains ſome more conſiderable variations.

Among the people who ſpeak the Sclavonic language, or any of its dialects, the *breviary* is rehearſed in the vulgar tongue; as among the Maronites in Syriac, among the Armenians in Armenian, &c.—Thoſe who rehearſe the *breviary* in the Sclavonic, are divided as to the rite: ſome following the Roman or Latin rite, as the inhabitants of Dalmatia, and the neighbouring coaſts: whereas thoſe who live farther within the continent, as in Hungary, Boſnia, Sclavonia, &c. and in Poland, Lithuania, and Muſcovy, follow the Greek rite.—The *breviaries* of the Cophts and Abyſſinians are much alike.

BREVIATE, is ſometimes uſed for an ABRIDGMENT, or ſhort extract of a book or paper. Phil. Tranſ. N° 37. p. 2212.

BREVIATOR, an officer under the eaſtern empire; whoſe buſineſs was to write and tranſcribe briefs.—At Rome, thoſe are ſtill called *breviators*, or ABBREVIATORS, who dictate, and draw up the pope's briefs.

BREVIER, among *Printers*, is the denomination of a ſmall ſpecies of letters between *minion* and *bourgeois*. See LETTER.

BREVIS *cubiti*, in *Anatomy*, one of the extenſor muſcles of the *cubitus*, ariſing from the external ſpine of the *humerus*.

BREVIS *radii*, one of the ſupinator muſcles of the *radius*, ariſing partly from the external condylus of the *humerus*, and partly from the upper and exterior part of the *ulna*; and inſerted into the ſuperior part of the *radius*, which it embraces wholly: and ſerves to turn the palm of the hand upwards.

BREVIS is alſo uſed by ſome for the third of the extenſors of the *carpus*, which, ariſing from the lower part of the *humerus*, and running along the *radius*, terminates in the bone of the *carpus*, which ſuſtains the middle finger. Some anatomiſts join this with the ſecond EXTENSOR, and call them *bicornis*, or *radialis externus:* others chooſe to diſtinguiſh them, becauſe they have different origins, and inſertions; and that their bellies are ſeparable.

BREVIS *extenſor pollicis pedis*. See EXTENSOR.

BREVIS *flexor pollicis pedis*. See FLEXOR.

BREVIS *peronæus*. See PERONÆUS.

BREVIS *pronator radii*. See PRONATOR.

BREVITY, in a general ſenſe, that which denominates a thing brief or ſhort.

BREVITY is more particularly uſed in ſpeaking of the ſtyle or compoſition of diſcourſe. *Brevity* of diſcourſe is by ſome called *brachylogia*, and *breviloquentia*; ſometimes *laconiſmus*. Tacitus and Perſius are remarkable for the *brevity* of their ſtyle. There are two kinds of *brevity*, one ariſing from dryneſs, poverty, and narrowneſs of genius; the other from judgment and reflexion; which latter alone is laudable. *Brevity* is ſo eſſential to a tale, a ſong, and an epigram, that, without it, they neceſſarily languiſh and become dull.

Rhetoricians make *brevity* one of the principal marks or conditions of eloquence; but the rules they preſcribe for attaining it, are difficult to apply, ſo as ſtill to keep the due medium between too much and too little.

A juſt *brevity* is attained by uſing all the words which are neceſſary, and none but thoſe which are neceſſary. Sometimes it may alſo be had, by chooſing a word which has the force of ſeveral. It is this laſt kind which Quintilian admires ſo much in Salluſt; and the imitation of which, by other writers, has cauſed ſo much OBSCURITY.

BREVIUM *cuſtos*. See CUSTOS.

BREVIUM *falſo retorno*. See FALSO.

BREWED *wine*. See WINE.

BREWER, an operator who profeſſes the art of BREWING.

Brewers are called, in *Middle Age Writers*, *braſiatores*, *braciatores*, *braxionarii*, *braſiatrices*, *braxatrices*, and *cambarii*. Du-Cange Gloſſ. Lat. tom. i.

The *brewers* of London make a COMPANY, incorporated by Henry VI. in 1438, conſiſting of a maſter, three wardens, twenty-eight aſſiſtants, and one hundred and eight liverymen.

At Paris, they have a company of *brewers*, which is one of the oldeſt in the city, having ſtatutes as early as 1268.

The apparatus and utenſils of a *brewer*, or a brewhouſe, are a furnace made cloſe and hollow for ſaving fuel, and with a vent for the paſſage of the ſmoke, leſt it taint the liquor; a copper, which is preferable to lead; a maſk-fat near the head, a cooler near the maſk-fat, and guile-fat under the cooler; adjoining to all, are ſeveral clean tubs, to receive the worts and liquors.

Brewers uſe BALLS for fining, feeding, preſerving, reliſhing, and colouring MALT-*drinks*, wines, and cyders. They are of two kinds, and denominated from their colours *brown* and *pale* BALLS.

The ingredients in the compoſition of theſe BALLS, of the brown kind, are as follow:

Alabaſter, or marble calcined into powder, two pounds; oyſter-ſhells a little calcined, and freed from their dirty-coloured outſide, one pound; pure fat chalk well dried, one pound; horſe-bean flour freed from the hulls, one pound; red ſaunders, four ounces; grains of paradiſe, half an ounce; Florentine orrice-root, half an ounce; coriander ſeed, one quarter of an ounce; ſix cloves; half an ounce of hops; two ounces of the beſt ſtaple inciſed iſinglaſs; and two pounds of the firſt runnings of melaſſes or treacle.

Pale *balls* are made after the ſame manner, and with the ſame quantities of all the ingredients; except that the ſaunders is left out, and a pound or two of fine ſugar made into a ſyrup is uſed in room of the melaſſes.

The powders are to be very fine, and the BALLS muſt be dried very gradually without heat for the firſt three or four days; afterwards they may be put into the ſun, or at a proper diſtance from the fire, in order to be thoroughly dried; the quantity of hops may be omitted or increaſed at diſcretion, as the liquor requires.

Put as much water to the iſinglaſs as will juſt cover it, in order to open its body, and ſo let it ſtand for twelve hours. Add then the following infuſion to it, and gradually diſſolve the whole over a gentle fire. It is then to be ſtrained off hot, upon ſome of the powder, the remainder of which is to be added by little and little, with ſome of the ſyrup or treacle alternately, till the whole be converted into a ſtiff maſs, of which the BALLS, weighing four ounces each, are to be formed.

To make the infuſion before ſpoken of, a pint of boiling water is to be poured on the coriander ſeed, and cloves bruiſed, and on the hops well rubbed. They are then to be cloſe covered, and ſuffered to ſtand ſo for twelve hours, when they may be ſtrained off for the purpoſe above mentioned.

What follows may ſerve for a direction with reſpect to the number of balls which are to be put into caſks of different ſizes.

Powder one of the balls, and put it into a half firkin; into a firkin, two; into a kilderkin, three; into a barrel, ſix; and ſo on, in proportion. It is to be ſtirred well into the liquor, which ſhould be racked off, if it be of age to bear racking.

BREWING, the operation of preparing ale, or beer, from malt.

The uſual proceſs of *brewing* is as follows.—A quantity of water being boiled, is left to cool, till the height of the ſteam be over; when ſo much is poured to a quantity of malt in the maſhing-tub, as makes it of a conſiſtence, ſtiff enough to be juſt well rowed up: after ſtanding thus a quarter of an hour, a ſecond quantity of the water is added, and rowed up as before. Laſtly, the full quantity of water is added; and that in proportion as the liquor is intended to be ſtrong or weak. This part of the operation is called *maſhing*. The whole now ſtands two or three hours, more or leſs, according to the ſtrength of the wort, or the difference of weather, and is then drawn off into a receiver; and the maſhing is repeated for a ſecond wort, in the ſame manner as for the firſt; only the water to be cooler than before, and not to ſtand above half the time.

The two worts are then to be mixed, the intended quantity of hops added, and the liquor cloſe covered up, gently boiled in a copper the ſpace of an hour or two; then let into the receiver, and the HOPS ſtrained from it into the coolers.—When cool, the barm or yeſt is applied; and it is left to work, or ferment, till it be fit to tun up.

For ſmall beer, there is a third maſhing, with the water near cold, and not left to ſtand above three quarters of an hour, to be hopped and boiled at diſcretion.—For double beer or ale, the two liquors reſulting from the two firſt maſhings, muſt be uſed as liquor for a third maſhing of freſh malt.—For fine ale, the liquor thus *brewed*, is further prepared with melaſſes; but liable to a forfeiture of 20*l.* by ſtat. 1 Ann, cap. 3.

Inſtead of YEST, ſome uſe Caſtile ſoap, others flour and eggs, others an eſſential oil of barley: others a quinteſſence of malt, others of wine, and others the *ſal panariſtus*.

For the properties of the liquors thus *brewed*, ſee MALT *liquor*. For duty on ale and beer, ſee ALE.

Brewing is an art depending on chemiſtry, and capable of being improved various ways, both with regard to the preparation of the malt, the uſe of hops, and the management of the working or fermentation. Some have introduced the uſe of vegetable ſaps, as birch and ſycamore waters, to good purpoſe into the art of *brewing*. Honey, treacle, and ſugar, are alſo capable of being applied to advantage in *brewing*. Phil. Tranſ. N° 68. p. 2071. N° 34. p. 917.

The ſap or juices of trees is a very valuable article in *brewing*, and not only improves malt liquor, but renders it much cheaper. The ſycamore is the beſt tree for tapping for this purpoſe; it yields a great quantity, and that without any other trouble than boring a hole properly, and placing a veſſel under it. One buſhel of malt *brewed* with this juice, will make as good beer as four buſhels in the ordinary way. The beſt way of procuring the ſap is this: take a large auger, and with it bore two holes on the oppoſite ſides of the tree, each ſo deep as to the pith. Each hole is to be bored ſloping upwards, and the beſt place for it is immediately under a large arm of the tree near the ground; and if the arm be pierced through with the auger in the way to the tree, it will be ſo much the better: in this manner, there needs no ſpigot or ſtone to keep open the hole, or to direct the courſe of the liquor, for it will of itſelf run down into a veſſel placed to receive it; and one tree will thus, in a few days, yield a ſufficient quantity of liquor to *brew* with.

In order to preſerve the ſap in a proper condition for *brewing*, what is firſt gathered muſt be inſolated by a conſtant expoſition of it to the ſun, in proper glaſſes, till the reſt be obtained; otherwiſe the firſt will contract an acidity that will ſpoil it. When a ſufficient quantity of the ſap is thus collected, as much rye-bread muſt be put into it, cut thin and well toaſted, but not burnt, as will ſerve to ferment it; when it works well, the bread is to be taken out, and, at a convenient time, it is to be bottled up, and will thus afford a pleaſant liquor, of conſiderable ſtrength, without malt or any other addition. Some people add ſage to this liquor, baking it in their cruſts of rye-bread, till thoroughly dry, and then adding it with the bread to the working liquor. If a few cloves be tied up in a rag, and put into the veſſels into which the ſap is received from the tree, they will preſerve it the year round, without any fermentation: they are very apt to give a taſte to the liquor; but if it be ſo contrived that they are taken out before they give this taſte, the liquor will keep as well without any flavour of them. The adding a few drops of oil of ſulphur, will have the ſame effect; and ſo will the fuming with ſulphur itſelf. A little ſpirit of wine, poured on the top of the juice in every bottle, will alſo be very inſtrumental in preſerving it.

Many people, inſtead of adding malt, and *brewing* the ſap of the ſycamore or birch into ale, uſe raiſins, and make a ſort of wine of it; and ſome add ſugar. Some have uſed the rye-toaſts with very good ſucceſs, though they were not put into the liquor, but only hung over it, at ſuch a diſtance as to give a warmth and motion to the ſurface. Common ale yeſt has been tried by ſome to ferment the juice of the birch; but it uſually ſpoils it, turning the liquor into a very bad ſmall beer. The Flemiſh wheat ferment would probably in time excellently mature the bottled juice of the birch or ſycamore; but it would require a conſiderable time for it. Cinnamon is worthy to be tried in the room of cloves, as of a much more agreeable flavour. Honey has no effect on cyder at all; for it will not mix with it, though boiled in it, to make mead; but, after a time, the cyder lets fall the honey, and becomes ſimple cyder again: it is a queſtion whether it would mix with theſe juices; but if it would, it might probably make a great improvement in them. The tops and young leaves of birch boiled in the ſap, are ſaid by ſome to preſerve it. Phil. Tranſ. N° 146.

BREWING, among *Diſtillers*, denotes the method of extracting the more ſoluble parts of vegetables with hot water, and thus procuring a ſolution or decoction fitted for vinous fermentation.

In which ſenſe, *brewing* is a neceſſary ſtep towards DISTILLATION.

A fermentable ſolution, fit for yielding a ſpirit, or brandy, is obtainable from any vegetable, under proper management; but the more readily and perfectly the ſubject diſſolves, the better it is diſpoſed for fermentation, and the production of brandies. Thus, ſugar, honey, treacle, manna, and other inſpiſſated vegetable juices, which totally unite with water, into a clear and uniform ſolution, are more immediate, more perfect, and better adapted ſubjects of fermentation, than roots, fruits, or herbs, in ſubſtance, the grains, or even malt itſelf; all which diſſolve but very imperfectly in hot water.

Yet MALT, for its cheapneſs, is generally preferred in England, and *brewed* for this purpoſe much after the common manner of *brewing* for beer; only the worſt malt will ſerve for diſtillation; and the tincture, without the addition of hops, and the trouble of boiling, is here directly cooled and fermented.

The grain intended for *brewing* is previouſly malted, to prepare it for diſſolving more eaſily and copiouſly in the water, ſo as to afford a richer tincture or ſolution, which, after due fermentation, will yield about one half more of proof ſpirit than the tincture of an equal weight of unmalted corn.

Brewing is alſo uſed, in an ill ſenſe, for the counterfeiting and compounding eſpecially of wines. Vintners and wine-coopers are ſuſpected of *brewing* wines, or mixing divers inferior ſorts, to imitate ſome better kind. The neceſſity of accommodating their liquors to the palates of their gueſts, is another cauſe of *brewing*; inſomuch that ſome have confeſſed they commonly draw out of two or three caſks for every pint.

BREWING, in *Sea-language*, the appearance of black tempeſtuous clouds, ariſing gradually from a particular part of the hemiſphere, and indicating an approaching ſtorm.

BREYNIA, in *Botany*, a genus of the *polyandria monogynia* claſs of plants, the characters of which are theſe: the flower hath four oval petals, which are a little longer than the empalement. It hath a great number of ſlender ſtamina. In the centre is ſituated a ſlender, oblong, obtuſe germen, which afterward becomes a long ſoft fleſhy pod, opening in two valves with one cell, encloſing a row of fleſhy kidney-ſhaped ſeeds. There are two ſpecies, which being natives of the Weſt Indies, are impatient of the cold, and therefore muſt be preſerved in ſtoves.

BRIAR, in *Botany*, a name given to ſeveral ſpecies of the ROSE.

BRIBE. See BRIBERY.

The word is French, *bribe*, which originally denotes a bit, fragment, or relic of meat taken off the table; on which footing, *bribe* imports as much as *panis mendicatus*, and ſtill keeps up the idea of the matter whereof *bribes* anciently conſiſted. Hence alſo the Spaniards uſe *bribar* and *brivar* for *begging*; and *brivia*, *brivoneria*, and *brivoniſmo*, for *beggary*. Menag. Orig. Franc. p. 131. Skinner Etym. in voc.

In *Middle Age Writers*, a *bribe* given a judge is called *quota litis*, and the receiver, *campi particeps*, or *cambi particeps*; becauſe the ſpoils of the field, i. e. the profits of the cauſe, were thus ſhared with the giver. Du-Cange, Gloſſ. Lat. tom. i.

BRIBERY, in *Common Law*, is when a perſon in judicial places takes a gift or reward of any perſon who has buſineſs before him, for doing his office, or by colour of his office, except the king only, unleſs it be meat and drink: and it is puniſhable by fine and impriſonment, and the loſs of office: and it was anciently deemed treaſon in a judge.

In a larger ſenſe, *bribery* denotes the receiving or offering any undue reward, to or by any perſon concerned in the adminiſtration of public juſtice, as an inducement for acting contrary to duty; and ſometimes it ſignifies the taking or giving a reward for a public office. Officers of the cuſtoms taking any *bribe*, whereby the crown may be defrauded, forfeit 100*l.* and are rendered incapable of any office. Candidates that *bribe* electors, after the date or *teſte* of the writs, or after the vacancy, are diſabled to ſerve in parliament; and he that takes, as well as he that offers a *bribe*, forfeits 500*l.* and is diſabled from voting, and holding any office in any corporation; unleſs, before conviction, he diſcovers ſome other offender of the ſame kind, whereby he is indemnified for his own offence. Blackſtone's Com. vol. i. p. 179. vol. iv. p. 139.

BRICIANI, *Knights of St. Bridget*, a military order, reſembling that of Malta, eſtabliſhed by St. Bridget, princeſs of Sweden, in 1366, and approved of by pope Urban V. who gave it the rule of St. Auguſtine.

The arms of the *Briciani* were a croſs azure, like that of the knights of Malta; under which was a tongue of fire, to expreſs the ardour of their zeal: their office was to fight againſt heretics, bury the dead, aſſiſt widows and orphans, &c.

BRICK, a kind of factitious ſtone, of a reddiſh or yellow colour, made of a fatty earth, formed into long ſquares, four inches in breadth, and eight or nine in length, by means of a wooden mould; and then baked or burnt in a kiln, to ſerve for the uſes of building.

There are alſo *bricks* of a whitiſh colour. Wulpit, in Suffolk, is famed for this ſort.

Bricks appear to be of a very ancient ſtanding; the tower of Babel, and the walls of Babylon being built thereof; as appears both from ſacred hiſtory, and from the remains thereof, ſtill ſaid to be in being. Under the firſt kings of Rome, they built with maſſive ſquared ſtones, which they learnt from the Tuſcans: towards the latter time of the republic, they began to uſe *brick*; borrowing the practice from the Greeks; and the greateſt, as well as the moſt durable buildings of the ſucceeding emperors, as the Pantheon, &c. were built therewith.—In the time of Gallienus, the buildings were compoſed of a row of *brick*, and a row of ſoft gritty ſtone, alternately. After him, they laid aſide the uſe of *bricks*, and reſumed that of flints.

In the Eaſt, they baked their *bricks* in the ſun: the Romans uſed them crude; only leaving them to dry in the air a long ſpace of time; viz. four or five years.

The *bricks* uſed by the Greeks were principally of three kinds: the firſt called διδωρον, i. e. of two palms; the ſecond τετραδωρον, of four palms; and the third πενταδωρον, of five palms.—They had other *bricks*, juſt half each of theſe, which they joined together to render their work more ſolid, as well as more agreeable to the eye, by the diverſity of figures and ſizes of the *bricks*.

Bricks, among us, acquire various names, according to their forms, dimenſions, uſes, method of making, place, &c. The principal are; *Compaſs bricks*, of a circular form, uſed in ſteening of walls. *Concave*, or *hollow bricks*, on one ſide flat, like a common *brick*, on the other hollowed, about three quarters of an inch deep, and half an inch broad; uſed for conveying water under ground: they are uſually a foot long, four inches and a half broad, and two and a quarter thick. *Cogging bricks*, uſed for making the indented work, under the coping of walls built with great *bricks*: they are about ten inches long, four broad, and two and a quarter thick. *Coping bricks*, formed on purpoſe for coping of walls, are about twelve inches ſquare, and four thick, flat underneath, one third above ſemicircular, and the two ends flat. *Dutch* or *Flemiſh bricks*, uſed to pave yards and ſtables, and for ſoap-boilers vats, and ciſterns. *Brique de Chantignole*, or *Demibrique*, is that only an inch thick, but otherwiſe of the ſame dimenſions as the whole *brick*; uſed in paving between borders of ſtones, and alſo for the making hearths and chimney-backs. *Clinkers*, ſuch *bricks* as are glazed by the heat of the fire in making: theſe lie in the middle of the kiln or clamps; and are the moſt durable. *Feather-edged bricks*, are made like the common ſtatute *bricks*, only thinner on one edge than on the other, and uſed to pen up the brick pannels in timber buildings. *Samel*, or *ſandal bricks*, are ſuch as lie outmoſt in a kiln or clamp, and conſequently are ſoft and liable to moulder; as not being thoroughly burnt. *Great bricks*, are thoſe which are twelve inches long, ſix broad, and three thick: the weight of one being about fifteen pounds: ſo that 100 weigh 1500, and 1000 of them 15000 pounds: their uſe is to build fence-walls; together with, *pilaſter*, or *buttreſs bricks*, which are of the ſame dimenſions with the great *bricks*, only they have a notch at one end, half the breadth of the *brick*: their uſe is to bind the work at the pilaſters of fence-walls, which are built of great *bricks*. *Paving bricks*, or *tyles*, are of ſeveral ſizes in ſeveral counties and places, from ſix to twelve inches ſquare, and one and a quarter, more or leſs, thick. See PAVEMENT, and TYLE. *Place-bricks*, ſuch as are made in a place prepared on purpoſe for them, near the building in which they are to be uſed. *Statute*, or *ſmall common bricks*, when burnt, by ſtat. 10 Geo. III. c. 49. ought to be eight inches and a half long, four broad, and two and a half thick: 100 of theſe uſually weigh about 550 pounds; and 1000, 5500 pounds; about 407 in number, make a ton weight. Theſe are commonly uſed in paving cellars, hearths, ſinks, &c. Thirty or thirty-two, if true meaſure, will pave a yard ſquare, and 330 will pave a ſquare of 100 feet laid flat; but if laid edgeways, there muſt be near double the number. *Stock-bricks* are to be of the ſame dimenſions; only one eighth of an inch thicker; and they are either marle or grey ſtocks. Theſe and the *ſamel bricks* are moſt uſed in building: *rubbing bricks* are for gauged work; *clinkers* for paving; Windſor and Welch *bricks* for furnaces, as being the fitteſt to bear intenſe heat.

Barbaro, in his commentary on Vitruvius, recommends another form of *bricks*; viz. *triangular* ones, every ſide a foot long, and only an inch and half thick. Theſe, he obſerves, would have many conveniences above others; as being more commodious in the management, of leſs expence, and of fairer ſhew; adding much beauty and ſtrength to the mural angles, where they fall gracefully into an indented work. Sir H. Wotton wonders they have never been taken into uſe, being recommended by ſo great an authority.

The earth whereof *bricks* are made, muſt not be ſandy, which will render them both heavy and brittle; nor muſt it be too fat, which will make them crack in drying. They ſhould be made either in the ſpring, or autumnal ſeaſon; and when made, they muſt be ſheltered from the ſun, if it be too hot, and yet be expoſed to the air to dry. If they be made in froſty weather, they are to be covered with ſand; if in hot weather, with wet ſtraw.

The ſeveral ſteps in the proceſs of our *brick*-making, are, caſting the clay or earth; treading or tempering the ſame with water; ſanding the *brick*, which is to riddle or caſt dry ſand on the wet *brick* lying on the ground; raiſing the *bricks* on one ſide, that they may dry the better and ſooner; walling the *brick*, which is to lay one upon another, after the manner of a wall, to keep them from foul weather, and that they may dry thoroughly; ſodding the *bricks*, which is to cover them up with turf; ſetting the *bricks* in the kiln, or the laying of ſlack or ſmall coal between every courſe or row of *bricks*; daubing the kiln, which is the claying of it all about the top, to keep the fire in, and ſecure the kiln from weather; firing, which is to ſet the fuel put into the arches on fire; earthing, which implies to put earth about it, to ſtop the arches, that the fire may take upwards to the top of the kiln; cooling the kiln after it has done burning; breaking the kiln; counting of the *bricks*; carrying the *brick*, which is to bring them to the place where they are to be uſed, either on horſeback or in tumbrels.

The burning of *bricks* is performed either in a kiln, or a clamp. In the former, the *bricks* being ſet in, and the kiln covered with pieces of *bricks*, they put in wood, to dry them with a gentle fire; and this they continue till they are pretty dry, which is known by the ſmoke's turning from a whitiſh to a thin black ſmoke. They then ceaſe to put in wood, and proceed to burn with bruſh, furze, ſtraw, heath, brake, or fern faggots; having firſt dammed up the mouth of the kiln with a ſhinlog, i. e. pieces of *bricks* piled upon one another, and cloſed with wet *brick* earth, inſtead of mortar: then they continue to put in more faggots, till the kiln and its arches look white, and the fire appears at the top of the kiln: upon which they ſlacken the fire for an hour, and let all cool by degrees. This they continue to do alternately heating and ſlacking, till the ware be thoroughly burnt; which is uſually effected in 48 hours.

About London, they chiefly burn in clamps, built of the *bricks* themſelves, after the manner of arches in kilns; with a vacancy between each brick's breadth, for the fire to play through: but with this difference, that inſtead of arching, they truſs or ſpan it over, by making the bricks project one over another, on both ſides of the place, for the wood and coals to lie in, till they meet and are bounded by the *bricks* at the top, which cloſe all up. The place for the fuel is carried up ſtrait on both ſides, till about three feet high: then they fill it almoſt with wood, and over that lay a covering of ſea-coal; and then over-ſpan the arch: but they ſtrew ſea-coal alſo over the clamp, betwixt all the rows of *bricks*; laſtly, they kindle the wood, which gives fire to the coal: and when all is burnt out, they conclude that the *bricks* are ſufficiently burnt.

The *arches* of a kiln of *bricks*, are the hollow places at the bottom where the fire is; *pigeon-holes* are apertures in the fire-arches; *checker-courſe*, denotes the lower row of *bricks* in the arch; *tying-courſe*, thoſe which cover the top of the arch; *binding-courſe*, is the laying of *bricks* over the joints of the under-courſe; *dividing-courſe*, is the diviſions or parts of a kiln; *flatting-courſe*, is the top of all the kiln; the *wheeler*, is he who carries the clay from the pit to the moulding-board foot, and there turns it off the wheelbarrow; *ſtaker*, he who puts the clay off the ground upon the board; *moulder*, he who works the clay into the *brick*-moulds, and ſtrikes the ſuperfluous clay off the top of the moulds; *breaker-off*, he who takes the mould, with the clay in it, from the moulder, and lays it on the ground to dry; *moulder*, he who parts off the clay from the mould; *off-bearer*, he who pulls off the empty mould into the tub of water or ſand; *taker-up* of the *brick* has his work alſo to dreſs and ſmooth them from irregular edges.

In burning *bricks*, much depends on the alternate raiſing and abating the fire. *Brick*-burners, who continue the heat without intermiſſion, uſually make their lower ware extremely hard and good, but the upper bad: and beſides, the lower ones will ſometimes run ſo with the exceſſive heat, as alſo to unite into one body. Then, for cooling kilns of ware, ſome unwiſe burners, as ſoon as the *bricks* are burnt, immediately ſtop up the reſt of the mouth of the kiln, which was left open above the ſhin-log, by which means the air being ſhut out, it is long in cooling; ſo that ſuch burners are commonly a fortnight, or almoſt three weeks, in ſetting, burning, and drawing of a kiln of ware; all which may be done in one week.

By ſtat. 12 Geo. I. cap. 35. earth or clay, deſigned for making *bricks* for ſale, ſhall be dug, and turned at leaſt once between the firſt of November, and the firſt of February, and not be made into *bricks* till after the firſt of March: and no *bricks* be made for ſale, but between the firſt of March and twenty-ninth of September. But by ſtat. 10 Geo. III. cap. 49. earth may be dug for making *bricks*, at any time in the year; provided ſuch earth be turned once before it be made into *bricks*. And by the former ſtatute, no Spaniſh is to be mixed with the earth; or breeze uſed in the burning of *bricks*. And all *bricks* are to be burnt either in kilns or diſtinct clamps, each ſort by itſelf.

By ſtat. 3 Geo. II. cap. 22. there may be mixed with the *brick* earth any quantity of ſea-coal aſhes, ſifted or ſcreened through a ſieve, or ſcreen half an inch wide, and not exceeding twenty loads, to the making one hundred thouſand *bricks*: each load not exceeding thirty-ſix buſhels. And breeze may be mixed with coal in the burning of *bricks* in clamps for ſale, &c. Stock-*bricks* and place-*bricks* may be burnt in one and the ſame clamp, ſo that the ſtock-*bricks* be ſet in one diſtinct parcel, and not mixed or ſurrounded with place-*bricks*.

For the more effectual ſecuring the obſervation of theſe laws, it was enacted, by 12 Geo. I. cap. 35. for the better diſcovering of offenders, that the maſter and wardens of the company of tylers and brick-layers ſhould have power to ſearch *brick*-kilns, &c. but they having permitted, and even encouraged divers perſons to make *bricks*, contrary to the directions in the ſaid act, by 2 Geo. II. cap. 15. they are diveſted of that power; and any two, three, or more perſons, appointed by the juſtices of peace, are impowered, within fifteen miles of London, to go, in the day-time, into any grounds, ſheds, or places, where any clay or earth ſhall be digged, or digging, for *bricks* or pantiles; or any *bricks* or pantiles ſhall be making, or made for ſale; and there to view, ſearch, and inſpect the ſame, &c.—Offenders to forfeit twenty ſhillings for every thouſand of unſtatutable *bricks*, and ten ſhillings for every thouſand of ſuch tyles: one moiety to the uſe of the proſecutor, the other to the poor of the pariſh, where the offence ſhall be committed.

Goldman obſerves, that *bricks* will have double the ſtrength, if, after one burning, they be ſteeped in water, and burnt afreſh. If the *brick* earth be too fat, it muſt be tempered with ſand; and that trodden out again, firſt by cattle, then by men. *Bricks* made of common earth, melt, nay vitrify, by too much heat: for which reaſon, the kilns are made of ſtones, that will themſelves calcine, that the vehemence of the fire may be broken by them: beſides which, they uſually place other *bricks*, made of an argillous earth, which will melt, next the fire.

Brick-work is found ſtronger and more durable than ſtone-work; and eſpecially better fitted to reſiſt the force of guns and engines of war. The Greeks are ſaid to have carried *brick*-makers with them in their armies, to be in readineſs for camp-works and fortifications. The Romans intermixed *brick* with their ſquare ſtone, in order to ſtrengthen it. In reality, *brick*-buildings were generally conſidered by the ancients as perpetual; ſo that, in Rome, abatement was always made for the age of ſtone-building, none for that of *bricks*. *Brick*-walls are alſo found warmer and wholeſomer than thoſe of free-ſtone and marble, as not being liable to ſweat, or collect humidities on their ſurface, which they rather imbibe. We may add, that *bricks* are found the beſt materials for vaults and edifices under ground, not only on account of their durableneſs, but the eaſineſs of their expence, and ſafety from fire. Phil. Tranſ. N° 93. N° 149.

Sir Henry Wotton ſpeaks of a ſort of *bricks* at Venice, of which ſtately columns were built; they were firſt formed in a circular mould, and cut before they were burnt, into four or more quarters or ſides; afterwards, in laying, they were jointed ſo cloſe, and the points concentered ſo exactly, that the pillars appeared one entire piece. Elem. Archit. lib. ii.

The ordinary Paris *brick* is eight inches long, four broad, and two thick, French meaſure, which makes ſomething more than others. But this ſmallneſs is an advantage to a building, the ſtrength and firmneſs of which conſiſts much in the multitude of angles and joints, at leaſt if well laid, and in good bond. The Romans were guilty of a great overſight in this reſpect; their *bricks* being above double of the French ones; though they had a better ſort, called *lateres beſſales*, only meaſuring eight inches in length: but theſe were properly only their half-*bricks*. In England, we alſo ſometimes make *bricks* of an unuſual length, meaſuring twenty-two inches long, and only ſix broad, ſerving to ſupply the office of laths or ſpars in malt-kilns.

Bricks may be made of any earth that is clear of ſtones, even ſea-owſe; but all earth will not burn red, a property peculiar to earths which contain ferruginous particles. In England, *bricks* are chiefly made of a hazely yellowiſh coloured fatty earth, ſomewhat reddiſh, vulgarly called *loam*, which is a mixture of clay and ſand. The earth, according to Leybourn, ought to be dug before winter, but not made into *bricks* till ſpring.

Worlidge, and others after him, have laboured to excite *brick*-makers to try their ſkill in making a new ſort of *brick*, or a compoſition of clay and ſand, whereof to form window-frames, chimney-pieces, door-caſes, and the like. It is to be made in pieces faſhioned in moulds, which, when burnt, may be ſet together with a fine red cement, and ſeem as one entire piece, by which may be imitated all manner of ſtone-work.

The thing ſhould ſeem feaſible by the earthen pipes made fine, thin, and durable, to carry water under ground at Portſmouth, and by the earthen backs and grates for chimneys, formerly made by Sir John Winter, of a great bigneſs and thickneſs.

In reality, much might be done towards making chimney-pieces, ſtone-mouldings, architraves, faſcias for fronts of buildings, and the like, if men of this profeſſion had a little tincture of chemiſtry, which would enable them to contrive ſome good compoſition of earth, and a proper way to manage it in the moulding, burning, &c.

Brick-making, among the Romans, was conducted with great care and choice; by which means their *bricks* were rendered of much longer duration than ours. In this reſpect moſt of our neighbours excel us; the *bricks* which we import from Holland, Denmark, &c. being better than our own. Phil. Tranſ. N° 351. Houghton Collect. tom. ii. N° 168. p. 26.

With reſpect to the poſition, or manner in which *bricks* are laid, we meet with

BRICKS *in bond*, *Briques en liaſon*, thoſe laid flatwiſe, and ſo as to over-reach each other by half their length.

BRICKS, *Floor*, *Briques de champ*, thoſe laid edgewiſe, to ſerve as a pavement.

BRICKS, *Spicated*, *Briques en epi*, thoſe placed diagonalwiſe, after the manner of Hungarian point. Such is the pavement of Venice.

BRICK *Walls*. See WALL.

BRICKS, in *Medicine* and *Chemiſtry*, are not only uſed in the preparation of the oil, which takes its denomination from them; but heated *bricks* are frequently added in diſtillation, to increaſe the fervour of bodies in boiling. Some adulterate the *ſoda*, or kali aſhes, for glaſs, with *brick*-duſt.

BRICKS, *Oil of*, is oil of olive, imbibed by the ſubſtance of *bricks*, and afterwards diſtilled from it.—The pieces of *bricks*, being heated red-hot in live-coals, are extinguiſhed in a trough half filled with oil of olives: being then ſeparated, and the *brick* thus ſaturated with oil, and groſsly pounded, it is put into a retort, and placed in a reverberatory furnace; and thus is drawn an oil, which the apothecaries call *oleum de lateribus*, and ſome chemiſts *oil of the philoſophers*: it is uſed for reſolving tumours in the ſpleen, alſo againſt palſies, epilepſies, &c. See OIL.

Some extol it as a ſeptic, excellent for taking away calluſes, cleanſing and removing ulcers, &c. It is now fallen much into diſuſe. Juncker Conſp. Chirurg.

BRICK-*duſt*.—It is a cuſtom with ſome perſons to reduce this ſubſtance to a very fine powder, and give it, inſtead of chalk, in the heart-burn. Many of the lozenges, ſo much famed for the cure of this diſorder, and ſold under the pompous names of coral lozenges, are only made of a mixture of this uncouth medicine and ſugar, made into the conſiſtence of a paſte, with gum tragacanth reduced to a mucilage with roſe-water. But it is to be obſerved, that this, as well as chalk, is a very dangerous remedy. It has grown into an opinion, that the ſole cauſe of this complaint was an acid humour in the ſtomach, and thence an abſorbent was judged alone ſufficient for a cure: chalk was the firſt ſubſtance pitched upon for this purpoſe; but ſome miſchievous events having happened from the taking it, recourſe was had by ſome to this odd medicine. But ſuch ſhould have obſerved, that as chalk did all its miſchief by being an aſtringent, this new medicine was qualified to do much more harm, on the ſame principle; it being a much more powerful one. Juncker Med. Conſp. p. 589.

BRICK is alſo uſed in ſpeaking of divers other matters made in the form of *bricks*.

In which ſenſe, we ſay a penny *brick*, or *brick*-BREAD. Some alſo mention *brick*-TIN, a ſort of tin in that ſhape brought from Germany; and *brick*-SOAP, made in oblong pieces, from a pound and a half to three pounds.

BRICKS, or **BRIQUES**, in *Heraldry*, are figures or bearings in arms, reſembling a building of *bricks*; being of a ſquare form, like billets and tablets; from which they only differ in this, that they ſhow their thickneſs, which the others do not.

BRICK, in *Zoology*, the name of a ſort of lamprey, called by the writers on theſe ſubjects, *lampetræ medium genus*; and diſtinguiſhed from the other lampreys, by having a number of black tranſverſe ſpots, very narrow and long.

BRICK-*earth*, in *Agriculture*. See *Brickiſh* SOIL.

BRICK-*kiln*, a place to burn bricks in.

BRICK-*layer*, an artificer whoſe buſineſs it is to build with bricks, or make brick-work.

Brick-layers work or buſineſs, in London, includes tyling, walling, chimney-work, and paving with bricks and tyles. In the country, it alſo includes the maſons and plaiſterers buſineſs.

The materials uſed by *brick-layers*, are bricks, tyles, mortar, laths, nails, and tyle-pins.

Their tools are, a brick-trowel, wherewith to take up mortar; a brick-ax, to cut bricks to the determined ſhape; a ſaw, for ſawing bricks; a rub-ſtone, on which to rub them; alſo a ſquare, wherewith to lay the bed or bottom, and face or ſurface of the brick, to ſee whether they be at right angles; a bevel, by which to cut the under-ſides of bricks to the angles required; a ſmall trannel of iron, wherewith to mark the bricks; a float-ſtone, with which to rub a moulding of brick to the pattern deſcribed; a banker, to cut the bricks on; line-pins, to lay their rows or courſes by; plumb-rule, whereby to carry their work upright; level, to conduct it horizontal; ſquare, to ſet off right angles; ten foot rod, wherewith to take dimenſions; jointer, wherewith to run the long joints; rammer, wherewith to beat the foundation; crow and pick-ax, wherewith to dig through walls.

The London *brick-layers* and TYLERS make a regular company, which was incorporated in 1568, and conſiſts of a maſter, two wardens, twenty-eight aſſiſtants, and one hundred and eight on the livery.

A *brick-layer* and his labourer will lay in a day about a thouſand bricks, in whole work on a ſolid plane, when the wall is but a brick and a half, or two bricks thick; and ſince a cubic yard contains 460 bricks, he will lay above two cubic yards in a day: and hence it may be eaſily computed how many *brick-layers* are required to finiſh a certain piece of work in a given time.

Brick-laying is one of the arts ſubſervient to architecture. Moxon has an exerciſe expreſs on the art of *brick-laying*, wherein he deſcribes the materials, tools, and methods of working uſed by *brick-layers*. See *Brick*-WALLS.

BRICKING popularly ſignifies building a thing up with brick; but, more properly, the act or art of counterfeiting of brick on plaiſter, by ſmeering it over with red oker colour, and marking the joints with an edged inſtrument.

This anſwers to what the French call *briqueter*, which is ſometimes alſo performed by uſing a layer of plaiſter, mixed with red oker, and, while it is freſh laid on, drawing deep lines for joints, and then filling them with fine plaiſter. Some even ſmear bricks themſelves with a red colour, and repair the joints with plaiſter, to make an antiquated building look freſh.

When bricks are rubbed to a particular dimenſion, and ſet with a neat joint, this is by way of eminence called *gauged work*.

BRIDE, a woman juſt married, or a wiſe in the firſt days of her matrimonial ſtate. See MARRIAGE.

Among the Romans, the maid eſpouſed remained a *bride*, *ſponſa*, till ſhe entered the huſband's houſe; from which time ſhe commenced a wife, *uxor*.

The bridegroom was attended by a brideman, *paranymphus*; the *bride* by a *pronuba*, or bridemaid, whoſe buſineſs was to inſtruct her young miſtreſs in the duties of the genial bed, and to prepare every thing for a proſperous copulation.

The ancient ceremonies practiſed in reſpect of a *bride* were numerous; moſt of them emblematical, or ſignificant of ſome part of her duty: as, dreſſing her hair after a peculiar manner, and parting it with a ſpear; putting on her a crown; girding her with a girdle, which the bridegroom was to looſen; putting a yoke on her neck; dreſſing her in yellow ſocks; and veiling her with the *flammeum*. She was to ſeem to be raviſhed or torn by force from her mother, in memory of the rape of the Sabines under Romulus; ſhe was to be carried home in the night-time to the bridegroom's houſe, accompanied by three boys, called *patrimi* and *matrimi*; one of whom carried a torch, and the other two, called *paranymphi*, led the *bride*; a ſpindle and a diſtaff being carried with her: ſhe brought three pieces of money, called *aſſes*, in her hand to the bridegroom, whoſe doors, on this occaſion, were adorned with flowers and branches of trees: being here interrogated who ſhe was, ſhe was to anſwer, *Caia*, in memory of Caia Cæcilia, wiſe of Tarquin the elder, who was an excellent *lanifica*, or ſpinſtreſs; for the like reaſon, before her entrance, ſhe lined the door-poſts with wool, and ſmeared them with greaſe.

Fire and water being ſet on the threſhold, ſhe touched both; but, ſtarting back from the door, refuſed to enter, till at length ſhe paſſed the threſhold, being careful to ſtep over, without touching it: here the keys were given her; a nuptial ſupper was prepared for her, and minſtrels to divert her; ſhe was ſeated on the figure of a Priapus, and here the *patrimi* and *matrimi* reſigned her to the *pronubæ*, who brought her into the nuptial chamber, and put her into the genial bed; this office was to be performed by matrons who had only been once married, to denote that the marriage was to be for perpetuity. When the bridegroom was brought to her, to drown the cries and ſqualling of a coy maid at the firſt conflict, epithalamia were ſung by the women, who were divided for that purpoſe into two bands, one whereof ſung in the evening, the other the next morning; and, for the like purpoſe, nuts were alſo thrown about for the boys to ſcramble for. Potter Archæol. lib. iv. cap. 11. tom. ii. Val. Max. 10. Plut. Quæſt. Rom. 30. Serv. ad Æn. lib. iv. ver. 450. Kenn. Rom. Ant. p. ii. lib. i. c. 9. Fabr. Bibl. Ant. cap. 10. § 5.

BRIDEGROOM, the ſpouſe or mate of a bride.

Among the Romans, the *bridegroom* was decked to receive his bride; his hair was combed and cut in a peculiar form; he had a coronet or chaplet on his head, and was dreſſed in a white garment. Pitiſc. Lex. Ant. tom. i.

By the ancient canons, the *bridegroom* was to forbear the enjoyment of his bride the firſt night, in honour of the nuptial benediction given by the prieſt on that day. Johnſ. Eccleſ. Law, ann. 740. § 88.

In Scotland, and perhaps alſo ſome parts of England, a cuſtom called *marchet*, obtained, by which the lord of the manor was entitled to the firſt night's habitation with his tenants brides. See BOROUGH-*Engliſh*, and MARCHET.

BRIDEMIF, in the *Perſian Tables*, the conſtellation LUPUS, or the wolf.

BRIDEWELL, in our *Cuſtoms*, denotes a work-houſe, partly for the correction of vagrants, and partly for the employment of the pariſh poor.

Bridewell, near Fleet-ſtreet, is a foundation of a mixt and ſingular nature, partaking of the hoſpital, the priſon, and work-houſe; it was founded in 1553, by Edward VI. who gave the place where king John had formerly kept his court, and which had been repaired by Henry VIII. to the city of London, with 700 merks of land, bedding, and other furniture.

Several youths are ſent to this hoſpital as apprentices to manufacturers, who reſide there; they are cloathed in blue doublets and breeches, with white hats. Having faithfully ſerved their time of ſeven years, they have their freedom, and a donation of ten pounds each, for carrying on their reſpective trades.

BRIDGE, an ediſice either of ſtone or timber, conſiſting of one or more arches, erected over a river, canal, or the like, for the conveniency of croſſing, or paſſing over from one ſide to the other.

A *bridge* may be conſidered as a ROAD over water.

Janus is made by ſome learned men, the firſt inventor of *bridges*, as well as of ſhips and crowns: their reaſon is, that in ſeveral ancient Greek, Sicilian, and Italian coins, there are repreſented on one ſide a Janus, with two faces, and on the other, a *bridge*, or a crown, or a ſhip.

The parts of a *bridge* are the *piers*, or legs, *pilæ*; the *arches*; the *pavement*, or way over for cattle and carriages; the *foot-banks* on each ſide for foot-paſſengers; the *rail* or parapet, which incloſes the whole; and the *butments*, or ends of the *bridge* on the banks.

Bridges are a ſort of edifices very difficult to execute, on account of the inconvenience of laying foundations, and walling under water. The earlieſt rules and inſtructions relating to the building of *bridges*, are given by Leon Baptiſta Alberti. Others were afterwards laid down by Palladio, and Scammozzi; all of which are collected by M. Blondel. The beſt of them are alſo given by Goldman, and Hawkſmoor. M. Gautier has a piece expreſs on *bridges*, ancient and modern. M. Belidor has likewiſe treated of this ſubject in his Architect. Hyd. Mr. Riou publiſhed a treatiſe in 1760, entitled, "Short Principles for the Architecture of Stone-Bridges, &c." Muller, Labelye, Hutton, and others, have written on this ſubject.

The conditions required in *bridges* are, that they be well deſigned, commodious, durable, and ſuitably decorated. The PIERS of ſtone-*bridges* are to be equal in number, that there may be one arch in the middle, where commonly the current is ſtrongeſt. Their thickneſs is not to be leſs than a ſixth part of the ſpan of the arch, nor more than a fourth. They are commonly guarded in front with an angular ſtarling, or ſpur, to break the force of the current; though this defence is ſometimes alſo turned ſemicircularly: in the ancient *bridges*, it is always a right angle; which has the advantage of being ſtronger and more durable than acute ones; though now ſeldom uſed but in *bridges* over ſmall rivers, whereby their height and the quantity of maſonry are conſiderably reduced. The ſtrongeſt arches, according to ſome, are thoſe whoſe ſweep is a whole ſemicircle; though others prefer elliptic arches. Others recommend thoſe in form of the CATENARIAN curve. For the rails, the height, ornaments, and the like, they are left to diſcretion. It is even complained, that no demonſtrative reaſons are given of the ſeveral proportions of the moſt eſſential parts of *bridges*: much of which is ſtill left to the diſcretion of the builder, to be regulated according to the circumſtances, deſign, place, magnitude, &c. of the deſigned edifice. M. Gautier wiſhes, that mathematical perſons would take the ſtructure and proportion of *bridges* into their conſideration, in order to bring things to more certainty and preciſion, founded on invariable geometrical truth. Something of which kind has been attempted by M. De la Hire, in Mem. Acad. R. Scienc. an. 1712. p. 70. and the Marquis De L'Hopital, in Act. Erud. Lipſ. 1695. p. 56.

The breadth of a *bridge*, according to Baptiſta Alberti, ought to be the ſame as that of the highway which abuts on it: the breadth of the piers is to be one third of the aperture of the arches; the ſtarlings to be one half the breadth of the piers, and to riſe above the greateſt height, to which the water ever mounts.

To ſecure the piers of *bridges*, they ſometimes diminiſh the current of the river, either by lengthening its courſe, by making it more winding (a method ſometimes uſed by the ancients in rendering their rivers navigable), or by ſtopping the bottom of a rapid river, with rows of banks, ſtakes, or piles, which break the current.

The piers of a *bridge* always diminiſh the bed of a river: ſuppoſe this diminution one fifth, it will follow, that in caſe of inundations, the bed muſt be ſunk or hollowed one fifth more than before, ſince the waters gain in depth what they have loſt in breadth. Add, that as the quantity of the water remains ſtill the ſame, it will paſs with greater velocity by one fifth in the place where ſuch contraction is: all which conduces to waſh away the foundation. The ſtream, thus augmented in velocity, will carry away flints and ſtones, which before it could not move.

The foundation of *bridges* is to be laid at the ſeaſon of the year when the waters are loweſt, as in autumn; and if the ground be rocky, hard gravel, or ſtony, the firſt ſtones of the foundation may be laid on the ſurface, without digging deeper; but if the ſoil be ſoft ſand, or gravel, it will be neceſſary to turn off the water, and dig till you come at a firm bottom; at leaſt, if this cannot be done, part of the water muſt be carried off, and the reſt kept dry, and piled: that ſide of the river where you are to work, is to be incloſed with coffer-dams, and the current to have its liberty on the other ſide. Palladio's directions are, firſt, to make choice of that place in a river, which has the leaſt depth of water, and where the ground is even and firm, eſpecially rock or gravel ſtone; ſecondly, to avoid thoſe places where there are vorago's, or whirlpools, and where the bottom is ſoft ſand, or gravel, in regard ſuch matters are eaſily carried away by the violence of water, which in time alters the bed of a river, and ſaps the foundation of the piers; thirdly, to pitch on a ſtrait part of a river, ſince otherwiſe, the turns and winding being worn away in time, the *bridge* is in danger of being left inſulate; beſides being liable to be choaked up with the filth and other matters commonly gathered in the turns of rivers.

The building and repairing of *bridges*, was one of thoſe ſervices to which all orders and ranks were ſubject; though the clergy have ſometimes got exemptions from it. See PONTAGE.

The ſtructure of the Roman *bridges* is beſt deſcribed by Bergier; they conſiſted of *pilæ*, or piers; *fornices*, or arches; *ſublices*, or butments; *pavimenta*, and *aggeres*; the roads over them in the middle for carriages; on each ſide whereof *decurſoria*, or banquettes, ſomewhat higher than the reſt, for foot-paſſengers, and ſeparated from it by a *ſponda*, or rail, and ſometimes even covered over, to ſhelter paſſengers from the rain, as in the Pons Ælius.

The Trajan *bridge* over the Danube, was the moſt magnificent of all the works of this kind in the world. It was erected by that emperor for the conveniency of ſending ſuccours to the Roman legions on the other ſide the Danube, in caſe they ſhould be ſuddenly attacked by the Daci; but demoliſhed by the next ſucceſſor Adrian, for fear the Barbarians, overpowering the guards ſet to defend it, ſhould, by means of it, pour into Mœſia, and cut off the garriſons there; or rather, as ſome think, out of envy, as deſpairing ever to do any thing like it himſelf. The arches were broken down by Adrian; but the ruins of it are ſtill ſeen in the middle of the Danube, near the city Warhel in Hungary. The piers were twenty in number, of ſquare ſtone; each of them 150 feet high above the foundation, 60 feet in breadth, and diſtant from one another 170 feet; ſo that the whole length of it was above 1530 yards. Dion Caſſius, lib. lxviii. cap. 13.

Modern architects are abſolutely at a loſs to conceive how the foundations of ſuch a *bridge* could be laid in ſo vaſt and rapid a river, and ſo deep a channel as the Danube. Scamozzi imagines that the river muſt have been turned out of its courſe. But to divert the Danube ſeems impoſſible. That author conjectures, that choice was made of ſome ſhort bend of the river, where it made almoſt a peninſula, and a canal was cut croſs the iſthmus or neck thereof, through which the river took its courſe; ſo that the *bridge* was built on dry land, and, when finiſhed, the river was returned to its ancient channel. Some writers have added, that this *bridge* was built in one ſummer, and that Apollodorus of Damaſcus was the architect.

The Trajan *bridge*, at Salamanca, over the river Formus, popularly attributed to the giants, by ſome to Hercules, appears rather to be a Roman work, though when and by whom erected, is not known; but it was repaired by Trajan, whoſe denomination it ſtill bears. It is 1500 feet long; conſiſts of 26 arches, each 72 feet wide; the piers that ſuſtain them being 23 feet thick, and 200 high.

Among the Romans, the building and repairing of *bridges* was firſt committed to the pontifices, or prieſts; then to the cenſors, and curators of the roads; laſtly, the emperors took the care of *bridges* into their own hands. Thus Antoninus Pius built the Pons Janiculenſis of marble; Gordian reſtored the Pons Ceſtius; and Adrian built a new one, denominated from him.

In the middle age, *bridge*-building was ranked in the number of acts of religion; and a regular order of hoſpitallers was founded by St. Benezet, towards the cloſe of the twelfth century, under the denomination of *Pontifices*, or *Bridge-builders*; whoſe chief object was to be aſſiſtant to travellers, by making *bridges*, ſettling ferries, and receiving ſtrangers in hoſpitals, or houſes built on the banks of rivers. But the order was too good to thrive. We read of one hoſpital of the kind at Avignon, where the hoſpitallers dwelt under the direction of their firſt ſuperior, St. Benezet. The Jeſuit Raynaldus has a treatiſe expreſs on St. John the *bridge*-builder.

In France, the Pont de Garde is a very bold work; the piers being only thirteen feet thick, yet ſerving to ſupport an immenſe weight of a triplicated arcade, and ſerves to join two mountains. It conſiſts of three *bridges* one over another; the uppermoſt of which is an aqueduct.

The *bridge* of Avignon was begun in the year 1176, and finiſhed in 1188; conſiſting of eighteen arches, meaſuring 1340 paces in length, or about 500 fathoms.

Divers of its arches have been ſince demoliſhed by the ice, &c. ſo that only part of it now ſubſiſts.

The *bridge* of St. Eſprit is the fineſt and boldeſt in France, conſiſting of nineteen great arches, beſides ſeven ſmaller ones, the apertures of the arches being from fifteen to twenty fathoms, which makes the length of the *bridge* upwards of 400 fathoms.

The famous *bridge* of Venice, called the Rialto, conſiſts but of a ſingle arch, and that a flat or low one; paſſing for a maſter-piece of art, being built in 1591, on the deſign of Michael Angelo: the ſpan of the arch is ninety-eight feet one half, and its height above the water only twenty-three feet.—Poulet alſo mentions a *bridge* with a ſingle arch, in the city of Munſter in Bothnia, much bolder than that of the Rialto at Venice. But theſe are nothing to a *bridge* in China, built from one mountain to another, conſiſting of one ſingle arch, 400 cubits long, and 500 cubits high, whence it is called the *flying bridge*: a figure of it is given in the Philoſophical Tranſactions. Kircher alſo ſpeaks of a *bridge* in the ſame country 360 perches long, without any arch; ſupported only by 300 pillars. The accounts given by ſome of the Popiſh miſſionaries of *bridges* in China, have much the air of fables.

We have many *bridges* of conſiderable note in our own country: ſuch is the *bridge* at York, whoſe maſter arch in the middle is 82 feet and a half in the clear wide, and 27 feet high. Rocheſter *bridge* is built in the ſame ſtyle with that of London; it is 550 feet long, and conſiſts of 11 arches, the biggeſt of which is more than 50 feet. It was erected at the charge of Sir Robert Knolles, who died in the midſt of the reign of king Henry IV. The *bridges* at Durham and Biſhop-Awkland may alſo be mentioned, whoſe largeſt arches are near 90 feet in the clear. The *bridge* at Berwick is an admirable work, begun under queen Elizabeth; it conſiſts of 17 arches, the largeſt upwards of 80 feet. That of Blenheim conſiſts of three arches, the chief of which ſpans 101 feet and a half.

There is a *bridge* over the river Don, near Old Aberdeen, very much celebrated, in the taſte, and on the plan of the Rialto at Venice. There is alſo in the ſame ſtyle a very remarkable *bridge* in Wales, built by William Edwards, a country maſon, over the river Taaf, near Caerphilly in Glamorganſhire. It is no more than eight feet broad, but it conſiſts of a ſingle arch no leſs than 140 feet wide, part of a circle of 175 feet diameter, ſo as to make the altitude 35 feet. The arch of this *bridge* is between 40 and 50 feet wider than the celebrated Rialto of Venice, and probably the wideſt arch in Europe, if not in the world. In order to leſſen the quantity of matter in the abutments preſſing upon the arch, and thereby to bring it to an equipoiſe with that in the crown, he contrived three circular arches in the abutments; which paſs through from ſide to ſide like round windows, and gradually decreaſe in the aſcent.

The longeſt *bridge* in England is that over the Trent at Burton, built by Bernard abbot of Burton, in the twelfth century; it is all of ſquared free-ſtone, ſtrong and lofty, 1545 feet in length, and conſiſting of 34 arches. Yet this comes far ſhort of the wooden *bridge* over the Drave, which, according to Dr. Brown, is at leaſt five miles long.

The triangular *bridge* at Crowland in Lincolnſhire, which was probably intended as an emblem of the Trinity, is the moſt ancient Gothic ſtructure remaining entire in the kingdom. It was erected about the year of our Lord 860.

London *bridge* conſiſts of 20 locks or arches, whereof 19 are open, and one filled up or obſcured; it is 900 feet long, 60 high, and 74 broad, and almoſt 20 feet aperture in each arch. It is ſupported by 18 piers or ſolids, from 34 to 25 feet thick; ſo that the greateſt water-way, when the tide is above the ſterlings, is 450 feet, ſcarce half the width of the river; and below the ſterlings, the water-way is reduced to 194 feet. Thus a river 900 feet wide, is here forced through a channel of 194 feet.

London *bridge* was firſt built with timber, in the reign of Ethelred, between the years 993 and 1016. It was repaired, or rather new-built of timber, in 1163. The ſtone-*bridge* was begun by king Henry II. in 1176, and finiſhed under king John in the year 1209. The architect was Peter of Colechurch, a prieſt; though he died before it was finiſhed.

For the charge of keeping it in repair, a large houſe is allotted, with a great number of offices, and a vaſt revenue in land, &c. The chief officers are two *bridge*-maſters, choſen yearly out of the body of the livery.

The foundation is ſaid to be on a ſoft oozy ground. Stow alleges, that, during the time of building, the river was turned from Batterſea to Rotherhithe; but this is not warranted. Some imagine, that the tide did not then riſe ſo high at the *bridge* as it does now, by which the work would be facilitated. However this be, the piers were erected on wooden piles driven under water, over which planks were laid, and the feet of the piers on the planks. The defects of this *bridge* are the narrowneſs and irregularity of the arches, and the largeneſs of the piers, which, together with the ſterlings, turn the current of the Thames into many frightful cataracts, which muſt obſtruct and endanger the navigation through the *bridge*.

It is pretty certain, there were no houſes on the *bridge* for upwards of 200 years; ſince we read of a tilt and tournament held on it in 1395. Houſes were built upon it afterwards, but being found a great inconveniency and nuiſance, they were removed in 1758, and the avenues to it enlarged and made more commodious, by ſtat. 29 Geo. II. c. 40. This act alſo directed, that there ſhould be a paſſage of 31 feet for carriages, and 7 feet on each ſide for foot-paſſengers, guarded with ſtone baluſtrades. Two of the middle arches were thrown into one ſemicircular arch, by taking up the pier between them. The repairs amounted to above 80,000*l*. The ſterlings have been added, to hinder the piers from being undermined by the rotting of the piles upon which they are built; for, by means of theſe ſterlings, the piles are kept conſtantly wet; and thus the timber is kept from decaying, which always happens when it is alternately wet and dry.

One of the nobleſt *bridges* known, is that at Weſtminſter, for the building of which an act of parliament was obtained in the year 1736, and it began to be erected in January, 1738; and it was opened the 18th of November, 1750. The whole amount of the neat expence that attended building this *bridge*, was 218,800*l*.

The breadth of the river Thames, between the Wool-ſtaple dock and the oppoſite ſhore, the place where the *bridge* is built, is about 1220 feet. This *bridge* conſiſts of thirteen large arches and two ſmaller ones, the fourteen intermediate piers, and two abutments.

The length of each abutment is 76 feet; the ſpan or opening of each of the ſmaller arches of the abutments is 25 feet; the opening or ſpan of the firſt of the large arches from each ſhore is 52 feet; the ſpan of the next arch is 56 feet, and ſo on, increaſing by four feet in every arch to the middle arch, the ſpan of which is 76 feet. The tranſverſe ſection, or breadth of the two firſt piers on each ſide, is 12 feet; of the next 13, and ſo on, to the piers ſupporting the middle arch, the ſection of each of which is 17 feet. Thus the length of the two abutments being 152 feet, the ſection of the fourteen piers 198 feet, and the ſpan or opening of the fifteen arches 870 feet, the whole length of the *bridge*, including abutments, is 1220 feet, which is the breadth of the river.

The arches are ſemicircular, and ſpring from about the height of two feet above low-water mark.

Theſe arches give, as has been ſaid, a water-way of 870 feet; the proportion of the water-way being ſo conſiderable with reſpect to the breadth of the piers, it follows, that the fall of water under this *bridge* muſt be very ſmall. And, in effect, thoſe who attempted to calculate it before the *bridge* was built, after making all poſſible allowances, could never find the perpendicular height of this fall to exceed three inches and three fourths; but, in truth, it now appears, by experience, that the height of the greateſt fall is ſcarce half an inch; whereas the height of the fall at London *bridge* is from four feet and nine inches to five feet.

The whole breadth of the *bridge* is 44 feet; which is divided into three walks; the middle one for carriages, &c. is 28 feet broad, and the ſide-walks near 7 feet each in the clear.

The foundations of the piers of Weſtminſter *bridge* are laid on a ſtrong grating of timber, planked underneath, and at leaſt five feet below the ſurface of the bed of the river. This grating was made of the bottom of a veſſel, ſuch as the French call *caiſſon*; the ſides of which were ſo contrived, that they might be taken off after a pier was finiſhed. The bed of the river was dug to a ſufficient depth, and made level, in order to lay the bottom of the *caiſſon*, and the bottom of the piers, out of all danger; the ground, by all trials that could be contrived, ſeemed ſo good, being every where a bed of gravel, that piling was thought unneceſſary. Whether there be any ſofter *ſtratum* under this or not, we cannot pretend to determine; neither does it appear from experience, that piling is an abſolute ſecurity againſt all accidents. By what Gautier ſays, it would ſeem otherwiſe; for he aſſures us, that let the architect of a *bridge* do his beſt, yet he can no more be ſure of the ſucceſs of his work than a phyſician is. And, in effect, we find, that notwithſtanding the care that was taken in examining the ground on which Weſtminſter *bridge* was built, yet one of the piers ſunk conſiderably. This damage was repaired, and its beauty and convenience is juſtly admired. See Labelye's Deſcription of Weſtminſter Bridge.

In the year 1756, an act was obtained for building a new *bridge* at Blackfryers, from the end of Fleet-ditch to the oppoſite ſhore in the county of Surry. It was begun in 1760, and completed in ten years and three quarters; the nett expence of building it amounted to 152,840*l*. This *bridge* conſiſts of nine elliptical arches; the central arch is 100 feet wide, and the four arches on each ſide, reckoning from the central one to the ſhores, are 98, 93, 83, and 70 feet reſpectively. The breadth of the carriage-way is 28 feet, and that of the raiſed foot-way on each ſide 7 feet: the height of the baluſtrade on the inſide is 4 feet 10 inches: and the whole length of the *bridge* from wharf to wharf is 995 feet. The upper ſurface of this *bridge* is a portion of a very large circle; over each pier is a receſs or balcony, ſupported by two Ionic pillars and two pilaſters, which ſtand on a ſemicircular projection of the pier, above high-water mark. The *bridge* is rounded off at each extremity to the right and left, in form of a quadrant of a circle, whereby the acceſs to it is rendered commodious and agreeable.

Bridges, *ſtone*, are compoſed of piers, arches, and butments, made of hewn ſtone, ſometimes alſo intermixed with brick; as, the *bridge* of Tholouſe, the plinths whereof are of ſtone, as alſo the quoins of the arches, and ſome bonding courſes, and copings; but the reſt, as the arches, walls, and butments, of brick.

Bridges, *wooden*, called by the Latins *pontes ſublicii*, conſiſt of beams and joiſts, ſuſtained by punchions, well cramped and bound together.

Sturmius has a diſſertation expreſs on the ſtructure of a wooden *bridge*.

Bridge, *ruſhen*, *point de jonc*, is made of large ſheaves of ruſhes growing in marſhy grounds, which they cover over with boards or planks. They ſerve for croſſing ground that is boggy, miry, or rotten.

The Romans had alſo a ſort of ſubitaneous *bridges* made by the ſoldiers, of boats, or ſometimes of caſks, leathern bottles, or bags, or even of bullocks bladders blown up, and faſtened together, called *aſcogephyri*. M. Couplet gives the ſtructure of a portable *bridge*, 200 feet long, eaſily taken aſunder and put together again, and which forty men may carry. Vid. Du Hamel Hiſt. Reg. Acad. Scien. lib. iii. ſect. 5. c. 4. p. 273.

Frezier ſpeaks of a wonderful kind of *bridge* at Apurima in Lima, made of ropes, formed of the bark of a tree.

Bridges, *pendent* or *hanging*, called alſo *Philoſophical* **Bridges**, are thoſe not ſupported either by poſts or pillars, but hung at large in the air, only ſuſtained at the two ends, or butments.—Inſtances of ſuch *bridges* are given by Palladio, and others.

Dr. Wallis gives the deſign of a timber-*bridge*, ſeventy feet long, without any pillars, which may be uſeful in ſome places where pillars cannot conveniently be erected. Phil. Tranſ. N° 163. p. 714.—Dr. Plott aſſures us, that there was formerly a large *bridge* over the caſtle-ditch at Tutbury in Staffordſhire, made of pieces of timber, none much above a yard long, and yet not ſupported underneath, either with pillars, or arch-work, or any other ſort of prop whatever.

Bridge, *draw*, *pons ſubductarius*, is ſuch an one as is made faſt only at one end, with hinges; ſo that the other end may be lifted up or let down by ſome eaſy contrivance: the moſt common way is by a kind of balance called PLYERS: in which caſe the *bridge* ſtands upright, to hinder the paſſage of a moat, or the like. The breadth of this *bridge* is uſually about nine or ten feet, and its length about fifteen feet.

There are others made to draw back, to hinder the paſſage, and to thruſt over again to afford a paſſage. And others, which open in the middle; half of which turns away to one ſide, and the other half to the other; being joined again at pleaſure: but theſe have this inconvenience, that one half of them remains on the enemy's ſide.

The Marquis De L'Hopital has given the conſtruction of a curve, in which a weight will always be a counterbalance to a *draw-bridge*; which the younger Bernoulli has ſhewn to be no other than the cycloid. Act. Erud. Lipſ. an. 1695.

Bridge, *flying*, *pont volant*, or *pons ductarius*, an appellation given to a *bridge* made of pontoons, leather boats, hollow beams, caſks, or the like, laid on a river, and covered with planks for the paſſage of an army.

Bridge, *flying*, *pont volant*, more particularly denotes a *bridge* compoſed of one or two boats joined together, by a ſort of flooring, and ſurrounded with a rail or baluſtrade; having alſo one or more maſts, to which is faſtened a cable, ſupported at proper diſtances by boats, and extended to an anchor, to which the other end is faſtened, in the middle of the water. By which contrivance, the *bridge* becomes moveable, like a pendulum, from one ſide of the river to the other, without other help than the rudder.—Such *bridges* ſometimes alſo conſiſt of two ſtories, for the quicker paſſage of a great number of men; or that both infantry and cavalry may paſs at the ſame time.

Bridge, *flying* or *floating*, is ordinarily made of two ſmall *bridges*, laid one over the other, in ſuch manner, as that the uppermoſt ſtretches and runs out, by the help of certain cords running through pullies placed along the ſides of the under-*bridge*, which puſh it forwards, till the end of it joins the place it is deſigned to be fixed on.

When theſe two *bridges* are ſtretched out at their full length, ſo that the two middle ends meet, they are not to be above four or five fathoms long, becauſe, if longer, they will break.

Their chief uſe is for ſurpriſing out-works, or poſts that have but narrow moats.

In the Memoirs of the Royal Academy of Sciences, we find a new contrivance of a *floating bridge*, which lays itſelf on the other ſide of the river. Vid. Hiſt. Acad. R. Scienc. an. 1713. p. 104.

Bridge *of communication*, is a *bridge* made over a river; by which two armies or forts, ſeparated by the river, have a free communication with one another.

Bridges *of boats* are either made of copper, or wooden boats faſtened with ſtakes, or anchors; and laid over with planks.

One of the moſt notable exploits of Julius Cæſar, was the expeditious making of a *bridge of boats* over the Rhine. Modern armies carry copper-boats, called *pontoons*, to be in readineſs for the making *bridges*: ſeveral of theſe being joined ſide by ſide, till they reach acroſs the river, and planks laid over them, make all plain for the men to march on.

There are fine *bridges of boats* at Beaucaire, and Rouen, which riſe and fall with the water; and that at Seville is ſaid to exceed them both.

The *bridge of boats* at Rouen, built in lieu of the ſtately ſtone-*bridge* erected there by the Romans, is repreſented by a modern writer, as the wonder of the preſent age; it always floats; and riſes and falls with the tide, or as land-waters fill the river; it is near 300 yards long, and is paved with ſtone, juſt as the ſtreets are: carriages with the greateſt burdens go over it with eaſe, and men and horſes with ſafety, though there are no rails on either hand. The boats are very firm, and well moored with ſtrong chains; and the whole well looked to, and conſtantly repaired, though now very old.

Bridge, in *Gunnery*, the two pieces of timber which go between the two tranſums of a gun-carriage, on which the bed reſts.

Bridge, in *Muſic*, that part of a ſtringed inſtrument over which the ſtrings are ſtretched.

BRIDLE *of an horſe*, is an aſſemblage of various members, or parts; as the *bit*, or *ſnaffle*; the *head-ſtall* or leathers, from the top of the head to the rings of the bit; the *fillet*, over the forehead, and under the fore-top; *throat-band*, which buttons from the head-band under the throat; *reins*, the part held in the hand; *noſe band*, going through loops at the back of the head-ſtall, and buckled under the cheeks: to which add the *trench*, the *cavezan*, *martingal*, and *chaff-halter*.

In lieu of a *bridle*, the maſters frequently uſe the word *hand*: thus, for *pull the bridle*, they ſay, *bear the hand*. To cleave to, or hold by the *bridle*, is the fault of a bad horſeman, who, when a horſe is diſorderly, inſtead of ſlacking his hand, clings to it, as if it were to the mane or pummel of the ſaddle; wanting the habit, or ſtrength, to keep himſelf faſt by clinging with his thighs.

Checks of the *bridle* are called EBRILLADES and SACCADES.

The firſt horſemen being unacquainted with the art of governing horſes by *bridles*, managed them only with a rope, or a ſwitch, and the accent of the voice. This was the practice of the Numidians, Getulians, Libyans, and Maſſilians.

The Roman youth alſo learned the art of fighting without *bridles*, which was an exerciſe or leſſon in the *Manege*; and hence it is, that, on the Trajan column, ſoldiers are repreſented riding at full ſpeed, without any *bridles* on. Phil. Tranſ. N° 322.

Bridle, in *Anatomy*. See FRÆNUM.

Bridle, among *Surgeons*, is a kind of BANDAGE contrived for retaining the lower jaw in its place.

Bridle, *ſcolding*.—In Staffordſhire, they have a *bridle* for correcting ſcolding women. It is put in the mouth, and takes particular hold of the tongue, which it effectually keeps from ſtirring: thus harnaſſed, the offender is led in triumph through the ſtreets. A figure and deſcription of this Staffordſhire *bridle* is given by Dr. Plott, who ſeems to wiſh the uſe of it more univerſal.

Bridle-*band* ſignifies the horſeman's left-hand, in reſpect of which the right-hand is called the ſpear or ſword-hand.

BRIDLE-*chain*, in *Huſbandry*, a name given by our farmers to a part of the ſtructure of their PLOUGH. This is an iron chain of ſeveral links, faſtened at one end to the beam of the plough, near that part where the collar receives the tow-chain, and faſtened at its other end to the ſtake of the plough, or to that upright piece which runs parallel to the left crowſtaff, and at its bottom pins in the tow-chain; this ſtake is faſtened to the crowſtaff, ſometimes by the end of this *bridle-chain*, and ſometimes by a wythe or cord.

BRIDLES, in *Sea-language*, denote the upper part of the moorings in the king's harbours, to ride ſhips of war.

BRIDLES *of the bow-line*. See BOW-*line*.

BRIDON, or BRIDOON, in the *Manege*, properly denotes a SNAFFLE, in contradiſtinction from a BIT or BRIDLE. The French ſay, that the Engliſh uſe no bridles, but only *bridoons*, except in the army: a horſe never goes ſo well nor ſo ſure with a *bridoon*, unleſs he has been firſt broke to the bit.

BRIEF, a thing of ſhort extent or duration.

The word is formed from the French *bref*, of the Latin *brevis*, which ſignifies the ſame.

BRIEF is more particularly uſed for a ſummary or ſhort ſtate of a thing.

BRIEF is alſo uſed for an act or writing drawn up by a notary.

BRIEF, *atteſted*, *Breve teſtatum*, a public inſtrument cloathed with the proper formalities.

BRIEF *of deviſing*, *Brevis diviſionalis*, denotes a laſt will or teſtament, or DEVISE.

BRIEF *of an oath*, *Breve ſacramenti*, an inſtrument made on oath, and authenticated by the ſubſcription of witneſſes.

BRIEF is alſo uſed for a judicial epiſtle, directed by a lord or other ſuperior, to his ſubjects or dependents, enjoining ſomething to be done or forborn.

In which ſenſe, we ſay, the lord's, king's, biſhop's, or pope's *brief*.

BRIEF alſo denotes the territory or diſtrict within which the lord's *brief* had courſe. In which ſenſe, we meet with the biſhop's *brief*, *breve epiſcopi*; the count's *brief*, *breve comitis*, &c.

BRIEF alſo denotes the yearly revenue ariſing out of the lands uſually deſcribed in *briefs*.

BRIEF, *Breve*, in *Common Law*, a writ whereby a man is ſummoned or attached to anſwer any action: or more largely, it is taken for a writing iſſued out of any of the king's courts of record at Weſtminſter, whereby ſomething is commanded to be done in order to juſtice, or the execution of the king's command.

It is called *brief*, *breve*, *quia breviter intentionem proferentis exponit*; becauſe couched in a few plain words, without preamble, &c.

BRIEF is alſo uſed for a letter patent, granting a licence to a ſubject, to make a collection for any public or private loſs.

BRIEFS, *apoſtolical*, denote letters which the pope diſpatches to princes, and other magiſtrates, touching any public affair.

They are thus called, as being very conciſe, and written on paper, without preface or preamble; by which they are diſtinguiſhed from *bulls*, which are more ample, and always written on parchment, and ſealed with lead or green wax; whereas *briefs* are ſealed with red wax, and with the ſeal of the fiſherman, or St. Peter in a boat; a ſeal never applied but in the pope's preſence.

The *brief* is headed with the name of the pope, apart; and commences with *Dilecto filio ſalutem*, *&* *apoſtolicam benedictionem*, &c. after which he proceeds directly to the matter in hand, without further preamble.

Briefs are not ſubſcribed by the pope, nor with his name, but with that of his ſecretary. Pope Alexander VI. inſtituted a college of ſecretaries for *briefs*; ſince which time, they have been made much longer, and more ample than before. See ABBREVIATOR.

Formerly *briefs* were only diſpatched about affairs of juſtice; but now they are likewiſe uſed in matters of benefices, expective graces, and diſpenſations.

BRIEFS *of the dead*, *Brevia mortuorum*, were letters ſent by the monks of one monaſtery to thoſe of another, with whom they were in fraternity, to inform them of the deaths or obits of their monks, for whom they were to ſay the ſtated and cuſtomary prayers and maſſes.

Theſe were alſo called *literæ currentes*, a formula of which we have in the book of the uſages of the Ciſtercian order.

BRIEF *of remembrance*, *Breve recordationis*, or *rememoratorium*, or *memorabile*, denotes a charter, otherwiſe called NOTITIA.

BRIG. See BRIGANTINE.

BRIG-*bote*, BRIGGE-*bote*, or BRIGH-*bote*, in *Ancient Law Writers*, ſignifies a being freed from contributing to the reparation of bridges. See PONTAGE.

The word is formed from the Saxon *brig*, *a bridge*, and *bote*, *compenſation*. It is ſometimes alſo written *brugh-bote*, or *bruch-bote*.

BRIGADE, in the *Military Art*, a party or diviſion of a body of ſoldiers, whether horſe or foot, under the command of a brigadier.

The word is French; ſome derive it from the Latin *briga*, *a brigue*, or *ſecret intrigue*: Du-Cange derives it from *brigand*, an ill diſciplined ſoldier, who ſcours the country, and plunders it of every thing, without waiting for the enemy: as the armies of Arabs, Tartars, &c. The origin of *brigand* is again deduced from *brigandine*, a ſort of armour uſed in the army raiſed by the Pariſians, during the captivity of their king John in England, notorious for their robberies.

There are two ſorts of *brigades*, according to the French way of accounting: 1. A *brigade of an army*, which is a body of horſe of ten or twelve ſquadrons: or of foot, of five or ſix battalions.—And in this way, an army is ſometimes divided into eight *brigades*; four of horſe, and four of foot.

2. A *brigade of a troop of guards*, which is a third part thereof, when the troop conſiſts of fifty ſoldiers; but only a ſixth, when it conſiſts of an hundred: that is, in the former caſe, the troop is divided into three *brigades*; in the latter, into ſix.

BRIGADE-*major*, in the *Military Art*, an officer choſen from among the moſt ingenious and expert captains. *Brigade-majors* are to wait, at proper times, to receive the word and orders, which they carry firſt to their brigadier, and afterwards to the adjutants of regiments at the head of the *brigade*, where they regulate together the guards, parties, detachments, and convoys, and appoint them the hour and place of rendezvous at the head of the *brigade*, where the *brigade-major* takes and marches them to the place of the general rendezvous. A *major of brigade* ought to keep a roll of the colonels, lieutenant-colonels, majors, and adjutants, belonging to the *brigade*. When a detachment is to be made, the major-general of the day regulates with the *brigade-majors*, how many men and officers each *brigade* ſhall furniſh; and they again with the adjutants of the regiments, how many each battalion is to ſend, which the adjutants divide among the companies. The complements each regiment is to furniſh, are taken by the adjutant at the head of each regiment, at the hour appointed, who delivers them to the *brigade-major* at the head of the *brigade*, who again delivers them to the major-general of the day, and he remits them to the officer who is to command the detachment.

BRIGADIER-*general*, an officer that commands a brigade of horſe, or foot, in an army.

The *brigadier* is an officer of importance; being the next in order below a major-general, or, in the French army, to the *mareſchal de camp*.

Brigadiers are only general officers in their reſpective corps. They have no particular command out of their brigades, nor any place or vote in councils of war; they have no aids de camp to carry their orders, but only a major of brigades, to ſee their orders executed, within the extent only of their own brigade.

Brigadiers of the horſe-guards command as youngeſt captains.

Sub-BRIGADIER of a troop of horſe-guards, an aſſiſtant of the *brigadier*.

BRIGANDINE, a coat of mail; a kind of ancient defenſive armour, conſiſting of thin-jointed ſcales or plates, pliant and eaſy to the body.

Some confound it with HABERGEON; and others with *brigantine*, a low long veſſel.

BRIGANDINI, BRIGANTINI, BRIGANDINARII, or BRIGANCII, in *Middle Age Writers*, military thieves, or highwaymen, who infeſted France and the Netherlands. See BRABANCIONES.

BRIGANTINE, a ſmall, light, flat, open veſſel, which goes both with ſails and oars, and is either for fighting, or giving chace.

It has uſually twelve or fifteen benches on a ſide for the rowers, a man and an oar to each bench. *Brigantines* are principally uſed by the Corſairs, all the hands aboard being ſoldiers, and each having his muſquet ready under his oar.

But the term is generally uſed for a merchant-ſhip with two maſts, though mariners of different nations apply it to a peculiar ſort of veſſel of their own marine. Among Engliſh ſeamen, the *brigantine* is diſtinguiſhed by having her main-ſail ſet nearly in the plane of her keel, the foremoſt edge of it being faſtened in different places to hoops which encircle the main-maſt, and ſlide up and down as the ſail is hoiſted or lowered.

BRIGG's *Logarithms.* See Logarithm.

BRIGITTINS, or Bridgetins, more properly Birgittins, a religious order, denominated from their foundreſs St. *Bridgit*, or *Birgit*, a Swediſh lady, in the fourteenth century, whom ſome repreſent as a queen; but Fabricius, on better grounds, as a princeſs, the daughter of king Birgerus, legiſlator of Upland: ſhe is famous for her revelations.

The *Brigittins* are ſometimes alſo called the *Order of our Saviour*; it being pretended that Chriſt himſelf dictated the rules and conſtitutions obſerved by them, to St. Bridget. In the main, the rule is that of St. Auguſtin; only with certain additions ſuppoſed to have been revealed by Chriſt; whence they alſo denominate it the *Rule of our Saviour*.

The firſt monaſtery of the *Brigittin* order was erected by the foundreſs, about the year 1344, in the dioceſe of Lincopen; on the model of which all the reſt were formed.

The *Brigittins* profeſs great mortification, poverty, and ſelf-denial, as well as devotion; and they are not to poſſeſs any thing they can call their own, not ſo much as a halfpenny, nor even to touch money on any account.

This order ſpread much through Sweden, Germany, the Netherlands, &c. In England we read but of one monaſtery of *Brigittins*, and this built by Henry V. in 1413, oppoſite to Richmond, now called Sion-houſe; the ancient inhabitants of which, ſince the diſſolution, are ſettled at Liſbon. The revenues were reckoned at 1945*l. per annum.*

BRIGNOTES, or Brugnotes, a kind of dried prunes, brought from Provence, chiefly from the town of Brugnote, from which the denomination is given to them all.

BRILLIANT *diamonds.* See Diamond.

BRIM, the utmoſt edge of a thing, as of a glaſs, plate, or the like.

The *brims* of veſſels are made to project a little over, to hinder liquors, in pouring out, from running down the ſide of the veſſel.

The *briming*, or *brimming* of veſſels, was contrived by the ancient potters, in imitation of the ſupercilium or drip of the cornices of columns; it is done by turning over ſome of the double matter when the work is on the wheel.

Among floriſts, the *brim* of a flower denotes the outward edge of the petala, or that part thereof which turns.

A ſow is ſaid to *brim*, or go to *brim*, when ſhe takes the boar.

The hart goes to *rut*, the roe to *tourn*, the boar to *brim.*

BRIMSTONE. See Sulphur.

Brimstone, *flower of.* See Flower.

Brimstone *marble*, a preparation of *brimſtone* in imitation of marble.

Brimstone *medals, figures*, &c. may be caſt in the following manner: melt half a pound of *brimſtone* over a gentle fire; with this mix half a pound of fine vermilion, and when you have cleared the top, take it off the fire, ſtir it well together, and it will diſſolve like oil; then caſt it into the mould, which muſt firſt be anointed with oil. When cool, the figure may be taken out; and, in caſe it ſhould change to a yellowiſh colour, you need only wipe it over with *aqua fortis*, and it will look like the fineſt coral.

Brimstone-*wort*, in *Botany.* See *Hog's*-Fennel.

BRINDONES, in *Natural Hiſtory*, the name of a fruit of the Eaſt Indies, called by John Bauhine, and ſome other botanical writers, *Indici fructus rubentes acidi.* It is by many accounted a delicious fruit, notwithſtanding its great ſharpneſs; and is uſed by the dyers, and in making vinegar.

BRINE, water replete with ſaline particles.

By ſtat. 1 Ann. cap. 21. are prohibited, *brine* taken out of *brine*-pits, or *brine*-pans, uſed by ſome for curing or pickling of fiſh, without boiling the ſame into salt; and rock-ſalt, without refining it into white-ſalt.

Brine is either native, as the ſea-water, which by coction turns to ſalt; or factitious, formed by diſſolving ſalt in water.

In the ſalt-works at Upwick in Worceſterſhire, there are found, at the ſame time, and in the ſame pit, three ſorts of *brine*, each of a different ſtrength. They are drawn by a pump, and that in the bottom, firſt brought up, is called *firſt man*; the next, *middle man*; and the third, *laſt man.* Phil. Tranſ. N° 140.

Brine, *leach*, a name given to what drops from the corned ſalt in draining and drying, which they preſerve and boil again; being ſtronger than any *brine* in the pit. Hought. Collect. tom. ii. N° 211. p. 81.

There is ſand found in all the Staffordſhire *brines* after coction; but naturaliſts obſerve, it did not pre-exiſt in the water, but rather is the product of the boiling. Phil. Tranſ. N° 145. p. 96.

The *brine* at Northwich is found to ſtink of ſulphur. *Brine* freezes with great difficulty. Some ſteep their ſeed-wheat in *brine*, to prevent the ſmut. *Brine* is alſo commended as of efficacy againſt gangrenes. Phil. Tranſ. N° 156.

Brine alſo denotes a pickle pregnant with ſalt, wherein things are ſteeped to keep.

Brine-*pans*, the pits wherein the ſalt-water is retained, and ſuffered to ſtand, to bear the action of the ſun, whereby it is converted into ſalt.

There are divers ſorts of ſalt-pans, as the water-pan, ſecond-pan, ſun-pan; the water being transferred orderly from one to another.

Brine-*pit*, in *Salt-making*, the ſalt ſpring from whence the water to be boiled into ſalt is taken. There are of theſe ſprings in many places; that at Namptwich, in Cheſhire, is alone ſufficient, according to the account of the people of the place, to yield ſalt for the whole kingdom; but it is under the government of certain lords and regulators, who, that the market may not be overſtocked, will not ſuffer more than a certain quantity of the ſalt to be made yearly. See Pit.

Brine-*ſalt.* See Salt.

Brine-*worms*, are red-coloured inſects, which breed both in ſummer and in winter, in the ſtrong *brine* of the ſalt-pans. They never become flies, but are of the claſs of apteræ, or *unwinged* inſects.

BRINEK, or Brineti, in *Aſtronomy*, the bright ſtar in the conſtellation Lyra; more frequently called *Lucida Lyræ.*

BRINGERS-UP, in a battalion, are the whole laſt rank of men in it, or the hindmoſt man in every file.

BRINGING-IN *a horſe*, in the *Manege*, is the keeping down his noſe, when he boars, and toſſes it up to the wind. A horſe is *brought-in* by a ſtrong hard branch.

BRING-TO, in *Sea-language*, ſignifies to check the courſe of a ſhip when ſhe is advancing, by arranging the ſails in ſuch a manner, as that they ſhall counteract each other, and prevent her either from retreating or moving forward. In this ſituation the ſhip is ſaid to *lie-by*, or to *lie-to.*

BRINING *of corn*, in *Huſbandry*, an operation performed on the wheat-ſeed, in order to prevent the *ſmut.* A liquor is to be prepared for this purpoſe, by putting 70 gallons of water into a tub (like a maſh-tub uſed for brewing), and a corn-buſhel of unſlaked lime-ſtone. This is to be well ſtirred till the whole is diſſolved, and left to ſtand for 30 hours; after which it is to be drained off into another tub, in the manner practiſed for beer. In this way about a hogſhead of ſtrong lime-water will be obtained, to which muſt be added three pecks of ſalt. The wheat muſt be ſteeped in this pickle, by running it gently, and in ſmall quantities, into a broad-bottomed baſket of about 24 inches in diameter, and 20 inches deep, and ſtirring it. The light ſeed that floats muſt be ſtrained off with a ſtrainer, and muſt not be ſown. When the baſket has been drawn up, and drained of the pickle, the wheat will be fit for ſowing in two hours after the *brining.*

Brining *of hay-ricks*, a practice common in America, of mixing ſalt with the hay as it is ſtacked.

BRIONY. See Bryony.

BRISKET, that part of a horſe extended from the two ſhoulders to the bottom of the cheſt.

BRISSOIDES, in *Natural Hiſtory*, the name of one of the genera of the echini *marini*; the diſtinguiſhing characters of theſe are, that they are of an oval figure, and have their backs ſtriated, not furrowed, and their rays ſmooth, not marked with ridges. Of this genus there are two known ſpecies: 1. A flat one, called by ſome the *cranium.* 2. A high one, called by ſome the *amygdala*, and uſually found foſſile, and immerſed in flint.

BRISSUS, in *Natural Hiſtory*, the name of a genus of the echini *marini*; the characters of which are, that they are of an oval figure, and have the aperture for the *anus* on one of the ſides of the ſuperficies; their back is ſmooth and even, nor furrowed, but on the *vertex* they have ſeveral very elegant crenated and dotted lines. Their baſe is as if cut off on the end neareſt the mouth, and is not flat as in the *ſpatangi*, but raiſed in the manner of a cuſhion.

BRISTLE, a thick gloſſy kind of hair, wherewith the ſwine kind more eſpecially are covered.

The name is ſometimes alſo applied to the quills of porcupines, and the muſtaches or whiſkers of cats.

Hogs *briſtles* are hard, tranſparent, horny ſubſtances, of a priſmatical figure, without any appearance of cavities or pores in them, diſcoverable even by the microſcope.

Cats *briſtles* have a large ſolid pith in the middle.

Bristle-*dice*, a ſort of falſe dice, furniſhed with a piece of hog's *briſtle* ſtuck in the corners, or other places, to hinder their falling on certain ſides, and make them run high or low at pleaſure.

BRISTOL *flower.* See Campion.

Bristol *water.* See Water.

BRITANNIC *plague*, a name given by ſome writers to the SWEATING *ſickneſs*, or *Anglicanus ſudor*.

BRITANNICA, in the *Materia Medica of the Ancients*, the name of a plant deſcribed as having leaves of a dark colour, very large, and in ſhape reſembling thoſe of the common wild-dock, but ſomewhat hairy and of an aſtringent taſte; the root ſmall and ſlender, and the ſtalk not large. This is the deſcription of Dioſcorides, who attributes to its inſpiſſated juice great virtues as an aſtringent, and a remedy for ulcers of the mouth and tonſils; and Pliny acquaints us of its prodigious efficacy in a diſtemper attending the army of Germanicus, who, when they had croſſed the Rhine, encamped in a place where there was only one ſpring of water, the drinking of which affected them in a terrible manner in their mouths, and made their teeth drop out; and that the phyſicians, who called the diſeaſe *ſtomacace* and *ſcelotyrbe*, were at length directed to a remedy by the Friſians who were in their camp, which was the herb *Britannica*.

The virtues attributed to this plant are obſerved, by the later phyſicians, to agree very well with thoſe of the *hydrolapathum majus*, or great water-dock, a plant produced very abundantly with us, but at preſent neglected in the practice of phyſic; and Muntingius, who has written profeſſedly of the *Britannica* of the ancients, is perſuaded that this is the true and genuine plant.

There is no doubt but that the real plant is our water-dock; but the commentators on the Greek phyſicians, and the authors who have written ſince, and have borrowed the greateſt part of their knowledge from them, have occaſioned great perplexities to their readers, by ſuppoſing that the *Britannica* and *betonica* were the ſame plant; whereas one was a dock, and the other the plant we call *ſerratula*, or ſaw-wort.

BRITE, or Bright, in *Huſbandry*.—Wheat, barley, or other grain, is ſaid to *brite*, when it grows over-ripe and ſhatters.

BRITISH *crown.* See Crown.

British *language*, the ſame with the Welch.

The ancient *Britiſh*, or *Cambro-Britiſh*, is a dialect of the Celtic. Some pretend, but with no proability, that the *Britiſh* is formed immediately from the Teutonic. Cooper abſurdly enough calls the Engliſh language the *Britiſh*.

BRITTLENESS, in *Natural Philoſophy*, that quality of bodies by which they are ſoon and eaſily broken by preſſure or percuſſion. It ſtands oppoſed to TENACITY.

Brittle bodies are extremely hard; the leaſt percuſſion exerts a force on them equivalent to the greateſt preſſure, and may conſequently eaſily break them. This effect is particularly remarkable in glaſs ſuddenly cooled, the *brittleneſs* of which is thereby much increaſed.

Tin, though in itſelf tough, gives a *brittleneſs* to all the other metals when mixed therewith.

The *brittleneſs* of GLASS ſeems to ariſe from the heterogeneity of the parts whereof it is compoſed, ſalt and ſand, which can never bind intimately together.

In TIMBER, *brittleneſs* ſeems to be connected with durableneſs; the more *brittle* any ſort of wood is, the more laſting it is found. Thus it is, oak is of ſo long duration, while beech and birch, as being tough, preſently rot, and are of little ſervice for building.

Brittleness *of the hoof*, in horſes. See Hoof.

BRIZA, in the Linnæan ſyſtem of *Botany*, the name of that kind of graſs called the *tremula*, or quaking-graſs. It belongs to the *triandria digynia* claſs.

Briza, in the *Materia Medica*, a name uſed for the grain of the *zea monococcos*, or St. Peter's corn.

BRIZE, in the *Country Language*, a ſort of ground which has lain long untilled.

Brize, or **Brise**, in *Navigation*. See Breeze.

Brize-*vents*, or **Brise**-*vents*, a kind of ſhelters uſed by gardiners, who have not walls on the north-ſide, to keep the cold winds from damaging their melon beds.

Brize-vents are incloſures ſix or ſeven feet high, and an inch thick, made of ſtraw, ſupported by ſtakes fixed into the ground, and props acroſs both inſide and outſide, faſtened together with willow-twigs or iron-wire.

BROACH, **Brocha**, in *Middle Age Writers*, denotes an awl or bodkin. Among us, *broach* is chiefly uſed for a ſteel inſtrument wherewith to open holes in metals. It is ſometimes alſo applied to a ſtick on which thread or yarn is wound; and, in the north, to a ſort of wooden needles uſed in knitting certain coarſe things.

See an account of the *broach* uſed in weaving tapeſtry, under Tapestry.

In ſome parts of England, a ſpit is called a *broach*.

Hence alſo to *broach* a barrel, is to tap it. The ancient lords received from their tenants a fee or tribute, called *pertuſagium*, for the liberty of *broaching* a cag of ale.

Broach-to, in *Sea-language*, is uſed for inclining ſuddenly to windward of the ſhip's courſe, when ſhe ſails with a large wind; or for deviating from the line of her courſe, when ſhe ſails directly before the wind, ſo as to bring her ſide to windward, and expoſe her to the danger of overſetting.

BROAD-*caſt*, as oppoſed to the *Drill Huſbandry*, denotes the method of cultivating corn, turneps, pulſe, clover, the foreign graſſes, and moſt other field-plants, that are not tranſplanted, by ſowing them with the hand at large; in which method they are ſown over the ground at large, and thence ſaid to be ſown in *broad-caſt*. This is called the *Old Huſbandry*, to diſtinguiſh it from the *Drill*, *Horſe-hoeing*, or *New Huſbandry*. See Drill, and Husbandry.

Broad-*piece*, a denomination given to certain gold PIECES *broader* than a guinea; particularly *Caroluſes* and *Jacobuſes*.

Broad-*ſide*, in the *Sea-language*, a diſcharge of all the guns on one ſide of a ſhip at the ſame time.

A *broad-ſide* is a kind of volley of cannon, and ought never to be given at a diſtance from the enemy above muſket-ſhot at point blank.

Broad-*ſtone*, in *Building*, a ſpecies of free-ſtone, thus denominated becauſe it is raiſed *broad* and thin out of the quarries; or not exceeding two or three inches in thickneſs; chiefly uſed for paving.

Broad-*worm*, *lumbricus latus*, a name given to the TÆNIA, or *tape*-WORM.

BROCADE, in *Commerce*, a ſort of ſtuff, or cloth of gold, ſilver, or ſilk, raiſed and enriched with flowers, foliages, or other figures, according to the fancy of the manufacturer.

Formerly, the term was reſtrained to cloths woven either wholly of gold, both woof and warp, or of ſilver, or of both together: but by degrees it came likewiſe to paſs for ſuch as had ſilk intermixed, to fill up, and terminate the flowers of gold and ſilver.

At preſent, any ſtuff of ſilk, ſatin, or even ſimple taffety, when wrought, and enriched with the flowers, &c. obtains the denomination of BROCADE.

Rich *brocades* may be cleaned, and the luſtre of them recovered, by waſhing them with a ſoft bruſh dipped in warm ſpirit of wine.

Brocade-*ſhell*, a name given to a ſpecies of the CYLINDRUS. It is of a ſilver colour, variegated with brown.

BROCARDICS, **Brocardica**, denote maxims or principles in *Law*; ſuch as thoſe publiſhed by Azo, under the title of *Brocardica Juris*.

Voſſius derives the word from the Greek ϖροταρχια, q. d. *firſt elements*. Others, with more probability, from *Burchard*, or *Brochard*, biſhop of Worms, who made a collection of canons, called from hence *Brocardica*; and as this work abounded much in ſentences and proverbs, the appellation *brocardica* became hence extended to every thing.

BROCATELL, called by the French *brocadel*, an ordinary kind of ſtuff made of cotton, or coarſe ſilk, in imitation of BROCADE; chiefly uſed for tapeſtry and other furniture. That manufactured at Venice is the moſt eſteemed.

BROCATELLO, a name given by lapidaries to the white and gold veined red MARBLE.

BROCCOLI, among *Gardeners*, the ſhoot of a ſort of cabbage. There are ſeveral ſorts of it, as the Roman, the Neapolitan, and the black; but the Roman is far the beſt, and is therefore the only ſort now in uſe.

The ſeeds of this ſhould be ſown about the middle of May, in a looſe moiſt ſoil; when the young plants have eight leaves, they are to be tranſplanted, and ſet at three inches diſtance; and when they have grown there till the middle of July, they will be fit to plant out for ſtanding. They muſt be now ſet in ſome well-ſheltered ground, but not under the drip of trees, and at a foot and a half diſtance from one another. The ſoil ſhould be light, and about the beginning of December they will begin to ſhew their heads, which look ſomewhat like a cauliflower; from this time they will continue eatable to the end of March. When the heads divide, and begin to run up, they are to be cut, with about four inches of the ſtem to them; and when theſe are cut off, about a month's time furniſhes a freſh crop from the ſame ſtock. They are to be ſtripped of their outer ſkin, and boiled; and when perfectly fine, they are very little inferior to aſparagus. The beſt way to have them fine, is to get freſh ſeed every year from Italy; for they are very apt to degenerate.

BROCHOS, in *Surgery*, a name uſed by ſome writers for bandages in general: in ſome of the old writers, the ſame word is alſo uſed to expreſs a perſon who has a very prominent upper lip, or very prominent teeth, and a thick mouth.

BROCK, among *Sportſmen*, ſometimes denotes a badger, otherwiſe called a grey *brock*. See BADGER.

BROCK, and **BROCKET**, is alſo uſed to denote a hart of the third year.

BRODIATORES, in the *Middle Age*, a kind of *librarii*, or copiſts, who did not write the words and letters plain, but variouſly flouriſhed and decorated, after the manner of embroidery. Du-Cange Gloſſ. Lat. tom. i.

BRODIUM, a term uſed by ſome writers in *Pharmacy*, for a liquor in which any ſolid ſubſtance has been boiled, is to be preſerved, or with which a medicine too ſtrong for uſe alone is to be diluted.

BROGLING, a method of fiſhing for eels, otherwiſe called SNIGGLING.

BROKEN-*backed*, in *Sea Language*, denotes the ſtate of a ſhip which is ſo impaired, and looſened in her frame, as to droop at each end; a diſorder to which the French ſhips are moſt expoſed, on account of their length, &c

BROKEN *knees*. Among *Horſe-jockies*, *broken knees* are a mark of a ſtumbler. A *broken* wind is diſcovered by a horſe's blowing at the noſe in the ſtable, and his flanks beating quick, double and irregular, eſpecially after motion. There are divers ways of concealing a *broken* wind. A quart of new milk given a horſe on an empty ſtomach will elude it for an hour. A bruſhing gallop diſcovers it; no medicine can prevent his coughing and wheezing in that caſe, if his wind be *broken*. This diſorder frequently happens to horſes which have ſtood long in the ſtable, without exerciſe; and it may be relieved by careful feeding, and moderate exerciſe. The following ball may be given once in a fortnight, or three weeks, with warm meal and water, whenever it is uſed, and it may be continued for two or three months, viz. ſix drams of Succotrine aloes; myrrh, galbanum, and ammoniacum, of each two drams; bay-berries, half an ounce; a ſpoonful of oil of amber; the whole is to be made into a ball, with a ſufficient quantity of ſyrup of black-thorn. Bartlet's Farriery, p. 68.

BROKEN *numbers*. See NUMBER and FRACTION.

Among *Painters*, a colour is ſaid to be *broken*, when it is taken down or degraded by the mixture of ſome other.

BROKEN *ray*, in *Dioptrics*, the ſame with *ray of refraction*.

BROKER. The origin of the word is conteſted; ſome derive it from the French *broier, to grind*; others from *brocarder, to cavil*, or *triggle*; others deduce *broker* from a trader *broken*, and that from the Saxon *broc*, *misfortune*; which is often the true reaſon of a man's breaking. In which view, a *broker* is a broken trader by misfortune; and it is ſaid none but ſuch were formerly admitted to that employment.

BROKERS are of three kinds; *exchange-brokers*, *ſtock-brokers*, and *pawn-brokers*.

BROKERS, *exchange*, are a ſort of negociators, who contrive, make, and conclude bargains between merchants and tradeſmen, in matters of money or merchandiſe, for which they have a fee, or *premium*. See EXCHANGE.

Theſe, in our old law-books, are called *broggers*, and in Scotland, *broccarii*, i. e. according to Skene, mediators or interceſſors in any contract, &c. See PROXENETA.

They make it their buſineſs to know the alteration of the courſe of exchange, to inform merchants how it goes, and to notify to thoſe who have money to receive or pay beyond ſea, who are proper perſons for negociating the exchange with; and when the matter is accompliſhed, that is, when the money is paid, they have for brokage, two ſhillings per 100 pounds ſterling.

Theſe, by the ſtatute of 8 and 9 William III. are to be licenſed in London by the lord-mayor; and any perſon acting without ſuch a licenſe, is liable to the forfeiture of 500*l.* and perſons employing them forfeit 50*l.* They are alſo to regiſter contracts, &c. under the like penalty; and not to deal for themſelves on pain of forfeiting 200*l.* They are likewiſe to carry about with them a ſilver medal, having the king's arms, and the arms of the city, &c. and to pay 40*s.* a year to the chamber of the city. 6 Ann. cap. 16.

In France, till the middle of the ſeventeenth century, their *exchange-brokers* were called *courtiers de change*; but by an arret of council in 1639, the name was changed for that more creditable one of *agent de change, banque, & finance*; and in the beginning of the eighteenth century, to render the office ſtill more honourable, the title of *king's counſellors* was added.

At Grand Cairo, and ſeveral places of the Levant, the Arabs, who do the office of *exchange-brokers*, are called *conſuls*: the manner of whoſe negociating with the European merchants has ſomething in it ſo very particular, that we have referred it to a diſtinct article.

The *exchange-brokers* at Amſterdam, called *makelaers*, are of two kinds; the one, like the Engliſh, called *ſworn brokers*, becauſe of the oath they take before the *burgomaſters*; but the others negociate without any commiſſion, and are called *walking brokers*.—The firſt are in number 395; whereof 375 are Chriſtians, and 20 Jews: the others are near double that number; ſo that in Amſterdam there are near 1000 *exchange-brokers*.—The difference between the two conſiſts in this; that the books and perſons of the former are allowed as evidence in the courts of juſtice; whereas in caſe of diſpute, the latter are diſowned, and their bargains diſannulled.

The fee of the ſworn *exchange-brokers* of Amſterdam is fixed by two regulations, of 1613, and 1623, with regard to matters of exchange, to eighteen ſols for 100 livres de gros, or 600 florins; i. e. three ſols for 100 florins; payable, half by the drawer, and half by the perſon who pays the money. But cuſtom has made conſiderable alterations herein.

The Jews, Armenians, and Banians, are the chief *brokers* throughout moſt parts of the Levant and the Indies. In Perſia, all affairs are tranſacted by a ſort of *brokers*, whom they call *delal*, i. e. *great talkers*. The manner of making their markets is very ſingular: after the *brokers* have launched out into long, and uſually impertinent diſcourſes, coming towards a concluſion, they only converſe with their fingers. The buyer and ſeller's *broker*, each take the other by the right hand, which they cover with their coat, or a handkerchief: the finger ſtretched out, ſtands for ſix; bent, for five; the tip of the finger for one; the whole hand for 100; and the hand clenched, for 1000. They will expreſs even pounds, ſhillings, and pence, by their hands. During all this myſtic commerce, the two *brokers* appear as cold and compoſed, as if there were nothing paſſing between them.

The French diſtinguiſh two kinds of *brokers*; one for the ſervice of merchants, the other of manufacturers, artificers, and workmen. The buſineſs of the former is to facilitate the ſale of goods in the wholeſale and mercantile way; that of the other, to procure the goods wanted for manufacturers, artificers, &c. or to ſell their goods when made. At Paris there is ſcarce a company of tradeſmen, or even mechanics, but have their *brokers*, who are uſually taken out of their body, and make it their ſole buſineſs to negociate in the particular kinds of goods to which ſuch company is by ſtatutes reſtrained. There are *brokers* for drapery, *brokers* for grocery, *brokers* for mercery, &c. There are even *brokers* for tanners, curriers, cutlers, and the like. Dict. of Commerce.

BROKER, *cloth*.—At Paris they have a regular company of theſe *brokers*, or *frippiers*, who are governed by ſtatutes firſt given them under Francis I. in 1544.

BROKERS, *piece*, a ſort of petty dealers in drapery, who ſell fragments or remnants of cloths, ſtuffs, ſilks, and the like, at under price.

BROKERS, *ſtock*, are thoſe employed to buy and ſell ſhares in the joint ſtock of a COMPANY or corporation. The negociations, &c. of theſe *brokers* are regulated by ſtat. 6 Geo. I. cap. 18. and 7 and 10 Geo. II. cap. 8. which, among other things, enact, that contracts in the nature of wagers, &c. incur a penalty of 500*l.* and by the ſale of ſtock, of which the ſeller is not poſſeſſed, a forfeit of 100*l.* and that *brokers* keep a book, in which all contracts, with their dates, and the names of the parties concerned, ſhall be entered, on pain of 50*l.* See SUBSCRIPTION and AGENT.

BROKERS *of houſhold furniture*. See APPRAISERS.

BROKERS, *pawn*, are perſons who keep ſhops, and let out money to neceſſitous people upon pledges, for the moſt part on uſurious conditions.

Theſe are more properly called *pawn-takers*, or *tally-men*, ſometimes *fripers*, or *friperers*.

Of theſe is to be underſtood the ſtatute of 1 Jac. I. cap. 21. by which it is enacted, that the ſale of goods, wrongfully gotten, to any *broker* in London, Weſtminſter, Southwark, or within two miles of London, ſhall not alter the property thereof.—If a *broker*, having received ſuch goods, ſhall not, upon the requeſt of the right owner, truly diſcover them, how and when he came by them, and to whom they are conveyed, he ſhall forfeit the double value thereof to the ſaid owner.

But there are ſeveral excellent regulations reſpecting *pawnbrokers*, of later date; for which, ſee 30 Geo. II. cap. 24, and 32 Geo. II. cap. 24.

In the cities of Italy, there are companies eſtabliſhed by authority for the letting out money in pawns; called *mounts of piety*; an honourable title, like that of the *charitable corporation*, but little becoming ſuch inſtitutions; inaſmuch as the loan is not *gratis*.

In ſome parts of Italy, they have likewiſe *mounts of piety* of another kind, wherein they only receive ready money, and return it again, with intereſt, at ſo much *per annum*.—At Bologna they have ſeveral ſuch *mounts*; which are diſtinguiſhed into *frank* and *perpetual*: the intereſt of the former is only four *per cent.* in the latter, ſeven.

BROKERAGE, the fee paid to a BROKER.

BROMELIA, in *Botany*, *Plum*; a genus of the *hexandria monogynia* claſs of plants. Its characters are theſe: the flower hath three long, narrow petals, each having a *nectarium* joined to it above the baſe, and hath ſix ſtamina; the germen is ſituated below the receptacle, which afterward becomes an oblong capſule, divided by a partition in the middle, to which the ſeeds are fixed quite round; theſe are ſmooth, and almoſt cylindrical. There are two ſpecies, which make a pretty variety in the hot-houſe.

BROMUS, in *Botany*, a name uſed by ſome authors for that kind of graſs, called by others *feſtuca* and ægilops, or *oat-graſs*.

BRONCHIA, in *Anatomy*, the little tubes into which the *trachea* is branched, at its entrance into the lungs; and which are diſtributed through every part thereof, ſerving for the conveyance of the air in reſpiration.

The *bronchia* conſiſt of cartilages like the *trachea*; only here the cartilages are perfectly circular, without any membranous hard part: they are joined together by the membranes that inveſt them, and are capable of being ſhot out lengthwiſe in inſpiration; and of being drawn into each other in expiration.

BRONCHIAL *artery* is an artery of the lungs, which ariſes from the deſcending trunk of the *aorta*, or intercoſtals; and, embracing the *trachea*, purſues the courſe of the *bronchia*, accompanying all the branches thereof through their whole progreſs. See *Tab. Anat.* (*Angeiol.*) *fig.* 1. *n.* 29.

BRONCHIAL *glands* are a ſoft, ſucculent, blackiſh ſort of glands, adhering externally to the lower part of the *trachea*, the greater diviſions of the *bronchia* and the *œſophagus*, ſome larger, ſome ſmaller; ſaid to be diſcovered by Verheyen.

Their uſe is uncertain; the generality hold them to furniſh an unctuous liquor, to moiſten and line the inſide of the *bronchia*. Verceillon will rather have them to ſecrete a juice for the ſervice of digeſtion, conveyed by minute ducts to the *œſophagus* and ſtomach; which, however, is called in queſtion by Heiſter.

Verheyen is of opinion, that the hoarſeneſs which ariſes from a cold, may proceed from an obſtruction of theſe glands; and that the benefit which accrues from taking oil of almonds, or other ſmooth medicaments, may proceed from their ſupplying the defect of this juice, and lubricating artificially the inſide of the *bronchia*. But it ſhould rather ſeem, that the humidity furniſhed the *trachea* and *bronchia*, comes from the miliary glands of thoſe parts, which are only lymphatics, and become tumid in morbid caſes, inſomuch that they frequently preſs the wind-pipe, or ſome of its branches, and cauſe an ASTHMA.

BRONCHIAL *vein* ariſes from the intercoſtals, or the azygos, accompanies the artery, and divides into the ſame number of branches with it.

The artery brings blood to the *bronchia*, for the nutrition thereof, and of the veſicles of the lungs; and the vein carries it off again to the *cava*, where it ſoon terminates.

The *bronchial* artery is ſometimes ſingle, but more frequently double; ſometimes triple.

BRONCHOCELE, a pendent tumour, with a large round neck, riſing on the bronchial part of the *trachea*.

The word is formed from βρογχος, *wind-pipe*, and κηλη, *ſwelling*.

The *bronchocele* is common in Lombardy, Savoy, and about the Alps; whence Horace,

Quis tumidum guttur miratur in Alpibus.

It is commonly ſuppoſed to derive its origin from the Alpine waters, which being impregnated and chilled with ice and ſnow, cauſes a *lentor* of the *lympha*, about the muſcles of the throat, whereby the veſſels are contracted, and the circulating humours thickened, whence an obſtruction, &c. Though there are ſome ſpecies of it ſuppoſed alſo to ariſe from ſtrains, bruiſes, and other accidents.

The *bronchocele* has been called by ſome *hernia gutturalis*, or *bronchialis*, *gutteria*, and *gongrona*. Some medical writers have confounded it with the *ſtruma*, *ſcrophula*, or king's evil, and others have made it only a ſpecies of STRUMA. It has been deſcribed by Celſus, Albucaſis, Heiſter, and many later writers. Some aſcribe it to a rupture of a lymphatic veſſel; others to ſome extravaſated, nutritious juice, converted into a fleſhy ſubſtance; and the tumor has been obſerved to conſiſt partly of a fluid, and partly of a more firm and glandular ſubſtance; but its conſiſtence is different in different caſes.

The Engliſh *bronchocele*, as Mr. Proſſer has termed it, or, as it is otherwiſe called, the *Derby-neck*, becauſe many of the women in the hills of Derbyſhire are ſubject to it, is a tumor ariſing on the fore-part of the neck, ſeated in the body of the neck, between the ſkin and wind-pipe, in the thyroid gland; and thus differs from the former, or Alpine *bronchocele*, which commonly hangs under the chin like dew-laps. Mr. Proſſer diſtinguiſhes it alſo from the ſimilar diſeaſe, which is cauſed by loud crying, coughing, or other means of ſtraining the neck; this, he ſays, is incurable; whereas the other, called the natural or ſpontaneous *bronchocele*, is eaſily cured by proper and timely application. Dr. Hunter has obſerved, that it appears two or three years before or after menſtruating; and Mr. Proſſer has made the ſame obſervation, that it commonly appears firſt between the age of eight or twelve years. When the menſtruation approaches kindly, it ſometimes ſpontaneouſly diſappears. This diſeaſe is almoſt peculiar to women; it is ſoft, or rather flabby to the touch, and moveable; but when it has continued for ſome years after the time of its growing, it becomes more firm. It is attended with a conſiderable difficulty of breathing, in ſome caſes, to ſuch a degree, as to occaſion a bad wheezing. The ſituation of this tumor is ſuch, that all attempts to extirpate it are extremely dangerous, and therefore the only method of cure is by diſcuſſion. The moſt celebrated remedy for this diſorder is one which is prepared and ſold at Coventry, and which Mr. Proſſer believes conſiſts of equal parts of ſponge, cork, and pumice-ſtone, calcined; half a dram of this is mixed with ſugar, and made into a bolus, and laid under the tongue every night. Mr. Proſſer recommends the following powders:

℞ Cinnab. Antimon. opt. levig. ℈j.
Milleped. pp. & pulv.
Spong. calcin. ā̄ā gr. xv. m. f. pulvis.

One of theſe is to be taken an hour or two before breakfaſt, for two or three weeks; and, after the interval of about a fortnight, they are to be again renewed; and three of the following pills are to be taken at bed-time, during the ſecond courſe of the powders:

℞ Pil. Mercurial. ph. nov. ℥ß.
Pil. N° 48. æquales.

The doſe is to be adjuſted to the age and conſtitution of the patient, who ſhould be prepared for this courſe by two or three previous purges, and avoid taking cold. If theſe means are uſed for about a month or ſix weeks, without any external application, he has no doubt of ſucceſs. However, the patient ſhould be under twenty-five years of age. At this age the cure is uncertain; but at a more advanced period of life much more improbable, and ſeldom or ever ſucceeds. Gooch, in his Medical Obſervations, mentions an *aqueous* BRONCHOCELE. Phil. Tranſ. N° 265. p. 631. Proſſer's Account and Method of Cure of the *Bronchocele*. 1771.

BRONCHOTOMY, in *Chirurgery*, the operation of cutting into the wind-pipe, to prevent ſuffocation, in the quinſy; or an inciſion made in the *trachea*, or wind-pipe, between two of its *annuli* or rings, in order to give paſſage for the breath, when there is danger of ſuffocation, from an inflammation of the *larynx*, &c.

The word comes from βρογχος, *wind-pipe*; and τεμνω, *I cut*.

Bronchotomy, called alſo *Laryngotomy*, is thus performed.—The body of the patient being prepared, an inciſion is made between the third and fourth *annuli*, or rings, of the *aſperia arteria*, an inch below the bottom of the *larynx*; the ſkin and integuments divided, and the muſcles removed; a ſilver tube is applied, and the cauſe of the diſeaſe removed, and the wound healed; nouriſhing clyſters being applied in the mean time, if deglutition be impracticable.

Dr. Muſgrave obſerves, that in all medicine there is not one method that works ſo great a change, for the better, in ſo ſhort a time.—However, it is ſeldom practiſed, becauſe that gap which appears on the cutting a throat (the divided parts being then drawn towards their more fixed ends), together with the great efflux of blood when the jugulars and carotid arteries are alſo wounded, create in moſt men a dread of the operation, and make many believe all wounds of the *trachea* mortal.—The ſame author makes no ſcruple, however, to ſay it ought to be practiſed in quinſies, and other dangers of ſuffocation from cauſes of a like nature with them; from an extraordinary cure which he himſelf had wrought in this way.

Bronchotomy is likewiſe recommended as the laſt thing to be done, in order to recover drowned people to life; and to this operation many have been indebted for their recovery.

In the Philoſophical Tranſactions, vol. lii. part ii N° 81. there is an account of the caſe of a *cut throat*, that may ſerve to make us ſomewhat more ready and reſolute in the operation of *bronchotomy*, when it is neceſſary; ſuch is the very inference that Dr. Huxham, who relates it, draws from it. P. 515.

BRONCHUS, in *Anatomy*, properly denotes the lower part of the *aſpera arteria*, dividing into *bronchiæ*, or branches. In which ſenſe, *bronchus* ſtands contradiſtinguiſhed from LARYNX.

The name *bronchus* is alſo extended to the whole *aſpera arteria*, or TRACHEA.

BRONCHUS alſo denotes a perſon afflicted with a BRONCHOCELE, or tumor of the throat, called by Ulpina *gutturoſus*.

BRONCINI, in *Zoology*, a name given by ſome to the *lupus*, or ſea-wolf, called in Engliſh the BASSE.

BRONTEUM, in *Antiquity*, that part of the theatre underneath its floor, wherein brazen veſſels, full of ſtones and other materials, to imitate the noiſe of thunder, were kept. Potter. Arch. Græc. lib. ii. cap. 8.

BRONTIÆ, among *Naturaliſts*, a kind of figured ſtones, commonly hemiſpherical, and divided by five pointed zones.

The word is formed from βροντη, *thunder*; alluding to the popular tradition, that thoſe ſtones fall in thunder-ſhowers: whence they are alſo denominated thunder-ſtones, ſometimes polar-ſtones, fairy-ſtones, and alſo *ombriæ*, by naturaliſts.

Some take the *brontiæ* for the petrified ſhells of the *echinus ſpatagus*, or *briſcus*, of Ariſtotle. Dr. Woodward rather ſuppoſes them to have been formed, and received their ſhape, in the ſhell of the *echinus ſpatagus*; on which footing they are alſo ranked in the number of ECHINITES. Dr. Plott conteſts both.

BRONTIÆ are ſometimes alſo uſed in England for a kind of figured ſtones, ſhaped like arrow-heads, leſs properly called BELEMNITES, and popularly *thunder-bolts*.

Dr. Woodward takes not theſe for natural ſtones, but ſuppoſes them to have been faſhioned thus by art, to ſerve as weapons before the invention of iron.

Some alſo give the denomination *brontia* to the BATRACHITES and CHELONITES.

BRONTOLOGY, books containing the doctrine of thunder, and of the preſages drawn therefrom. See THUNDER.

BRONZE, in *Chemiſtry*, a factitious metal, compounded of copper and tin, to which ſometimes other metallic ſubſtances are added, particularly *zinc*. It is brittle, hard, and ſonorous.

The word is French, in which language it has a very extenſive ſignification, including all the compoſitions of copper or braſs, as for guns, bells, pots, or the like.

It is formed from the Italian *bronzo*, which has the ſame ſignification. Copper medals are frequently called medals of *bronze*. Medaliſts diſtinguiſh the *large*, *middle*, and *little* BRONZE.

Bronze is employed for various uſes, as for making bells, cannons, and ſtatues; and the proportions of the component metals are varied, to ſuit the ſeveral uſes to which it is applied. For the fineſt ſtatues, the mixture in the compoſition of *bronze* is half *copper*, and half *braſs*, or LATTEN.

The Egyptians, who are ſaid by ſome to have invented the art of making it, uſe two thirds of *braſs*, and one third of *copper*.

The compound of *copper* and *tin*, it is obſerved in the Dictionary of Chemiſtry, has a greater than the intermediate ſpecific gravity: whence he infers, that in the union of *copper* and *tin* there is a penetration of parts; i. e. that one metal enters into the pores of the other, and perhaps even this effect is reciprocal. See on this ſubject Gellert's Metallurgic Chemiſtry.

Bronze is leſs apt to be covered with verdigriſe than pure *copper* is; for as *tin* is leſs liable to the action of ſalts, of moiſture, and of the air, than *copper*, it is alſo leſs liable to ruſt; hence ariſes one reaſon why this ALLAY of *bronze* is uſed for cannons, ſtatues, and works expoſed to the air and weather. The greater fuſibility of *bronze* than of *copper*, is alſo an advantageous property, and much facilitates the caſting of large works, as ſtatues, bells, and cannon. See BELL-*metal*.

The operation by which large works of *bronze* are caſt, is ſufficiently ſimple. For this purpoſe a brick-furnace is uſed nearly of the ſhape of an oven for baking bread. The floor of it is concave, and conſiſts of a compoſition of ſand and clay; in which the metals to be fuſed are put. The furnace has three openings; the firſt is a lateral mouth, at which enters the flame of wood, placed in a ſecond furnace on one ſide of the firſt; the ſecond opening is a chimney placed on the ſide oppoſite to the mouth, by means of which the flame is drawn over the metal; the third opening is a hole opened and ſhut at pleaſure, through which the inner part of the ſurface may be occaſionally inſpected, that the ſtate of the metal may be obſerved. When the metal is in the ſtate required, a fourth opening is then uncloſed, communicating with the hollow floor, and through which the melted metal flows by channels into the moulds prepared to receive it. Dict. of Chemiſtry.

BRONZE, in *Painting*, denotes a colour prepared by the colourmen of Paris, in imitation of *bronze*. There are two ſorts of it, the *red* and the *yellow*, or *golden*: the latter, the *yellow*, is made ſolely of the fineſt and brighteſt copper-duſt that can be had; and in the former there is only added a ſmall quantity of red ochre, well pulveriſed. They are both applied with varniſh, and, to prevent its turning greeniſh, the work is dried over a chaffing-diſh, as ſoon as *bronzed*.

BRONZES. Thus *Antiquarians* denominate figures of men or beaſts, urns, and every piece of ſculpture, which the ancients made of the above metal. Statues, buſts, &c. caſt of this metal, are called by this name, whether they be originals or copies.

BRONZING is the art of imitating *bronze*. See BRONZE, in *Painting*.

BROOD, the young of fiſh and fowls.

The word is derived from the Saxon *bredan*, *to breed*; which alludes to βρυω, *to be big with young*.

Malpighi had the curioſity to break ſeveral times all the eggs of a *brood*, one half an hour after another, and obſerve with a microſcope the ſucceſſive alterations produced therein, till the moment of hatching; of all which he has given figures, curiouſly engraven.

The word is alſo uſed for a ſet of any young. In which ſenſe we ſay, a *brood* of vipers, a *brood* of oyſters. A *brood* of pheaſants is more properly called an *eye*. Phil. Tranſ. N° 369.

BROOD of ſea-fiſh is ſpawned, and lies in ſtill waters, where it may have reſt to receive nouriſhment, and grow to perfection. And here it is often deſtroyed by weirs, draw-nets, and nets with canvas, or like engines in the bottoms of them; in harbours, havens, and creeks.—Every weir near the main ſea takes, in twelve hours, ſometimes five buſhels, ſometimes ten, ſometimes twenty or thirty.

For the preventing hereof, by 3 Jac. I. cap. 12. it is enacted, that none ſhall erect a weir, or weirs, along the ſea-ſhore, or in any haven, or creek, or within five miles of the mouth of any haven or creek, or ſhall willingly deſtroy the ſpawn, or fry of fiſh, on pain of 10*l.* to be divided betwixt the king and the proſecutor. Neither ſhall any one fiſh in any of the ſaid places, with any net of a leſs meaſh than three inches and an half betwixt knot and knot (except for the taking ſmoulds in Norfolk only), or with a canvas net, or other engine, whereby the ſpawn or fry of fiſh may be deſtroyed; on pain to forfeit the ſaid engine or net, and 10*s.* in money, to be divided betwixt the poor of the pariſh, and the proſecutor.

BROOD, or BROOD-*comb*, called by the French *couvain*, is that part of the comb of a bee-hive, which contains in its cells the future progeny of the hive, in the three different ſtates of eggs, worms, and nymphs. See BEE, and QUEEN-*bee*.

BROODING, the act of a hen, or other bird, ſitting on a number of eggs, to keep them warm, till they hatch, or produce young ones. See HATCHING.

In which ſenſe, the word amounts to the ſame with *incubation*.

Inſects have alſo a method of *brooding* on their *ova*. Some even pretend, that ſnakes lye on their eggs; which ſeems without foundation. Phil. Tranſ. N° 8.

There is a difference between the *brooding* of SNAKES and VIPERS; the former being oviparous, and the latter bringing forth their young alive.

BROOKLIME, in *Botany*, a ſpecies of SPEEDWELL.

Brooklime bears a reſemblance in its flowers to the *Paul's betony*, though its leaves are larger, and the ridges entire.

Its chief uſe is to abrade and clear away thoſe little viſcoſities which obſtruct the capillaries, and occaſion ſcabs and blotches, though it has alſo a diuretic virtue, and ſerves as a cleanſer of all the viſcera; whence it is frequently an ingredient in antiſcorbutic and deobſtruent compoſitions. Quincy. Diſp. p. ii. § 4.

BROOM, *ſingle-ſeeded*, *Geniſta*, in *Botany*, a genus of the *diadelphia decandria* claſs of plants. Its characters are theſe: the flower is of the butterfly kind; the ſtandard long, and wholly reflexed; the wings are a little ſhorter, and looſe; the keel erect, and longer than the ſtandard. It hath ten ſtamina joined, which are ſituated in the keel. In the centre is an oblong germen, which afterwards becomes a roundiſh, turgid pod, with one cell, opening with two valves, encloſing kidney-ſhaped ſeeds. There are ten ſpecies. It grows plentifully on heathy grounds. See *Tab. of Botany*, *Claſs* 22.

Among *Huſbandmen*, *broom* is conſidered as a weed very pernicious to the culture of lands; and, on that account, to be grubbed up and deſtroyed.

It roots deep, and, ſhedding no leaves, is continually ſucking the moiſture from the earth. The beſt method of deſtroying it, is the burning the land, then plowing it deep, and manuring it very well with dung and aſhes; the ſpreading on the land chalk or marle, or the manuring it with urine. If the ground be deſigned for paſture-land, it is beſt to cut it cloſe to the ground in May, when the ſap is ſtrong in it. By this artifice, the roots are deſtroyed; whereas, in the common way of pulling up the young plants, ſome ſtrings will be left, and the leaſt of theſe will grow. Foddering of cattle upon *broomy* land, is one very good way of deſtroying the *broom*, their urine killing the roots, and their treading the land making it leſs proper for the roots of this plant; for the *broom* is never obſerved to grow in trodden places. This troubleſome and pernicious plant is not, however, without its uſe to the farmer; for, when well laid, it will make an excellent and laſting kind of thatch for barns.

Broom-flowers make a principal ingredient in divers medicated ales. Their aſhes are extolled for purging off waters in dropſies; in which reſpect, however, Dr. Quincy aſſures us, they are no better than any other lixivious ASHES.

Some pickle the yellow buds with vinegar and ſalt, &c. after the manner of capers, from which they are then ſcarce to be diſtinguiſhed.

Broom is an attenuant, abſtergent, and aperient. The juice of the green ſhoots of *broom*, or a ſtrong infuſion of them in wine, is an excellent diuretic, and cleanſes the ureters and kidneys. If taken in large doſes it purges by ſtool, and therefore is doubly proper in dropſical caſes. The ſeed of *broom* is alſo a purge, and that of no weak kind, a dram and half of it being a ſufficient doſe. The *lixivium* of *broom* with white wine is a powerful diuretic, but muſt be taken with caution.

BROOM, *African.* See ASPALATHUS.

BROOM, *Butcher's*, in *Botany*. See BUTCHER'S *Broom.*

BROOM-*flower*, gives the denomination to an order of knights inſtituted by St. Lewis of France, on occaſion of his marriage. The motto was, *Exaltat humiles*, and the collar of the order made up of *broom-flowers* and huſks, enamelled and intermixed with fleurs-de-lys of gold, ſet in open lozenges, enamelled white, chained together, and at it hung a *croſs florence* of gold. This anſwers to what the French call *Ordre de la Geneſte*, from the name of a ſpecies of *broom* ſo called; different from the common *broom*, as being lower, the ſtalk ſmaller, and leaf narrow; the flower is yellow, and bears a long huſk.

Some alſo ſpeak of another order of the *Geneſte*, or *Broom*, eſtabliſhed by Charles Martel, or rather Charles VI.

BROOM alſo denotes a well known houſhold beſom, or implement wherewith to ſweep away dirt, duſt, and the like.

We ſay, a *birch-broom*, a *hair-broom*, a *ruſh-broom*, a *heath-broom.* The primitive kind of *brooms*, from whence the denomination is given to all the reſt, was made of the *geniſta*, or wild *broom*, growing on commons.

BROOM-*gall*, in *Natural Hiſtory*, a name given by authors to a remarkable ſpecies of galls found on the *geniſta vulgaris*, or common *broom.* This is occaſioned, like all other galls, by the puncture and eating of an inſect, and, when opened, is found to contain a ſmall oblong worm, of a red colour, but whoſe ſize requires the uſe of a glaſs in order to ſee it diſtinctly.

BROOM *rape*, in *Botany*. See *Broom* RAPE.

BROOM-*tree*, *Spartium*, *Cytiſo Geniſta*, in *Botany*, a genus of the *diadelphia decandria* claſs of plants. Its characters are theſe: the empalement of the flower is heart-ſhaped; the flower of the butterfly kind; the ſtandard almoſt heart-ſhaped, large, and wholly reflexed; the wings are oblong, ſhorter than the ſtandard, and annexed to the ſtamina; the keel is oblong, longer than the wings; the borders hairy, and connected together; to which the ſtamina are inſerted. It has ten unequal ſtamina, nine of which are joined together, and the under ſtands apart; with an oblong hairy germen, ſupporting a riſing awl-ſhaped ſtyle, to which is faſtened an oblong, hairy, inflexed ſtigma. The germen afterward becomes a long, cylindrical, obtuſe pod, of one cell, opening with two valves, including ſeveral globular kidney-ſhaped ſeeds. There are eleven ſpecies, natives of different parts; the beſt known of which is the Spaniſh *broom*, which is common in gardens, and flowers in June and July; the parts in uſe are the branches, flowers, and ſeeds, which agree in virtues with the common *broom*; only are more efficacious.

BROOMING, or BREAMING *of a ſhip*, the burning off the filth ſhe has contracted on her ſides with ſtraw, reeds, broom, or the like, when ſhe is on a careen, or on the ground. See CAREENING.

BROSSÆA, in *Botany*, the name of a genus of plants of the *pentandria monogynia* claſs, the characters of which are theſe: the cup is a one-leaved *perianthum*, divided into five ſegments, each of which terminates in a long point, of the ſame length with the petals; the flower is monopetalous, of the ſhape of a truncated cone, and undivided at the edge; the germen is divided into five parts; the ſtyle is pointed, not ſo long as the flower, and its ſtigma ſimple. The fruit is a roundiſh capſule, divided by five deep furrows into five cells; it is covered with a large cup, which cloſes over its top; it is ſucculent and fleſhy; and, finally, opening at the ſides, it diſcharges a great number of minute ſeeds.

BROTHEL. See STEWS.

BROTHER, *Frater*, a term of relation between two male children, ſprung from the ſame father, or mother, or both. Scaliger and Voſſius derive *frater* from φρατηρ, for φρατωρ, which properly ſignifies a perſon who draws water in the ſame well; φρεαρ, in Greek, ſignifying *well*, and φρωτρια, a company of people, who have a right to draw water out of the ſame well.—The word, it is ſaid, came originally from the city Argos, where there were only a few wells diſtributed in certain quarters of the city, to which thoſe of the ſame neighbourhood alone repaired.

By the civil law, *brothers* and ſiſters ſtand in the ſecond degree of conſanguinity; by the canon law, they are in the firſt degree.

By the Moſaic law, the *brother* of a man who died without iſſue was obliged to marry the widow of the deceaſed. Deuter. xxv. 7. See LEVIRATE.

The ancients applied the term *brother* indifferently to almoſt all who ſtood related in the collateral line, as uncles and nephews, couſin-germans, &c.—This we learn not only from a great many paſſages in the Old Teſtament, but alſo from profane authors: Cicero, in his Philippics, ſays, "Antonia was both wife and ſiſter of Mark Antony; "becauſe ſhe was daughter of his brother C. Antonius." And as to couſins, Tullius Hoſtilius, in Dionyſius Halicarneſſeus, calls the Horatii and Curatii, *brothers*; becauſe they were ſiſters children.

The language of the Jews, biſhop Pearſon obſerves, included in the name of *brethren* not only the ſtrict relation of fraternity, but alſo the larger of conſanguinity. We are brethren, ſays Abraham to Lot, Gen. xiii. 8. whereas Lot was only his nephew.—So Jacob told Rachel that he was her father's *brother*, Gen. xxix. 12. whereas he was only her father's nephew.—This conſideration has been urged with good advantage againſt the Antidicomarianites, who, from the mention made of the *brethren of Jeſus* (John ii. 12. Matth. xii. 46.) have impugned the perpetual virginity of the mother of Chriſt.

Among us, it is cuſtomary for kings to give the title *brother* to each other; the unction in coronation being eſteemed to create a kind of *brotherhood.* Nor is the cuſtom modern: Menander mentions a letter of Coſroes king of Perſia, to the emperor Juſtinian, beginning thus: Coſroes king of kings, &c. to the emperor Juſtinian *my brother.*

Kings now alſo give the ſame appellation to the electors of the empire; and the like was given, by the king of France, to the late king of Sardinia, while only duke of Savoy.

In the civil law, *brothers*, *fratres*, in the plural, ſometimes comprehends ſiſters: as *Lucius & Titia*, *fratres*; *tres fratres*, *Titius*, *Mævius*, *& Seia.*

BROTHERS, *foſter*, thoſe which ſucked the ſame nurſe. The French call them *fratres du lait*, or *brothers by milk*; which is moſt properly uſed in reſpect of a perſon who ſucked a nurſe at the ſame time with the nurſe's own child.

BROTHERS, *German*, *Fratres Germani.* See GERMAN.

BROTHER was alſo uſed, in *Middle Age Writers*, for a *comes*, or governor of a province.

BROTHER is applied, in a leſs proper ſenſe, to denote a perſon of the ſame profeſſion. In which ſenſe, judges, biſhops, prieſts, &c. call each other *brothers.*

BROTHER *in Chriſt*, *frater in Chriſto*, the ſame with *ſpiritual brother*, a perſon admitted into a monaſtic ſociety or fraternity.

BROTHER is more particularly uſed to denote the relation between monks of the ſame convent.

In which ſenſe they ſay, *brother* Zachary, *brother* Bonaventure, &c. In Engliſh, we more uſually ſay, *friar* Zachary, &c. from the French word *frere*, *brother.*

This appellation is borrowed from the primitive Chriſtians, who all called each other *brothers:* but it is principally uſed for ſuch of the religious as are not prieſts; thoſe in orders are generally honoured with the title of *fathers*, *patres*, *peres*; whereas the reſt are only ſimply *brothers.*

The monks of St. Dominic are particularly called *preaching brothers*, or *friars predicants:* thoſe of St. Francis, *minor brothers*; thoſe of charity, *ignorant brothers*, &c.

BROTHERS, *conſcript*, *fratres conſcripti*, denote laymen and others entered in the catalogue of the *brothers* of a monaſtery, or rather poſſeſſed of the fraternity thereof.

BROTHER, *outer*, *frater exterior*, ſometimes denotes a lay-*brother.*

BROTHER, *ſtrange*, *frater adveniens*, a hoſt or gueſt belonging to another monaſtery.

BROTHER, *foreign*, *frater externus*, either a monk, prieſt, or canon of ſome other monaſtery, to whom the prayers of the ſociety are granted.

BROTHER, *mature*, *frater maturus*, one diſtinguiſhed by his age, gravity, or probity, above the reſt.

BROTHERS, *ſpiritual*, laymen admitted into a monaſtic fraternity.

ternity. The name was alſo given to thoſe otherwiſe called *mature brothers*, and ſometimes alſo to a ſort of adopted *brothers*, or perſons who commenced a kind of *brotherhood*, with the ceremony of breaking bread together in the church before the prieſt.

Brother, *lay*, *frater laicus*, or *converſus*. See Lay *Brother*.

Brother, *given*, *frater donatus*, among the Carthuſians, denotes a young perſon dreſſed in minim cloth, and wearing a hat, whoſe office is to ſerve in the houſe, anſwering to what in other orders is called an *offered brother*, *frater oblatus*.

Brother is alſo an appellation more peculiarly given to certain orders of religious: thus, the

Brothers *of St. Alexis*, in the Low Countries, were an order of perſons who attend on thoſe who lay dying, and took care of the burial of the dead.

Brothers *of Ave Maria*. See Servites.

Brothers *of Charity*, a ſort of religious hoſpitallers, founded about the year 1297, ſince denominated *Billetins*. They took the third order of St. Francis, and the ſcapulary, making three uſual vows, but without begging.

Brothers *of Charity* alſo denote an order of hoſpitallers ſtill ſubſiſting in Romiſh countries, whoſe buſineſs is to attend the ſick, poor, and miniſter to them both ſpiritual and temporal ſuccour.

They are all laymen, except a few prieſts, for adminiſtering the ſacraments to the ſick in their hoſpitals. The *brothers of charity* uſually cultivate botany, pharmacy, ſurgery, and chemiſtry, which they practiſe with ſucceſs.

They were firſt founded at Granada, by St. John de Dieu; and a ſecond eſtabliſhment was made at Madrid, in the year 1553: the order was confirmed by Gregory XIII. in 1572: Gregory XIV. forbad them to take holy orders; but by leave of Paul V. in 1609, a few of the *brothers* might be admitted to orders. In 1619 they were exempted from the juriſdiction of the biſhop. Thoſe of Spain are ſeparated from the reſt, and they, as well as the *brothers* of France, Germany, Poland, and Italy, have their diſtinct generals, who reſide at Rome. They were firſt introduced into France by Mary of Medicis in 1601, and have ſince built a fine hoſpital in the Fauxbourg St. Germain.

Brothers *of charity of St. Hippolytus*, a religious congregation firſt ſet on foot by Alvarez, a citizen of Mexico, in 1585, who aſſociated with him ſeveral other pious perſons, to attend on the ſick, and founded an hoſpital without the wall of that city; which being approved of by the pope, and the number of like hoſpitals increaſing, a congregation was formed under the title of *the charity of St. Hippolytus*, becauſe the firſt hoſpital had been dedicated to that ſaint, on whoſe feaſt-day the city firſt fell into the hands of the Chriſtians. Clement VIII. in 1594, granted them all the privileges of the *brothers of the charity* of St. John de Dieu.

Brothers *of death*, a denomination uſually given to the religious of the order of St. Paul, the firſt Hermit.

They are called *brothers of death*, *fratres a morte*, on account of the figure of a death's head, which they were always to have with them, in order to keep perpetually before them the thoughts of death.

This order, by its conſtitutions made in 1620, does not ſeem to have been eſtabliſhed long before pope Paul V: Lewis XIII. in 1621, permitted them to ſettle in France. The order was probably ſuppreſſed by pope Urban VIII.

Brothers *of penitence*, or of *the penitence of Jeſus Chriſt*, a name given at Thoulouſe to the religious of the third order of St. Francis, called alſo *Beguini*; and to a fraternity of penitents held in the chapel of the church of the third order, under the direction of the Beguini. See Beguins.

Brothers, *pyed*, *fratres pii*, a denomination given to all monks, whoſe habit was partly white, partly black; they were otherwiſe called *Agaches*.

Brothers *of St. Gregory the Illuminator*, a religious order eſtabliſhed in Armenia, in the fourteenth century, which being much reduced and decayed by the conqueſts of the Turks and Perſians, was, in 1356, united to the order of St. Dominic.

Brothers, *joyful*, *fratres gaudentes*, in Italy, denote the knights of the order of the Virgin Mary, firſt inſtituted at Bologna in 1261, for whom a rule was preſcribed by pope Urban IV.

Brothers, *poor*, in the Charter-house, a denomination given to decayed gentlemen, to the number of 80, who are ſubſiſted with diet, clothing, and lodging, on the eſtabliſhment.

The *poor brothers* are to be gentlemen by deſcent, come to poverty, or decayed merchants, ſoldiers, or officers of the king's houſhold. The conditions of admiſſion are, that they have no eſtate for life worth 200*l.* nor coming in, *viis & modis*, 24*l.* *per annum*; and that they be fifty years old, unleſs they have been maimed in the public ſervice; in which caſe, the age of forty ſuffices. They wear a livery-gown within doors.

Brothers, *white*, the name of a ſect which appeared in Ruſſia towards the beginning of the fourteenth century; ſo called from their white cloaks, on which was a St. Andrew's croſs, of a green colour. See Brethren.

Brothers *of arms*, an appellation given thoſe who contract a kind of fraternity in war, obliging themſelves to the mutual ſervice and aſſiſtance of each other.

In the military orders, the knights are alſo called *brothers*. —In the order of Malta, there is a particular claſs, who are called *ſerving brothers*; conſiſting of ſuch as cannot give proof of their nobility. In Latin they are denominated *fratres clientes*.

Brothers *by adoption*. See Adoption.

Two *brothers*, who have only the ſame father, are called *fratres conſanguinei*; and thoſe who are only deſcended from the ſame mother, *fratres uterini*.

Brothers *of the roſy croſs*. See Rosycrusians.

Brothers, *ſworn*, *fratres conjurati*. See Fratres.

Brothers, in *Alchemy*, *lame or maimed*, denote the imperfect metals which are to be cured of their lameneſs by the perfect elixir; i. e. are to be purified and ſeparated from their droſs, &c. by the philoſopher's ſtone.

BROTHERHOOD. See Fraternity.

BROW-*antler*, the firſt branch of the horn of a hart or buck, ſhooting out from the beam, or main horn, next the head.

Brow-*poſt*, in *Carpentry*, a beam which goes acroſs or overthwart a building.

BROWALLIA, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Its characters are theſe: the flower is funnel-ſhaped, of one leaf, having a cylindrical tube, twice the length of the empalement; the upper part ſpread open, and divided into five parts. It hath four ſtamina included in the chaps of the petal; the two upper being very ſhort, and the two under broad and longer. In the centre is ſituated an oval germen; the empalement afterward becomes an oval, obtuſe veſſel, with one cell, opening at the top into four parts, and filled with ſmall compreſſed ſeeds. One ſpecies of this *genus* grows naturally at Panama; beſides which, Linnæus reckons two more.

BROWN, a duſky kind of colour, inclining ſomewhat towards redneſs.

Dyers diſtinguiſh divers ſhades and gradations of *brown*, a *ſad brown*, *London brown*, *clove brown*, *purple brown*, *walnut-tree brown*, &c.

Spaniſh brown is a dull red colour, uſed by houſe-painters, chiefly for priming, and by colourmen, in preparing cloths for pictures, and other coarſe work, as being cheap and eaſy to work.

It is obtained from a native earth, which is found in the ſtate and of the colour in which it is uſed. The name ſeems to import, that it was formerly brought from abroad, but that which is now uſed is dug up in ſeveral parts of England. The method of dying *browns* is by putting the cloth in a boiling bath of red wood ground, and nut-galls bruiſed; and when it has boiled for two hours and a half, and has been cooled and aired, it is put again into the ſame bath, to which a proportionable quantity of copperas has been previouſly added. Soot communicates a *brown* dye, and is ſometimes uſed by dyers for this purpoſe.

Brown *bay*, in the *Manege*, is underſtood of horſes of a very dark cheſnut colour.

Brown *ochre*. See Ochre.

Brown, *pink*. See Pink.

Brown *wort*, in *Botany*. See Self-*heal*, and Fig-*wort*.

BROWNÆA, in *Botany*, a genus of the *monadelphia enneandria* claſs of plants, ſo called in memory of Dr. Patrick Brown, the celebrated Engliſh botaniſt. There are only two ſpecies of this genus yet diſcovered, which are natives of America. It is doubtful whether this plant will vegetate in our ſtoves, or green-houſes; it makes a beautiful appearance with its aſſemblage of purple or blood-red flowers. Phil. Tranſ. vol. lxiii. part i. p. 173.

BROWNISTS, a religious ſect, which ſprung out of the Puritans, towards the cloſe of the ſixteenth century: their leader, Robert Brown, wrote divers books in their behalf, was a man of good parts, and ſome learning. He was born of a good family in Rutlandſhire, and related to the lord-treaſurer Burleigh. He had been educated at Cambridge; but firſt publiſhed his notions, and began to inveigh openly againſt the diſcipline and ceremonies of the church, at Norwich, in the year 1580, from which time he underwent divers perſecutions from the biſhops; inſomuch that he boaſted, he had been committed to no leſs than thirty-two priſons, in ſome of which he could not ſee his hand at noon day. At length, with his congregation, he left the kingdom, and ſettled at Middleburgh in Zealand; where they obtained leave of the States to worſhip God in their own way, and form a church according to their own model; which they had not long done, before this handful of men, juſt delivered from the ſeverities of the biſhops, began to differ among themſelves, and crumble into ſo many parties, that Brown, their paſtor, grew weary of his office; and, returning to England in 1589, renounced his principles of ſeparation; and was preferred to the rectory of a church in Northamptonſhire, and died, after leading a very idle and diſſolute life, in 1630.

The revolt of Brown was attended with the diſſolution of the church at Middleburgh; but the ſeeds of *Browniſm*, which he had ſown in England, were ſo far from being deſtroyed, that Sir Walter Raleigh, in a ſpeech in 1592, computes no leſs than twenty thouſand followers of it.

The occaſion of their ſeparation was not any fault they found with the faith, but only with the diſcipline and form of government of the other churches in England. They equally charged corruption on the epiſcopal form; and on that of the preſbyterians, by conſiſtories, claſſes, and ſynods: nor would they join with any other reformed church, becauſe they were not aſſured of the ſanctity and regeneration of the members that compoſed it; on account of the toleration of ſinners, with whom they maintained it an impiety to communicate. They condemned the ſolemn celebration of marriages in the church; maintaining, that matrimony being a political contract, the confirmation thereof ought to come from the civil magiſtrate. They would not allow any children to be baptized of ſuch as were not members of the church, or of ſuch as did not take ſufficient care of thoſe baptized before. They rejected all forms of prayer; and held, that the Lord's prayer was not to be recited as a prayer; being only given for a rule, or model, whereon all our prayers are to be formed.

The form of church-government which they eſtabliſhed was *democratical*. When a church was to be gathered, ſuch as deſired to be members of it made a confeſſion of it; and ſigned a covenant, by which they obliged themſelves to walk together in the order of the Goſpel. The whole power of admitting and excluding members, with the deciſion of all controverſies, was lodged in the brotherhood. Their church-officers were choſen from among themſelves, for preaching the word, and taking care of the poor, and ſeparated to their ſeveral offices by faſting, prayer, and impoſition of hands of ſome of the brethren. But they did not allow the prieſthood to be any diſtinct order, or to give any indelible character. As the vote of the brotherhood made a man a miniſter, and gave him authority to preach the word, and adminiſter the ſacraments among them; ſo the ſame power could diſcharge him from his office, and reduce him to a mere layman again. And as they maintained the bounds of a church to be no greater than what could meet together in one place, and join in one communion; ſo the power of theſe officers was preſcribed within the ſame limits. The miniſter or paſtor of one church could not adminiſter the Lord's ſupper to another, nor baptize the children of any but thoſe of his own ſociety. Any lay-brother was allowed the liberty of propheſying, or of giving a word of exhortation to the people; and it was uſual for ſome of them, after ſermon, to aſk queſtions, and reaſon upon the doctrines that had been preached. In a word, every church, on the *Browniſts* model, is a body-corporate, having full power to do every thing which the good of the ſociety requires, without being accountable to any claſſis, ſynod, convocation, or other juriſdiction, whatever. Moſt of their diſcipline has been adopted by the independents, a party which afterwards aroſe from among the *Browniſts*.

The laws were executed with great ſeverity on the *Browniſts*; their books were prohibited by queen Elizabeth, and their perſons impriſoned, and many of them were hanged. The eccleſiaſtical commiſſion, and the ſtar-chamber, in fine, diſtreſſed them to ſuch a degree, that they reſolved to quit their country. Accordingly, many families retired, and ſettled at Amſterdam, where they formed a church, and choſe Mr. Johnſon their paſtor; and after him Mr. Ainſworth, author of the learned commentary on the Pentateuch. Their church flouriſhed near an hundred years. See Neal. Hiſt. of New Eng. tom. i. cap. 2. p. 58; and Robinſon, Apologia juſta, &c. Browniſtarum & Barrowiſtarum. 12mo. 1619. See INDEPENDENTS.

BROWS, or EYE-BROWS, are two hairy arches above the orbits of the eyes, bunching out by means of ſome fat under the ſkin in this place.

That end next the noſe is called the head, *caput*, the other the tail, *cauda*, of the *eye-brow*.

The uſe of the *eye-brows* is partly to break the rays of light deſcending from above, that they may not dart too ſtrongly into the eyes; and partly to be a ſkreen to the eyes from ſweat, duſt, or other matters deſcending from the forehead.

BROWSE, the tops of the branches of trees, whereon beaſts feed. This is ſometimes alſo called brouce, and bruttle; probably from the French *brout*, which ſignifies the ſame.

BROWSE more properly denotes the food which deer find in young copſes, continually ſprouting anew.

BROWSE, *beaſts of*, or BROWSING *beaſts*, a denomination including all of the fallow-kind, as the deer, roe-buck, rupicapra, &c.

BROWSE-*wood*, the ſame with ſpray or bruſhwood.

BROWTING, *Brouter*, among the *French Gardeners*, ſignifies breaking off the tips of the ſlender branches of trees, when too long in proportion to their ſtrength.

BRUARIA *turbaria*. See TURBARY.

BRUCHUS, a genus of inſects of the order of *coleoptera*, with filiform *antennæ*. Linnæus enumerates ſeven ſpecies.

BRUISE, in *Surgery*. See CONTUSION.

BRUISER, in *Mechanics*, the name of a concave tool uſed for grinding and poliſhing the *ſpecula* of teleſcopes. It is made of braſs, about a quarter of an inch thick, and hammered as near to the *gage* as poſſible. It is tinned on the convex ſide, and made equally broad at bottom and top. This ſerves to reduce the figure of the HONES, when it is too convex, and to rub down any gritty matter that happens to be mixed with the putty, before the ſpeculum is applied to the POLISHER. See Phil. Tranſ. vol. lxvii. part i art. 16. and Smith's Optics, book iii. chap. 2.

BRUISING, in *Pharmacy*, ſignifies the operation of breaking or pounding a thing coarſely, or by halves; frequently practiſed on roots, woods, and other hard bodies, to make them yield their juice or virtue more freely than they would do whole.

BRUMALIA, or BROMALIA, a feaſt of Bacchus, celebrated among the ancient Romans, during the ſpace of thirty days; commencing on the twenty-fourth of November, and ending the twenty-ſixth of December. Some ſay this feaſt was celebrated twice a year, viz. on the twelfth of the calends of March, and on the eighteenth of the calends of September.

The word comes from *bruma*, the day of the winter ſolſtice; in regard of the time when the feaſt was held: though others derive it from *brumus*, or *bromius*, names of Bacchus.

The *brumalia* were inſtituted by Romulus, who uſed, during this time, to entertain the ſenate.

During this feaſt indications were taken of the felicity of the remaining part of the winter.

The *brumalia* were alſo called *hiemalia*.

BRUNELLA. See SELF-*heal*.

BRUNSFELSIA, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower is of one leaf, and funnel-ſhaped, having a long tube, but ſpreads open at the top; it hath five ſtamina of the length of the tube, which are inſerted in the petal. In the centre is placed a ſmall round germen; the empalement afterward becomes a globular berry, with one cell, encloſing a great number of ſmall ſeeds, which adhere to the ſkin of the fruit.

We know but one ſpecies, which is a native of the ſugar iſlands in America; but is at preſent very rare in the Engliſh gardens.

BRUNIA, in *Botany*, formerly reckoned a genus in the Linnæan ſyſtem, but ſince claſſed as a ſpecies of the PROTEA.

BRUSH, an aſſemblage of hairs or hogs briſtles, faſtened in the holes of a wooden handle or board, pierced for that purpoſe, and ſerving to cleanſe divers bodies by rubbing therewith.

We ſay a round, a flat, or a ſquare *bruſh*, clothes-*bruſh*, head-*bruſh*, horſe-*bruſh*, beard-*bruſh*, comb-*bruſh*, weavers-*bruſh*, and the like.

The manner of making *bruſhes* is by folding the hair or briſtle in two, and bringing it by means of a pack-thread, or wire, engaged in the fold, through the holes wherewith the wood is pierced all over, or faſtened therein with glue, or pitch. When the holes are thus all filled, they cut the ends of the hair, to make the ſurface even.

BRUSH, *Painter's*. See PENCIL.

BRUSH, *ſheermens*, is made of wild boars briſtles, and ſerves to lay the wool or nap of cloths, after ſheering it for the laſt time.

The *fleſh-bruſh* is of uſe in medicine, eſpecially in caſe of rheumatiſms, and certain cutaneous diſorders. See FRICTION.

The *bruſh* is alſo applied to the ſoles of the feet of new-born infants, when fainting, to find whether they be alive or dead.

BRUSH, *ſilver*, in *Botany*. See LADY'S FINGER.

BRUSH, in *Electricity*, denotes the luminous appearance of the electric matter, iſſuing in a parcel of diverging rays, from a point. Beccaria aſcribes this appearance to the force with which the electric fluid, going out of a point, divides the contiguous air, and paſſes through it, to that which is more remote. See *Tab. Electricity*, *fig.* 8, 9, 10, 11. See STAR.

Bruſhes, *wire*, are uſed by ſilver-ſmiths and gilders, for ſcrubbing ſilver, copper, or braſs pieces, in order to the gilding them.

There is a method of dying or colouring leather, performed by only rubbing the colour on the ſkin with a *bruſh*. This the French leather-gilders call *brouſſure*; being the loweſt of all the ſorts of dye allowed by their ſtatutes.

Bruſh *of a fox*, among *Sportſmen*, ſignifies his drag or tail, the tip or end of which is called the chape.

Bruſh *iron-ore*, ſignifies a kind of ORE full of *ſtriæ*, reſembling the hair of a bruſh.

Bruſh is alſo uſed in ſpeaking of a ſmall thicket, or COPPICE. In this ſenſe, the word is formed from the middle age Latin *bruſcia*, *bruſcus*, which ſignifies the ſame.

Bruſh-*wood* denotes ſmall ſlender wood or ſpray. See BROWSE.

BRUSHING. Among *Jockies*, a *bruſhing* gallop denotes a briſk one: a horſe ſhould have his *bruſhing* gallop in a morning before watering.

BRUTE, an ANIMAL deſtitute of the faculty and uſe of REASON.

In which ſenſe, *brute* amounts to the ſame with BEAST.

Brutes are the ſecond order of *mammalia* in the Linnæan ſyſtem; the character of which is, that they have no upper or under fore-teeth; their feet have ſtrong hoofs, not formed for ſwift or ſtately motion, and they maſticate their food.

Among *brutes*, the monkey-kind bear the neareſt reſemblance to man; and this, both in the external ſhape and internal ſtructure, though more in the former than the latter. In the monkey-kind, the higheſt and the neareſt approaching the likeneſs of man, is the ORANG OUTANG, or *homo ſylveſtris*. Phil. Tranſ. N° 189. N° 256. p. 339.

The ſtructure and œconomy of *brutes* make the object of what is called comparative ANATOMY.

Philoſophers are much divided about the eſſential characters of *brutes*. Some define *brute* as an animal not riſible, or a living creature incapable of laughter; others, a mute animal, or a living thing deſtitute of ſpeech; the Peripatetics, an animal endowed with a ſenſitive power, but without a rational one. The Platoniſts allow reaſon and underſtanding, as well as ſenſe, to *brutes*, though in a degree leſs pure and refined than that of men. Lactantius allows every thing to *brutes* which men have, except a ſenſe of religion. Some *ſceptics* have aſcribed religion and virtue to *brutes*; and they ſay that Solomon ſeems to aſſure us, that the ſouls of men have no pre-eminence over thoſe of *brutes*. Eccleſ iii. 18, 19. Lact. Inſt. Div. lib. iii cap. 10. Stanley Hiſt. of Phil. p. xii chap. 13. Budd de Error. Stoic. Exerc i. § 6.

There are different faculties and degrees of knowledge in different ſpecies. Some have only the motive and ſenſitive faculties, as worms; others have alſo memory, and ſome imagination and invention, as monkeys and elephants: beſides that in the ſame ſpecies, ſome in docility and ingenuity exceed others; and that the climate, air, and food, have their influence on the *brute* kind, as on men; ſo that thoſe of the ſame ſpecies, in different countries, are found to have different qualities; of which Engliſh horſes, dogs, cocks, &c. are a ſufficient proof. It is hard therefore to define any thing univerſally concerning *brutes*. What agrees to the oyſter or the ſtar-fiſh, which differ little from inanimate, will it agree to the ORANG-OUTANG, which ſcarce differs, except as to ſpeech, from ſome ſpecies of men?

They have ſenſible knowlege, but want intellectual knowlege; they have apprehenſion, but not reflexion; are capable of prudence, which is only a great pitch of experience, but not of ſapience, which can only be the fruit of evidence. Phil. Tranſ. N° 80. p. 4054, and 4071. Hobbes Diſc. of Hum. Nat. chap. v. § 4. chap. vi. § 4. and chap. ix. § 18.

The chief operation of a rational ſoul is judgment, by which we diſtinguiſh true from falſe; to which the memory and imagination are ſubſervient. But this cannot be aſcribed to *brutes*, ſince they do not make propoſitions. They are incapable of ſcience, for want of names and ſigns whereby to denote abſtract ideas: however, there is no talent peculiar to man, which we may not diſcover ſome reſemblance of in *brutes*, except ſpeech and curioſity.

As for ſpeech or enunciative reaſon, to many it does not ſeem ſo neceſſary, ſince many of the philoſophers condemn it as a vice, and enjoin abſolute ſilence: in reality, ſuppoſing a man naturally dumb, does it follow, that he is void of reaſon? Is it any objection then to the reaſoning of *brutes*, that they have not the uſe of ſpeech, though, as a late author expreſſes it, they have all the organs neceſſary for that purpoſe? Budd. Annal. Phil. p. 102.

Some have pretended, that they have a jargon intelligible to one another; and Porphyry relates, that Tireſias and Apollonius Tyanæus underſtood their language. There is at leaſt a ſimilitude of ſpeech in *brutes*, for they know each other by their voices, and have their ſigns whereby they expreſs anger, joy, and other paſſions: thus a dog aſſaults in one ſtrain, fawns in another, howls in another, and cries when beaten in another. It is true, their ſpeech to us appears rude and inarticulate; but perhaps ours is the ſame in their ears. And if the voice of *brutes* be unintelligible to us, does not the ſame hold of the language of our own kind, till we have been inſtructed in it? The language of foreigners, what does it appear to us, but a confuſed unmeaning heap of ſounds. In fine, if laughter be peculiar to men, we ſee the image of it in *brutes*, ſignified by the motion of their ears, eyes, mouth, tongue, &c. Laſtly, what is ſo peculiar to man as foreſight of futurity; but have not beaſts this, which lay up ſtores with great care in their cells, as the ant, bee, &c.

The generality of the ancient philoſophers thought that *brutes* reaſoned: this, among the heathens, was the opinion of Anaxagoras, Plato, Porphyry, Celſus, Galen, Plutarch, and others. Among Chriſtians, Lactantius, and the whole body of Manichees and Gnoſtics: among the moderns, Valla, Sonnertus, Arriaga, Tho. Campanella, Gaſſendus, F. Daniel, and others, aſſert the ſame. Plutarch has a dialogue under this title, that *brutes* uſe reaſon. All the ſect of Pythagoras ſhould be of the ſame ſentiment, becauſe the *metempſychoſis* imports that human ſouls paſs into the bodies of *brutes*. Can any perſon, ſays Lactantius, deny that *brutes* have reaſon, when they often outwit man himſelf? Inſt. Div. lib. iii. cap. 10.

The Stoics, holding that the Divine Being is diffuſed through all creatures, were neceſſitated to maintain the ſouls of *brutes* to be divine, and conſequently that they had reaſon.

The Sceptics paralleled *brutes* with men. Sextus, more particularly, gives a compariſon between dogs and the human kind. The former excels the latter as to ſenſe; it has a quicker ſcent, whereby to purſue beaſts unſeen; it diſcovers them ſooner by the eye, and is more acute of hearing. Sext. Empir. Pyrrhon. lib. i. cap. 13.

A dog is not deſtitute of logic, as appears from Chryſippus's famous inſtance, who obſerved, that a hound coming into a road which divides into three, makes choice of the third by virtue of an induction or ſyllogiſm: for that having ſcented the two ways by which the beaſt did not paſs, he runs ſtraight upon the third without ſcenting it: where the reaſoning is obvious: the beaſt paſſed either that way, or that way, or this way; but he neither paſſed that way, nor that way, and therefore this way. Stanley Hiſt. Phil. p. 780.

That a dog is poſſeſſed of what they call internal reaſon, appears from his chooſing things convenient, flying the hurtful, purſuing his food, and running away from the whip; and when wounded or ſick, acting prudently as the circumſtances of his caſe, and his abilities and opportunities dictate.

Of how many medicines, how many arts do we owe the invention to *brutes*? It was from the ſpider, that man learned the art of weaving; from the ſwallow he borrowed architecture, from the gooſe ſwimming, from fiſh navigation, from ſilk-worms ſowing; to omit many other inſtances of the like kind alleged by Plutarch, Voſſius, and others. Tab. Bib. Græc. lib. iv. cap. 29. tom. iv. Plut. de Solert. Animal. p. 974. Voſſ. de Orig. Idol. lib. iii. cap. 27.

How many actions are to be obſerved of *brutes*, not to be accounted for without reaſon and argumentation? If we ſay that dogs, by long habit, and by force of rewards and puniſhments, may be taught many things: do not this teaching, docility, and remembrance of blows, argue memory, fear, and deſire, which cannot ſubſiſt without knowledge, ſenſe, pleaſure, and pain?

And if *brutes* have knowledge, it is allowed they muſt alſo have judgment and reaſon, and a ſcience of univerſals. Tavern. Trav. Ind. ap. Phil. Tranſ. N° 326. p. 65. Chauvin Lex. Phil. p. 377, &c.

Some ſpeak as if they held *brutes* to be moral beings, and under the obligation of the law of nature. Ulpian, and other civil lawyers, are ſuppoſed to be of this opinion; as alſo the Stoics, from whoſe ſchool this tenet is ſaid to have been firſt borrowed. It is alleged on the other hand, that *brutes* cannot be ſubject to a law, unleſs they have a power of knowing him that made the law, judging whether we have a right to command them, and what is contained in the law, that they may direct themſelves accordingly; which ſeem all to be things out of the reach of *brutes*. But Ulpian's definition of the law of nature, *Jus naturale eſt quod natura omnia animalia docuit*, when fairly interpreted, does not imply, that *brutes* have reaſon and reflection, but may be underſtood of that natural inſtinct common to man and *brute*, by which they are impelled to ſelf-defence, propagation of their ſpecies, &c. Albertus and Schmidius have diſſertations expreſs on the divine honours paid to *brutes*.

Brutes, *mechaniſm of.*—The Carteſians, on the other hand, adopt that ſtrange paradox, of the mechaniſm of *brutes*; and aſſert them not only void of all reaſon and thought, but of all perception. This ſyſtem is much older than Des Cartes; it was borrowed by him from Gomez Pereira, a Spaniſh phyſician, who employed thirty years in compoſing a treatiſe, which he entitles Antoniana Margarita, from the Chriſtian names of his father and mother. It was publiſhed in 1554. See Voſſ. de Orig. Idol. lib. iii. cap. 41.

This was revived by Des Cartes, and further aſſerted by Le Grand, D'Armaſon, and others of his followers, who were led to adopt this doctrine, from that principle of his philoſophy, that the eſſence of the ſoul conſiſts in thinking; ſo that, ſuppoſing knowlege and thought in *brutes*, they muſt have ſouls like thoſe of men; the ſenſitive ſoul of the Ariſtotelians being held by him a mere chimera.

But Pereira does not appear to have been the firſt inventor of the doctrine; ſomething like it having been held by ſome of the ancients, as we find from Plutarch, and St. Auguſtin. Plut. de Plac. Phil. lib. v. cap. 20. Auguſt. de Quant. Animæ. Paſch. Invent. Nov. Antiq. c. 3.

Perhaps the beſt argument againſt the ſyſtem of machines is, that it is contrary to the common ſenſe and apprehenſions of all mankind. Ought not thoſe, who deny that *brutes* have ſenſe, to be combated with the ſame weapons that are uſed againſt the Sceptics, who deny all truth and certitude; and againſt the immaterialiſts, who deny the exiſtence of bodies?

Henry More, in his Enchiridicon Metaphyſicum, F. Daniel, in his Nouvelles Difficultés, publiſhed in 1693, and in his Voyage du Monde de Deſcartes, as alſo F. Pardies, in a treatiſe of the knowlege of *brutes*, have preſſed the Carteſians hard. Paſchius has alſo a diſputation on the ſenſe and knowlege of *brutes*, and Willis a treatiſe on the ſouls of *brutes*. De Anim. Brut. Oxon. 1672, 4to.

But to ſay the truth, we are not much wiſer for the labours of theſe learned gentlemen. The common opinion of the untaught and unprejudiced part of mankind ſeems to be, that *brutes* have ſenſe, imagination, memory, and paſſion, but that they are void of underſtanding and reaſon; that is, in the language of philoſophers, they have the inferior faculties of the ſoul, but not the ſuperior. Nor will the diſtinction appear groundleſs to thoſe who attend to the difference between the objects of the mind, and its acts about theſe objects; as alſo to the difference between the confuſed and the diſtinct comprehenſion of any thing. See Buffon's Hiſt. Natur. vol. ii. p. 443.

BRUTIA, in the *Medical Writings of the Ancients*, a word uſed to expreſs the fatteſt and moſt reſinous kinds of PITCH, and ſuch as was propereſt for making the oil of pitch, called *oleum picinum*.

The word *brutia* ſeems to have been an adjective of diſtinction given to this kind of PITCH by the ancients, from their common cuſtom of naming things from the places whence they were brought; *Brutia* being the name of a country in the extreme parts of Italy. Plin. lib xv. cap. 7.

BRYGMOS, a kind of convulſion, affecting the lower jaw, and ſtriking the teeth together; moſt frequently obſerved in children affected with worms.

The word is formed from βρυκειν, or βρυχειν, frequently uſed by Hippocrates for chattering of the teeth.

The *brygmos*, or chattering of the teeth, is a ſymptom of the acceſs of an ague, or intermitting fever.

BRYON, in the *Botanical Writings of the Ancient Greeks*, an abbreviation of the word *bryonia*.

BRYONY, in *Botany*, a name uſually made to take in two different *genera* of plants, under the names of *alba* and *nigra*, the *white* and *black* kind. Mr. Tournefort, however, has determined this word to expreſs only what we call the *white bryony*, making TAMUS the name of the black.

In the Linnæan ſyſtem it is a genus of the *monoecia ſyngeneſia* claſs of plants. Its characters are theſe: it hath male and female flowers on the ſame plant; the male flowers are bell-ſhaped, adhering to the empalement, cut into five ſegments, and have three ſhort ſtamina; the female flowers ſit upon the germen; and the petal is the ſame with thoſe of the male; the germen, which is under the flower, afterward becomes a ſmooth, globular berry, containing oval ſeeds adhering to the ſkin. There are ſix ſpecies.

The firſt ſort grows upon dry banks under hedges, in many parts of England. The roots of this plant have been formerly, by impoſtors, brought into a human ſhape, and ſhewn about the country for mandrakes, to the common people, who were eaſily impoſed on by their credulity, and the owners got good livings thereby. The method practiſed was, to find a young thriving *bryony* plant, and opening the earth all round it, ſo as not to diſturb the lower fibres, they faſtened a mould, ſuch as is uſed by the makers of plaſter figures, round the root, with wire; and then filling up the earth again, left it to grow to the ſhape of the mould, which it will do in a ſummer. The leaves of this plant are alſo often impoſed on the people in the market for *mandrake* leaves, although there is no reſemblance in figure, or agreement in quality, between them.

The other kinds muſt be raiſed in a bark ſtove, and when they begin to ſpread, their branches may be trailed againſt the wall, or againſt an eſpalier; and when they are full of fruit, they make a pretty variety among other exotics.

The root was anciently much uſed as a powerful purgative, eſpecially of ſeroſities; but now chiefly retained as an uterine detergent; in which quality it enters the compoſition of an officinal water, denominated, from it, *aqua bryoniæ*, generally preſcribed againſt hyſteric diſorders.

M. Boulduc found, by a chemical analyſis, that *bryony* conſiſts only of ſaline principles, without any reſin: wherein it differs from *mechoacan*, which, in other reſpects, it much reſembles. He adds, that it has more virtue taken in ſubſtance than in any other manner; which is common to this, with moſt other purgatives.

From two ounces of *bryony*, Neumann obtained by water ten drams of gummy extract, and from the ſame quantity he obtained by ſpirit, two drams, two ſcruples and an half of reſinous extract. It is a ſtrong purgative, and as ſuch has been ſtrongly recommended in hydropic caſes. It appears, however, ſays Neumann, not to be entirely ſafe. See his chemical hiſtory of this plant, in Dr. Lewis's edition of Neumann's Works, p. 351.

But as this is apt to be too rough in its operation, the ſeveral preparations of infuſions, decoctions, and extracts, are to be preferred to the ſubſtance.

It is, when freſh, full of an uſeleſs and redundant moiſture, and its doſe in infuſion in white wine, which is the beſt menſtruum, is a dram of the dried root, or half an ounce of the green, which is about equivalent in ſtrength. Hiſt. Acad. Par. 1712.

BRYTIA, among the *Ancient Naturaliſts*, denotes the maſk or ſolid part of grapes, which remain after expreſſing the juice.

BRYUM. See *Wall*-Moss.

Bryum *lactucæ folio*, a name given by ſome to the oyſter-green. See Tremella.

BUBALINUS, *ſerpens*, in *Zoology*, a name given by authors to the *Anacandaya* of the Ceyloneſe, a very terrible SERPENT, common in that part of the world, and very miſchievous among their cattle: whence its Indian name, which ſignifies as much.

BUBALUS, the *buffalo*, a ſort of wild bull, a ſpecies of the *bos* or *ox*, very common in many parts of Europe, and in the pope's territories, kept tame, for the ſake of the milk of the female, of which the famous cheeſes, called *caſe di cavallo*, are made. They are alſo commonly employed in the affairs of huſbandry, and have, for this purpoſe, a braſs or iron ring put through their noſes, and, by means of a rope, or thong of leather, put through this, they are managed at pleaſure; though if ever ſo well tamed, they uſually keep ſomething of their native fierceneſs. They were originally brought from India into Lombardy in the reign of king Agilulf, who reigned from 591 to 616.

The Italian *buffalo* is conſiderably larger than the common bull; his body alſo is thicker, and his horns very large, ſtrait for a great length from their baſe, then bending inwards, not round, but compreſſed, with one ſide ſharp, and of a black colour; the toughneſs of his ſkin, of which buff-leather is made, is well known.

Beſides this, there are other varieties of this ſpecies; as the *naked buffalo* of the Eaſt Indies, with briſtly thin hair, with the rump and thighs quite bare, the firſt marked with two duſky ſtripes pointing downward, the laſt with two tranſverſe ſtripes; and with horns compreſſed ſideways, taper, and ſharp at the point. The American *buffalo*, or the BOS BISON of Linnæus, has horns very cloſely united at the baſe, bending inwards and downwards, and turning outwards at their points; they are two feet round at the baſe, very prominent, ſharp at the point, and two feet long; the head and ſhoulders are covered with long hairs of a dark colour; the body is naked behind, the ſhoulders high, and the fleſh ſmells ſtrong of muſk. It lodges among the high reeds in the *ſavannas*, in the interior parts of North America; it is very fierce, but capable of being tamed, and will breed with the common kind. Its weight is from 1600 to 2400lb. See *Tab. Quadrupeds, fig.* 12. See Bison.

There is alſo the *dwarf buffalo*, with horns cloſe at their baſe, broad and flat at the beginning, receding in the middle, almoſt meeting at the points, and ſtanding erect. This animal is larger than a roe-buck, but leſs than a ſtag; it is compact and well made, with ſhining hair, of a tawny brown; ſhort legs, thick neck, elevated ſhoulders, and tail terminated with long hairs. Pennant.

BUBBLES, Bullæ, in *Phyſics*, little round drops or veſicles of any fluid filled with air, and formed either on its ſurface, upon the addition of more of the fluid, as in raining; or in its ſubſtance, upon a vigorous inteſtine commotion of its parts.

Bubbles are dilatable, or compreſſible, i. e. they take up more or leſs room, as the included air is more or leſs heated, or more or leſs preſſed, from without; and are round, becauſe the included aura acts equally from within all round. Their coat, or cover, is formed of the minute particles of the fluid, retained either by the velocity of the air, or by the briſk attraction between thoſe minute parts and the air. See Colour.

Theſe little *bubbles*, riſing up from fluids, or hanging on their ſurface, form the white ſcum at top; and theſe ſame *bubbles* form the ſteam, or vapour, flying up from liquors in boiling, &c. the manner of which ſee under Boiling, Vapour, &c.

Bubble, in *Commerce*, is a cant name given to a ſort of projects, for the raiſing of money on imaginary grounds; very frequent in the years 1720 and 1721.

The pretended deſign of theſe undertakings was, to raiſe a ſtock, for the retrieving, ſetting on foot, or carrying on, ſome promiſing and uſeful branch of trade, manufacture, machinery, or the like. In order to which, propoſals were given out, ſhewing the advantages of the deſign, and inviting perſons into it. The ſum neceſſary to carry on the affair, together with the profits expected from it, were divided into a certain number of ſhares, or ſubſcriptions, to be purchaſed by perſons diſpoſed to adventure therein.—The real deſign, in ſome, was to raiſe a ſum for the private advantage of the projectors, to be laid out by them in the South-ſea ſtock, &c. in hopes, by the riſe thereof, to be able to refund the ſubſcribers money, with profit to themſelves. In others, the deſign was abſolutely to defraud the adventurers of their ſubſcription-money, without any view to reſtitution.

There was a third kind ſomewhat different: the projectors of theſe, to proceed the more ſecurely, propoſed to have books opened, and ſubſcriptions taken at ſome time to come; and in the mean time took money, by way of *premium*, to intitle perſons to be admitted ſubſcribers, as ſoon as the affair ſhould be ripe for dividing into ſhares. Several thouſand ſhares were thus very frequently beſpoke in one day; and *premiums*, from one ſhilling, to ſome pounds, paid thereupon, to the profits of the projectors.

The number of *bubbles*, and their qualities, are very extraordinary; ſome of them, too, authorized by patents; and, in others, the projectors and their proprietors formed into corporations: ſome for fiſheries, ſome for inſurances, ſome for the digging of mines, &c.

BUBBLING *waters*. See Water.

BUBO, in *Zoology*. See Owl.

Bubo, in *Anatomy*, is ſometimes uſed to denote that part otherwiſe called inguen, or *groin*.

Bubo, in *Medicine* and *Surgery*, denotes a tumour, ſometimes inflammatory, and ſometimes ſchirrhous, gathering chiefly in the glands of the *inguen*, or groin.

The word comes from the Greek βȣϐων, *inguen*; the uſual place of ſuch tumours.

There are two kinds of *buboes*, the one called *benign*, or mild, the other *malignant*.—Mild *buboes* are thoſe which are preceded or attended with no manifeſt diſeaſe in the body; and they are eaſily cured by gentle mercurials, externally applied, and an occaſional purge; or by encouraging ſuppuration, and proceeding as in a common abſceſs.—Malignant *buboes* are divided into *peſtilential* and *venereal*: the former ariſe in peſtilential fevers, &c. The latter are the product of impure embraces; and frequently the forerunner of the pox.—When a *bubo* is encompaſſed with a circle of ſeveral colours, it is a ſign it is peſtilential; and it is generally mortal.

By *buboes* in *peſtilential* caſes, the writers in phyſic not only expreſs ſuch tumors as ariſe under the arms, under the ears, and in the groin; but comprehend under this term thoſe alſo which are ſituated in the neck, breaſt, arms, legs, and other fleſhy parts of the body, which ſwell and inflame in *peſtilential* fevers, and ſeem the conſequences of the endeavours of nature to throw out the peſtiferous matter which lay concealed in the body.

Peſtilential buboes are diſtinguiſhed from other tumors by their happening at a time, and in conjunction with the plague, and from their being accompanied by the ſymptoms proper to that diſeaſe. Theſe tumors appear ſometimes ſooner, ſometimes later, in the courſe of the diſeaſe; in ſome they appear before the patient knows he has the infection, and in others two or three days elapſe before their appearance: they are very ſeldom known to appear later than on the fourth day, and are ſometimes joined with carbuncles; but though the *buboes* frequently appear without theſe, yet the carbuncles never appear without tumors.

Perſons who have theſe tumors come on without any very bad ſymptoms, and have them maturate ſpeedily, are in general the ſooneſt freed from the diſtemper, inſomuch, that the beſt method of giving relief in this terrible diſeaſe, conſiſts in the carefully promoting and keeping up the *buboes* and tumors. All diſcutient or diſperſing medicines are carefully to be avoided, and the phyſician's buſineſs is to aſſiſt nature in the throwing out, and moſt ſpeedily bringing theſe tumors to ſuppuration.

The patient is to be confined to his bed on the firſt appearance of theſe, and with the help of internal medicines proper to haſten the ſuppuration of tumors, the parts affected are to be rubbed pretty ſtrongly with the hands or cloths, and external, maturating, and emollient cataplaſms, to be applied; of this kind is that of yeaſt, ſalt, and muſtard-ſeed, all mixed together, or of yeaſt alone: by means of theſe the tenſe parts are relaxed and ſtimulated, and the ſuppuration greatly promoted; as alſo by the cataplaſms of roaſted onions, with Venice treacle and butter; or of crumb of bread, with milk and ſaffron. Plaſters are alſo very uſeful on ſome occaſions, in theſe caſes, as the frequent renewal of the cataplaſms expoſes the patient too much to the external air, and theſe are not attended with that inconvenience.

The moſt famed plaſters on theſe occaſions are that of Barbet, made of the *diachylon*, with the gum and mucilage plaſter, of each half a pound; muſtard-ſeed in powder, three ounces; baſilicon, four ounces, all mixed and made into a plaſter; and that of Dr. Hodges, made of three ounces of *oxycroceum*, an ounce of *galbanum*, the ſame quantity of *gum caranna*, and two ounces of black pitch, reduced to the conſiſtence of a plaſter.

This may be uſed like the former; nor is that plaſter to be eſteemed a trifle, which is made of honey, flour, and the yolks of eggs.

In ſome caſes of this terrible diſtemper, the tumor comes to ſuppuration in a few days; in others it is ſome weeks before it can be brought to it, by all that can be done. When thoroughly ſuppurated, it is to be opened with the ſcalpel, if it does not break of itſelf; and after thus opening, when the matter has been diſcharged, it muſt be well cleanſed. The beſt digeſtive in this caſe is the common ointment uſed on that occaſion, mixed with a ſmall quantity of Venice treacle, and balſam of ſulphur made with oil of turpentine. At each dreſſing the matter is to be gently ſqueezed out of the abſceſs, and the ointment applied without tents, unleſs the opening prove very narrow; then applying over all a plaſter of the common diachylon, or of honey and flour, the whole may be bound on, and this dreſſing continued till it is a proper time to heal with ſome vulnerary balſam.

There has been much diſpute between the phyſicians of different ages about the proper time for opening *buboes* of this kind; ſome have been for making an immediate inciſion, and others even for extirpating the whole ſwelling, as ſoon as it appeared, by means of the knife; but the firſt of theſe methods has been found to be frequently attended with the ill conſequences of ill conditioned fiſtulæ, ſtiffneſs, and loſs of motion in the limb, and ſometimes even with mortifications and gangrene; and the other too harſh and dangerous in many parts of the body: and the preſent practice univerſally diſallows both methods, being always for bringing the ſwelling to ſuppurate. Heiſter's Surg. p. 200.

The poiſon of the matter of theſe ſores has been nicely and boldly enquired into, as to its nature and properties, by Dr. Alpranus of Prague, in the time of the plague there in 1680. This gentleman having launced a *peſtilential* boil, collected the matter from it, and put it into a retort, luting the junctures with the receiver very cloſely and exactly, and applying by proper gradation the ſeveral degrees of fire; at firſt there came over a water, then a more fat and viſcid liquor, of an oily nature; and laſtly, there appeared in the neck of the retort, a ſalt. The fire being taken away, and the veſſels cooled, the doctor prepared himſelf for the opening of them by ſtopping his ears with cotton, his noſtrils with peſſaries, and his mouth with pieces of ſpunge, all ſoaked in vinegar and Venice treacle. The moment the veſſels were opened, however, there proceeded out of them a ſtench more horrible than can be conceived, which ſtruck the doctor with an univerſal trembling, in ſpite of his defence. He proceeded, however, to break the neck of the retort, and ſeparating the fœtid ſalt from it, he ventured himſelf to taſte it, and deſired Mr. Reſhel, the perſon from whom the matter was obtained, to do the ſame: it was found to have a moſt dreadfully piercing acrid taſte, which the doctor compares to that of *aqua regia*.

Hence he infers, that the moſt terrible ſymptoms of this fatal diſeaſe are to be accounted for: the ſtomach, wounded by ſo acrid a juice as this mingled among the blood, nauſeates food, and is afflicted with continual vomitings; the guts, infeſted by the ſame unwelcome gueſt, are thrown into violent perturbations, whence ariſe thoſe diarrhœas which often accompany the patient to his death; and from the horribly acrid quality of this juice, it is no wonder that ſuch piercing pains are found in the *buboes*, and ſuch burnings in the carbuncles that attend this diſeaſe.

Hence, alſo, as he obſerves, it is, that ſudorifics are the beſt remedies, ſince they allay the acrimony, and tend to expel the venomous juices through the pores. In this ſickneſs at Prague this gentleman obſerved, that almoſt all who ſweat plentifully recovered, whereas thoſe who did not ſweat, were moſtly taken off. Hook's Philoſoph. Collect. N° ii. p. 18.

Buboes, *venereal*, are tumors ariſing principally in the groin, after contracting the venereal diſeaſe, and they are ſometimes attended with the other ſymptoms of that diſorder, ſometimes they are themſelves the only ſymptoms of it. Theſe ariſe ſometimes ſooner, ſometimes later, after contracting the infection. The tumor firſt appears with hardneſs, redneſs, and pain either in one or both the groins, and ſometimes in the arm-pits. Great care is to be taken to diſtinguiſh, in thoſe caſes, whether the *bubo* be of a benign kind, or be really from a venereal infection; for miſtakes of this matter are on both ſides very dangerous. If a benign *bubo* be miſtaken for a venereal one, the patient is uſually treated in too harſh a method, and has more trouble and pain than are neceſſary; and, on the other hand, if a venereal *bubo* be miſtaken for a benign one, he is uſually treated ſo improperly as to be brought into a confirmed lues.

The *buboes* are known to be venereal, when they are the conſequences of impure embraces, or are accompanied with, or preceded, by gonorrhœas, chancres, and other ſymptoms of the venereal diſeaſe. When from theſe attendant ſymptoms, and from the patient's confeſſion, the *bubo* is found to be venereal, a cure is immediately to be ſet about; for though there is no great difficulty or danger in theſe caſes when taken in time, yet there are few in which delays are of worſe conſequence; for, from theſe, from an irregular courſe of life, or from an improper method of treatment, the cure often becomes extremely difficult, and the patient too frequently gets into a confirmed lues.

It is much diſputed whether the cure of theſe tumors by diſcuſſion be ſafe; many are of opinion, it is by no means to be allowed in theſe any more than in peſtilential *buboes*, ſince in both caſes, by that means, the poiſon is driven back into the blood. But the caſe is not parallel, and the truth is, that in theſe tumors the cure by ſuppuration is ſlow, tedious, and attended with many inconveniences, and that much better effects may be produced, and with the greateſt ſafety, by purging and mercurial medicines, with the decoctions of the woods, and other purifiers and ſweeteners of the blood.

The beſt method, whether the *bubo* be attended with a gonorrhœa or not, is to purge frequently, and give proper doſes of calomel; for *buboes* can never be ſafely cured till the body is perfectly freed from the venereal venom; and, by this means, if there be a gonorrhœa in the caſe alſo, that is cured at the ſame time. When there is a great inflammation, and the patient is of a robuſt plethoric habit, it is always neceſſary to bleed; while this method is followed, diſcutient plaſters ſhould be applied externally to the tumor, as the mercurial plaſter or the like, and the patient ſhould be kept to a regular courſe of life, and a proper diet. By this method, venereal *buboes*, which are not become inveterate, may be cured with great eaſe and ſafety.

But if the ſurgeon be called in too late, if the *bubo* will not give way to theſe methods; or if, for any other reaſon, he determines to bring it to ſuppuration, the maturation is in this caſe to be promoted as faſt as poſſible; and one great method to bring on ſuppuration with ſpeed, is to order the part to be rubbed ſtrongly, and for a conſiderable time, either with the fingers wetted with a little oil, or with linen rags, till it look very red and inflamed; and this is to be often repeated, applying after each time a plaſter of diachylon, with the gums, or ſome other of the maturating kind. While the patient is able to go abroad, violent exerciſes of all ſorts, as dancing and the like, are extremely proper, and do ſervice in haſtening a ſuppuration. When the pain will not ſuffer him to walk any longer, then it is proper to keep to the uſe of cataplaſms, inſtead of the plaſter; theſe are indeed ever much more ſerviceable to promote ſuppuration than plaſters, and the beſt on this occaſion are thoſe made of onions, roaſted under the aſhes, or of flour, honey, and yeaſt, or that of crumbs of bread boiled in milk, with the addition of a little ſaffron; theſe are to be applied warm to the parts, and frequently renewed; and it is always beſt to rub the parts, till they look very red, before the application of them. During the uſe of theſe external remedies, the patient ſhould be continually taking decoctions of the woods, and ſmall doſes of calomel; for theſe greatly attenuate the blood, drive it toward the ſkin, and correct the venereal venom. When theſe methods have brought the ſwelling to a perfect ſuppuration, the ſcalpel is to be taken in hand, to make the opening. Great caution is to be uſed in making the inciſion, not to hurt the larger blood-veſſels, which might occaſion very dangerous hæmorrhages. To avoid theſe miſchiefs, the protuberant part of the *bubo* is to be preſſed outward by the fingers, before the ſcalpel is introduced to make the inciſion. Great caution is alſo neceſſary as to the time of opening theſe tumors; for the doing this either too ſoon, or too late, are of very bad conſequence; the firſt brings on violent pains and inflammations, and other bad ſymptoms, and, by the latter, the venom has time given it to mix itſelf with the blood, and bring on a confirmed lues.

If the patient dreads the knife, the *bubo* may be opened with a cauſtic; and by whatever means it is done, it muſt be afterwards well cleanſed. The proper dreſſing on this occaſion is the common digeſtive ointment, with a ſmall quantity of Venice treacle, and a little red precipitate mixed in it; over this is to be applied a plaſter of diachylon, with the gums, or the like; by which means the lips of the *bubo* will be ſufficiently ſoftened: and when ſufficiently deterged in this manner, it may be healed by ſome vulnerary balſam applied on lint. It ſometimes happens, that the ulcerated *bubo* becomes ſo ſtubborn, that it will neither incarn nor cicatrize by the help of any medicines, but always diſcharges a copious quantity of matter. If, in this caſe, burnt alum and red precipitate prove of no ſervice, the actual cautery ought to be applied, and the lymphatics will by this means have their commuuications for ever cut off. Heiſter's Surgery, p. 207.

BUBON, in *Botany*, *Macedonian* PARSLEY; a genus of the *pentandria digynia* claſs of plants. The characters are theſe. It hath an umbelliferous flower, and the ſmall umbels have twenty rays; the empalement of the flower is permanent; the flower is compoſed of five ſpear-ſhaped petals, which turn inward, and hath five ſtamina; the oval germen is ſituated below the flower, which afterward becomes an oval, channelled, hairy fruit, dividing in two parts, each having an oval ſeed, plain on one ſide, but convex on the other. There are four ſpecies. This plant in warm countries is biennial; but in England it ſeldom flowers until the third or fourth year: when the plant flowers it always dies. They make a pretty variety in the green-houſe.

The ſeeds of one ſpecies of this plant are ingredients in the mithridate and theriaca.

The *galbanum* of the ſhops is ſuppoſed to be procured from two other ſpecies indifferently; and upon breaking their leaves, the juice which flows from the wound hath a ſtrong odour of the *galbanum*, which is a confirmation of it.

BUBONIUM, in *Botany*, a name given by ſome authors to the *Aſter Atticus*, or golden STAR-*wort*.

BUBONIUS *lapis*, a figured ſtone, in ſhape reſembling an owl's head, of a flinty ſubſtance, black within, and cineritious without. It was thus denominated by Dr. Plott, having not been before named by naturaliſts. Hiſt. Oxford. chap. v. § 45.

BUBONOCELE, a tumor in the groin; occaſioned by the deſcent either of the *epiploon*, or the inteſtines, through the perforation of the *muſculus obliquus deſcendens*.

The word comes from the Greek βȣϐων, *inguen*, and κηλη, *tumor*.

The *bubonocele* is the ſame with what is otherwiſe alſo called *ramex*, and HERNIA *inguinalis*.

It is a ſpecies of rupture; though ſurgeons call it an *incomplete* one; and is common to women, as well as men.

Some make two kinds of *bubonoceles*; the one owing to a deſcent of ſome of the *viſcera*, as the *omentum*, or inteſtines, ſtopping in the groin, and not falling ſo far as to the *ſcrotum*; the other a collection or ſtagnation of excrementitious humours in the inguinal glands; which latter is more properly called *bubo*, and differs little, except in ſeat, from the bronchocele.

BUBULCA, in *Zoology*, a ſmall freſh-water fiſh, called by ſome *bouviera* and *petenſe*; it is ſmall, flat, and very ſhort, approaching to a round rather than a long ſhape, and of a fine ſilvery whiteneſs, ſeldom above two inches in length.

BUCA, in *Natural Hiſtory*, a name by which ſome authors call the *buccinum*.

BUCAO, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of *ſcreech* OWL, which is of the ſize of a peacock. It is very common in thoſe iſlands, but wholly unknown to us, and is a very beautiful bird, but makes a hideous noiſe in the night.

BUCARDITES, or BUCARDIA, in *Natural Hiſtory*, a name given by many authors to a ſtone, in ſome degree reſembling the figure of an ox's heart. See *Tab. of Foſſils*, *Claſs* 9.

It is uſually of the ſubſtance of the coarſer ſtones, and is no other than a quantity of the matter of ſuch ſtone received while moiſt into the cavity of a large cockle, and thence aſſuming the figure of the inſide of that ſhell, the depreſſion of the head of the cockle, where the *cardo* or hinge of this ſhell is, makes a long and large dent in the formed maſs, which gives it a heart-like ſhape. Plott mentions a *bucardites*, which he found at Stretfford in Staffordſhire, which weighed twenty pounds, though broken half away, curiouſly reticulated, with a white ſpar-coloured ſtone. Nat. Hiſt. Oxf. chap. v. § 145.

BUCARDIUM, in *Natural Hiſtory*, a name given by authors to a kind of HEART-SHELL, reſembling an ox's heart in ſhape; it is of the *genus* of the *cordiformes*, or heart-ſhells, and differs from the other kinds, in being of a more globular figure.

The cabinets of the curious afford us ſeven *ſpecies* of this ſhell: 1. A yellow-furrowed one. 2. A grey ſpinoſe one. 3. A white-furrowed one. 4. A thicker narrow one. 5. The thick one, with a *cardo* ſeparated from the *apex*. 6. The thick kind, with the *cardo* at the *apex*; and, 7. The baſtard Noah's ark-ſhell.

BUCCA FERREA, in *Botany*, a name given by Micheli to a genus of plants, called ſince by Linnæus RUPPIA.

BUCCÆ *muſculus*, in *Anatomy*, a name given by ſome to the muſcle more uſually called the *buccinator*, and *contrahens labiorum*.

BUCCALES *glandulæ* are ſmall glands diſperſed over the inner ſide of the cheeks and lips, which ſeparate a ſpittle, uſeful in maſtication and digeſtion.

Steno, and ſome other writers, confound the *buccal* with the maxillary glands; from which they are really diſtinct. Phil. Tranſ. Nº 304. p. 6.

BUCCANEERS, or BUCANEERS, a term frequent in the Weſt Indies, properly uſed for a kind of ſavages, who prepare their meat on a grate, or hurdle, made of Braſil-wood, placed in the ſmoke, at a good height from the fire, and called *buccan*.

Whence, alſo, the little lodges, raiſed for the preparation of their food, are called *buccans*; and the action of dreſſing it *buccaning*.

Meat *buccaned*, is ſaid to have an excellent taſte, the vermil colour of a roſe, and a charming ſmell; all which it retains many months. Oexmelia, from whom we have this, adds, that the neighbouring people ſend their ſick hither; that, by eating their *buccaned* meat, they may be recovered.

The origin of the word is referred to the people of the Caribbee iſlands, who uſed to cut their priſoners of war in pieces, and lay them on hurdles with fire underneath, which they call *buccaning*, i. e. roaſting and ſmoking together: hence our *buccaneers* took both their name, and their cuſtom; with this difference, that what the former did to men, theſe did to animals caught in hunting.

The Spaniards, Savary tells us, call the *buccaneers* in their territories *matadores*, that is, *killers*; and *monteros*, that is, *hunters*: the Engliſh call theirs, *cow-killers*.

The *buccaneers* are of two diſtinct profeſſions: the one only hunt bulls, for their ſkins; the other beaſts, for their fleſh.

The art of *buccaning*, Oexmelia deſcribes thus: the beaſt being flaid, and the bones ſtripped out, the fleſh is cut into pieces of the length of the arm, and ſalted, and the next day laid on the *buccan*; which conſiſts of twenty or thirty bars laid acroſs, half a foot from each other: under this they raiſe a thick ſmoke, adding the ſkin and bones of the beaſt, to heighten it.

This is found vaſtly better than any ſimple fewel: becauſe the volatile ſalts of thoſe parts are by this means communicated to the fleſh, and give it ſuch a reliſh, as that, after a little of this *buccaning*, the niceſt palate will eat it without further preparation.

Buccaneers are uſually confounded with freebooters, from whom, in ſtrictneſs, they ought to be diſtinguiſhed. The ancient inhabitants of Hiſpaniola, and the other Caribbee iſlands, after their conqueſt by the Europeans, conſiſted of four ranks or orders of perſons, viz. *buccaneers*, or bull-hunters, who ſcoured the woods; *freebooters*, who ſcoured the ſeas as pirates; *huſbandmen*, who tilled the lands; and *ſlaves*. Of theſe, the two firſt diſtinguiſhed themſelves moſt by their military diſpoſition, and the ravages they made, eſpecially among the Spaniards.

The name is particularly given to the French inhabitants of the iſland of St. Domingo, whoſe ſole employment is to hunt bulls or wild boars; in order to ſell the hides of the former, and the fleſh of the latter.

Sometimes the word *buccaneer* ſignifies alſo thoſe famous adventurers of all the nations in Europe, who joined together to make war againſt the Spaniards of America: and, under that name, their hiſtory has been publiſhed in the year 1686, by Alexander Oliver Oexemelia.

The *buccaneers* ſell their meat by the bundle or pack, weighing commonly ſixty pounds, at the rate of ſix pieces of eight per pack. The palmetto leaves ſerve to pack it up in, but their weight is deducted; ſo that there muſt be in each pack ſixty pounds of neat fleſh. Theſe *buccaneers* have alſo a great trade of the lard of boars, which they melt and gather in large pots, which they call *potiches*. This lard, which is called *mantegua*, is alſo ſold for about eight pieces of eight per pot.

There is a great conſumption and trade of each of theſe articles in the French ſettlements of the iſlands of St. Domingo, and in thoſe of Tortuga; beſide which they ſend great quantities of them to the Antilles, and even into the continent of French America. There is alſo a great deal of it ſold for the ſupport of the crews of the ſhips that come from France for trading, or which the privateers of Tortuga fit out, for cruiſing againſt the Spaniards.

BUCCEA, or BUCCELLA, in *Medicine*, a term uſed by ſome to expreſs a fragment of any thing, and others make it the name of what we uſually call a POLYPUS of the noſe.

BUCCELLARII, an order of ſoldiery under the Greek emperors, appointed to guard and diſtribute the ammunition-bread.

The word is formed from *buccellus*, a kind of loaf, or cake of a circular figure.

The *buccellarii* were alſo called, in reſpect of their country, *Gallogræci*, or *Helenogalatæ*, q. d. Greeks of Galatia; ſometimes *Maryandini*.

Authors are much divided as to the office and quality of the *buccellarii*: ſome give the denomination to paraſites in the courts of princes and great men, maintained at their table and expence. In reality, among the Viſigoths, *buccellarius* was a general name for all clients, or vaſſals, who lived at the expence of their lords. Spelman rather ſuppoſes them to anſwer to what among us are called *tenants by military ſervice*.—Others repreſent the *buccellarii* as ſtationary ſoldiers in the provinces, who, when the emperor commanded, marched before and behind him as his body guard.—According to others, they were men whom the emperors employed in putting perſons to death ſecretly.

BUCCELLATIO, in *Surgery*, a word uſed by ſome chirurgical writers for the ſtopping the bleeding of an artery or vein, by applying lint to it.

BUCCELLATION, in *Ancient Phyſic*, the name of a medicine, in which *ſcammony* was the principal ingredient.

BUCCELLATUM, in *Ancient Military Writers*, denotes *camp*-BREAD or BISKET baked hard and dry, both for lightneſs and keeping.

The word is formed from *buccea*, or *buccella*, a *morſel*, or *mouthful of meat*.

Soldiers always carried with them enough for a fortnight, and ſometimes much longer, during the time that military diſcipline was kept up.

BUCCINA, an ancient military, or rather muſical inſtrument, uſed in war; eſpecially for proclaiming the watches of the night, and giving notice to the ſoldiery when they were to mount, and when to quit the guard.

The word comes from *bucca*, *mouth*, and *cano*, *I ſing*; becauſe played on by the mouth: others ſuppoſe it formed from βȣκανη, or βυκανη, which ſignifies the ſame; formed from βȣς, *bullock*, and *cano*, *I ſing*; becauſe anciently made of bullocks horns: others from the Hebrew *buk*, a *trumpet*. Varro will have it to have been originally formed by *onomatopœia*, from *bou bou*, alluding to the ſound it gives. Others, with more probability, derive it from *buccinum*, the name of a ſhell-fiſh.

The *buccina* is uſually conſidered as a ſpecies of *tuba*, or trumpet; from which, however, in propriety, it appears to have differed, not only in reſpect of figure, which in the *tuba* was ſtrait, and in the *buccina* recurve, or crooked, but in ſound; that of the *buccina* being ſharper, and audible to a greater diſtance than the trumpet-ſound.

The *buccina* approached neareſt to the *cornu*, or horn: originally the two ſeem to have been the ſame; though in after-times a difference aroſe; the name *buccinum* being reſtrained to the leſſer ſorts, and the *cornu* to the larger. —Some alſo take the *buccina* to have been leſs crooked than the *cornu*, which made a full ſemicircle.

Varro aſſures, that the *buccinæ* were alſo called *cornua*, *horns*; becauſe originally made of the horns of cattle, as is ſtill done among ſome people. Servius intimates, that they were at firſt made of goats or rams horns; and accordingly, in Scripture, the like inſtruments uſed both in war, and in the temple, are called *rams-horns*, *keren-jobel*, and *ſopheroth haijobelim*, or *buccinæ* of rams.

This inſtrument was in uſe among the Jews, to proclaim their feaſt-days, new moons, jubilees, ſabbatic years, and the like. At Lacedæmon, notice was given by the *buccina* when it was ſupper-time; and the like was done at Rome, when the grandees had a *buccina* blown both before they ſat down to table, and after.

The ſound of the *buccina* was called *buccinus*, or *bucinus*, and the muſician who played on it, *buccinator*.

Buccina alſo denotes the ſpace or extent to which the ſound of the *buccina* may be heard.

Buccina *auris*, in *Middle Age Writers*, denotes the *tympanum* or *drum* of the ear.

BUCCINATOR, he that ſounds or winds the *buccina*.

Among the Romans there was a public ſlave, denominated *buccinator nominum*, whoſe office was to attend the public crier.

BUCCINATOR, in *Anatomy*, a muſcle on each ſide the face, common to the lips and cheeks; making the inner ſubſtance of the latter.—Its fibres run from the *proceſſus coronæ* of the lower jaw to the angle of the mouth, and adhere to the upper part of the gums of both jaws: through its middle paſs the upper *ductus ſalivales*. By this is contracted the cavity of the mouth, and the meat thruſt forward to the teeth in maſtication.

It has its name from *buccina*, *trumpet*; becauſe, when ſwelled, it enlarges the cheeks, as in blowing a trumpet.—See *Tab. Anat. (Myol.) fig.* 1. *n.* 10.

BUCCINUM, in *Botany*, a name given by ſome authors to the LARK-SPUR. Ger. Emac. Ind. 2.

Buccinum is alſo uſed for the TRUMPET-*ſhell*. It is a diſtinct genus of the univalve and ſpiral *teſtacea*, in the Linnæan ſyſtem.

BUCCO, in *Anatomy*, a name given by Riolanus, and ſome others, to the muſcle more uſually called *buccinata*, and *contrahens labiorum*.

Bucco, in *Ornithology*, a genus of birds of the order of *picæ*.

BUCCULA, in *Anatomy*, the fleſhy part under the chin

Some extend the name farther to the whole lower part of the face, comprehending the under part of the lower lip, with the chin and the fleſhy part under it.

Buccula, in *Antiquity*, denotes the *umbo* of a ſhield, or the part prominent in the middle thereof.

It is thus called, becauſe uſually made in the form of a mouth or face, either of a man or ſome animal. The like figures were ſometimes alſo found on other parts of armour, eſpecially on the *loricæ* and *thoraces*.

BUCENTAUR, the name of a large ſtate-veſſel, uſed by the Venetians in the ceremony of eſpouſing the ſea, performed each Aſcenſion-day with much pomp.

The word comes from βουκενταυρος; compoſed of βου, a particle of augmentation, uſed to denote an enormous greatneſs, and κενταυρος, *centaur*. Juſtiniani adds two other etymologies: the firſt from *bis*, and *taurus*, or rather *centaurus*, the name of one of Æneas's veſſels in Virgil: the other from *bucentaurus*, for *ducentaurus*, a word forged to ſignify a veſſel capable of holding two hundred men.

P. Juſtiniani gives a very preciſe deſcription of the *bucentaur*; and adds, that its origin is carried up as high as the year of Chriſt 1311, though others trace it higher, to the year 1177, when the emperor Frederic Barbaroſſa came to Venice, to make peace with the republic and the pope: at which time the pope, in conſideration of the ſervices the ſtate had done him, in ſheltering him in their city, when he had been driven out of his own, granted them ſeveral privileges; and made a preſent to the doge of a gold ring, which is the origin of that, yearly caſt by the doge, from the *bucentaur*, into the ſea.

It is on Aſcenſion-day, that the doge, being advanced in the *bucentaur* a little way into the gulph, throws a gold ring into the ſea, and ſays, "We marry thee, O ſea, in "token of that true and perpetual dominion which the "republick has over thee."

The archducheſs Maria Joſepha, married to the prince of Saxony, on the day of her entry into Dreſden, was received in a magnificent galley, finely rigged, and called a *bucentaur*, becauſe built after the model of that of Venice.

BUCEPHALON, in *Botany*. See TROPHIS.

BUCEPHALUS, βουκεφαλος. See HORSE.

BUCEROS, in *Ornithology*, the name of a ſpecies of raven found in the Eaſt Indies, China, and Tartary. Its head, neck, rump, and tail, are of a gloſſy black, without the leaſt tinge of any other colour. It is of the bigneſs of a well grown pullet: its head is remarkably large, as is its beak, which has a conſiderable gibboſity towards the baſe, riſing above the reſt of the ſurface.

Buceros, forms a genus of birds, of the order of *picæ*, in the Linnæan ſyſtem. The beak is convex, and bent backwards; the upper chap of the beak is longer than the under; the noſtrils are near the baſe of the beak; the tongue is acute and ſhort, and the feet are formed for walking.

BUCHNERA, in *Botany*, the name of a genus of the *didynamia angioſpermia* claſs of plants, the characters of which are theſe: the *perianthum* is tubular, conſiſting of one leaf, divided into five ſegments at the edge, and remaining after the flower is fallen. The flower conſiſts of one petal, which forms a very long and capillary arched tube; its verge is plain and ſhort, and is divided lightly into five ſegments, which are ſmall at the baſe, and broader, and figured like a heart at the top. The ſtamina are four very ſhort filaments; the *antheræ* are oblong and obtuſe; the germen of the piſtil is oblong and oval; the ſtyle is very ſlender, and of the length of the tube; and the ſtigma is obtuſe. The fruit is a capſule of an oblong oval figure, pointed at the end, containing two cells, and opening at the top into two parts. The ſeeds are numerous, and of an angular figure.

BUCIDA, in *Botany*, a genus of the *decandria monogynia* claſs of plants, the calyx of which is indented in five ſegments; it has no corolla; and the fruit is a ſingle ſeeded berry. There is only one ſpecies of this *genus*.

BUCK, a male horned beaſt of venery or chace, whoſe female is denominated a *doe*.

A *buck* the firſt year is called a *fawn*, the ſecond a *pricket*, the third a *ſorel*, the fourth a *ſore*, the fifth a *buck of the firſt head*, and the ſixth a *great buck*. See DEER and HUNTING.

Buck is alſo applied to the males of the hare and rabbet kind. Hares commonly go to *buck* in January, February, and March, and ſometimes all the warm months; ſometimes they ſeek the *buck* ſeven or eight miles from the place where they ſit.

The *buck* rabbet is ſaid to kill all the young he can come at; on which account the doe is careful to hide her offſpring in ſome remote corner, out of his way.

The doe coney goes to *buck* as ſoon as ſhe has kindned. She cannot ſuckle her young till ſhe has been with the *buck*. When he has bucked, he uſually falls backward, and lies as in a trance half dead, at which time he is eaſily taken.

Buck-*maſt*, is uſed by ſome for the maſt or fruit of the beech-tree.

Buck-*bean*. See TRIFOLIUM *paluſtre*.

This plant, though mentioned by ſeveral writers before Simon Pauli, yet was firſt recommended by him in ſcorbutic caſes. He ſays it is more ſubtle and penetrating than *naſturtium*, or creſſes.

It ſeems at preſent to be coming into great repute in many chronical diſtempers; and frequently preſcribed among alexipharmics.

Many have got it into uſe in their families in the form of tea, and experience its conſtant uſe to be very effectual againſt ſcrophulas, the king's evil, and obſtinate ſcorbutic diſtempers. Its taſte, at firſt, is not very grateful, but time wears off that diſlike; its uſe in ſhop compoſitions is not yet known.

Buck-bean ſerves in Hampſhire to a very remarkable uſe; the brewers uſing it in their beer in the place of hops. It is as good a preſerver of the drink, and is a bitter of as agreeable a flavour: it has this advantage alſo, that one eighth part of the quantity is ſufficient; it is a very harmleſs plant, and is given by many as an antiſcorbutic, and by ſome in rheumatiſms, and other chronic caſes. It might be extremely worth while to try this practice in other parts, as the plant might be eaſily cultivated in any quantity, and with this advantage, that it will grow on the worſt kind of boggy land, which will produce nothing elſe.

Buck-*ſkins*. See SKINS.

Buck-*ſtall*, in our *Ancient Law-books*, a toil wherein to take deer.

By an ancient ſtatute, no perſon is allowed to keep a *buck-ſtall*, who has not a park of his own. Stat. 19. Hen. VII.

BUCKET, in *Hydraulics*, a kind of veſſel or recipient chiefly of uſe for the raiſing and conveyance of water from wells, and other places.

The word is formed from the French *bacquet*, a *pail* or *tub*.

In an army, *buckets* are carried with the artillery, in the fire-workers ſtores.

Town *buckets*, for extinguiſhing fires, are made of thick leather, ſtrongly ſoaked and boiled.

One method of raiſing water, deſcribed by hydraulic writers, is by the means of a chain of *buckets*.

Bucket, *ſea-gage*. See *Sea*-GAGE.

BUCKING, among *Miners*. See ORE.

Bucking, an operation performed on linen cloth and yarn, to render them ſomewhat white, by working them with lie made of aſhes.

Bucking of cloth is the firſt ſtep or degree of whitening it. See BLEACHING.

To drive a buck of yarn, they firſt cover the bottom of the *bucking-tub* with fine aſhes of the aſh-tree, then ſpread the yarn thereon, then cover it again with aſhes, and thus *ſtratum ſuper ſtratum*, till the yarn is all in; when they cover the whole with a *bucking-cloth*, and lay on it more aſhes, and pour in warm water, till the tub be full, and let it ſtand all night. Next morning they let the lie run into another veſſel, and, as it waſtes, fill up the tub with warm water from a kettle, and, as this waſtes, fill it up with the lie that runs from the *bucking-tub*; ſtill obſerving

ſerving to make the lie hotter and hotter, till it boils. Thus are both the tub and kettle to be ſupplied for at leaſt four hours, which is called *driving a buck of yarn.*

BUCKLE, in *Matters of Trade*, a little metalline machine, whereby to retain and keep faſt certain parts of the habit, as well as of the harneſs of horſes, &c.

The word is formed from the French *boucle*, and that, according to Caſſeneuve, from the barbarous Latin *pluſcula*, which ſignified the ſame. According to Menage, from *bucula*, the *anſa*, or handle, of a buckler.

The *buckle* is a part of modern dreſs, correſponding to the *fibula*, among the ancients.

Buckles are of divers ſorts, as ſhoe and garter *buckles*; ſome round, others ſquare, or oval, or cut, each of which have their reſpective artificers by whom they are made.

The like may be ſaid of the great variety of *buckles* belonging to the pack and hackney-ſaddles.

Buckle, *girth*, among *Sadlers*, is a four ſquare hood, with a tongue, which is made ſteady, by going through a hole of leather, and faſtened with narrow thongs.

BUCKLER, a piece of defenſive armour, uſed by the ancients to ſkreen their bodies from the blows of their enemies.

The word comes from the barbarous Latin *bucularium*; of *buckula*, the umbo or middle point of this weapon, which had uſually a head, or mouth, repreſented prominent thereon.

The *buckler* of Achilles is deſcribed in Homer, that of Æneas in Virgil, that of Hercules in Heſiod: Ajax's *buckler* was lined with ſeven bulls hides.

The *buckler* is the ſame with what we otherwiſe call ſhield or target; and by the one or the other we indifferently render what among the ancients were denominated *clypeus*, *ſcutum*, and *parma*; though the three latter were different from each other. Phil. Tranſ. N° 241. p. 206.

The ancients were particularly ſolicitous to preſerve their *bucklers* in fight; it being highly infamous, and even penal, to return without them. It was on their *bucklers* that they carried off the bodies of their ſlain, eſpecially thoſe of diſtinction. Potter. Arch. lib. iii. cap. 4. & 13.

The Spaniards ſtill retain the *ſword* and *buckler* in their night-walks.

Buckler, on medals, are either uſed to ſignify public *vows*, rendered to the gods for the ſafety of a prince; or that he is eſteemed the defender and protector of his people.—Theſe were particularly called *votive bucklers*, and were hung at altars, &c.

Buckler *muſtard*, in *Botany*. See Mustard.

Buckler *of a caſk*, denotes a moveable head, whereby to compreſs the contents of it.

In this ſenſe we ſay, a *buckler* of PILCHARDS.

BUCKRAM, a thick ſort of linen or hempen cloth, ſtiffened with gum, chiefly uſed in the linings of cloaths, to ſuſtain and make them keep their form.

BUCKS-HORN. See Plantain.

Bucks-horn *creſſes*. See Cochlearia.

BUCKTHORN, *Rhamnus*, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: it hath male and female flowers on different plants, which have no empalements according to ſome, or petals, according to others. The cover of the ſexes is funnel-ſhaped, cut into four parts at the top, which ſpread open; the male flowers have four ſtamina of the length of the tube, terminated by ſmall ſummits; the female flowers have a roundiſh germen, ſupporting a ſhort ſtyle, crowned by a quadrifid ſtigma; the germen afterward becomes a roundiſh berry, encloſing four hard ſeeds. There are nineteen ſpecies of the *rhamnus*.

The berries of *buckthorn* are larger than elder-berries, round and black, yielding a bitter purple juice, tinged with green, and holding three or four cornered ſeeds.

The tree grows in woods and hedges, having its branches ſet with long ſtiff thorns.

The ſyrup is the only preparation of thoſe berries now in phyſical uſe.

It is a ſtrong purgative, and effectual in evacuating watry and flatulent humours; on which account it is eſteemed in dropſies, rheumatiſms, and even the gout.

Of *buckthorn* berries are made three ſeveral ſorts of colours; being gathered green, and kept dry, they are called *ſap-berries*; which being ſteeped in alum-water, give a fair yellow colour, uſed by painters, book-binders, and leather-dreſſers; who alſo make a green colour, called SAP-*green*, taken from the berries when they are black. Theſe being bruiſed, and put into a braſs kettle, and there ſuffered to remain for three or four days, with ſome beaten alum put to them, are afterwards preſſed, and the liquor uſually put into bladders, and hung up till it be dry: this is afterwards diſſolved in water or wine, but Canary is the beſt, to preſerve the colour from ſtarving. The third is of a purpliſh colour, made of the berries, ſuffered to grow upon the buſhes till the middle or end of November, when they are ready to fall of themſelves. Vid. Boyle, Phil. Works abr. vol. ii. p. 76, 77.

Buckthorn, *ſea*, in *Botany*. See Sea *Buckthorn*.

BUCK-WHEAT. See Wheat.

BUCOLICA, is uſed by ſome for the art of managing, feeding, and breeding cattle.

BUCOLICS, *Paſtorals*; a kind of poems relating to ſhepherds, and their flocks.

The word is derived from βȣς, and κολον, *cibus*, *meat*; hence βȣκολεω, *to feed cattle*; and βȣκολος, *bubulcus*, a *herdſman*.

Bucolic poetry is the moſt ancient of all the kinds of poetry; and is ſuppoſed to have had its origin in Sicily, amidſt the mirth and diverſions of the ſhepherds; and to have been inſpired by love and idleneſs: by degrees, their rural gallantries were brought under rules, and became an art. The concerns of the flocks, the beauties of nature, and the pleaſures of a country life, were their principal ſubjects. Moſchus, Bion, and Theocritus, were the moſt agreeable among the ancient *bucolic* poets.

Fontenelle obſerves, that Theocritus's ſtyle is ſometimes a little too *bucolic*. Some authors attribute the invention of *bucolic poetry* to a ſhepherd called *Daphnis*; and others to *Bucolius*, ſon of Laomedon: but this appears all fiction.

Some aſcribe the invention of *bucolic poetry* to the herdſmen of Laconia, who, not being able to hold the cuſtomary feaſt of virgins in honour of Diana Caryatis, by reaſon of the war with Xerxes, inſtituted βȣκολιασμοι, or *bucolic* exerciſes, in lieu thereof.

Hence alſo the origin of a ſort of poetical champions, called βȣκολιαϛαι, by the Latins *luctiones*, who went about the country contending for the prizes frequently propoſed for the conquerors in this kind of combat. Of which rank Daphnis was the moſt diſtinguiſhed. They not only rehearſed their verſes, but played on a kind of *fiſtula*, or pipe, called *ſyrinx*. Scal. Poet. lib. i. cap. 4. Pott. Arch. lib. ii. cap. 20. Hiſt. Acad. Inſcr. tom. iii. p. 123, & 131, &c.

Bucolic poetry is by ſome called *Aſtrabic*, as being ſuppoſed to have firſt commenced among the ancient herdſmen in riding a ſort of waggons called *aſtrabes*.

It is uſually divided into *monoproſopium*, wherein only a ſingle perſon ſpeaks, and *amœbæum*, or dialogue, wherein are ſeveral interlocutors.

Theocritus's Idyllia, and Virgil's Eclogues, are the chief of the ancient *bucolics* now extant.

BUCTON, a word uſed by Severinus, and ſome others, as a name for that part of the *pudendum muliebre*, commonly called the HYMEN.

BUD primarily denotes that part of a SEED which firſt begins to ſprout or germinate.

In which ſenſe, *bud* amounts to the ſame with germ, *germen*, gem, or *gemma*.

In moſt ſeeds is found a true *bud*, conſiſting of perfect leaves, only differing in bigneſs from thoſe which grow on the ſtalk. In many ſeeds this *bud* is very apparent, in others it lies ſo deep between the lobes, as to be almoſt indiſcernible. In ſome plants the leaves of the *buds* are but two, in others four, in others ſix, and in ſome more.

Bud is alſo uſed to denote the beginning of a bloſſom, or young ſprout, whether of a branch, foliage, or flower.

The *buds* of flowers and fruits are formed at the ſame time as the branches themſelves on which they ariſe. Mem. Acad. Scienc. ann. 1711. p. 59, ſeq.

The *bud* of a branch has its origin from the inner part of the ligneous body next the pith; by which it differs from a thorn, which has its origin from the outer and leſs fruitful part, and ſo produces no leaves, being as it were only the male of a *bud*.

Every *bud*, beſides its proper leaves, wherein it is couched or folded up, is covered with divers leafy pannicles or ſurfoils, which ſerve as a defence to the leaves themſelves. Grew. Anat. Veget. lib. i. cap. 4. lib. iv. cap. 1. § 2. & cap. 5. § 3.

The *buds* or knots on branches ariſe from the inmoſt part of the branches, the ſtructure of the ligneous fibres and little bladders of the branch being ranged ſo nicely in this form, that, upon the putting out of the branch, the *bud*, which is compoſed of the ſame parts, may likewiſe ſhoot with it. Phil. Tranſ. N° 118. p. 404.

Leewenhoeck aſſures us, that in the *bud* of a currant-tree, even in winter, he could diſcover not only the ligneous part, but even the berries themſelves, appearing like ſmall grapes.

Bud is uſed in the country language for a weaned calf of the firſt year; ſo called, becauſe the horns are then in the *bud*.

BUDDING, in *Gardening*. See Engrafting.

BUDDLE, in *Mineralogy*, a name given by the Engliſh dreſſers of the ores of metals, to a ſort of frame made to receive the ore after its firſt ſeparation from its groſſeſt foulneſs.

The ore is firſt beaten to powder in wooden troughs, through which there runs a continual ſtream of water, which carries away ſuch of it as is fine enough to paſs a grating, which is placed at one end of the trough; this falls into a long ſquare receiver of wood, called the *launder*: the heavieſt and pureſt of the ore falling at the head of the launder, is taken out ſeparately, and requires little more care or trouble; but the other part, which ſpreads over the middle and lower end of the launder, is thrown into the *buddle*, which is a long ſquare frame of boards, about four feet deep, ſix long, and three wide; in this there ſtands a man bare-footed, with a trampling ſhovel in his hand, to caſt up the ore about an inch thick, upon a ſquare board placed before him as high as his middle; this is termed the *buddle-head*; and the man dexterouſly, with one edge of his ſhovel, cuts and divides it longwiſe, in reſpect of himſelf, about half an inch aſunder, in theſe little cuts; the water coming gently from the edge of an upper plain board, carries away the filth and lighter part of the prepared ore firſt, and then the metalline part immediately after; all falling down in the *buddle*, where, with his bare feet, he ſtrokes it and ſmooths it, that the water and other heterogeneous matter may the ſooner paſs off from it.

When the *buddle* by this means grows full, the ore is taken out; that at the head part, being the fineſt and pureſt, is taken out ſeparate from the reſt, as from the launder. The reſt is again trampled in the ſame *buddle*; but the head, or, as it is called, the forehead, of this *buddle*, and of the launder, are mixed together, and carried to another *buddle*, and trampled as at firſt. The foreheads of this laſt *buddle*, that is, that part of the ore which has fallen at the head, is carried to what they call a drawing *buddle*, whoſe difference from the reſt is only this, that it has no tye, but only a plain ſloping board, on which it is once more waſhed with the trampling ſhovel. Tin-ore, when it is taken from this, is called black tin, and this is found to be completely ready for the blowing-houſe. Phil. Tranſ. N° 69. See *Dreſſing of* ORE.

BUDDLING *of calamine*, denotes the operation of cleanſing it from filth, by waſhing and picking it, preparatory to the baking it in the oven. Phil. Tranſ. N°. 198. p. 675. See CALAMINE.

BUDDLING-*diſh*, a ſmall, ſhallow veſſel, like the baſons of a pair of ſcales, for the waſhing of ores of metals by the hand.

BUDGE. See BOUCHE.

BUDGE-*barrels*, are ſmall barrels well hooped, with only one head, the other end having nailed on it a piece of leather, to draw together upon ſtrings, like a purſe.

Budge-barrels are uſed for carrying powder along with a gun or mortar; as being leſs dangerous, and alſo eaſier than whole barrels. They are alſo uſed upon batteries of mortars, for holding meal-powder.

BUDHURS, in *Ichthyology*, a name given by the Iriſh to a large ſpecies of TROUT, reſembling outwardly the red GILLAROO. See Phil. Tranſ. vol. lxiv. N° 14, and N° 15.

BUDLEIA, in *Botany*, a genus of the *tetandria monogynia* claſs of plants. Its characters are theſe: the flower is of one leaf, bell-ſhaped, and quadrifid; and hath four ſhort ſtamina, which are placed at the diviſions of the petal; the oblong germen is ſituated in the centre, which afterward becomes an oblong capſule, having two cells filled with ſmall ſeeds. There are two ſpecies, which grow naturally in gullies, or other low-ſheltered ſpots in the Weſt Indies; their branches being too tender to reſiſt the force of ſtrong winds, they are rarely ſeen in open ſituations.

BUDNÆANS, in *Eccleſiaſtical Hiſtory*, ſo called from the name of their leader, Simon Budnæus. They not only denied all kind of religious worſhip to Jeſus Chriſt, but aſſerted, that he was not begotten by any extraordinary act of divine power; being born, like other men, in a natural way. Budnæus was depoſed from his miniſterial functions in the year 1584, and publicly excommunicated, with all his diſciples; but afterwards abandoning his peculiar ſentiments, he was readmitted to the communion of the Socinian ſect. Crellius aſcribes the origin of the above opinion to Adam Neuſer. Moſh. Eccl. Hiſt. vol. iv. p. 199.

BUDUN is the name of one of the Ceyloneſe gods: he is ſuppoſed to have arrived at ſupremacy, after ſucceſſive tranſmigration from the loweſt ſtate of an inſect, through the various ſpecies of living animals. There have been three deities of this name, each of which is ſuppoſed to reign as long as a bird removes a hill of ſand, half a mile high, and ſix miles round, by a ſingle grain in a thouſand years. See SAKRADAWENDRA.

BUFETAGE, *buſetagium*, or *buſetaria*, a duty paid to the lord for the drinking, or rather ſelling of wine in taverns.

The word is formed from *buvetage*, or *buveterie*, of the French *boire*, *to drink*. Du-Cange Gloſſ. Lat. tom. i.

BUFF, in *Commerce*, a ſort of leather prepared from the ſkin of the buffalo, or BUBALUS.

The ſkin of the buffalo being dreſſed in oil, after the manner of ſhammy, or chamois, makes what we call *buff-ſkin*; anciently much uſed among the military men for a kind of coats or doublets; and ſtill retained by ſome of our grenadiers, as well as the French *gen d'armes*, on account of its exceeding thickneſs and firmneſs. It is alſo uſed for waiſt-belts, pouches, &c.

Buff-ſkins, or *buff-leather*, makes a very conſiderable article in the Engliſh, French, and Dutch commerce, at Conſtantinople, Smyrna, and along the coaſt of Africa. The ſkins of elks, oxen, and other like animals, when dreſſed in oil, and prepared after the ſame manner as that of the buffalo, are likewiſe denominated *buff*, and uſed for the ſame purpoſes.—In France there are a good number of conſiderable manufactories employed in the preparation of ſuch ſkins; particularly at Corbeil, Paris, and Rouen: their firſt eſtabliſhment is owing to the Sieur Jabas, a native of Cologne. The manner of preparation ſee under SHAMMY.

The SKIN of the American mooſe deer, when well dreſſed, makes excellent *buff*. The Indians make their ſnow-ſhoes of them. Their way of dreſſing it, which is reckoned very good, is thus: after they have haired and grained the hide, they make a lather of the mooſe's brains in warm water, and, after they have ſoaked the hide for ſome time, they ſtretch and ſupple it. Phil. Tranſ. N° 368.

BUFF, in *Medicine*, is uſed to ſignify that ſizy, viſcid, tough maſs, which forms on the upper ſurface of the blood; it is what phyſicians call the *coagulable lymph*, which Dr. Fordyce, in his very excellent Elements of the Practice of Phyſic, ſays, is not ſo eaſily coagulable when the arteries of the perſon from whom the blood is drawn, act more ſtrongly than they uſually do. See BLOOD.

BUFFET. See BEAUFET.

BUFFALO, *Bubalus*, in *Zoology*. See BUBALUS.

BUFFOON, a droll, or mimic, who diverts the public by his pleaſantries and follies.

Menage, after Salmaſius, derives the word from *buffo*; a name given to thoſe who appeared on the Roman theatre with their cheeks blown up; that, receiving blows thereon, they might make the greater noiſe, and ſet the people a laughing. Others, as Rhodiginus, makes the origin of *buffoonery* more venerable; deriving it from a feaſt inſtituted in Attica, by K. Erictheus, called BUPHONIA.

Buffoons are the ſame with what we otherwiſe find denominated *ſcurræ*, *gelaſiani*, *mimilogi*, *miniſtelli*, *goliardi*, *joculatores*, &c whoſe chief ſcene is laid at the tables of great men.

Gallienus never ſat down to meat without a ſecond table of *buffoons* by him; Tillemont alſo renders PANTOMIMES by *buffoons*. In which ſenſe he obſerves, the ſhews of the *buffoons* were taken away by Domitian, reſtored by Nerva, and finally aboliſhed by Trajan. Hiſt. des Emper. tom. ii. p. 144.

BUFO, in *Zoology*, the name by which many authors call the common TOAD, denominated by others RUBETA.

BUFONIA, in *Botany*, a genus of the *tetandria digynia* claſs of plants, the calyx of which is a permanent *perianthium*, conſiſting of four erect, ſubulated, carinated leaves; the corolla conſiſts of four oval, linear, entire, erect, equal petals, ſhorter than the cup; the fruit is an oval, compreſſed capſule, conſiſting of two valves, and containing one cell, in which are two oval compreſſed ſeeds.

BUFONITA, in *Natural Hiſtory*, the TOAD-*ſtone*. This is a foſſil that has been received not only among the liſt of native ſtones by the generality of authors, but even has held a place among the gems, and is ſtill worn in rings by ſome people: it is, however, as much an extraneous foſſil, as any animal remaining of that kind. There has been a ſtrong opinion in the world, that it was found in the head of an old toad; and that this animal voided it at the mouth, on being put on a red cloth. See *Tab. Foſſils, Claſs* 8.

The general colour of the *bufonitæ* is a deep, duſky brown; but it varies greatly in this reſpect in ſeveral ſpecimens, ſome of which are quite black, others of an extremely pale, ſimple brown, a cheſnut colour, liver colour, black, grey, or whitiſh.

The *bufonitæ* are uſually found immerſed in beds of ſtone; and ſo little doubt is there of what they have originally been, viz. the petrified teeth of the *lupus piſcis*, or wolf-fiſh, that part of the jaw of the fiſh has ſometimes been found, with the teeth petrified in it. See Grondeur.

The *bufonitæ* are ſaid to be cordial and aſtringent: many other fanciful virtues are aſcribed to them, which the preſent practice has rejected.

Dr. Kramer ſays, *pulvis bufonum*, when applied by way of poultice, with barley-flour and urine, is an excellent remedy for ripening *peſtilential* Bubces, but that it has no ſuch effect in *venereal*, or any other than *peſtilential* Buboes.

BUG, in *Zoology*. See Chermes, and Cimex.

BUGA *marble*, in *Natural Hiſtory*, a name given by the Spaniards to a ſpecies of black marble, called by our artificers the Namur-marble, and known among the ancient Romans by the name of *marmor Luculleum*. It is common in many parts of Europe, and is uſed by the Spaniards in medicine as well as in building; the powder of it being ſaid to be an excellent ſtyptic, applied to freſh wounds.

BUGEE, in *Zoology*, a ſpecies of monkey, which we ſee ſometimes brought over for a ſhew. It is an Indian animal, and a very rare one even there. It is about the ſize of a beaver, and much of the ſame colour, but its tail and claws wholly of the monkey-kind.

BUGELUGEY, in *Zoology*, the name of a large ſpecies of lizard, called by Cluſius, and ſome other authors, by the indeterminate name of *Lacertus Indicus*. It grows to four feet long, and will then meaſure nine inches round; the tail is very long, and ends in an extremely ſlender point.

BUGG-*caterpillar*, in *Natural Hiſtory*, a name given by Mr. Bonnet to a ſmall ſpecies of caterpillar, which ſmells exactly like a bug. This is not the only ſpecies which yields a ſenſible ſmell, for there is one of the middle-ſized ſmooth kinds, which, at the time of the change into the chryſalis ſtate, yields a very pleaſant roſe-like ſcent; and their caſes, which are made of earth and ſilk, retain that ſmell for a long time together, even for ſeveral years. There is another, which ſmells ſtrongly of muſk. Phil. Tranſ. Nº 469.

BUGGERS, *Bulgarii*, anciently ſignified a kind of heretics, otherwiſe called *Paterini*, *Cathari*, and *Albigenſes*.

The word is formed of the French *Bougres*, which ſignified the ſame, and that from *Bougria* or *Bulgaria*, the country where they chiefly appeared.

The *Buggers* are mentioned by Matthew Paris, in the reign of Henry III. under the name of *Bugares*. *Circa dies autem illos invaluit hæretica pravitas eorum qui vulgariter dicuntur* Paterini & Bugares, *de quorum erroribus malo tacere quam loqui.*

Bugger, or Buggerer, came afterwards to be uſed for a Sodomite; it being one of the imputations laid, right or wrong, on the Bulgarian heretics, that they taught, or at leaſt practiſed, this abominable crime. Caſen. Orig. p. 27. Menag. Orig. p. 114. Trev. Dict. Univ. tom. i. p. 1149. voc. *Bougre*. Du-Cange, Gloſſ. Lat. tom. i. p. 637. voc. *Bulgari*.

Bugger, *Bulgarius*, is alſo a denomination given to uſurers, a vice to which the ſame heretics are ſaid to have been much addicted. Du-Cange, Gloſſ. Lat. tom. i. p. 637.

BUGGERY, in our laws, ſignifies the crime of ſodomy.

Sir Edward Coke defines *buggery*, *carnalis copula contra naturam, & hæc per confuſionem ſpecierum* (viz. by a man's or woman's coupling with a brute beaſt) *vel ſexuum*, by a man's having to do with a man, or a woman with a woman.—Each of which is felony, without benefit of clergy. 25 Hen. VIII. cap. 6. and 5 Eliz. cap. 17. In ancient times, ſuch offenders were burnt by the common law.

Buggery is uſually excepted out of a general pardon. The practice is ſaid to have been introduced into England by the Lombards; by whom it is uſually ſuppoſed to have been borrowed from the *Bougres*, or *Bulgarians*.

BUGLE, *Ajuga*, in *Botany*, a genus of the *didynamia gymnoſpermia* claſs. The characters are theſe: the flower is one leaf, of the lip kind, having an incurved cylindrical tube; the upper lip is very ſmall, erect, and bifid; the under lip is large, open, and divided into three ſegments. It hath four erect ſtamina, two of which are longer than the upper lip, and two ſhorter. In the centre is ſituated four *germina*, which afterward become four naked ſeeds encloſed in the empalement.

Bugle is a noted vulnerary, much uſed in potions of that intention, and alſo in plaſters, eſpecially among the French, with whom it is a proverb, that the perſon who has *bugle* and ſanicle, has no occaſion for a ſurgeon.

It is uſed both internally and externally for all bruiſes, wounds, and contuſions; for ſores and ulcers, ſpitting of blood, and hæmorrhages from any part; alſo for the dyſentery, *fluor albus*, diſeaſes of the throat, and thruſhes in the mouth.

BUGLOSS, in *Botany*. For the characters, ſee Anchusa.

Bugloſs is uſually planted in gardens, and flowers in June and July. The leaves, flowers, and ſometimes the root are uſed.

The flowers of the common *bugloſs* ſtand recommended for the ſame virtues with thoſe of borrage; they are ſuppoſed to be cordials of the very firſt rank, and to be of great uſe in hypochondriac and melancholic caſes. But theſe virtues are not well warranted. Tournefort, Hiſt. Plant, p. 133.

Bugloss, *viper's*, in *Botany*. See Viper's *Bugloſs*.

Bugloss, *ſmall wild*. See Asperugo.

BUGLOSSUS, in *Zoology*, a name uſed by many authors for the ſoal-fiſh.

BUILDING, a fabric, or place erected by art, of ſtone, or timber, either for ſhelter from the weather, or for ſecurity, magnificence, or devotion.

Building, *regular*, is that whoſe plan is ſquare, its oppoſite ſides equal, and the parts diſpoſed with ſymmetry.

Building, *irregular*, is that, on the contrary, whoſe plan is not contained within equal or parallel lines, either by the nature of its ſituation, or the artifice of the *builder*; and whoſe parts have not any juſt relation to one another in the elevation.

Building, *inſulated*, is that which is not attached, joined, or contiguous to any other; but is encompaſſed with ſtreets, or ſome open ſquare, or the like; as St. Paul's, the Monument, &c.

A Building is ſaid to be *engaged*, when it is encompaſſed with others, and has no front towards any ſtreet or public place, nor any communication without, but by a back paſſage.

Building, *an interred*, or *ſunk*, is that whoſe *area* is below the adjacent ſtreet, court, or garden, &c. and whoſe loweſt courſes of ſtone are hidden.

Buildings are either public, or private.

Buildings, *public*, according to Daviler, include thoſe belonging to religion, as temples, churches, hoſpitals, moſques, tombs, &c. thoſe erected for ſecurity, as walls, towers, baſtions, and other parts of fortification; thoſe ſerving for utility or convenience, as bridges, cauſeways, ports, aquæducts, courts, markets, bazars, caravanſeras; and laſtly, thoſe erected for magnificence, as triumphal arches, obeliſks, amphitheatres, porticos, &c. Phil. Tranſ. Nº 200.

Buildings, *private*, thoſe intended for habitation, ſuitable to the ſtate and condition of perſons, as places, hotels, ſeats, convents, houſes of citizens, &c.

Buildings, *ruſtic or country*, are thoſe which compoſe farm-houſes, granges, menageries, mills, baſſecours, ſtables, &c.

Buildings, *hydraulic*, thoſe wherein are encloſed machines for the moving or raiſing of water, either for uſe or entertainment, as pumps, fountains, reſervoirs, caſcades, &c.

Buildings, *marine*, thoſe wherein ſhips and other veſſels are made or preſerved; ſuch are arſenals, docks, ſtorehouſes, and the like.

Buildings, *ſubterraneous*, thoſe framed under ground, as labyrinths, grottos, caves, temples cut out of rocks, &c. Some take theſe to be of the greateſt antiquity, and to have given occaſion to the firſt erecting of ſuperterranean edifices: the primitive *buildings* ſeem rather to have been intended as ſhelter againſt the ſcorching heats of the climate and ſeaſons in Æthiopia, where the midday was ſcarce tolerable without ſome defence. Phil. Tranſ. Nº 144. p. 344.

Building is alſo uſed for the art or act of conſtructing, or raiſing an edifice.—In which ſenſe it comprehends, as well the expences, as the invention and execution of the deſign thereof.

In *building* there are three things chiefly in view, viz. conveniency, firmneſs, and delight.—To attain theſe ends, Sir Henry Wotton conſiders the whole ſubject under two heads, viz. the *ſeat* or *ſituation*, and the *work* or *ſtructure*.

Building, *for the ſituation of a*, either that of the whole is to be conſidered, or that of its parts.—As to the *firſt*, regard is to be had to the quality, temperature, and ſalubrity of the air; the conveniency of water, fuel, carriage, &c. and the agreeableneſs of the proſpect.

For the *ſecond*, the chief rooms, ſtudies, libraries, &c. are to lie towards the eaſt; offices that require heat, as kitchens, diſtillatories, brew-houſes, &c. to the ſouth: thoſe that require a cool freſh air, as cellars, pantries, granaries, &c. to the north: as alſo galleries for painting, muſeums, &c. which require a ſteady light.—He adds, that the ancient Greeks and Romans generally ſituated the front of their houſes to the ſouth: but that the modern Italians vary from this rule.—Indeed, in this matter, regard muſt ſtill be had to the country; each being obliged to provide againſt its reſpective inconveniencies; ſo that a good parlour in Egypt might make a good cellar in England.—The ſituation being fixed on, the next thing to be conſidered is the

BUILDING, *work* or *ſtructure of the*, under which come firſt the *principal* parts, then the *acceſſories* or ornaments. —To the principals belong, firſt, the materials; then the form, or diſpoſition.

There are three ſorts of draughts or repreſentations of a *building* neceſſary to be made before the conſtruction be begun, viz. an ichnography or plan, an orthography or profile, and a ſcenography or perſpective. See ICHNOGRAPHY, ORTHOGRAPHY, and SCENOGRAPHY.

BUILDING, *the materials of a*, are either ſtone, as marble, free-ſtone, brick, for the walls, &c. or wood, as fir, cypreſs, cedar, for poſts and pillars of upright uſe; oak for beams, ſummers, and for joining and connexion.

BUILDING, *for the form or diſpoſition of a*, it muſt either be *ſimple* or *mixed*.—The ſimple forms are either *circular* or *angular*: and the circular ones either *complete*, as juſt ſpheres; or deficient, as ovals.

The circular form is very commodious, of the greateſt capacity of any; ſtrong, durable beyond the reſt, and very beautiful: but then it is found of all others the moſt chargeable; much room is loſt in the bending of the walls, when it comes to be divided; beſides an ill diſtribution of light, except from the center of the roof; on theſe conſiderations it was, that the ancients only uſed the circular form in temples and amphitheatres, which needed no compartition.—Oval forms have the ſame inconveniences, without the ſame conveniences; being of leſs capacity.

As for angular figures, Sir Henry Wotton obſerves, that *building* neither loves many nor few angles; the triangle, v. gr. is condemned above all others, as wanting capacity and firmneſs; as alſo, becauſe incapable of being reſolved into any other regular figure in the inward partitions, beſides its own.—As for figures of five, ſix, ſeven, or more angles, they are fitter for fortifications than civil *buildings*. There is, indeed, a celebrated *building* of Vignola, at Caprarola, in form of a *pentagon*; but the architect had prodigious difficulties to encounter with, in diſpoſing the lights, and ſaving the vacuities. Such *buildings*, then, ſeem rather for curioſity than conveniency; and for this reaſon, rectangles are pitched on, as being a medium between the two extremes. But again, whether the rectangle is to be juſt a ſquare, or an oblong, is diſputed: Sir Henry Wotton prefers the latter, provided the length doth not exceed the breadth by above one third.

Mixed figures, partly circular, and partly angular, may be judged of from the rules of the ſimple ones; only they have this particular defect, that they offend againſt uniformity. Indeed uniformity and variety may ſeem to be oppoſite to each other: but Sir Henry Wotton obſerves, that they may be reconciled; and for an inſtance, he mentions the ſtructure of the human body, where they both meet.—Thus much for the firſt grand diviſion, viz. the whole of a *building*.

BUILDING, *the parts of a*, Baptiſta Alberti compriſes under five heads; viz. the *foundation*, *walls*, *apertures*, *compartition*, and *cover*.

For the foundation; to examine its firmneſs, Vitruvius orders the ground to be dug up; an apparent ſolidity not to be truſted to, unleſs the whole mould, cut through, be found ſolid: he does not indeed limit the depth of the digging; Palladio limits it to a ſixth part of the height of the *building*. This Sir Harry Wotton calls the *natural foundation*, whereon is to ſtand the ſubſtruction, or ground-work, to ſupport the walls, which he calls the *artificial foundation*: this then is to be its level; its loweſt edge, or row, of ſtone only, cloſe laid with mortar, and the broader the better; at the leaſt, twice as broad as the wall: laſtly, ſome add, that the materials below ſhould be laid juſt as they grew in the quarry; as ſuppoſing them to have the greateſt ſtrength in their natural poſture. De Lorme enforces this, by obſerving, that the breaking or yielding of a ſtone in this part, for the breadth of the back of a knife, will make a cleft of above half a foot in the fabric above.—For pallification, or piling the ground-plot, ſo much commended by Vitruvius, we ſay nothing; that being required only in a moiſt marſhy ground, which ſhould never be choſen: nor, perhaps, are there any inſtances of this kind, where it was not neceſſity that drove them to it.

For the walls, they are either entire and continued, or intermitted; and the intermiſſions are either columns, or pilaſters. Entire, or continued walls, are variouſly diſtinguiſhed; by ſome, according to the quality of the materials, as they are either ſtone, brick, &c. others only conſider the poſition of the materials; as when brick, or ſquare ſtones, are laid in their lengths, with ſides and heads together, or the points conjoined, like a network, &c.

The great laws of muring are, that the walls ſtand perpendicular to the ground-work; the right angle being the cauſe of all ſtability: that the maſſieſt and heavieſt materials be loweſt, as fitter to bear than be borne: that the work diminiſh in thickneſs, as it riſes; both for eaſe of weight, and expence: that certain courſes, or ledges of more ſtrength than the reſt, be interlaid, like bones, to ſuſtain the fabric from total ruin, if the under parts chance to decay: and, laſtly, that the angles be firmly bound; theſe being the nerves of the whole fabric, and commonly fortified, by the Italians, on each ſide the corners, even in brick *buildings*, with ſquared ſtones; which add both beauty and ſtrength.

The intermiſſions, as before obſerved, are either columns, or pilaſters: whereof there are five orders, viz. *Tuſcan*, *Doric*, *Ionic*, *Corinthian*, *Compoſite*; each of which ſee diſtinctly conſidered under its reſpective head. See alſo COLUMN, ORDER, and PILASTER.

Columns, and pilaſters, are frequently, both for beauty and majeſty, formed archwiſe; the doctrine of which ſee under ARCH.

For the apertures; they are either doors, windows, ſtair-caſes, chimneys, or conduits for the ſuillage, &c. which ſee under their heads, DOOR, WINDOW, &c. Only, with regard to the laſt, it may be obſerved, that art ſhould imitate nature in theſe ignoble conveyances, and ſeparate them from ſight, where a running water is wanting, into the moſt remote, loweſt, and thickeſt part of the foundation; with ſecret vents, paſſing up through the walls like tunnels to the open air; which the Italians all commend for the diſcharge of noiſome vapours. See SEWERS, &c.

For the compartition, or diſtribution of the ground-plot into apartments, &c. Sir H. Wotton lays down theſe preliminaries; that the architect never fix his fancy on a paper-draught, how exactly ſoever ſet off in perſpective; much leſs on a mere plan, without a model, or type of the whole ſtructure, and every part thereof, in paſteboard, or wood; that this model be as plain, and unadorned, as poſſible, to prevent the eye's being impoſed on; and that the bigger this model, the better.

In the compartition itſelf, there are two general views, viz. the *graceſulneſs*, and *uſefulneſs* of the diſtribution, for rooms of office, and entertainment; as far as the capacity thereof, and the nature of the country, will allow. The graceſulneſs will conſiſt in a double analogy, or correſpondency; firſt, between the parts and the whole, whereby a large fabric ſhould have large partitions, entrances, doors, columns, and, in brief, all the members large: the ſecond, between the parts themſelves, with regard to length, breadth, and height. The ancients determined the length of their rooms, that were to be oblongs, by double their breadth; and the height by half their breadth, and length, added together. When the room was to be preciſely ſquare, they made the height half as much more as the breadth: which rules the moderns take occaſion to diſpenſe with; ſometimes ſquaring the breadth, and making the diagonal thereof the meaſure of the height; and ſometimes more. This deviating from the rules of the ancients is aſcribed to M. Angelo.

The ſecond conſideration in the compartition is, the uſefulneſs; which conſiſts in the having a ſufficient number of rooms of all kinds, with their proper communications, and without diſtraction. Here the chief difficulty will lie in the lights, and ſtair-caſes: the ancients were pretty eaſy on both theſe heads, having generally two cloiſtered open courts, one for the women's ſide, the other for the men: thus the reception of light into the body of the *building* was eaſy, which among us muſt be ſupplied, either by the open form of the *building*, or by graceful refuges or breaks, by terraſſing a ſtory in danger of darkneſs, and by abajours, or ſky-lights.—For caſting the ſtair-caſes, it may be obſerved, that the Italians frequently diſtribute the kitchen, bake-houſe, buttery, &c. under ground, next above the foundation, and ſometimes level with the floor of the cellar, raiſing the firſt aſcent into the houſe fifteen feet or more: which, beſide the removing of annoyances out of the ſight, and gaining ſo much room above, does, by elevating the front, add a majeſty to the whole. Indeed, Sir H. Wotton obſerves, that, in England, the natural hoſpitality thereof will not allow the buttery to be ſo far out of ſight; beſides, that a more luminous kitchen, and a ſhorter diſtance between that and the dining-room is required, than that compartition will well bear.

In the diſtribution of lodging-rooms, it is a popular and ancient fault, eſpecially among the Italians, to caſt the partitions ſo, that, when the doors are all open, a man may ſee through the whole houſe: this is grounded on the ambition of ſhewing a ſtranger all the furniture at once; an intolerable hardſhip on all the chambers, except the inmoſt, where none can arrive but through all the reſt, unleſs the walls be extremely thick for ſecret paſſages: nor will this anſwer the purpoſe, without at leaſt three doors to each chamber; a thing inexcuſable, except in hot countries; beſides it being a weakening to the *building*.

In the compartition, the architect will have occaſion for frequent ſhifts; through many of which his own ſagacity, more than any rules, muſt conduct him.

For the covering of the *building*; this is the laſt in the execution, but the firſt in the intention: for who would *build*, but to ſhelter? In the covering, or roof, there are two extremes to be avoided; the making it too heavy, or too light: the firſt will preſs too much on the under-work; the latter has a more ſecret inconvenience; for the cover is not only a bare defence, but a band, or ligature, to the whole *building*; and as ſuch requires a reaſonable weight. Indeed, of the two extremes, a houſe top-heavy is the worſt. Care is likewiſe to be taken, that the preſſure be equal on each ſide; and Palladio wiſhes, that the whole burden might not be laid on the outward walls, but that the inner might likewiſe bear their ſhare.—The Italians are very curious in the proportion and gracefulneſs of the pentice or ſlopeneſs of the roof; dividing the whole breadth into nine parts, whereof two ſerve for the height of the higheſt top, or ridge, from the loweſt: but, in this point, regard muſt be had to the quality of the region; for, as Palladio inſinuates, thoſe climates which fear the falling of much ſnow, ought to have more inclining pentices than others.

Thus much for the principal or eſſential parts of a *building*. For the *acceſſories*, or *ornaments*; they are derived from painting and ſculpture. The chief things to be regarded in the firſt are, that no room have too much, which will occaſion a ſurfeit; except in galleries, or the like: that the beſt pieces be placed where there are the feweſt lights: rooms with ſeveral windows are enemies to painters, nor can any pictures be ſeen in perfection, unleſs illuminated, like nature, with a ſingle light: that in the diſpoſition regard be had to the poſture of the painter in working, which is the moſt natural for the poſture of the ſpectator; and that they be accommodated to the intentions of the room they are uſed in. For ſculpture, it muſt be obſerved, that it be not too abundant; eſpecially at the firſt approach of a *building*, or at the entrance, where a Doric ornament is much preferable to a Corinthian one: that the niches, if they contain figures of white ſtone, be not coloured in their concavity too black, but rather duſky; the ſight being diſpleaſed with too ſudden departures from one extreme to another: that fine ſculptures have the advantage of nearneſs, and coarſer of diſtance.

As to the ſtone and ſtucco uſed in *buildings*, which are freſh and white at firſt, and are commonly ſuppoſed to be diſcoloured with the air, moiſture, ſmoke, &c. the true cauſe thereof is, that they become covered with a minute ſpecies of plants, which alter their colour. A ſort of lichens, yellowiſh, browniſh, or greeniſh, which commonly grow on the barks of trees, do grow alſo on ſtones, mortar, plaiſter, and even on the ſlates of houſes, being propagated by little light ſeeds, diſperſed by the wind, rain, &c. The beſt preſervative known, is lime.

Building, *to judge of a*, Sir H. Wotton lays down the following rules. That before fixing any judgment, a perſon be informed of its age; ſince, if apparent decays be found to exceed the proportion of time, it may be concluded, without further inquiſition, either that the ſituation is bad, or the materials or workmanſhip too ſlight. If it be found to bear its years well, let him run back, from the ornaments and things which ſtrike the eye firſt, to the more eſſential members; till he be able to form a concluſion, that the work is commodious, firm, and delightful; the three conditions, in a good *building*, laid down at firſt, and agreed on by all authors.

This, our author eſteems the ſcientifical way of judging. Vaſſari propoſes another; viz. by paſſing a curſory examination over the whole edifice, compared to the ſtructure of a well-made man; as, whether the walls ſtand upright on a clean footing and foundation; whether the *building* be of a beautiful ſtature; whether, for the breadth, it appear well burniſhed; whether the principal entrance be on the middle line of the front, or face, like our mouths; the windows, as our eyes, ſet in equal number and diſtance on both ſides; the offices, like the veins, uſefully diſtributed, &c.

The perfection of *building* conſiſts in its adequate agreement with the intention of the founder; its decoration, in the aſſemblage of ſuch things as are proper to attract the attention of perſons paſſing by; its ſtrength or firmneſs, in being free from the danger of coming ſhortly to ruin or decay; its utility or conveniency, that diſpoſition of the whole, and each part, which renders its uſe to the owner moſt perfect; its beauty, in the true or apparent perfection of it, conſidered as ſeen.

Vitruvius gives a third method of judging; ſumming up the whole art under theſe ſix heads: *ordination*, or ſetting the model and ſcale of the work; *diſpoſition*, the juſt expreſſion of the firſt deſign thereof (which two, Sir H. Wotton thinks, he might have ſpared, as belonging rather to the artificer than the cenſurer); *eurythmy*, the agreeable harmony between the length, breadth, and height of the ſeveral rooms, &c. *ſymmetry*, or the agreement between the parts and the whole; *decor*, the due relation between the *building* and the inhabitant; whence Palladio concludes, the principal entrance ought never to be limited by any rule, but the dignity and generoſity of the maſter; and laſtly, *diſtribution*, the uſeful caſting of the ſeveral rooms, for office, entertainment, or pleaſure. Theſe laſt four are ever to be run over, before a man paſs any determinate cenſure: and theſe alone, Sir Henry obſerves, are ſufficient to condemn or acquit any *building* whatever.

Dr. Fuller gives us two or three good aphoriſms in *building*; as, 1. Let not the common rooms be ſeveral, nor the ſeveral rooms common; i. e. the common rooms not to be private or retired, as the hall, galleries, &c. which are to be open; and the chambers, &c. to be retired. 2. A houſe had better be too little for a day, than too big for a year. Houſes therefore to be proportioned to ordinary occaſions, not extraordinary. 3. Country houſes muſt be ſubſtantives, able to ſtand of themſelves: not like city *buildings*, ſupported and ſheltered on each ſide by their neighbours. 4. Let not the front look aſquint on a ſtranger; but accoſt him right, at his entrance. 5. Let the offices keep their due diſtance from the manſion-houſe; thoſe are too familiar, which are of the ſame pile with it.

The method of *building*, both in Barbary and the Levant, ſeems to have continued the ſame from the earlieſt ages, without the leaſt alteration or improvement.

The modern *buildings* are much more commodious, as well as beautiful, than thoſe of former times. Of old they uſed to dwell in houſes, moſt of them with a blind ſtair-caſe, low ceilings, and dark windows; the rooms built at random, without any thing of contrivance, and often with ſteps from one to another; ſo that one would think the people of former ages were afraid of light and freſh air: whereas the genius of our times is altogether for light ſtair-caſes, fine ſaſh-windows, and lofty ceilings. And ſuch has been our builders induſtry in point of compactneſs and uniformity, that a houſe after the new way will afford, on the ſame quantity of ground, almoſt double the conveniencies which could be had from an old one.

By acts 11 Geo. I. and 4 Geo. III. for the regulation of *building* within the weekly bills of mortality, and in other places therein ſpecified, party walls are required to be erected of brick or ſtone, which ſhall be two bricks and a half thick in the cellar, two bricks thick upwards to the garret floor, &c. and other limitations are enacted reſpecting the diſpoſition of the timbers, &c. And every *building* is to be ſurveyed; and the perſon who offends againſt the ſtatute in any of the particulars recited, is liable to a forfeit of 250*l.* to be levied by warrant of juſtices of the peace. The other principal ſtatutes relating to *building* are 19 Car. II. c. 3. 22 Car. II. c. 11. 5 Eliz. c. 4. 35 Eliz. c. 6. 6 Ann. c. 31. 7 Ann. c. 17. 33 Geo. II. c. 30. and 6 Geo. III. c. 37.

For the method of ſecuring *buildings* from lightning, ſee Conductor.

Building, *ſection of a*. See Section.

Building, Ship. See Ship.

BUILT, in *Sea-language*, is an epithet applied to ſhips, denoting their peculiar form and ſtructure, and diſtinguiſhing ſome from others of a different claſs or nation. Thus we uſe frigate-*built*, galley-*built*, &c. Engliſh-*built*, French-*built*, &c.

BUL, in the *Hebrew Calendar*, the eighth month of the eccleſiaſtical, and ſecond of the civil year, ſince called *Marſhevan*; it anſwers to our October, and has nine and twenty days.

Bul, in *Ichthyology*, an Engliſh name for the common flounder.

BULAFO, a muſical inſtrument, much uſed by the Negroes of Guinea, &c.

It conſiſts of ſeveral pipes made of hard wood, ſet in order; which diminiſh by little and little in length, and are tied together with thongs of thin leather twiſted about ſmall round wands, put between each of the pipes, ſo as to form a ſmall interſtice. They play on it with ſticks, the ends of which are covered with leather, to make the ſound leſs harſh.

BULATWÆLA, in *Botany*, a name by which ſome authors have called the betel, an herb the people of the Eaſt Indies are fond of chewing.

BULB, Bulbus, in *Botany*, a thick root, nearly round, compoſed of ſeveral ſkins, or coats, laid one over another;

other; ſending forth from its lower part a great number of fibres. Such are the roots of the common onion, the daffodil, the hyacinth, &c.

The ſame denomination is ſometimes alſo, though improperly, given to tuberous roots, compoſed of one ſolid continuous ſubſtance, without any ſkins laid over one another.

Dr. Grew obſerves, that in *bulbous* plants, as well as many other perennial ones, the root is annually renewed, or repaired, out of the trunk or ſtalk itſelf: that is, the baſis of the ſtalk continually and inſenſibly deſcends below the ſurface of the earth; and hiding itſelf therein, is, both in nature, place, and office, changed into a true root. Thus, in brownwort, the baſe, ſinking by degrees, becomes the upper part of the root; the next year, the lower part; and the next it rots away, a freſh ſupply coming.

The ancients divided *bulbs* into eſculent, as the onion and leek; emetic, as the narciſſus; and wild, as the hermodactyl. Nothing, Pliny obſerves, is more prolific than the lily, a ſingle root often producing no leſs than fifty *bulbs*. Nat. Hiſt. lib. ii. cap. 5.

Modern botaniſts diſtinguiſh two kinds of *bulbs*, *tunicated* and *ſquamous*.

Bulbs, *tunicated*, are thoſe compoſed of ſeveral coats or tunics laid over each other; ſuch are the roots of onion, tulip, and jonquil.

Bulbs, *ſquamous*, are thoſe compoſed of ſeveral ſcales, laid in like manner over each other; ſuch is that of the white lily. To which are added, the *ſolid bulb*, compoſed of an uniform ſolid ſubſtance; the *articulate bulb*, conſiſting of *lamellæ* linked together; the *duplicate*, when there are two to each plant; and *aggregate*, when each plant has a congeries of ſuch roots.

Some conſider the *bulb* as a real plant, out of which a new ſtalk is yearly produced; the ſtalk itſelf withering and falling away with the flower and leaves. In reality, as the leaves which fall yearly, are not neceſſary to the integrity of the plant; ſo neither does the ſtalk ſeem to be, which ſprings out of the *bulb*, and withers away, the *bulb* itſelf ſtill remaining entire. We may add, that the very leaves and flowers, e. gr. of a tulip, have been diſtinctly perceived to be contained in its *bulb*. Du Hamel, Acad. Sc. lib. ii. § 2. cap. 1.

Bulbs are alſo taken for the round ſpired beards of flowers.

BULBINE, in *Botany*. See Spider-*wort*.

BULBOCASTANUM. See Pig-*nut*.

BULBOCODIUM, in *Botany*, a genus of the *hexandria monogynia* claſs of plants. The flower is funnel-ſhaped, and compoſed of ſix petals: the fruit is a triangular acuminated capſule, with three cells, containing ſeveral angular ſeeds. There are two ſpecies; one of which grows naturally on the Alps, and upon Snowdon in Wales; the other is a native of Spain, and has been long cultivated in our gardens. The root of this plant, according to Lemery, is purgative: Ray ſays it is emetic, and hurtful to the nerves. Herman recommends the bruiſed leaves for an eryſipelas.

Bulbocodium is alſo a name uſed by ſome authors for *pſeudo narciſſus anglicus*, or common wild yellow daffodil.

BULBONACK, in *Botany*, the name by which ſeveral authors call the *viola lunaris*, known in our gardens by the names of *ſatin* and HONESTY.

BULBOUS, or Bulbose *plants*, thoſe which have a BULB.

Bulbous *plants, flowering of*. See Flowering.

BULBUS *vepiſtorius*, in the *Materia Medica*, the name uſed for the root of the *muſcari*, or muſk grape plant.

BULCARD, an Engliſh name for the *galeetta*, or *alauda non criſtata*, of Rondeletius; a ſmall ſea-fiſh caught among the rocks on the Corniſh and other ſhores. Willughby.

BULEF, in *Botany*, a name by which ſome authors call the willow.

BULEPHORUS, in the court of the eaſtern emperors, was the ſame officer with *ſummæi rei* RATIONALIS.

BULEUTÆ, in the cities of Greece and Aſia, were the ſame with the DECURIONES at Rome. Calv. Lex. Jur. p. 128.

The word has been ſometimes alſo uſed to denote SENATORS.

BULGARIAN *language*, the ſame with the *lingua Heneta*, or Sclavonic.

BULGOLDA *lapis*, the name of the ſtone taken out of the head of an animal in America, called by the natives *bulgoldalf*. We have no account of this, but that it poſſeſſes the virtue of the bezoar, as a cordial and reſiſter of poiſons.

BULIMY, an enormous appetite, attended with fainting, and coldneſs of the extremities.

The word is formed of βȣς, *ox*, and λιμὸς, *hunger*; as importing that the patient has the ſtomach of an ox; or, as others term it, ſufficient to eat up an ox. Varro and Suidas derive it from the particle βȣ, which is prefixed by the Greeks to divers words, only as an intenſive; and λιμὸς, *hunger*, q. d. *a great hunger*.

The perpetual craving of food is ſometimes owing to a defect of nouriſhment on account of exceſſive evacuations, by an hæmorrhage, flux of the belly, vomiting, ſweating, or the like: or from too great a conſumption of the alimentary ſubſtance, from various cauſes, whence the food is hurried out of the ſtomach with greater ſpeed than it ought to be. Sometimes this affection is owing to worms conſuming the chyle.

The diagnoſtic ſigns of this diſorder are ſufficiently evident, as well to the patients as to the attendants, who cannot but obſerve a depraved and exceſſive appetite, which compels them to receive into their ſtomachs an immoderate quantity of victuals, which afterward proving burdenſome and oppreſſive to nature, are thrown up again by vomiting; in which caſe the diſtemper is the *fames canina*; or if there be no vomiting, the patient is ſeiſed with a lipothymy, and then it is a *bulimus*.

The different cauſes of this diſtemper, are diſtinguiſhable by the circumſtances which are antecedent, attendant, and conſequent to it. Acid evacuations and vomitings, crude ſtools and want of thirſt, are ſigns of an acid abounding in the ſtomach. In defect of nutrition, the patients are emaciated: and laſtly, the ſigns of worms are to be taken from their proper ſymptoms.

As to the prognoſtics of this diſorder, if it depends wholly on external cauſes, there is no danger, provided theſe are ſpeedily removed; and what proceeds from worms carries but little danger in it, becauſe the effects ceaſe on their being deſtroyed. In pregnancy, where an inordinate appetite is frequent, there is no danger to be apprehended from it.

But the diſtemper is very dangerous, when followed by large evacuations or colliquations of the body: and eſpecially when after receiving food, while the ſtomach is yet full, the patient is ſeized with fainting fits: for when thoſe things which ought to give moſt relief, prove of none, or of ill effect, it is a ſign of a great diſorder in the tone of the ſtomach.

So alſo the CANINE appetite, when the vomiting or flux is obſtinate, is not void of danger: for it commonly degenerates into a cachexy, dropſy, lientery, atrophy, and other fatal diſtempers.

For the methods of cure, while the patient is under the fainting fit, it is uſual to have recourſe to ſuch things as remarkably affect the ſenſe of ſmelling: as, bread ſopped in wine, roaſted ſwine's fleſh, or kid, and in general all ſuch things as have a nidorous and well-favoured ſmell. It is ſometimes the practice likewiſe to compreſs the extremities of the patients, to prick them in every part, rub their ears, pull them by the cheeks, and by the hair. When they are come to themſelves from the lipothymy, the moſt proper thing to give them in the firſt place, is wine, and after that other food. In our future management, they are to be reſtored by ſuch meats, as are of good and quick nutrition, but difficult of alteration and digeſtion: they are alſo to be treated with ſuch things as refrigerate and ſtrengthen. By this method they are greatly benefited, and in proceſs of time are reſtored to a good temperament.

Evacuation is to be performed, either by vomit or purge; and that by means of ſuch remedies as are proper for thoſe who labour under a want of appetite. For though theſe affections are contrary to each other, yet they are uſually produced by the ſame humours, differing only in degrees of frigidity, and ſome very different ſecondary qualities which affect the ſtomach after a very different manner. A remedy of this kind, which is very much commended by Galen, is *hiera* made into pills.

Pure wine alone, drank in ſufficient plenty, is a moſt powerful reliever of HUNGER, according to the aphoriſms of Hippocrates, xxi. ſect. 2. and the ſpirit of wine commonly called *aqua vitæ*, has a ſtill more powerful effect that way.

In the Philoſophical Tranſactions, we have an account of a perſon affected with a *bulimy*, to ſuch a degree that he would eat up an ordinary leg of veal at a common meal, and would feed on ſowthiſtle, &c. he was cured by throwing up ſeveral worms, of the length and thickneſs of a tobacco-pipe.

BULITHOS, *lapis bovinus*, a calculus or ſtone found in the gall-bladder, kidneys, or urinary bladder of oxen.

Inſtances hereof are given by Bromell, the Academy Naturæ Curioſorum, and other naturaliſts; by which it appears that Ariſtotle was miſtaken in aſſerting, that man alone is ſubject to the ſtone, and inquiring ſolicitouſly into the reaſons hereof. Ariſt. Probl. § x. n. 42.

BULK *of a ſhip*, denotes her whole content in the hold for ſtowage of goods.

Bulk, *to break*. See Breaking.

Bulk-*heads*, are partitions made acroſs a ſhip, or lengthways, with boards of timber, whereby one part is divided from another.

The *bulk-head afore*, is the partition between the fore-caſtle and gratings in the head, and in which are the chaſe-ports. See *Tab. Ship. fig.* 2. *n.* 11. 24. 48. 85. 95. 99. 102. 115.

BULL, in *Eccleſiaſtical Writers*, denotes an inſtrument diſpatched out of the Roman chancery, ſealed with lead; anſwering to the edicts, letters patent, and proviſions, of ſecular princes.

The word *bull* is derived from *bulla, a ſeal*; and that from *bulla, a drop*, or *bubble:* or, according to others, from the Greek, *βουλη*, *council*; according to Pezron, from the Celtic *buil*, or *bul, a bubble.*

We meet with four kinds of theſe *bulli*, or *bullæ*; golden, ſilver, waxen, and leaden; all in uſe among the emperors and kings of the middle and barbarous ages. In ſome, the impreſſion is made on the ſolid metal itſelf; in others on wax, and only incloſed in a metalline box, or caſe.

Sealing with metals is an illuſtrious privilege, belonging only to princes, though aſſumed alſo by prelates, as princes of the church. The doges of Venice durſt not arrogate this honour, till leave was given them by pope Alexander III. about the year 1170, to ſeal their diplomata with lead.

The *bull* is the third kind of apoſtolical reſcript, and the moſt in uſe, both in affairs of juſtice, and of grace. It is wrote on parchment; by which it is diſtinguiſhed from a *brief*, or ſimple *ſignature*, which is on paper. A *bull* is properly a ſignature enlarged: what the latter comprehends in a few words, the former dilates and amplifies.

If the *bulls* be letters of grace, the lead is hung on ſilken threads; if they be letters of juſtice, and executory, the lead is hung by a hempen cord. They are all wrote in an old round Gothic letter.

The *bull*, in the form wherein it is to be diſpatched, is divided into five parts; viz. the narrative of the fact; the conception; the clauſe; the date; and the ſalutation, in which the pope takes on himſelf the quality of *ſervant of the ſervants of God, ſervus ſervorum Dei.*

Properly ſpeaking, it is the ſeal, or pendant lead alone that is the *bull:* it being that which gives it both the title, and authority. The ſeal preſents, on one ſide, the heads of St. Peter and St. Paul; on the other, the name of the pope, and the year of his pontificate.

By *bulls*, jubilees are granted: without them no biſhops, in the Romiſh church, are allowed to be conſecrated.

In Spain, *bulls* are required for all kinds of benefices; but in France, &c. ſimple ſignatures are ſufficient; excepting for biſhopricks, abbeys, dignities, and priories conventual. According to the laws of the Roman chancery, no benefice exceeding twenty-four ducats per annum, ſhould be conferred without *bulls:* but the French would never ſubmit to this rule, except for ſuch benefices as are taxed in the apoſtolical chamber: for the reſt, they reſerve the right of diſſembling the value, expreſſing it in general terms: *Cujus & illi forſan annexorum fructus 24 ducatorum auri de camera, ſecundum communem æſtimationem, valorem annuum non excedunt.*

The *bulls* brought into France are limited and moderated by the laws and cuſtoms of the land, before they are regiſtered; nor is any thing admitted till it hath been well examined, and found to contain nothing contrary to the liberties of the Gallican church: thoſe words, *proprio motu*, in a *bull*, are ſufficient to make the whole be rejected in France.

Nor do the Spaniards admit the papal *bulls* implicitly; but, having been examined by the king's council, if there appear any reaſon for not executing them, notice thereof is given to the pope by a ſupplication; and the *bull*, by this means, remains without effect: and the like method of proceeding with the court of Rome is obſerved by moſt of the other courts of Europe, in the papal communion.

To *fulminate bulls*, is, to make publication thereof, by one of the three commiſſaries to whom they are directed; whether he be the biſhop or official. This publication is ſometimes oppoſed; but when it is, the fault is not charged on the pope who iſſued the *bull*; but an appeal is brought to him againſt the perſon who is ſuppoſed to make it: thus the fault is laid, where it is known not to be juſt, to evade affronting the pontiff. See Fulmination.

The *bull in cœna Domini*, is a *bull* read every year on Maundy-Thurſday, in the pope's preſence; containing various excommunications and execrations, againſt heretics, thoſe who diſobey the ſee, who diſturb or oppoſe the exerciſe of eccleſiaſtical juriſdiction, &c.

After the death of the pope, no *bulls* are diſpatched during the vacancy of the ſee, to prevent any abuſes; therefore, as ſoon as the pope is dead, the vice-chancellor of the Roman church takes the ſeal of the *bulls*; and in the preſence of ſeveral perſons, orders the name of the deceaſed pope to be eraſed; and covers the other ſide, on which are the heads of St. Peter and St. Paul, with a linen cloth; ſealing it up with his own ſeal, and giving it, thus covered, to the chamberlain, to be preſerved, that no *bulls* may be ſealed with it in the mean time.

By ſtat. 28 Hen. VIII. c. 16. all *bulls*, &c. obtained from the biſhop of Rome, are void; and by 13 Eliz. c. 2. (ſee alſo 23 Eliz. c. 1.) the procuring, publiſhing, or uſing any of them, is high treaſon.

Bull, *golden*, is a denomination peculiarly given to an ordinance, or ſtatute, made by the emperor Charles IV. in 1356, ſaid to have been drawn up by that celebrated lawyer, Bartoli, and ſtill reputed the *magna charta*, or fundamental law of the empire.

It is thus called from a golden ſeal fixed to it, ſuch as were uſed by the emperors of Conſtantinople, annexed to their edicts.

Till the publication of the *golden bull*, the form and ceremony of the election of an emperor were dubious, and undetermined; and the number of electors was not fixed: this ſolemn edict regulating the functions, rights, privileges, and pre-eminences of the electors.

The original, which is in Latin, on vellum, is kept at Frankfort. On the back-ſide of it there are ſeveral knots of black and yellow ſilk; to which hangs a *bull*, or ſeal of gold.

This ordinance, containing thirty articles, was approved of by all the princes of the empire, and remains ſtill in force. The election of the empire is by it declared to belong to ſeven electors; three of them eccleſiaſtics, viz. the archbiſhops of Mentz, Treves, and Cologn; and four ſeculars, viz. the king of Bohemia, prince Palatine, duke of Saxony, and marquis of Brandenburg.

Bulls, *golden*, were in uſe among the eaſtern emperors for a conſiderable time, leaden ones being confined to matters of a ſmaller moment. Spelman mentions a *golden bull*, in a treaty of alliance between our Henry VIII. and Francis I. of France; the ſame author relates, that the inſtrument, whereby Clement VII. gave king Henry VIII. the title of Defender of the Faith, had a golden *bulla* affixed to it; and there are other inſtances in Du-Cange and Altaſerra.

Bulls, *ſilver*, were not in ſo frequent uſe, though we do not want inſtances of them.

Bulls, *leaden*, were ſent by the emperors of Conſtantinople to deſpots, patriarchs, and princes; and the like were alſo uſed by the grandees of the imperial court, as well as by the kings of France, Sicily, &c. and by biſhops, patriarchs, and popes.

Polydore Virgil makes pope Stephen III. the firſt who uſed leaden *bulls*, about the year 772. But others find inſtances of them as early as Silveſter, Leo I. and Gregory the Great. The later popes, beſides their own names, ſtrike the figures of St. Peter and St. Paul on their *bulls*; a practice firſt introduced by pope Paſchal II.

Bulls, *waxen*, are ſaid to have been firſt brought into England by the Normans. They were in frequent uſe among the Greek emperors, who thus ſealed letters to their wives, mothers, and ſons. Of theſe there were two ſorts, one red, the other green. Du-Cange Gloſſ. Lat. tom. i. & Gloſſ. Græc. Montfaucon, Palæog. lib. 6.

Bull, a ſpecies of the ox or bos.

One *bull* ſuffices for fifty cows, ſome ſay ſixty. His beſt age is about two, or from one to three, before he arrives at his full growth, when he grows heavy and ſluggiſh. Hence that old rule among countrymen:

He that will have his farm full,
Muſt have an old cock and a young bull.

From that time, being of no further uſe in breeding, he is uſually gelt, and makes what they call a *bull-ſtag*, in the North corruptly a *bull-ſeg*, to be fatted for the market. When theſe creatures are intended to breed, the better the land is, the larger ſort of beaſts are to be choſen, and the greater will be the profit. But of whatever ſort the breed is, the *bull* ſhould always be of the ſame country with the cow, otherwiſe it never ſucceeds ſo well. The *bull* ſhould be choſen of a ſharp quick countenance, his forehead broad and curled, his eyes black and large, his horns long, his neck fleſhy, his belly long and large, and his hair ſmooth and like velvet; his breaſt ſhould be large, his back ſtrait and flat, his buttocks ſquare, his thighs round, his legs ſtrait, and his joints ſhort. This ſort of *bull* is the beſt for breed, and makes the beſt oxen for draught as well as for fattening.

The cow ought to have a broad forehead, black eyes, great clean horns, the neck long and thin, the belly large and deep, the thighs thick, the legs round, and the joints ſhort; a white large and deep udder with four teats, and large feet. The ſize muſt be proportioned to the goodneſs of the land.

Among the ancients, thoſe who triumphed, ſacrificed a *bull*, when they arrived at the Capitol. *Bulls* were offered to Apollo and Neptune. It was held a crime to ſacrifice them to Jupiter, though we do not want inſtances of that practice.

Bulls were ranked by the Romans in the number of military rewards.

Bull, *African*, in *Natural Hiſtory*, a ſmall wild *bull*, common in that part of the world, and ſuppoſed to be the true *bubalus* of the ancients.

Bull, *Perillus's*, was a hollow brazen engine of torture, in the ſhape of that quadruped; wherein perſons being ſhut up, and fire applied, their cries imitated the roaring of a *bull*.

Bulls *blood*, freſh drawn, is a powerful poiſon, as coagulating in the ſtomach. This is related on the authority of Pliny, xxviii. 9. and xi. 38. and many perſons among the ancients, ſuch as Æſon, Midas, Hannibal, and Themiſtocles, are ſaid to have been poiſoned by it. But the fact has been queſtioned by ſome, and denied by others. See Apollodorus, lib. i. cap. 27. Strabo, lib. i. p. 106. Plutarch in Flaminio; and Valer. Maxim. vol. vi. ext. 3.

Bulls *gall*, is an intenſe bitter, more pungent and acrimonious than that of any other animal; whence it is ſometimes uſed to deſtroy worms.

Bull, *bannal*, denotes a *bull* kept by a lord, who has a right to demand all his tenants to bring their cows to be ſerved by him. See Bannalis.

Bull, *free*, according to Du-Cange, ſignifies the ſame with *bannal bull.* Hence *tauri liberi libertas*; which, however, ſhould rather ſeem to denote a privilege of keeping a *bull* independent of the lord.

Bulls, *wild.* The *wild bulls*, now ſo numerous on the continent of America, are ſaid to have ſprung from one *bull* and ſeven cows, which were carried thither by ſome of the firſt conquerors.

In the iſland of Hiſpaniola, the French buccaneers purſue *bulls* with dogs, and kill them with fire-arms. At Buenos Ayres, the Spaniſh toradors chaſe them on horſeback, armed with a long lance, at the end of which is a half-moon of ſharp ſteel. Having drawn a number of the horned kind together, they let the cows eſcape, but dextrouſly take the *bulls* with their half-moons on the hind-legs, by which, diſabling them from flight, they are eaſily diſpatched.

Bull-*fighting*, a ſport or exerciſe much in vogue among the Spaniards and Portugueſe, conſiſting in a kind of combat of a cavalier or *torador* againſt a wild *bull*, either on foot or on horſeback, by riding at him with a lance.

The Spaniards have *bull-fights*, i. e. feaſts, attended with ſhews, in honour of St. John, the Virgin Mary, &c.

This ſport the Spaniards received from the Moors, among whom it was celebrated with great eclat. Some think, that the Moors might have received the cuſtom from the Romans, and they from the Greeks. Dr. Plott is of opinion, that the Ταυροκαθαψιων ἡμεραι amongſt the Theſſalians, who firſt inſtituted this game, and of whom Julius Cæſar learned and brought it to Rome, were the origin both of the Spaniſh and Portugueſe *bull-fighting*, and of the Engliſh *bull-running*. Nat. Hiſt. Staff. chap. x. § 76.

The practice was prohibited by pope Pius V. under pain of excommunication, incurred *ipſo facto*. But ſucceeding popes have granted ſeveral mitigations in behalf of the toradors.

Bull-*running*, denotes a feudal cuſtom obtaining in the honour of Tudbury in Staffordſhire, where anciently, on the day of the Aſſumption of our Lady, a *bull* was turned looſe by the lord to the minſtrels, who, if they could catch him before he paſſed the river Dove, were to have him for their own, or, in lieu thereof, to receive each forty pence; in conſideration of which cuſtom, they pay twenty pence yearly to the ſaid lord. Plot. ubi ſupra.

Bull *and boar*.—By the cuſtom of ſome places, the parſon is obliged to keep a *bull* and *boar* for the uſe of his pariſhioners, in conſideration of his having tithes of calves and pigs, &c. Rol. Abr. 559. 4 Med. 241.

Bull, in *Aſtronomy*, the conſtellation taurus.

Bull's *eye*, in *Aſtronomy*. See Aldebaran.

Bull's *eye*, in *Meteorology*, a little dark cloud, reddiſh in the middle, chiefly appearing about the Cape of Good Hope; thus denominated by the Portugueſe, who, on the appearance of it, inſtantly take down their ſails, as knowing that a terrible ſtorm of thunder, lightning, and whirlwind, is at hand.

Bull's *eye*, in *Sea-language*, denotes a ſort of ſmall pulley in the form of a ring, having a rope ſpliced round the outer edge of it, and a large hole in the middle for another rope to ſlide in. It is more commonly uſed by Dutch than by Engliſh ſeamen.

Bull-*finch*, a ſpecies of the loxia. This is a very pernicious bird in gardens and orchards. They feed on the young buds of trees in ſpring, which contain the bloſſoms for the ſummer's fruit. The black-thorn, or ſloe-tree, is the great favourite of the *bull-finch*, and keeps him employed in the hedges in mild weather; but if the latter end of the winter hath been ſevere, and theſe ſhrubs are backward with their buds in February, he then comes into the gardens, the trees growing there being forwarder than thoſe in the field in a cold ſpring; they will ſometimes come in ſuch numbers, as to take off all the buds from the currants, plumbs, &c. in the gardens of a whole town in a few days. Theſe birds are ſo bold, that no ſcarecrow, or other means that can be deviſed, can deter them; their great favourite in the garden is the damſon-tree, and they will feed upon this while a perſon comes almoſt cloſe up to them. It is very eaſy to ſhoot theſe birds; but the buds and young branches are uſually much injured by this method, and the beſt way ſeems to be to dawb over the twigs in many places with bird-lime.

The wild note of this bird is not in the leaſt muſical; but when tamed, it may be taught any tune after a pipe, or to whiſtle any notes; and it ſeldom forgets what it has learned. Theſe birds may be taught to ſpeak, and ſome thus inſtructed are annually brought to London from Germany.

Bull-*frog*, a ſpecies of the *frog*, common in Sweden, and the northern parts of America, with four divided toes on the fore-feet, and five webbed ones on the hinder. When the limbs are extended, it meaſures near two feet: it is very voracious, and will frequently ſwallow young ducks and other fowl: its croaking is ſo loud, as to reſemble the roaring of a *bull*; whence its name. See Frog.

Bull-*head*, the Engliſh name given to a ſmall fiſh of the cottus kind, found very frequently in ſhallow running waters, and called by the ancients *bœtus* and *cœtus*; called alſo Miller's *thumb*.

Bull-*trout*, an Engliſh name for a fiſh of the ſalmon kind, caught in many of the rivers of England, and more uſually called the scurff.

Bull-*weed*. See Centaury.

BULLA, in *Antiquity*, a golden ornament, of a globular figure, and hollow within, wherein was contained ſome amulet, to ſerve as a preſervative from witchcraft and envy, hung about the neck by thoſe who triumphed among the Romans; and alſo by the children of the patricians, and even *ingenui*, as a badge of their hereditary nobility and freedom, by which they might be animated to behave themſelves worthy of their birth. Rom. Ant. p. ii. lib. v. cap. 8.

The *bulla* was not allowed to the children of ſlaves, or even of *liberti*, who, in lieu thereof, wore a leather collar round the neck, much after the manner of the purple ſtring to which the *bulla* was hung. But the great veſtal, and the Roman ladies, wore a *bulla*; the former by way of diſtinction, the latter as a piece of dreſs. We may add, that *bullæ* were ſometimes allowed to ſtatues; whence the phraſe, *ſtatuæ bullatæ*. M. Lepidus, having killed an enemy, and ſaved a citizen, even when a boy, had a *bullated* ſtatue erected to him in the Capitol, in memory of the exploit. The Roman youth laid aſide the *bulla*, together with the *prætexta*, and conſecrated it to the *Lares*, when they arrived at their fifteenth year; as appears from the ſatyriſt:

> *Cum primum pavido cuſtos mihi purpura ceſſit,*
> *Bullaque ſuccinctis Laribus donata pependit.*

Perſ. Sat. v. ver. 20. Hiſt. Acad. Inſcr. tom. ii. Valer. Max. lib. iii. cap. 1.

Bulla was alſo a denomination given to divers other metalline ornaments made after the form of *bullæ*.

In which ſenſe, *bullæ* ſeem to include all golden and ſilver ornaments of a roundiſh form, whether worn on the habits of men, the trappings of horſes, or the like. Such were thoſe decorations uſed by the ancients on their belts and doors. Virgil, ſpeaking of Pallas's belt or girdle, ſays:

> *Notis fulſerunt cingula bullis*
> *Pallantis pueri.* Æneid lib. xii. ver. 942.

The *bullæ* of doors were a kind of large-headed nails faſtened on the doors of the rich, and kept bright with great care. The doors of temples were ſometimes adorned with golden *bullæ*.

Bulla alſo denoted a table hung up in the public courts, to diſtinguiſh which days were *faſti*, and which *nefaſti*; anſwering in ſome meaſure to our calendar.

Bulla, in *Natural Hiſtory*, a genus of worms of the order of *teſtacea*.

BULLACE-*tree*, in *Botany*, a ſpecies of plum-*tree*.

BULLARII, in the court of Rome, the makers or drawers of bulls or conſtitutions.

BULLARY, *Bullarium*, a collection of papal bulls.

We have extant divers kinds of *bullaries*; ſome containing only the bulls of particular popes; ſuch are the *bullaries* of Innocent XII. and Clement XI. Others contain the bulls granted to particular communities; ſuch is the *bullary* of the order of Cluny, &c.

A general *bullary* of all the papal conſtitutions from

Gregory VII. to Sixtus Quintus, was compiled by order of pope Sixtus Quintus, in 1586; ſince which has been publiſhed a great *bullary*, by Laert. Cherubin, containing the bulls of all the popes from Leo in 440, to Paul V. in 1559; ſince continued by Ang. Cherubin to the year 1644, and by Ang. a Lantuſca and Jo. Paulus to the year 1676; and, laſtly, by an anonymous editor to the time of Benedict XIII. under the title of *Bullarium magnum Romanum*. We have the ſame digeſted in a new method by Bouchardus; a commentary on it begun by Vinc. Petra, and a ſummary of it by Novarias. Fabr. Bibl. Med. Ævi. Lat. lib. ii. tom. i. p. 816. 822.

BULLET, an iron or leaden ball, or ſhot, wherewith fire-arms are loaded.

Some derive the word from the Latin *botellus*, others from the Greek *βαλλειν*, *to throw*.

According to Merſenne, a *bullet*, ſhot out of a great gun, flies 92 fathoms in a ſecond of time, which is equal to 589½ Engliſh feet; and, according to Huygens, it would be 25 years in paſſing from the earth to the ſun: but, according to ſome very accurate experiments of Mr. Derham, it flies, at its firſt diſcharge, 510 yards in five half-ſeconds; or about ſeven miles in a minute: allowing therefore the ſun's diſtance 95000000 Engliſh miles, a *bullet* would be near 26 years in its paſſage at the full ſpeed.

Bullets are of various kinds, viz. *red-hot bullets*, made hot in a forge; intended to ſet fire to places where combuſtible matters are found.

BULLETS *hollow*, ſhells made cylindrical, with an aperture and a fuſee at one end, which giving fire to the inſide, when in the ground, burſts, and has the ſame effect with a mine.

Chain-bullets, conſiſting of two balls, joined by a chain three or four feet apart.

Branch-bullets, two balls joined by a bar of iron five or ſix inches apart.

Two-headed bullets, called alſo *angels*, being two halves of a *bullet* joined by a bar, or chain: theſe are chiefly uſed at ſea, for cutting of cords, cables, ſails, &c.

The diameter of a leaden *bullet*, weighing 1 pound, is 1.69 inches, according to Sir Jonas Moor; and the diameter of any other *bullet* is found by dividing 1.69 inches by the cube-root of the number, which expreſſes how many of them make a pound; or by ſubtracting the third part of the logarithm of the number of bullets in the pound from the logarithm of 1.69, and the difference will be the logarithm of the diameter required.

Thus may be calculated the following table, ſhewing the diameters of leaden *bullets*, from 1 to 39 in the pound.

	0	1	2	3	4	5	6	7	8	9
0	0	1.69	1.341	1.172	1.064	0.988	0.93	0.883	0.845	0.812
1	0.784	0.760	0.738	0.719	0.701	0.685	0.671	0.657	0.645	0.633
2	0.623	0.612	0.603	0.594	0.586	0.578	0.570	0.563	0.556	0.550
3	0.544	0.537	0.532	0.527	0.521	0.517	0.512	0.507	0.503	0.498

N. B. The upper horizontal column ſhews the number of bullets to a pound; the ſecond, their diameters; the third, the diameters of thoſe of 10, 11, 12, &c. and the fourth, thoſe of 20, 21, 22, &c. and the laſt, thoſe of 30, 31, 32, &c.

The government allows 11 *bullets* in the pound for the proof of muſkets, and 14 in the pound, or 29 in two pounds, for ſervice; 17 for the proof of carabines, and 20 for ſervice; and 28 in the pound for proof of piſtols, and 34 for ſervice. Canon *bullets* or balls are of different diameters and weights, according to the nature of the piece. See **CALIBER**.

BULLET, *quarter*. See **QUARTER**.

Bullets ſhot into the water undergo a refraction; ſeveral experiments concerning which are given by Mr. Carré. Vide Mem. Acad Scienc. ann. 1705. p. 277.

The extraction of *bullets* from wounds is an operation deſcribed by chirurgical writers. *Bullets* ſometimes remain eaſy in the body during many years.

Swallowing of muſket-*bullets* is ſometimes practiſed to remove iliac and colic pains. Mr. Young gives a caſe wherein this had a terrible effect: the *bullet* happening to miſs its way down, instead of the *œſophagus*, got into the *trachea*. Mr. Chirac has a diſſertation on the queſtion, which of the two is ſafer in **ILIAC** caſes, to ſwallow leaden *bullets*, or crude mercury? He gives the preference to the *bullets*. Phil. Tranſ. Nº 263.

BULLET-*moulds* conſiſt of two concave hemiſpheres, with a handle whereby to hold them; and between the hemiſpheres is a hole, called a gate, at which to pour in the melted metal. The chaps or hemiſpheres of *bullet-moulds* are firſt punched, being blood-red hot, with a round-ended punch, of the ſhape and ſize of the intended bullets. To cleanſe the inſides, they make uſe of a *bullet-bore*.

BULLET-*bore*, is a ſteel-ſhank, having a globe at one end, wherewith to bore the inſide of a mould clean, of the ſize intended.

BULLET-*iron*, a denomination given by ſome to Spaniſh or Swediſh bars of **IRON**.

BULLIMENTA, is uſed by ſome *Chemiſts* for the waſhings and ſcourings of gold or ſilver veſſels, in proper liquors, to render them brighter.

BULLIMONY, or **BOLLIMONG**, denotes a mixture of ſeveral ſorts of grain, as oats, peaſe, and vetches, called alſo *maſlin* or *mong-corn*.

BULLION, denotes gold or ſilver in the maſs, or billet.

Silver and gold, whether coined or uncoined (though uſed for a common meaſure of other things), are no leſs a commodity than wine, tobacco, or cloth; and may, in many caſes, be exported as much to national advantage, as any other commodity.—No nation can ever be conſiderable in trade, that prohibits the exportation of *bullion*.

And it is more for the public advantage to export gold or ſilver coined, than uncoined: ſince, in the former, we have the advantage of the manufacture.

The word is apparently formed from the French *billon*, a maſs of gold or ſilver below ſtandard, which Du-Cange derives further from *bi a*, as being *aurum aut argentum in maſſam ſeu billam*, i. e. *baculum conflatum*.

Silver *bullion* is ſometimes alſo denominated **PLATE**.

By the Scottiſh laws, the cuſtoms in the exportation of goods were to be paid in *bullion*.

BULLION is alſo uſed for the place where the king's exchange is kept: or where gold and ſilver is brought in the lump to be tried, or exchanged.

BULLITION is uſed for the effect ariſing upon the mixture of different liquors, which often is a quantity of bubbles, or froth.

BULLOCK'*s eye*, in *Architecture*. See **EYE**.

BULLY-*tree*, in *Botany*. See *Star*-**APPLE**.

BULTEL, the bran or refuſe of meal after dreſſing.

The word is derived from the barbarous Latin, *bultellus*, or *bultelium*, *a ſearce* or *boulter*.

BULTEL alſo denotes a bag wherein meal is dreſſed, called alſo a *bulter*, or rather *boulter*.

BULTER-*cloth*, a linen or hair-cloth for ſifting or ſearcing of meal or flour.

BULTERS, are ſtrong lines five hundred feet long, with ſixty hooks, eight feet aſunder, and baited with pilchards or mackrel, which are uſed on the coaſt of Cornwall in the fiſhery of **CONGERS**. They are ſunk to the ground by a ſtone faſtened to them; and ſometimes ſuch a number of theſe are tied together, as to reach a mile.

BULWARK, *Propugnaculum*, in the *Ancient Fortification*, amounts to much the ſame with **BASTION** in the modern. See alſo **RAMPART**.

BUMBUNNY, in *Botany*, a name given by the people of Guinea to a plant common in that place, which ſerves them as an emetic; they boil a few of the leaves in water, and drink this liquor, which works very eaſily. Phil. Tranſ. Nº 232.

BUMICILLI, a ſect of Mahometans in Africa, ſaid to be great ſorcerers: they fight againſt the devil, as they ſay; and frequently run about covered with blood and bruiſes, in a great fright: they ſometimes counterfeit combats with him at noon-day, and in the preſence of numbers of people, for the ſpace of two or three hours, with darts, javelins, ſcimitars, &c. laying deſperately about them, till they fall down on the ground oppreſſed with blows: after reſting a moment, they recover their ſpirits, and walk off.

What their rule is, is not well known; but they are ſaid to be an order of religious.

BUMKIN, or **BOOMKIN**, in *Sea-language*, is a ſhort *boom* or bar of timber, projecting from each bow of a ſhip, to extend the lower edge of the fore-ſail to windward. It is ſecured by a ſtrong rope, which confines it to the ſhip's bow.

BUN, the dry ſtalk of **HEMP**, ſtripped of its rind.

BUNCH, a cluſter or aſſemblage of certain things, as of grapes.

BUNCH alſo denotes a **TUMOUR**, or protuberance, natural or preternatural, either on an animal or vegetable body. The *bunch* growing about the **GRAFT** of a plant is a ſort of *callus* formed by the extravaſated ſap.

BUNCH *of Camels*. See **CAMELS**.

BUNCH, in *Chirurgery*, denotes an elevation of the back, ariſing from an exterior luxation of the *vertebræ* thereof. The cure is begun by keeping emollients a long time on the *vertebræ*, whereby to looſen the ligaments, and finiſhed by wearing an iron boddice, which, compreſſing the *vertebræ*, by degrees drives them back to their natural ſituation.

BUNCHES in horſes, called alſo *knobs*, *warts*, and *wens*, are diſeaſes ariſing from foul meat, bruiſes, hard labour, or the like; whereby the blood becoming putrefied and foul, occaſions ſuch excreſcencies.

BUNCHED *cods*, among *Floriſts*, are thoſe which ſtand out, and wherein the ſeed is lodged.

BUNCHED *roots*, thoſe round roots which have knobs or knots in them. See **BULB** and **ROOT**.

BUNG, the ſtopple of a CASK, barrel, or the like.

The *bung* is a wooden plug, ſerving to ſtop the hole left in the top of a veſſel to be filled by. It anſwers to what, among the ancients, was called *epiſtomium*, and in the middle age *ſigillus*, *the ſeal of a veſſel*, becauſe in thoſe days it was uſually ſealed.

After tunning new wine, or cyder, the *bung* is uſually left open for ſome time, that when the liquor comes to work, there may be vent for the froth or ſcum, and that the hoops may not be in danger of being burſt by the violence of the fermentation. Yet, in ſome caſes, they leave wines to ferment, without giving them vent by the *bung*, in order to render them more briſk and ſpirituous: in which caſe, it is neceſſary the veſſel be hooped with iron, and other precautions taken that the *bung* may not fly.

BUNIAS, in *Botany*, *corn* or *ſquare-podded rocket*, a genus of the *tetradynamia ſiliquoſa* claſs of plants. Its characters are theſe: the flower hath four petals, placed in form of a croſs, joined at their baſe, and erect. It hath ſix ſtamina, two of which are oppoſite, and ſhorter than the other. In the centre is ſituated an oblong germen, which afterward becomes an irregular ſhort oval pod with four angles, one or other of which is prominent and pointed; incloſing one or two roundiſh ſeeds.

Bunias, or *navew*, is ſown in gardens, and flowers in April: the root is uſed in food, and the ſeed in phyſic. Theſe ſeeds are ſaid to be heating, drying, abſterging, aperitive, and digeſtive: and to be enemies to venery.

BUNIUM. See PIG-NUT.

BUNK, or BUNKEN, a word frequently occurring in the writings of the Arabian phyſicians. We do not at this time certainly know what it was; but it was evidently an aromatic root uſed in cardiac, ſtomachic, and carminative compoſitions. See LEUCACANTHA.

BUNT *of a ſail*, is the middle part of it, purpoſely formed into a kind of bag, or pouch, that it may catch and receive the more wind.

The *bunt* is chiefly uſed in topſails; for courſes are for the moſt part cut ſquare, or at leaſt with a ſmall allowance for *bunt* or compaſs.—They ſay, *the bunt holds much leeward wind*; that is, it hangs too much to leeward.

Seamen all agree, that a bellying or *bunting* ſail carries a veſſel faſter to the windward than a ſtrait or faſt ſail: the contrary of which is aſſerted by Dr. Hooke, who has a diſcourſe to ſhew the preference of ſtrait to *bunting* ſails. Vide Hooke's Poſthum. Works, p. 563, ſeq.

BUNT-*lines*, are ſmall lines made faſt to the bottom of the ſquare ſails, in the middle part of the bolt-rope to a crengle; and ſo are reeved through a ſmall block, ſeized to the yard: their uſe is to trice up the *bunt* of the ſail, for the better furling it up.—See *Tab. Ship. fig.* 1. *n.* 48. 74. 91. 116.

BUNTINE, a thin woollen ſtuff, of which the colours and ſignals of a ſhip are uſually made.

BUNTING, in *Zoology*, the common Engliſh name of the EMBERIZA *alba*, called by others *calandra*, *cenchramus alaudæ congener*, and *ſtrozello*, or *ſtrillozzo*.

The bill of this bird is ſingularly conſtructed; the ſides of the upper mandible form a ſharp angle, bending towards the lower; and in the roof of the former is a hard knob, adapted to bruiſe corn or other ſeeds.

BUONACCORDO, a ſmall ſtringed muſical inſtrument, reſembling a ſpinet, uſed by children to learn to play on, becauſe of the ſhortneſs of their fingers.

The word is Italian, and properly denotes a HARPSICHORD.

BUOY, at ſea, a block of wood, or cork, ſometimes an empty caſk well cloſed, ſwimming on the ſurface of the water, and faſtened by a chain, or cord, to a large ſtone, piece of broken cannon, or the like; ſerving to mark the dangerous places near a coaſt, as rocks, ſhoals, wrecks of veſſels, anchors, &c.

In lieu of *buoys*, are ſometimes placed pieces of wood, in form of maſts, in the conſpicuous places: ſometimes large trees are planted in a particular manner; in number, two at the leaſt, to be taken in a right line, the one hiding the other; ſo that the two may appear to the eye no more than one.

BUOY is alſo uſed for a piece of wood, or a barrel at ſea, faſtened ſo as to float directly over the anchor; that the men who go in the boat to weigh the anchor, may certainly know where the anchor lies.

BUOYS are of various kinds, differing in their conſtruction and uſe, and bearing different names. *Cone-buoys*, are thoſe in the form of a cone, floating over dangerous banks and ſhallow places. *Nun-buoys*, are ſhaped like the middle fruſtum of two cones, abutting upon a common baſe tapering at each end. *Wooden-buoys*, are ſolid pieces of timber, ſometimes in the ſhape of a cylinder, and ſometimes of a *nun-buoy*. *Cable-buoys*, are common caſks employed to *buoy* up the cable from rocky ground.

BUOY-*rope*, the rope which faſtens the *buoy* to the anchor. Its length ſhould be little more than the depth of the water where the anchor lies; and it ſhould be ſtrong enough to draw up the anchor when the cable is broke.

BUOY, *ſlings of*, ropes faſtened to the *buoy*, by which it is hung, and ſpliced round it in a manner reſembling the braces of a drum.

BUOY, *to ſtream the*, is to let it fall from the ſhip's ſide into the water; which is always done before they let go the anchor.

BUOYANT, denotes a thing floating, or apt to float.

BUPHAGA, in *Ornithology*, a genus of the order of *picæ*, of which there is one ſpecies in Senegal.

BUPHONIA, from βȣς, *ox*, and φωνη, *ſlaughter*, in *Antiquity*, an Athenian feaſt or ceremony, denominated from a bullock ſlain therein, with quaint formalities.

The *buphonia* was properly a part or appendage of the ceremony of the DIIPOLIA.

For the origin of the *buphonia*, we are told it was forbidden by the laws of Attica to kill an ox: but it once happened, at the feaſt of the *diipolia*, that an ox eat the corn, others ſay the cakes, which had been dreſſed for the ſacrifice. Thaulon the prieſt, enraged at this, preſently killed him, and fled for it. On which the Athenians, fearing the reſentment of the gods, and feigning themſelves ignorant who had committed the fact, brought the bloody axe before the judges, where it was ſolemnly arraigned, tried, found guilty, and condemned. And, in memory of this event, a feaſt was inſtituted under the denomination of *buphonia*. In which it was ſtill cuſtomary for the prieſt to fly, and judgment to be given about the ſlaughter of the ox.

BUPHTHALMUM, from βȣς, *ox*, and οφθαλμος, *eye*, in *Botany*. See OX-*eye*.

BUPHTHALMUS, in *Botany*, a name given by ſome of the ancients to the common great houſe-leek, or SEDUM *majus*, from the manner of its growing in cluſters, reſembling the eyes of large animals.

BUPLEURUM. See HARE'*s-ear*.

BUPRESTES, a ſort of oblong cantharides, of a ſtinking ſmell, and very ſevere bite. It is of the ſame nature with the common cantharides, or Spaniſh fly, and is ſaid to do great injury to the cattle, which, feeding, chance to eat it. They form, in the Linnæan ſyſtem, a genus of inſects, different from the CANTHARIDES, but belonging to the ſame order of *coleoptera*, and comprehending ſeveral ſpecies.

BURACO *de velta*, in *Zoology*, the name of a fiſh caught on the ſhores of the Braſils, and more uſually known among authors by its Braſilian name, GUAIBI-*coara*.

BURBARUS, in *Ichthyology*, a name given by Paul Jovius, and ſome other writers on fiſhes, to the common CARP. See CYPRINUS.

BURBER, an Egyptian piece of money. It is a thick piece of copper, about as broad as a ſixpence; twelve of theſe make a *medine* there.

BURBOT, the Engliſh name of the *muſtela fluviatilis*; a fiſh common in the Trent, and many other of our rivers, and called in other places the eel-pout; the *gadus lota* of Linnæus. See Phil. Tranſ. vol. lxiii. pt. ii. Nº 18.

BURCA, among the Turks, the name of the rich covering of the door of the houſe at Mecca; it is ten feet long, and five wide; and there are ſeveral figures and Arabic letters on it, very richly embroidered in gold, on a ground of red and green. This is carried about in their ſolemn proceſſions, and is often made to ſtop, that the people may touch it.

BURDA, in ſome *Middle Age Writers*, denotes a garment made of ruſhes.

BURDACK, an Ægyptian veſſel, which ſheep uſually drink out of at Cairo. They are made of a peculiar ſort of earth, which is ſuppoſed to cool the water, and are always ſet out to the north, to keep the cooler, and covered with a ſtrainer, to prevent any thing falling into the water; they are of ſo porous a ſtructure, that the water put into them will get through them in a few days.

BURDEN properly ſignifies a heavy weight or load.

Ringelberg recommends the bearing *burdens* as the beſt ſort of exerciſe; eſpecially to ſtrengthen men of ſtudy. To this end, he had a gown lined with plates of lead, which he could juſt lift with both his hands. This load he bore ſix or ſeven days together, either increaſing or diminiſhing it as he found occaſion; by which means he could both write and exerciſe at the ſame time.

BURDEN alſo denotes a fixed quantity of certain commodities. A *burden* of gad-ſteel is two ſcore, or 120 pounds.

BURDEN *of a ſhip*, is its content, or the number of tons it will carry.

The uſual rule whereby a ſhip's *burden* is eſtimated, is, that it will commodiouſly bear a weight equal to that of half the water which would fill its capacity. But this rule is not demonſtrative, and ſome depart from it as unexact, allowing only two fifths, or even one third of the water, for the ſhip's *burden*.

To determine the *burden* of a ſhip, multiply the length of the keel, taken within board, by the breadth of the ſhip, within board, taken from the midſhip beam from plank to plank, and the product by the depth of the hold, taken from the plank below the keelſon, to the under part of the upper deck plank; and divide the laſt product by 94, and the quotient is the content of the tonnage required. See FREIGHT.

BURDEN, *ſhips of*, denote thoſe of a larger and heavier ſort, carrying 500 tons, or upwards.

BURDEN, or rather BURDON, in *Muſic*, denotes the drone or deepeſt ſound of an organ; being that produced by the thickeſt pipe.

The word is French, *bourdon*; formed, according to ſome, from the law Saxon *burden*, *crepitum emittere*, *to break wind backwards*. Others will have *bourdon* originally to ſignify *buz*, or *hum*, as that of bees; anſwering to the Latin *bombus*; and formed by *onomatopæia*.

The modern *bourdon* anſwers to the note which the Greeks called προσλαμϐανομενος.

BURDEN alſo denotes the pipe, or ſtring itſelf, by which ſuch ſound is given.

Matth. Paris will have the name *burden* to have been originally given this pipe, on account of its reſemblance to a pilgrim's ſtaff, anciently called alſo *burdo*.

BURDO, in *Phyſiology*, a mongrel beaſt of burden, produced by a horſe and ſhe-aſs, by which it is diſtinguiſhed from the MULE, which is that produced of a male aſs by a mare.

The liver and teſticles of the *burdo* are greatly commended by Aldrovand, and ſome other authors, as medicines, but now never uſed.

BURDO, or BURDON, in *Middle Age Writers*, denotes a pilgrim's long ſtaff, as doing the office on that occaſion of a MULE, or other vehicle.

BURDOCK, *Arctium*, in *Botany*, a genus of the *ſyngeneſia polygamia æqualis* claſs of plants. Its characters are theſe: the flower is compoſed of many florets, which are tubulous and uniform, and cut into five narrow ſegments at the top. The germen is ſituated at the bottom of the tube, which afterward becomes a ſingle pyramidal angular ſeed, crowned with down. There are three ſpecies; the two firſt of which are common weeds, growing on the ſides of roads and foot-paths in moſt parts of England; ſo are not admitted into gardens. The firſt is ordered for medicinal uſe by the college of phyſicians.

As theſe plants are ſeldom cultivated, it is needleſs to give any inſtructions for that purpoſe: but where they are troubleſome weeds, it may not be amiſs to mention that their roots laſt but two years; they may therefore be deſtroyed with much leſs trouble than ſuch as have abiding roots; for the plants which come up from ſeed do not flower until the ſecond year, and when their ſeeds are perfected their roots decay.

The root of the common *burdock* is a very powerful diuretic and diaphoretic. It is given with great ſucceſs, in decoction, in obſtructions of the ſpleen, and in dropſies. It is alſo recommended by ſome in all diſeaſes of the breaſt and lungs, in aſthmas, in the ſtone, and in the ſciatica. The ſeed of it is eſteemed by many to be one of the greateſt lithontriptics known; and, by the inſtances that have been produced of its doing ſervice in nephritic complaints, it ſeems to merit a fair trial. The freſh leaves are by ſome recommended as a dreſſing for old ulcers, and for burns and luxations. They are alſo applied by the good women to the ſoles of the feet, as a remedy in hyſteric complaints.

The ſection of a *burdock* root, viewed with a microſcope, has the appearance repreſented in *Tab. of Microſcopical Objects*, *Claſs* 2.

BURDOCK, *leſſer*, *Xanthium*, in *Botany*, a genus of the *monoecia pentandria* claſs. Its characters are theſe: it hath male and female flowers on the ſame plant. The male flowers have a common ſcaly empalement; they are compoſed of ſeveral tubulous, funnel-ſhaped florets, which are equal, and diſpoſed in a hemiſphere, cut into five ſegments at the top, and have each five very ſmall ſtamina, terminated by erect parallel ſummits. The female flowers are ſituated under the male by pairs; they have no petals or ſtamina, but are ſucceeded by oblong oval prickly fruit, having two cells, each including one oblong ſeed, convex on one ſide, and plain on the other. There are four ſpecies.

The roots of this plant are of a bitter and acrid taſte, and are recommended as of great ſervice in ſcrophulous caſes, taken in decoction. Matthiolus gives great praiſe to the roots dried and powdered, and given in mixture with rhubarb for the leproſy: but they are now rarely uſed

BURDONARII, an appellation ſometimes given to pilgrims, or thoſe who went out of devotion to the holy land.

The word is formed from BURDO, an appellation given to the ſtaff wherewith they travelled.

BURDUNCULUS, in *Botany*, a name given by ſome to the plant known among moſt of the botanical writers by the name of *bugloſſum echioides capitulis cardui benedicti*.

BURFORD *ſaddle*. See SADDLE.

BURGAGE, a tenure proper to boroughs and towns, whereby the inhabitants hold their lands and tenements of the king, or other lord, at a certain yearly rate. See BOROUGH *Engliſh*.

BURGAGE is ſometimes uſed to denote the rent, or quitrent paid to the chief lord for the houſes and tenements in a town or borough.

BURGAGE alſo obtains in the laws of Normandy; ſome imagine, that it had its firſt riſe here, and was brought into England by William the Conqueror; others are of opinion, that Rollo, when driven out of England, carried it thence into Normandy.

BURGAGE, *free*, *Burgagium liberum*, denotes a tenure, whereby the tenants, after having paid their rent to the ſuperior lord, were exempted from the ſervice.

BURGAU, in *Natural Hiſtory*, the name of a large ſpecies of ſea-ſnail, of the lunar or round-mouthed kind. It is very beautifully lined with a coat, of the nature of the mother of pearl; and the artificers take this out, to uſe under the name of mother of pearl, though ſome call it after the name of the ſhell they take it from, *burgaudine*.

BURGAUDINE, the name given by the French artificers to what we call mother of pearl. In their works, they do not uſe the common nacre-ſhell for this, but the lining of the American burgau. Hence ſome call the mother of pearl *burgaudine*, and others the *burgaudine* mother of pearl.

BURGEON, in *Gardening*, a knot or button put forth by the branch of a tree in the ſpring.

The word is formed from the French *bourgeon*, which ſignifies the ſame, formed from the Latin *burrio*, of *burra*. *Bourgeon* amounts to the ſame with what is otherwiſe called *eye*, *bud*, or *germ*.

Froſts are chiefly dangerous when the *burgeons* begin to appear.

The *burgeons* have the ſame ſkin, ſame pith, ſame ligneous body, and the ſame inſertions as the ſtalk; that is, all the parts are the ſame in both, only more contracted in the former.

BURGESS, an inhabitant of a borough, or walled town, or one who poſſeſſes a tenement therein.

In other countries, *burgeſs* and citizen are confounded together; but with us they are diſtinguiſhed. See BOROUGH.

The word is alſo applied to the magiſtrates of ſome towns; as the bailiff and *burgeſſes* of Leominſter.

Anciently, *burgeſſes* were held in great contempt; being reputed ſervile, baſe, and unfit for war; ſo that the gentry were not allowed to intermarry in their families, or fight with them; but, in lieu thereof, were to appoint champions. A *burgeſs's* ſon was reputed of age, when he could diſtinctly count money, meaſure cloth, &c. Spelm. Gloſſ. Glanvil. lib. vii. cap. 9.

BURGESS, *king's*, *Burgenſis regis*, was he who, though reſiding in another's juriſdiction, was exempt therefrom, and only ſubject to the juriſdiction of the king, unleſs the lord alſo enjoyed royal juriſdiction.

In ſtatute 5 Rich II. c. 4. where the ſeveral claſſes of perſons in the commonwealth are enumerated, we meet with count, baron, banneret, *chivaleer de countee*, *citizein de citie*, and *burgeſs de bourg*.

BURGESS is now ordinarily uſed for the repreſentative of a borough-town in parliament.

Burgeſſes are ſuppoſed to repreſent the mercantile part or trading intereſt of the nation. They were formerly allowed, by a rate eſtabliſhed in the reign of Edward III. two ſhillings a day as wages. It is much to be regretted, that the members for boroughs bear above a quadruple proportion to thoſe for counties. The right of election of *burgeſſes* depends on ſeveral local charters and cuſtoms: though, by 2 Geo. II. c. 24. the right for the future ſhall be allowed according to the laſt determination of the houſe of commons concerning it: and by 3 Geo. III. c. 15. no freeman, except ſuch as claim by birth, ſervitude, or marriage, ſhall be intitled to vote, unleſs he hath been admitted to his freedom twelve months before. No perſon is eligible as a *burgeſs*, who hath not a clear eſtate of 300*l*. a year. Stat. 9 Ann. c. 7. See PARLIAMENT.

BURGGRAVE, properly denotes the hereditary governor of a caſtle, or fortified town, chiefly in Germany.

The word is compounded of *bourg*, *town*, and *graf*, or *grave*, *count*.

The *burggraves* were originally the ſame with what we otherwiſe call *caſtellans*, or *comites caſtellani*; but their dignity was conſiderably advanced under Rudolph of Hapſburgh; before his time they were ranked only as counts, and below the princes, but under him began to be eſteemed on a footing with princes.

In ſome parts, the dignity is much degenerated, eſpecially in the Palatinate. There were formerly, according to Leti, fifteen families who enjoyed the title of *burggraves*, thirteen of which are now extinct. But this is differently repreſented by others.

In Bohemia, the title *burggrave* is given to the chief officer, or to him that commands in quality of viceroy.

In Pruſſia, the *burggrave* is one of the four chief officers of the province.

In Guelderland, the *burggrave* of Nimeguen is preſident of the ſtates of the province.

BURGH, the ſame with BOROUGH.

BURGH-*bote*, is chiefly uſed for an aid or contribution levied for the repairing of a town or caſtle.

By the law of king Athelſtan, the caſtles and walls of towns were to be repaired, and *burgh-bote* levied every year, within a fortnight after Rogation days. No perſon whatever was exempt from this ſervice; the king himſelf could not releaſe a man from *burgh-bote*: yet, in after-times, exemptions appear to have been frequently granted; inſomuch that, according to Cowel, the word *burgh-bote* came to be chiefly uſed to denote, not the ſervice, but the liberty or exemption from it.

BURGH-*breche*, or *brech*, a fine impoſed on the community of a town, or *burgh*, for the breach of peace among them.

BURGH-*mails*, were yearly payments to the crown of Scotland, introduced by Malcolm III. and reſembling the FEE-*farm* rents of *burghs* in England. See MAIL.

BURGH-*maſter*, an officer in the TIN mines, who directs and lays out the meers for the workmen, &c. otherwiſe denominated *bailiff* and BAR-MASTER.

BURGHERMASTERS, BOURGERMESTERS, or BURGMESTERS, chief magiſtrates in the cities of Germany, Holland, and Flanders; to whom belong the giving of orders for the government, adminiſtration of juſtice, policy, and finances of the place: though the authority and office is not every where alike; each city having its particular laws and ſtatutes.

The word is formed from the two Flemiſh words, *borger*, *burgeſs*, or *citizen*; and *meſter*, *maſter*. Some expreſs it in Latin by *conſul*, others by *ſenator*.—M. Bruneau obſerves, that *burghermaſter*, in Holland, anſwers to what is called *alderman* and *ſheriff* in England; *attorney* at Compeigne, *capitoul* at Tholouſe, *conſul* at Languedoc, &c.

BURGLARY, an unlawful entering into another man's dwelling, wherein ſome perſon is, or into a church in the night-time; in order to commit ſome felony, or to kill ſome perſon, or to ſteal ſomething thence, or do ſome other felonious act: whether the ſame be executed, or not. The like offence, by day, we call *houſe-breaking*, &c.

It is felony at common law; but within benefit of clergy: however, this is taken away from the principals by 18 Eliz. c. 7. and from all acceſſories before the fact, by 3 and 4 W. and M. c. 9.

BURGMOTE, a borough-court; or court held for a town or borough. See COURT, and MOTE.

The word is alſo written *burgemotus*, *burgimotus*, *burgmotus*, and *burgemote*, from *burgh*, *oppidum*, and *mote*, or *gemote*, *conventus*.

The *burgmote*, by the laws of king Edgar, was to be held thrice in the year. By thoſe of Henry I. twelve times.

BURGOMASTER *of Greenland*, in *Zoology*, a whimſical name given by the Dutch ſailors to a ſpecies of *larus* or ſea-gull, common on that and many other coaſts. It is known among authors by the name of MARTINAZZO.

BURGOO, or BURGOUT, a ſea-faring diſh, made of whole oatmeal, or greets, boiled in water, till they burſt; then mixed with butter. It is made in Scotland and in Wales, by mixing oatmeal and water, and boiling it into a moderate conſiſtence. It is a cheap and ſtrengthening diet.

Burgoo, otherwiſe called *loblolly*, is held by Cockburn very proper to correct that thickneſs of humours and coſtiveneſs to which the other diet of ſailors much diſpoſes them. Yet the *burgoo* victualling is the leaſt liked of all their proviſions, becauſe of the ſcanty allowance of butter to it. The ſame author thinks it might be worth the conſideration of thoſe to whom the care of the ſeamen is committed, to contrive to render this food more agreeable to them.

BURGWARD, *Burgwardus*, or *Burgwardium*, in *Middle Age Writers*, the ſame with BULWARK.

The name is alſo extended to the town, and even the country about ſuch a fortreſs. It is formed from the Teutonic *burg*, *town*, and *ward*, *cuſtody*, *keeping*.

BURIAL, the act of interring a dead body, and depoſiting it in the ground.

Burial and baptiſm are parochial rights, and belong not to chapels of eaſe, unleſs by uſurpation.

Weſtminſter abbey is the *burial*-place of moſt of our Engliſh kings.

The deſire of *burial* has been ſtrong in moſt ages, and the denial of it reputed the laſt and ſevereſt of puniſhments: yet the Cynics appear to have deſpiſed it; and Pliny ranks the concern for it in the number of weakneſſes peculiar to man. Pott. Anh. Græc. tom. ii. lib. iv. cap. 1. Plin. Hiſt. Nat. lib. vii. Cic. Tuſc. Quæſt.

Burial is an office or a debt of humanity. Some found this obligation on the law of nature, others on the law of nations, and others on the divine law. It is certain it is warranted by them all. One of the ſeven corporal works of mercy, recited by ancient divines, is *burying* the dead. The primitive chriſtians ventured on it at the hazard of their lives: they never ſcrupled it either in times of perſecution, or of the plague, when the greateſt dangers attended it. They were always tenacious of the plain way of *burying* by inhumation, and could never be brought to uſe any other; reckoning it a great piece of barbarity in their perſecutors whenever they denied them this decent interment after death, as they ſometimes did, either by expoſing their bodies to the fury of wild beaſts and birds of prey, or burning them in ſcorn and deriſion of their doctrine of a future reſurrection. They ſeem to have had a particular averſion to burning; their method was to put the body whole in the ground, or, if there was occaſion for any other way of *burying*, they embalmed the body, and laid it in a CATACOMB.

The heathens believed, that the ſouls of thoſe who lay unburied, remained in a wandering ſtate during the ſpace of an hundred years.

The invention of *burial* among the Greeks is aſcribed to Pluto, who, on this account, was deified, and made to preſide over the world of ſhades. The Rabbins pretend, that the firſt hint was taken from birds: Adam and Eve, ſay they, being utterly at a loſs what to do with the body of Abel killed by his brother, were relieved under this perplexity, by obſerving a crow to throw earth and leaves over the body of one of his dead companions. This was enough for the patriarch: he went preſently and did the ſame to his ſon. The Egyptians carried their dead for *burial* over a certain lake; for the paſſage of which, one Charon, a farmer under one of the Pharaohs, procured a toll to be impoſed, by which he was ſpeedily enriched. Whence the whole tradition of the ferryman of hell. Cicero refers the origin of the vulgar opinion concerning hell to the ancient manner of *burying* the dead by interment: for from hence the earth was conſidered as the laſt habitation of mankind, who were here ſuppoſed to lead a new life under ground. Diod. Sic. lib. v. cap. 15. Fab. Cod. Pſeud. Vet. Teſt. tom. i. § 38. Hiſt. Acad. Inſcrip. tom. ii. p. x. p. 38.

Among the Greeks, drowning was no *burial*; for which reaſon, it was a cuſtom to faſten to ſome part of their bodies a reward for him that ſhould take them up, and *bury* them in caſe they were caſt aſhore. Among us, however, thoſe who die at ſea are uſually *buried* there, unleſs they be near land: the ceremony is ſhort; the corpſe being ſewed up in its hammock, or quilt, is thrown over from the ſtarboard, under the diſcharge of a gun. It is a great diſgrace to be thrown over the larboard.

The Arwaces, a people of Guiana, pulveriſe the bones of their great men, and drink them in their liquor.

Some nations among the Braſilians are ſaid to eat their dead, not out of hunger, much leſs deſpight, but affection and reverence.

At the ſame time that the Romans uſed to burn the bodies of their dead, the cuſtom was, to avoid expence, to throw thoſe of the ſlaves to rot in holes dug perpendicularly, called *puticuli*. Phil. Tranſ. N° 265.

They who thought human bodies were compounded of earth, inclined to have them committed to the earth: Heraclitus and his followers, imagining fire the firſt principle of all things, preferred burning.

The ancients *buried* by day, as deeming the night of ill omen, on account of the evil ſpirits then abroad: only perſons who died in the flower of their days, were *buried* in the morning before ſun-riſe.

Among the Romans, we find two kinds of *burial*, mentioned in the Theodoſian code; one, the *burying* of whole bodies in coffins under ground; the other, *burying* the bones and aſhes in urns above ground. Both appear to have been uſed at the ſame time; though interring appears to be the older practice.

Mr. Monro takes the catacombs about Rome to have been the *burial*-place of the ancient Romans, before burning came into faſhion; and which, on the new mode's taking place, fell into diſuſe, till they were revived by the primitive Chriſtians. See CATACOMB, and Phil. Tranſ. N° 265.

The Romans in Britain *buried* their warriors near the *via ſtrata*, or military way, to put their bodies out of danger of inſult; and, to prevent the ſcattering of their aſhes in haſte, the whole army caſt on them graſſy turfs; which is the origin of many of the *tumuli* ſtill found among us. As it was the greateſt diſhonour to lie unburied, it was moſt glorious to be covered with a large *tumulus*: which might be one reaſon of the Romans *burying* their generals near public ways, that paſſengers might be continually adding to the heap, which it was judged a work of piety to do.

The ancient Saxons laid the bodies of thoſe that were ſlain in the field on the ſurface of the ground, and covered them with clods of earth; which were raiſed in proportion to their dignity. See BARROW.

Though burning was the ordinary uſage among the Romans, yet ſome ſtill retained the ancient one of *burying*. The family of the Cornelii conſtantly interred their dead till the time of Sylla the dictator, who, in his will, gave particular order to have his body burnt, probably to avoid the indignities which might have been offered it after *burial*, by the Marian faction, in return for the violence ſhewn by Sylla's ſoldiers to the tomb and relics of Marius.

Burial was denied by the ancients to traitors, proſcribed perſons, ſuicides, and even frequently to enemies killed in war; though this was reputed by the more moral and civilized nations, a violation of the laws of nature. Among the Greeks, ſpendthrifts and inſolvent debtors were alſo refuſed the rights of *burial*. By the laws of the church, this penalty has been carried further, to perſons unbaptized and excommunicated, to thoſe who could not ſay their creed and pater-noſter, to ſtrikers of eccleſiaſtics, and to thoſe who ſhould omit communicating at Eaſter. But the prohibition of *burial* is now reſtricted to perſons excommunicate, unbaptized, and that have laid violent hands on themſelves, ideots, lunatics, and, in ſome perſons excepted, to heretics, to perſons killed in duels, tilts or tournaments. Potter. Arch. Græc. lib. iv. cap. 1. Grot. de Jure Belli, lib. ii. cap. 19. § 2, 3. Seld. de Leg. Nat. lib. vi. cap. 16. Johnſ. Eccl. Law. Ann. 960. § 22. Ann. 1138. § 10. Ann. 1378. § 4.

Among the ancient Egyptians, kings themſelves were to undergo a trial after their death; and, if their behaviour had been ill, were refuſed the privilege of Charon's boat, that is, to be carried to *burial*.

The Danes and northern nations, in their ſecond age, *buried* their dead under earthen hillocks. Sometimes huge pyramids of ſtone were raiſed over their bodies, many of which are ſtill remaining in divers parts of England.

In Japan, Peru, Pegu, Mexico, Tartary, Siam, and the Great Mogul's dominions, they burn their dead. For the great ones, the fires are made with aromatic woods, gums, balſams, and oils. The like method obtained among the Jews as early as Saul's time, whoſe body was burnt at Jabeſh, and his bones afterwards *buried*. Aſa was burnt in the bed which he had made for himſelf, filled with ſweet odours, and divers kinds of ſpices.

The ancients buried out of cities and towns; an uſage which we find equally among Jews, Greeks, and Romans. Among the laſt, *burying* within the walls was expreſsly prohibited by a law of the Twelve Tables: *Hominem mortuum in urbe ne ſepelito, neve urito.* The uſual places of interment were in the ſuburbs and fields, but eſpecially by the way-ſides: partly, ſays Kennet, to put paſſengers in mind of their mortality, and partly alſo to ſave the beſt of their land.

Two reaſons are alleged, why the ancients buried out of cities; the firſt, an opinion, that the touch, ſight, or even neighbourhood of a corpſe, defiled a man, eſpecially a prieſt: whence the rule in A. Gellius, that the *flamen dialis* might not, on any account, enter a place where there was a grave: the ſecond, to prevent the air from being corrupted by the ſtench of putrefied bodies, and the buildings from being endangered by the frequency of funeral fires. We have inſtances, however, of perſons *buried* in the city; but it was a favour only allowed to a few of ſingular merit to the commonwealth. Plutarch ſays, thoſe who had triumphed were indulged in it. Be this as it will, Val. Publicola, and C. Fabricius, are ſaid to have had tombs in the Forum; and Cicero adds Tubertus to the number.

Lycurgus allowed his Lacedæmonians to *bury* their dead within the city, and around their temples, that the youth being inured to ſuch ſpectacles, might be the leſs terrified with the apprehenſion of death.

Burying in churches was allowed for the firſt three hundred years after Chriſt; but it was ſeverely prohibited by the Chriſtian emperors for many ages after. The firſt ſtep towards it appears to have been the practice of erecting churches over the graves of ſome martyrs in the country, and tranſlating the relics of others into churches in the city: the next was, allowing kings and emperors to be *buried* in the atrium or church-porch. The reaſon alleged by Gregory the Great for *burying* in churches, or in places adjoining to them, was, that their relations and friends, remembering thoſe whoſe ſepulchres they beheld, might hereby be led to offer up prayers for them. And this reaſon was afterwards transferred into the body of the canon law. To this ſuperſtition, and the profit ariſing from it, we may aſcribe the original of church-yards. In the eighth century, the people began to be admitted into the church-yards, and ſome princes, founders, and biſhops, into the church. The practice firſt introduced into the Romiſh church by Gregory the Great, was brought over into England by Cuthbert archbiſhop of Canterbury, about the year 750: and the practice of erecting vaults in chancels, and under the altars, was begun by Lanfranc archbiſhop of Canterbury, when he had rebuilt the church in this city, about the year 1075. From that time, the matter ſeems to have been left to the diſcretion of the biſhop. By our common law, no perſon can be *buried* within the church, without conſent of the incumbent, excluſively of the biſhop; becauſe the freehold of the church belongs to him, and he is deemed the beſt judge, who are entitled to the favour of being *buried* in the church.

Burying in any ſhroud, &c. that is not made of ſheep's wool only, is by the Engliſh law, 30 Car. II. ſtat. 1. c. 3. ſubject to a penalty of 5 *l.* and an affidavit ſhall be made to this purpoſe, either to a magiſtrate, or the officiating miniſter. See CEMETERY, FUNERAL, &c.

Burying alive, was the puniſhment of a VESTAL who had violated her vow of virginity. The unhappy prieſteſs was let down into a deep pit, with bread, water, milk, oil, a lamp burning, and a bed to lie on: but this proviſion was but ſhow, for the moment ſhe was at the bottom, they began to caſt in the earth upon her, till the pit was filled up. Mem. Acad. Inſcr. tom. iii. p. 278.

Lord Bacon gives inſtances of the reſurrection of perſons who had been accidentally *buried* alive.

BURIAL, *Chriſtian*, is often uſed to denote that which is performed in holy ground, and with the uſual ſervice or ceremonies of the church.

BURIAL is alſo uſed to denote the dues paid for interment, eſpecially to the miniſter.

The *burial*-fee paid to the prieſt on opening the grave, was called by our Saxon anceſtors *ſoul-ſcot*. Phil. Tranſ. Nº 189.

BURIAL *of an aſs*, *Aſini ſepultura*, an ignominious kind of *burial* out of holy ground, under the gallows, or in a highway, where ſeveral roads meet, and performed by public hangmen, or the like. Such is that of ſuicides, excommunicated perſons, &c. ſometimes denominated CANINE *burial*, or *burial* of a dog.

In the middle age we alſo find mention of a peculiar kind of *burial*, called IMBLOCATION, practiſed on the bodies of perſons excommunicated. Du-Cange.

BURIAL *of the crucifix*, *Sepultura crucifixi*, denoted a repreſentation of the *burial* of Chriſt, anciently performed annually in churches on the day of the Paraſceue. Du-Cange.

BURIALS, in computations of mortality, denote deaths, and ſtand oppoſed to births.

In this ſenſe, we have eſtimates of the *burials* in Brandenburg, in Francfort, Breſlaw, &c. Phil. Tranſ. Nº 261. 229. and 176.

By a ſtatute under king Charles II. a regiſter is to be kept in every pariſh, of all perſons *buried* within the ſame, or at the common *burial*-places thereof. Stat. 30 Car. II. c. 3. See MORTALITY.

BURIAL is alſo uſed for the incloſing of vegetable or mineral bodies in the ground, for divers purpoſes. Lord Bacon gives divers experiments of *burying* fruits, &c. for preſervation and condenſation, and to give nouriſhment to their reſpective trees. Works. tom. iii. p. 80.

Some commend *burials* in the earth, others in wheat, to ſeaſon TIMBER when firſt felled, and make it of more durable uſe. Chemiſts ſometimes *bury* their cements. The Chineſe are ſaid to *bury* their porcelain, to give it the greater beauty.

BURIS, a name given by Avicenna, and ſome other old authors, to a ſchirrhous hernia, cauſed by a hard abſceſs.

BURLAW, or BYRLAW, *Burlawa*, in *Middle Age Writers*, denotes country laws, or the laws concerning country affairs. Du-Cange.

BURLESQUE, a jocoſe kind of poetry, chiefly uſed in the way of drollery, either to excite laughter merely, or to provoke deriſion and ridicule.

F. Vavaſſor maintains, in his book *De Ludicra Dictione*, that *burleſque* was abſolutely unknown to the ancients; againſt the opinion of ſome others, that one Raintovius, in the time of Ptolemy Lagus, turned the ſerious ſubjects of tragedy into ridicule; which, perhaps, is a better plea for the antiquity of farce, than of *burleſque*.

The Italians ſeem to have the juſteſt claim to the invention of *burleſque*. The firſt author in this kind was Bernia; he was followed by Lalli, Caporalli, &c. From Italy it paſſed into France, and became there ſo much the mode, that in 1649 appeared a book under the title of "The Paſſion of our Saviour in Burleſque Verſe." Thence it came into England; but the good ſenſe of the Engliſh never adopted, or owned it, notwithſtanding one or two have excelled in it.

BURLING *of cloth*. See CLOTH.

BURMANNIA, in *Botany*, a genus of the *hexandria monogynia* claſs of plants. The flower is ſmall, and conſiſts of three minute, ovated, oblong petals, ſituated at the mouth of the cup: the fruit is an involuted capſule, of a cylindraceo-trigonal figure, formed of three valves, with three cells, containing many ſmall ſeeds.

BURN, in a medicinal ſenſe, denotes a ſolution of the continuity of a part of the body, by the force of fire.

Of *burns*, phyſicians uſually make ſeveral degrees: the firſt, when there are only a few puſtules raiſed on the ſkin, with a redneſs, and a ſeparation of the *epidermis* from the genuine ſkin. The ſecond, when the ſkin is burnt, dried, and ſhrunk, but without any cruſt, or ſcab. The third is, when the fleſh, veins, nerves, &c. are ſhrunk, and form a ſcab.

Luſitanus recommends an unguent, made of the aſhes of laurel leaves burnt, with hog's fat dropped on them, for a *burn*; or, on occaſion, the *unguentum populeum*, with vine leaves laid over it. Panarole obſerves, that clay laid on a *burn* abates the pain; and that the brewers in Holland uſe a decoction of ivy for the cure of *burns*.

Burns are likewiſe divided into dry and humid, from the cauſes that produce them.

BURNS, *dry*, are thoſe occaſioned by the application of a naked fire, or ignited body, as coals, flame, red-hot metals, gunpowder, lightning, and the like, which are attended with a corrugation or ſhrivelling of the part.

BURNS, *humid*, more uſually among us called *ſcalds*, are thoſe occaſioned by fluid ſubſtances, as hot water, oil, wax, or the like.

Dry *burns* are of a worſe kind than moiſt ones. Of the dry, the worſt and moſt penetrating of all is that of lightning; the next are thoſe cauſed by melted metals and gunpowder; the next, by fats and oily ſubſtances; the ſlighteſt of all *burns* is that by hot water.

As *burns* nearly reſemble inflammatory diſorders in their ſeveral degrees, ſo they alſo do in their method of cure. In the ſlighter degree of *burns*, the beſt method is to have recourſe to emollients and aſtringents. The beſt ſlight aſtringent is either common proof ſpirit, or rectified ſpirit of wine, or, when it is neceſſary, ſpirit of wine camphorated: theſe may be applied to the part with linen rags, as may alſo oxycrate, or the pickle of cabbages, or litharge vinegar; and theſe applications muſt be repeated as there is occaſion. Oil of turpentine has alſo very good effects, if applied in time, and repeated frequently. And the vulgar method of holding the injured part, when that is the hand or a finger, to the fire, as long and as near as can be borne, is often attended with ſucceſs; for the ſtagnating fluids are, by this degree of heat, driven back into their proper channels, and, by that means, the veſication, and other troubleſome ſymptoms, which naturally ſucceed, are often prevented. Another remedy, however, there is, very efficacious on the ſame occaſions, though founded on a contrary intention. This is by emollient remedies, which remove the tenſion of the fibres or veſſels, and reſtore the blood to its natural courſe before any bad ſymptoms come on, as the injured part may be fomented with water, made as warm as the patient can bear, till all the pain and heat entirely diſappear. Sydenham very highly, and with great reaſon, extols this method. It is eaſy, however, to add to the efficacy of it, by giving the virtues of a fomentation to the water before it is uſed, by boiling in it marſhmallows, mallows, mullein, linſeed, fenugreek-ſeed, or quince-ſeed. Cataplaſms made of the ſame ingredients, are alſo of great ſervice, as are alſo the emollient oils of linſeed, and the like. Whatever remedies are uſed in this caſe, ſhould be very frequently repeated; and when it is the face that is *burnt*, they ſhould be ſpread on a linen maſk, to be kept conſtantly moiſt by the application of the ſame remedy.

When the *burn* is ſomething greater than this, and attended with veſication, or puſtules, the puſtules are by no means to be opened, which always brings on great pain; ſome of the remedies before mentioned will always prove of more ſervice, applied while the bliſters are whole; and, by the uſe of them, the heat and pain will quickly go off, and the cuticle will ſeparate from the cutis, without either deformity or pain. But if theſe remedies do not abate the pain, the part is to be dreſſed with linſeed oil, or the litharge ointment, or the *unguentum diopompholigos*, or ſomething of a like kind. Theſe are to be applied either by rubbing them frequently on the parts, or ſpreading them on a linen rag, and applying that, and often renewing it. After theſe, a plaſter of the *emplaſtrum de minio*, or any of a like kind, will keep the ſkin ſmooth, and forward the renovation of the cuticle. If the *burn* or ſcald, whichever it be, be very conſiderable in extent, and great part of the body be burnt, it is neceſſary to bleed plentifully, even till the patient faints, and to give a briſk purge. This method will often prevent ill conſequences, that too frequently elſe attend large *burns*; ſuch as foul ulcers, large cicatrices, and ſometimes even gangrenes. When infants are the ſubjects of theſe accidents, bleeding being not ſo convenient, the revulſion is to be made by repeated purges; and, in grown perſons, a regularity of diet is above all things to be obſerved.

In the yet greater degree of *burns*, where the burnt part is covered by a cruſt or eſchar, the cure cannot be performed without ſuppuration. When this accident happens to the face, great caution is neceſſary, to avoid making a deformed cicatrix: for this reaſon, all ointments and plaſters whatever are to be forbidden, even though they are the moſt valuable ſecrets, as there are in almoſt all families many ſuch; for the miſchief of theſe remedies is, that they all dry up the wound too faſt, and contract the fibres and the ſkin, and by ſuch means leave an uneven cicatrix. The forwarding the caſting off the eſchar, is by all means to be attempted, and the diſcharge of the matter that is contained under it. The eaſieſt and moſt ſucceſsful method of doing this, is by the repeated application of emollients. Three or four times every day the dreſſings are to be changed; and if, at any of theſe times, any part of the eſchar is found to be looſe, it muſt be raiſed with the *forceps*, and removed, if that conveniently may be; at the ſame time, the reſt of the eſchar muſt be anointed with butter, and warm fomentations, made of emollient herbs, &c. applied. Two, three, or four days employed in this manner, generally afford a ſeparation of all the cruſt or eſchar; and the next intention is then to heal the wound. It is firſt therefore to be thoroughly cleanſed, by means of ſome mild digeſtive mixed with honey of roſes, and afterwards healed up with any of the lead or litharge ointments. If the eſchar in theſe caſes ſhould not ſeparate in a proper time, it will be neceſſary to make a deep inciſion through the middle of it, to let out the included ſanies. *Burns* of the moſt extreme and worſt kind, where the burn has penetrated ſo deep as to deſtroy all the parts quite down to the bone, can have no relief from medicines; nor is there any thing in the ſurgeon's power, but amputating the limb. Heiſter.

Burns, however, are not only diſeaſes, but in ſome caſes remedies: M. Homberg obſerves, that in the iſle of Java the natives cure themſelves of a colic, otherwiſe mortal, by burning the ſoles of their feet; and cure themſelves of a *panaris*, by dipping their finger in boiling water ſeveral times. In the country of the Mogul, the colic is cured by an iron ring applied red-hot about the patient's navel.

Travellers relate many other caſes of other diſeaſes cured by *burning*; and we ſee the effects of it ourſelves, in horſes, hounds, birds of prey, &c.

A kind of downy matter, called *moxa*, brought from the Indies, has been likewiſe uſed for the gout; applied, by *burning* it on the part affected. Many of the Japaneſe are covered with ſcars, ariſing from the uſe of the MOXA. And among theſe people, the whole art of phyſic conſiſts in the choice of proper places to be *burnt*; which are varied according to the nature of the diſeaſe. *Burning* has been particularly recommended in the gout, as a ſevere but adequate cure of that ſtubborn diſeaſe.

M. Homberg gives us inſtances of two women cured, the one of a violent diſeaſe in the head and eyes, and the other of a diſeaſe in the legs and thighs, by the accidental *burning* of thoſe parts. He adds, that *burning* may cure in three ways; either by putting the peccant humours into a greater motion, and making them take new routes; or by diſſolving and breaking their viſcidity; or by deſtroying the canals which brought them in too great quantities.

Burning pyramidal pieces of tow or cotton on the joints, is an ancient practice revived in Europe, chiefly by Fab. ab Aquapendente, and Severinus, againſt pains of the joints ariſing from cold and viſcous humours impacted in them. The operation is alſo ſpoke of by Hippocrates and Celſus; the former of whom recommends the uſe of raw flax. Severinus calls it the Arabian *burning*, becauſe moſt frequently uſed among that people, though common enough alſo among the Egyptians. Hippocr. App. ult. lib. vi. & de Affat. Text. 30. and 32. Celſ. lib. iv. cap. 22. Alpin. de Med. Egypt. lib. iii.

BURN, *heart*. See HEART.

BURNET, **BURNETA**, or **BURNETUS**, in *Middle Age Writers*, denotes brown cloth made of dyed wool.

In which ſenſe, the word ſtands contradiſtinguiſhed from *brunus*, which was applied to the wool undyed.

BURNET, in *Botany*. See POTERIUM, and SANGUISOREA.

BURNET *ſaxifrage*. See *Burnet* SAXIFRAGE.

BURNING, the action of fire on ſome pabulum, or fewel, whereby the minute parts thereof are torn from each other, and put into a violent motion; and ſome of them aſſuming the nature of fire themſelves, fly off *in orbem*, while the reſt are diſſipated in form of vapour, or reduced to aſhes.

The appearances of *burning* ariſe ſucceſſively, and in a certain order: a heat muſt precede greater than what ſuffices to boil oil; the lighteſt and moſt volatile parts of the body burn the firſt; the heavier are ſlower in taking fire, but burn the longeſt.

Burning is a ſeparation of the parts of bodies made by means of fire. Some conſider it as a ſpecies of ſolution, and ſuppoſe it effected by a diſſolvent power inherent in fire, which acts as a menſtruum in reſpect of the ſulphureous parts of bodies.

Dr. Hooke, conſidering the neceſſity of air to *burning*, and that heat, however great, does not alone ſuffice to burn a body, does indeed take *burning* for a ſolution of the ſulphureous parts of bodies; but ſuppoſes the menſtruum, by which it is done, to be the air, or at leaſt ſome ſubtile, ſaline, nitrous ſubſtance diffuſed in the air. See AIR, CALCINATION, CALX, FIRE, and PHLOGISTON.

BURNING is alſo applied to the action of divers things which are cold to the touch, or do not contain fire.

In this ſenſe, *aqua fortis* is ſaid to *burn* cloth. There are certain fogs which *burn* or ſcorch the corn. Virgil obſerves, that ſevere cold itſelf wlll *burn*, that is, have much the ſame effects on the parts of the body, as fire itſelf in cauſing gangrenes.

BURNING, *extraordinary caſes of*.—We have inſtances of perſons *burnt* by fire kindled with their own bodies. A woman at Paris, who uſed to drink brandy in exceſs, was one night reduced to aſhes by a fire from within, all but her head and the ends of her fingers. Novum Lumen Phoſphor. accenſ. Amſt. 1717.

Signora Corn. Zangari, or, as others call her, Corn. Bandi, an aged lady, of unblemiſhed life, near Ceſena in Romagna, underwent the ſame fate in March, 1731. She had retired in the evening into her chamber ſomewhat indiſpoſed, and in the morning was found in the middle of the room, reduced to aſhes, all except her face, ſkull, three fingers, and legs, which remained entire with the ſhoes and ſtockings on. The aſhes were light, and, on preſſing between the fingers, vaniſhed, leaving a groſs ſtinking moiſture behind, with which the floor was ſmeared; the walls, and furniture of the room, being covered with a moiſt cineritious ſoot, which had not only ſtained the linen in the cheſts, but had penetrated into the cloſet, as well as into the room overhead, the walls of which were moiſtened with the ſame viſcous humour. Mem. de Trev. an. 1731. p. 1293.

Sig. Mondini, Bianchini, and Maffei, have written diſcourſes expreſs, to account for the cauſe of ſo extraordinary an event: common fire it could not be, ſince this would likewiſe have burnt the bed and the room; beſides that it would have required many hours, and a large quantity of fuel, to reduce a human body to aſhes; and, after all, a conſiderable part of the bones would have been left entire, as they were anciently found after the fierceſt funeral fires. Sign. Mondini attributes this effect to lightning. A philoſopher of Verona maintains, that ſuch a conflagration might have ariſen from the inflammable matters wherewith the human body naturally abounds. Sig. Bianchini accounts for it from an internal fire, occaſioned by ſpirit of wine camphorated, which the lady uſed by way of bath or lotion, when ſhe found herſelf out of order. Maffei's ſyſtem is a combination of the three laſt: he ſuppoſes it owing to lightning, but lightning generated in her own body; agreeable to his doctrine, which is, that lightning does not come from the clouds, but is always produced in the place where it is ſeen, and its effects perceived. The humours of her body, naturally inflammable enough, were become preternaturally ſo, by her putrid indiſpoſition; and theſe, by perſpiration, had enveloped her body with an atmoſphere of the ſame kind, replete likewiſe with mineral matters, whereby its activity was heightened. She had probably riſen in the night to uſe her lotion, and, by the friction of her hand, had helped to kindle the flame.

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For the manner of *burning* among the Greeks: the body was placed on the top of a pile, on which were alſo thrown divers animals, and even ſlaves and captives, beſides unguents and perfumes. In the funeral of Patroclus, we find a number of ſheep and oxen thrown in, then four horſes, followed by two dogs, and, laſtly, by twelve Trojan priſoners. Hom. Il. xxiii.

Euſtathius aſſigns two reaſons for the prevalency of *burning* in Greece; the firſt, that bodies being thought to be unclean after the ſoul's departure, were to be purified by fire: that the ſoul, or purer part, being ſeparated by the flames from the groſs inactive matter, might take its flight to the heavenly manſions with more freedom. This latter opinion obtained ſo much, that the Indian philoſophers had not patience to wait for *burning* till after death; they had recourſe to it in their life-time; erecting themſelves piles for the purpoſe, to looſen their ſouls from confinement. Calanus, who followed Alexander out of India, finding himſelf indiſpoſed, obtained that prince's leave to prevent the growth of his diſtemper, by committing himſelf to the flames; and Hercules, before his reception into heaven, was purified from the dregs of earth by the ſame means. Quintil. Declam. x. Potter. ubi ſupra.

Soldiers uſually had their arms burnt with them. The garments worn by the living, were alſo thrown on the pile, with other ornaments and preſents; a piece of extravagance, which the Athenians carried to ſo great a length, that ſome of their law-givers were forced to reſtrain them, by ſevere penalties, from defrauding the living by their liberality to the dead. Virgil. Æn. lib. vi. Potter lib. cit.

Pliny aſſures us, that *burning* was firſt brought into uſe among the Romans, on occaſion of the cruel uſage which the bodies of the dead Romans underwent in enemies countries. But this muſt only be underſtood in regard of the common uſage; ſince we find mention of *burning* as practiſed by ſome even in the earlieſt ages of Rome: Numa forbad his own body to be *burned*, commanding it to be laid entire in a ſtone coffin, which ſhews, that the practice of *burning* was not then unknown at Rome. Plin. Hiſt. Nat. lib. viii. cap. 54. Kenn. Rom. Ant. p. ii. lib. v. cap. 10.

In ſome caſes, *burning* was expreſsly forbid, and looked upon as the higheſt impiety. Thus infants, who died before the breeding of teeth, were intombed, unburnt, in the ground, in a particular place ſet apart for this uſe, called *ſuggrundarium*. The like was practiſed with regard to thoſe who had been ſtruck dead with lightning, who were never to be *burnt* again.

Some ſay, that *burning* was denied to ſuicides as a puniſhment.

The manner of *burning* among the Romans, was not unlike that of the Greeks: the corpſe being brought without cylindraceo-trigonal figure, formed of three valves, with three cells, containing many ſmall ſeeds.

BURN, in a medicinal ſenſe, denotes a ſolution of the continuity of a part of the body, by the force of fire.

Of *burns*, phyſicians uſually make ſeveral degrees: the firſt, when there are only a few puſtules raiſed on the ſkin, with a redneſs, and a ſeparation of the *epidermis* from the genuine ſkin. The ſecond, when the ſkin is burnt, dried, and ſhrunk, but without any cruſt, or ſcab. The third is, when the fleſh, veins, nerves, &c. are ſhrunk, and form a ſcab.

Luſitanus recommends an unguent, made of the aſhes of laurel leaves burnt, with hog's fat dropped on them, for a *burn*; or, on occaſion, the *unguentum populeum*, with vine leaves laid over it. Panarole obſerves, that clay laid on a *burn* abates the pain; and that the brewers in Holland uſe a decoction of ivy for the cure of *burns*.

Burns are likewiſe divided into dry and humid, from the cauſes that produce them.

Burns, *dry*, are thoſe occaſioned by the application of a naked fire, or ignited body, as coals, flame, red-hot metals, gunpowder, lightning, and the like, which are attended with a corrugation or ſhrivelling of the part.

Burns, *humid*, more uſually among us called *ſcalds*, are thoſe occaſioned by fluid ſubſtances, as hot water, oil, wax, or the like.

Dry *burns* are of a worſe kind than moiſt ones. Of the dry, the worſt and moſt penetrating of all is that of lightning; the next are thoſe cauſed by melted metals and gunpowder; the next, by fats and oily ſubſtances; the ſlighteſt of all *burns* is that by hot water.

As *burns* nearly reſemble inflammatory diſorders in their ſeveral degrees, ſo they alſo do in their method of cure.

In the ſlighter degree of *burns*, the beſt method is to have recourſe to emollients and aſtringents. The beſt ſlight aſtringent is either common proof ſpirit, or rectified ſpirit of wine, or, when it is neceſſary, ſpirit of wine camphorated: theſe may be applied to the part with linen rags, as may alſo oxycrate, or the pickle of cabbages, or litharge vinegar; and theſe applications muſt be repeated as there is occaſion. Oil of turpentine has alſo very good effects, if applied in time, and repeated frequently. And the vulgar method of holding the injured part, when that is the hand or a finger, to the fire, as long and as near as can be borne, is often attended with ſucceſs; for the ſtagnating fluids are, by this degree of heat, driven back into their proper channels, and, by that means, the veſication, and other troubleſome ſymptoms, which naturally ſucceed, are often prevented. Another remedy, however, there is, very efficacious on the ſame occaſions, though founded on a contrary intention. This is by emollient remedies, which remove the tenſion of the fibres or veſſels, and reſtore the blood to its natural courſe before any bad ſymptoms come on, as the injured part may be fomented with water, made as warm as the patient can bear, till all the pain and heat entirely diſappear. Sydenham very highly, and with great reaſon, extols this method. It is eaſy, however, to add to the efficacy of it, by giving the virtues of a fomentation to the water before it is uſed, by boiling in it marſhmallows, mallows, mullein, linſeed, fenugreek-ſeed, or quince-ſeed. Cataplaſms made of the ſame ingredients, are alſo of great ſervice, as are alſo the emollient oils of linſeed, and the like. Whatever remedies are uſed in this caſe, ſhould be very frequently repeated; and when it is the face that is *burnt*, they ſhould be ſpread on a linen maſk, to be kept conſtantly moiſt by the application of the ſame remedy.

When the *burn* is ſomething greater than this, and attended with veſication, or puſtules, the puſtules are by no means to be opened, which always brings on great pain; ſome of the remedies before mentioned will always prove of more ſervice, applied while the bliſters are whole; and, by the uſe of them, the heat and pain will quickly go off, and the cuticle will ſeparate from the cutis, without either deformity or pain. But if theſe remedies do not abate the pain, the part is to be dreſſed with linſeed oil, or the litharge ointment, or the *unguentum diopompholigos*, or ſomething of a like kind. Theſe are to be applied either by rubbing them frequently on the parts, or ſpreading them on a linen rag, and applying that, and often renewing it. After theſe, a plaſter of the *emplaſtrum de minio*, or any of a like kind, will keep the ſkin ſmooth, and forward the renovation of the cuticle. If the *burn* or ſcald, whichever it be, be very conſiderable in extent, and great part of the body be burnt, it is neceſſary to bleed plentifully, even till the patient faints, and to give a briſk purge. This method will often prevent ill conſequences, that too frequently elſe attend large *burns*; ſuch as foul ulcers, large cicatrices, and ſometimes even gangrenes. When infants are the ſubjects of theſe accidents, bleeding being not ſo convenient, the revulſion is to be made by repeated purges; and, in grown perſons, a regularity of diet is above all things to be obſerved.

In the yet greater degree of *burns*, where the burnt part is covered by a cruſt or eſchar, the cure cannot be performed without ſuppuration. When this accident happens to the face, great caution is neceſſary, to avoid making a deformed cicatrix: for this reaſon, all ointments and plaſters whatever are to be forbidden, even though they are the moſt valuable ſecrets, as there are in almoſt all families many ſuch; for the miſchief of theſe remedies is, that they all dry up the wound too faſt, and contract the fibres and the ſkin, and by ſuch means leave an uneven cicatrix. The forwarding the caſting off the eſchar, is by all means to be attempted, and the diſcharge of the matter that is contained under it. The eaſieſt and moſt ſucceſsful method of doing this, is by the repeated application of emollients. Three or four times every day the dreſſings are to be changed; and if, at any of theſe times, any part of the eſchar is found to be looſe, it muſt be raiſed with the *forceps*, and removed, if that conveniently may be; at the ſame time, the reſt of the eſchar muſt be anointed with butter, and warm fomentations, made of emollient herbs, &c. applied. Two, three, or four days employed in this manner, generally afford a ſeparation of all the cruſt or eſchar; and the next intention is then to heal the wound. It is firſt therefore to be thoroughly cleanſed, by means of ſome mild digeſtive mixed with honey of roſes, and afterwards healed up with any of the lead or litharge ointments. If the eſchar in theſe caſes ſhould not ſeparate in a proper time, it will be neceſſary to make a deep inciſion through the middle of it, to let out the included ſanies. *Burns* of the moſt extreme and worſt kind, where the burn has penetrated ſo deep as to deſtroy all the parts quite down to the bone, can have no relief from medicines; nor is there any thing in the ſurgeon's power, but amputating the limb. Heiſter.

Burns, however, are not only diſeaſes, but in ſome caſes remedies: M. Homberg obſerves, that in the iſle of Java the natives cure themſelves of a colic, otherwiſe mortal, by burning the ſoles of their feet; and cure themſelves of a *panaris*, by dipping their finger in boiling water ſeveral times. In the country of the Mogul, the colic is cured by an iron ring applied red-hot about the patient's navel.

Travellers relate many other caſes of other diſeaſes cured by *burning*; and we ſee the effects of it ourſelves, in horſes, hounds, birds of prey, &c.

A kind of downy matter, called *moxa*, brought from the Indies, has been likewiſe uſed for the gout; applied, by *burning* it on the part affected. Many of the Japaneſe are covered with ſcars, ariſing from the uſe of the Moxa. And among theſe people, the whole art of phyſic conſiſts in the choice of proper places to be *burnt*; which are varied according to the nature of the diſeaſe. *Burning* has been particularly recommended in the gout, as a ſevere but adequate cure of that ſtubborn diſeaſe.

M. Homberg gives us inſtances of two women cured, the one of a violent diſeaſe in the head and eyes, and the other of a diſeaſe in the legs and thighs, by the accidental *burning* of thoſe parts. He adds, that *burning* may cure in three ways; either by putting the peccant humours into a greater motion, and making them take new routes; or by diſſolving and breaking their viſcidity; or by deſtroying the canals which brought them in too great quantities.

Burning pyramidal pieces of tow or cotton on the joints, is an ancient practice revived in Europe, chiefly by Fab. ab Aquapendente, and Severinus, againſt pains of the joints ariſing from cold and viſcous humours impacted in them. The operation is alſo ſpoke of by Hippocrates and Celſus; the former of whom recommends the uſe of raw flax. Severinus calls it the Arabian *burning*, becauſe moſt frequently uſed among that people, though common enough alſo among the Egyptians. Hippocr. App. ult. lib. vi. & de Affat. Text. 30. and 32. Celſ. lib. iv. cap. 22. Alpin. de Med. Egypt. lib. iii.

Burn, *heart*. See Heart.

BURNET, **Burneta**, or **Burnetus**, in *Middle Age Writers*, denotes brown cloth made of dyed wool.

In which ſenſe, the word ſtands contradiſtinguiſhed from *brunus*, which was applied to the wool undyed.

Burnet, in *Botany*. See Poterium, and Sanguisorba.

Burnet *ſaxifrage*. See *Burnet* Saxifrage.

BURNING, the action of fire on ſome pabulum, or fewel, whereby the minute parts thereof are torn from each other, and put into a violent motion; and ſome of them aſſuming the nature of fire themſelves, fly off *in orbem*, while the reſt are diſſipated in form of vapour, or reduced to aſhes.

The appearances of *burning* ariſe ſucceſſively, and in a certain order: a heat muſt precede greater than what ſuffices to boil oil; the lighteſt and moſt volatile parts of the body burn the firſt; the heavier are ſlower in taking fire, but burn the longeſt.

Burning is a ſeparation of the parts of bodies made by means of fire. Some conſider it as a ſpecies of ſolution, and ſuppoſe it effected by a diſſolvent power inherent in fire, which acts as a menſtruum in reſpect of the ſulphureous parts of bodies.

Dr. Hooke, conſidering the neceſſity of air to *burning*, and that heat, however great, does not alone ſuffice to burn a body, does indeed take *burning* for a ſolution of the ſulphureous parts of bodies; but ſuppoſes the menſtruum, by which it is done, to be the air, or at leaſt ſome ſubtile, ſaline, nitrous ſubſtance diffuſed in the air. See AIR, CALCINATION, CALX, FIRE, and PHLOGISTON.

BURNING is alſo applied to the action of divers things which are cold to the touch, or do not contain fire.

In this ſenſe, *aqua fortis* is ſaid to *burn* cloth. There are certain fogs which *burn* or ſcorch the corn. Virgil obſerves, that ſevere cold itſelf wlll *burn*, that is, have much the ſame effects on the parts of the body, as fire itſelf in cauſing gangrenes.

BURNING, *extraordinary caſes of*.—We have inſtances of perſons *burnt* by fire kindled with their own bodies. A woman at Paris, who uſed to drink brandy in exceſs, was one night reduced to aſhes by a fire from within, all but her head and the ends of her fingers. Novum Lumen Phoſphor. accenſ. Amſt. 1717.

Signora Corn. Zangari, or, as others call her, Corn. Bandi, an aged lady, of unblemiſhed life, near Ceſena in Romagna, underwent the ſame fate in March, 1731. She had retired in the evening into her chamber ſomewhat indiſpoſed, and in the morning was found in the middle of the room, reduced to aſhes, all except her face, ſkull, three fingers, and legs, which remained entire with the ſhoes and ſtockings on. The aſhes were light, and, on preſſing between the fingers, vaniſhed, leaving a groſs ſtinking moiſture behind, with which the floor was ſmeared; the walls, and furniture of the room, being covered with a moiſt cineritious ſoot, which had not only ſtained the linen in the cheſts, but had penetrated into the cloſet, as well as into the room overhead, the walls of which were moiſtened with the ſame viſcous humour. Mem. de Trev. an. 1731. p. 1293.

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Kings were burnt in cloth made of the ASBESTOS ſtone, that their aſhes might be preſerved pure from any mixture with the fewel, and other matters thrown on the funeral pile. And the like uſage is ſtill retained for the princes in Tartary.

Burning is not ſo ancient among the Greeks as interring; though we find it obtained in the time of the Trojan war. Potter. Arch. lib. iv. cap. 6. tom. ii.

For the manner of *burning* among the Greeks: the body was placed on the top of a pile, on which were alſo thrown divers animals, and even ſlaves and captives, beſides unguents and perfumes. In the funeral of Patroclus, we find a number of ſheep and oxen thrown in, then four horſes, followed by two dogs, and, laſtly, by twelve Trojan priſoners. Hom. Il. xxiii.

Euſtathius aſſigns two reaſons for the prevalency of *burning* in Greece; the firſt, that bodies being thought to be unclean after the ſoul's departure, were to be purified by fire: that the ſoul, or purer part, being ſeparated by the flames from the groſs inactive matter, might take its flight to the heavenly manſions with more freedom. This latter opinion obtained ſo much, that the Indian philoſophers had not patience to wait for *burning* till after death; they had recourſe to it in their life-time; erecting themſelves piles for the purpoſe, to looſen their ſouls from confinement. Calanus, who followed Alexander out of India, finding himſelf indiſpoſed, obtained that prince's leave to prevent the growth of his diſtemper, by committing himſelf to the flames; and Hercules, before his reception into heaven, was purified from the dregs of earth by the ſame means. Quintil. Declam. x. Potter. ubi ſupra.

Soldiers uſually had their arms burnt with them. The garments worn by the living, were alſo thrown on the pile, with other ornaments and preſents; a piece of extravagance, which the Athenians carried to ſo great a length, that ſome of their law-givers were forced to reſtrain them, by ſevere penalties, from defrauding the living by their liberality to the dead. Virgil. Æn. lib. vi. Potter lib. cit.

Pliny aſſures us, that *burning* was firſt brought into uſe among the Romans, on occaſion of the cruel uſage which the bodies of the dead Romans underwent in enemies countries. But this muſt only be underſtood in regard of the common uſage; ſince we find mention of *burning* as practiſed by ſome even in the earlieſt ages of Rome: Numa forbad his own body to be *burned*, commanding it to be laid entire in a ſtone coffin, which ſhews, that the practice of *burning* was not then unknown at Rome. Plin. Hiſt. Nat. lib. viii. cap. 54. Kenn. Rom. Ant. p. ii. lib. v. cap. 10.

In ſome caſes, *burning* was expreſly forbid, and looked upon as the higheſt impiety. Thus infants, who died before the breeding of teeth, were intombed, unburnt, in the ground, in a particular place ſet apart for this uſe, called *ſuggrundarium*. The like was practiſed with regard to thoſe who had been ſtruck dead with lightning, who were never to be *burnt* again.

Some ſay, that *burning* was denied to ſuicides as a puniſhment.

The manner of *burning* among the Romans, was not unlike that of the Greeks: the corpſe being brought without the city, if they deſigned to burn it, was carried directly to the place appointed for that purpoſe; which, if it joined to the ſepulchre, was called *buſtum*, if ſeparate from it, *uſtrina*, and there laid on the *rogus*, a pile of wood prepared to burn it on, built in ſhape of an altar, but of different height, according to the quality of the deceaſed. The wood uſed was commonly from ſuch trees as contained moſt pitch or roſin; and if any other were uſed, they ſplit it for the more eaſy catching fire: round the pile they ſet cypreſs trees, probably to hinder the noiſome ſmell of the corpſe. The body was not placed on the bare pile, but on the couch or bed where it lay on. This done, the next of blood performed the ceremony of lighting the pile, which they did with a torch, turning their face all the while the other way, as if it were done with reluctance. During the ceremony, decurſions and games were celebrated; after which came the *oſſilegium*, or gathering the bones and aſhes; alſo waſhing and anointing them, and repoſiting them in urns; which were common to both nations. Tibull. lib. i. Eleg. i. Virg. Æn. lib. vi. Kennet & Potter. lib. cit.

It is commonly ſuppoſed the practice of *burning* ceaſed at Rome under the empire of the Antonines.

BURNING *alive*, among the Romans, a puniſhment inflicted on deſerters, betrayers of the public councils, incendiaries, coiners, and even Chriſtians: it was called *crematio*.

The Jews had two ways of *burning*; one called *burning* of the body, performed with wood and faggots; the other, *burning* of the ſoul, *combuſtio animæ*, performed by pouring ſcalding-hot lead down their throats. The prieſt's daughter, who committed whoredom, he that lay with his own daughter, or grand-daughter, or his mother-in-law, were *burnt* alive. Phil. Tranſ. N° 230. Godw. Moſes & Aaron. lib. v. cap. 7.

BURNING, *Uſtio*, in *Chemiſtry*, is diſtinguiſhed from CALCINING; as the former is performed in cloſe veſſels, and terminates in charring, or reducing the body to a blackneſs; whereas the latter turns them white, being performed in the open air.

It alſo differs from ROASTING, *toſtio*, as, in *burning*, the fire is applied in contact with the body; in roaſting, at a diſtance from it.

A dextrous *burning* volatilizes ſalts, as common ſalt, *ſal alkali*. *Burning* alſo produces ſomewhat of a mineral ſulphur out of tartar, &c.

BURNING, or **BRENNING**, in our *Ancient Cuſtoms*, denotes an infectious diſeaſe, got in the ſtews, by converſing with lewd women; ſuppoſed to be the ſame that we now call the *venereal diſeaſe*. Whence that diſeaſe is argued to be much more ancient than the common epocha of the ſiege of Naples.

The chief objection againſt *burning* being the ſame with the venereal diſeaſe is, that the remedies preſcribed againſt the former, would be ineffectual in the latter: but it is not to be expected, the meaſures of the ancient phyſicians ſhould be calculated for the removing of any malignity in the maſs of blood or other juices, as in the modern practice; inaſmuch as they looked on the diſeaſe as merely local, and the whole of the cure to depend on the removal of the ſymptoms: beſides this, it is matter of frequent obſervation, that ſome diſeaſes grow more violent, and others more remiſs in courſe of time: ſo that the remedies which might have availed for the ancient *brenning*, may now fail as to the modern *pox*.

The proceſs for the cure, as delivered by J. Arden, chirurgeon to king Henry IV. is thus: *Contra* incendium *virgæ virilis interius ex calore & excoriatione, fiat talis ſyringa* (i. e. *injectio*) *lenitiva. Accipe lac mulieris maſculum nutrientis, & parum zacarium, oleum violæ & ptiſanæ: quibus commixtis per ſyringum infundatur.*

In an ancient MS. written about the year 1300, is a receipt for *brenning of the pyntyl yat men clepe the apegalle*; *galle* being an old word for a running ſore. And in another MS. written fifty years after, is a receipt for *burning in that part by a woman*. Simon Fiſh, a zealous promoter of the Reformation, in his Supplication of Beggars, preſented to king Henry VIII. 1530, ſpeaking of the Romiſh prieſts, ſays, "They catch the pocks of one "woman, and bare them to another; they be burnt with "one woman, and bare it to another; they catch the "lepry of one woman, and bare it to another." And Boord, a prieſt and phyſician in the ſame reign, begins one of his chapters of his Breviary of Health, thus: "The 19th chapter doth ſhew of the *burning* of an "harlot." The ſame author adds, that if a man be *burnt* with an harlot, and do meddle with another woman within a day, he ſhall *burn* the woman he ſhall meddle withal: and, as an immediate remedy againſt the *burning*, he recommends the waſhing the *pudenda* two or three times with white wine, or elſe with ſack and water.

BURNING *of diamonds*, is uſed among the jewellers for putting the DIAMONDS into a fierce fire, in order to diveſt them of a yellow or brown colour.

BURNING *on the forehead*, *Frontis inuſtio*, was anciently the penalty of a calumniator. In the middle age, we find frequent inſtances of *burning* in the cheek; a puniſhment allotted to bondmen, or villains guilty of theft.

BURNING-*glaſs*, or *burning-mirror*, a machine whereby the ſun's rays are collected into a point; and by that means their force and effect extremely heightened, ſo as to burn objects placed therein.

Burning-glaſſes are of two kinds: the firſt convex, called *lentes cauſticæ*; which tranſmit the rays of light, and in their paſſage refract, or incline them towards the axis; having the property of lenſes, and acting according to the laws of refraction.

The ſecond, which are the more uſual, are concave; very improperly called *burning-glaſſes*, being uſually made of metal: theſe reflect the rays of light, and, in that reflection, incline them to a point in their axis; having the properties of *ſpecula* or MIRRORS; and acting according to the laws of REFLEXION.

The firſt, or convex kind, authors ſuppoſe to have been unknown to the ancients; but the latter they are generally allowed to have been acquainted with. Their magnifying power is taken notice of both by Seneca and Pliny; and their *burning* power is mentioned in a treatiſe of Optics, aſcribed to Euclid, theorem 31. It is probable that the Romans had a method of lighting their ſacred fire by means of reflecting concave *ſpecula*. But Porta, and many others, ſuppoſe, that the *burning* mirrors of the ancients were made of metal, in the form of a ſection of a parabola, having the vertex cut off; it being the well-known property of this curve, to reflect all rays that fall upon it parallel to the axis into the focus. Hiſtorians tell us, that Archimedes, by means of reflecting mirrors, burnt a whole fleet; and though the effect related be very improbable, yet does it ſufficiently prove ſuch things were then known. The machines then uſed, nobody doubts, were metallic and concave, and had their focus by reflexion: it being agreed, that the ancients were unacquainted with the refracted *foci* of convex glaſſes. Yet M. de la Hire has diſcovered even theſe in the Clouds of Ariſtophanes; where Strepſiades tells Socrates of an expedient he had to pay his debts, by means of a round tranſparent ſtone or glaſs, uſed in lighting of fires, by which he intended to melt the bond; which in thoſe days was written on wax. The glaſs here uſed to light the fire, and melt the wax, M. de la Hire obſerves, could not be concave; ſince a reflected *focus* coming from below upwards, would have been exceedingly improper for that purpoſe: and the old ſcholiaſt of Ariſtophanes confirms the ſentiment. Pliny makes mention of globes of glaſs and cryſtal, which being expoſed to the ſun, burnt the cloaths and fleſh on people's backs; and Lactantius adds, that a glaſs ſphere, full of water, and held in the ſun, lighted the fire even in the coldeſt weather; which inconteſtably proves the effects of convex glaſſes.

Indeed, there is ſome difficulty in conceiving how they ſhould know ſuch glaſſes burnt, without knowing they magnified; which it is granted they did not, till towards the cloſe of the thirteenth century, when ſpectacles were thought of. For as to thoſe paſſages in Plautus, which ſeem to intimate the knowlege of ſpectacles, M. de la Hire obſerves, they do not prove any ſuch thing: and he ſolves this, by obſerving, that their *burning-glaſſes* being ſpheres, either ſolid, or full of water, their *foci* would be one fourth of their diameter diſtant from them: if then their diameter were ſuppoſed half a foot, which is the moſt we can allow, an object muſt be at an inch and a half's diſtance to perceive it magnified: thoſe at greater diſtances do not appear greater, but only more confuſed, through the glaſs than out of it. It is no wonder, therefore, the magnifying property of convex glaſſes was unknown, and their *burning* one known: it is more wonderful there ſhould be 300 years between the invention of ſpectacles and teleſcopes.

Every concave mirror, or *ſpeculum*, collects the rays diſperſed through its whole concavity, after reflexion, into a point or focus; and is therefore a *burning* mirror.

Hence, as the focus is there where the rays are the moſt cloſely contracted, if it be a ſegment of a large ſphere, its breadth muſt not ſubtend an arch above eighteen degrees: if it be a ſegment of a ſmaller ſphere, its breadth may be thirty degrees; which is verified by experiment.

As the ſurface of a mirror, which is a ſegment of a larger ſphere, receives more rays than another of a leſs, if the latitude of each ſubtend an arch of eighteen degrees; or even more or leſs, provided it be equal; the effects of the greater mirror will be greater than thoſe of the leſs.

And, as the *focus* is contained between the fourth and fifth parts of the diameter, mirrors that are ſegments of greater ſpheres *burn* at a greater diſtance than thoſe which are ſegments of a ſmaller.

Since, laſtly, the *burning* depends on the union of the rays, and the union of the rays on the concave ſpherical figure; it is no wonder, that even wooden mirrors, gilt, or thoſe prepared of alabaſter, &c. covered with gold; nay, even that thoſe made of paper, and covered with ſtraw, ſhould be found to *burn*.

Among the ancients, the *burning* mirrors of Archimedes and Proclus are eminent; by one of which, the Roman ſhips beſieging Syracuſe, under the command of Marcellus, according to the relations of Zonaras, Tzetzes, Galen, Euſtathius, Anthemius, &c. and by the other, the navy of Vitalian beſieging Byzantium, according to the ſame Zonaras, were burnt to aſhes.

Many have queſtioned the fact recorded by ſeveral hiſtorians concerning the ſurpriſing effects of Archimedes's *burning* mirrors; and they have principally urged the impoſſibility of producing ſuch effects by means of concave ſpecula, the focal diſtance of which muſt have been much too ſmall for the purpoſe. Des Cartes, particularly, diſcredited the ſtory, as fabulous, on this account; but Kircher made many experiments with a view of vindicating its credibility. Apprehending that the concave ſpecula of the ancients were ſections of a parabola, he began with combining ſeveral of this figure; but, failing of ſucceſs in this way, he tried the effect of a number of plane mirrors; and with five mirrors of the ſame ſize, placed in a frame, he contrived to throw the rays reflected from them to the ſame place, at the diſtance of more than a hundred feet; and by their means he produced ſuch a degree of heat, as led him to conclude, that, by increaſing their number, he could have ſet fire to inflammable ſubſtances at a greater diſtance. He likewiſe made a voyage to Syracuſe, in company with his pupil Schottus, in order to examine the place of the ſuppoſed tranſaction; and they were both of opinion, that the galleys of Marcellus could not have been more than thirty paces from Archimedes. M. Buffon, though ignorant of the particular teſtimonies of ancient writers, relative to the invention of Archimedes, and of the attempts of Kircher above mentioned, has more lately, by a ſimilar contrivance, ſufficiently evinced the practicability of the operation.

Dr. Wolfe, in the year 1768, after having given an account of ſome parabolic mirrors, conſtructed by M. Hoeſen of Dreſden, offers a conjecture, that thoſe of Archimedes might be of this kind, ſince it is not difficult to deſcribe a parabola, whoſe parameter is 2000 feet; and that rays reflected from ſuch a ſpeculum might be received by a lens, after having been brought to a focus, and tranſmitted parallel to any diſtance: but he was not apprized, that Kepler and Dechales had ſhewn, that no rays could be conveyed parallel to one another, except thoſe which proceeded from the ſame points in the ſun's diſk. Dutens du Miroir Ardent d'Archimede. Paris, 1755. Phil. Tranſ. vol. xlviii. p. 621, &c. Ibid. vol. lix. p. 8.

Among the moderns, the moſt remarkable *burning* mirrors, are thoſe of Magine, twenty inches in diameter; of Sepatala of Milan, which was near three feet and a half in diameter, and which burnt at the diſtance of fifteen feet; of Villette, and Tſchirnhauſen, and the new complex one of M. Buffon.

Villette, a French artiſt at Lyons, made a large mirror, which was bought by Tavernier, and preſented to the king of Perſia; a ſecond, bought by the king of Denmark; a third, preſented by the French king to the Royal Academy; a fourth has been in England, where it was publicly expoſed.—The effects hereof, as found by Dr. Harris and Dr. Deſaguliers, are, that a ſilver-ſixpence is melted in 7″ and ½; a king George's halfpenny in 16″, and runs with a hole in 34″. Tin melts in 3″, caſt iron in 16′, ſlate in 3″; a foſſile ſhell calcines in 7″; a piece of Pompey's pillar at Alexandria, vitrifies in the black part in 50″, in the white 54″; copper ore in 8′; bone calcines in 4″, and vitrifies in 33″. An emerald melts into a ſubſtance like a turquois ſtone; a diamond weighing four grains, loſes ⅞ of its weight; the *aſbeſtos* vitrifies; as all other bodies will do, if kept long enough in the *focus*; but when once vitrified, the mirror can go no further with them.—This mirror is forty-ſeven inches wide; and is ground to a ſphere of ſeventy-ſix inches *radius*; ſo that its *focus* is about thirty-eight inches from the *vertex*. Its ſubſtance is a compoſition of tin, copper, and tin-glaſs. Phil. Tranſ. vol. iv. p. 198.

M. Tſchirnhauſen's reflecting mirror deſerves next to be mentioned.—The following things are noted of it in the Acta Eruditorum, for 1687, p. 52. 1. Green wood takes fire inſtantaneouſly, ſo that a ſtrong wind cannot extinguiſh it. 2. Water boils immediately, and eggs in it are preſently edible. 3. A mixture of tin and lead, three inches thick, drops preſently, and iron or ſteel-plate becomes red-hot preſently, and a little after burns into holes. 4. Things not capable of melting, as ſtones, bricks, &c. become ſoon red-hot, like iron. 5. Slate becomes firſt white, then a black glaſs. 6. Tiles are converted into a yellow glaſs, and ſhells into a blackiſh yellow one. 7. A pumice-ſtone emitted from a volcano, melts into white glaſs; and, 8. A piece of crucible alſo vitrifies in eight minutes. 9. Bones are ſoon turned into an opake glaſs, and earth into a black one. It is made of copper, and its ſubſtance is not above double the thickneſs of the back of a knife: this was about 4½ French feet in diameter, and it burnt at the diſtance of twelve feet.

Every lens, whether convex, plano-convex, or convexo-convex, collects the ſun's rays, diſperſed over its convexity, into a point by refraction; and is therefore a *burning-glaſs*. The moſt conſiderable of this kind known, is that made by M. de Tſchirnhauſen: the diameters of his lenſes are three and four feet; the focus at the diſtance of twelve feet, and its diameter an inch and a half. To make the focus more vivid, the rays are collected a ſecond time by a ſecond lens parallel to the firſt; and placed in that place where the diameter of the cone of rays formed by the firſt lens, is equal to the diameter of the ſecond; ſo that it receives them all; and the focus from an inch and a half, is contracted into the ſpace of eight lines, and its force increaſed proportionably. It was purchaſed by the duke of Orleans, who preſented it to the French academy. Its weight was 160 pounds.

Its effects, among others, as related in the Acta Erudit. Lipſiæ, are, that it lights hard woods, even moiſtened with water, into a flame, inſtantly; that water, in a little veſſel, begins to boil preſently; all metals are melted; brick, pumice-ſtone, Delft wares, and the *aſbeſtos* ſtone, are turned into glaſs; ſulphur, pitch, &c. melted under water: the aſhes of vegetables, woods, and other matters, tranſmuted into glaſs; in a word, every thing applied to its focus, is either melted, turned into calx, or into ſmoke; and the colours of jewels, and all other bodies, metals alone excepted, are changed by it. He obſerves, that it ſucceeds beſt when the matter applied is laid on a hard charcoal well burnt.

Though the force of the ſolar rays be here found ſo ſtupendous, yet the rays of the full moon, collected by the ſame *burning-glaſs*, do not exhibit the leaſt increaſe of heat. Further, as the effects of a *burning* lens depend wholly on its convexity, it is no wonder that even thoſe prepared of ice produce fire, &c. A LENS of that kind is eaſily prepared, by putting a piece of ice into a ſcuttle, or hollow ſegment of a ſphere, and melting it over the fire, till it accommodate itſelf to the figure thereof.

Nor will thoſe ignorant of dioptrics be leſs ſurpriſed to ſee flame, and the effects thereof, produced by means of the refraction of light in a glaſs bubble with water.

Wolfius tells us, that an artiſt of Dreſden made *burning mirrors* of wood, bigger than thoſe of M. Tſchirnhauſen or Villette, which had effects, at leaſt equal to any of them.—Traberus teaches how to make *burning mirrors* of leaf gold, viz. by turning a concave, laying its inſide equally with pitch, and covering that with ſquare pieces of the gold, two or three fingers broad, faſtening them on, if need be, by fire. He adds, that very large mirrors may be made, of thirty, forty, or more concave pieces, artfully joined in a turned wooden diſh or ſcuttle; the effects of which will not be much leſs, than if the ſurface was continuous.—Zahnius adds further, that Newman, an engineer at Vienna, in 1699, made a mirror of paſteboard, covered within-ſide with ſtraw glued to it; by which all kinds of metals, &c. were readily melted.

Sir Iſaac Newton's *burning mirror* conſiſted of ſeven concave glaſſes, each of which was eleven inches and a half in diameter, and ſo diſpoſed as to have one common focus: ſix of them were placed round the ſeventh, and contiguous to it, in ſuch a manner as to form the ſegment of a ſphere, whoſe ſubtenſe is about thirty-four inches and a half; the focus is about twenty-two inches and a half diſtant, and about half an inch in diameter. This ſpeculum vitrified brick or tile inſtantaneouſly, and in about half a minute melted gold. M. Zeiher, not long ſince, made ſome improvement of this inſtrument; and formed panes of plain glaſs into the neceſſary degree of curvature, by heating them ſo hot on a diſh made of metal, that they would all aſſume the ſame form. M. Buffon has conſtructed furnaces for converting plain into concave mirrors; the mirrors are expoſed to a degree of heat ſufficient to ſoften the glaſs, in conſequence of which it conforms itſelf to the ſpherical figure of the mould on which it is placed. This method is ſubject to many difficulties and accidents; however, out of twenty-four mirrors treated thus, M. Buffon preſerved three; two of which are thirty-ſeven inches in diameter, and the other forty-ſix inches. The laſt was tin-foiled, and preſented to the French king; and is repreſented by the maker as the moſt powerful *burning* mirror in Europe; and yet the moon's light reflected from this concave ſpeculum, on a thermometer placed in the focus, produced no ſenſible dilatation of the included fluid. M. Buffon has alſo made attempts for conſtructing convex lenſes of great power, by fixing two of the above mentioned concave glaſſes together, and filling the cavity between them with water: one of his glaſſes broke in the trial; but others have ſince undertaken to conſtruct theſe water lenſes. He has likewiſe ſuggeſted another improvement in the conſtruction of *burning* glaſſes, conſiſting in a contrivance for diminiſhing the thickneſs of the middle or central part of the lens from three inches to one inch; whereby he propoſes to prevent the diminution of light occaſioned by its paſſing through the middle part of a lens of large diameter, and ſhort focus, which muſt be proportionably thick in that part. This new kind of lens is compoſed of three parts ground to the ſame radius, or of two circular zones, or bands, ſurrounding a central or middle part. He computes that the heat in the focus of a lens of this kind, three feet in diameter, will be about four times greater than that produced by any *burning* glaſs yet known.

But the moſt conſiderable improvement which M. Buffon has introduced into the optical apparatus is his machine, conſiſting of a number of mirrors; whereby he ſeems to have revived the ſecret of Archimedes, and to have vindicated the credit of hiſtory in this point. In the year 1747 he conſtructed a machine, with a hundred and forty plain mirrors, each about four inches long, and three broad; theſe are fixed at about a quarter of an inch diſtance from each other, upon a large wooden frame of about ſix foot ſquare. Each of them has three moveable ſcrews, which are ſo contrived, that the mirror can be inclined to any angle, and in any direction that meets the ſun; and by this means, the ſolar image of each mirror is made to coincide with all the reſt. The experiment was firſt tried with twenty-four mirrors, which readily ſet on fire a combuſtible matter, prepared of pitch and tow, and laid on a deal board, at the diſtance of ſixty-ſix French feet.

He then farther purſued the attempt, and put together a kind of polyhedron, conſiſting of 168 pieces of plane looking glaſs, each being ſix inches ſquare; and by means of this ſome boards of beech-wood were ſet on fire, at the diſtance of a hundred and fifty feet, in the month of March, and a ſilver plate was melted at the diſtance of ſixty feet. This machine, beſide other advantages, may be eaſily moved, ſo as to burn downwards or horizontally; and it burns either in its diſtant focus, or in any nearer interval, which our common *burning*-glaſſes cannot do, becauſe their focus is wholly fixed and determined. This machine, in the next ſtage of its improvement, contained three hundred and ſixty plain mirrors, each eight inches long, and ſix broad, mounted on a frame eight feet high, and ſeven feet broad. With twelve of theſe mirrors, light combuſtible matters were kindled at the diſtance of twenty feet; at the ſame diſtance, a large tin veſſel was melted with forty-five of them, and a thin piece of ſilver with a hundred and ſeventeen. When the whole machine was employed, all the metals and metallic minerals were melted at the diſtance of twenty-five, and even of forty feet. Wood was kindled in a clear ſky, at the diſtance of two hundred and ten feet. The focus, at the diſtance of fifty feet, is about ſeven inches broad; and at the diſtance of two hundred and forty feet, it becomes two feet in diameter. Mr. Buffon afterwards conſtructed a machine, which contained four hundred mirrors, each half a foot ſquare, with which he could melt lead and tin at the diſtance of a hundred and forty feet. Phil. Tranſ. vol. xliv. p. 493. 496. M. de Buffon Hiſtoire Naturelle, &c. Supplem. vol. i. Montucla, Hiſtoire des Mathematiques, vol. i. p. 246.

There is no ſolid ſubſtance that reſiſts the efficacy of modern *burning-glaſſes*. Meſſrs. Macquer and Baumé have ſucceeded in melting ſmall portions of PLATINA, by means of a concave glaſs, twenty-two inches in diameter, and of twenty-eight inches focus; though this metal is not fuſible by the ſtrongeſt fires that can be excited in furnaces, or ſuſtained by any chemical apparatus. Yet it was long ago obſerved by the Academicians del Cimento, that ſpirit of wine could not be fired by any *burning-glaſs* which they uſed; and notwithſtanding the great improvements which theſe optical inſtruments have ſince received, M. Nollet has not been able, by the moſt powerful *burning* mirrors, to ſet fire to any inflammable liquors whatever. See LENS, MIRROR, &c.

BURNING *of land*, called alſo *burn-beating*, and vulgarly *denſhiring*, from Devonſhire, a county in which it has been long practiſed, is a method of preparing and fertilizing lands barren, ſour, heathy, and ruſhy, for corn; by paring off the turf, and drying and burning it on the ground.—The ſame method alſo obtains for meadows and paſture-ground, moiſt, clayey, or ruſhy, to improve the hay.

BURNING, in *Law*. See ARSON, BRANDING, TREASON, &c.

BURNING *of metals*, *uſtio metallorum*, is either performed by fire, or by corroſive ſalts; which latter is alſo denominated CÆMENTATION.

The firſt preparation of moſt ores is by uſtion, or *burning*, whereby to diſpoſe them for fuſion. This is uſually performed by expoſing them, without addition, to a naked fire; ſometimes fixed alkalis and abſorbents are added, to hinder the avolation of the metalline particles. Some hold *burning* in the ſtone or glebe moſt advantageous; others *burning* in the meal. Phil. Tranſ. Nº 109.

The baſer metals, tin and lead, may be burnt like plants to aſhes. For gold and ſilver, the caſe is otherwiſe.

BURNING *mountains*. See VOLCANO, EARTHQUAKE, MOUNTAIN, &c.

The ancients deſcribe a meteor under the denomination of *burning buckler*, *clypeus ardens*. Plin. Hiſt. Nat. lib. ii. cap. 34. Mem. Acad. Inſcr. tom. vi. p. 95.

Travellers into Italy deſcribe a *burning* ſpot of ground at Firenzuola, in the Appennines, out of which a crackling flame continually ariſes, yet without any cleft for it to iſſue out at. Maffei ſuppoſes the ſteams which the place yields, to be a kind of native *phoſphorus ardens*, which take fire on their coming in contact with the air.

BURNING, among *Painters*.—Several of the painters COLOURS require *burning*, to fit them for uſe, as lamp-black, umber, ivory, &c.

The *burning*, or rather drying, of lamp-black, is performed by ſetting it over the fire in an iron ladle, or crucible, till no ſmoke ariſes from it. To *burn* umber, they put it in large lumps into a naked fire, where it is left till thoroughly red-hot. Ivory muſt be *burnt*, to make a black, in two crucibles, luted, covered with coals.

BURNING, in *Enamel Painting*. See ENAMELLING.

BURNING is alſo an operation in *Pharmacy*. Simples are frequently *burnt* in earthen-veſſels, either to reduce them to aſhes, as in the preparation of vegetable ſalts, or in order to dry them, that they may be more commodiouſly pulverized, as is practiſed in regard of hartſhorn, &c.

BURNING *phoſphorus*. See PHOSPHORUS.

BURNING *plant*, *Euphorbia*. See SPURGE.

BURNING *ſpring*, in *Natural Hiſtory*. See SPRING.

BURNING *zone*, in *Geography*. See TORRID *zone*.

BURNISHED *gold* or *ſilver*, denotes thoſe metals laid on any work or leaves, and afterwards paſſed over with a burniſher to heighten their luſtre.

BURNISHER, a round poliſhed piece of ſteel, ſerving to ſmooth and give a luſtre to metals.

Of theſe there are various kinds, of various figures; ſtrait, crooked, &c.—Half *burniſhers* are uſed to SOLDER ſilver, as well as to give a luſtre.

Burniſhers for gold and ſilver are commonly made of a dog's or wolf's tooth, ſet in the end of an iron or wooden handle. Of late, agates and pebbles have been introduced, which many prefer to the dog's tooth.

The *burniſhers* uſed by engravers in copper, uſually ſerve with one end to burniſh, and with the other to ſcrape.

BURNISHING, the act or art of ſmoothing, and poliſhing a metalline body, by briſkly rubbing it with a *burniſher*.

Bookbinders *burniſh* the edges of their books by rubbing them with a dog's tooth. Gold and ſilver are *burniſhed* with a wolf's tooth, a dog's tooth, or the blood ſtone, or by *tripoli*, a piece of white wood, emery, and the like.

Deer are ſaid to BURNISH *their heads*, when rubbing off a white downy ſkin from their horns againſt a tree, they thruſt them, as is ſaid, into a reddiſh earth, to give them a new colour and luſtre.

BURNT-*clay*. See MANURING.

BURNT-*grain*. See SMUT.

BURNT-*allum*. See ALLUM.

BURNT-*lead*. See LEAD.

BURNT, in ſpeaking of medicines, imports as much as imperfectly calcined. See CALCINATION.

Burnt bodies are generally dry and aſtringent. The other medicinal qualities belonging to bodies are frequently deſtroyed, at leaſt impaired, by the *burning*.

BURNT *planet*.—A planet is ſaid to be *burnt*, *combuſtus*, when it is in conjunction, or nearly ſo, with the ſun. Thus Saturn is ſaid to be *burnt*, when not above five degrees diſtant from the ſun, Jupiter when ſix, &c. Planets, in this ſituation, are ſuppoſed by aſtrologers to be much weakened or enfeebled in their influences.

BURNT *way*, *combuſta via*, among *Aſtrologers*, that part of the zodiac from the beginning of Libra to the middle of Scorpio; or, according to others, from the middle of Libra to the end of Scorpio, comprehending 45 degrees; a ſpace ſuppoſed very unfortunate, and in which the planets are much enfeebled in their virtues, eſpecially the moon. Vital. Lex. Math. p. 118.

BURNT *wine*. See WINE.

BURR-PUMP, or BILDGE-PUMP, a kind of PUMP ſo called, becauſe it holds much water.

BURR, the round knob of a horn next a deer's head.

BURRAS-*pipe*, an inſtrument uſed by goldſmiths, conſiſting of a copper box with a ſpout, having teeth like a ſaw; ſometimes alſo uſed by ſurgeons for the application of certain ſolid medicines by inſperſion.

BURREL-*fly*, in *Natural Hiſtory*. See WRINGLE-TAIL.

BURROCK, a ſmall wear or dam, were wheels are laid in a river for the taking of fiſh.

BURROUGH. See BOROUGH.

BURROUGH-*duck*, in *Zoology*, a common Engliſh name for the TADORNA.

BURROWS, holes in a WARREN, ſerving as a covert for rabbets, &c.

A coney's coming out of her *burrow*, is called *bolting*. To catch coneys, they ſometimes lay purſe-nets over the *burrows*, then put in a terrier cloſe muzzled, which making the creature bolt, ſhe is caught in the net.

BURROW, or BARROW. See BARROW.

BURSA, *Burſe*, originally ſignifies a purſe.

BURSAM, *revocatio per*, in the Norman *Laws*, is a right belonging to the next akin, to redeem or purchaſe back, within a year after ſale, a fee or tenement alienated by his kinſman, on paying the price it had been ſold at. Du-Cange.

BURSA is more particularly uſed, in *Middle Age Writers*, for a little college or hall in an univerſity, for the reſidence of ſtudents, called *burſales*, or *burſarii*.

BURSA, *Burſe*, or *Bourſe*, in the French univerſities, ſtill denotes a foundation for the maintenance of poor ſcholars in their ſtudies.

The nomination to *burſes* is in the hands of the patrons and founders thereof. The *burſes* of colleges are not benefices, but mere places aſſigned to certain countries and perſons. A *burſe* becomes vacant by the burſar's being promoted to a cure, as being incompatible. In the college of cardinal Maine at Paris, there are two ſorts of *burſes*, leſſer, for young ſcholars, who can only enjoy them ſix years, that is, as long as ſuffices for their riſing to the degree of maſter of arts; and greater, which may be held nine years, or till the ſtudents obtain the degree of doctors.

BURSA *paſtoris*. See SHEPHERD'S *Pouch*.

BURSA *paſtoris minor*. See DRABA.

BURSALIS *muſculus*, in *Anatomy*, a name given by Cowper and others to a muſcle of the thigh, called alſo *marſupialis* by the ſame authors. It is the *obturator internus* of Winſlow and Albinus, and is deſcribed by Veſalius under the name of *decimus tertius moventium*, and by Spigelius under that of *circumagentium tertius*, or *obturator internus*.

BURSAR, or BURSER, *burſarius*, is uſed in *Middle Age Writers* for a treaſurer, or caſh-keeper.

In this ſenſe, we meet with *burſars* of colleges. Conventual *burſars* were officers in monaſteries, who were to deliver up their account yearly on the day after Michaelmas.

The city of Bern is commanded by four bannerets, who are the heads of the militia of the whole canton, and two *burſars*, who are the treaſurers general, one for the German diſtrict, the other for the Roman or French.

The word is formed from the Latin *burſa*; whence alſo the Engliſh word *purſe*: and hence the like officer who in a college is called *burſar*, in a ſhip is called PURSER.

BURSARS, or BURSERS, in *Univerſities*, alſo denote thoſe who enjoy certain benefices left for defraying the expences of the education of young men of promiſing parts, and ſmall fortune. In Scotland, and at Paris, all exhibitioners are ſtill called *burſars*, or *bourſiers*. Actions brought for the effects of a college, are entered in the name of the principal and *burſars*. See BURSA.

BURSARIA, *Burſary*, in *Middle Age Writers*, denotes the place of receiving and paying money and rents by the burſars, or officers of account, in religious houſes. See BURSA and BURSAR.

BURSE, in *Matters of Commerce*. See EXCHANGE.

The firſt place of this kind to which the name *burſe* was given, Guicciardin aſſures us, was at Bruges; and it took its denomination from a hotel adjoining to it, built by a lord of the family *de la Bourſe*, whoſe arms, which are three purſes, are ſtill found on the crowning over the portal of the houſe. Catel's account is ſomewhat different, viz. that the merchants of Bruges bought a houſe or apartment to meet in, at which was the ſign of the purſe. From this city the name was afterwards transferred to the like places in others, as in Antwerp, Amſterdam, Berghen in Norway, and London.

BURSE *of merchants*, *Bourſe des marchands*, denotes a court or juriſdiction eſtabliſhed in ſeveral trading cities of France, for the taking cognizance, at the firſt inſtance, of all diſputes ariſing between merchants, bankers, negociants, and the like, and from which no appeals lie but to the parliament.

The *burſe* is a kind of conſular juriſdiction, the judges whereof are alſo denominated *priors* and *conſuls*.

The *burſe* of merchants at Tholouſe was eſtabliſhed by Henry II. in 1549, after the manner of the judges conſervators of the privileges of the fairs at Lyons. The chief officers are a prior and two conſuls, choſen yearly, and empowered to chooſe and aſſociate, to the number of ſixty, ſeveral merchants, to aſſiſt them in the deciſion of differences. Theſe are called judges *conſeillers de la retenuë*.

The *burſe* of Rouen, or, as it is commonly called, the convention of Rouen, is of ſome years later ſtanding than that of Tholouſe, having only been erected in 1566.

The lateſt of the conſular *burſes* is that of Marſeilles, eſtabliſhed by Louis XIV. in 1691; whoſe juriſdiction extends through ſeveral of the neighbouring dioceſes.

BURSERA, in the Linnæan *Syſtem of Botany*, a genus of the *hexandria monogynia* claſs. It has a three-leaved cup; the flower is compoſed of three petals, and has three valves, and contains one ſeed. Former botaniſts have called this the American turpentine-tree, and the American birch. See MASTIC-*tree*.

BURSTEN, a perſon ruptured, called by phyſicians *hernioſus*; in middle-age writers, *ponderoſus*. See HERNIA and RUPTURE.

BURTHEN. See BURDEN.

BURTON, in the *Sea Language*, a ſmall tackle, conſiſting of two ſingle blocks, capable of being made faſt any where at pleaſure, for hoiſting of ſmall things in or out, and which will purchaſe more than a ſingle tackle with two blocks. It is generally employed to tighten the ſhrouds of the top-maſts.

BURY, is ſometimes uſed to denote the hole or den of ſome animal under ground. See BURROW.

In which ſenſe we ſay, the *bury* of a mole, a tortoiſe, or the like. The *grillotalpa*, or male cricket, digs itſelf a *bury* with its fore-feet, which are made broad and ſtrong for that purpoſe. Naturaliſts ſpeak of a kind of urchins in the iſland of Maraguan, which have two entries to their *buries*, one towards the north, the other to the ſouth, which they open and ſhut alternately, as the wind happens to lie.

BURYING, the ſame with interment or BURIAL.

BUSELAPHUS, in *Zoology*, the name of an animal of the goat kind, called alſo *moſchelaphus*. It is of a ſort of middle ſhape between the ſtag and ox kind. Its head and its ears are long, its legs and feet ſmall, its tail about a foot long, and of the ſhape of that of a heifer; its upper part reddiſh and very naked, its lower covered with long hairs. The hair of its whole body is of a tawney or reddiſh yellow colour; its horns are black, ſmooth at the top, and rough every where elſe. It has two teats, and is an extremely tame and quiet animal, and naturally full of play. It is extremely ſwift in running, and in moſt reſpects, except in ſize, greatly reſembles the common ANTELOPE. Ray.

BUSH, a tuft or aſſemblage of boughs or branches.

BUSH-*lime*, among *Bird-Catchers*, denotes an arm or bough of a buſhy-tree, full of thick and long, yet ſmooth and ſtraight twigs, dawbed over with BIRD-LIME, and placed on ſome hedge where birds frequent, uſed eſpecially for the taking of pheaſants and fieldfares.

BUSH alſo denotes a coronated frame of wood hung out as a ſign at taverns. It takes the denomination from hence, that, anciently, ſigns where wine was ſold were *buſhes* chiefly of ivy, cypreſs, or the like plant, which keeps its verdure long. And hence the Engliſh proverb, "Good wine needs no *buſh*."

BUSH, *poiſon*. See SPURGE.

BUSHEL, a meaſure of capacity for things dry; as grains, pulſe, dry fruits, &c. containing four pecks, or eight gallons, or one eighth of a quarter.

Du-Cange derives the word from *buſſellus*, *buſtellus*, or *biſſellus*, a diminutive of *buz*, or *buza*, uſed in the corrupt Latin for the ſame thing: others derive it from *buſſulus*, an *urn*, wherein lots were caſt; which ſeems to be a corruption from *buxulus*.

Buſſellus appears to have been firſt uſed for a liquid meaſure of wine, equal to eight gallons. *Octo libræ faciunt galonem vini, & octo galones vini faciunt* buſſellum *London, quæ eſt octava pars quarterii.* The word was ſoon after transferred to the dry meaſure of corn of the ſame quantity—*Pondus octo librarum frumenti facit* buſſellum, *de quibus octo conſiſtit quarterium.*

By 12 Hen. VII. cap. 5. a *buſhel* is to contain eight gallons of wheat: the gallon eight pounds of wheat troy-weight; the pound twelve ounces troy-weight; the ounce twenty ſterlings; and the ſterling thirty-two grains, or corns of wheat, growing in the midſt of the ear.

This ſtandard *buſhel* is kept in the Exchequer; when being filled with common ſpring water, and the water meaſured before the houſe of commons in 1696, in a regular parallelopiped, it was found to contain 2145,6 ſolid inches; and the ſaid water being weighed, amounted to 1131 ounces and 14 penny weights troy. Greaves Orig. of Weights, p. 25.

Beſides the ſtandard or legal *buſhel*, we have ſeveral local *buſhels*, of different dimenſions in different places. At Abingdon and Andover, a *buſhel* contains nine gallons; at Appleby and Penrith, a *buſhel* of peaſe, rye, and wheat, contains 16 gallons; of barley, big, malt, mixt malt, and oats, 20 gallons. A *buſhel* contains at Carliſle, 24 gallons; at Cheſter, a *buſhel* of wheat, rye, &c. contains 32 gallons, and of oats 40; at Dorcheſter, a *buſhel* of malt and oats contains 10 gallons; at Falmouth, the *buſhel* of ſtricken coals is 16 gallons, of other things 20, and uſually 21 gallons; at Kingſton upon Thames, the *buſhel* contains eight and a half; at Newbury 9; at Wiccomb and Reading, eight and three fourths; at Stamford, 16 gallons. Houghton. Collect. tom. i. n. 46. p. 42.

At Paris, the *buſhel* is divided into two half *buſhels*; the half *buſhel* into two quarts; the quart into two half quarts; the half quart into two litrons; and the litron into two half litrons. By a ſentence of the provoſt of the merchants of Paris, the *buſhel* is to be eight inches two lines and an half high, and ten inches in diameter; the quart four inches nine lines high, and ſix inches nine lines wide; the half quart four inches three lines high, and five inches diameter; the litron three inches and an half high, and three inches ten lines in diameter.—Three *buſhels* make a minot, ſix a mine, twelve a ſeptier, and an hundred and forty-four a muid.

In other parts of France, the *buſhel* varies: fourteen one eighth *buſhels* of Amboiſe and Tours make the Paris ſeptier. Twenty *buſhels* of Avignon make three Paris ſeptiers. Twenty *buſhels* of Blois make one Paris ſeptier. Two *buſhels* of Bourdeaux make one Paris ſeptier. Thirty-two *buſhels* of Rochel make nineteen Paris ſeptiers. Oats are meaſured in a double proportion to other grains; ſo that twenty-four *buſhels* of oats make a ſeptier, and 248 a muid. The *buſhel* of oats is divided into four picotins, the picotin into two half quarts, or four litrons. For ſalt four *buſhels* make one minot, and ſix a ſeptier. For coals eight *buſhels* make one minot, ſixteen a mine, and 320 a muid. For lime, three *buſhels* make a minot, and forty-eight minots a muid. See Measure and Weight.

BUSKIN, *Cothurnus*, a kind of garment, ſomewhat in manner of a boot, covering the foot and mid-leg, and tied beneath the knee: very rich and fine, and uſed principally on the ſtage by the actors in tragedy.

The *buſkin* is ſaid to have been firſt introduced by Æſchylus: it was of a quadrangular form, and might be worn indifferently on either leg. Its ſole was made ſo thick, as, by means hereof, men of ordinary ſtature might be raiſed to the pitch and elevation of the heroes they perſonated: in which it was diſtinguiſhed from the ſock, worn in comedy; which was a low, popular ſhoe.

Dempſter obſerves, that the *buſkin* was not confined to actors only, but girls likewiſe uſed it to raiſe their height; and travellers and hunters to defend themſelves from the mire, &c.

As the *buſkin* was the diſtinguiſhing mark of tragedy on the ſtage, we find it in claſſic authors frequently uſed to ſignify *tragedy itſelf*.

BUSS, in *Navigation*, a ſhip with two maſts, uſed by the Engliſh and Dutch in the HERRING-FISHING.

The word is originally Flemiſh, *buis*, or *buys*, which ſignifies the ſame.

The herring-*buſs* is uſually about 60 tun, and furniſhed with two ſmall cabbins, one at the prow, and the other at the ſtern, the former of which is uſed as a kitchen. The officers on board it are the maſter or patron, his mate, and a boatſwain, who directs the fiſhermen, barrellers, &c. The only diet in a *buſs* is ſea-biſket, gruel, and the fiſh they catch.

Buss, *Buſſa*, is alſo the name of a large ſort of veſſel of war, in uſe in the middle age, ſpoke of by antiquaries and hiſtorians under the ſeveral denominations of *buſſa*, *buſcia*, *burcia*, *buza*, *bucca*, and *bucia*.

BUSSORES, by corruption from *Bazora* in Perſia, whence they were originally brought, a name given by ſome to that ſpecies of pigeon called the CARRIER.

BUST, or Busto, in *Sculpture*, denotes the figure, or portrait of a perſon *in relievo*, ſhewing only the head, ſhoulders, and ſtomach, the arms being lopped off; ordinarily placed on a pedeſtal, or conſole.

In ſpeaking of an antique, we ſay the head is marble, and the *buſt* porphyry, or bronze, that is, the ſtomach and ſhoulders. Felibien obſerves, that though in painting, one may ſay a figure appears in *buſto*, yet it is not properly called a *buſt*, that word being confined to things in *relievo*.

The *buſt* is the ſame with what the Latins called *herma*, from the Greek Hermes, Mercury, the image of that god being frequently repreſented in this manner among the Athenians.

Bust is alſo uſed, eſpecially by the Italians, for the trunk of an human body, from the neck to the hips.

Busta *Gallica*, was a place in ancient Rome, wherein the bones of the Gauls, who firſt took the city, and were ſlain by Camillus, were depoſited. It differed from

Busta *Gallorum*, a place on the Appennines, thus called by reaſon of many thouſands of Gauls killed there by Fabius.

BUSTARD, Otis, in *Zoology*, the name of a large bird. The *otis* is called *tarda* and *otardes* by ſeveral authors. See *Tab. of Birds*, N° 28.

In the Linnæan ſyſtem of zoology, the *otis* makes a diſtinct genus of birds of the order of the *gallinæ*; the diſtinguiſhing characters of which are, that the feet have only three toes each, and thoſe all placed before, and the head is not adorned with a creſt or any other ornament. It is of the ſize of the common turkey, its beak is like that of the common gallinaceous fowls; its head and neck are grey; its belly white, and its back variegated with tranſverſe ſtreaks of red and black: it has no hinder toe, by which, and by its ſize, it is eaſily diſtinguiſhed from all the reſt of the gallinaceous kind. The male is diſtinguiſhed from the female by being of a much larger ſize, and by a tuft of feathers about five inches long on each ſide the lower mandible. Beſides, the males have a pouch, whoſe entrance lies immediately under the tongue, which is capable of holding near ſeven quarts; this ſecures them againſt drought, in thoſe dry tracts where they commonly live, and is probably filled with water, to ſupply the hen when ſitting, or the young before they can fly. It feeds on herbs and grain, and earth worms, and eats very greedily the leaves of dandelion, and particularly on the ſeeds of hemlock, which ſeems a very ſtrange food. It is frequent in many parts of England, where there are large heaths and plains: they are very bad fliers, and very difficultly raiſe themſelves up from the ground; but they are extremely ſhy, and if they ſee a man at a very great diſtance, they immediately eſcape as faſt as they can. Their fleſh is eſteemed. The leſſer *buſtard*, or *otis tetrax*, of Linnæus is about the ſize of a pheaſant.

Bustard, *Thick-kneed*. See *Stone*-Curlew.

BUSTIARII, a kind of gladiators, among the ancient Romans, who fought about the buſtum, or pile, of a deceaſed perſon, in the ceremony of his obſequies.

The practice at firſt was, to ſacrifice captives on the tomb, or at the buſtum, of their warriors: inſtances of which we have in Homer, at the obſequies of Patroclus, and among the Greek tragedians. Their blood was ſuppoſed to appeaſe the infernal gods; and render them propitious to the manes of the deceaſed.

In after-ages, this cuſtom appeared too barbarous; and in lieu of theſe victims, they appointed gladiators to fight; whoſe blood, it was ſuppoſed, might have the ſame effect.—According to Valerius Maximus and Florus, Marcus and Decius, ſons of Brutus, were the firſt, at Rome, who honoured the funeral of their father with this kind of ſpectacle, in the year of Rome 489.—Some ſay, the Romans borrowed this cuſtom from the Hetrurians; and they from the Greeks.

BUSTUARIÆ *mœchæ*, a kind of public whores, who proſtituted their bodies among the *buſta* or tombs, which it ſeems were ordinarily places of rendezvous for affairs of this kind. Others ſuppoſe that theſe were women hired to attend a funeral, and lament the loſs of the deceaſed.

BUSTUM, in *Antiquity*, denotes a pyramid or pile of wood, whereon were anciently placed the bodies of the deceaſed, in order to be burnt.

The Romans borrowed the cuſtom of BURNING their dead from the Greeks. The deceaſed, crowned with flowers, and dreſſed in his richeſt habits, was laid on the *buſtum*. See Burning.

Some authors ſay, it was only called *buſtum*, after the burning, *quaſi bene uſtum*: before the burning it was more properly called *pyra*; during it, *rogus*; and afterwards, *buſtum*.

When the body was only burnt there, and buried elſewhere, the place was not properly called *buſtum*, but *uſtrina*, or *uſtrinum*.

Bustum, in the *Campus Martius*, was a ſtructure whereon the emperor Auguſtus firſt, and, after him, the bodies of his ſucceſſors were burnt.

It was built of white ſtone, ſurrounded with an iron paliſade, and planted within ſide with alder trees.

Bustum was alſo figuratively applied to denote any TOMB.

Whence thoſe phraſes, *facere buſtum*, *violare buſtum*, &c.

Bustum *of an altar*, was the hearth or place where the fire was kindled.

BUTCHER. Among the ancient Romans there were three kinds of eſtabliſhed *butchers*; viz. two colleges, or companies, compoſed each of a certain number of citizens, whoſe office was to furniſh the city with the neceſſary cattle, and to take care of preparing and vending their fleſh. One of theſe communities was at firſt confined

fined to the providing of hogs, whence they were called *ſuarii*; and the other were charged with cattle, eſpecially oxen; whence they were called *pecuarii*, or *boarii*. Under each of theſe was a ſubordinate claſs, whoſe office was to kill, prepare, &c. called *lanii*, and ſometimes *carnifices*.

Briſſonius, Modius, and others, mention a pleaſant way of ſelling meat, uſed for ſome ages among this people: the buyer was to ſhut his eyes, and the ſeller to hold up ſome of his fingers; if the buyer gueſſed aright, how many it was the other held up, he was to fix the price; if he miſtook, the ſeller was to fix it. This cuſtom was aboliſhed by Apronius, prefect of Rome; who in lieu thereof introduced the method of ſelling by weight.

Some derive the term *butcher* from *buccarius*, of *bucca*, *mouth*; others from βȣθυτης, *killer of cattle*.

The French call a place ſet apart either for the ſlaughter of cattle, or expoſing their fleſh to ſale, a *butchery*, *boucherie*. The Engliſh diſtinguiſh, calling the latter a *fleſh-ſhamble*, or *market*, the former a *ſlaughter-houſe*.—Nero built a noble edifice of this kind at Rome; on which occaſion was ſtruck that medal, whoſe reverſe is a building ſupported by columns, and entered by a perron of four ſteps; the legend, MAC. AVG. S. C. *Macellum Auguſti Senatuſconſulto*.

In London, the furniſhing the markets with *butchers* meat is cantoned into ſeveral offices. We have carcaſs-*butchers*, who kill the meat in great quantities, and ſell it out to another ſort called retail *butchers*, diſperſed in all out-parts, villages, and towns, near the city. There are, beſides, cow-jobbers, or ſaleſmen, who buy and ſell cattle, acting between the *butchers* and the breeders, or feeders. Something like this alſo obtains at Paris.

The company of *butchers* was not incorporated until the third year of king James I. when they were made a corporation by the name of maſter, wardens, and commonalty of the art and myſtery of *butchers*; yet the fraternity is ancient. Their arms are azure, two axes ſaltier wiſe argent, between three boars heads couped, attired or, a boars head gules, between two garbes vert.

There are ſome good laws made for the better regulation, and for preventing the abuſes committed by *butchers*. *Butchers*, ſelling ſwine's fleſh meaſled, or dead of the murrain, or that buy fleſh of Jews, and ſell the ſame to Chriſtians, for the firſt time ſhall be grievouſly amerced, the ſecond time ſuffer the pillory, the third time be impriſoned and fined, and the fourth time forſwear the town. 17 Edw. II. cap. 7. vid. 51 Hen. III.

Stat. 4. Hen. VII. cap. 3. no *butcher* ſhall ſlay beaſts within the wall of London, upon pain to forfeit for every ox 12*d*. and for every cow and other beaſt, 8*d*. and this law ſhall be obſerved in every city and town walled in England, and in the town of Cambridge; except Berwick and Carliſle.

Stat. 15 Car. II. cap. 8. § 2. no perſon uſing the trade of a *butcher*, ſhall ſell or expoſe to ſale, any fat oxen, ſteers, runts, kine, heifers, calves, ſheep, or lambs alive, on pain to forfeit double the value of the cattle.

Stat. 5 Anne, cap. 4. § 2. no perſon uſing the trade of a *butcher* ſhall ſell, or offer to ſell, within London and Weſtminſter, or within ten miles thereof, to any perſon uſing the trade of a *butcher*, any fat cattle or ſheep, alive or dead, upon pain to forfeit the value.

Stat. 7 Anne, cap. 6. the clauſe 5 Anne, cap. 34. § 32. ſhall not extend to the ſelling of calves, ſheep, or lambs, dead, by one *butcher* to another.

No *butcher* ſhall kill any calf, to ſell, being under five weeks old; nor uſe the craft and myſtery of a tanner.

BUTCHER-*bird*, in *Ornithology*, the Engliſh name of the *lanius*, the ſmalleſt of all the European birds of prey, yet very fierce and deſtructive. Its beak is all the way ſtraight, except juſt at the end, where it is ſlightly hooked, the upper mandible furniſhed with a ſharp proceſs, and its tail faſhioned like that of the magpye, the outer feathers being the ſhorteſt, the reſt gradually longer; for which reaſon ſome have called it the *pica*. The ancients called it the *tyrannus*, and in Engliſh we ſometimes alſo call it the *ſhrike*.

There are ſeveral ſpecies of the *lanius*: the principal are, 1. The common larger kind, called the MATTAGESS. 2. The ſmaller, called the FLUSHER. And, 3. The *lanius minor*, or grey little *butcher*-bird. See *Tab. of Birds*, N° 5. The *lanius minor cinereus*, or little grey *butcher*-bird, is the name of a very ſmall ſpecies of the *lanius*, common in Italy and elſewhere, and is a very great deſtroyer of the wrens, and other ſmall birds.

BUTCHER'S-*broom*, *Ruſcus*, in *Botany*, a genus of the *dioecia ſyngeneſia* claſs. Its characters are theſe: it hath male and female flowers in diſtinct plants; the male have erect ſpreading empalements, compoſed of ſix oval convex leaves, whoſe borders are reflexed; they have no petals, but an oval *nectarium* of the ſize of the empalement, which is erect and inflated, opening at the mouth; they have no ſtamina, but each has three ſpreading ſummits ſitting on the top of the *nectarium*, which are joined at their baſe. The female flowers have empalements, but no petals, and *nectariums* like the male; they have no ſtamina, but have an oblong, oval germen, hid within the *nectarium*, ſupporting a cylindrical ſtyle, crowned by an obtuſe ſtigma, ſtanding above the mouth of the *nectarium*; the germen afterward becomes a globular berry, with two or three cells, encloſing two globular ſeeds. There are eight ſpecies.

The root of *butcher's-broom* is one of the five aperient ones, and is celebrated by authors as a very powerful attenuant and reſolvent. It is good in all chronic caſes, and is frequently preſcribed in diet drinks, intended to open obſtructions of the *viſcera*, or to promote urine.

BUTEO. See BUZZARD.

BUTHYSIA, βȣθυσια, in *Antiquity*, a ſacrifice of the greateſt kind; ſuch were the hecatombs. See SACRIFICE and HECATOMB.

The Greeks frequently prefixed the particle βȣ, *bu*, to words, to denote things of extraordinary magnitude, as alluding to the bigneſs of oxen.

BUTIGA, is an inflammation of the whole face, otherwiſe called *gutta roſacea*.

BUTLER, or BOTILER, an officer whoſe chief charge is over the cellar and drinkables. See ARCH-*Butler*.

BUTLERS, *buticularii*, among the Normans, denote wine-taſters, appointed to examine liquors, and ſee that they be right and legal.

BUTLER *of France*, *buticularius Franciæ*, was one of the four great officers in the houſhold of the ancient kings of that country, who ſigned all the royal patents, or at leaſt was preſent at the diſpatch of them. His ſeat was among the princes, and he even diſputed the precedency of the conſtable of France. He had a right of preſiding at the chamber of accounts; and in the regiſters of that office of the year 1397, mention is made, that John de Bourbon, grand *butler* of France, was admitted there as firſt preſident. But the title is now aboliſhed, and, in lieu thereof, a new office of *grand echanſon*, or cup-bearer, erected.

BUTLER'S *ale*. See ALE.

BUTLER'S *ſtone*, a medicinal preparation, of which the ancient chemiſts relate wonders. See Boyle's Works, Abr vol. i. p. 50.

The inventor, from whom it takes its name, was a Scotchman, in great favour with king James I. and is ſaid to have done wonders with it, not only in the ſpeedy cure of the moſt dangerous diſtempers, but in the making of gold out of lead and quickſilver.

The preparation of this ſtone is given by Morley. Collect. Chym. Leyd. cap. 375.

BUTLERAGE and PRISAGE; theſe were originally the only cuſtom that was payable upon the importation of wines, and were taken and received by virtue of the regal prerogative, for the proper uſe of the crown: but for many years paſt, there having been granted by parliament, ſubſidies or aids to the kings of England, and theſe duties not repealed, but confirmed, they have been pleaſed to grant the ſame away to ſome noblemen, who, by virtue of ſuch grant or patent, are to enjoy the full benefit and advantage thereof, and may cauſe the ſame to be levied and collected in the ſame manner, as the kings themſelves might, and were formerly wont to do.

Butlerage is a duty of two ſhillings for every ton of wine imported by merchants ſtrangers; being a compoſition (in lieu of the priſage payable in kind by Engliſh only) in conſideration of the liberties and freedoms granted to them by king John, and king Edward I. by a charter called *Charta Mercatoria*. 31 Edw. I. cap. 1. & 2.—27 Edw. III. cap. 26.

BUTMENTS, in *Architecture*, thoſe ſupporters, or props, on or againſt which the feet of arches reſt.

The word comes from the French *bouter*, *to abut* or *terminate* on any thing; or rather from *buter*, *to prop*.

The name *butment* is alſo given to little places taken out of the yard, or the ground-plot of an houſe, for butteries, ſculleries, &c.

Butments of arches are the ſame with buttreſſes. They anſwer to what the Romans call *ſublices*, the French, *culees* and *butees*.

BUTMENTS, or ABUTMENTS of a BRIDGE, denote the two maſſives at the end of a bridge, whereby the two extreme arches are ſuſtained and joined with the ſhore on either ſide.

The *butments* of bridges next the banks ſhould be built more firm and ſolid, as ſerving to ſuſtain the whole ſeries of arches, and hinder them from ſpreading.

BUTOMUS, the *flowering ruſh*, in *Botany*. See RUSH.

BUTORIUS, in *Zoology*, a name by which ſome have called the *ardea ſtellaris*, or BITTERN.

BUTRO, in *Natural Hiſtory*, the name of a wild bull. See BISON.

BUTT, in our *Ancient Cuſtoms*, denotes a place erected for archers to ſhoot at, and in which a mark or white was fixed.

BUTT is uſed for a veſſel, or meaſure of wine, containing two hogſheads, or 126 gallons.—Otherwiſe called PIPE.

A *butt* of currans is from fifteen to twenty-two hundred weight.

BUTT, or **BUTT-*end***, in the *Sea Language*, denotes the end of any plank, which joins to another on the outſide of a ſhip, under water.

Hence, when a plank is looſe at one end, they call it *ſpringing a butt*; to prevent which, ſhips are uſually bolted at the *butt-heads*, that is, at the plank's end.

BUTTER, a fat, unctuous ſubſtance, prepared, or ſeparated from milk, by heating or churning it.

The word is formed from βȣτυρον, a compound of βȣς, *cow*, and τυρος, *cheeſe*; q. d. *cow's cheeſe*.—Some authors, out of regard to this etymon, affect to write the word *buttyr*, and *butyr*.

It was late ere the Greeks appear to have had any notion of *butter*. Homer, Theocritus, Euripides, and the other poets, make no mention of it; and yet are frequently ſpeaking of milk and cheeſe: and Ariſtotle, who has collected abundance of curioſities relating to the other two, is perfectly ſilent on this. Pliny tells us, that *butter* was a delicate diſh among the barbarous nations; and was that which diſtinguiſhed the rich from the poor. Hiſt. Nat. lib. xxviii. cap. 35.

The firſt time the word βȣτυρον occurs is in Hippocrates, in ſpeaking of the Scythians, from whom the Greeks appear to have firſt learnt the art of making it. In reality what reaſon can be given, why Herodotus ſhould deſcribe the Scythians proceſs of making *butter* with ſo much exactneſs, if the ſame had been in uſe among the Greeks. Herm. Melpom.

It muſt not be forgot, that the ancient Jews appear to have been acquainted with the method of preparing *butter*. Solomon, Iſaiah, and even Moſes, ſpeak of it. The laſt repreſents it as in uſe in Abraham's time, unleſs we ſhould ſuppoſe, with ſome modern writers, that by *butter* in theſe paſſages we are to underſtand CHEESE. See Prov. xxx. 33. Iſa. vii. 15.

The Romans uſed *butter* no otherwiſe than as a medicine, never as a food. Schookius obſerves, that it is owing to the induſtry of the Dutch, that there is any ſuch thing as *butter* in the Eaſt Indies: that in Spain, *butter* is only uſed medicinally, for ulcers; and adds, that the beſt opiate for making the teeth white, is the rubbing them with *butter*.

Cl. Alexandrinus obſerves, that the ancient Chriſtians of Egypt burnt *butter* in the lamps at their altars, inſtead of oil; and the Abyſſinians, according to Godignus, ſtill retain a practice much like it. Clemens finds a religious myſtery in it.—In the Roman churches, it was anciently allowed, during Chriſtmas-time, to uſe *butter* inſtead of oil; by reaſon of the great conſumption thereof, in other ways.

In the cathedral of Rouen there is a tower called the BUTTER *tower*, *tour du beurre*, becauſe George d'Amboiſe, archbiſhop of Rouen in 1500, finding the oil fail in his dioceſe during Lent, permitted the uſe of *butter*, on condition that each inhabitant ſhould pay ſix deniers for the liberty, with which ſum this tower was erected. There are other *butter* towers at Notre Dame, Bourges, &c.

Butter is made in the greateſt plenty from cows milk, but ſometimes alſo from goats, and the richeſt from ſheeps milk, as is obſerved by Pliny; though Galen ſeems to doubt it. Inſtances have alſo been known of *butter* made from women's milk, which is extolled by Hoffman as a ſovereign remedy againſt the *phthiſis*. Add, that the ancient Scythians, according to Hippocrates, made *butter* of mares milk; the method of preparing which is deſcribed by that author.

If cows feed on ſhort graſs, they will yield more *butter*, though leſs milk, than if they fed on long rank graſs. The milk of ſome cows, though fed on the ſame graſs, will not yield ſo much *butter* as that of others. In many caſes, the *butter* is found to retain the taſte of the plant on which the cows feed.

Writers on the dairy deſcribe the proceſs of making and ordering *butter*. The chief means whereby *butter* is produced, is a long continued agitation of milk, whereby its texture is broken. After the *butter* is come, as they call it, they take it out, waſh it, and beat it, to expreſs the milk. In Bengal, *butter* is eaſily made, by the ſlight turning of a ſtick in milk. Phil. Tranſ. Nº 337. p. 227.

In Barbary, *butter* is made by putting the milk or cream into a goat's ſkin, ſuſpended from one ſide of the tent to the other, and preſſing it to and fro in one uniform direction. This quickly occaſions the neceſſary ſeparation of the unctuous and wheyey parts. Shaw's Travels, p. 241.

If the milk be not well wrought out, the *butter* will not keep. When *butter* begins to decay and taſte amiſs, working it well anew, and waſhing it with water, will reſtore it.

In Bengal, to make *butter* paſs for freſh when old and rank, they melt it, and pour on it ſour curdly milk; ſome hours after which, they ſtrain it through a cloth for ſale.

BUTTER, *clarified*, and TALLOW, are ſaid to be ſpecifics againſt the *bloody* FLUX, and defluxions of the eyes and breaſt. The proceſs of *clarifying butter* is as follows.—Take new churned *butter*, without ſalt, melt it over a clear fire, and ſkim off the curdy part. Two ſpoonfuls of the clarified remainder are to be given twice or thrice within the day.

This oil of MILK, which is naturally diſtributed through all the ſubſtances of the milk, conſiſts of very ſmall particles, which are interpoſed betwixt the caſeous and the ſerous parts, among which it keeps itſelf ſuſpended, by a ſlight adheſion, but without being diſſolved. It is in the ſame ſtate in which oil is in emulſions; hence, the ſame whiteneſs in MILK and in EMULSIONS; and hence by reſt, the oily parts ſeparate from both theſe liquors to the ſurface, and form a cream. When *butter* is in the ſtate of cream, its proper oily parts are not yet ſufficiently united together to form a homogeneous maſs. They are ſtill half ſeparated by the interpoſition of a pretty large quantity of caſeous and ſerous particles. The *butter* is completely formed by preſſing out theſe heterogeneous parts, by means of continued percuſſion. It then becomes an uniform maſs.

The trade of *butter* is very conſiderable. It is chiefly made within forty miles round the city. Fifty thouſand firkins are ſaid to be ſent yearly from Cambridge and Suffolk alone; each firkin containing 56 pounds. Uttoxeter in Staffordſhire is a market famous for good *butter*, inſomuch that the London cheeſemongers have an eſtabliſhed factory here for *butter*. It is bought by the pot, of a long cylindrical form, weighing 14 pounds.

Divers abuſes are practiſed in the packing and ſalting of *butter*, to increaſe its bulk and weight, againſt which we have a ſtatute expreſs. 4 Car. II. cap. 26.

By 13 and 14 Car. II. cap. 26. no *butter* which is old or corrupt, ſhall be mixed or packed with that which is new and ſound.—Nor any *whey*-BUTTER be mixed or packed with *butter* made of cream.—But each ſort ſhall be packed ſeparately.—No *butter* ſhall be ſalted or ſaved with any great ſalt, but all with ſmall ſalt.

Butter, as a wholeſome aliment, ſhould be freſh, and free from rancidity, and not fried or burnt; otherwiſe the acid being diſengaged by age and fermentation, as well as by fire, it will diſorder digeſtion, render it difficult and painful, excite acrid, empyreumatic belchings, and introduce much acrimony into the blood.

Butter is an emollient, and has virtues approaching to thoſe of oil; having a peculiar power of reſiſting poiſon, and obtunding the acrimony thereof. By its ſuppling and relaxing the parts, Dr. Quincy thinks it has a tendency to ſtop in the capillaries and glands, and foul the *viſcera*; whence proceed blotches, and cutaneous diſeaſes. Some repreſent it as a diuretic, purgative, and promoter of expectoration.

BUTTER, *May*, BUTYRUM *Majale*, is a medicine in ſome repute among good women, for ſtrains, aches, and wounds. It is made of *butter* churned at that time, and expoſed to the ſun of the whole month, till, by repeated fuſions, it be brought to a whiteneſs. Helmont calls it *magiſtery of graſs*. Quincy affirms it is no better than plain lard.

Naturaliſts ſpeak of ſhowers and dews of *butter*. See DEW.

BUTTER-*milk*, the MILK which remains after the *butter* is come by churning.

Butter-milk is eſteemed an excellent food, in the ſpring eſpecially, and is particularly recommended in hectic fevers.

Some make curds of *butter-milk*, by pouring into it a quantity of new milk hot.

BUTTER-*bump*. See BITTERN.

BUTTER-*bur*, *Petaſitis*, in *Botany*, an officinal plant, both in figure and virtues reſembling *maſter*-WORT. Linnæus has comprehended this plant under the genus of *tuſſilago*, which belongs to the claſs of *ſyngeneſia polygamia ſuperflua*. Its characters are theſe: the flower is compoſed of ſeveral hermaphrodite florets, which are included in one common cylindrical empalement; they are tubulous, or funnel-ſhaped, of one petal, cut into five ſegments at the brim. They have each five ſmall hair like ſtamina, terminated by cylindrical ſummits, and a ſhort germen, crowned with down, ſupporting a ſlender ſtyle, crowned by a thick ſtigma; the germen afterward becomes an oblong, compreſſed ſeed, crowned with a hairy down. There are five ſpecies; the firſt of which is the common *butter-bur*, or peſtilent-wort, which grows naturally by the ſides of rivers and ditches in moſt parts of England. It is reputed an alexipharmic and detergent, and uſed in many compoſitions, eſpecially with the firſt of thoſe intentions. There is alſo a compound water denominated from it, though rejected in the laſt college diſpenſatory.

The root is the part principally uſed; and beſide theſe virtues, it has thoſe of an aperient and detergent. It is preſcribed in ſuppreſſions of the urine and *menſes*, and in coughs, aſthmas, and other diſeaſes of the breaſt.

Butter-*nut*, a fruit in New England, whoſe kernel yields a great quantity of ſweet oil.

Butter-*wort*, *Pinguicula*, in *Botany*, a genus of the *diandria monogynia* claſs. The corolla conſiſts of a ſingle ringent petal; the longer lip is ſtrait, obtuſe, trifid, and ſupine; the ſhorter lip is bifid, more obtuſe, and patent; the *nectarium* is corniculated, and produced from the baſe of the petal; the fruit is an oval capſule, compreſſed at top, and containing one cell, in which are ſeveral ſmall ſeeds of a cylindric figure.

This plant is found growing on bogs in many parts of England, and flowers in June; but is never cultivated in gardens.

Butter, *Butyrum*, is alſo uſed to expreſs ſeveral chemical ſubſtances—as, *butter* of ANTIMONY, of ARSENIC, of BEN, of BISMUTH, of CACAO, of FLAX, of SATURN, of TIN, of WAX, &c. on account of their form of conſiſtence reſembling that of *butter*.

Butter *of ſtone*, a kind of mineral drug found on the higheſt mountains and hardeſt rocks of Siberia, being drawn by the ſun's heat, in the way of tranſudation, from the dry ſubſtance of the ſtones themſelves, and adhering to the ſurface thereof like a ſort of calx, which, having received its full coction, is ſcraped off by the inhabitants under the name of *kamine maſla*. The Ruſſians aſcribe many virtues to it. It is much uſed for the dyſentery and venereal diſeaſes; but its operation is ſo violent, however corrected by other ingredients, that none but the Ruſſians dare uſe it.

Butter-*fiſh*, a ſmall fiſh common in Cornwal, ſhaped ſomewhat like an eel, and diſtinguiſhed by two rows of black ſpots along its back, and called GUNELLUS.

Butter-*fly*, in *Zoology*. See PAPILIO.

Butter-*fly fiſh*, the Engliſh name for the fiſh called by authors BLENNUS, or BLENNIUS.

It has its name of the *butter-fly fiſh* from a ſpot in the fin, which reſembles thoſe in the wings of ſome *butter-flies*.

Butter-*fly ſhell*. See VOLUTA.

Butter-*fly*, *Satyrion*, in *Botany*. See ORCHIS.

Butter-*jags*, flowers of the wild TREFOIL.

BUTTERY.—Officers in the king's *buttery*, are a gentleman, yeoman, and three grooms of the *buttery*. The *buttery* among us is uſually placed near the cellar, being commonly the room next the top of the cellar ſtairs.

BUTTING, *imbotare*, in *Middle Age Writers*, is uſed for turning of wine, or putting it into butts.

Butting-*pillar*. See PILLAR.

BUTTOCK *of a ſhip* is her full breadth right aſtern from the tuck upwards.—According as a ſhip is built, broad or narrow at the tranſom, ſhe is ſaid to have a *broad* or *narrow buttock*.

BUTTONS make an article in dreſs, whoſe form and uſe is too familiar to need a deſcription.—The matter whereof they are made is various; as metal, ſilk, mohair, &c.

Buttons, *metal*, are various; both with regard to the matter and manner of making: beſides thoſe caſt in moulds, much in the manner of other ſmall works (ſee FOUNDERY), there are now made great quantities with thin plates, or leaves of gold, ſilver, and braſs; eſpecially of the two laſt.—The invention of theſe *buttons* being very late, as not having been ſet on foot before the beginning of the eighteenth century; and their ſtructure very ingenious, though but of indifferent uſe; we ſhall here ſubjoin it.

Buttons, *manner of making plated*. The metal to be uſed being reduced into thin plates, or leaves, of the thickneſs intended (either by the goldſmith or braſier), is cut into little round pieces, of a diameter proportionable to the wooden mould they are made to cover: this cutting is performed with a ſharp punch, on a leaden block or table.—Each piece of metal thus cut, and taken off from the plate, is reduced to the form of a *button*, by beating it ſucceſſively in ſeveral ſpherical cavities, with a round piece of iron in form of a puncheon; ſtill beginning with the flatteſt cavity, and proceeding to the more ſpherical, till the plate has got all the relievo required; and the better to manage ſo thin a plate, they form ten or twelve to the cavities at once; and alſo boil the metal to make it more ductile.

The inſide thus formed, they give an impreſſion to the outſide, by working it with the ſame iron puncheon, in a kind of mould, like the minter's coins, engraven *en creux*, or indentedly; and faſtened to a block or bench. The cavity of this mould, wherein the impreſſion is to be made, is of a diameter and depth ſuitable to the ſort of *button* to be ſtruck in it; each kind requiring a particular mould. Between the puncheon and the plate is placed ſome lead, which contributes to the better taking off all the ſtrokes of the graving; the lead, by reaſon of its ſoftneſs, eaſily giving way to the parts that have relievo; and as eaſily inſinuating itſelf into the trace, or engraving of the dentures.

The plate thus prepared, makes the upper part or ſhell of the button. The lower part is formed of another plate, made after the ſame manner, but flatter, and without any impreſſion. To this laſt, is ſoldered a little eye made of wire of the ſame metal, for the *button* to be faſtened by.

The two plates are ſoldered together, with a wooden mould, covered with wax, or other cement, between; in order to render the *button* firm and ſolid: for the wax entering all the cavities formed by the relievo of the other ſide, ſuſtains it, prevents its flattening, and preſerves its boſſe or deſign. Ordinarily, indeed, they content themſelves to cover the naked mould with the ſhell; and in this caſe, for the faſtening, they paſs a thread or gut acroſs through the middle of the mould.

Buttons made of hair, or other foreign *buttons*, ſhall not be imported, on pain of forfeiture, &c. 13 and 14 Car. II. cap. 13.—4 W. and M. cap. 10. Alſo *buttons* are not to be made of cloth, ſtuff, or wood, under penalties. Stat. 4 and 5. W. and M.—10 W. III. cap. 2. 4 Geo. I. cap. 7.—7 Geo. I. St. 1. cap. 12.

Button, in *Botany*, denotes a flower or cluſter of leaves not yet expanded; and is much of the ſame import with BUD.

The term *button* is chiefly uſed in ſpeaking of vines and roſes; and is otherwiſe denominated *eye*, *ſprout*, *bud*, *burgeon*, &c.

Button, in *Building*, denotes a ſlight faſtening for a door or window, made to turn on a nail.

Button *of a lock*, denotes a round head ſerving to move the bolt.

Button, in *Chemiſtry*, ſignifies the metal which is collected, generally in a roundiſh maſs at the bottom of a crucible after fuſion, or which remains in the cupels after cupellation.

Button, in *Fencing*, ſignifies the end or tip of a foil, being made roundiſh, and uſually covered with leather, to prevent making contuſions in the body.

Button *of the reins of a* BRIDLE, in the *Manege*, is a ring of leather with the REINS put through it, running all along the length of the reins.

To put a horſe under the *button*, is when he is ſtopt, having no rider on his back, by the reins being laid on his neck, and the *button* lowered, ſo far as that the horſe's head is brought in by the reins, and fixed to the true poſture or carriage.

Button-*antennæ*, a name given by *Naturaliſts* to thoſe *antennæ* or horns, as they are called, of butterflies, which are ſlender and terminated at the top by a ſort of *button*, in form of an olive, or of part of one. The French naturaliſts, from Reaumur, call theſe *antennes a boutons*. See FEELERS.

Button-*ſtone*, in *Natural Hiſtory*, a kind of figured ſtone, ſo denominated from its reſembling the *button* of a garment.

The *button-ſtone* is called by *Naturaliſts porpites*. Some make it a ſpecies of ECHINITES.

Dr. Hook gives the figure of three ſorts of *button-ſtones*, which ſeem to have been nothing elſe but the filling up of three ſeveral ſorts of ſhells. They are all of them very hard flints, and have this in common, that they conſiſt of two bodies, which ſeem to have been the filling up of two holes or vents in the ſhell. Poſth. Works. p. 284.

Dr. Plot deſcribes a new ſpecies of *button-ſtone*, finely ſtriated from the top, after the manner of ſome hair buttons, on which account it may be denominated *porpites*, unleſs we ſhould rather take it for a new ſpecies of ECHINITES. Hiſt. Oxf. chap. v. § 178.

This name is alſo given to a peculiar ſpecies of ſlate found in the marquiſate of Bareith, in a mountain called Fichtelberg; which is extremely different from the common ſorts of ſlate, in that it runs with great eaſe into glaſs in five or ſix hours time, without the addition of any ſalt or other foreign ſubſtance, to promote its vitrification, as other ſtones require.

It contains in itſelf all the principles of glaſs, and really has mixed in its ſubſtance the things neceſſary to be added to promote the fuſion of other ſtony bodies.

The Swedes and Germans make *buttons* of the glaſs produced from it, which is very black and ſhining, and it has hence its name *button-ſtone*. They make ſeveral other things alſo of this glaſs, as the handles of knives, and the like, and ſend a large quantity of it unwrought in round cakes, as it cools from the fuſion, into Holland.

Button-*tree*, *Cephalanthus*, in *Botany*, a genus of the *tetrandria monogynia* claſs. The characters are theſe: it hath a number of ſmall flowers collected into a ſpherical head, and each particular flower hath a funnel-ſhaped empalement, divided into four parts at the top; the flower is funnel-ſhaped, of one petal, divided at the top into four parts, incloſing four ſtamina, which are inſerted in the petal. The germen is ſituated under the flower, which becomes a globular hairy capſule, incloſing one or two oblong, angular ſeeds; theſe are joined to an axis, and form a round head. There are two ſpecies.

Button-*tree of Jamaica*, *Conocarpus*, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flowers are collected in a globular head, each ſtanding in a ſcaly empalement. At the bottom is ſituated a large, compreſſed germen, divided into five parts at the top. The flower has one petal, which is cut into five equal parts, and five ſlender ſtamina, which extend beyond the petal. The germen becomes a ſingle ſeed, incloſed in the ſcale of the fruit, which is ſhaped like the cone of the alder-tree. There are two ſpecies.

Button-*weed*. See Spermacoce.

BUTTRESS, a *butment*, or maſs of ſtone, or brick, ſerving to prop or ſupport the ſides of a building, wall, or the like, on the outſide; where it is either very high, or has any conſiderable load to ſuſtain on the other ſide, as a bank of earth, &c. See Arch, and Arc-boutant.

The theory and rules of *buttreſſes*, or props for eaſing walls, is ranked among the deſiderata of architecture. They are uſually placed leaning againſt the edifice they are to ſuſtain. We find them uſed againſt the angles of ſteeples, churches, and other buildings of ſtone; alſo along the walls of ſuch buildings as have great and heavy roofs, which would otherwiſe be ſubject to thruſt the wall out. They are alſo placed as ſupports againſt the feet of arches turned croſs great halls, in old palaces, &c. and are much uſed in fortification.

Buttress, **Buttrice**, or **Butteris**, likewiſe denotes a tool, uſed by farriers, to pierce the ſole of a horſe's foot, which is overgrown; to pare the hoof; to fit the ſhoe; and to cut off the ſkirts of the ſole, that overcaſt the ſhoe.

BUTYROUS, or **Butyraceous**, ſomething that partakes of the nature or qualities of butter.

BUVETTE, or **Beuvette**, in the *French Laws*, an eſtabliſhed place in every court, where the lawyers and counſellors may retire, warm themſelves, and take a glaſs of wine by way of refreſhment, at the king's charge.

There is one for each court of parliament, but theſe are only for perſons belonging to that body; there are others in the *palais* whither other perſons alſo reſort.

BUXBAUMIA, in *Botany*, a genus of the *cryptogamia moſſes*.

BUXTON *waters*. See Waters.

BUXUS, in *Botany*. See Box-*tree*.

BUYER, *Emptor*. See Buying and Emptor.

BUYING, the act of making a purchase, or of acquiring the property of a thing for a certain price.

Buying ſtands oppoſed to ſelling, and differs from borrowing or hiring, as in the former the property of the thing is alienated for perpetuity, which in the latter is not.

By the civil law, perſons are allowed to *buy* hope, *ſpem pretio emere*, that is, to purchaſe the event or expectation of any thing. E. gr. The fiſh or birds a perſon ſhall catch, or the money he ſhall win in gaming.

There are divers ſpecies of *buying* in uſe among traders; as *buying* on one's own account, oppoſed to *buying* on commiſſion; *buying* for ready money, which is when the purchaſer pays in actual ſpecie on the ſpot; *buying* on credit, or for a time certain, is when the payment is not to be preſently made, but, in lieu thereof, an obligation given by the buyer for payment at a time future; *buying* on delivery, is when the goods purchaſed are only to be delivered at a certain time future.

Buying *the refuſal*, is giving money for the right or liberty of purchaſing a thing at a fixed price, in a certain time to come; chiefly uſed in dealing for ſhares in ſtock. This is ſometimes alſo called by a cant name, *buying the bear*.

Buying *the ſmall-pox*, is an appellation given to a method of procuring that diſeaſe by an operation nearly akin to inoculation; frequent in South Wales, where it has obtained time out of mind.

It is performed either by rubbing ſome of the *pus* taken out of a puſtule of a variolous perſon on the ſkin, or by making a puncture in the ſkin with a pin dipped in ſuch *pus*. Phil. Tranſ. Nº 375. See Inoculation and Pox.

BUZ, in *Ichthyography*, the name of a fiſh more commonly known by that of albula, and caught in the German lakes.

BUZIDAN, in the *Materia Medica of the Ancients*, a name given by Avicenna, and others, to a wood produced in Africa, which had the ſame virtues with the radix behen, or white and red behen, or ben root. We are not acquainted with this medicine at this time, but it appears to have been of the colour of our red ſaunders; ſo that it could only ſerve to adulterate the red ben root; though they ſay, in general, that it was uſed to adulterate the ben when ſcarce.

BUZZARD, **Buteo**, in *Ornithology*, the name of a bird of prey, of the long-winged hawk kind; of which there are ſeveral ſpecies. 1. The bald *buzzard*, ſo called from the whiteneſs of his crown, ſometimes called *oſprey*. 2. The common *buzzard*, diſtinguiſhed from the former by the ſhortneſs of its wings, and its ſmaller ſize. 3. The honey *buzzard*, or apivorous *buzzard*, which feeds its young from the bee-hives. See Apivorus *Buteo*. 4. The subbuteo, the male of which has been uſually called the hen-harrier, the female the ring-tail; though by later obſervations males have been found of this ſpecies; and, 5. The moor *buzzard*, common in marſhy places, and called milvus æruginosus by authors.

The common *buzzard* is a bird of the long-winged hawk kind, of the ſize of a pheaſant, or ſmall pullet. It feeds on moles, field-mice, and other ſmall birds, and ſometimes will ſeize on rabbets. In want of better food, it will live on beetles, worms, and the like. Its eggs are white, more or leſs ſprinkled with irregular red ſpots. In age, or by ſome other accidents, the head and back in this ſpecies are ſometimes found grey.

The *moor buzzard* is a bird of the long-winged hawk kind, ſmaller than the common *buzzard*, and not ſo flat on the head. Its beak is large and crooked, covered with a greeniſh yellow ſkin near the top, and black in other places. Its mouth is bluiſh within; its head is of a whitiſh orange colour, variegated with black ſtreaks; its throat is of the ſame colour; and all the reſt of its body, as well back as belly, is of a duſky ruſt colour, only that in each wing there is a yellowiſh white ſpot; and the feathers at the root of the tail are yellowiſh. Its legs are long and ſlender, and of a yellowiſh colour. The inſide of its wing-feathers are whitiſh. It is common with us about heaths and marſhes.

BYAS is uſed by Petty for the central point ſuppoſed in the middle of each atom or corpuscle.

BY-LAWS, **Bye-laws**, or **Bi-laws**, private or peculiar orders, and regulations for the good government of a city, court, or other community, made by general conſent of the members thereof; being not repugnant to the general laws of the realm.

By ſtat. 9 Hen. VII. cap. 7. *bye-laws* made by corporations are to be approved by the lord-chancellor, or chief-juſtices, under penalty of 40*l*.

The word is formed from the Saxon *by*, *habitation*, *vill*, and *laxa*, q. d. *lex villæ*, or *town-law*.—They are alſo called *birlaws*, *byrlaws*, and *burlaws*, *bilager*, and *bellagines*. Such is the cuſtom in Kent of deciding controverſies among neighbours about boundaries, by the ſeneſchals, or bailiffs.

In Scotland, thoſe are called *laws of burlaw*, or *byrlaw*, which are made and determined by neighbours, elected by common conſent in burlaw-courts; wherein cognizance is taken of complaints betwixt neighbour and neighbour.—The men thus choſen as judges or arbitrators are called *burlaw-men*, or *byrlaw-men*.

BYRRHUS, in *Natural Hiſtory*, a genus of inſects of the order of *coleoptera*.

BYRSODEPSICON, from βυρσα, *ſkin*, and δεψεω, *I dreſs*, an epithet given to *ſumach*, denoting its uſe in dying of leather. See Sumach.

BYSSUS, or **Byssum**, a fine ſort of thready matter produced in India, Egypt, and about Elis in Achaia, of which the richeſt apparel was anciently made, eſpecially that wore by the prieſts both Jewiſh and Egyptian.

In reality, the ancients ſeem to have applied the name indifferently to any kind of matter that was ſpun and wove finer than wool: ſo that it is probable there were divers ſorts of *byſſus*. This is certain, that Ariſtotle gave the name *byſſus* to the hair or ſilken threads of the *pinna marina*; whether it were on account of its reſemblance to the *byſſus* of which cloths were made, or whether it were that this was the true *byſſus* itſelf. What countenances this latter opinion is, that the *byſſus* of the *pinna marina* may be ſpun, and conſequently there is little doubt but that in ages when ſilk was ſcarce, it might be uſed in the cloaths of great men. Add, that this *byſſus*, though groſly ſpun, appears much finer and more beautiful than wool, and comes not much ſhort of ſilk. Stockings and other ſuch manufactures are ſtill made of it, which would be more valuable if ſilk was leſs common.

mon. To ſpin this *byſſus*, they leave it ſome days in a cellar to moiſten and grow ſoft; after this they comb it, to get out the impurities, and, laſtly, ſpin it as they do ſilk.

Authors uſually diſtinguiſh two ſorts of *byſſus*, that of Elis, and that of Judea, which was the fineſt. Of this latter were the prieſtly ornaments made. Bonfrerius notes, that there muſt have been two ſorts of *byſſus*, one finer than the ordinary, by reaſon there are two Hebrew words uſed in Scripture to denote *byſſus*, one of which is always uſed in ſpeaking of the habit of the prieſts, and the other of that of the Levites. See Luke xvi. 19.

It is probable the *byſſus* of the ancients was a very fine ſort of cotton, or a mixture of linen and cotton. Forſter. De Byſſo Antiquorum.

Byssus, in *Botany*, a word uſed to expreſs a genus of moſſes, deſcribed by ſome of the ancients under the name of *alcyonium*, and belonging, in the Linnæan ſyſtem, to the claſs of *cryptogamia algæ*, the moſt imperfect of the whole claſs of vegetables. The characters of this genus are, that the moſſes of it are compoſed of ſimple and uniform parts, and always appear in form of excreſcences, either of a woolly or of a duſty matter. It ſeems properly a genus of vegetables of a middle kind, between the muſhrooms and the moſſes, but moſt approaching to the latter, in that the ſeveral ſpecies of it are of a longer duration, and want that fleſhy texture which diſtinguiſhes the *fungus* claſs, and in that they never produce heads, nor have any thing of the figure or texture of *fungi*. The *byſſi* differ from the CONFERVÆ, in that they do not grow in the water, and in their being compoſed of ſlenderer and ſhorter filaments. They have not yet been diſcovered to have either flower or ſeed, but appear always in form of threads, or of a light down, or fine powder, on the ſurfaces of many different bodies, but principally on ſuch as are liable to putrefaction. Micheli, in his Nova Genera Plantarum, p. 210. mentions the ſeeds of ſome of the *byſſi*; but later obſervers, and particularly the indefatigable Dillenius, were never able to obſerve them. This laſt author has deſcribed twenty ſpecies of theſe ſmall plants. See in the Philoſophical Tranſactions, vol. xlviii. part i. N° 54. an. 1753, an account, with obſervations, on this *genus* of plants, which in the order of nature comes between the moſſes and the *fungi*. This vegetable is found in England, as well as in many parts of Europe, covering the ground like a carpet.

BYTTNERIA, in *Botany*, a genus of the *pentandria monogynia* claſs; the corolla is compoſed of five petals; the capſule has five lobes, and is covered with prickles. There is only one ſpecies.

BYZANT. See Besant.

BYZANTINA *blatta*. See Blatta.

C.

C, The third letter, or ſecond conſonant of the alphabet, has two ſounds, one like *k*, as in the word *call*; and the other like *s*, as in *Cæſar*. It has the former ſound before *a*, *o*, *u*, or a conſonant; and the latter before *e*, *i*, and *y*. C is formed, according to Scaliger, from the ϰ of the Greeks, by retrenching the ſtem or upright line; though others derive it from the כ of the Hebrews, which has in effect the ſame form; allowing only for this, that the Hebrews, reading backwards, and the Latins, &c. forwards, each have turned the letter their own way. However, the C not being the ſame as to ſound with the Hebrew *caph*; and it being certain the Romans did not borrow their letters immediately from the Hebrews, or other Orientals, but from the Greeks; the derivation from the Greek ϰ is the more probable. Add, that F. Montfaucon, in his Palæographia, gives us ſome forms of the Greek ϰ, which come very near that of our C; this, for inſtance, C: and Suidas calls the C, the Roman kappa. The ſecond ſound of C reſembles that of the Greek Σ; and many inſtances occur of ancient inſcriptions, in which Σ has the ſame form with our C. Gruter, vol. i. p. 71. vol. iii. p. 1020.

All grammarians agree, that the Romans pronounced their Q like our C, and their C like our K. F. Mabillon adds, that Charles the Great was the firſt who wrote his name with a C; whereas all his predeceſſors of the ſame name wrote it with a K: and the ſame difference is obſerved in their coins.

C was alſo a numeral letter among the Romans, ſignifying an hundred: according to the verſe,

Non plus quam centum C litera fertur habere.

Some add, that a daſh over it, made it ſignify an hundred thouſand.

C is alſo an ABBREVIATURE.

In proper names, C. was uſed for Caius; as C. Cæſar, &c. Their lawyers uſed it ſingle for *Codice* or *Conſule*, and double, CC. for *Conſulibus*.

C was alſo uſed in their courts, as a letter of condemnation, and ſtood for *condemno*; in oppoſition to A, which ſignified *abſolvo*.

C, in *Muſic*, denotes the higheſt part in a *thorough* BASS; and when placed after the cliff, it intimates, that the muſic is in common time.

CAABA, a ſquare ſtone edifice in the temple of Mecca, ſuppoſed to have been built by Abraham and his ſon Iſhmael; being the part principally reverenced by the Mahometans, and to which they always direct themſelves in prayer. See KEBLA.

The word is Arabic, *caaba*, and *caabah*, a denomination which ſome will have given to this building, on account of its height, which ſurpaſſes that of the other buildings in Mecca; but others, with more probability, derive the name from the quadrangular form of this ſtructure.

CAAMINI, in *Botany*, a name given by the Spaniards and others to the fineſt ſort of the Paraguay tea. It is the leaves of a ſhrub which grows on the mountains of Maracaya, and is uſed in Chili and Peru as the tea is with us. The mountains, where the trees which produce this valuable leaf grow naturally, are far from the inhabited parts of Paraguay; but the people of the place know ſo well the value and uſe of it, that they conſtantly furniſh themſelves with great quantities of it from the ſpot. They uſed to go out on theſe expeditions many thouſands together, and their country was left to the inſults of their enemies in the mean time, and many of them periſhed with the fatigue.

To remedy theſe inconveniences, they have of late planted the trees about their habitations; but the leaves of theſe cultivated trees have not the fine flavour or the virtues of the wild ones. The king of Spain has permitted the Indians of Paraguay to bring to the town of Santfoy, twelve thouſand arobes of the leaves of this tree every year: but they are not able to procure ſo much of the wild leaves annually; about half the quantity is the utmoſt they bring of this; the other half is made up of the leaves of the trees in their own plantations, and this ſells at a lower price, and is called *pabos*. The arobe is about five and twenty pounds weight; the general price is four piaſtres for the arobe, and the money is always divided equally among the people of the colony.

CAA-APIA, in *Botany*, the name of a Braſilian plant, deſcribed by Marcgrave, Piſo, and others; the root of which ſo much reſembles the ipecacuanha in its virtues, that ſome have erroneouſly called it by the ſame name. It is an aſtringent and emetic, as the ipecacuanha, but it poſſeſſes both theſe qualities in a much weaker degree, and is therefore neceſſarily given in a much larger doſe, a dram being the quantity commonly given at once. The Braſilians bruiſe the whole plant, and expreſs the juice, which they take internally, and alſo apply it externally to wounds made by poiſoned arrows, and by the bites of ſerpents. Some have ſuppoſed the root of this plant to be the white ipecacuanha; but this is an error, that being little different from the grey. Mem. Acad. Par. an. 1700. p. 134. hiſt. 69. Geoffroy.

CAAPIBA, in *Botany*, the name given by Plumier to a genus of plants, called afterwards by Linnæus CISSAMPELOS.

CAB, or KAB, denotes a Hebrew meaſure of capacity, equal to the ſixth part of the ſeah, or an eighteenth of the EPHA. Arbuthnot's Tab. Anc. Coins, &c. n. 14. and 15.

The *cab* of wine contained two Engliſh pints; the *cab* of corn, $2\frac{5}{8}$ pints corn meaſure.

We alſo find mention of the *cab* as a dry meaſure, in Grecian and Roman writers: ſome make it equal to the Grecian CHOENIX, and aſſert it to be the quantity of what a labourer eats per day, as aſſigned by Cato.

CABAL, a name given to a ſort of drink made of dried raiſins. The manner in which the Portugueſe make *cabal* is this; they take out the ſtones of about twenty pounds of raiſins, and then bruiſing the raiſins a little, they put them into a barrel of white wine, in the month of January or February, and let them ſtand till about Eaſter. It is then very clear and rich, luſcious and palatable to the taſte. It is recommended to ſtop coughs, and give ſtrength to the ſtomach. It is worth while to try the experiment with the ſame proportion of raiſins to the ſame quantity of our Engliſh cyder, which would probably prove a fine drink. Phil. Tranſ. Nº 157.

CABALA *vein*, in *Natural Hiſtory*, a name given by our Suſſex miners to one kind of the iron ore commonly wrought in that country. It is a ſtony ore, of a browniſh colour, with a bluſh of red, which is more or leſs conſpicuous in different parts of the ſame maſſes. It is uſually found in thin ſtrata, lying not far from the ſurface, and is not very rich in iron, but it runs very readily in the fire.

CABALATAR, in *Natural Hiſtory*, a name given by ſome of the chemical writers to nitre, called alſo *cerberus chemicus*, and *ſal infernalis*.

CABALISTE, in *Commerce*, a term uſed at Thouloufe, and in the whole province of Languedoc; which ſignifies a merchant who does not trade in his own name, but is concerned in the trade of another merchant in chief. See ANONYMOUS *partnerſhip*.

CABALLEROS, in *Commerce*; wools of *caballeros*, or *cavalleros*, are Spaniſh wools, of which there is a conſiderable trade at Bayonne in France.

CABALLI, among *Myſtic Philoſophers*, denote the ſhades, or aſtral bodies of men who died any ſudden or violent death, before the expiration of their predeſtinated term of life.

The *caballi*, called alſo *cabales* and *cobales*, are ſuppoſed to wander as goblins or ghoſts over the face of the earth, till their deſtined term is accompliſhed; being doomed to live out the time as ſpirits, which they ought to have ſpent in the fleſh.

CABALLINA, *Aloe*, is a denomination given to the coarſeſt and rankeſt kind of ALOES, as being little uſed unleſs for purging horſes. Hiſt. Acad. Scienc. an. 1708. p. 66.

CABALLINUM, *Sulphur*, denotes common brimſtone, or SULPHUR.

CABALLINE, CABALLINUS, from the Greek καϐαλλος, *a horſe*, ſomething relating to, or partaking of, the nature and qualities of a horſe.

CABBAGES, in *Gardening*; for the characters, ſee BRASSICA. The common ſorts of *cabbages* are largely cultivated about London. The common white, red, flat, and long-ſided ones, are chiefly for winter uſe. The ſeeds of theſe ſorts muſt therefore be ſown in the end of March, and beginning of April, in beds of good freſh earth; and in May, when the young plants will have about eight leaves a-piece, they are to be pricked out into ſhady borders, about three inches ſquare, and, about the beginning of June, they muſt be tranſplanted to the places where they are to remain: and this is commonly between cauliflowers or artichokes, at about two feet and a half diſtance in the rows. They muſt be watered at times, and the earth muſt be hoed up about their roots, and kept clear from weeds.

Theſe *cabbages* will be fit for uſe ſoon after Michaelmas, and will continue till the end of February, if not deſtroyed by bad weather; to prevent which, the gardeners about London pull up their *cabbages* in November, and trench the ground in ridges, laying their *cabbages* againſt the ridges, as cloſe as poſſible on one ſide, burying their ſtems in the ground; and in this manner they let them remain till after Chriſtmas, when they cut them for market.

The Germans make great uſe of a preparation of *cabbages*, which they call *ſour krout*, and CROUTE.

The Ruſſian *cabbage* is ſmall, and not much cultivated now. It is to be raiſed as the others, but may be planted nearer, as not ſo large. It is fit for uſe in July.

The early and ſugar-loaf *cabbages* are ſown for ſummer uſe, and are commonly called Michaelmas *cabbages*. The ſeaſon for ſowing theſe is the end of July or beginning of Auguſt, in an open ſpot of ground. The plants are pricked out at three inches diſtance, when they have eight leaves. It is common to ſow ſpinach in the ſame beds with theſe, hoeing it up from about their ſtalks in ſpring; in May and June theſe begin to turn their leaves for cabbaging, and may be brought to it much ſooner than naturally they would, by tying them about the top with an ozier band.

The Savoy *cabbages* are for winter uſe, and are to be ſown about the middle of April; they are to be treated as the common *cabbage*, and planted out at two feet and a half diſtance, in an open place.

The *bore-cole* may be cultivated in the ſame manner, but muſt be planted only at one foot diſtance; theſe are not fit to cut till the froſts have nipped them. See BROCCOLI, and CAULIFLOWER.

The method of getting good *cabbage*-ſeed is this: chooſe out ſome fair plants about the end of November, pull them up, and hang them up three days, with the root upward, in a ſhady place; then plant them under a warm hedge, burying the whole ſtalk and half the *cabbage* in the earth; cover them with ſtraw or peaſe haum, if the winter be ſevere, and in ſpring they will ſhoot out many branches. When theſe begin to pod, the ends of the upper ones ſhould be cut off, to give ſtrength to the other pods. The ſeed muſt be preſerved from the birds, by fixing ſome lime twigs about the plants, where the catching one or two will intimidate the reſt. When ripe, it muſt be threſhed out, and kept for uſe. Miller.

The culture of *cabbages* as food for cattle, makes a very conſiderable branch of modern huſbandry. Thoſe in common uſe for this purpoſe are the great Scotch *cabbage*, the turnep *cabbage*, and, on account of its peculiar hardineſs and duration, the turnep-rooted *cabbage*. By proper management, a ſucceſſion of different *cabbage* crops may be obtained through the winter. *Cabbages* afford a wholeſome and nutritive food for cattle, ſheep, horſes and hogs: and if they are cultivated on good ground, well manured, and horſe-hoed after the method of Mr. Tull, they produce very large crops, from 30 to 60 tons on an acre. An Iriſh acre (which is in proportion to the Engliſh as 196 to 121) was planted with *cabbages* by Mr. Baker in July, at the diſtance of two feet from each other, in the middle of ridges five feet aſunder, and hoed in Mr. Tull's method, and produced by December 52,038 lb. weight of *cabbages*, each weighing at an average about 7 lb. 6 oz. The ſame quantity of ground planted with turnep *cabbages*, and treated in the ſame manner, yielded in the whole 57,761 lb. each *cabbage* weighing at an average 8 lb. 2 oz. Bore-cole planted in the ſame manner, and on the ſame ſpace of ground, yielded 40,096 lb. each plant at an average weighing 5 lb. 10 oz. Mr. Baker, by ſubſequent trials, found, that larger crops might be obtained by planting his *cabbages* on four feet ridges, and eighteen inches diſtant in the rows; and the ſmaller kinds at the diſtance only of one foot.

CABBAGE-*ſhrub*, *Anjou*, or *Colewort*, a plant which has been for ſome time cultivated in France, and lately introduced into England. It is an excellent vegetable for the kitchen, good food for cattle, and greatly increaſes the milk of cows. The dry ſtalk of this plant ſerves for fewel. It will grow in any ſoil that is well dunged. The ſeeds are ſown in June; and the plants are to be well watered and kept free from weeds, and tranſplanted into the common field where they are to remain till November. The Marquis de Turbilly, in a letter to Mr. Mills, has given particular directions for the management of them. See COLEWORT.

CABBAGE, *Dog's*, *Theligonum*, in *Botany*, a genus of the *monoecia polyandria* claſs. Its characters are theſe: it has male and female flowers on the ſame plant; the male flowers have a turbinated empalement of one leaf, cut into two ſegments which turn backward. It has no petal, but ſeveral erect ſtamina of the length of the empalement, terminated by ſingle ſummits. The female flowers have a ſmall bifid empalement of one leaf, which is permanent. It has no petals, but has a globular germen, ſupporting a ſhort ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a thick globular capſule with one cell, incloſing one globular ſeed. We have but one ſpecies, which grows naturally in the ſouth of France, in Italy, and Tartary; and is the *cynocrambe*, or *dog's cabbage* of Dioſcorides.

CABBAGE, *Turnep*, is the *Braſſica cauleſcente orbiculari carnoſo foliis ſeſſilibus* of Linnæus. It is ſo called, becauſe the ſtalk forms an orbicular bunch near the root, but a little above the ground. This plant has been long known in England as an object of curioſity in botanic gardens, or as an eſculent herb; but the firſt perſon who introduced it into uſe as an article of huſbandry was Mr. Baker, not twenty years ago. It has ſince been cultivated by many others, and found to be an excellent fodder for cattle in ſcarce winters, though not ſo hardy as the ſpecies of *cabbage* deſcribed in the next article.

CABBAGE, *Turnep-rooted*, or *Engliſh ſea-cabbage*, is comprehended in the fifth ſpecies of *braſſica*; denominated by Linnæus *braſſica radice caulescente tereti carnoſa*. Its root is larger than that of the common turnep, and runs into ſeveral ramifications, which are thicker than a man's thumb at their inſertion; in taſte and conſiſtence it reſembles the kernel of the cocoa-nut, being much firmer, more oily, and leſs ſucculent than the common turnep. From the root ariſes a ſtalk, ſmooth, round, and branched into ſeveral arms. The leaves near the root are like thoſe of the ſea-*cabbage*, roundiſh and jagged: but thoſe which riſe from the ſtalks are oblong, narrow, and ſinuated. The flowers are large and yellow, of a deeper colour than thoſe of the common kind of *cabbage*: to theſe ſucceed narrow cods about an inch long. This plant has been long cultivated in the more northern parts of Europe; but it was firſt introduced into England, as an article of agriculture, by Mr. Reynolds, not quite ten years ago. It is a very valuable acquiſition on account of its hardineſs and duration through the whole year; as it may be eaſily raiſed on ground not rich and without manure, and as the produce it affords is very conſiderable, and its quality wholeſome and nutritive.

CABBAGE-*bark tree of Jamaica*, in *Botany*, is a ſpecies of the GEOFFRÆA of Linnæus. The wood of this tree is uſed in building, but it is chiefly valued for its bark, which is adminiſtered in different forms, viz. in decoctions, ſyrup, powder, and extract, as an anthelmintic medicine. From this medical property it is alſo called the *worm-bark* tree. The decoction made by boiling an ounce of the bark in a quart of water, is moſtly uſed in Jamaica; and it ſeldom fails to perform every thing that can be expected from an anthelmintic medicine, by deſtroying worms in the inteſtines, and bringing them away in great quantities. This bark is externally of a grey colour, and internally black and furrowed; its taſte, when freſh, is mucilaginous and ſweet, and its ſmell, which it retains in the decoction, diſagreeable. Dr. Wright of Jamaica recommends it as a very valuable remedy. See his deſcription of the tree, with a drawing, and of the method of preparing and adminiſtering the bark in the Phil. Tranſ. vol. lxvii. pt. ii. art. 28.

CABBAGE-*tree*. See PALM-*tree*.

CABBAGING, among *Gardeners*, is ſometimes uſed to denote the knitting or gathering of certain pot-herbs into round bunched heads.

In which ſenſe the word amounts to the ſame with what Evelyn calls *poming*, *pommer*; q. d. appling, or growing applewiſe. Others call it ſimply heading or bunching.

To make lettuce *cabbage*, they tranſplant it, taking care, during the great heats, to water it; otherwiſe, inſtead of poming, it runs to ſeed. To promote the *cabbaging* of cabbage, thoſe who live on the ſea-coaſt, put ſea-weed, with a little nitre, under their roots.

Cabbage plants of the early kind begin to turn in their leaves for *cabbaging* in May. The Batterſea ſort *cabbage* apace when they once begin, and as ſoon grow hard and burſt open; but the ſugar-loaf kind is longer before it comes, and is as ſlow in its *cabbaging*.

CABBALA, a myſterious kind of ſcience, delivered by revelation to the ancient Jews, and tranſmitted by oral tradition to thoſe of our times; ſerving for interpretation of the books both of nature, and ſcripture.

The word is alſo written *Cabala*, *Caballa*, *Kabbala*, *Kabala*, *Cabaliſtica*, *Ars Cabala*, and *Gaballa*. It is originally Hebrew, קבלה, *kabbalah*; and properly ſignifies *reception*; formed from the verb קבל, *kibel*, *to receive by tradition*, *or from father to ſon*, eſpecially in the Chaldee and Rabbinical Hebrew.

Cabbala, then, primarily denotes any ſentiment, opinion, uſage, or explication of Scripture tranſmitted from father to ſon. In this ſenſe, the word *cabbala* is not only applied to the whole art; but alſo to each operation performed according to the rules of that art. Thus it is, R. Jac. Ben Aſcher, ſurnamed Baal-Hatturim, is ſaid to have compiled moſt of the *cabbalas* invented on the books of Moſes before his time.

As to the origin of the *cabbala*: the Jews believe, that God gave to Moſes on mount Sinai, not only the law, but alſo the explication of that law; and that Moſes, after his coming down, retiring to his tent, rehearſed to Aaron both the one and the other. When he had done, Aaron ſtanding on the right hand, his ſons, Eleazar and Ithamar, were introduced to a ſecond rehearſal: this being over, the ſeventy elders that compoſed the ſanhedrim were admitted; and laſtly, the people, as many as pleaſed: to all of whom, Moſes again repeated both the law and explanation, as he received them from God. So that Aaron heard it four times, his ſons thrice, the elders twice, and the people once. Now, of the two things which Moſes taught them, the laws, and the explanation, only the firſt were committed to writing; which is what we have in Exodus, Leviticus, and Numbers: as to the ſecond, or the explication of thoſe laws, they were contented to impreſs it well in their memory, to teach it their children; they, to theirs, &c. Hence, the firſt part they call ſimply the law, or the written law; the ſecond, the oral law, or *cabbala*. Such is the original notion of the *cabbala*.

Among theſe explications of the law, which, in reality, are little elſe but the ſeveral interpretations and deciſions of the Rabbins on the laws of Moſes, ſome are myſtical; conſiſting of odd abſtruſe ſignifications given to a word, or even to the letters whereof it is compoſed: whence, by different combinations, they draw meanings from Scripture, very different from thoſe it ſeems naturally to import. The art of interpreting Scripture after this manner, is called more particularly *cabbala*: and it is in this laſt ſenſe the word is more ordinarily uſed among us.

This *cabbala*, called alſo *artificial cabbala* (to diſtinguiſh it from the firſt kind, or ſimple tradition), is divided into three ſorts. The firſt, called *gematria*, conſiſts in taking letters as figures, or arithmetical numbers, and explaining each word by the arithmetical value of the letters whereof it is compoſed; which is done various ways. The ſecond is called *notaricon*; and conſiſts either in taking each letter of a word for an entire diction, or in making one entire diction out of the initial letters of many. The third kind, called *themurah*, q d. *changing*, conſiſts in changing and tranſpoſing the letters of a word; which is done various ways.

This is by ſome called the acroamatic philoſophy of Moſes, by way of contradiſtinction from the exoteric or popular doctrine. See Acroamatic.

The generality of Jews prefer the *cabbala* to the Scripture; comparing the former to the ſparkling luſtre of a precious ſtone, and the latter to the fainter glimmering of a candle.

The *cabbala* only differs from *maſorah*, as the latter denotes the ſcience of reading the Scripture, the former of interpreting it. Both are ſuppoſed to have been handed down from generation to generation by oral tradition only, till at length the readings were fixed by the vowels and accents, as the interpretations were by the *maſorah* and *gemara*. Prideaux Conn. p. i. lib. v. p. 506.

The firſt author who delivered any thing of the *cabbala*, was Joachaides, or Simon ſon of Joachai, who publiſhed that famous cabbaliſtical work entitled Zohar. Some ſay, he lived about the time of the deſtruction of Jeruſalem by Titus; others, only in the tenth century. Baſnage, Hiſt. of the Jews.

Dr. Burnet examines into the merits of the ſeveral parts of the *cabbala*, which he finds to be without rational foundation, and not conducing to any real knowledge. But he conjectures, that the moſt ancient *cabbala*, before it was confounded and defiled with fables, might contain ſomething of the original of things, and their gradations; particularly, that, before the creation, all things had their being in God; that from him they flowed as emanations; that they will all flow back again into him, when they are deſtroyed; and that there will ſucceed other emanations and regenerations, and other deſtructions and abſorptions to all eternity, as they had been from all eternity; that nothing is produced out of nothing; and that the things produced never return to nothing, but always have their ſubſiſtence in God. Burn. Archæol. lib. i. cap. 7. Phil. Tranſ. Nº 201. p. 800.

The *cabbala* hitherto ſpoken of, may be called *ſpeculative cabbala*; in oppoſition to the following, which may be called *practical cabbala*.

Cabbala is alſo applied to the uſe, or rather abuſe, which viſionaries and enthuſiaſts make of Scripture, for diſcovering futurity, by the ſtudy and conſideration of the combination of certain words, letters, and numbers, in the Sacred Writings. All the words, terms, magic figures, numbers, letters, charms, &c. uſed in the Jewiſh magic, as alſo in the hermetical ſcience, are compriſed under this ſpecies of *cabbala*. But it is only the Chriſtians that call it by this name, on account of the reſemblance this art bears to the explications of the Jewiſh *cabbala*: for the Jews never uſe the word *cabbala* in any ſuch ſenſe, but ever with the utmoſt reſpect and veneration. It is not, however, the magic of the Jews alone which we call *cabbala*, but the word is alſo uſed for any kind of magic.

CABBALIC *art*, *Ars caballica*, is uſed by ſome writers for *ars palæſtrica*, or the art of wreſtling.

CABBALISTIC *art*. See Cabbala, and Cabbalists.

D. Franc. Berlendi, a Theatin of Venice (under the fictitious name of C. Berardo Schinflini), has publiſhed a *Caballomachia*, or Refutation of the *Cabbaliſtic* Art.

CABBALISTS, a ſect among the Jews, who follow and practiſe the *cabbala*, or interpret Scripture according to the rules of the literal *cabbala*, above laid down.

The Jews are divided into two general ſects; the Karaites, who refuſe to receive either tradition, or the Talmud, or any thing but the pure text of Scripture: and the Rabbiniſts or Talmudiſts, who, beſide this, receive the traditions of the ancients, and follow the Talmud.

Theſe latter are again divided into two other ſects; pure Rabbiniſts, who explain the Scripture in its natural ſenſe, by grammar, hiſtory, and tradition; and *Cabbaliſts*, who, to diſcover hidden myſtical ſenſes, which they ſuppoſe God to have couched therein, make uſe of the *cabbala*, and the myſtical rules and methods above mentioned.

There are viſionaries among the Jews, who believe that Jeſus Chriſt wrought his miracles by virtue of the myſteries of the *cabbala*. Some learned men are of opinion, that Pythagoras and Plato learned the *cabbaliſtic* art of the Jews in Egypt; and fancy they ſee evident footſteps thereof in their philoſophy: others, on the contrary, ſay, it was the philoſophy of Pythagoras and Plato, that firſt furniſhed the Jews with their *cabbala*. Be this as it will, it is certain, that in the firſt ages of the church, moſt of the heretics gave into the vain notions of the *cabbala*: particularly the Gnoſtics, Valentinians, and Baſilidians. Hence aroſe the αϐραξας, and the multitude of taliſmans, wherewith the cabinets of the virtuoſi were ſtocked.

See a particular account of the *cabbaliſtic* art, as practiſed not only by Jews, but by Heathens and Chriſtians, in Baſnage's Hiſt. of the Jews, book iii. chap. 10—28.

CABBIN. See Cabin.

CABEBI, a name given by ſome authors to the ſcales of iron. Rulandus.

CABECA, or Cabesse, in *Commerce*; the Portugueſe who carry on the trade of ſilks in the Eaſt Indies, diſtinguiſh them by the names of *cabeça*, and *bariga*; that is to ſay, head and belly. The *cabeça* ſilks are the fineſt; the *bariga* being from fifteen to twenty *per cent.* inferior to them. The Indian workmen endeavour to mix them together; for which reaſon the more experienced European merchants, who carry on that trade, take care to open the bales, and to examine the ſkains.

CABIDOS. See Cavidos.

CABILIAU, in *Zoology*, a name by which ſome authors have called the common cod-*fiſh*, the *morhua* and *aſellus major* of other writers.

CABIN, or **Cabbin**, is ſometimes uſed for the huts or cottages of ſavages, and other poor people.

The habitations of the Indians in Virginia are *cabins*, about nine or ten feet high, which are made after this manner: they fix poles into the ground, and bring the tops of them one within another, and ſo tie them together; the outſide of theſe poles they line with bark, to defend them from the injuries of the weather, but they leave a hole in the top, right in the middle of the *cabin*, for the ſmoke to go out; round the inſide of their *cabins* they have banks of earth caſt up, which ſerve inſtead of ſtools and beds. Phil. Tranſ. N° 126.

Cabins, or **Cabbins**, in a ſhip, are ſmall cells, or apartments for the officers of the ſhip to lie in; very narrow, and in form of armories or preſſes; uſed in ſeveral parts of the ſhip, particularly on the quarter-deck, and on each ſide of the ſteerage. The bed-places erected for ſailors at the ſhip's ſide, in merchant-men, are likewiſe called *cabins*. The word comes from the French *cabane*, Spaniſh *cabana*, or Italian *capanna*, *a little ſtraw hut*; and that from the Greek καπανη, *a ſtall* or *manger*.

CABINET, or **Cabbinet**, the moſt retired place in the fineſt apartment of a building; ſet apart for writing, ſtudying, or preſerving any thing very precious.

A complete apartment conſiſts of an hall, ante-chamber, chamber, and *cabinet*; with a gallery on one ſide.

Cabinet is ſometimes particularly uſed for a place at the end of a GALLERY, wherein are preſerved the paintings of the beſt maſters, conveniently ranged, and accompanied with buſts, and figures of marble and bronze, with other curioſities.

In this ſenſe, *cabinet* amounts to the ſame with what is called by Vitruvius, *pinacotheca*. Sometimes there are ſeveral pieces or rooms deſtined for this uſe, which are all together called *cabinet*, or GALLERY.

Cabinet alſo denotes a kind of bufet or cheſt of drawers, partly for the preſervation of things of value, and partly as a decoration of a chamber, gallery, or other apartment.

In the repoſitory of the Royal Society is a Chineſe *cabinet*, filled with the inſtruments and ſimples uſed by the ſurgeons of that country. The moſt remarkable are thoſe which are contrived for ſcratching, picking, and tickling the ears, in which the Chineſe take great pleaſure. Phil. Tranſ. N° 246. p. 390, ſeq.

Cabinet, in *Gardening*, is a little inſulated building in manner of a ſummer-houſe, built in ſome agreeable form, and open on all ſides; ſerving as a place of retirement, and to take the freſh air under cover.

According to Miller, a *cabinet* is a kind of ſaloon, placed at the end or in the middle of a long ARBOUR.

It differs from an arbour, which is long, in form of a gallery, and arched over head; whereas the *cabinet* is either ſquare, circular, or in cants, making a kind of ſaloon.

Cabinet is alſo uſed in ſpeaking of the more ſelect and ſecret councils of a prince or adminiſtration.

Thus we ſay, the ſecrets, the intrigues of the *cabinet*.

To avoid the inconveniences of a numerous council, the policy of Italy, and practice of France, have introduced *cabinet* councils; a remedy worſe than the diſeaſe.

King Charles I. is charged with firſt eſtabliſhing this uſage in England. Beſides his privy council, that prince erected a kind of *cabinet* council, or junto, under the denomination of a council of ſtate; compoſed of archbiſhop Laud, the earl of Strafford, and lord Collington, with the ſecretaries of ſtate.

Yet ſome pretend to find the ſubſtance of a *cabinet* council of much greater antiquity, and even allowed by parliament, who anciently ſettled a quorum of perſons moſt confided in, without whoſe preſence no arduous matter was to be determined; giving them power to act without conſulting the reſt of the council. As long ſince as the 28th of Henry III. a charter paſſed in affirmance of the ancient rights of the kingdom; which provided, that four great men, choſen by common conſent, who were to be conſervators of the kingdom, among other things, ſhould ſee to the diſpoſing of monies given by parliament, and appropriated to particular uſes; and parliaments were to be ſummoned as they ſhould adviſe. But even of theſe four, any two made a quorum; and generally the chief juſtice of England, and chancellor, were of the number of the conſervators. Matth. Par. 28 Hen. III.

In the firſt of Henry VI. the parliament provides, that the quorum for the privy council be ſix, or four at leaſt; and that in all weighty conſiderations, the dukes of Bedford and Glouceſter, the king's uncles, ſhould be preſent; which ſeems to be erecting a *cabinet* by law.

CABIRI, in *Antiquity*, certain deities worſhipped more eſpecially by the Samothracians, and in the iſle of Imbros, and ſome other parts of Greece.

The *Cabiri*, according to Sanchoniathon, were alſo adored by the Phœnicians. Diodorus Siculus aſcribes to them the invention of fire, and the art of working iron. Whence it is, that on a medal of Gordian, and another of Furia Sabina Tranquillina, both ſtruck at Carrhæ, where the *Cabiri* were worſhipped, we find the figure of a *Cabirus* on a column, holding a hammer in his right hand. For the ſame reaſon, Herodotus obſerves, they were repreſented like Vulcan. Diod. Sic. lib. v. Herod. lib. iii.

The word *cabir*, conſidered as of Hebrew or Phœnician origin, denotes *great* and *powerful*; and ſome have ſuppoſed that the deities worſhipped under this appellation were Ceres, Proſerpine, Pluto, and Mercury: whilſt others have comprehended under it all the principal heathen deities: though it is diſputed who, and how many, the *Cabiri* were, whether they be of Phœnician, Samothracian, or Egyptian origin; and whether the ſons of Vulcan or of Jupiter?

Cabiri is alſo uſed to denote the *Gabri*, or Perſian FIRE-*worſhippers*. Hyde de Rel. Perſarum, cap. 29. See GABRES.

CABIRIA, Καϐειρια, religious feaſts held by the ancient Greeks of Lemnos and Thebes, in honour of the gods *Cabiri*.

Theſe feaſts were very ancient, and prior even to the time of Jupiter; who is ſaid to have reſtored them: they were held by night. Children above a certain age were here conſecrated; which conſecration was ſuppoſed to be a preſervative againſt all dangers of the ſea, &c.

The ceremony of conſecration, called θρονωσις, or θρονισμος, q. d. *enthronizing*, conſiſted in placing the initiated youth on a throne, the prieſts dancing round him: the badge of the initiated was a girdle or ſcarf.

When a perſon had committed any murder, the *cabiria* gave him an aſylum.—Meurſius is very particular in the proof of each of theſe points.

CABLE, a thick, long, three-ſtrand rope, ordinarily of hemp, ſerving to hold ſhips firm at anchor, and to tow veſſels in large rivers. In Europe, the *cables* are commonly made of hemp; in Africa, of long ſtraw or ruſhes called *baſs*; and in Aſia, of a peculiar kind of Indian graſs.

The word *cable* comes from the Hebrew word *chebel*, *cord*. Du-Cange derives it from the Arabic, *habl*, *cord*, or *habala*, *vincire*: Menage, from *capulum*, or *cabulum*; and that from the Greek καμηλος, or the Latin *camelus*.

The term *cable* is ſometimes alſo applied to the cordage uſed to raiſe maſſy loads, by means of cranes, wheels, and other like engines: though, in ſtrictneſs, *cable* is not to be applied to ropes of leſs than three inches circumference. Every *cable*, of whatever thickneſs it be, is compoſed of three ſtrands; each ſtrand of three twiſts; and each twiſt of a certain number of caburns, or threads of rope-yarn, more or leſs, as the *cable* is to be thicker or ſmaller.

To make a *cable*: after forming the ſtrands, they uſe ſtaves; which they firſt paſs between the ſtrands, that they may turn the better, and be intertwiſted the more regularly together. And to prevent any entangling, a weight is hung at the end of each ſtrand. The *cable*, being properly twiſted, neither too much, ſo as to become ſtiff, nor too little, ſo as to be weakened, is untwiſted again three or four turns, that the reſt may the better retain its ſtate. The uſual allowance for the diminution of length by twiſting, is one third of the whole; ſo that for a *cable* of 120 fathoms, the rope-yarn muſt be 180 fathoms long.

The number of threads which each kind of *cable* is to be compoſed of, is always proportioned to its length and thickneſs; and it is by this number of threads, that its weight and value are aſcertained. Suppoſing, then, the lengths to be equal, the number of threads and the weights will be as the areas of their baſes, or, which comes to the ſame, as the ſquares of their circumferences. Having, then, the weight and number of threads of any one *cable*, we may eaſily calculate the following table:

Circumference.	Threads.	Weight.
3 Inches	48	192 Pounds
4	77	308
5	121	484
6	174	696
7	238	952
8	311	1244
9	393	1572
10	485	1940
11	598	2392
12	699	2796
13	821	3284
14	952	3808
15	1093	4372
16	1244	4976
17	1404	5616
18	1574	6296
19	1754	7016
20	1943	7772

Every merchant-veſſel, how ſmall ſoever, has three *cables*; viz. the main or maſter-*cable*, which is that of the chief anchor, called the ſheet-*cable*; and the two *bowers*, beſt and ſmall. The ordinary length of the great *cable*, is 120 fathoms or braces.

A long *cable* is not ſo apt to break as a ſhort one, becauſe it draws more horizontally on the anchor than the other; and a ſhip will ride more ſmoothly as well as more ſafely with a long *cable*, becauſe ſhe will not be ſo liable to plunge deep in the water with her fore-part.

By ſtat. 21 Hen. VIII. c. 12. ſect. 2. no perſon dwelling within five miles of the town of Bridport, in the county of Dorſet, ſhall ſell out of the market, holden within the ſaid town, any hemp which ſhall grow within the ſaid five miles, upon pain of forfeiture of the hemp.

Sect. 3. No perſon other than ſuch as ſhall dwell within the ſaid town, ſhall make out of the ſaid town, any *cables*, halſers, ropes, traces, halters, or other tackle made of hemp, within five miles of the ſaid town; upon pain of forfeiture of the ſaid *cables*, &c.

Sect. 4. Twenty pounds weight ſhall be accounted the ſtone.

Sect. 5. Every perſon dwelling within the ſaid diſtance, may make *cables* and other tackle for their own uſe. This act to endure to the next parliament. Continued indefinitely by 3 Car. I. c. 4.—16 Car. I. c. 4.

Stat. 35 Eliz. c. 8. ſect. 3. If any perſon ſhall make *cables* of any old or overworn ſtuff, which ſhall contain above ſeven inches in compaſs; every perſon ſo offending, ſhall forfeit four times the value: and if any perſon ſhall tar any halſers or other cordage made within this realm, of ſuch old and overworn ſtuff, being of leſſer aſſiſe, and not containing in compaſs ſeven inches; and by retail put to ſale the ſame being ſo tarred; every perſon ſo offending, ſhall forfeit treble the value, &c.

Sect. 4. Every perſon who ſhall offend againſt this act, ſhall be impriſoned during her majeſty's pleaſure.

Stat. 6 Ann. c. 29. ſect. 13. Foreign cordage or *cable*-yarn imported, upon exportation ſhall have no allowance or drawback of duties.

CABLE, *ſtream*, a halſer, or rope, ſmaller than the *bowers*, uſed to moor a ſhip in a river or haven.

The ſeamen ſay, the *cable is well laid*, when it is well wrought, or made.

Serve the cable, or *plat the cable*, i. e. bind it about with ropes, clouts, &c. to keep it from galling in the hawſe.

To *ſplice a cable*, is to make two pieces faſt together, by working the ſeveral ſtrands of the rope one into another.

To *coil the cable*, is to roll it up round in a ring; of which, the ſeveral rolls one upon another are called *cable-tire*.

Pay more cable, *pay cheap the cable*, *veer more cable*; that is, let it more out from the ſhip, that the boat which carries the anchor may the more eaſily drop it into the ſea.

Heave in the cable; that is, draw it into the ſhip by winding it about the capſtane or windleſs.

When two *cables* are ſpliced together, it is called a *ſhot of a cable*.

Bit the cable. See BITS.

CABLE, or **CABLE'S-LENGTH**, is alſo uſed for a meaſure of 120 fathoms, being the uſual length of the *cable*.

CABLED, in *Heraldry*, is applied to a croſs formed of the two ends of a ſhip's cable: ſometimes alſo to a croſs covered over with rounds of rope; more properly called a croſs corded.

CABLING, in *Architecture*, the figure of a ſtaff, or reed, either plain or carved, in reſemblance of a rope, or a ruſh, wherewith a third part of the flutings of a column are ſometimes filled up; hence called *cabled flutings*.

There are alſo *cablings* in relievo without fluting, eſpecially on certain pilaſters, as in the church of Sapienza at Rome. See FLUTES.

CABLISH, *Cablicia*, in the *Foreſt Law*, denotes bruſh, or browſe wood; though Spelman takes it more properly to ſignify trees, or branches, thrown down by the wind; from the French *chablis* or *bois chablis*, which denotes the ſame.

CABOCHED, **CABOSHED**, or **CABOSSED**, in *Heraldry*, is where the head of a beaſt is cut off behind the ears, by a ſection parallel to the face; or by a perpendicular ſection: in contradiſtinction to couped; which is done by a horizontal line; beſides that it is farther from the ears than *caboſſing*.

The word is formed from the obſolete French *caboche*, from *caput*, *head*.

CABOCLES, a name given in the Weſt Indies by the Portugueſe to thoſe produced between Americans and Negroes.

CABOTE, in *Zoology*, the name of a fiſh of the cuculus kind, more uſually known among authors by the name of the CORAX.

CABRUSI, in the *Writings of the Ancients*, a word frequently uſed to expreſs Cyprian, or coming from the iſland of Cyprus. The ancient Greeks had almoſt all their vitriols and vitriolic minerals from this iſland; they therefore ſometimes called theſe *cabruſi*, without any addition. It is very probable that our word copperas, the common name of green vitriol, is a falſe pronunciation of this word *cabruſi*.

CABUIA, a Weſt Indian ſpecies of hemp, produced in the province of Panama, from a plant ſomewhat like the *chardon* or *iris*; when ripe, they lay it to ſteep in water, and after drying it again, beat it with wooden mallets till nothing but the hemp remains, which they afterwards ſpin, and make thread and ropes of it; the former of which is ſo hard and tough, that with it they ſaw iron, by fitting it on a box, and laying a little fine ſand over the metal as the work proceeds.

CABURE, in *Zoology*, the name of a ſmall Braſilian bird of the owl-kind; very beautiful, and very eaſily tamed. It is of a brown colour, variegated with white, and is feathered down to the toes. The Braſilians keep it tame for its diverting tricks; it will play with people like a monkey, and is perfectly harmleſs.

CABUREIBA, in *Botany*, a name by which ſome authors have called the tree which affords the black Peruvian balſam of the ſhops.

CABURNS, in *Sea-language*, denotes ſmall lines made of ſpun yarn, wherewith to bind cables, ſeize tackles, and the like.

CACABOGA, in *Zoology*, the name of an American ſpecies of ſerpent, by ſome accounted the ſame with the TAREIBOIA, or black water-ſnake of that part of the world; but by others deſcribed as yellow in colour, living about houſes, and doing great miſchief among poultry, though not fatal to mankind in its bite.

CACAGOGA, in *Ancient Medicinal Writings*, a word uſed for certain ointments intended for rubbing on the fundament to procure ſtools. The moſt common of theſe was made of alum mixed with honey, and boiled till the whole was of a tawny colour. This anointed on the fundament, procured a great many ſtools, but not without ſome pain.

CACALIA, in *Botany*. See *Foreign* COLT'S-FOOT.

CACAO, in *Botany*, *Theobroma* of Linnæus, the chocolate-nut tree; a genus of the *polyadelphia pentandria* claſs. Its characters are theſe: the flower hath five petals, which are irregularly indented; and hath five erect ſtamina. In the centre is placed the oval germen, which afterward becomes an oblong pod ending in a point, which is divided into five cells, filled with oval, compreſſed, fleſhy ſeeds. We have but one ſpecies of this plant, which is a native of America, and is found in great plenty in ſeveral places between the tropics; but particularly at Carracca, and Carthagena, on the river Amazon, in the iſthmus of Darien, at Honduras, Guatimala, and Nicaragua. At all theſe places it grows naturally without culture; but is cultivated in many of the iſlands poſſeſſed by the French and Spaniards; and was formerly planted in ſome of the iſlands which are in poſſeſſion of the Engliſh.

The native Mexicans call the *cacoo-tree*, *cucuhua guahuitl*; and the Spaniards, *cacaotal*. It reſembles our cherry-tree; but is ſo very delicate, and the ſoil it grows in ſo hot, that to guard it from the ſun, they always plant it in the ſhade of another tree, called mother of *cacao*.

It is very proper to obſerve, that the chocolate-nut will not retain its vegetative faculty long after they are taken from the trees; ſo that there is no poſſibility of tranſporting them to any great diſtance for planting: nor ſhould they be kept long out of the ground in the natural places of their growth. In order therefore to cultivate this plant for curioſity in Europe, it will be neceſſary to have the nuts planted in boxes of earth, in the countries where they grow, ſoon after they are ripe. Theſe plants muſt be frequently but gently watered, and protected from the ſun and the cold, according to the latitudes they paſs through; and when arrived, muſt be carefully preſerved in a bark ſtove.

The fruit is incloſed in a kind of pod, of the ſize and figure of a cucumber; except that it begins and ends in a point. Within the pod, which is half a finger thick, is formed a plexus of white fibres, very ſucculent, a little acid, and good to appeaſe thirſt. In the middle of theſe fibres are contained ten, ſometimes twelve, and ſometimes more, as far as forty ſeeds, of a violet colour, and dry as acorns. Each ſeed, which is covered with a little bark or rind, when ſtripped thereof, ſeparates into five or ſix unequal pieces, in the middle whereof is a kernel having a tender bud, very difficult to preſerve.

Of this ſeed, with the addition of vanilla, and ſome other ingredients, the Spaniards, and, after their example, the reſt of Europe, prepare a kind of conſerve, or cake; which, diluted in hot water, makes that delicious, wholeſome drink, called CHOCOLATE.

It is likewiſe made into a ſweet-meat; and there is an oil extracted from it, to which they give the name of butter. That oil is as ſweet as oil of almonds, and is made after the ſame manner. It is an extraordinary remedy for the cure of burns and ſcalds. Some of the Creolian ladies uſe it as a paint, to render their complexion freſh, and their ſkins ſmooth.

In ſome parts of America, the *cacao* ſeeds are uſed by the Indians as money: twelve or fourteen are eſteemed equivalent to a Spaniſh real, or ſix pence three farthings ſterling.

There are two kinds of *cacaos*: the moſt common, which is likewiſe the beſt, is of a dark colour, bordering on red, and round: the other is called *patlaxe*, which is white, larger, thicker, and flatter; its quality is deſiccative. Some druggiſts, however, ſell four kinds; viz. the great and little *caracca*, and the great and little *cacao* of the iſlands: theſe, however, may be probably reduced to the two kinds above mentioned; it being only the greatneſs and ſmallneſs that multiplies the name and kinds.

They were procured in great plenty from one of the iſlands called King George's Iſlands, by Commodore Byron, in his late voyage through the South ſeas, and found to be an excellent antiſcorbutic. Many, he obſerves, whoſe limbs were become as black as ink, who could not move without the aſſiſtance of two men, and who, beſides total debility, ſuffered excruciating pain, were in a few days, by eating theſe nuts, although at ſea, ſo far recovered as to do their duty, and could go even aloft as well as they did before the diſtemper ſeiſed them. Hawkeſworth's Voyages, vol. i. chap. x. p. 114.

Cacao is one of the moſt oily fruits which nature produces; and has this ſingular advantage, that it never grows rank, how old ſoever it be, as all other fruits do which have any analogy with this: ſuch as walnuts, almonds, kernels of pine-apples, piſtacho-nuts, olives, &c. The *cacao*-nuts are eſteemed by the Mexicans as anodyne; and uſed, eaten raw, to aſſuage pains of the bowels.

CACAOTETE, in *Natural Hiſtory*, the name by which the Braſilians call the BELEMNITES, which is very common there as well as with us.

CACATORY *fever*, a denomination given by Sylvius to an intermittent fever, accompanied with a ſevere looſeneſs, and ſometimes gripes.

CACAVATE, in *Botany*, a name given by ſome authors to the COCOA-*tree*; which is alſo ſometimes called *cacavera*.

CACAVIA, in *Botany*, a name given by the Greek authors and ſome of the others to the LOTUS or nettle-tree. It obtained this name from the reſemblance of its fruit when ripe, to the HALICACCABUM or winter-cherry.

CACCALIA, in *Botany*, a name given by ſome of the old Greek writers to the *halicaccabum* or *alkekengi*, the winter-cherry; a kind of nightſhade or plant allied to that family, but diſtinguiſhed from all the others by the fruit being covered with a membranaceous bag.

CACCABON, in *Botany*, a name given by ſome authors to the *water*-LILY or *nymphæa*.

CACEDONIUS *tartarum*, is peccant matter in the human body, generated from ſeparations by the ſecretive faculty, which are not immediately ſucceeded by the operation of the expulſive faculty.

CACHALOT, in *Ichthyology*, a cetaceous fiſh, with teeth in the lower jaws only; claſſed by Linnæus under the *phyſeter*. The blunt-headed *cachalot* is one of the ſpecies that yields the *ſpermaceti*: there are beſides the round-headed and the high-finned *cachalots*. See PHYSETER.

CACHEF, or CACHEEF, in the *Turkiſh Affairs*, the governor of a city, town, or even province in Egypt.

The title *cachef* is alſo given to the captains or commanders of little flying armies, intended to keep the Arabs in obedience.

Egypt is divided by the Turks into thirty-nine *cacheſtecks*, or governments.

CACHEXY, in *Medicine*, an ill ſtate or diſpoſition of body; wherein the nutrition is depraved throughout the whole habit; accompanied with a ſwelling, or bloating of the fleſhy parts; a flaccid ſtate of the body, eaſily perceived externally, and ariſing from a viſcoſity of the juices, and a remiſſion of the tonic motions of the parts.

The word is formed from κακος, *ill*, and ἑξις, *habit* or *diſpoſition*.

The *cachexy* is diſtinguiſhed from the anaſarca by the fleſh hanging flaccid and pendulous, and being ſoft in it; whereas in the anaſarca it is often ſo diſtended and hard, that the ſkin ſhines, and looks as if it would burſt. The anaſarca alſo uſually forms œdematous tumors in many parts of the body, but the *cachexy* never does this. It differs from the aſcites in that this diſeaſe only affects the lower parts of the body, but the *cachexy* the whole; but it differs only from the chloroſis as genus from ſpecies. Phyſicians diſtinguiſh the *cachexy* into ſimple and compound: the firſt is, when it is combined with no other diſeaſe; in the other, it is frequently compounded with the ſcurvy.

CACHEXY, *ſigns of the*. There is no diſeaſe more readily known than this, as none has ſuch obvious and diſtinctive ſymptoms. The face, hands, feet, and legs, are always bloated, and ſwelled beyond their natural dimenſions; the natural heat of the body decreaſes, and there is an evident and actual ſenſation of cold in the parts. This is attended with an univerſal languor, and anxiety of mind, and a painful weakneſs in going up ſtairs, or walking up hill: the appetite is very uncertain, and loathings of food are very frequent: after food, there are all the ſymptoms of a bad digeſtion, as tenſions and oppreſſions about the ſtomach, and flatulencies. The bowels are in a very uncertain ſtate, ſometimes remaining coſtive for a long while; and at others, throwing off the food undigeſted, in the manner of a lientery: the patients have always a great propenſity to ſleep, but they are not refreſhed by it. The urine is but ſmall in quantity, and is ſometimes crude and reddiſh; ſometimes limpid, but always has a livid appearance. The pulſe is languid and weak; and the blood, if it happens to be ſeen by any accident, is pale and thin, and abounds in ſeroſities. The patients always complain alſo of a ſhortneſs of the breath, and a difficulty of breathing, eſpecially after the body has been at any time in motion. Heats and fluſhings come on at times, and the head is always diſturbed; always torpid and inclined to ſleep, and ſometimes vertiginous and violently painful; and œdematous tumours appear in the feet, when the patient is ſtanding up, but diſappear again when he lies down.

There is always alſo a ſenſe of weight and preſſure in the abdomen; ſometimes in the right hypochondrium, ſometimes in the left; and often deeply inward under the navel; ſometimes the whole abdomen is inflated and hard, and ſometimes it is only partially ſo; hardneſſes and inequalities being ſenſible to the touch in it.

It moſt frequently attacks perſons of a phlegmatic habit, and is more common among women than men, as well on account of their ſofter texture, as of the frequent diſorders the irregularity of their menſtrual diſcharges throws them into. Women oftener, however, are brought into it through a defect of the menſes, than by the exceſs of that diſcharge.

Cauſes of it. Among theſe are to be reckoned, the living in wet and damp rooms; the leading an idle and ſedentary life; and the feeding on viſcous things, and drinking great quantities of water. On the contrary, the abuſe of ſpirituous liquors will alſo occaſion it; and the taking aſtringent medicines at the times when the blood is in violent emotions, as in hæmorrhages, and in acute fevers: the ſtriking in of cutaneous humours will alſo ſometimes occaſion it; and very often the omiſſion or ſuppreſſion of habitual diſcharges of blood, by whatever paſſages. Great loſs of blood is vulgarly ſuppoſed to be one of the principal agents in bringing on this diſeaſe, but improperly; for when this ſucceeds ſuch diſcharges, it is rather owing to their being long continued, than violent, and to the improper diet of the patient afterwards, which prevents a proper ſupply of blood again, than from the actual loſs of it. Improper treatment of the gout, and the abuſe of volatile ſalts in high fevers, are alſo too often the cauſes of this diſeaſe.

According to Boerhaave, *cachexies* may ariſe either from a vitiated ſtate of the nutritious juice, from ſome diſorder of the veſſels that are to receive it, or from a defect in the faculty that ſhould apply it. The juices, he obſerves, may be depraved, either from the quality of the food; as if it be farinaceous, leguminous, fat, fibrous, ſharp, aqueous, or viſcous; from the want of motion; from the organs being vitiated by too much weakneſs, or too much ſtrength: and theſe, again, may be occaſioned by immoderate ſecretions, and evacuations of any kind, the ſchirrhoſity of ſome of the viſcera, or the retention of ſomething that ſhould be ſecreted: and hence, a diminution of the ſolids, or a repletion of the liquids with things that cannot paſs; whence ariſe two notable ill effects of this evil, viz. a leucophlegmatia, and an anaſarcous dropſy. According to the various colour, quantity, tenacity, acrimony, and fluidity of the nutritious liquor, ariſe alſo various diſorders, as the effects of the *cachexia*; v. g. paleneſs, yellowneſs, lividneſs, greenneſs, blackneſs, or redneſs of the ſkin; heavineſs, windineſs, palpitation of the heart and arteries increaſed with the leaſt motion, crude thin urine, ſpontaneous watery ſweats; and, at length, a leucophlegmatia and dropſy. For the veſſels that receive the nutritious juice, there cannot well be aſſigned any univerſal fault; unleſs their too great laxity, and the diſorders accruing from them, may be admitted as ſuch. Laſtly, nutrition is impeded and perverted, by a defect in the faculty that ſhould apply it; as when the circulating force is either too languid or too violent.

Prognoſtics. When this diſeaſe is plenary, and the whole craſis of the humours is depraved by it, it is very difficult of cure: it is in general more eaſily cured in young people than in older; and in theſe laſt, it uſually degenerates into a dropſy, and hectic; and when driven back, it often produces a ſuffocative catarrh. When the diſeaſe is not plenary, or in its full ſtate, but rather may be called a *cachectic* diſpoſition than a *cachexy*, as is frequently the caſe with young people; particularly with girls, on account of the ſuppreſſions of the menſes; then it is in general eaſily cured, unleſs the bad regimen of the patient for ſome time before has rendered it more than uſually obſtinate and violent; in general, the ſooner it is undertaken, the more eaſily it is cured.

The chloroſis of young girls, which ſeems to be of a middle nature, between a cachectic diſpoſition, and a confirmed *cachexy*, is a chronic caſe, and ſeldom admits of a ſudden cure, unleſs there be a remarkable change of life in the patient, as by marriage. This chloroſis is in itſelf rather troubleſome than dangerous, as it gives an univerſal languor both of body and mind, a bad colour, palpitations of the heart, and other painful ſymptoms; but it ſometimes degenerates into a *cachexy*, or a hectic.

Method of cure. The general method muſt be by correction of the vitiated humours; a reſeration of the viſcera; an evacuation of the humors, when thus prepared for it; and, finally, a reſtitution of the due tone to the ſolids.

For the firſt fortnight, the patient ſhould be treated with reſolvents and digeſtives: ſuch as the *tartarum vitriolatum*, and abſorbents ſated with acids; as crab's eyes with lemon juice; and with aperient decoctions of the woods of guaiacum and ſaſſafras; as the roots of pimpernel, and the like; and either during this time, or afterwards, evacuants are to be given; ſuch as ſena, jalap, and dwarf-elder. When the improper treatment of a fever has been the occaſion of the malady, the mild alexipharmics are to be given at times; and when an obſtruction of the menſes is in the caſe, the time they are to be expected is to be carefully regarded, and emmenagogues and baths for the feet, are to be ordered at thoſe periods. When obſtructions of the hæmorrhoidal diſcharges are in the caſe, then, after the firſt fortnight, leeches ſhould be applied to the hæmorrhoidal veins; and if the diſeaſe has ariſen from long continued hæmorrhages, then analeptics are to be truſted to, with very gentle correctives, for fear of exciting new commotions in the blood; and in theſe caſes, bleeding in the arm is ſometimes found neceſſary.

It is of the utmoſt conſequence in this caſe, that a proper diet be obſerved; all coarſe and heavy foods are to be avoided, as alſo all acid and ſalt things; and much water is as carefully to be guarded againſt, as an exceſſive uſe of ſpirituous liquors. Finally, when the diſeaſe is cured, its return is to be guarded againſt, by taking proper purgatives once a month. To this purpoſe, Stahl greatly recommends a mixture of gum ammoniacum, galbanum and myrrh, and ſmall quantities of calomel, with the purges. It is too common a practice to give boldly the forcing medicines, as they are called, to young women in *cachectic* complaints; ſuch as myrrh, ſaffron, ſavin, and the like; but this very often throws them into an *aſcites*, or other diſorders, worſe than the firſt.

Cachexy, *uterine*, a term uſed by Hoffman for the *fluor albus*.

CACHLEX, in *Natural Hiſtory*, a name uſed by ſome authors for the ſmall pebbles found on the ſea and river ſhores, which being heated red-hot, and quenched in whey, are ſaid to give an aſtringent virtue.

CACHORRODOMATO, in *Zoology*, the name by which the Portugueſe, in America, call the taiibi; a creature in many reſpects reſembling the opossum, and ſuſpected to be the male of that creature.

CACHRYS, in *Botany*, a genus of the *pentandria digynia* claſs. Its characters are theſe: it hath an umbellated flower, the involucrum compoſed of many narrow ſpear-ſhaped leaves, with five ſpear-ſhaped erect petals. It hath five ſingle ſtamina. The turbinated germen is ſituated under the receptacle; the empalement afterward becomes a large, oval, blunt fruit, dividing in two parts, each having one large fungous ſeed. There are five ſpecies.

The ſeed of *cachrys*, though not uſed in the preſent pharmacy, was recommended by the ancients for its heating and drying qualities; and therefore judged a proper ingredient in ſmegmas. It alſo made a good plaſter for the head in defluxions upon the eyes, provided it is taken off at the end of three days; and taken with pepper and wine, it was ſaid to be good for the epilepſy. James.

Cachrys, or Canchrys, among *Ancient Botaniſts*, denoted a ſcaly tuft, growing like a catkin on certain trees; as the oak, beech, pine, and the like; or, according to others, an unſeaſonable kind of germen or bud, appearing either in the ſpring, or autumn; and which, after the winter is over, ſpreads or ſhoots into branches. The word is ſometimes alſo uſed for the ſeed of roſemary, or even the plant itſelf; ſometimes for barley roaſted in a furnace, to render it more eaſy to grind into flour.

CACHU, Cachou, or Catechu. See Catechu.

CACHUNDE, the name of a medicine, highly celebrated among the Chineſe and Indians, and made of ſeveral aromatic ingredients, the perfumes, medicinal earth, and precious ſtones: they make the whole into a ſtiff paſte, and form out of it ſeveral figures according to their fancy, which are dryed for uſe: theſe are principally uſed in the Eaſt Indies, but are ſometimes brought over to Portugal. In China, the principal perſons uſually carry a ſmall piece in their mouths, which is a continued cordial, and gives their breath a very ſweet ſmell. It is a highly valuable medicine alſo, in all nervous complaints; and is eſteemed a prolonger of life, and a provocative to venery, the two great intentions of moſt of the medicines in uſe in the Eaſt.

CACHYMIA, in *Metallurgy*, a term uſed by Paracelſus for an imperfect metalline ore, as he expreſſes it, an immature metalline body, which is neither a ſaline ſubſtance nor a metal.

The *cachymiæ* may be divided into ſulphureous, as marcaſite; mercurial, as arſenic or orpiment; and ſaline, as all talcs.

CACOCHYMIA, a vicious ſtate of the vital humours, eſpecially of the maſs of blood; ariſing either from a diſorder of the ſecretions, or excretions, or from external contagion.

The word is compounded of *κακος*, *ill*, and *χυμος*, *juice*.

Gorræus gives this name to the abundance, or exceſs of any ill humour; whether it be bile, *pituita*, or any other; provided there be only one that thus offends in quantity; and *plethora* he calls the abundance or exceſs, or all the humours together.

CACODES, in the *Ancient Writers of Medicine*, a name given to ſeveral kinds of matter diſcharged from the human body, which had an ill ſmell. The offenſive matter voided ſometimes by vomit, has this name, as alſo that evacuated by ſtool, and the diſcharge of foul ulcers.

CACOETHES, or Cacoethia. See Malignant.

CACOPHONIA, in *Grammar* and *Rhetoric*, the meeting of two letters, or ſyllables, which yield an uncouth, and diſagreeable ſound.

The word is compounded of *κακος*, *evil*, and *φωνη*, *voice*.

Cacophonia, in *Medicine*, denotes a vice or depravation of the voice, or ſpeech; of which there are two ſpecies, *aphonia*, and *dyſphonia*.

CACTONITES, in *Natural Hiſtory*, a name given by ſome old writers, to a beautiful pale red ſtone, ſuppoſed to be the ſame with our pale *cornelian*.

CACTUS, in *Botany*. See *Melon* Thistle.

CACULE, in the *Materia Medica*, a name given by Avicenna, Serapio, and all the other Arabian writers, to the *cardamom* ſeeds. They diſtinguiſh two kinds of this fruit, a larger, and a ſmaller. The larger is the grain of paradiſe, and the ſmaller the common cardamom ſeed of theſe times. They alſo called the cardamoms, in general, by the name *heil*, and diſtinguiſhed the ſmall kind, now principally in uſe, by the word *bilbanc*, which after-writers corrupted into *hilbave* and *hilbua*, or *helbua*.

CADARI, or Kadari, a ſect of Mahometans, who aſſert free-will, attribute the actions of men to men alone, not to any ſecret power determining the will; and deny all abſolute decrees, and predeſtination.

The author of this ſect was Mabed ben Kaled Al Gihoni, who ſuffered martyrdom for it.

The word comes from the Arabic, קדר, *cadara*, *power*. Ben Aun calls the *Cadarians*, the Magi, or Manichees of the Muſſulmen.

CADE, a cag, caſk, or barrel; uſed in the book of rates for a determinate number of ſome ſorts of fiſh.—Thus a *cade* of herrings is a veſſel containing the quantity of five hundred herrings, and of ſprats one thouſand.

Anciently the *cade* of herrings appears to have contained ſix hundred fiſh, reckoning ſix ſcore to the hundred.

Cade-*lamb*, a young lamb weaned, and brought up by hand, in a houſe; called in the North, *pet-lamb*.

Cade-*oil*, in the *Materia Medica*, a name given to an oil much in uſe in ſome parts of France and Germany. The phyſicians call it *oleum cadæ*, or *oleum de cada*. This is ſuppoſed by ſome to be the *piſſelæum* of the ancients, but improperly; it is made of the fruit of the *oxycedrus*, which is called by the people of theſe places, *cada*.

Cade-*worm*, in *Natural Hiſtory*, a name given by authors to the *phryganium*, a common worm, found in ditches, and uſed as a bait for fiſh. The fly produced from this worm has a long body, four brown wings, and a forked tail, and is found in the month of Auguſt very frequent on waters.

CADENCE, in *Muſic*, denotes a kind of cloſe, or reſt, either at the end of a ſong, or ſome of its parts, into which it is divided as into members, or periods.

The word ſeems a metaphor, drawn from the dancing-ſchool, where it properly ſignifies a pauſe, or fall, from motion to reſt. A *cadence* is properly when the parts fall, and terminate on a chord, or note, the ear ſeeming naturally to expect it. Regularly it is to be made on the final or dominant, though ſometimes alſo on the mediant, or middle chord of a mode.

Cadences in ſinging anſwer nearly to points, or ſtops, in diſcourſe. They are reſts contrived to favour the weakneſs of the performers, as well as the hearers, of a muſical compoſition. Men are not able to ſuſtain their attention, or their voice, beyond the ſpace of two meaſures; even in this ſhort interval we perceive the ſong to fall, and tend rapidly to a pauſe, or reſt: the notes which introduce theſe pauſes, are called *cadences*, in the proper conducting and expreſſing of which a great part of the muſician's ſkill depends. The chief *cadence* or cloſe is the key itſelf, in which the baſs muſt always conclude; the next in dignity is the fifth above, and the next to that the third. Or if the baſs be ſharp, the fourth or ſecond above the key.

In modulation, *cadences* are made on ſeveral keys, though ſtill with ſome relation to the principal one: the harmony muſt always return to the key appropriated to the piece, and often terminate there by middle as well as final *cadences*.

Cadences uſually occur in every two meaſures, and always in the note which begins the meaſure they happen in. It requires a nice taſte to diſtinguiſh the tonic note on which the *cadences* eſſentially fall; becauſe they uſually ſeem to fall on another note preſented in the ſong. It is by the natural progreſſion of the fundamental baſs that we are enabled to make the diſcovery. As often as this baſs falls a fifth, or riſes a fourth, there is a *cadence*. In reality, this diſpoſition imitates a cloſe ſo well, that when we come to the firſt ſound of this *cadence*, we find ourſelves as it were forced to fall on the other, ſo that it requires an extraordinary effort of the voice to ſuſtain itſelf on the firſt, or only to fall a third. Hence it is that the firſt ſound which makes its fifth of the tonic, is called its dominant, being in reality the top, or higheſt part of the harmonical ſyſtem, and that fartheſt from the fundamental ſound: thus *ſol* is the dominant of *ut*; and *re*, of *ſol*. In making a *cadence*, the baſs muſt always fall a fifth, or riſe a fourth.

CADENCE, among the French *Muſicians*, is uſed to ſignify a *trillo*, or *ſhake*, but improperly, according to Broſſard. In effect, the *cadence* is properly the tranſition from the note on which the ſhake is made, to a note which is a tone lower, or a ſemi-tone major higher, in the treble parts. See CADENZA *Sfuggita*.

CADENCE, in the *Ancient Muſic*, denotes a ſeries or ſucceſſion of muſical notes, in certain intervals, which ſtrike the ear agreeably; and eſpecially at the cloſe of a ſong, couplet, or ſtanza. In which ſenſe, *cadence* amounts to much the ſame with *rhythmus*.

CADENCE, in *Oratory* and *Poetry*, denotes the running of verſe, or proſe; otherwiſe called the numbers, and by the ancients ῥυθμος. See RHYTHM.

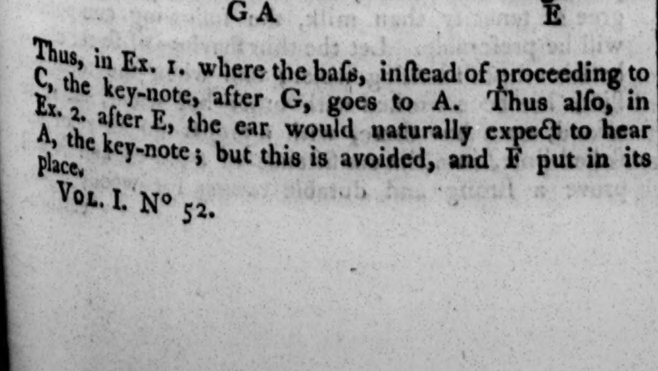
CADENCE, in the *Modern Dancing*, is when the ſeveral ſteps and motions follow, or correſpond to, the notes or meaſures of the muſic.

CADENCE, in the *Manege*, denotes an equal meaſure, or proportion, obſerved by a horſe in all his motions, when he is thoroughly managed, and works juſtly either at the gallop, *terra à terra*, or the airs.

A horſe's working in *cadence* imports, that his times or motions are uniform, and that one does not take in more ground than another.

CADENCY, in *Heraldry*, the ſtate, or quality, of a CADET. Niſbet has an eſſay on the additional figures and marks of *cadency*. See DIMINUTION.

CADENZA *Sfuggita*, in the *Italian Muſic*, is uſed when a part inſtead of aſcending or deſcending the proper interval, to form a *cadence*, proceeds by ſome other interval. For inſtance, when the baſs, inſtead of riſing a fourth, or falling a fifth, aſcends only by a tone, or ſemi-tone major.



Thus, in Ex. 1. where the baſs, inſtead of proceeding to C, the key-note, after G, goes to A. Thus alſo, in Ex. 2. after E, the ear would naturally expect to hear A, the key-note; but this is avoided, and F put in its place.

CADETS, the younger brothers of a family: a term naturalized in our language from the French.

At Paris, among the citizens, the *cadets* have an equal portion with the eldeſt: in other places, the eldeſt has all. According to the cuſtom of Spain, one of the *cadets*, in great families, takes the mother's name.

CADET alſo denotes a young gentleman ſoldier, who, to attain to ſome knowlege in the art of war, and in expectation of preferment, chooſes to carry arms as a private man in a company of foot.

Cadet differs from volunteer, as the former takes pay, though only that of a private man, whereas the latter ſerves without pay.

Formerly there were allowed only two *cadets* in each company. In 1682, the king of France eſtabliſhed companies of *cadets*, wherein the young gentry were trained up to war, and taught the arts and exerciſes belonging thereto, as riding, fencing, mathematics, &c.

CADGE, a round frame of wood, on which falconers carry their hawks when they expoſe them to ſale.

CADI, among the Turks and Saracens, denotes an ordinary judge, who decides in all civil controverſies within the diſtrict of a town, or city, though ſubject to appeals to ſuperior judges.

The word is Arabic קדי or קאדי, q. d. *judge*, formed of קדי, *to judge*. D'Herbelot writes it *cadhi*.

The term *cadi*, uſed abſolutely, denotes the judge of a ſmaller town or village; thoſe of cities being called *mollas*, or *moulas*, ſometimes *mouli-cadis*, or *great cadis*.

We find numerous complaints of the avarice, extortion, and iniquity of the Turkiſh *cadies*; all juſtice is here venal; the people bribe the *cadies*; the *cadies* bribe the *moulas*; the *moulas* the *cadileſchers*, and the *cadileſchers* the *mufti*.

It is uſually vain to appeal from the ſentences of the *cadi*; ſince the affair is never heard anew, but judgment is paſſed on the caſe, as ſtated by the *cadi*. The *cadies*, nevertheleſs, are often caſhiered, and puniſhed for notorious injuſtice with the *baſtonado* and mulcts; but the law forbids them to be put to death. Conſtantinople has had *cadies* ever ſince the year 1390, when Bajazet I. obliged John Palæologus, emperor of the Greeks, to receive *cadies* into the city, to judge all controverſies happening between the Greeks and the Turks ſettled there.

In ſome countries of Africa, the *cadies* are alſo judges of religious matters. Among the Moors, *cadi* is the denomination of their higher order of prieſts, or doctors, anſwering to the rabbins among the Jews.

CADIANG, in *Botany*, a kind of lentiles in Batavia, and the adjacent country, which makes a conſiderable part of the food of the common people. Dr. Hawkeſworth's Account of the Voyages to the South Seas, vol. iii. p. 733.

CADILESCHER, or CADI-LESKER, a capital officer of juſtice among the Turks, anſwering to a chief-juſtice among us.

The word comes from the Arabic *kadi*, *judge*, the particle *al*, and *aſchar*, *army*; as being at their firſt inſtitution chiefly judges of the ſoldiery; of whoſe cauſes they have ſtill the ſole cognizance. D'Herbelot writes the name *cadhi-leſker*, or *cadhi-aſker*.

It is ſaid that this authority was originally confined to the ſoldiery; but that at preſent it extends itſelf to the determination of all kinds of law-ſuits; yet nevertheleſs ſubject to appeals.

There are but three *cadileſchers* in all the Grand Seignior's territories: the firſt, is that of Europe; the ſecond, of Natolia; and the third reſides at Grand Cairo. This laſt is the moſt conſiderable. They have their ſeats in the divan next to the grand viſir.

The *cadileſchers* have much the ſame authority in the provinces, that the *muftis* have at Conſtantinople: they even frequently riſe to be *muftis*: their chief ſtudy is the Alcoran, which is the code of their civil, as well as canon law. Appeals are ſometimes brought to them from the ſentences of the *cadies* in civil affairs; and they have the ſuperintendence of all other officers of juſtice within the empire. They nominate the *cadies*, and *moula-cadies*; but theſe laſt only with the conſent of the Grand Seignior. On any grievous complaint againſt the *cadies*, they condemn and depoſe them. Tournef. Voyage Lev. tom. ii. let. 14. Pocock. Egypt. p. 170.

CADITES, an appellation given by Plott to a kind of figured ſtone, reſembling a *cadus*, or barrel.

The *cadites* ſwells in the middle, and goes tapering to both ends, being divided lengthwiſe, with ſuch equidiſtant lineaments, as are uſually made by the ſtaves of a barrel, but without hoops, nor yet hollow.

CADIZADELITES, a ſect among the Muſſulmen, reſembling the ancient ſtoics, who avoid all feaſting and diverſion, and affect an uncommon gravity in all they do or ſay. Thoſe of them who inhabit the frontiers of Hungary, &c. agree in many things with the Chriſtians, and drink wine, even in the faſt of the Ramazan.

They read the Sclavonic tranſlation of the Bible, as well as the Alcoran. Mahomet, according to them, is the Holy Ghoſt, which deſcended on the apoſtles at the feaſt of Pentecoſt.

CADLOCK, in *Botany*. See MUSTARD.

CADMEAN *Letters*, the ancient Greek, or Ionic characters, ſuch as they were firſt brought by Cadmus from Phœnicia; whence Herodotus alſo calls them, *Phœnician letters*.

According to ſome writers, Cadmus was not the inventor, nor even importer of the Greek letters, but only the modeller and reformer thereof; and it was hence they acquired the appellation *Cadmean*, or *Phœnician letters*; whereas before that time they had been called *Pelaſgian letters*.

CADMIA, in *Pharmacy*, a name which has been variouſly applied; but it uſually denotes a mineral ſubſtance, whereof there are two kinds, *natural* and *artificial*.

The *natural cadmia*, again, is of two ſorts; the one containing arſenic, and called *cadmia foſſilis*, or COBALT; the other containing zinc, called calamine, or *lapis* CALAMINARIS.

The *artificial cadmia*, called *cadmia fornacum*, is prepared from ores containing zinc, when ſmelted in furnaces: of this there are five kinds; the firſt called *botryitis*, as being in form of a bunch of grapes; the ſecond, *oſtracitis*, as reſembling a ſea-ſhell; the third, *placitis*, becauſe reſembling a cruſt; the fourth, *capnitis*, *duſty*; and the fifth, *calamitis*: this laſt hangs round certain iron rods, wherewith the matter of the copper is ſtirred in the furnace, which being ſhaken off, bears the figure of a quill, called in Latin *calamus*.

The *cadmia botryitis* is found in the middle of the furnace; the *oſtracitis* at the bottom; the *placitis* at the top; and the *capnitis* at the mouth of the furnace.

This *cadmia* is deſiccative and deterſive: it is generally uſed in ſtinking ulcers; which by means hereof are brought to cicatrize. The *botryitis*, and *placitis*, are alſo good in diſeaſes of the eyes. See TUTTY.

CADMIA is alſo uſed by Pliny for copper-ore, or the ſtone of which copper is made. And hence the ſeveral appellations, *cadmia foſſilis*, *cadmia fornacum*, *cadmia metallico*, *cadmia atramentoſa*, and *cadmia pro cæruleo*. Hiſt. Nat. lib. xxxiv. cap. 10. cum Hard. Not.

CADMITES, in *Natural Hiſtory*, a kind of gem, nearly reſembling the OSTRACITIS; from which it only differs in that the latter is ſometimes girt with blue ſpots.

In ſome MSS. for *cadmites*, we read *calamites*.

CADRITES, a kind of religious among the Mahometans; whoſe founder was Abdul Cadri, a great philoſopher and lawyer; whence they take their name, *Cadrites*.

They live in common, and in a kind of monaſteries; which, however, they are allowed to quit, if they requeſt it, and to marry; on condition of their wearing black buttons on their garments, to diſtinguiſh them from the reſt of the people.

In their monaſteries, they paſs the greateſt part of every Friday night in running round, holding each other's hand, and crying inceſſantly, *hhai*, *living*, one of the names of God: one of their number plays all the time on a flute, to animate them in this extravagant dance.

CADUCEATOR, in *Antiquity*, a denomination given to heralds or meſſengers of peace. See CADUCEUS.

CADUCEUS, or CADUCEUM, Mercury's rod, or ſceptre; a wand entwiſted with two ſerpents, worne by that deity as the enſign of his quality and office.

The poets attribute wondrous virtues to the *caduceus*; as that of throwing people into a ſleep, raiſing the dead, &c. It was alſo uſed by the ancients as a ſymbol of peace and concord: the Romans ſent the Carthaginians a javelin, and a *caduceus*, offering them their choice, whether of war or peace.

Among that people, thoſe who denounced war were called *feciales*, and thoſe who went to demand peace, *caduceatores*; becauſe they bore a *caduceus* in their hand.

The *caduceus* found on medals, is a common ſymbol, ſignifying good conduct, peace, and proſperity. The rod expreſſes power, the two ſerpents prudence, and the two wings diligence.

Wedelius has given a diſſertation expreſly on *caduceated* medals.

CADUCEUS is alſo a name given to a kind of ſtaff covered with velvet, and decorated with *fleurs de lys*, which the French heralds of arms bear in their hands on ſolemn occaſions. That borne by the king at arms has a golden *fluer de lys* at the end; and is by ſome called ſceptre.

CADUCUS *morbus*, in *Medicine*. See EPILEPSY.

CADUS, an ancient liquid meaſure of capacity, containing ten, ſometimes twelve *congii*; and ſixty, or, according to others, ſeventy-two *ſextaries*.

The *cadus* is the ſame with what is otherwiſe denominated *metretes*, and *cerameon*, &c. See AMPHORA.

CÆCÆ *Glandulæ*. See GLANDS.

CÆCILIA, in *Zoology*, the name of a genus of ſerpents. See SLOW-*worm*.

CÆCILIA, in *Ichthyography*, a name uſed by ſome authors for the fiſh more uſually known by the name of the ACUS.

CÆCILIANA, in *Botany*, a name uſed by Pliny and ſome other authors for the *tutſan*, or *androſæmum*. Ger. Emac. Ind. 2.

CÆCUM, in *Anatomy*. See COECUM.

CÆLATURA, or COELATURA, the art of ENGRAVING on metals, ſtones, woods, or the like, with inſtruments of ſteel, diamond, &c. See SCULPTURE.

CÆLESTIANS, the followers of Cæleſtius, a monk, who flouriſhed under the empire of Arcadius, about the year 405, and taught much the ſame doctrines as Pelagius. See PELAGIANS.

CÆMENT, in a general ſenſe, any compoſition of a glutinous, or tenacious nature, proper to bind, unite, or keep things in coheſion.

The word is alſo written *cement*, and even *ciment*. It is formed from the Latin *cæmentum*, of *cædo*, *I beat*.—Though M. Felibien obſerves, what the ancient architects called *cæmentum*, was a very different thing from our *cæment*. The name *cæment*, with them, ſignified a kind of maſonry, or manner of laying the ſtones, and even the quality of the ſtones; as when the walls were built of rude, unequal ſtones. In reality, the ſtones were cut for ſuch work, but not ſquared nor uniform: ſo that *cæmenta* ſtood oppoſed to *quadrati lapides*.

CÆMENT is particularly uſed, in *Architecture*, for a ſtrong binding ſort of mortar, uſed to bind, or unite bricks or ſtones together, for ſome kinds of mouldings; or to make a block of bricks, for the carving of ſcrolls, capitals, &c.

It is of two ſorts: the *hot cæment*, which is the moſt common, is made of reſin, bees-wax, brick-duſt, and chalk, boiled together. The bricks to be *cæmented* are heated, and rubbed one upon another, with *cæment* between.

The *cold cæment* is leſs uſed; it is made of Cheſhire cheeſe, milk, quick-lime, and whites of eggs.

Mortar, ſolder, glue, &c. are *cæments*. The BITUMEN brought from the Levant is ſaid to have been the *cæment* uſed in the walls of Babylon.

Equal quantities of powdered glaſs, ſea-ſalt, and iron filings, mixed with loam, make a very hard and durable *cæment*.

Mr. Boyle informs us, that the beſt method to cloſe and repair pipes of ſubterraneous aquæducts is with tobacco-pipe clay pulverized, and mixed with a large quantity of pulverized flocks, and carefully beat up with linſeed oil into a ſtiff paſte. See MORTAR and TARRAS.

CÆMENT is alſo uſed among *Goldſmiths*, *Engravers*, *Jewellers*, &c. for a compoſition of fine brick-duſt, well ſifted, reſin, and bees-wax; in uſe among thoſe artificers to keep the metals to be engraven, or wrought on, firm to the block, &c. as alſo to fill up what is to be chiſſelled.

The receiver of an air-pump may be faſtened to a metalline plate by means of a *cæment* of bees-wax and turpentine, made with equal parts, for the winter; and three parts of the former, to two of the latter, for the ſummer. We have various receipts for making *cæments* to mend broken china or glaſſes: one of the fineſt, and at the ſame time ſtrongeſt, *cæments* for this purpoſe, is the juice of garlick, ſtamped in a ſtone mortar; this, if applied with care, will leave little or no mark. Another *cæment* for broken glaſſes, china, or earthen-ware, may be prepared by beating the white of an egg very clear, and mixing it with fine powdered quick-lime; or iſinglaſs, powdered chalk, and a little lime, may be mixed together, and diſſolved in fair water; with which the glaſſes, &c. are to be *cæmented*, and then ſet in the ſhade to dry.

Drying oil with white lead is alſo frequently uſed for this purpoſe; but where the veſſels are not expoſed to heat or moiſture, iſinglaſs glue, with a ſmall quantity of tripoli, or chalk, is better.

Some have recommended a *cæment* made by tempering quicklime with the curd of milk, till it become of a proper conſiſtence for uſe; but as cheeſe has a greater degree of tenacity than milk, the following compoſition will be preferable. Let the thin ſhavings of ſweet cheeſe be ſtirred with boiling water; and when the tenacious ſlime has been worked with other hot water, let it be mixed, on a hot ſtone, with a proper quantity of unſlaked lime, into the conſiſtence of a paſte; and it will prove a ſtrong and durable *cæment* for wood, ſtone, earthen-ware, and glaſs; and it has this advantage, that when it is thoroughly dry, it will receive no injury from water.

A *cæment* may be prepared for chemical glaſſes that will bear the fire, by mixing equal quantities of wheat flour, fine powdered Venice glaſs, pulverized chalk, with half the quantity of fine brick-duſt, and a little ſcraped lint, in the whites of eggs: this mixture is to be ſpread upon a linen cloth, and applied to the cracks of the glaſſes, and ſhould be well dried before they are put into the fire.

Old varniſh will likewiſe anſwer the ſame purpoſe. A very uſeful *cæment* for joining alabaſter, marble, porphyry, and other ſtones, may be prepared in the following manner. Melt two pounds of bees-wax, and one pound of reſin; add a pound and a half of the ſame kind of matter pulverized, as the body to be *cæmented* is compoſed of, and ſtir them well together; let the maſs be kneaded in water, and heated when applied to the heated parts of the body to be *cæmented*. The colour of this maſs may be adapted to that of the body on which it is employed, by varying the proportion of the powdered matter added to the maſs of bees-wax and reſin.

The beſt *cæment* for electrical purpoſes is made with two parts of reſin, two of bees-wax, and one of the powder of red ochre. Theſe ingredients are melted, and mixed together in any veſſel over the fire, and afterwards kept for uſe. This adheres well, is leſs brittle than reſin, and inſulates as well.

For the manner of preparing a *cæment* to bind together the various embeliſhments of grottos, ſee **Grotto**. See alſo **Glue**, **Putty**, and **Solder**.

Cæment, in *Chemiſtry*, is a general name, comprehending all paſtes or powders, which, by means of fire, and proper crucibles, are capable of producing changes in any body. See **Brass**, **Steel**, and **Porcelain**.

It is particularly uſed to denote a compound maſs, or ſaline powder, uſed for the purifying of gold, and conſuming the improper metals mixed therewith.

The principal *cæment* uſed for this purpoſe is compoſed of four parts of bricks powdered and ſifted, of one part of green vitriol calcined, till it becomes red, and of one part of common, or ſea-ſalt. A paſte is made of this mixture, by moiſtening it with water or urine. This is called *royal cæment*, from its uſe in purifying gold, the king of metals; and becauſe gold, previous to the diſcovery of platina, was the only metal capable of reſiſting it. Some writers on this ſubject recommend a mixture of nitre in ſubſtance, with an equal weight of calcined green vitriol, and twice its weight of powdered bricks.

Cæment *for gilding fiſh*. See **Gilding** *of fiſh*.

Cæment, or *ziment copper*, is copper precipitated from vitriolic waters by iron. The name is derived, it is ſaid, from a vitriolic water in Hungary, called *ziment*.

Cæment-*pots*, in *Aſſaying*, are veſſels made for the *cementation* of metals.

Theſe pots are cylindrical veſſels, made of potters clay, with tiles adapted to them, and may be conveniently turned by the potters. The ſize of theſe veſſels muſt be proportioned to the quantity of *cæment* to be put in them. It is not prudent, however, to make them of more than eight or ten inches broad, becauſe when they are larger the fire acts but difficultly and unequally upon them, eſpecially on that part of the matter near their center.

It is to be obſerved, in the making theſe veſſels alſo, that all kinds of clay contract and take up a ſmaller ſpace in the drying and baking; the purer clay will contract one tenth part of their diameter, but the more ſand or other dry powder there is in the mixture, the leſs it contracts. If a veſſel, therefore, of any determinate ſize is to be made of clay without admixture, it muſt be made one tenth larger than the expected ſize; if of clay with theſe admixtures, experience alone can ſhew what muſt be the exceſs in ſize, when moiſt. Cramer.

CÆMENTATION, a manner of purifying gold from other metals, by means of *cæment*. Or, as it is defined by Stahl, a method of corroding metals in a dry form by the fumes of dry ſalts.

It is performed thus: thin plates, or laminæ, are ſtratified in a crucible with the royal cæment; the crucible is covered up, luted with a mixture of clay and ſand, and encompaſſed with fire for twenty-four hours, till being thus calcined, the ſalts have imbibed and conſumed the impurities of the gold.

The crucible is then left to cool, and the gold is to be carefully ſeparated from the cæment, and boiled at different times in a large quantity of pure water. It is often neceſſary, for the effectual purification of the gold, to repeat the proceſs. This method, which has obtained the name of *concentrated parting*, ſays Dr. Lewis, is incommodious, either for purifying gold, or aſcertaining its purity, and is therefore now little uſed. Its principal uſe is for extracting ſilver or baſe metals from the ſurface of gold, and thus giving ſuperficial purity and high colour to alloyed or pale gold. Lewis's Comm. Phil. p. 155. See **Depart**, **Gold**, **Refining**, and **Silver**.

CÆRITES, or **Cæritum** *tabulæ*, in *Antiquity*, denote the cenſors tables, wherein were entered the names of ſuch perſons as, for ſome miſdemeanor, were to loſe their right of ſuffrage in elections at Rome.

The origin of the appellation aroſe hence; that during the captivity of Rome under the Gauls, the *Cærites*, or inhabitants of Cære, a city in Etruria, preſerved their ſacred books, and other matters belonging to the worſhip of the Gods, in gratitude for which, the Romans dignified the *Cærites* with the appellation of Roman citizens, but without admitting them into any part of the adminiſtration.

CÆRULEUS, in *Zoology*, a name given by authors to a bird of the thruſh or blackbird kind, and ſomewhat reſembling that ſpecies of blackbird commonly called the ſolitary ſparrow.

Cæruleus is alſo a name given by Solinus to the great Indian worm deſcribed, by Pliny and others, as inhabiting the Ganges. It is probable that all the accounts we have of this monſtrous animal are only falſe deſcriptions of the crocodile.

CÆSALPINIA, in *Botany*, *Braziletto*, a genus of the *decandria monogynia* claſs, deriving its name from Cæſalpin, the famous botaniſt and phyſician to pope Clement VIII. The characters are theſe: the flower hath five petals, which are ſituated like thoſe of the butterfly-flowers; it hath ten declining ſtamina, which are diſtinct; it hath an oblong germen; the empalement afterward becomes an oblong compreſſed pod with one cell, encloſing three or four compreſſed ſeeds. There are two ſpecies.

The firſt ſort is the tree which affords the braziletto wood, which is ſo much uſed in dying. It grows naturally in the warmeſt parts of America, from whence the wood is imported for the dyers; and the demand for it has been ſo great, that there are no large trees left in any of the Britiſh colonies; the biggeſt ſcarcely exceeding eight inches in diameter, and fifteen feet in height. It hath very ſlender branches, which are armed with recurved thorns.

Theſe plants are propagated by ſeeds, which ſhould be ſown in ſmall pots filled with light rich earth early in the ſpring, and plunged into a hot-bed of tanner's bark. Being tender, they ſhould always be kept in the bark-ſtove, and have a moderate ſhare of heat in the winter; and being placed among other tender exotics of the ſame country, will afford an agreeable variety.

CÆSAR, among the Romans, was a long time uſed for the heir intended, or preſumptive, of the empire; as *king of the Romans* is now uſed for that of the German empire.

The *Cæſars* were a kind of adjuncts or aſſociates of the empire, *participes imperii*. They wore the imperial mantle, purple, and diadem, and walked with other marks of the ſovereign dignity: they were created like the emperors, by putting on the purple robe.

The dignity of *Cæſar* remained the ſecond of the empire, till Alexius Comnenus made Nicephorus Meliſſenus *Cæſar* by contract, and it being neceſſary to confer ſome higher dignity on his own brother Iſaacius, he created him Sebaſtocrator, with the precedency over Meliſſenus, ordering that in all acclamations, &c. Iſaacius Sebaſtocrator ſhould be named the ſecond, and Meliſſenus *Cæſar* the third.

The title took its riſe from the cognomen, or ſurname of the firſt emperor, C. Julius *Cæſar*, which by a decree of the ſenate all the ſucceeding emperors were to bear. Under his ſucceſſor, the appellation Auguſtus being appropriated to the emperors, in compliment to that prince, the title *Cæſar* was given to the ſecond perſon in the empire, though it ſtill continued alſo to be given to the firſt: and hence the difference between *Cæſar* uſed ſimply, and *Cæſar* with the addition of Imperator Auguſtus. Authors are divided as to the origin of the word *Cæſar*, the cognomen of the Gens Julia. The more common opinion is, that the word *Cæſar* comes *à cæſo matris utero*; becauſe his mother's womb was cut open to give him birth.

Some pretend that the laurel crown on medals is never given to *Cæſars*, but only to *Auguſti*; which is overthrown by a medallion of Maximus; not to mention another medal of the lower empire, wherein Criſpus *Cæſar* is crowned with laurel.

Card. Noris obſerves, that the years of the *Cæſars* were frequently marked on their medals; of which we have inſtances in the medals of Conſtantine, Chlorus, and divers others, whoſe years are expreſſed on their coins, though they were never more than *Cæſars*.

CÆSARIAN *ſection*, in *Midwifery*, the operation of extracting the *fœtus* from the mother, whether living or dead, by an inciſion through the *abdomen* into the *uterus*. Thoſe brought into the world in this manner, are called *Cæſares*, and *Cæſones*, *à cæſo matris utero*; as were C. Julius Cæſar, Scipio Africanus, Manlius, and our Edward VI. See Delivery.

Many have exclaimed againſt the cruelty of this operation; and certainly it is too terrible to be uſed on any but the moſt emergent occaſions: but there ſeem three caſes in which it is juſtifiable, nay abſolutely neceſſary. The firſt is, when the mother is dead, either in labour, or by ſome other accident, and the child is perceived to be alive. The ſecond is, when the mother is living, and the *fœtus* dead, and incapable of being extracted by the common paſſages by any help of the midwife. And the laſt, when the mother and child are both living, and there is found an utter impoſſibility of delivery any other way. In all theſe caſes the *Cæſarian* practice is juſtifiable to ſave life, that muſt otherwiſe be inevitably loſt.

In the firſt caſe, the operation muſt be performed immediately after the death of the mother, otherwiſe it is to no purpoſe, for the child can live but a very little time afterwards in the body. The ſurgeon is, in this caſe, to make a crucial inciſion, as in the common diſſections; or a longitudinal one on one ſide, without regard to the courſe of the fibres or veſſels: and if the *fœtus* ſhould have fallen into the cavity of the *abdomen*, through a rupture of the *uterus*, it ſhould then be taken out; or if it be yet in the womb, or in the Fallopian tube, theſe parts muſt be carefully opened, and the child being taken out, muſt have Hungary water, or the like, held at ſome ſmall diſtance from its noſe to revive it, and the navel-ſtring be tied up as uſual. The *fœtus* is not always preſerved, or found alive after this operation; but as there is often a probability of it, it is certainly better to open an hundred dead women in vain, than to loſe the life of one infant.

In the ſecond caſe, when a dead *fœtus* is contained in the cavity of the *abdomen*, in the Fallopian tube, or in a kind of hernia or ſacculus without the *abdomen*, of all which caſes there are inſtances recorded; or when from the particular ſtructure of the parts, as is ſometimes the caſe in crooked women, and others; and when, as in many inſtances, there is no poſſibility of the extraction of the infant, even by inciſion of it, there is no way but the opening the *abdomen*, and, if neceſſary, the *uterus* of the mother, and taking out the *fœtus*; and this is often the means of preſerving the mother, and when in parallel caſes the child is alſo alive, there have been not a few inſtances of both being preſerved.

The *Cæſarian ſection* is recommended by ſeveral authors, and Mr. Helvetius communicated to the Academy of Sciences at Paris, a well-atteſted hiſtory of a woman recovering after the operation had been performed upon her by a midwife. Vid. Hiſt. de l'Acad. des Scienc. 1731.

We have alſo an account of this operation ſucceſsfully performed by a midwife in Ireland. See Med. Eſſ. Edinb. vol. v. art. 37.

There is likewiſe an account of the *Cæſarian* operation ſucceſsfully performed by a butcher on a woman in Ireland. Vid. Phil. Tranſ. N° 461. ſect. 17.

Cyprianus, profeſſor at Franeker, gives an extraordinary caſe of the *Cæſarian* operation, whereby a *fœtus*, which had been dead twenty-one months, was drawn out of the *tuba uteri*, yet the mother preſerved. M. Jobert, phyſician at Chateau Thierri, relates the hiſtory of a woman in the neighbourhood of that place, who was twice delivered of children by the *Cæſarian* operation; the firſt time in 1682, the ſecond time eleven months after, and recovered from both.

See an account of two caſes in which this operation was performed in London, both of which proved fatal to the mothers, with remarks on the hiſtory of the operation, in the Medical Obſerv. and Inq. vol. iv. p. 261. 272. and vol. v. p. 217.—See alſo inquiries relative to this operation, by Monſ. Simon, in the firſt volume of the Memoirs of the Academy of Surgery at Paris.

CÆSARIANS, or Cæsarienses, in *Antiquity*, were miniſters or officials of the procurator *Cæſaris*, to whom belonged the keeping the fiſcal accounts, and taking poſſeſſion of effects devolving or eſcheating to the emperor. Theſe were alſo called *catholiciani*. From the appellation *Cæſarianus* ſome deduce the modern word ſergeant. See Sergeant.

CÆSARIS, *Emplaſtrum*, among *Phyſicians*, a name given to a plaſter compoſed of aſtringents, to prevent abortion.

CÆSIAS, in *Meteorology*, denotes the north-eaſt wind; called, in the Mediterranean, *vento Græco*, or *Greco levante*.

CÆSTUS, a large leathern gantlet, loaded with lead, uſed in the combats, or exerciſes, of the ancient athletæ. It was called *cæſtus*, *à cædendo*, from *cædo*, *to ſtrike*, or *beat*.

Calepine ſays it was a kind of a club with leaden balls hanging from it, ſuſpended by leathern thongs: but he was miſtaken, it being only a leathern thong ſtudded with nails of lead or iron; part of it was twiſted round the hand and arm, to prevent their being broken or diſlocated. See Cestus.

CÆSURA, in the *Ancient Poetry*, is when, in the ſcanning of a verſe, a word is divided, ſo that one part ſeems cut off, and goes to a different foot from the reſt; e. gr.

Menti | ri no | li: nun | quam men | dacia proſunt.

Where the ſyllables *ri*, *li*, *quam*, and *men* are *cæſures*.

Or, it denotes a certain and agreeable diviſion of the words, between the feet of a verſe; whereby the laſt ſyllable of a word becomes the firſt of a foot: as in

Arma virumque cano, *Trojæ qui primus ab oris.*

Where the ſyllables *no* and *jæ* are *cæſures*.

Cæsure, in the *Modern Poetry*, denotes a reſt or pauſe towards the middle of a long Alexandrine verſe; by which the voice and pronunciation are aided, and the verſe as it were divided into two hemiſtichs.

CÆTERIS *paribus*, a Latin term, in frequent uſe among mathematical, and phyſical writers.

The words literally ſignify, *other things being equal*; which expreſſes pretty nearly their meaning as a term. Thus, we ſay, the heavier the bullet, *cæteris paribus*, the greater the range; i. e. by how much the bullet is heavier, if the length and diameter of the piece, and the quantity and ſtrength of the powder, be the ſame, by ſo much will the utmoſt range or diſtance of a piece of ordnance be greater.

Thus alſo, in a phyſical way, we ſay, the velocity and quantity of blood circulating in a given time, through any ſection of an artery, will, *cæteris paribus*, be according to its diameter, and nearneſs to, or diſtance from the heart.

CAFFA, in *Commerce*, cotton cloths painted with ſeveral colours, and of divers deſigns; they are manufactured in the Eaſt Indies, and ſold at Bengal. The length and breadth are not the ſame in all pieces.

CAFFACA, in *Natural Hiſtory*, a name given by the Turks and Tartars to a peculiar kind of earth, of a grey colour, having a light caſt of green in it. It is very ſoft and unctuous, and ſomething reſembles our fullers earth; but is more aſtringent, and adheres very firmly to the tongue: theſe people bathe very frequently, and they uſe this earth on thoſe occaſions.

CAFFILA, a company of merchants or travellers, or both together, who join company, in order to go with more ſecurity through the dominions of the Great Mogul; and through other countries on the continent of the Eaſt Indies. There are alſo ſuch *caffilas*, which croſs ſome parts of the deſerts of Africa, particularly what is called the ſea of ſand, which lies between Morocco, and the kingdoms of Tombut and Gago. This is a journey of four hundred leagues, and takes up two months in going, and as many in coming back; the *caffila* travelling only by night, becauſe of the exceſſive heat of the country. The chief merchandize they bring back conſiſts in gold-duſt.

The *caffila* is properly what is called caravan in the dominions of the Grand Signior, and in other parts of the Eaſt. See Caravan.

On the coaſt of Guzerat, or Cambaya, it ſignifies a ſmall fleet of merchant-ſhips.

CAFRES, according to Ludolf, an opprobrious appellation given by the Arabs to all thoſe who do not profeſs the Mahometan religion. It comes from the Arabic word *cafir*, which ſignifies *infidel*, or *unbeliever*.

CAGADO *de agoa*, in *Zoology*, a name by which the Portugueſe in America call a ſpecies of tortoiſe common there, and uſually known among authors by its Braſilian name JURURA.

Cagado *de terra*, in *Zoology*, the name by which the Portugueſe in America call a remarkable ſpecies of tortoiſe, called by the Braſilians JABOTI. See Testudo.

CAGANUS, or Cacanus, an appellation anciently given by the Huns to their kings.

The word appears alſo to have been formerly applied to the princes of Muſcovy, now called CZAR.

From the ſame alſo, probably, the Tartar title CHAM, or *can*, had its origin.

CAGAO, in *Natural Hiſtory*, the Indian name for a large bird which inhabits the mountains, and feeds on the piſtachia nuts, and many other fruits, all which it ſwallows whole: it is very voracious, and its food paſſes off very quickly; the piſtachias only looſe their rind in its ſtomach, and the almonds their pulpy covering; the kernel and the ſtone being voided whole: it is of the ſize of a common hen, but has a longer neck.

CAGASTRUM is uſed by Paracelſus to denote a morbific *ſemen*, not connate or hereditary, but acceſſional, owing to corruption.

In which ſenſe the word ſtands oppoſed to *iliaſtrum*. The pleuriſy, plague, fever, &c. are ranked by that author in the number of *cagaſtric* diſeaſes.

CAGE, an incloſure made with wire, wicker, or other matter, interwoven latticewiſe, for the detention of wild beaſts or birds.

The word is French, *cage*, formed from the Italian *gaggia*, of the Latin *cavea*, which ſignifies the ſame: *a caveis theatralibus in quibus includebantur feræ*.

Beaſts were uſually brought to Rome ſhut up in oaken or beechen *cages*, artfully formed, and covered or ſhaded with boughs, that the creatures, deceived with the appearance of a wood, might fancy themſelves in their foreſt. The fiercer ſort were pent in iron *cages*, leſt wooden priſons ſhould be broke through.

In ſome priſons there are iron *cages* for the cloſer confinement of criminals.

The French laws diſtinguiſh two ſorts of *bird-cages*, viz. high, or ſinging *cages*, and low, or *dumb-cages*; thoſe who expoſe birds to ſale are obliged to put the hens in the latter, and the cocks in the former, that perſons may not be impoſed on, by buying a hen for a cock.

CAGES, *caveæ*, denote alſo places in the ancient amphitheatres, wherein wild beaſts were kept, ready to be let out for ſport. The *caveæ* were a ſort of iron *cages* different from dens, which were under ground and dark; whereas the *caveæ* being airy and light, the beaſts ruſhed out of them with more alacrity and fierceneſs than if they had been pent under ground.

CAGE, in *Carpentry*, ſignifies an outer-work of timber, encloſing another within it.

In this ſenſe we ſay, the *cage* of a wind-mill.

The *cage* of a ſtair-caſe denotes the wooden ſides, or walls, which encloſe it.

CAGGAW, in *Botany*, a name given, by the people of Guinea, to a plant which they boil in water, and uſe the decoction to waſh the mouth with, as a cure for the tooth-ach. The leaves of this are ſmooth and ſhining, like thoſe of the laurel, but they are thin, and bend like thoſe of the bay. Phil. Tranſ. N° 232.

CAGIT, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands, to a ſpecies of parrot, very common in their woods: it is of a middling ſize, and is all over of a fine green colour.

CAGUI, in *Zoology*, the name of a kind of Braſilian monkey, called alſo *pougi*, of which there are two ſpecies, the one larger, the other ſmaller. The large kind is of a grey colour, with a mixture of black, and its hairs are longer than thoſe of the ſmall ſpecies; its face is round, and it has ſomething of the look of a lion; its ears are ſmall, round, black, and naked; its eyes are alſo black, as is its mouth, and its forehead is covered with a mixture of grey and black hairs; its tail is above a foot long, and is covered with hairs of a tawney colour.

The leſſer *cagui* is a ſmall and tender animal, but has the ſame lion-like face with the larger. Its body is not above ſix fingers breadth long; its tail about ten fingers; its head is ſmall, ſcarce ſo large as a ſmall apple; its noſe is ſmall and elate; its eyes very tender, its mouth little, and its teeth extremely ſharp; its ears are round, and ſurrounded with white hairs in a very beautiful order; its hair is all of a reddiſh tawney toward the body, and toward the ends of a mixture of white and brown; and its tail is variegated with circular rings of white and brown; its voice is extremely ſhrill; it is naturally an extremely lively and nimble creature, but cannot bear the leaſt cold. Ray.

CAHLLO, in *Ichthyology*, a name given by ſome authors to the fiſh uſually called the LUPUS *marinus*, or wolf-fiſh.

CAIA, in the *Turkiſh Military Orders*, an officer ſerving in the poſt of a deputy or ſteward, and acting for the body of the janizaries.

CAIANI, in *Eccleſiaſtical Antiquity*, a ſort of heretics, thus denominated from one Caianus of Alexandria, their leader, otherwiſe denominated APHTHARTODOCETÆ.

The ſame name is ſometimes alſo given to the ſect of Cainians or Cainites.

CAIC, CAIQUE, CAICA, in *Sea-language*, is uſed to denote the ſkiff, or ſloop, belonging to a galley.

The Coſſacs give the ſame name, *caic*, to a ſmall kind of bark uſed in the navigation of the Black ſea. It is equipped with forty or fifty men, all ſoldiers: their employment is a kind of piracy. The Turks have alſo a ſort of *caics*, which ſome render by *biremes*.

CAJEPUT, an oil brought from the Eaſt Indies. The ſmell of the oil of *cajeput* reſembles that of cardamoms; hence Dr. Trew judges the plant from which it is obtained to be the *elegans meligettæ ſpecies*, deſcribed by Sobelius, or the *granis paradyſi ſive meligettæ affinis fructus.* Four or five drops of this oil of *cajeput*, in a proper liquor, is recommended as an excellent nervous medicine, and as of great efficacy in the cardialgia.

CAIMACAN, or CAIMACAM, a dignity in the Ottoman empire, anſwering to that of lieutenant, or vicar, among us.

The word is compoſed of the two Arabic words, *Caim machum*, q. d. *he who holds the place, or diſcharges the function of another.*

There are uſually two *caimacans*: one reſides at Conſtantinople, who is the governor thereof: the other attends the grand vizir, in quality of his lieutenant. Sometimes there are three *caimacans*; one conſtantly attending the grand ſignior, another the grand vizir, and a third conſtantly at Conſtantinople, who examines affairs of policy, and regulates them in great meaſure. The *caimacan* that attends the vizir, only officiates when at a diſtance from the grand ſignior; his function ceaſing, when the vizir is with the ſultan. The *caimacan* of the vizir is his ſecretary of ſtate, and the firſt miniſter of his council.

CAINITES, or CAINIANS, a ſect of ancient Gnoſtics, that ſprung up towards the cloſe of the ſecond century, and paid extraordinary honours to thoſe perſons repreſented in Scripture as the worſt of mankind; ſo called from Cain, whom they eſteemed their patriarch, and the chief object of their veneration. They held, that Cain and Eſau, Lot, and thoſe of Sodom, were born of a moſt eminent celeſtial virtue; that Abel, on the contrary, was born of a virtue much leſs eminent: to Cain, and others of the ſame order, who, according to them, had a mighty knowlege of all things, they aſſociated Judas, whom they held in ſo much eſteem, that they had a book among them called the goſpel of Judas. S. Epiphanius relates, and at the ſame time refutes, their errors.

CAINITO, in *Botany*, the name given by Plumier to the *ſtar*-APPLE.

CAINS, in the iſland of Candia, denote Greeks revolted, and retired to the Venetians, either at Suda, or Spina longa; who, in time of war, burn, pillage, and commit all manner of cruelties on their ancient brethren under the Turks.

When a *cain* or falſe brother is taken, there is no mercy for him; they either impale him, or put him to the ganche.

CAJOU, CASHEW, or CASSU. See ANACARDIUM.

CAIRINA, in *Zoology*, a name by which ſome authors have called the Muſcovy duck.

CAISSON, in the *Military Art*, is ſometimes uſed for a cheſt; and in particular for a BOMB-CHEST.

The *caiſſon* is conſidered as a ſuperficial MINE, or *fourneau*. See MINE.

CAISSON is alſo a covered waggon to carry bread, or ammunition.

CAISSON is alſo uſed for a kind of cheſt uſed in laying the foundations of the piers of bridges. See BRIDGE.

CAITAIA, in *Zoology*, the name of an American monkey, remarkable for its ſweet ſmell; it has indeed ſomewhat of a ſcent of muſk about it; its hair is long, and of a whitiſh yellow colour; its head is round; its forehead depreſſed, and very ſmall; its noſe ſmall and flatted, and its tail arched. It is eaſily tamed and kept about houſes, but is very clamorous and quarrelſome.

CAKE, a finer ſort of BREAD, denominated from its flat, round figure.

We meet with divers compoſitions under the name of *cakes*; as *ſeed-cakes*, made of flour, butter, cream, ſugar, coriander and caraway ſeeds, mace, and other ſpices and perfumes baked in the oven; *plum-cake*, made much after the ſame manner, only with fewer ſeeds, and the addition of currants; *pan-cakes*, made of a mixture of flour, eggs, &c. fried; *cheeſe-cakes*, made of cream, eggs, and flour, with or without cheeſe-curd, butter, almonds, &c. *oat-cakes*, made of fine oaten flour, mixed with yeſt, and ſometimes without, rolled thin, and laid on an iron or ſtone to bake over a ſlow fire; *ſugar-cakes*, made of fine ſugar beaten and ſearced with the fineſt flour, adding butter, roſe-water, and ſpices; *roſe-cakes*, *placentæ roſaceæ*, are leaves of roſes dried and preſſed into a maſs, ſold in the ſhops for epithems. See EPITHEM.

CAKE-*wax*, a denomination ſometimes given to the white or virgin-WAX.

CAKE-*ſoap*, ſtands diſtinguiſhed from ſoft-ſoap, and ball-ſoap. See SOAP.

CALABA, in *Botany*, the name given by Plumier to a genus of plants afterwards called by Linnæus CARYOPHYLLUM.

CALABASH, in *Botany*. See MELOPEPO.

CALABASH-*tree*, *Creſcentia*, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Its characters are theſe: the flower hath one petal which is irregular, having a curved gibbous tube; it hath an empalement of one leaf, cut into two obtuſe ſegments, which are concave. It hath four ſtamina, two of which are the length of the petal, the other are ſhorter; with an oval germen, which afterward becomes an oval or bottle-ſhaped fruit with a hard ſhell, encloſing many flat, heart-ſhaped ſeeds. There are two ſpecies, the firſt of which grows naturally in Jamaica, and in all the Leeward iſlands; it has a thick trunk, covered with a whitiſh bark, which riſes from twenty to thirty feet high, and at the top divides into many branches, forming a large regular head.

From the lower part of the tube of the flower, ariſes a long ſlender foot-ſtalk, ſupporting an oval germen, which afterward turns to a large fruit of different forms and ſize, ſometimes with a contracted neck like a bottle, and ſo large, that when the pulp and ſeeds are cleaned out, the ſhells will contain three pints or two quarts. Theſe fruits are covered with a thin ſkin of greeniſh yellow when ripe, which is peeled off; and under it is a large ligneous ſhell, encloſing a yellowiſh ſoft pulp, of a tart unſavoury flavour, ſurrounded with a great number of ſeeds. See BAOBAB.

Theſe fruits are ſeldom eaten, but the ſhell is converted to many uſeful purpoſes when dried; and ſerves to make cups, ladles, and many other articles of houſehold furniture; for caſes to put divers kinds of goods in, as pitch, roſin, or the like.

The word is Spaniſh, *calabaça*, which ſignifies the ſame. The Indians alſo, both of the North and South ſea, put the pearls they have fiſhed in *calabaſhes*, and the negroes on the coaſt of Africa do the ſame by their gold-duſt.

The ſmaller *calabaſhes* are alſo frequently uſed by theſe people as a meaſure, by which they ſell theſe precious commodities to the Europeans.

CALABRINI, in *Botany*, a name by which ſome authors call the rough SPLEENWORT, or *lonchitis aſpera*. Ger. Emac. Ind.

CALADE, in the *Manege*, a deſcent or ſlope in a riding-ground, by which to bring a horſe to bend his haunches, and form his ſtop, with the aids of the calves of the legs, bridle, and caveſon, ſeaſonably given.

The *calade* is alſo called, by the French, *baſſe*. They ſay, to ride or gallop down the *calade*.

CALAE, CALAEM, or CALAEMUM, denotes a ſpecies of Indian tin, which by force of fire is tranſmutable into ceruſs, like that made of our lead.

Alchemiſts alſo pretend, that it may be converted by cementation into ſilver; and allege it as an argument in behalf of a poſſibility of tranſmutation of other metals into gold.

CALAINUS, in *Natural Hiſtory*, a name given to the ſubſtance otherwiſe called CALLIMUS.

CALAMANCO, in *Commerce*, a woollen ſtuff manufactured in Brabant and in Flanders, particularly at Antwerp, Liſle, Tournay, Turcoin, Roubaix, and Lannoy. There are alſo a great many made in England.

It is commonly woven wholly of wool; there are ſome, however, wherein the warp is mixed with ſilk, and others with goat's hair. There are *calamancos* of all colours, and diverſly wrought. Some are quite plain, others have broad ſtripes adorned with flowers; ſome with plain broad ſtripes; ſome with narrow ſtripes; and others watered. This is alſo no inconſiderable branch of the woollen manufacture in England, both for home wear and exportation.

CALAMARIÆ, in *Botany*, an order of plants in the Fragmenta Methodi Naturalis of Linnæus. See CULM.

CALAMBA, or CALAMBAC, in *Commerce*, a kind of wood brought from China, uſually ſold under the denomination of *lignum* ALOES, or AGALLOCHUM.

Sir Phil. Vernatti makes *calambac* and *lignum aloes* ſynonymous. Others ſeem to diſtinguiſh, reſtraining *calamba* wood to the beſt ſort of aloes wood, growing chiefly in Malacca, and Sumatra; and much uſed in India for making of beads and crucifixes. Phil. Tranſ. Nº 43. p. 863.

CALAMIFEROUS, a denomination given by ſome to thoſe otherwiſe called CULMIFEROUS plants.

CALAMINARIS *lapis*, CALAMINE-*ſtone*, a kind of foſſile of ſome uſe in medicine, but of more in foundery; being uſed to make copper yellow, i. e. to convert it into braſs. It is either of a browniſh colour, as that of Germany, and England; or reddiſh, as that about Liege, and in ſome parts of France, which is accounted the beſt, becauſe turning yellow by calcination. It is dug out of mines, uſually in ſmall pieces; having always eyes, ſometimes veins, of lead in it; though it be not always found in lead-mines. We have mines of *calamine* at Wrington in Somerſetſhire, and elſewhere. It is generally dug in barren rocky ground; its courſes running, uſually at ſix o'clock, as they call it, i. e. from eaſt to weſt; ſometimes at nine, and ſometimes at twelve; or perpendicular, which is accounted the beſt.

Dr. Lawſon was the firſt who publicly proved *calamine* to be the ore of ZINK.

Calamine-ſtone is a ſpecies of *foſſile* CADMIA; ſome even take it for the true CADMIA of Galen and the ancients, to which it is certain it bears a near reſemblance: when burnt, its fume gathers and grows on the ſides of the chimney.

When dug, it is waſhed, or buddled, as they call it, in a running water, which carries off the impure and earthy parts; leaving the lead, *calamine*, and ſparry parts, at bottom; they then put it in a ſieve, and ſhaking it well in water, the lead mixed with it ſinks to the bottom, the ſparry parts get to the top, and the *calamine* lies in the middle: thus prepared, they bake it in an oven or reverberatory furnace four or five hours; the flame being ſo contrived, as to paſs over, and ſo to heat and bake the *calamine*; ſtirring and turning it all the while with iron rakes. Or, it may be roaſted or calcined by ſetting fire to a conical pile, compoſed of horizontal layers of *calamine* and of charcoal placed alternately one upon the other, and of a lower ſtratum conſiſting of large pieces of wood; in which lower ſtratum are four horizontal channels, through which the air maintaining the fire paſſes to the centre, and it thence ariſes through a chimney or perpendicular empty ſpace, left for that purpoſe, along the axis of the conical pile. The length of time and degree of heat for this operation, are different according to the qualities of the mineral. This done, they beat it to powder, and ſiſt it; picking out of it what ſtones they find. And thus it is fit for uſe.

For the manner of applying *calamine* in the preparation of braſs, ſee BRASS.

Beſides the two natural *calamines*, this and cobalt, there are two artificial ones: the beſt is that called *pompholyx*, the other *tutty*.

Calamine is of ſome medicinal virtue; being aſtringent, deſiccative, and deterſive; and is much uſed for taking off films from the eyes of horſes, &c.

CALAMINT, in *Botany*, an officinal plant, whoſe leaves are reputed warm, aperient, and diaphoretic, and enter ſeveral alexipharmic compoſitions. It is enumerated by Miller, among the ſpecies of *meliſſa*, or baum. For its general characters therefore, ſee BAUM.

There are three ſorts of *calamint* in uſe, viz. the *ſylveſtris*; the *vulgaris*, or *montana*; and *paluſtris*, or *aquatica*; of which the firſt ought to be the officinal ſort, though the ſcarcity of it among us uſually brings the ſecond to market in its ſtead; the third is taken into the college diſpenſatory, but rarely uſed. In the college diſpenſatory, we find a compound powder denominated from *calamint*. See Phil. Tranſ. vol. xlix. pt. ii. p. 838.

CALAMISTRUM, in *Natural Hiſtory*, a name by which Linnæus and ſome authors have called a ſmall plant, known among us by the name of *pepper-graſs*, from its having graſſy leaves, and round globules at their inſertions, reſembling pepper-corns. Mr. Vaillant has more properly named it PILULARIA.

CALAMITA, or CALAMITIS, is uſed to denote the MAGNET or loadſtone.

CALAMITA *alba*, in *Natural Hiſtory*, the name of an earth dug in Spain and Italy, of a hard texture, a white colour, and ſtyptic taſte; they pretend that this attracts fleſh in the ſame manner as the magnet does iron, and thence call it MAGNES *carneus*.

CALAMITA *ſtorax*. See STORAX.

CALAMITES, in *Natural Hiſtory*, a name given by ſome to the oſteocolla, which when in ſmall pieces, ſometimes pretty exactly reſembles the barrel of a quill; others have called ſome of the foſſile coralloides by this name, there being frequently in them the reſemblance of ſeveral quills cemented together in ſtone.

CALAMITIS is uſed for a ſpecies of artificial *cadmia*, found adhering to the ſticks, ladles, and other utenſils wherewith they ſtir the copper when in fuſion in the furnace. It is denominated *calamitis*, from the Latin *calamus*, *a reed*, on account of its reſemblance to the figure of a reed cloven in the middle.

CALAMUS, in *Botany*, a genus of the *hexandria monogynia* claſs of plants: the calyx conſiſts of ſix leaves; it has no corolla; and the fruit is a ſingle-ſeeded berry.

CALAMUS is commonly uſed to denote the ſame with *arundo*, a reed, ruſh, cane, or flag.

CALAMUS, in the *Paſtoral*, denotes a ſimple kind of pipe, or fiſtula, the muſical inſtrument of the ſhepherds and herdſmen; uſually made either of an oaten ſtalk, or a reed.

CALAMUS *aromaticus*, in *Pharmacy*, a ſpicy, bitteriſh root, produced by a peculiar kind of water-plant, growing in the Levant, and even in ſeveral parts of England. See ACORUS.

The beſt is that which is greyiſh without, and reddiſh within; its pulp white, and taſte ſomewhat bitter; but its leaves, as well as roots, ſweet-ſcented.

The agreeable flavour and peculiar taſte of the root, are owing to an eſſential oil. Neumann.

CALAMUS *indicus petrifactus*, in the *Natural Hiſtory of the Ancients*, a name given to a ſubſtance found often in the foſſile kingdom, uſually of about three inches long, half an inch broad, and one third of an inch thick, and covered all over its ſurface with large round figures, in form of radiated ſtars within. This very much reſembled in external appearance the root of our common *calamus aromaticus* of the ſhops turned into ſtone, and ſeems to have been vulgarly ſuppoſed to be that ſubſtance petrified. The more accurate among the earlier writers, however, have by no means countenanced ſo wild a conjecture; and Theophraſtus, though he records the ſubſtance under that name, as it had no other in his time, yet joins it to the corals which, he ſays, grow in the ſea, and are vegetables; and adds, that thoſe, and this ſubſtance, are properly the ſubjects of another treatiſe, not of a hiſtory of ſtones. See *Tab. of Foſſils, Claſs* 7.

This author's placing it among the CORALS is perfectly right, ſince the ſpecimens of it now found are plainly no other than corals of the ſtellated kinds, which have been long buried in the earth.

CALAMUS *odoratus*, in the *Materia Medica*, the name of a reed of the Eaſt Indies, of a very ſweet ſmell. Our CALAMUS *aromaticus*, which is the root of a water-plant, is a very different ſubſtance.

CALAMUS *ſcriptorius*, properly denotes a reed, or ruſh to write with, anſwering the uſe of the ancient ſtylus and modern pen.

The ancient Egyptian *calamus* was a ſort of *arundo aquatica* growing plentifully about Memphis, and on the banks of the Nile; whence it was alſo called *calamus Memphiticus, Niloticus*, &c.

CALAMUS *ſcriptorius*, in *Anatomy*, is a dilatation of the fourth ventricle of the BRAIN; ſo called from its figure, which reſembles that of a quill.

CALAMUS *aucupatorius*, or *calamus ſtructus*, among *Fowlers*, ſignifies a *bird*-CALL.

CALAMUS alſo denotes a ſort of meaſure otherwiſe called CANNA, CANE, or reed.

CALANDRE, in *Natural Hiſtory*, a name given by the French writers to an inſect that does vaſt miſchief in granaries. It is properly of the ſcarab claſs.

The female lays a conſiderable number of eggs, and the increaſe of theſe creatures would be very great, but nature has ſo ordered it, that while in the egg ſtate, and even while in that of the worm, they are ſubject to be eaten by mites; theſe little vermin are always very plentiful in granaries, and they deſtroy the far greater number of theſe larger animals.

CALANGAY, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of parrot very common there; it is all over white, and has a creſt of white feathers on its head; it is of the ſize of a pigeon, and is eaſily kept tame, and learnt to talk. It is called alſo in ſome of the Philippines *catatua* and *abacay*.

CALASH, or CALESH, a ſmall light kind of chariot, or chair, with very low wheels, uſed chiefly for taking the air in parks and gardens.

The word is French, *caleche*, which Menage derives from the Latin *carrus, carri, carriſcus, carriſca, carreſca, caleſca, caleche*.

The *calaſh* is for the moſt part richly decorated, and open on all ſides, for the conveniency of the air, and proſpect; or at moſt incloſed with light mantlets of waxed cloth, to be opened and ſhut at pleaſure.

In the Philoſophical Tranſactions, we have a deſcription of a new ſort of *calaſh*, going on two wheels, not hung on traces, yet eaſier than the common coaches; having this further advantage, that whereas a common coach will overturn if one wheel goes on a ſurface a foot and a half higher than that of the other, this will admit of a difference of three feet and one third, without danger of overturning. Add, that it would turn over and over, that is, after being turned ſo as that the ſpokes are parallel to the horizon, and one wheel flat over the head of him that rides in it, and the other flat under him, it will turn once more, by which the wheels are placed in *ſtatu quo*, without any diſorder to the horſe, or rider. N°. 172. p. 1028.

CALASIRIS, or CALASSIS, in *Antiquity*, a linen tunic worn by the Phœnician, Ægyptian, Roman, and other prieſts. We alſo find mention of the *calaſiris* as worn by the ſoldiers, and by women. In which laſt ſenſe it ſeems to have been a knot in the women's gown, whereby it was drawn about the neck.

CALATHIANA *viola*, in *Botany*, a name given by many writers to a ſpecies of GENTIAN, called alſo by others *pneumonanthe*.

CALATHUS, in *Antiquity*, a kind of hand-baſket made of light wood, or ruſhes; uſed by the women ſometimes to gather flowers, but chiefly, after the example of Minerva, to put their work in.

The figure of the *calathus*, as repreſented on ancient monuments, is narrow at the bottom, and widening upwards, like that of a top. Pliny compares it to that of a lily. Hiſt. Nat. lib. xxi. cap. 5.

The *calathus* or work-baſket of Minerva, is no leſs celebrated among the poets, than her diſtaff.

CALATHUS is alſo uſed to denote a drinking-cup. Pliny ſeems likewiſe to uſe it for the CALYX of a flower. Hiſt. Nat. lib. xxv. cap. 7.

CALATOR, in *Antiquity*, a cryer, or officer appointed to publiſh ſomething aloud, or call the people together.

The word is formed from καλεω, *voco, I call*. Such miniſters the pontifices had, whom they uſed to ſend before them when they went to ſacrifice on *feriæ* or holidays, to advertiſe the people to leave off work.

The magiſtrates alſo uſed *calatores*, to call the people to the COMITIA, both *curiata* and *centuriata*. The officers in the army alſo had *calatores*; as had likewiſe many private families, to invite their gueſts to entertainments.

CALATRAVA, a military order, inſtituted in 1158, by Sancho III. king of Caſtile, on the following occaſion. The Moors going to attack the little city *Calatrava*, and the Templars, who held it, ſurrendering it up to the king, on a ſuſpicion of their inability to defend it; Diego Velaſquez, a Ciſtercian monk, but a man of quality, perſuaded Raimond abbot of Fitero, a monaſtery of Ciſtercians, to beg *Calatrava* of the king. He obtained it; and Raimond and Diego put themſelves in it; being followed by a great number of people who joined them out of zeal, for the defence of *Calatrava*. The Moors abandoning the enterprize, many of thoſe, who came to the defence of the city, entered the order of the Ciſtercians; and that under a habit more fit for military than monaſtic exerciſes. Accordingly, they began to make excurſions on the Moors; and this was the riſe of the order of *Calatrava*.

The firſt grand maſter was Garcias; under whoſe government the order was approved by Alexander III. in 1164, and confirmed by Innocent III. in 1198. In 1489, Ferdinand and Iſabella, with the conſent of pope Innocent VIII. reunited the grand maſterſhip of *Calatrava* to the Spaniſh crown: ſo that the kings of Spain are now become perpetual adminiſtrators thereof.

The knights bear a croſs gules, fleury with green, &c. Their rule and habit was originally that of the Ciſtercians, but their dreſs was a little ſhortened, on account of their exerciſes: and in proceſs of time they were permitted a ſecular habit.

Alphonſus IX. having recovered Alcantara from the Moors, in the year 1212, committed the cuſtody and defence thereof, firſt to the knights of *Calatrava*; and, two years afterwards, to the knights of the Pear-tree, another military order inſtituted in 1170, by Gomez Fernand, and approved by pope Alexander III. under the rule of St. Benedict: upon which they changed their name, and took the denomination of knights of Alcantara.

CALAUDRA, in *Zoology*, the name of a bird of the lark-kind, and of the ſhape of the common lark, but conſiderably larger. This bird is either the ſame with the common Engliſh bunting, called by authors *emberiza alba*, or very like it.

CALAURITIS, in the *Materia Medica of the Ancients*, a name given to a ſort of litharge. We find the litharge made in the ſame operation will be of different colours, according to the degree of heat it receives; and we have accordingly dignified it with the founding names of litharge of gold, and litharge of ſilver: the Greeks went yet farther, and added to theſe a third kind, which they called litharge of lead, or *molybditis*. All theſe ſorts of litharge were brought in great abundance from Calauros, a ſmall iſland near Crete, to the Greeks, for their uſe in medicine.

CALCADIS, in the *Materia Medica*, a name given by the Arabians to white vitriol, or to ſome white vitriolic mineral.

CALCAGIUM, in *Middle Age Writers*, a tax or contribution paid by the neighbouring inhabitants towards the making or repairing a common cauſeway.

CALCANEUM, or Calcaneus, in *Anatomy*, the ſame as calx, os calcis, calcar, or the heel-bone.

It lies under the *aſtragalus*, to which it is articulated by *ginglimus*; behind it is a large protuberance, which makes the heel, and into which the *tendo Achillis* is inſerted.

CALCANTHUM, in *Mineralogy*. See Vitriol.

CALCAR, in *Anatomy*, the ſame with calcaneum.

Calcar, in *Glaſs-making*, is the name of a ſmall oven, or reverberatory furnace, in which the firſt calcination of ſand and ſalt of pot-aſhes is made, for the turning them into what they call frit.

CALCAREOUS, ſomething that partakes of the nature and qualities of calx, or lime.

We ſay, a *calcareous* earth, *calcareous* ſtone.

Liſter ſpeaks much of a *calcareous* nitre.

Several authors attribute the heat of *thermæ*, or hot ſprings, to the admixture of a *calcareous* earth or ſtone with the water.

Calcareous earths and ſtones, properly ſo called, have been found by experiment to conſiſt of the following component parts; viz. quick-lime, or pure *calcareous* earth; fixed air, which, when extricated from them, is permanently elaſtic; and water. But if the term is more generally applied according to common uſe, the earths and ſtones calcined for making quick-lime, are intermixed with various other ſubſtances, ſuch as ſand, or vitrifiable earth, clay, and metallic calces. Theſe earths acquire cauſticity, and loſe a great part of their weight by calcination, and by diſſolution in acids, in conſequence of the diſcharge of a conſiderable quantity of fixed air. See Air *fixed*, Phosphorus, and *Quick*-Lime.

CALCAREUS *lapis*, the ſtone of which lime is made.

The *lapis calcareus* is found unfit for the making of glaſs, by reaſon of the acid ſalt it abounds with.

CALCEARIUM, or Calciarium, in *Antiquity*, a donative, or largeſs beſtowed on the Roman ſoldiers for buying ſhoes.

In the monaſteries, *calcearium* denoted the daily ſervice of cleaning the ſhoes of the religious.

CALCEDONIANS, a denomination given by Copt writers to the Melchites, on account of their adherence to the council of Calcedon. See Cophti, Monophysites, &c.

CALCEDONY, *Lapis* Calcedonius, one of the loweſt-prized among precious ſtones; diverſified with various colours, partly tranſparent, and partly opake.

Salmaſius derives the word, by corruption, from *carchedonius*; taking the modern *calcedony* to be the ſame with the *lapis carchedonius* of the ancients.

The *calcedony*, or *calcidony*, nearly reſembles the common agate, and is reputed a ſpecies thereof: its colour is a miſty grey, clouded with blue, yellow, or purple. It is ſuppoſed to be the white agate of the ancients; though we ſometimes find pieces of it blackiſh.

It is very fit for the graver; and much uſed, either to engrave arms, &c. upon, as being harder and preferable to cryſtal, if good; or to paint them on the backſide. In ſome parts, vaſes, cups, religious beads, &c. are made thereof. The cleareſt and beſt is that with a pale caſt of blue.

The Italians make it into beads, and both they and the Germans call theſe *caſſidonies*; but they are not determinate in the uſe of the word, but call beads of ſeveral of the agates by the ſame name.

Many chimerical virtues are attributed to this ſtone; but its true medicinal virtues ſeem to conſiſt in its abſorbent quality, when reduced to a fine powder, and exhibited like other earthy and abſorbent powders. But becauſe apothecaries have other ſubſtances of the ſame virtues, and, at the ſame time, far more eaſily prepared, it is rarely preſcribed by the moderns.

Neri ſhews how to make artificial *calcedonies* of the colour of agate, and oriental jaſpers.

Calcedonius is alſo a term uſed by the jewellers for a defect in ſome precious ſtones; when, in turning them, they find white ſpots, or ſtains, like thoſe of the *calcedony*.

This defect is frequent in granates and rubies. The lapidaries uſually remedy it by hollowing the bottom of the ſtone.

CALCENA, a term uſed by ſome medicinal writers to denote a morbid tartareous humour in the body.

CALCEOLUS, in *Botany*. See Lady's *ſlipper*.

CALCHACCA, in *Botany*, a name by which ſome authors have called the tree whoſe bark is the *caſſia lignea*, uſed in medicine.

CALCHOCRUM, in *Botany*, a name by which ſome authors call the *fumaria* or *fumitory*.

CALCHOPHONOS *lapis*, among the *Ancients*, a name given to a ſtone of a black colour and conſiderable hardneſs, which when cut into thin plates, and ſtruck againſt by any other hard body, gave a ſound like that of braſs: it ſeems to have been one of the hard black marbles.

CALCIFRAGA, in *Botany*, a name given by ſome authors to ſamphire.

The ancients alſo gave the appellation *calcifraga* to the ſea-fennel, though on a different account, becauſe of its ſprouting up in the middle of ſtones.

CALCIFRAGUS, *ſtone-breaking*, an appellation given by ſome to the *ſcolopendrium*; by others to pimpernel, on account of their lithontriptic quality.

CALCINATION, the act of reducing any matter into a calx, or very ſubtile white powder, by fire, whereby it is deprived of its volatile and inflammable principles; ſometimes alſo called *chemical pulverization*.

Calcining differs from mere burning, as the latter leaves the bodies of a black colour, the former of a white one. If white wine, tartar, or the white cryſtals of ſuch tartar, are burnt without being truly *calcined*, the *caput mortuum* will be black. But if the *calcination* be continued till the tartar is perfectly reduced to aſhes, and kept long enough in a ſtrong fire, the remaining calx will be white. And ſo we ſee, that not only other vegetable ſubſtances, but even white woods, as the hazel, will yield a black charcoal, and afterwards whitiſh aſhes. Thus alſo animal ſubſtances, naturally white, as bones and egg-ſhells, grow black upon being burnt, and white again when perfectly *calcined*.

Hence the rule *aduſta nigra, peruſta alba*; which yet does not hold ſo univerſally, but that Mr. Boyle finds ſeveral exceptions to it. Lead *calcined* by a ſtrong fire turns to minium; which is of a red colour.

Calcination alſo differs from mere combuſtion, or burning, in that the former requires the preſence and aſſiſtance of the air, whereas the latter may be done without it. Thus a coal kept in a veſſel exactly cloſed, will not be *calcined* though kept ever ſo long in a ſtrong fire; but when taken out in the open air, readily falls to pure white aſhes, without the help of any new *calcination*.

By *calcination*, the parts of bodies are not only much broken, but rarified and rendered ſpecifically lighter. Thus the gravity of crude lead compared to water, is above eleven to one; of *calcined* lead, only as nine to one. And the like holds of other metals: yet in ſome bodies *calcination* ſometimes increaſes the abſolute gravity, while it diminiſhes the ſpecific. Thus four ounces of regulus of antimony, by being kept in fuſion an hour and a half, will gain two drams and a half, notwithſtanding all that it has loſt by evaporation; the reaſon of which ſeems difficult to aſſign.

The increaſe of weight in minium, which is prepared from *calcined* lead, is ſaid to amount to one fourth the weight of the lead; and the lead recovered from the minium, to be one twentieth leſs than the original weight of the metal: and the quantity of lead recoverable, is leſs in proportion to the vehemence and continuance of the *calcination*.

The increaſe of weight, which the imperfect or calcinable metals acquire by *calcination*, has been long known to the chemiſts, though, before the modern diſcoveries with reſpect to fixed air, they had not been able to aſſign any probable cauſe of it. Dr. Pemberton, in his Chemical Lectures, obſerved, that the air, by acting on the inflammable ſubſtance either in metals or other bodies, expels it from them, and unites itſelf (in part at leaſt) to the remains of the body; and to this he aſcribed the additional weight acquired by their calces; that portion of air which loſes its elaſticity, and ſeems to be conſumed by burning bodies, being abſorbed by them in the proceſs of *calcination*. It had not eſcaped the notice of the ingenious Dr. Hales, that the calces of metals contain air of ſome kind or other, and that this air contributes to their additional weight. Many facts have ſince been alleged in proof of this obſervation. Dr. Prieſtley found, that no weight is either gained or loſt by the *calcination* of tin in a cloſe glaſs veſſel; and in an experiment for revivifying the calx of lead, he perceived a conſiderable generation of air; and he afterwards expelled a quantity of air, by heating a ſmall phial filled with red lead, about four or five times the bulk of the lead, together with a ſmall quantity of water; whence he concluded, that the water and air together muſt be the cauſe of the addition of weight in the calx: and this, he apprehends, is, in ſome inſtances, owing to a nitrous acid attracted from the common air in which metallic ſubſtances are calcined. M. Lavoiſier had about the ſame time made a ſimilar diſcovery, and he explains the whole proceſs of *calcination* by means of the combination of fixed air with metals converted into calces. He obſerved, that metals cannot be calcined in veſſels that are either cloſely ſtopped or exhauſted of air; that the facility of *calcination* depends on the extent of ſurface in the metal, that is expoſed to the air; that the efferveſcence which takes place, when the metallic ſubſtance paſſes from the ſtate of a calx to that of a metal, is no more than the ſeparation of an elaſtic fluid which before exiſted under a fixed form, and at this inſtant recovers its elaſticity; and that whenever a metal paſſes from its metallic ſtate to that of a calx, there is an abſorption of the ſame fluid, and that the *calcination* is nearly proportionable to this abſorption. Dr. Prieſtley had obſerved, that a diminution in the volume of air was produced by the *calcination* of metals; and M. Lavoiſier adds, that this diminution is nearly anſwerable to the augmentation of weight in the metal. He concludes, however, from ſome ſubſequent experiments, that the air which may be obtained from all metallic calces, is not fixed but common air, in a ſtate rather more pure than that which we uſually breathe; and that the fixed air, which is produced from reductions in the common method, does not proceed from the calx, but from the charcoal employed in the proceſs: whereas Dr. Prieſtley found, that ſeveral of the metallic calces yielded fixed air by heat only, as we have already obſerved, without any addition of charcoal. See Pemberton's Courſe of Chemiſtry, p. 245. Prieſtley's Exp. and Obſ. on Air, vol. ii. p. 194, &c. Lavoiſier's Eſſays Phyſical and Chemical, vol. i. pt. ii. chap. 5, 6, 7, and Appendix.

CALCINATION, in a more extenſive ſenſe, includes alſo the ſolution of metalline bodies by corroſive matters.

In this ſenſe, *calcination* is divided into *actual*, and *potential*.

CALCINATION, *actual*, is that effected by actual fire, of wood, coals, or other fewel, raiſed to a certain heat, according to the nature of the ſubſtance to be calcined.

Actual *calcination* is ſubdivided into *incineration*, and *reverberation*. To this head alſo belongs the *extinction* of things ignited.

CALCINATION, *potential*, is that procured by potential fire; viz. by ſalts, ſulphurs, and other drugs, which have, as it were, the force of fire; as ſtrong waters, corroſive ſpirits, &c.

Gold is calcined by a reverberatory fire, with mercury, and *ſal ammoniac*; ſilver with common ſalt, and alcali ſalt; copper with ſalt, and ſulphur; iron with *ſal ammoniac*, and vinegar; tin with antimony, lead, and ſulphur; mercury with *aqua fortis*: this laſt, alſo, as well as moſt other minerals, calcines with fire alone, without any other ingredient.

CALCINATION, *potential*, *philoſophical*, or *chemical*, comprehends AMALGAMATION, PRECIPITATION, EVAPORATION, FUMIGATION, and CÆMENTATION; and DETONATION by nitre is alſo reduced by Libavius to this ſpecies of *calcination*.

CALCINATION *by dry corroſion*, is that effected without moiſture, by the application of dry corroſive ſalts; to which head belongs CÆMENTATION.

CALCINATION *by vaporous corroſion*, is when metalline bodies being reduced to thin plates, are expoſed to the action of an acrimonious fume or vapour.

There are divers ways of performing this; ſometimes the plates are ſuſpended over *aqua fortis*; ſometimes over vinegar, or the recrements of preſſed grapes; ſometimes, eſpecially the nobler metals, over melted lead or quickſilver, &c.

CALCINATION, *humid*, is either by vapour, or immerſion. Iron is calcined to a ſubtile crocus, by a vaporous corroſion over ſtrong *aqua fortis*. Lead is calcined to cerus over vinegar, copper over the recrements of grapes.

CALCINATION, *humid*, *by immerſion*, is when the body is dipt into the corroſive fluid, and is either performed by amalgamation or precipitation.

CALCINATION, *reverberatory*, properly denotes the ſolution or reduction of a body into a CALX or impalpable powder; ſometimes alſo denominated ALCOHOL.

CALCINATION *of gold and ſilver by electricity*, was effected by Mr. Canton, who by the heat of electrical exploſions, produced numberleſs beautiful globules of tranſparent glaſs, and alſo others tinged with all the varieties of colour from thoſe metals. He made it alſo probable that the *black duſt* diſcharged from the braſs chain, and other pieces of metal in ſuch experiments, is the calx or glaſs of the metal reduced to ſmaller particles than the laws of optics require to produce colour. Hiſt. of Electr. edit. 1775. vol. ii. p. 292.

CALCINATUM, a CALX or body which has undergone CALCINATION.

CALCINATUM *majus*, is uſed by alchemiſts for any thing rendered ſweet by chemical art, which of its own nature was not ſo; as *mercurius dulcis*, or *ſaccharum ſaturni*.

CALCINATUM *minus*, denotes a thing which is naturally ſweet, as ſugar, manna, &c.

CALCIS *Os*. See OS *Calcis*.

CALCITRAPA, in *Botany*. See CENTAURY.

CALCITRAPOIDES, in *Botany*, thorny knap-weed. See CENTAURY.

CALCULARII, in *Antiquity*, a ſort of jugglers who practiſed ſlight of hand. Their art conſiſted in laying ſeveral calculi, or counters on the table, then covering them with cups, and ſhifting and changing them with dexterity, like what is practiſed by our jugglers.

CALCULARY *of a pear*, a congeries of little ſtony knots diſperſed through the whole parenchyma of the fruit.

The *calculary* is no vital, or eſſential part of the fruit; the ſeveral knots whereof it conſiſts being only ſo many concretions or precipitations out of the ſap, as we ſee in urines, wines, and other liquors.

CALCULATION, the act of computing ſeveral ſums, by adding, ſubtracting, multiplying, or dividing. See ARITHMETIC.

An error in *calculation* is never protected, or ſecured, by any ſentence, decree, &c. In ſtating accounts, there is always underſtood, *ſalvo errore calculi*.

The word *calculus* is uſed in this ſenſe, in alluſion to the practice of the ancients, who uſed *calculi*, or little ſtones, in making computations, in taking ſuffrages, and in keeping accounts, &c. as we now uſe counters, figures, &c.

A merchant or trader is ſaid to have been miſtaken in his *calculation* or accounts, when he has happened to take falſe meaſures, and has not ſucceeded in his undertakings ſo well as he expected.

CALCULATION is more particularly uſed to ſignify the computations in aſtronomy and geometry, for making tables of logarithms, ephemerides, finding the times of eclipſes, &c.

CALCULATION *of clock and watch-work*. See CLOCK and WATCH-WORK.

CALCULATOR, a machine contrived and conſtructed by Mr. Ferguſon, in the ſhape of an orrery, for exhibiting the motions of the earth and moon, and reſolving a variety of aſtronomical problems. See the conſtruction, figure, and uſe of this machine, in Ferguſon's Aſtronomy, 4to. p. 265, &c.

CALCULATORES, in *Antiquity*, accomptants who reckoned their ſums by *calculi*. There were ſeveral ſervants under this denomination in great families. Children alſo at ſchool were taught to practiſe the ſame.

In the ancient canons, we find a ſort of diviners, or enchanters, cenſured under the denomination of *calculatores*.

CALCULUS primarily denotes a little ſtone, pebble, or counter, anciently uſed in making computations, taking of ſuffrages, playing at tables, and the like.

Hence the phraſe *ponere calculos*, to denote a ſeries of reaſons, and a multitude of others alluding to the uſe of theſe *calculi* in accounts. Computiſts were by the lawyers called *calculones*, when they were either ſlaves, or newly freed men; thoſe of a better condition were denominated *calculatores*, or *numerarii*: ordinarily there was one of theſe maſters in each family of diſtinction; the title of whoſe office was *a calculis*, or *a rationibus*.

The Roman judges anciently gave their opinions by *calculi*, which were white for abſolution, and black for condemnation.

Hence *calculus albus*, in ancient writers, denotes a favourable vote, either in behalf of a perſon to be abſolved and acquitted of a charge, or elected to ſome dignity or poſt; as *calculus niger* did the contrary.

This uſage is ſaid to have been borrowed from the Thracians, who marked their happy or proſperous days by white, and their unhappy, by black pebbles put each night into an urn. Hence alſo the phraſes, *ſignare*, *notare aliquid albo*, *nigrove lapillo ſeu calculo*.

Beſides the diverſity of colour, there were ſome alſo which had figures or characters painted or graven on them; as thoſe which were in uſe in taking the ſuffrages both in the ſenate, and at aſſemblies of the people.

The letters marked upon theſe *calculi* were U. R. for *uti rogas*, and A. for *antiquo*; the firſt of which expreſſed an approbation of the law, the latter a rejection of it.

Afterwards the judges, who ſat in capital cauſes, uſed *calculi* marked with the letter A. for *abſolvo*, C. for *condemno*, and N. L. for *non liquet*; ſignifying a more full information was required.

We may alſo mention another ſpecies of *calculi* uſed at the public games, whereby the rank and order in which the athletæ were to fight was determined. If for inſtance they were twenty, then twenty of theſe pieces were caſt into an urn; each ten were marked with numbers from one to ten, and the law was, that each of thoſe who drew, ſhould fight him who had drawn the ſame number.

Theſe were called *calculi athletici*.

Calculus is alſo uſed in *Ancient Grammatic Writers* for a kind of weight equal to two grains of *cicer*. Some make it equivalent to the *ſiliqua*, which is equal to three grains of barley. Two *calculi* made the *ceratium*.

Calculus *differentialis* is a method of differencing quantities, or of finding an infinitely ſmall quantity, which, being taken infinite times, ſhall be equal to a given quantity: or, it is the arithmetic of the infinitely ſmall differences of variable quantities.

The foundation of this *calculus* is an infinitely ſmall quantity, or an infiniteſimal, which is a portion of a quantity incomparable to that quantity, or that is leſs than any aſſignable one, and therefore accounted as nothing; the error accruing by omitting it being leſs than any aſſignable one. Hence two quantities, only differing by an infiniteſimal, are reputed equal.

Thus, in *Aſtronomy*, the diameter of the earth is an infiniteſimal, in reſpect of the diſtance of the fixed ſtars; and the ſame holds in abſtract quantities. The term infiniteſimal, therefore, is merely reſpective, and involves a relation to another quantity; and does not denote any real ens, or being.

Now infiniteſimals are called *differentials*, or differential quantities, when they are conſidered as the differences of two quantities. Sir Iſaac Newton calls them *moments*; conſidering them as the momentary increments of quantities; v. g. of a line generated by the flux of a point; or of a ſurface by the flux of a line. The *differential calculus*, therefore, and the doctrine of FLUXIONS, are the ſame thing, under different names; the former given by M. Leibnitz, and the latter by Sir Iſaac Newton: each of whom lay claim to the diſcovery.

There is, indeed, a difference in the manner of expreſſing the quantities reſulting from the different views wherein the two authors conſider the infiniteſimals; the one as moments, the other as differences: Leibnitz, and moſt foreigners, expreſs the differentials of quantities by the ſame letters as variable ones, only prefixing the letter d: thus the differential of x is called dx; and that of y, dy: now dx is a poſitive quantity, if x continually increaſe; negative, if it decreaſe.

The Engliſh, with Sir Iſaac Newton, inſtead of dx, write $\dot{x}$ (with a dot over it); for dy, $\dot{y}$, &c. which foreigners object againſt, on account of that confuſion of points, which they imagine ariſes, when differentials are again differenced; beſides, that the printers are more apt to overlook a point than a letter. Stable quantities being always expreſſed by the firſt letters of the alphabet $da = o$, $db = o$, $dc = o$; wherefore $d\,(x+y-a) = dx+dy$, and $d\,(x-y+a)\ dx-dy$. So that the differencing of quantities is eaſily performed, by the addition or ſubtraction of their compounds.

To difference quantities that multiply each other; the rule is, firſt, multiply the differential of one factor into the other factor, the ſum of the two factors is the differential ſought: thus, the quantities being xy, the differential will be $xdy+ydx$, i. e. $d\,(xy) = xdy+ydx$. Secondly, if there be three quantities mutually multiplying each other, the factum of the two muſt then be multiplied into the differential of the third: thus, ſuppoſe vxy, let $vx=t$, then $vxy=ty$; conſequently $d\,(vxy) = tdy+ydt$: but $dt = vdx+xdv$. Theſe values, therefore, being ſubſtituted in the antecedent differential, $tdy+ydt$, the reſult is, $d\,(vxy) = vxdy+vydx+xydv$. Hence it is eaſy to apprehend how to proceed, where the quantities are more than three.

If one variable quantity increaſe, while the other y decreaſes, it is evident $ydx-xdy$ will be the differential of xy.

To difference quantities that mutually divide each other; the rule is, firſt, multiply the differential of the diviſor into the dividend; and, on the contrary, the differential of the dividend into the diviſor; ſubtract the laſt product from the firſt, and divide the remainder by the ſquare of the diviſor; the quotient is the differential of the quantities mutually dividing each other. See FLUXIONS.

Calculus *exponentialis*, is a method of differencing exponential quantities, or of finding and ſumming up the differentials or moments of exponential quantities; or at leaſt bringing them to geometrical conſtructions.

By exponential quantity, is here underſtood a power, whoſe exponent is variable; v. g. $x^x\ a^x.\ x^y.$ where the exponent x does not denote the ſame in all the points of a curve, but in ſome ſtands for 2, in others for 3, in others for 5, &c.

To difference an exponential quantity: there is nothing required but to reduce the exponential qualities to logarithmic ones; which done, the differencing is managed as in logarithmic quantities.—Thus, ſuppoſe the differential of the exponential quality x^y required, let

$$\underline{x^y = z}$$

Then will $\underline{ylx = lz}$

$$\underline{lxdy + \frac{ydx}{x} = \frac{dz}{z}}$$

$$zlxdy + \frac{zydx}{x} = dz$$

That is, $x^y\,lxdy + x^{y-1}\,dx = dz$. Bernouilli Opera, tom. i. See EXPONENTIAL.

Calculus *integralis*, or *ſummatorius*, is a method of integrating, or ſumming up moments, or differential quantities; i. e. from a differential quantity given, to find the quantity from whoſe differencing the given differential reſults.

The *integral calculus*, therefore, is the inverſe of the differential one: whence the Engliſh, who uſually call the differential method, *fluxions*, give this *calculus*, which aſcends from the fluxions, to the flowing or variable quantities: or, as foreigners expreſs it, from the differences to the ſums; by the name of the *inverſe method of* FLUXIONS.

Hence, the integration is known to be juſtly performed, if the quantity found, according to the rules of the *differential calculus*, being differenced, produce that propoſed to be ſummed.

Suppoſe $\int$ the ſign of the ſum, or integral quantity; then $\int ydx$ will denote the ſum, or integral of the differential ydx.

To integrate, or ſum up a differential quantity. It is demonſtrated, firſt, that $\int dx = x$: ſecondly, $\int (dx+dy) = x+y$: thirdly, $\int (xdy+ydx) = xy$: fourthly, $\int (mx^{m-1}\,dx = xm$: fifthly, $\int (n:m)\,x^{\frac{n-m}{m}}\,dx = x^{\frac{n}{m}}$: ſixthly, $\int (ydx-xdy) : y^2 = x:y$. Of theſe, the fourth and fifth caſes are the moſt frequent; wherein the differential quantity is integrated, by adding a variable unity to the exponent, and dividing the ſum by the new exponent multiplied into the differential of the root; v. g. the fourth caſe, by $m-(1+1)\,dx$, i. e. by mdx.

If the differential quality to be integrated, doth not come under any of theſe formulas, it muſt either be reduced to an integral finite, or an infinite ſeries, each of whoſe terms may be ſummed.

It may be here obſerved, that, as in the analyſis of finites, any quantity may be raiſed to any degree of power; but *vice verſa*, the root cannot be extracted out of any number required: ſo in the analyſis of infinites, any variable or flowing quantity may be differenced; but, *vice verſa*, any differential cannot be integrated. And as, in the analyſis of finites, we are not yet arrived at a method of extracting the roots of all equations; ſo neither has the *integral calculus* arrived at its perfection: and as in the former we are obliged to have recourſe to approximation; ſo in the latter we have recourſe to infinite SERIES, where we cannot attain to a perfect integration.

Calculus *literalis*, or *literal* **Calculus**, is the ſame with ſpecious arithmetic, or algebra, ſo called, from its uſing the letters of the alphabet: in contradiſtinction to numeral arithmetic, which uſes figures.

In the literal *calculus*, given quantities are expreſſed by the firſt letters, $a\,b\,c\,d$; and quantities ſought by the laſt $z\,y\,x$, &c. Equal quantities are denoted by the ſame letters.

Calculus, in *Medicine*, the diſeaſe of the ſtone in the bladder, or kidneys.

The term is Latin, and ſignifies a *little pebble*.

The *calculus* in the bladder is called *lithiaſis*; and in the kidneys, *nephritis*. See STONE.

Calculus *Minervæ*, among the *Ancient Lawyers*, denoted the deciſion of a cauſe, wherein the judges were equally divided. The expreſſion is taken from the hiſtory of Oreſtes, repreſented by Æſchylus and Euripides; at whoſe trial, before the Areopagites for the murder of his mother, the votes being equally divided for and againſt him, Minerva interpoſed, and gave the caſting vote, or *calculus*, in his behalf.

M. Cramer, profeſſor at Marpurg, has a diſcourſe expreſs, De Calculo Minervæ; wherein he maintains, that all the effect an entire equality of voices can have, is to leave the cauſe *in ſtatu quo*.

Calculus *tiburtinus*, a ſort of figured ſtone, formed in great plenty about the cataracts of the Anio, and other rivers in Italy; of a white colour, and in ſhape oblong, round, or echinated. They are a ſpecies of the *ſtiriæ lapideæ*, and generated like them; and ſo like ſugar-plums in the whole, that it is a common jeſt at Rome to deceive the unexperienced by ſerving them up at deſerts.

CALDA, or **Caldum**, in the *Ancient Diet*, denotes hot water, uſed much among the Romans, anciently, as a drink, partly for pleaſure, and partly for health.

The word is formed from *calidus*, *hot*; *aqua* being underſtood; *calda*, q. d. *calida aqua*.

Lipſius, Caſtalio, Mercurialis, Baccius, and Freinſhemius, have treated largely *de potu caldæ*, or *caldi*. Act. Erud. Lipſ. 1721.

CALDARIA *Judiciaria*, the method of trial, or PURGATION by boiling water. See ORDEAL.

CALDARIUM, in the *Ancient Baths*, denoted a brazen veſſel or ciſtern, placed in the hypocauſtum, full of hot water, to be drawn thence into the *piſcina* or BATH, to give it the neceſſary degree of heat.

In this ſenſe, the *caldarium* ſtood contradiſtinguiſhed from the *tepidarium* and *frigidarium*.

CALDARIUM alſo denoted the ſtove, or ſudatory, being a cloſe vaulted room, wherein by hot dry fumes, without water, people were brought to a profuſe ſweat.

In which ſenſe, *caldarium* was the ſame with what was otherwiſe denominated *vaporarium*, *ſudatorium*, and *laconium*; in the Greek baths, *hypocauſtum*, ὑποκαυϛον.

CALDARIUM *æs*, denotes POT-*Metal*.

CALDRON, a large kitchen utenſil, commonly made of copper; having a moveable iron handle, whereby to hang it on the chimney-hook.

The word is formed from the French *chaudron*, or rather the Latin *caldarium*.

CALDRONS, *boiling in*, *caldariis decoquere*, is a capital puniſhment ſpoken of in the middle age writers, decreed to divers ſorts of criminals, but chiefly to debaſers of the coin.

One of the torments inflicted on the ancient Chriſtian martyrs, was boiling in caldrons of water, oil, &c.

CALE, or KALE. in *Botany*, a ſpecies of the BRASSICA, or *cabbage*. See BORECOLE and COLEWORT.

CALE, *ſea*. See CRAMBE.

CALEA, in *Botany*, a genus of the *ſyngeneſia polygamia æqualis* claſs of plants; the receptacle of which is covered with a hairy down, and the calyx imbricated.

CALEDONIANS, in *Antiquity*, the ancient inhabitants of that part of Britain which lies northward beyond Graham's Dyke, or the wall of Antoninus Pius, afterwards called Picts by the Romans and Provincials. The term *Caledonii* became, in proceſs of time, ſo common among the Roman writers, that they applied it generally to all Britain, and all the foreſts of Britain.

Camden derives the name from the plural *kaledion*, of the Britiſh word *kaled*, *hard*; whence *Caledonii*, denoting a people *hardy*, *uncivilized*, and *ruſtick*. Buchanan derives it from the old Scottiſh word *calden*, *hazel-tree*.

CALEFACIENTIA, in *Medicine*. The *calefacientia* of the Latins are the ſame with the θερμαντικα of the Greeks; and denote no more than what we commonly call warming medicines. That the natures and qualities of the ſeveral medicines coming under this denomination may be the more thoroughly underſtood, it is neceſſary to obſerve, that there may be heat without any external appearance of fire, and that it diſcovers itſelf by numberleſs effects; but in no inſtance more conſpicuouſly than by the dilatation of the air in the thermometer. Boerhaave's Chemiſtry, vol. i.

The means then by which warmth is generated in bodies, are the very ſame with thoſe by which apparent fire is produced. Where there is a heat, there is alſo a proportionable and correſpondent motion and agitation of the parts of the body ſaid to be hot; and, *vice verſa*, where there is an agitation of the parts of a body, there is a proportionable heat and warmth.

CALEFACTION, a ſchool term for the action of fire in heating a body; or the impulſe which the particles of a hot body impreſs on other bodies around.

The word is particularly uſed in pharmacy; where *calefaction* is diſtinguiſhed from coction: the firſt being applied, where the thing is only heated, without boiling.

CALENDAR, KALENDARIUM, CALENDARIUM, or KALENDAR, a diſtribution of time, accommodated to the uſes of life; or a table, or ALMANAC, containing the order of days, weeks, months, FEASTS, &c. happening throughout the YEAR. See TIME, MONTH, YEAR, &c.

It is called *calendar* from the word *calendæ*, anciently wrote in large characters at the head of each month. See CALENDS.

The days in *calendars* were originally divided into octoades, or eights, but afterwards, in imitation of the Jews, into hebdomades, or ſeven; which cuſtom, Scaliger obſerves, was not introduced among the Romans till after the time of Theodoſius.

There are divers *calendars*, according to the different forms of the year, and diſtributions of time, eſtabliſhed in different countries. Hence the Roman, the Jewiſh, the Perſian, the Julian, the Gregorian, &c. *calendars*.

The ancient Roman *calendar* is given by Ricciolus, Struvius, Danet, and others; by which we ſee the order and number of the Roman holy-days, and work-days.

The three Chriſtian *calendars* are given by Wolfius in his Elements of Chronology.

The Jewiſh *calendar* was fixed by rabbi Hillel, about the year 360, from which time the days of their year may be reduced to thoſe of the Julian *calendar*.

CALENDAR, *the Roman*, owed its origin to Romulus; but it has undergone various reformations ſince his time. That legiſlator diſtributed time into ſeveral periods, for the uſe of the people under his command: but as he was much better verſed in matters of war than of aſtronomy, he only divided the year into ten months, making it begin in the ſpring, on the firſt of March: imagining the ſun made his courſe through all the ſeaſons in three hundred and four days.

Romulus's *calendar* was reformed by Numa, who added two months more, January and February; placing them before March: ſo that his year conſiſted of three hundred fifty-five days, and began on the firſt of January. He choſe, however, in imitation of the Greeks, to make an intercalation of forty-five days, which he divided into two parts; intercalating a month of twenty-two days at the end of each two years; and at the end of each two years more, another month of twenty-three days; which month, thus interpoſed, he called *Marcedonius*, or the intercalary February.

But theſe intercalations being ill obſerved by the pontiffs, to whom Numa committed the care of them, occaſioned great diſorders in the conſtitution of the year; which Cæſar, as ſovereign pontiff, endeavoured to remedy: to this end, he made choice of Soſigenes, a celebrated aſtronomer of thoſe times; who found, that the diſpenſation of time in the *calendar* could never be ſettled on any ſure footing, without having regard to the annual courſe of the ſun. Accordingly, as the ſun's yearly courſe is performed in three hundred ſixty-five days ſix hours, he reduced the year to the ſame number of days: the years of this correction of the *calendar* was a year of confuſion; they being obliged, in order to ſwallow up the ſixty-five days that had been imprudently added, and which occaſioned the confuſion, to add two months beſides the *Marcedonius*, which chanced to fall out that year; ſo that this year conſiſted of fifteen months, or four hundred forty-five days. This reformation was made in the year of Rome 708, forty-two or forty-three years before Chriſt.

The Roman, called alſo *Julian calendar*, from its reformer Julius, is diſpoſed into quadriennial periods; whereof the three firſt years, which he called *communes*, conſiſt of three hundred ſixty-five days; and the fourth, *biſſextile*, of three hundred ſixty-ſix; by reaſon of the ſix hours, which in four years make a day, or ſomewhat leſs; for in one hundred thirty-four years an intercalary day is to be retrenched. On this account it was, that pope Gregory XIII. with the advice of Clavius and Ciaconius, appointed, that the hundredth year of each century ſhould have no biſſextile, excepting in each fourth century: that is, a ſubtraction is made of three biſſextile days in the ſpace of four centuries; by reaſon of the eleven minutes wanting in the ſix hours whereof the biſſextile conſiſts. See BISSEXTILE.

This reformation of the *calendar*, or the new ſtile, as we call it, commenced on the fourth of October 1582, when ten days were thrown out at once; ſo many having been introduced into the computation ſince the time of the council of Nice, in 325, by the defect of eleven minutes.

CALENDAR, *Julian Chriſtian*, is that wherein the days of the week are determined by the letters A, B, C, D, E, F, G, by means of the ſolar cycle; and the new and full moons, eſpecially the paſchal full moon, with the feaſt of Eaſter, and the other moveable feaſts depending thereon, by means of golden numbers, rightly diſpoſed through the Julian year. See CYCLE, and *Golden* NUMBER.

In this *calendar*, the vernal equinox is ſuppoſed to be fixed to the twenty-firſt day of March; and the cycle of nineteen years, or the golden numbers, conſtantly to indicate the places of the new and full moons; yet both are erroneous. And hence aroſe a very great irregularity in the time of Eaſter. To ſhew this error the more apparently, let us apply it to the year 1715. In this year, then, the vernal equinox falls on the tenth of March; and therefore comes too early by eleven days. The paſchal full moon falls on the ſeventh of April; and therefore too late, with regard to the cycle, by three days. Eaſter, therefore, which ſhould have been on the tenth of April, was that year on the ſeventeenth. The error, here, lies only in the metemptoſis, or poſt-poſition of the moon, through the defect of the lunar cycle. If the full moon had fell on the eleventh of March, Eaſter would have fallen on the thirteenth of March; and therefore the error, ariſing from the anticipation of the equinox, would have exceedingly augmented that ariſing from the poſt-poſition. Theſe errors, in courſe of time, were ſo multiplied, that the *calendar* no longer exhibited any regular Eaſter. Pope Gregory XIII. therefore, by the advice of Aloyſius Lilius, in 1582, threw ten days out of the month of October, to reſtore the equinox to its place, viz. the twenty-firſt of March; and thus introduced the form of the Gregorian year, with ſuch a proviſion, as that the equinox ſhould be conſtantly kept to the twenty-firſt of March. The new moons and full moons, by advice of the ſame Lilius, were not to be indicated by golden numbers, but by epacts. The *calendar*, however, was ſtill retained in England, without this correction: whence there was a difference of eleven days between our time and that of our neighbours. But by 24 Geo. II. cap. 23. the Gregorian computation is eſtabliſhed here, and accordingly took place in 1752.

CALENDAR, *Gregorian*, is that which, by means of epacts, rightly diſpoſed through the ſeveral months, determines the new and full moons, and the time of Eaſter, with the moveable feaſts depending thereon, in the Gregorian year.

The Gregorian *calendar*, therefore, differs from the Julian, both in the form of the year, and in that epacts are ſubſtituted in lieu of golden numbers: for the uſe and diſpoſition whereof, ſee EPACT.

Though the Gregorian *calendar* be preferable to the Julian, yet it is not without its defects (perhaps, as Tycho Brahe and Caſſini imagine, it is impoſſible ever to bring the thing to a perfect juſtneſs.) For, firſt, the Gregorian intercalation does not hinder, but that the equinox ſometimes ſucceeds the twenty-firſt of March, as far as the twenty-third; and ſometimes anticipates it, falling on the nineteenth; and the full moon, which falls on the twentieth of March, is ſometimes the paſchal; yet not ſo accounted by the Gregorians. On the other hand, the Gregorians account the full moon of the twenty-ſecond of March, the paſchal; which yet, falling before the equinox, is not paſchal. In the firſt caſe, therefore, Eaſter is celebrated in an irregular month; in the latter, there are two Eaſters in the ſame eccleſiaſtical year. In like manner, the cyclical computation being founded on mean full moons, which yet may precede or follow the true ones by ſome hours, the paſchal full moon may fall on Saturday, which is yet referred by the cycle to Sunday; whence, in the firſt caſe, Eaſter is celebrated eight days later than it ſhould be; in the other it is celebrated on the very day of the full moon, with the Jews and Quartodeciman heretieks; contrary to the decree of the council of Nice. Scaliger and Calviſius ſhew other faults in the Gregorian *calendar*, ariſing from the negligence and inadvertency of the authors: yet is this *calendar* adhered to by the Romaniſts throughout Europe, &c. and uſed wherever the Roman breviary is uſed.

CALENDAR, *reformed*, or *corrected*, is that which, ſetting aſide all apparatus of golden numbers, epacts, and dominical letters, determines the equinox, with the paſchal full moon, and the moveable feaſts depending thereon, by aſtronomical computation, according to the Rudolphine tables.

This *calendar* was introduced among the proteſtant ſtates of Germany, in the year 1700, when eleven days were at once thrown out of the month of February; ſo that in 1700, February had but eighteen days: by this means, the corrected ſtile agrees with the Gregorian. This alteration in the form of the year, they admitted for a time; in expectation that, the real quantity of the tropical year being at length more accurately determined by obſervation, the Romaniſts would agree with them, on ſome more convenient intercalation.

CALENDAR, *conſtruction of a*, or *almanac*. 1. Compute the ſun's and moon's place for each day of the year; or take them from ephemerides. 2. Find the dominical letter, and, by means thereof, diſtribute the *calendar* into weeks. 3. Compute the time of Eaſter, and thence fix the other moveable feaſts. 4. Add the immoveable feaſts, with the names of the martyrs. 5. To every day add the ſun's and moon's place, with the riſing and ſetting of each luminary; the length of day and night; the crepuſcula, and the aſpects of the planets. 6. Add, in the proper places, the chief phaſes of the moon, and the ſun's entrance into the cardinal points; i. e. the ſolſtices and equinoxes; together with the riſing and the ſetting, eſpecially heliacal, of the planets, and chief fixed ſtars: means for each of which will be found under the proper heads.

The duration of the crepuſcula, or the end of the evening and beginning of the morning twilight; together with the ſun's riſing and ſetting, and the length of days, may be transferred from the *calendars* of one year, into thoſe of another; the differences in the ſeveral years being too ſmall to be of any conſideration in civil life. Hence it appears, that the conſtruction of a *calendar* has nothing in it of myſtery, or difficulty; if tables of the heavenly motions be at hand. See ALMANAC.

Some divide *calendars* or *almanacs* into public and private, perfect and imperfect; others into heathen and Chriſtian.

Public *almanacs* are thoſe of a larger ſize, uſually hung up for common or family uſe; private are thoſe of a ſmaller kind, to be carried about either in the hand, inſcribed on a ſtaff, or in the pocket; perfect, thoſe which have the dominical letters as well as primes, and feaſts inſcribed on them; imperfect, thoſe which have only the primes and immoveable feaſts. Till about the fourth century, they all carry the marks of heatheniſm; from that age to the ſeventh, they are generally divided between heatheniſm and Chriſtianty.

Almanacs are of ſomewhat different compoſition, ſome containing more points, others fewer. The eſſential part is the *calendar* of months and days, with the riſings and ſettings of the ſun, age of the moon, &c. To theſe are added various parerga, aſtronomical, aſtrological, meteorological, chronological, and even political, rural, medical, &c. as calculations, and accounts of eclipſes, ſolar ingreſſes, aſpects, and configurations of the heavenly bodies, lunations, heliocentrical and geocentrical motions of the planets, prognoſtics of the weather, and predictions of other events, tables of the planetary motions, the tides, terms, intereſt, twilight, equation, kings, &c.

CALENDAR, *Gelalean*, or *Jellalæan*, is a correction of the Perſian *calendar*, made by order of ſultan Gelaleddan, in the 467th year of the Hegira; of Chriſt 1089. See EPOCHA and YEAR.

CALENDAR is alſo applied to divers other compoſitions reſpecting the twelve months of the year.

In this ſenſe, Spencer has given the Shepherd's *Calendar*; Evelyn, and Miller, the Gardener's *Calendar*, &c.

CALENDAR is uſed for the catalogue, or faſti, anciently kept in each church, of the ſaints, both univerſal, and thoſe particularly honoured in each church; with their biſhops, martyrs, &c. *Calendars* are not to be confounded with martyrologies, for each church had its peculiar *calendar*; whereas the martyrologies regarded the whole church in general; containing the martyrs and confeſſors of all the churches. From all the ſeveral *calendars* were formed one martyrology: ſo that martyrologies are poſterior to *calendars*. See MARTYROLOGY.

CALENDAR is alſo extended to an orderly table, or enumeration of perſons or things.

Lord Bacon wiſhes for a *calendar* of doubts. A late writer has given a *calendar* of the perſons who may inherit eſtates in fee-ſimple.

CALENDAR, *Kalendarium*, originally denoted among the Romans, a book containing an account of monies at intereſt, which became due on the calends of January; the uſual time when the Roman uſurers let out their money. Senec. de Benef. lib. vii. c. 10. Idem, lib. i. c. 2. Ejuſd. Epiſt. 14. Idem, Ep. 87. Fab. Theſ. p. 413.

CALENDAR *months*, the ſolar months, as they ſtand in the Calendar, viz. January 31 days, &c.

CALENDAR, *aſtronomical*, an inſtrument engraved upon copper-plates, printed on paper, and paſted on board, with a braſs ſlider which carries a hair, and ſhews by inſpection, the ſun's meridian altitude, right aſcenſion, declination, riſing, ſetting, amplitude, &c. to a greater exactneſs than our common globes will ſhew.

CALENDAR *of priſoners*, is a liſt of all their names, with their ſeparate judgments in the margin, which the judge ſigns, and the execution of which is committed to the reſpective ſheriff. In the caſe of a capital felony, the words "hanged by the neck" are annexed to the priſoner's name, inſtead of "*ſuſ. per coll.*" for *ſuſpendatur per collum*, which was the ancient form. Judge Blackſtone well obſerves, that the execution of a man ſeems to be too important and terrible a taſk to depend on a marginal note. Blackſt. Com. vol. iv. p. 396.

CALENDAR-*glaſs*, *vitrum calendare*, a name formerly given by ſome writers to a thermometer, or graduated tube, whereby to meaſure the degrees of heat.

CALENDAR-*brothers*, *fratres calendarii*, a ſort of devout fraternities, compoſed of eccleſiaſtics as well as lay-men; whoſe chief buſineſs was to procure maſſes to be ſaid, and alms diſtributed, for the ſouls of ſuch members as were deceaſed. They were alſo denominated *calend-brothers*, becauſe they uſually met on the *calends* of each month, though in ſome places only once a quarter.

CALENDARIUM *feſtum*. The Chriſtians retained much of the ceremony and wantonneſs of the calends of January, which for many ages was held a feaſt, and celebrated by the clergy with great indecencies, under the names *feſtum kalendarum*, or *hypodiaconorum*, or *ſtultorum*, that is, the feaſt of fools: ſometimes alſo *libertas decembrica.* The people met maſked in the church, and in a ludicrous way proceeded to the election of a mock pope, or biſhop, who exerciſed a juriſdiction over them ſuitable to the feſtivity of the occaſion: fathers, councils, and popes long laboured to reſtrain this licence, to little purpoſe. We find the feaſt of the calends in uſe as low as the cloſe of the fifteenth century. Du-Cange.

CALENDER, a machine uſed, in the manufactories, for preſſing certain ſtuffs, ſilks, and even linens; to make them ſmooth, even, and gloſſy. It is alſo uſed for watering, or giving the waves to tabbies and mohairs.

The word is formed from the French *calandre*, or Spaniſh *calandra*, which ſignify the ſame; and which ſome derive further from the Latin *cylindrus:* becauſe the whole effect of the machine depends upon a cylinder. Borel derives the name from that of a little bird, of the ſwallow kind; on account of the agreement between the feathers of the bird, and the impreſſion of the machine.

The *calender* conſiſts of two large wooden rollers, round which the pieces of ſtuff are wound: theſe are put between two large, cloſe, poliſhed planks of wood, the lower ſerving as a fixed baſe, and the upper moveable, by means of a wheel like that of a crane; with a rope, faſtened to a ſpindle which makes its axis: this upper part is of a prodigious weight, ſometimes twenty or thirty thouſand pounds. It is the weight of this part, together with its alternate motion, that gives the poliſh, and makes the waves on the ſtuffs, by cauſing the cylinders on which they are put to roll with great force over the loweſt board. The rollers are taken off, and put on again, by inclining the machine.

At Paris they have an extraordinary machine of this kind, called the *royal calender*, made by order of M. Colbert; the lower table or plank of which is made of a block of ſmooth marble, and the upper lined at bottom with a plate of poliſhed copper.

This is called the great *calender*; they have alſo a ſmall one with two tables of poliſhed iron or ſteel.

There are alſo *calenders* without wheels, which are wrought by a horſe harneſſed to a wooden bar, which turns a large arbor placed upright; at the top of which, on a kind of drum, is wound a rope, the two ends of which being faſtened to the two extremities of the upper plank of the engine, give it motion. But the horſe *calender* is in leſs eſteem than the wheel kind, as the motion of this latter is more equable and certain.

We read of *calendering* worſteds. To improve linen farther, the drapers get ſeveral ſorts of their cloths *calendered*; whereby their threads are made to lie flatter and ſmoother.

Calender alſo denotes the workman who manages the machine above deſcribed; applying the cloth or ſtuff underneath, after having firſt wound it on the rollers.

Calenders is alſo the name of a ſort of Derviſes ſpread through Turky and Perſia, whoſe order is not in general eſteem among the Mahometans, as being reputed leſs abſtemious and ſtrict in morals than ſome other orders. They derive their name from Calenderi, their founder. See Dervis.

CALENDS, Calendæ, in the *Roman Chronology*, the firſt day of every month.

The word is formed from καλεω, *I call*, or *proclaim*; becauſe, before the publication of the Roman Faſti, it was one of the offices of the pontifices to watch the appearance of the new moon, and give notice thereof to the *Rex Sacrificulus*; upon which a ſacrifice being offered, the pontiff ſummoned the people together in the capitol, and there, with a loud voice, proclaimed the number of *calends*, or the day whereon the nones would be; which he did by repeating this formula, as often as there were days of *calends*; *Calo Juno Novella.* Whence the name *calendæ* was given thereto, from *calo*, *calare.* This is the account given by Varro. Plutarch, and after him Gaza, derive the word from *clam*; *Quia luna calendis clam ſit:* but this is far fetched. Others derive the appellation hence: that the people being convened on this day, the pontifex called, or proclaimed the ſeveral feaſts or holidays in the month; a cuſtom which continued no longer than the year of Rome 450, when C. Flavius, the curule ædile, ordered the faſti, or calendar, to be ſet up in public places, that every body might know the difference of times, and the return of the feſtivals.

The *calends* were reckoned backwards, or in a retrograde order: thus, v. g. the firſt of May being the *calends* of May; the laſt, or thirtieth of April, was the *pridie calendarum*, or ſecond of the *calends* of May; the twenty-ninth of April, the third of the *calends*, or before the *calends:* and ſo back to the thirteenth, where the ides commence; which are, likewiſe, numbered invertedly to the fifth, where the nones begin; which are numbered after the ſame manner to the firſt day of the month, which is the *calends* of April. See Ides, and Nones.

The rules of computation by *calends*, are included in the following verſes:

Prima dies menſis cujuſque eſt dicta calendæ:
Sex Maius nonas, October, Julius, & Mars;
Quatuor at reliqui: habet idus quilibet octo.
Inde dies reliquos omnes dic eſſe calendas;
Quas retro numerans dices à menſe ſequente.

To find the day of the *calends* anſwering to any day of the month we are in; ſee how many days there are yet remaining of the month, and to that number add two: for example; ſuppoſe it the twenty-ſecond of April; it is then the tenth of the *calends* of May. For April contains thirty days: and twenty-two taken from thirty, there remains eight; to which two being added, the ſum is ten.

The reaſon of adding *two* is, becauſe the laſt day of the month is called *ſecundo calendas*, the laſt but one *tertio calendas*, &c.

The Roman writers themſelves are at a loſs for the reaſon of this abſurd and whimſical manner of computing the days of the month: yet it is ſtill kept up in the Roman chancery; and by ſome authors, out of a vain affectation of learning, preferred to the common, more natural, and eaſy manner.

Calends, *Kalendæ*, are alſo uſed in *Church-Hiſtory* to denote conferences anciently held by the clergy of each deanry, on the firſt day of every month, concerning their duty and conduct, eſpecially in what related to the impoſition of penance. Du-Cange.

Calends *of January*, in *Roman Antiquity*, was a ſolemn feſtival conſecrated to Juno and Janus; wherein the Romans offered vows and ſacrifices to thoſe deities, and exchanged preſents among themſelves, as a token of friendſhip.

It was only a melancholy day to debtors, who were then obliged to pay their intereſts, &c. Hence Horace calls it *triſtes calendæ.* Lib. i. Serm. Sat. 3.

CALENDULA, in *Botany*, the herb, or flower popularly called marygold, uſed in the ſhops as a cardiac and alexipharmic, of like, though of inferior virtue to ſaffron.

Calendula, in *Ornithology*, a ſpecies of the motacilla in the order of *paſſeres*, found in Penſylvania.

CALENTES, in *Logic*, a ſort of ſyllogiſm in the fourth, commonly called *Galenical* figure, wherein the major propoſition is univerſal and affirmative; and the ſecond or minor, as well as the concluſion, univerſal and negative.

This is intimated by the letters it is compoſed of, where the A ſignifies an univerſal affirmative, and the two E's as many univerſal negatives. E. gr.

CA	*Every affliction in this world is only for a time.*
LEN	*No affliction, which is only for a time, ought to diſturb us.*
TES	*No affliction ought to diſturb us, which happens in this world.*

The Ariſtotelians not allowing the fourth figure of ſyllogiſms, turn this word into celantes, and make it only an indirect mood of the firſt figure.

CALENTURE, an inflammatory fever, frequent at ſea, attended with a delirium; wherein the patients imagine the ſea to be green fields; and, if not prevented, will leap over-board.

The word *calenture* is Spaniſh, *calentura*, and ſignifies a heat, fever, or ague; from the Latin *calere*, *to be hot.*

Calentures are chiefly found in ſailing towards the Weſt Indies, as they approach the tropic. Thoſe affected with them have a fierce look, and are very unruly, being ſo eager to get to their imaginary cool verdure, and ſo ſtrong, that ſix men ſometimes ſcarce ſuffice to detain them. The diſeaſe chiefly ſeiſes the young and ſtrong, eſpecially of a ſanguine complexion; the pulſe is extremely low. When taken in time, it rarely proves mortal.

The ſeat of this diſorder is in the ſtomach, and its principal ſource ſeems to be the eating ſalt proviſions for a long time together.

The firſt ſtep toward a cure is the giving a briſk vomit; this has the immediate effect of diſpelling the fancy of the green leaves and trees in the water; after this, ſalt of wormwood, a little diaſcordium, and conſerve of roſes vitriolated are proper, and bleeding in the arm; and if that does not take effect, the opening of the temporal artery is proper: a thin diet and cream of tartar in water-gruel, after theſe things, generally remove the remains of the diſeaſe.

When they are ſeiſed with this violent heat and diſorder, which for the moſt part happens in the night, they ſteal privately over-board into the ſea, imagining themſelves to be going into the green fields. *Calentures* happen oftener by night than by day, becauſe ſhips are more cloſely ſhut up by night, and are leſs airy than they are in the day-time. Phil. Tranſ. abr. vol. iv. by Dr. Oliver.

CALESIAM, in *Botany*, H. M. *Arbor baccifera racemoſa, vitis floribus acinis oblongis compreſſis monopyrenis.* It is a very tall and beautiful tree; the wood is of a dark purple colour, ſmooth and flexible; the flowers grow in cluſters at the ends of the boughs, very like the flowers of vines, and are ſucceeded by berries in cluſters, like grapes or currants, full of a ſucculent and inſipid pulp, encloſing a ſtone having a white inſipid kernel.

It grows common in Malabar, bears fruit once a year, and is fruitful from ten years ſtanding to fifty and upward: of the wood they make ſheaths for knives and ſwords.

The bark pulveriſed and made into an ointment with butter, cures the *ſpaſmus cynicus*, and convulſions excited by great wounds; it heals alſo malignant ulcers, and mitigates the pain in the gout. The juice of the bark cures *aphthæ*; and taken inwardly, is a remedy for the dyſentery. The bark of this tree with that of the codampulli reduced into a powder, purges the belly, and carries off pituitous and atrabilious humours. Half a tea-cup full of the decoction of the leaves and bark in water, is uſually given to women juſt before their labour, to promote an eaſy delivery.

CALF, *Vitulus*, in *Zoology*, the young one of a cow, an animal too well known to need a particular deſcription.

There are two ways of breeding *calves* that are intended to be reared; the one is to let the *calf* run with its dam all the year round: this is the method in the cheap breeding countries, and is generally allowed to make the beſt cattle. The other way is to take them from the dam after they have ſucked about a fortnight; they are then to be taught to drink flat milk, which is to be made but juſt warm for them, it being very dangerous to give it them too hot.

The beſt time of weaning *calves* is from January to May; they ſhould have milk for twelve weeks after, and a fortnight before that is left off, water ſhould be mixed with the milk in larger and larger quantities. When the *calf* has fed on milk about a month, little whiſps of hay ſhould be placed all about him in cleft ſticks, to induce him to eat. In the beginning of April they ſhould be turned out to graſs; only for a few days they ſhould be taken in for the night, and have milk and water given them; the ſame may alſo be given them in a pail ſometimes in the field, till they are ſo able to feed themſelves that they do not regard it. The graſs they are turned into muſt not be too rank, but ſhort and ſweet, that they may like it, and yet get it with ſome labour.

Calves ſhould be always weaned at graſs, for if it be done with hay and water, they often grow big-bellied on it, and are apt to rot. When thoſe among the males are ſelected which are to be kept as bulls, the reſt ſhould be gelt for oxen: the ſooner the better. Twenty days old is a very good time, or any thing between that age and ten days. About London, almoſt all the *calves* are fatted for the butcher. The reaſon of this is, that there is a good market for them; and the lands here are not ſo profitable to breed upon as in cheaper countries. The way to make the *calves* fat and fine is, the keeping them very clean, giving them freſh litter every day, and the hanging a large chalk-ſtone in ſome corner where they can eaſily get at it to lick it, but where it is out of the way of being fouled by their dung and urine. The coops are to be ſo placed as not to have too much ſun upon them, and ſo high above the ground that the urine may run off. They alſo bleed them once when they are a month old, and a ſecond time before they kill them; this is a great addition to the beauty and whiteneſs of their fleſh: the bleeding is by ſome repeated much oftener; but this is ſufficient.

Calves are very apt to be looſe in their bowels; this waſtes and very much injures them. The remedy is, to give them chalk ſcraped into milk, pouring it down with a horn. If this does not ſucceed, they give them bole armenic in large doſes, and uſe the cold bath every morning. If a cow will not let a ſtrange *calf* ſuck her, the common method is to rub both her noſe and the *calf*'s with a little brandy: this generally reconciles them, after a few ſmellings.

Calves, beſide their fleſh, afford two ſorts of commodities for trade, namely, the hide and the hair.

Calf-*ſkins*, in the leather manufacture, are prepared and dreſſed by the tanners, ſkinners, and curriers, who ſell them for the uſe of the ſhoe-makers, ſadlers, bookbinders, and other artificers, who employ them in their ſeveral manufactures.

Calf-*ſkin dreſſed in ſumach*, denotes the ſkin of this animal curried black on the hair ſide, and dyed of an orange colour on the fleſh ſide, by means of ſumach, chiefly uſed in the making of belts.

The Engliſh *calf-ſkin* is much valued abroad, and the commerce thereof very conſiderable in France and other countries; where divers attempts have been made to imitate it, but hitherto in vain.

What is like to baffle all endeavours for imitating the Engliſh *calf* in France is, the ſmallneſs and weakneſs of the *calves* about Paris; which, at fifteen days old, are not ſo big as the Engliſh ones when they come into the world.

Calf, *ſea*, in *Zoology*. See Sea-*calf*.

Calf, among *Sportſmen*, is uſed for a male hart, or hind of the firſt year.

Calf alſo denotes the young of the whale.

Calf's *ſnout*, in *Botany*. See Snap-dragon.

CALI is uſed to denote pot-aſhes, or the ſalt of the plant kali.

CALIBER, or **Caliper**, in a general ſenſe, notes the extent of any round thing in thickneſs, or diameter.

In which ſenſe we ſay, a column is of the ſame *caliber* as another, when they are both of the ſame diameter.

Caliber more particularly denotes the bore, or width of a piece of ordnance, or other fire-arms; or the diameter of the mouth thereof; or of the ball it carries.

The *caliber* is the rule by which all the parts of a cannon, or a mortar, as well as of its carriage, are proportioned.

Caliber-*compaſſes*, a ſort of *compaſſes* made with arched legs, to take the diameter of convex or concave bodies.

Caliber-compaſſes are chiefly uſed, by gunners, for taking the diameters of the ſeveral parts of a piece of ordnance, or of bombs, bullets, &c. Their legs are therefore circular, and move on an arch of braſs, whereon are marked the inches, and half-inches; to ſhew how far the points of the *compaſſes* are opened aſunder.

Some are alſo made for taking the diameter of the bore of a gun, or mortar.

The gaugers alſo ſometimes uſe *calibers*, to embrace the two heads of any caſk, in order to find its length.

The *caliber*, uſed by carpenters and joiners, is a piece of board notched triangular-wiſe in the middle, for the taking of meaſure.

Caliber, **Caliber**-*rule*, or *Gunner's* **Callipers**, is an inſtrument, wherein a right line is ſo divided, as that the firſt part being equal to the diameter of an iron or leaden ball of one pound weight, the other parts are to the firſt, as the diameters of balls of two, three, four, &c. pounds, are to the diameter of a ball of one pound. The *caliber* is uſed by engineers, from the weight of the ball given, to determine its diameter, or *caliber*; or *vice verſa*.

The gunner's *callipers* conſiſts of two thin plates of braſs joined by a rivet, ſo as to move quite round each other: its length from the centre of the joint is between ſix inches and a foot, and its breadth from one to two inches: that of the moſt convenient ſize is about nine inches long. Many ſcales, tables, and proportions, &c. may be introduced on this inſtrument; but none are eſſential to it, except thoſe for taking the *caliber* of ſhot and cannon, and for meaſuring the magnitude of ſaliant and entering angles. The moſt complete *callipers* is exhibited *Tab. Gunnery, fig.* 2. the furniture and uſe of which we ſhall now briefly deſcribe. Let the four faces of this inſtrument be diſtinguiſhed by the letters A, B, C, D: A and D conſiſt of a circular head and leg; B and C conſiſt only of a leg.

On the circular head adjoining to the leg of the face A are diviſions denominated *ſhot diameters*; which ſhew the diſtance in inches and tenths of an inch of the points of the *callipers* when they are opened; ſo that if a ball not exceeding ten inches be introduced between them, the bevil edge E marks its diameter among theſe diviſions.

On the circular bevil part E of the face B is a ſcale of diviſions diſtinguiſhed by *lb. weight of iron ſhot.* When the diameter of any ſhot is taken between the points of the *callipers*, the inner edge of the leg A ſhews its weight in avoirdupoiſe pounds, provided it be lb. ½, 1, 1½, 2, 3, 4, 5¼, 6, 8, 9, 12, 16, 18, 24, 26, 32, 36, or 42; the figures neareſt the bevil edge anſwering to the ſhort lines in the ſcale, and thoſe behind them to the longer ſtrokes. This ſcale is conſtructed on the following geometrical theorem, viz. that the weights of ſpheres are as the cubes of their diameters.

On the lower part of the circular head of the face A is a ſcale of diviſions marked *bores of guns*; for the uſe of which, the legs of the *callipers* are ſlipped acroſs each other, till the ſteel points touch the concave ſurface of the gun in its greateſt breadth; then the bevil edge F of the face B will cut a diviſion in the ſcale ſhewing the diameter of the bore in inches and tenths.

Within the ſcales of *ſhot* and *bore* diameters on the circular part of A, are diviſions marked *pounders*: the inner figures ½, 1½, 3, 5¼, 8, 12, 18, 26, 36 correſpond to the longeſt lines; and the figures 1, 2, 4, 6, 9, 16, 24, 32, 42 to the ſhort ſtrokes. When the bore of a gun is taken between the points of the *callipers*, the bevil edge F will either cut or be near one of theſe diviſions, and ſhew the weight of iron ſhot proper for that gun.

On the upper half of the circular head of the face A are three concentric ſcales of degrees; the outer ſcale conſiſting of 180 degrees numbered from right to left, 10, 20, &c. the middle numbered the contrary way, and the outer ſcale beginning at the middle with 0, and numbered on each ſide to 90 degrees. Theſe ſcales ſerve to take the quantity of an angle, either entering or ſaliant. For an entering, or internal angle, apply the legs of the *callipers* ſo that its outward edges coincide with the legs of the given angle, the degree cut by the bevil edge F in the outer ſcale ſhews the meaſure of the angle ſought: for a ſaliant, or external angle, ſlip the legs of the *callipers* acroſs each other, ſo that their outward edges may coincide with the legs forming the angle, and the degree marked on the middle ſcale by the bevil edge E will ſhew the meaſure of the angle required. The inner ſcale will ſerve to determine the elevation of cannon and mortars, or of any oblique plane. Let one end of a thread be fixed into the notch on the plate B, and any weight tied to the other end: apply the ſtrait ſide of the plate A to the ſide of the body whoſe inclination is ſought; hold it in this poſition, and move the plate B, till the thread falls upon the line near the centre marked *Perp.* Then will the bevil edge F cut the degrees on the inner ſcale, ſhewing the inclination of that body to the horizon.

On the face C near the point of the *callipers* is a little table ſhewing the proportion of troy and avoirdupoiſe weights, by which one kind of weight may be eaſily reduced into another.

Near the extreme of the face D of the *callipers*, are two tables ſhewing the proportion between the pounds weight of London and Paris, and alſo between the lengths of the foot meaſure of England and France.

Near the extreme on the face A is a table containing four rules of the circle and ſphere; and geometrical figures with numbers annexed to them: the firſt is a circle including the proportion in round numbers of the diameter to its circumference; the ſecond is a circle inſcribed in a ſquare, and a ſquare within that circle and another circle in the inner ſquare: the numbers 28, 22 above this figure exhibit the proportion of the outward ſquare to the area of the inſcribed circle; and the numbers 14, 11 below it ſhew the proportion between the area of the inſcribed ſquare and the area of its inſcribed circle. The third is a cube inſcribed in a ſphere; and the number $89\frac{1}{3}$ ſhews that a cube of iron, inſcribed in a ſphere of 12 inches in diameter, weighs $89\frac{1}{3}$. The fourth is a ſphere in a cube, and the number 243, expreſſes the weight in pounds of a ſphere inſcribed in a cube whoſe ſide is 12 inches: the fifth repreſents a cylinder and cone of one foot diameter and height: the number in the cylinder ſhews, that an iron cylinder of that diameter and height weighs 364.5 lb. and the number 121.5 in the cone expreſſes the weight of a cone, the diameter of whoſe baſe is 12 inches, and of the ſame height: the ſixth figure ſhews that an iron cube, whoſe ſide is 12 inches, weighs 464 lb. and that a ſquare pyramid of iron, whoſe baſe is a ſquare foot and height 12 inches weighs $154\frac{2}{3}$ lb. The numbers which have been hitherto fixed to the four laſt figures were not ſtrictly true; and therefore they have been corrected in the figure here referred to; and by theſe the figures on any inſtrument of this kind ſhould be corrected likewiſe.

On the leg B of the *callipers*, is a table ſhewing the weights of a cubic inch or foot of various bodies in pounds avoirdupoiſe.

On the face D of the circular head of the *callipers* is a table contained between five concentric ſegments of rings: the inner one marked *Guns* ſhews the nature of the gun, or the weight of ball it carries; the two next rings contain the quantity of powder uſed for proof and ſervice to braſs guns, and the two outermoſt rings ſhew the quantity for proof and ſervice in iron cannon.

On the face A is a table exhibiting the method of computing the *number of ſhot or ſhells* in a triangular, ſquare, or rectangular pile. Near this is placed a table containing the principal rules relative to the *fall of bodies*, expreſſed in an algebraic manner: nearer the centre we have another table of rules for raiſing water, calculated on the ſuppoſition, that one horſe is equal in this kind of labour to five men, and that one man will raiſe a hogſhead of water to eight feet of height in one minute, and work at that rate for ſome hours. N. B. Hogſheads are reckoned at ſixty gallons.

Some of the leading principles in gunnery, relating to *ſhooting* in cannon and mortars, are expreſſed on the face B of the *callipers*. Beſides the articles already enumerated, the ſcales uſually marked on the SECTOR are laid down on this inſtrument: thus, the line of inches is placed on the edge of the *callipers*, or on the ſtrait borders of the faces C, D: the logarithmic ſcales of numbers, ſines, verſed ſines, and tangents, are placed along theſe faces near the ſtrait edges: the line of lines is placed on the ſame faces in an angular poſition, and marked *Lin.* The lines of plans or ſuperfices are alſo exhibited on the faces C and D, tending towards the centre, and marked *Plan.* Finally, the lines of ſolids are laid on the ſame faces tending towards the centre, and diſtinguiſhed by *Sol.* See farther on the conſtruction and uſe of this inſtrument, Robertſon's Treatiſe of Mathematical Inſtruments, &c. Appendix.

CALICAPHA, in *Botany*, a name uſed by ſome authors for the white-thorn.

CALICULARIS, in *Botany*, a name given by ſome authors to the common *hyoſciamus* or HENBANE.

CALIDRIS, *Bellonii*, *Jonſt.* in French, *Chevalier*; in *Ornithology*, a water-fowl of the bigneſs of a pigeon, well feathered, with a long red bill, blackiſh toward the upper part; its head, neck, wings and tail of an aſh colour; its belly white; with very long legs.

Becauſe its body is high mounted, and its walk ſwift, it is called the *chevalier*; as though it were mounted on horſeback. It lives about meadows, pools, and rivulets; its fleſh is delicious, and of a good ſmell: there are ſeveral ſorts of them, which differ in colour.

They contain much volatile ſalt, with oil ſomewhat exalted, and reſtorative, and corroborative.

CALIDUCTS, from *calor*, *heat*, and *duco*, *I lead*; a kind of pipes, or canals, diſpoſed along the walls of houſes and apartments; uſed by the ancients for the conveyance of heat to ſeveral remote parts of the houſe, from one common furnace.

The ancient *caliducts* ſeem both for thrift and uſe preferable to the German ſtoves; and might even challenge the advantage over our own faſhion, were it not that the very ſight of a fire adds ſomething of luſtre to a room.

CALIETA, in *Botany*, a name uſed by ſome authors for a ſort of yellow *fungus* common about the roots of trees, as the juniper, &c.

CALIGA, in *Roman Antiquity*, was the proper ſoldier's ſhoe, made in the ſandal faſhion, without upper leather to cover the ſuperior part of the foot, though otherwiſe reaching to the middle of the leg, and faſtened with thongs. The ſole of the *caliga* was of wood, like the Sabot of the French peaſants, and its bottom ſtuck full of nails; which clavi are ſuppoſed to have been very long in the ſhoes of the ſcouts and ſentinels; whence theſe were called by way of diſtinction, *caligæ ſpeculatoriæ*; as if by mounting the wearer to a higher pitch, they gave a greater advantage to the ſight: though others will have the *caligæ ſpeculatoriæ* to have been made ſoft and woolly, to prevent their making a noiſe. Plin. Nat. Hiſt. lib. ix. cap. 18. lib. xxxiv. cap. 14. Hard. Suet. in Calig. cap. 9. & cap. 52.

From theſe *caligæ* it was that the emperor Caligula took his name, as having been born in the army, and afterwards bred up in the habit of a common ſoldier.

A ſort of *caligæ* was alſo worn by monks, and biſhops, when they celebrated maſs pontifically. Du-Cange.

CALIGATI, an appellation given by ſome ancient writers to the common ſoldiers in the Roman armies, by reaſon of the *caliga*, which they wore.

The *caliga* was the badge, or ſymbol of a ſoldier; whence to take away the *caliga* and belt, imported a diſmiſſion or caſhiering.

CALIGO, or CALIGATIO, in *Medicine*, an opacity, or cloudineſs of the anterior ſurface of the cryſtalline, cauſing a dimneſs or ſuffuſion of ſight.

The *caligo* is the ſame with what the Greeks call αχλυς, ACHLYS.

CALIMUS. See CALLIMUS.

CALIN, the name of a ſort of mixt metal, ſeemingly compoſed of lead and tin. It is prepared by the Chineſe, and they make ſeveral utenſils of it, as tea-caniſters, coffee-pots, and the like. In ſome places alſo they cover their houſes with it as we do with lead.

CALIPH, CALIF, KALIPH, denotes a ſucceſſor of Mahomet, in the ſpiritual as well as temporal empire erected by that legiſlator.

The word is originally Arabic, *khalifah*; which properly denotes a ſucceſſor, or heir.

After the death of Mahomet, Abubeker having been elected by the muſſulmans to ſupply his place, he would take no other title but that of *khalifah reſſoul allah*, i. e. *vicar of the prophet*, or *meſſenger of God.* Omar, coming afterwards to ſucceed Abubeker, repreſented to the Mahometan chiefs, that if he took the quality of vicar, or ſucceſſor of Abubeker, the vicar or ſucceſſor of the prophet, the word vicar would, in courſe of time, come to be repeated and multiplied without end: upon which, at the motion of Mogairah, Omar took the title of *emir moumenin*, that is, *lord*, or *prince of the believers*; an appellation accepted and borne by all the legitimate *caliphs*, or ſucceſſors of Mahomet, from that time: not but they ſtill retained the title *caliph*, without other addition. The *caliphs* in the Mahometan, bear a near affinity to the popes in the Chriſtian religion.

At one of the windows of the *caliph's* palace, there hung always a piece of black velvet, twenty cubits long, which reached to the ground, and was called the *caliph's* ſleeve; which the grandees of his court never failed to kiſs, with great reſpect, every day.

The honours paid the *caliphs* were exceſſive, and bred a pride in them, of which they ceaſed not to give marks even when their authority was at the loweſt. They affected great ſplendor and magnificence in every thing. Abulpharagius relates, that the *caliph* Motazem had no leſs than a hundred women in his ſeraglio, and three hundred eunuchs to keep them.

But this ſplendor was much diminiſhed during the reign of the Bonides in Perſia; who ſtript them of every thing, taking from them their vizirs, and leaving them no higher officer than a ſecretary to take care of their affairs.

The *caliphs* loſt their authority, and almoſt their name, in that deluge of deſtruction by the Tartars, who over-run all the Eaſt. Since the deſtruction of the *caliphate*, the Mahometan princes have a particular officer appointed in their reſpective dominions, who ſuſtains the ſacred authority of *caliph*. In Turky he goes under the denomination of *mufti*, and in Perſia under that of *ſadne*.

CALIPPIC *period*, in *Chronology*, a ſeries of ſeventy-ſix years, perpetually recurring; which elapſed, the middle of the new and full moons, as its inventor Calippus, an Athenian, imagined, return to the ſame day of the ſolar year.

Meton, an hundred years before, had invented the *period*, or cycle, of nineteen years (ſee *Metonic* CYCLE); aſſuming the quantity of the ſolar year $365\textit{d.}\ 6\textit{h.}\ 18'\ 56''\ 50^{3}\ 31^{4}\ 34^{5}$; and the lunar month, $29\textit{d.}\ 12\textit{h.}\ 45'\ 47''\ 26^{3}\ 48^{4}\ 30^{5}$: but Calippus, conſidering that the Metonic quantity of the ſolar year was not exact, multiplied Meton's *period* by 4, and thence aroſe a *period* of 76 years, called the *Calippic*. The *Calippic period*, therefore, contains 27759 days: and ſince the lunar cycle contains 235 lunations, and the *Calippic period* is quadruple of this, it contains 940 lunations. This period began in the third year of the 112th Olympiad, or the 4384th of the Julian period.

It is demonſtrated, however, that the *Calippic period* itſelf is not accurate; that it does not bring the new and full moons preciſely to their places: $8\textit{h.}\ 5'\ 52''\ 60'''$, being the exceſs of 940 lunations above 76 ſolar years; but brings them too late, by a whole day, in 225 years.

CALIX, or CALYX. See CALYX, and CHALICE.

CALIXTINS, a name given to thoſe, among the Lutherans, who follow the ſentiments of George Calixtus, a celebrated divine, and profeſſor at Helmſtadt, in the duchy of Brunſwick, who died in 1656: he oppoſed the opinion of St. Auguſtin, on predeſtination, grace, and free-will, and endeavoured to form an union among the various members of the Romiſh, Lutheran, and reformed churches; or, rather, to join them in the bonds of mutual forbearance and charity. See SYNCRETISTS.

The *Calixtins* are eſteemed a kind of SEMI-PELAGIANS.

CALIXTINS alſo denote a ſect in Bohemia, derived from the Huſſites, about the middle of the fifteenth century, who aſſerted the uſe of the cup, as eſſential to the euchariſt.

And hence their name; which is formed from the Latin *calix*, a *cup*. See CALYX.

The *Calixtins* are not ranked by Romaniſts in the liſt of heretics, ſince in the main they ſtill adhered to the doctrine of Rome. The reformation they aimed at terminated in the four following articles. 1. In reſtoring the cup to the laity. 2. In ſubjecting the criminal clerks to the puniſhment of the civil magiſtrate. 3. In ſtripping the clergy of their lands, lordſhips, and all temporal juriſdiction. 4. In granting liberty to all capable prieſts to preach the word of God. See TABORITES.

CALKING, or CAULKING, in *Sea-language*, &c. See CAUKING.

CALKING, in *Painting*. See CALQUING.

CALKINS, or CALKERS, a part prominent from a horſe-ſhoe, intended to ſecure the beaſt from ſliding.

The *calkins* are the end or extremity of horſe-ſhoes, turned or bent downwards, and forged to a ſort of point, to make the beaſt ſtep more ſafe and ſteady on the ice.

The inconvenience of *calkins* is, that they hinder the horſe from treading evenly on the ground, and thus occaſion wrenches of the foot, or ſtrains of the ſinews; eſpecially in ſtony ways, where the hardneſs of the bottom will not ſuffer the *calkins* to penetrate: add, that they are apt to make a horſe cut.

Calkins are either ſingle or double, i. e. at one end of the ſhoe, or at both; the latter are reputed leſs hurtful, as they allow the creature to tread more even; ſome are made large and ſquare; the beſt are in form of the point of a hare's ear.

CALL, in *Hunting*, a leſſon blown upon the horn, to comfort the hounds.

Among *Fowlers*, it means the noiſe or cry of a bird, eſpecially to its young, or its mate in coupling time.

One method of catching partridges, is by the natural *call* of a hen trained for the purpoſe, which drawing the cocks to her, gives opportunity for entangling them in a net.

Calls are alſo a ſort of artificial pipes, made to catch ſeveral ſorts of birds, by imitating their notes.

Different birds require different ſorts of artificial *calls*; but they are moſt of them compoſed of a pipe or reed, with a little leathern bag or purſe, ſomewhat in form of a bellows; which, by the motion given thereto, yields a noiſe like that of the ſpecies of bird to be taken.

The *call* for partridges is formed like a boat, bored through, and fitted with a pipe or ſwan's quill, &c. to be blown with the mouth, to make the noiſe of the cock partridge, which is very different from the *call* of the hen.

Calls for quails, &c. are made of a leathern purſe in ſhape like a pear, ſtuffed with horſe hair, and fitted at the end with a bone of a cat's, hare's, or coney's legs, formed like a flageolet: they are played by ſqueezing the purſe in the palm of the hand, at the ſame time ſtriking on the flageolet part with the thumb to counterfeit the *call* of the hen quail.

CALL, in *Sea-language*, a ſort of whiſtle, or pipe, of ſilver or braſs, uſed by the boatſwain and his mates to ſummon the ſailors to their duty, and to direct them in their ſeveral employments. It is ſounded to various ſtrains, adapted to the different exerciſes, as hoiſting, heaving, &c. and the *piping* of it ſerves the ſame purpoſes among ſailors, as the beat of the drum among ſoldiers.

CALL, among *Miners*. See TELAUGIA.

CALL *of the houſe*, in a parliamentary ſenſe, has been ſometimes practiſed, to diſcover whether there be any in the houſe not returned by the clerk of the crown; but more frequently to diſcover what members are abſent without leave of the houſe, or juſt cauſe.

In the former caſe, the names of the members being called over, every perſon anſwers to his name, and departs out of the houſe, in the order wherein he is called. In the latter, each perſon ſtands up uncovered, at the mention of his name.

CALL *of the plaintiff, in Law*. See NON-SUIT.

CALLA, *African arum*, in *Botany*, a genus of the *gynandria polyandria* claſs of plants: the *ſpatha* is plain, the *ſpadix* is covered with ſmall flowers: it has neither calyx nor petal, and the fruits are berries containing many ſeeds.

CALLAF, in *Botany*, a low, ſhrubby tree, growing in the Eaſt; of ſmooth wood, and leaves ſomewhat reſembling the cherry-tree, ſerrated on the edges, and growing out from the extremities of the branches, which are ſtrait, without joints, flexible, and of a yellowiſh colour. The flowers, which are produced before the leaves, come forth very thick in December, at equal diſtances; and are a ſort of oblong, downy, little balls, of a whitiſh yellow, or true yellow colour, and of a fragrant ſmell. It has a place in the gardens of the nobility, on account of its incomparable fragrancy; and is cultivated with great care by the peaſants, for the profit they make of its flowers.

An excellent water is prepared from the flowers, eſpecially at Damaſcus, which is of ſo ſtrengthening a virtue, that we have nothing to compare with it; for by the extraordinary ſweetneſs of its ſmell, it wonderfully relieves perſons under a lipothymy. The Moors uſe this water both internally and externally, in burning and peſtilential fevers; it refrigerates and moiſtens. An oil alſo is made of the flowers, which is ſerviceable for many purpoſes.

CALLARIAS, by ſome called *aſellus callarius*, in *Ichthyology*, a fiſh of the truttaceous kind, called by Aldrovandus *tinca marina*, and by Rondeletius and Geſner *phycis*. It uſually grows to about a foot in length, and is in ſhape ſomething flattiſh; it is covered with ſmall ſcales, and is of a greyiſh colour, but ſomewhat purple on the head; its tail is roundiſh, not forked; it is a very well taſted fiſh, and is common in the Mediterranean, and brought to market at Rome, Venice, &c.

CALLENDER, in *Manufactures*. See CALENDER.

CALLIBER, or CALIPER. See CALIBER.

CALLIBLEPHARA, from καλλος, *beauty*, and βλεφαρον, *eye-lid*, in the *Medicinal Writings of the Ancients*, a name given to certain compoſitions intended to make the eye-lids beautiful; and as the eye-lids are ſubject to be deformed ſeveral ways, there were ſeveral different ſorts of theſe medicines.

CALLICARPA, in *Botany*. See JOHNSONIA.

CALLICHTHUS, in *Zoology*, a name given by ſome writers to the *anthias*, a ſmall fiſh caught in the Adriatic, and ſuppoſed to be a certain token of there being no voracious fiſhes near the place where it is found; it is called alſo *ſacer piſcis*, the *holy fiſh*, and is a very beautiful fiſh.

CALLICO, in *Commerce*, a ſort of cloth reſembling linens made of cotton.

This name is taken from that of *Callicut*, a city on the coaſt of Malabar, being the firſt place at which the Portugueſe landed when they diſcovered the India trade. The Spaniards ſtill call it *callicu*.

Callicoes are of divers kinds, plain, printed, painted, ſtained, dyed, chints, muſlins, and the like, all included under the general denomination of *callicoes*.

A great naturaliſt has ſuggeſted that the Indian *callico* is made of the fibres of nettle ſtalks; but this is not confirmed: on the contrary, there are *callicoes* alſo made in the iſland of Candia, which, it is known, are made of cotton.

The printing of *callicoes* was firſt ſet on foot in London about the year 1676.

By an act of parliament made in 1722, the uſe of dyed, painted, or printed *callicoes* is forbid, either in apparel or furniture, on the forfeiture of five pounds to the informer for every offence; and drapers ſelling ſuch *callico* forfeit 20 *l.* 7 Geo. I. Stat. 1. cap. 7. § 2. but this prohibition does not extend to *callicoes* dyed blue.

The deſign of this prohibition was to promote the conſumption of our own manufactures. But its chief effect has been to promote the uſe of printed linen. Upon the act's taking place, the *callico*-printers fell to work to imitate the Indian *callicoes*, by making the ſame ſtamps and impreſſions, and with the ſame beauty of colours upon linen. This fell chiefly on Scots and Iriſh linen, the manufacture of which have been hereby greatly increaſed, many hundred thouſand ells thereof being yearly imported from thoſe countries, and printed or ſtamped in England.

CALLIDRYS, in *Zoology*, a name given by Bellonius, and ſome other authors, to a water-bird, known among us by the name of the REDSHANK.

CALLIDRYS *nigra*, in *Zoology*, the name of a bird, deſcribed by Bellonius, and ſuppoſed by ſome to be that bird which we call the KNOT.

CALLIDRYS. See CALIDRIS.

CALLIGONUM, in *Botany*, a genus of the *polyandria digynia* claſs; the calyx has four leaves; the plant has neither petal nor ſtyle; the fruit is briſtly, with a ſingle ſeed.

CALLIGRAPHUS anciently denoted a copyiſt, or ſcrivener, who tranſcribed fair, and at length, what the notaries had taken down in notes, or minutes.

The word is compounded of καλλος, *beauty*, and γραφω, *I write*. The minutes of acts, &c. were always taken in a kind of cypher, or ſhort-hand; ſuch as the notes of Tyro in Gruter: by which means the notaries, as the Latins called them, or the σημειογραφοι and ταχυγραφοι, as the Greeks called them, were enabled to keep pace with a ſpeaker, or perſon who dictated. Theſe notes, being underſtood by few, were copied over fair, and at length, by perſons who had a good hand, for ſale, &c. and theſe were called *calligraphi*; a name frequently met with in the ancient writers.

CALLIGRAPHY, the art of fair writing.

Callicrates is ſaid to have written an elegant diſtich on a ſeſamum ſeed. Junius ſpeaks of a perſon, as very extraordinary, who wrote the apoſtles creed, and beginning of St. John's Goſpel, in the compaſs of a farthing. What would he have ſaid of our famous Peter Bale, who in 1575, wrote the Lord's prayer, creed, ten commandments, and two ſhort prayers in Latin, with his own name, motto, day of the month, year of the Lord, and reign of the queen, in the compaſs of a ſingle penny, inchaſed in a ring and bordure of gold, and covered with a cryſtal, all ſo accurately wrought, as to be very legible?

CALLIMUS, in *Phyſiology*, a ſtony ſubſtance found in the cavity of the ÆTITES, or eagle ſtone.

The word is alſo written *calimus*, and in ſome copies of Pliny *calainus*; which latter reading Salmaſius receives. The *callimus* fills the hollow of the ætites, much as the yolk does the white of an egg.

The GEODES, inſtead of a *callimus*, or ſolid ſtone, have a looſe, ſandy, chalky, or earthy ſubſtance, and the ENHYDRI a liquid ſubſtance.

CALLION, in *Botany*, a name given by Pliny, and ſome other authors, to the *alkekengi*, or *winter*-CHERRY. Some of the Greeks called it alſo *cyſtis*.

CALLIONYMUM, in *Botany*, a name given by ſome authors to the LILLY *of the valley*.

CALLIONYMUS, in *Ichthyology*, a name uſed by Appian, and ſome other authors, for the fiſh called the *uranoſcopus*, or the ſtar-gazer.

In the Linnæan ſyſtem, it is a genus of the order of *jugular* fiſhes, comprehending three ſpecies.

CALLIOPE, the chief of the nine Muſes, called by Horace *Regina*. The diſtinguiſhing office of this muſe was to record the worthy actions of the living; and accordingly ſhe is repreſented with tablets in her left hand.

CALLIPÆDIA, the art of getting or breeding fine and beautiful children.

The word is formed from καλος, *fair*, and παις, *puer*, either boy or girl.

We find divers rules and practices relating to this art, in ancient and modern writers.

The Jews are ſaid to have been ſo ſolicitous about the beauty of their children, that care was taken to have ſome very beautiful child (ſuch as was Jochanan, the diſciple of Judah, author of the Miſchna) placed at the door of the public baths, that the women at going out, being ſtruck with his appearance, and retaining the idea, might all have children as fine as he.

The Chineſe take great care of their breeding women, to prevent uncouth objects of any kind from ſtriking their imagination.

Callipædia, nevertheleſs, ſeems to have been firſt erected into a juſt art by Claude Quillet de Chinon, a French abbot, who, under the fictitious name of Calvidus Lætus, has publiſhed a fine Latin poem, in four books, under the title of *Callipædia, ſeu de pulchræ prolis habendæ ratione*; wherein are contained all the precepts of the art. Paris, 1656, 8vo. & Lond. 1708, 8vo.

CALLISIA, in *Botany*, a genus of the *triandria monogynia* claſs, with a three-leaved calyx, three petals, a double anthera, and bilocular capſule.

CALLISTIA, in *Antiquity*, a Leſbian feſtival, wherein the women preſented themſelves in Juno's temple, and the prize was aſſigned to the faireſt.

The word is formed from καλλος, *beauty*, q. d. beauty's rewards. The like conteſt of beauty was held at the feſtival of Ceres Eleuſinia, among the Parrhaſians, firſt ſet on foot by Cypſelus, whoſe wife Herodice was honoured with the firſt prize. Another obtained among the Elians, where the conteſt was among the men, the moſt beautiful of whom was preſented with a ſuit of armour, which he conſecrated to Minerva, to whoſe temple he walked in proceſſion, adorned with ribbons, and crowned with a myrtle garland. Pott Arch. Græc. lib. ii. cap. 20.

CALLITRICHE, in *Botany*, a genus of the *monandria digynia* claſs: it has no calyx, two petals, and the capſule has two cells, with four ſeeds.

CALLITRICHUS, in *Zoology*, a ſpecies of MONKEY, with a black, flattiſh face, white hairs on the ſides, and black ears, and the upper parts of the body are covered with ſoft hair, of a yellowiſh green colour, whence it is called the green monkey; and the lower parts with hair of a ſilvery colour. It is about the ſize of a ſmall cat.

CALLOSUM *corpus*, in *Anatomy*, denotes a part in the medulla of the brain of a white colour, and a texture ſomewhat harder and more compact than the reſt; approaching to that of a *callus*.

The *corpus calloſum* runs along the whole tract of the *falx*; at the extremity next the cerebellum it ſends out two proceſſes, whoſe juncture conſtitutes the *fornix*; under which lies the *ſeptum lucidum*.

The *corpus calloſum* is an aſſemblage of bundles of fibres ſpringing from the glands, which compaſs the cineritious part, and ſerve as excretory ducts thereto: theſe fibres as deſcending towards the *medulla oblongata*, all meet there; and ſerve to connect the lobes of the brain. Signior Lanciſi makes the *corpus calloſum* to be the immediate ſeat of the ſoul. See BRAIN.

CALLOUS, *Calloſus*, ſomething of the nature or conſiſtence of a CALLUS.

Phyſicians ſpeak of *callous* nodes or excreſcences, *callous* ulcers, and the like.

CALLOUS *eggs*, *ova calloſa*, the longer and better ſort, ſuppoſed to contain male chicks; having a denſer white, and richer flavour than the reſt. See EGG.

CALLUS, or CALLOSITY, in a general ſenſe, denotes any cutaneous, fleſhy, or bony hardneſs, whether natural or preternatural.

In which ſenſe, *clavi*, or corns, are a ſpecies of *callus*. See CLAVUS.

CALLUS is alſo frequently uſed for a kind of node, which joins the extremities of a fractured bone.

The formation of a *callus* ſeems to be as follows: the juice that feeds the bone, running along its fibres, becomes extravaſated in the place where thoſe fibres are broken: ſo that ſtopping, and gathering together round the extremities of the fracture, it there dries, knits, and hardens, to a conſiſtence like a ſtrong glue; leaving only a little inequality in the place where it is formed.

But as the new fleſh in wounds will frequently ſprout up too faſt, ſo will alſo the *callus* in fractures; and by this means render the limb uneven and deformed. The only methods that can be taken to prevent the *callus* from exceeding its due bounds, are to make the bandage ſomewhat tighter than ordinary, and wet it with ſpirit of wine; for by this means the *callus* is not only often kept within its due bounds, but the induration of it is alſo much forwarded; but when once the *callus* is indurated, we have no medicines by which it can be taken down or deſtroyed. Heiſter.

Calluſes frequently grow ſo firm as to ſupply the place of whole bones. In the Philoſophical Tranſactions we have an inſtance of a *callus* ſupplying the place of the *os humeri*, taken out upon its being carious, by Mr. Fowler; and another of a *callus* ſupplying the place of the *os femoris*, and the perſon continued as ſtrong as ever, and walked without any lameneſs.

Callus is alſo a hard, denſe, inſenſible knob, or ſubſtance, riſing on the hands, feet, &c. by much friction, and preſſure againſt hard bodies.

Mr. Lewenhoek examining the *callus* formed on the hands and feet, obſerved that it was a ſubſtance compoſed of ſeveral layers of particles ſo looſely connected, that it was a wonder they could hang together; on putting a piece of this into fair water, after it had ſtood a conſiderable time to ſteep, he found that the particles of which it was compoſed, would eaſily ſeparate from one another with a little touch of a quill, and theſe ſeparated particles put into a drop of water, and examined before the microſcope, were found to be all of the ſame regular ſhape, which was like that of a weaver's ſhuttle, being broad in the middle, and pointed at each end, with a line in the middle like thoſe upon the uppermoſt, or outſide ſkins of fruits, or of our bodies, but generally irregular. Theſe pieces were thick in proportion to their ſize; and when they are put into water, and ſeparated again, they naturally form a great number of other particles, all of which are of the ſame regular figure with the original piece. Phil. Tranſ. N° 373. p. 160.

By this we ſee the reaſon of the increaſe in thickneſs of the ſkin of the hands of thoſe who labour hard, and of the feet of ſuch people as walk much, which is wholly owing to the addition of vaſt numbers of theſe ſhuttle-like particles, which form combinations together; but theſe ſo looſely, that it is no wonder they are ſo eaſily ſeparated on moiſtening.

The people who labour ever ſo hard will have no *callus* upon their hands, if they waſh them often; the waſhing the hands daily rubs off a great quantity of theſe particles or ſcales, if they may be ſo called; but they are quickly renewed.

Callus is by ſome alſo applied to thoſe knots, or tophaceous NODES, generated in the joints of gouty patients. See TOPHUS.

Callus is alſo eſpecially uſed to denote a hardneſs of the eye-brows, occaſioned by the congeſtion of an acid, or tartareous juice therein.

Paracelſus alſo gives the denomination *callus*, to an abſceſs or ulcer, cauſed by the acrimonious, or arſenical quality of the nutritious juice, and exciting a vehement itching.

CALLYCHTHIS, in *Ichthyology*, the name of a broad and flat ſea-fiſh, brought to market at Rome under the name of the *lampuga*, and commonly called the STROMATEUS; and by the Venetians the *licette*.

In the Linnæan ſyſtem, it is a ſpecies of the SILURUS.

CALLYONYMUS. See CALLIONYMUS.

CALM, in *Sea Language*, that ſtate of the air and water when there is no wind ſtirring.

They ſay a flat *calm*, a dead or ſtark *calm*. A *calm* is more terrible to a ſea-faring man than a ſtorm, if he has a ſtrong ſhip, and ſea-room enough; for under the line exceſſive heat ſometimes produces ſuch dead *calms*, that ſhips are obliged to ſtay two or three months without being able to ſtir one way or other.

Two oppoſite winds will ſometimes make a *calm*. This is frequently obſerved in the gulf of Mexico, at no great diſtance from the ſhore, where ſome guſt or land-wind will ſo poiſe the general eaſterly wind, as to produce a perfect *calm*.

Calms are never ſo great on the ocean as on the Mediterranean, by reaſon the flux and reflux of the former keep the water in a continual agitation, even where there is no wind; whereas there being no tides in the latter, the *calm* is ſometimes ſo dead, that the face of the water is as clear as a looking glaſs; but ſuch *calms* are almoſt conſtant preſages of an approaching ſtorm. On the coaſts about Smyrna, a long *calm* is reputed a prognoſtic of an earthquake.

When a ſhip is cloſe under the lee of another, the windward veſſel is ſaid to *becalm* the leeward.—A ſhip is alſo ſaid to be *becalmed* when near the land, which keeps the wind from it.

It is not uncommon for the veſſels to be *calmed*, or *becalmed*, as the ſailors expreſs it, in the road of the conſtant levantine winds, in places where they ride near the land. Thus between the two capes of Cartooche toward the main, and cape Antonio in Cuba, the ſea is narrow, and there is often a *calm* produced by ſome guſt of a land-wind, that poiſes the levantine wind, and renders the whole perfectly ſtill for two or three days.

In this caſe, the current that runs here is of uſe to the veſſels, if it ſets right; when it ſets eaſterly, a ſhip will have a paſſage in three or four days to the Havannah; but if otherwiſe, it is often a fortnight or three weeks ſail; the ſhip being embayed in the gulf of Mexico.

When the weather is perfectly *calm*, no wind at all ſtirring, the ſailors try which way the current ſets, by means of a boat which they ſend out, and which will ride at anchor, though there is no bottom to be found, as regularly and well as if faſtened by the ſtrongeſt anchor to the bottom. The method is this: they row the boat to a little diſtance from the ſhip, and then throw over their plummet, which is about forty pounds weight; they let this ſink to about two hundred fathom; and then, though it never reaches the bottom, the boat will turn head againſt the current, and ride as firmly as can be.

Calm *Latitudes*, in *Sea Language*, are ſituated in the Atlantic ocean, between the tropic of Cancer, and the latitude of 29° N. or they denote the ſpace that lies between the trade and variable winds, becauſe it is frequently ſubject to *calms* of long duration.

CALOGERI, Καλογεροι, or CALOYERS, monks, or religious, in Greece, both male and female; inhabiting, particularly, mount Athos, but diſſeminated alſo throughout all the churches of the Eaſt. They follow the rule of St. Baſil, and make vows like the weſtern religious. Tournefort ſays, the females are moſt of them only a more moderate ſort of Magdalens, who, as they grow old, make a vow to practiſe thoſe virtues they had much neglected in their youth; and retire into convents to lead a life ſomewhat leſs ſcandalous than before, under the eyes of a ſuperior or *hegumeniſſa*, who is far from being too ſevere.

The *caloyers*, in ſome places, are divided into cœnobites, anachorites, and aſcetics, or hermits; the life of which laſt is the moſt ſevere and recluſe.

The Turks alſo uſe the word *caloyers* for their derviſes, or religious muſſulmen. See DERVIS.

CALOMEL, in *Pharmacy*, a name given to *mercurius dulcis*, ſublimated; or, it is a combination of the marine acid, with as much mercury as that acid is capable of corroding and uniting with. The denomination *calomel* rather ſeems to have firſt belonged to the Æthiops mineral; from καλος, *pulcher*, *fair*; and μελας, *niger*, *black*; becauſe white or pale bodies, rubbed herewith, become black.

Calomel is the *panchymagogum* of Quercetanus. It is an effectual purge, and given not only to adults, but even to children, to carry off the ſlimy humours from whence the worms ariſe. *Calomel*, rubbed with ſulphur of antimony, is alſo found a powerful alterant. See MERCURY, and PLUMMER's *Æthiops*.

CALONDRONIUS, a name given by the writers of the middle ages to a ſtone of which they have left us no deſcription, but only a large account of its great virtues, in giving chearfulneſs to the perſon who wears it, and preventing the power of magic and enchantments.

CALOPHYLLUM, in *Botany*, the name given by Linnæus to a genus of plants of the *polyandria monogynia* claſs, called by Plumier *calaba*, the characters of which are theſe. The cup is coloured and deciduous, and conſiſts of one leaf divided into four acute ſegments; the flower conſiſts of four roundiſh, hollowed, and expanded petals; the ſtamina are numerous capillary filaments, ſhorter than the flower; the antheræ are roundiſh; the germen of the piſtil is roundiſh; the ſtyle is ſimple, and of the length of the ſtamina; the ſtigma is headed; the fruit is a large, globoſe, unilocular drupa; and the ſeed is a large pointed nut, of a roundiſh figure.

CALOTTE, a CAP, or coif of hair, ſattin, or other ſtuff; uſed firſt for neceſſity, but now become an eccleſiaſtical ornament, in France, &c.

It was firſt worn by cardinal Richelieu: the red *calotte* is a badge of a cardinal.

Calotte, in *Architecture*, a round cavity, or depreſſure, in form of a cup, or cap, lathed and plaiſtered, uſed to diminiſh the riſe, or elevation of a chapel, cabinet, alcove, &c. which, without ſuch an expedient, would be too high for other parts of the pile.

CALQUING, or CALKING, a term in *Painting*, &c. uſed where the back-ſide of any deſign is covered with black lead, or red chalk; and the ſtrokes or lines traced through on a waxed plate, wall, or other matter; by paſſing lightly over each ſtroke of the deſign with a point, which leaves an impreſſion of the colour on the plate or wall. This method of *off-tracing* may likewiſe be performed by pricking the original print, or drawing and tranſmitting a coloured powder through the punctured holes, in order to mark the outlines on a new ground; or, by diſſolving part of the printing ink by means of ſoap, and impreſſing it in that ſtate on a freſh ground. See DESIGNING.

CALTHA, in *Botany*. See *Marſh*-MARYGOLD.

CALTROP, or CALTHROP, an inſtrument with four iron points, each three or four inches long, diſpoſed triangularwiſe; ſo that there are always three points bearing on the earth, the fourth being in the air.

Several of theſe, fixed in the ground, or thrown into breaches where the cavalry is to paſs, ſtick into the horſes feet, and embarraſs them.

CALTROPS, *Tribulus*, in *Botany*, a genus of the *decandria monogynia* claſs. Its characters are theſe: the empalement of the flower is cut into five acute parts; there are five oblong blunt petals to the flower, which ſpread open; and ten ſmall awl-ſhaped ſtamina, terminated by ſingle ſummits, and an oblong germen the length of the ſtamina, having no ſtyle, but crowned by a headed ſtigma. The germen turns to a roundiſh, prickly fruit, divided into five capſules, armed with three or four angular thorns on one ſide, joining together. The cells are tranſverſe, and contain two or three pear-ſhaped ſeeds. There are three ſpecies, natives of warm countries. It derives its name from the form of its fruit, which reſembles thoſe inſtruments of war that were caſt in the enemy's way, to annoy their horſes.

This plant, taken inwardly, is a vulnerary; and is ſaid to be of ſervice in a diarrhœa, and the ſtone.

CALTROPS, *water*. See TRAPA.

CALVARIA, or CALVA, the ſcalp, or upper part of the HEAD; ſo called from its growing bald firſt. See BALDNESS.

The external parts of the *calva* are the *ſynciput*, *occiput*, *vertex*, and temples; all inveſted with the hair, and the common integuments of the body.

The *calvaria* in adults conſiſts of eight bones, one of the forehead, another of the *occiput*, two of the *ſynciput*, two of the temples, and two others common alſo to the upper jaw, viz. the *cuneiforme* and *ſpongioſum*.

CALVARY, a term uſed in catholic countries for a kind of chapel of devotion, raiſed on a hillock near a city; in memory of the place where Jeſus Chriſt was crucified near Jeruſalem.

The word comes from the Latin *calvarium*, and that from *calvus*, *bald*; the top of that hillock was bare, and deſtitute of verdure; which is alſo ſignified by the Hebrew word *golgotha*.

Such is the *Calvary* of St. Valerian, near Paris; which is accompanied with ſeveral little chapels, in each whereof is repreſented in ſculpture one of the myſteries of the paſſion.

CALVARY, in *Heraldry*, a croſs ſo called, becauſe it reſembles that on which our Saviour ſuffered: it is always ſet upon ſteps.

CALVINISM, the doctrine and ſentiments of Calvin, one of the principal reformers in the ſixteenth century, a native of Noyon in France, and afterwards paſtor and profeſſor of divinity at Geneva, and of his followers, with regard to matters of religion.

Calviniſm ſubſiſts in its greateſt purity in the city of Geneva; and from thence it was firſt propagated into Germany, France, the United Provinces, and England. In France it was aboliſhed by the revocation of the edict of Nants, in 1685. It has been the prevailing religion in the United Provinces ever ſince the year 1571. The theological ſyſtem of Calvin was adopted, and made the public rule of faith in England, under the reign of Edward VI. and the church of Scotland was modelled by John Knox, the diſciple of Calvin, agreeably to the doctrine, rites, and form of eccleſiaſtical government, eſtabliſhed at Geneva. In England it has declined ſince the time of queen Elizabeth; though it ſtill ſubſiſts, ſome ſay a little allayed, in the articles of the eſtabliſhed church; and in its rigour in Scotland. See REFORMATION and *Reformed* CHURCH.

The diſtinguiſhing theological tenets of *Calviniſm*, as the term is now generally applied, reſpect the doctrines of PREDESTINATION, or *particular* ELECTION and REPROBATION, *original* SIN, *particular* REDEMPTION, *effectual*, or, as ſome have called it, *irreſiſtible* GRACE in *regeneration*, JUSTIFICATION *by faith*, PERSEVERANCE, and the TRINITY. See each of theſe articles. See alſo ARMINIANS.

Beſides the doctrinal part of Calvin's ſyſtem, which, ſo far as it differs from that of other reformers of the ſame period, principally regarded the abſolute decree of God, whereby the future and eternal condition of the human race was determined out of mere ſovereign pleaſure and free-will; it extended likewiſe to the diſcipline and government of the Chriſtian church, the nature of the Euchariſt, and the qualification of thoſe who were intitled to the participation of it. Calvin conſidered every church as a ſeparate and independent body, inveſted with the power of legiſlation for itſelf. He propoſed that it ſhould be governed by preſbyteries and ſynods, compoſed of clergy and laity, without biſhops, or any clerical ſubordination; and maintained, that the province of the civil magiſtrate extended only to its protection and outward accommodation. In order to facilitate an union with the Lutheran church, he acknowleged a real, though ſpiritual, preſence of Chriſt, in the Euchariſt, that true Chriſtians were united to the man Chriſt in this ordinance, and that divine grace was conferred upon them, and ſealed to them, in the celebration of it; and he confined the privilege of communion to pious and regenerate believers. See EUCHARIST, &c. and LUTHERANISM.

In France the *Calviniſts* are diſtinguiſhed by the name of *Huguenots*; and, among the common people, by that of *Parpaillots*. In Germany they are confounded with the Lutherans, under the general title *Proteſtants*; only ſometimes diſtinguiſhed by the name *Reformed*.

CALVINISTS, *Crypto*, a name given to the favourers of *Calviniſm* in Saxony, on account of their *ſecret* attachment to the Genevan doctrine and diſcipline. Many of them ſuffered by the decrees of the convocation of Torgaw, held in 1576. See *Form of* CONCORD.

The *Calviniſts* in their progreſs have divided into various branches, or leſſer ſects.

CALVITIES, or CALVITIUM. See BALDNESS.

CALUMET, among *Travellers*, a myſtic kind of pipe uſed by the American ſavages as the enſign of peace, and for religious fumigation.

The *calumet* is a ſort of tobacco pipe, made of red, black, or white marble. The ſhank is decorated with rounds of feathers, and locks of hair, or porcupines quills: in it they ſmoke in honour of the ſun. F. Lafitau will have it to be the original CADUCEUS of Mercury, of which that uſed by the Greeks and Romans, with its wings and its ſerpents, was only the copy.

The *calumet* is the ſymbol and ſecurity of traffic; by it they pronounce life and death, peace and war: they alſo aſcribe to it a power of raiſing the ſouls of the dead.

CALUMNY, the crime of accuſing another falſely and knowingly of ſome heinous offence. *Calumnia eſt malitioſa & mendax informatio.*

It is an ancient maxim, which experience ſhews us to be too well founded: *Audacter calumniare, ſemper aliquid hærebit.*

CALUMNY, *oath of*, *Juramentum*, or rather *Juſjurandum calumniæ*, among civilians and canoniſts, was an oath which both parties in a cauſe were obliged to take; the plaintiff, that he did not bring his charge, and the defendant, that he did not deny it with a deſign to abuſe each other, but becauſe they believed their cauſe was juſt and good; that they would not deny the truth, nor create unneceſſary delays, nor offer the judge or evidence any gifts or bribes. If the plaintiff refuſed this oath, the complaint or libel was diſmiſſed; if the defendant, it was taken *pro confeſſo*.

This cuſtom was taken from the ancient athletæ, who, before they engaged, were to ſwear they had no malice, nor would uſe any fraudulent or unfair means for overcoming the other.

The *juramentum calumniæ* is much diſuſed, as a great occaſion of perjury.

Anciently the advocates and proctors alſo took this oath; but of late it is diſpenſed with, and thought ſufficient that they take it once for all at their firſt admiſſion to practice.

CALUMNIÆ, *judicium*, was an action brought againſt the plaintiff in a court for a falſe and malicious accuſation.

When an accuſer did not prove his charge, nor ſeemed to have ſufficient or probable grounds for bringing any, the judges in pronouncing ſentence uſed the formula *calumnioſus es*; which gave the defendant a right to bring an action of *calumny*; the penalty of which was *frontis inuſtio*, or burning on the forehead.

CALX literally ſignifies LIME; a ſort of ſtone burnt or calcined in a kiln for that purpoſe, to be uſed in the making of mortar, &c.

It is alſo made of the bones of large fiſhes, and from the ſhells of buccinæ, oyſters, and the like, burnt. This is more particularly called *calx peregrinorum* and *calx manica alba*.

CALX, in *Chemiſtry*, is a kind of aſhes, or fine friable impalpable powder, which remains of metals, minerals, &c. after CALCINATION by fire, SOLUTION by acid menſtrua, or DETONATION by nitre; by means of which all metallic ſubſtances, except gold, ſilver, platina, and mercury, may be deprived of their phlogiſton, and conſequently of their metallic properties, acquiring at the ſame time an acceſſion of air which becomes fixed in them during the reduction; and thus loſe their fuſibility, become more fixed, and leſs ſoluble in acids.

Calxes differ from aſhes not only as the former is the effect of calcination, and the latter of mere burning, but as the former is of a more ſolid conſiſtence than the latter; and that the bodies reduced to a *calx*, as metals and minerals, may frequently be reſtored out of theſe *calxes*; which can never be done out of the aſhes of wood and other bodies conſumed by BURNING.

Calxes are divided into *reducible* and *irreducible*, *fixed* and *volatile*. Chemiſts ſpeak of fire retained and fixed in all *calxes*, and of fixed ſalt p. 56, ſeq. from *calxes*. Hiſt. Acad. Scienc. an. 1712. procurable Hiſt. Acad. Scienc. lib. iv. ſect. 6. c. 3. See Fire and Salt.

Many metals and ſome minerals, whoſe parts are moſt homogeneous, do not appear to loſe their nature with their form. Thus gold, ſilver, and quickſilver, cannot be ſo deſtroyed by CALCINATION, but that they may eaſily be revived. So out of *calx* of tin, the tin itſelf may be reſtored; and the like holds of the *calx* of lead, though the moſt impure of all metals; and even of antimony, the firſt ſubſtance of which may be extracted either from its *calx*, or even glaſs. See Revivification.

Paracelſus calls the bolar and argillaceous earths, *calces terræ*. See Bole and Chalk.

The ſame author alſo gives the denomination *calx* to the chalky matter formed in the joints of gouty perſons.

Calx *antimonii*, a name given in the late London diſpenſatory to the preparation of ANTIMONY, called before *antimonium diaphoreticum*.

Calx *of braſs*, is called ÆS USTUM.

Calx *jovis*, the *calx* of TIN, called PUTTY.

Calx *lunæ*, the *calx* of SILVER.

Calx *martis*, the crocus or ſaffron of IRON.

Calx *mercurii*, precipitated MERCURY.

Calx *nativa*, in *Natural Hiſtory*, a native marley earth, which, without burning, has ſome of the qualities of the artificial lime, and was called by the ancients, *gypſum tymphaicum*.

It is a hard, dry, and ſomewhat coarſe earth; it never conſtitutes a ſtratum of itſelf, but is ſometimes found in the fiſſures of other ſtrata, and ſometimes lying looſe upon or among the laxer ſtrata of gravel and the like. It is uſually found in maſſes of two, three, or four inches in diameter, of irregular ſurfaces, and generally flattiſh It is found in ſome parts of England, and appears to have been well known to the ancients, and in common uſe among them.

Calx *ſaturni*, is ceruſs calcined with ſpirit of vinegar, or in the ſun. See Ceruſſe.

Calx *ſaturni*, is alſo uſed for MINIUM or *red* LEAD.

Calx *ſolis*, denotes calcined GOLD.

Calx *veneris*, VERDEGRISE.

Calx *viva*, quick-lime, that on which no water has been caſt ſince its burning, in oppoſition to *calx extincta*, that ſlacked by the affuſion of water. See Lime.

Calx *viva philoſophorum*, denotes that made of quickſilver.

Calx, in *Anatomy*. See Calcaneum.

CALYBITES, the inhabitant of a cottage, an appellation given to divers ſaints on account of their long reſidence in ſome hut, by way of mortification.

The word is formed from καλυπτω, *tego*, *I cover*; whence καλυϐη, *a little cot*.—The Romiſh church commemorates St. John the *calybites* on the 15th of December.

CALYCANTHEMI, in *Botany*, an order of plants in the Fragmenta Methodi Naturalis of Linnæus.

CALYCISTÆ, among the *Botanical Authors*. See Botany.

CALYCULUS, in *Ancient Naturaliſts*, denotes a SILIQUA or ſeed-caſe.

CALYCULATED, an appellation given by ſome naturaliſts to the fruits of thoſe trees which have the CALYX of their flower non-deciduous, and whoſe FRUIT ſtands as in a cup. Phil. Tranſ. Nº 204. p. 928. See Plant, Tree, &c.

CALYPTRA, from καλυπτω, *I hide*, among *Botaniſts*, a thin membranous involucrum, uſually of a conic figure, which covers the parts of fructification. The capſules of moſt of the MOSSES have *calyptræ*.

CALYX, or Calix, in a general ſenſe, denotes a CUP. See Chalice.

Calyx, in *Botany*, is ſometimes applied to a FLOWER whoſe body, or even a part of it, is formed in manner of a cup or *chalice*: ſuch is that of a tulip, &c.

Pliny defines the *calyx* the cavity in the middle of a flower, wherein the ſtamina and apices are contained. Auſonius calls it *calathus*.

Calyx is more particularly uſed for that outward greeniſh cover, which encompaſſes and defends the petals and other parts of a flower; ſerving alſo as a baſis or ſupport to the whole. In which ſenſe, *calyx* is the ſame with what is otherwiſe called *perianthium*, and by Dr. Grew the *empalement* or *flower-cup*.

The *calyx* is that ſet of leaves which involves the petala, as the petala do the immediate organ of generation.

The *calyx* is in ſome plants of one entire piece; as in pinks, &c. and in ſome is divided into ſeveral; as in roſes, &c.—Saffron has no *calyx*; its flower comes out of the earth before its leaves.

The cups of flowers are very various in their ſtructure, and are diſtinguiſhed by the names of AMENTUM, CALYPTRA, GLUMA, INVOLUCRUM, PERIANTHIUM, SPATHA, and VOLVA.

Botaniſts diſtinguiſh two ſorts of *calices*, one external, called the *calyx* of the flower, by the ancients *perianthium*, as encompaſſing the flower and ſeed; the other internal, called the *calyx* of the fruit, by the ancients *pericarpium*, as being the capſule which encompaſſes the fruit, and is itſelf encompaſſed by the petala.

The external *calyx* may alſo be divided into two ſorts, one which ſurrounds the flower, another which ſuſtains it, different from the pedicle; in that this latter ſpreads itſelf underneath the flower to give room for the nutritious juice to riſe more freely; the cavity of the pedicle enlarged, is reputed part of the *calyx* both external and internal.

Calyx, *auctus*, in *Botany*, a term uſed by authors to expreſs one kind of the perianthia of the compound flowers. A cup is thus called when it conſiſts of a ſingle and equal ſeries of ſcales, which are of an oblong figure, and ſurround the flowers; and another ſmall ſeries of ſcales, which only ſurround theſe, cloſe to the baſe.

The ancients have often uſed the word *calyx* to expreſs the roſe when in the bud, and not yet ſhewing its petals, except between the ſegments of the cup.

Calyx, in *Ancient Aquæducts*, denoted a brazen module or cup, put over a head or caſtellum, to which pipes were fitted.

CAMÆA, in *Natural Hiſtory*, the name of a genus of the ſemipellucid gems, the characters of which are theſe: they are obſcurely tranſparent ſtones approaching to the onyx ſtructure, being compoſed of zones, and formed on a cryſtalline baſis, but having their zones very broad and thick, and laid alternately on one another with no other matter between them.

Of this genus we have four known ſpecies.

CAMAHA, in the *Materia Medica*, a name given by Avicenna and others to the large truffles found in the deſarts of Numidia, and many other parts of Africa, in great abundance. Theſe are white on the outſide; the modern Africans call them *terſon*, and are very fond of them; they eat them ſtewed with milk, water, and ſpices, and account them wholeſome and nutritive.

CAMAIEU, or Camayeu, a word uſed to expreſs a peculiar ſort of onyx: alſo by ſome to expreſs a ſtone, whereon are found various figures, and repreſentations of landſcapes, &c. formed by a kind of *luſus naturæ*; ſo as to exhibit pictures without painting.

The word comes from *camehuia*, a name the Orientals give to the onyx, when they find, in preparing it, another colour; as who ſhould ſay, *a ſecond ſtone*.

It is of theſe *camaieux* Pliny is to be underſtood when he ſpeaks of the manifold picture of gems, and the party-coloured ſpots of precious ſtones: *Gemmarum pictura tam multiplex, lapidumque tam diſcolores maculæ.* Plin. Hiſt. Nat. lib. ii. c. 93.

Camaieu is alſo applied by others to thoſe precious ſtones, as onyxes, cornelians, and agats, whereon the lapidaries employ their art to aid nature, and perfect thoſe repreſentations. See Camæa.

Camaieu is alſo frequently applied to any kind of gem, whereon figures may be engraven either indentedly, or in relievo.

In this ſenſe the lapidaries of Paris are called in their ſtatutes, *cutters of camayeux*.

A ſociety of learned men at Florence undertook to procure all the *cameos* or *camayeux*, and intaglios in the great duke's gallery to be engraven; and began to draw the heads of divers emperors in *cameos*.

Camaieu is alſo uſed for a painting, wherein there is only one colour; and where the lights and ſhadows are of gold, wrought on a golden, or azure ground.

When the ground is yellow, the French call it *cirage*; when grey, *griſſaile*. This kind of work is chiefly uſed to repreſent baſſo relievos: the Greeks call pieces of this ſort μονοχρωματα.

CAMALDULIANS, Camaldunians, or Camaldolites, an order of religious, founded by Romuald, an Italian fanatic, in 1023, in the horrible deſart of Camaldoli, otherwiſe called Campo-Malduli, ſituate in the ſtate of Florence, on the Appenines.

Their rule is that of St. Benedict; and their houſes, by the ſtatutes, are never to be leſs than five leagues from cities. The *Camaldulians* have not borne that title from the beginning of their order; till the cloſe of the eleventh century they were called *Romualdins*, from the name of their founder. Till that time, *Camaldulian* was a particular name for thoſe of the deſart Camaldoli; and D. Grandi obſerves, was not given to the whole order, in regard it was in this monaſtery that the order commenced, but becauſe the regulation was beſt maintained here.

Guido Grandi, mathematician of the great duke of Tuſcany, and a monk of this order, has publiſhed *Camaldulian* Diſſertations, on the origin and eſtabliſhment of it. The *Camaldolites* were diſtinguiſhed into two claſſes, of which the one were COENOBITES, and the other EREMITES.

CAMARA, a name given by Plumier to an American ſpecies of LANTANA.

CAMAROSIS, from καμαροω, *I arch over*, in *Architecture*, denotes an elevation with an arch or vault.

CAMAROSIS, among *Phyſicians*, denotes a FRACTURE of a bone, wherein the two broken ends riſe and form a kind of *camera*, or arch.

This is alſo called *camaroma*, and by modern Latin writers *cameratio*, ſometimes *fornicatio*.—It is commonly reſtrained to fractures of the ſkull.

CAMBAYES, in *Commerce*, cotton cloths made at Bengal, Madraſs, and ſome other places on the coaſt of Coromandel. They are proper for the trade of Marſeilles, whither the Engliſh at Madras ſend great numbers of them. Many are alſo imported into Holland.

CAMBER-*beam*, in *Building*, a piece of timber cut archwiſe, or with an obtuſe angle in the middle, commonly uſed in platforms; as church-leads, and on other occaſions, where long and ſtrong beams are required. A *camber-beam* is much ſtronger than another of the ſame ſize; ſince being laid with the hollow ſide downwards, as they uſually are, it repreſents a kind of arch.

CAMBERED-*deck*, in *Ship-building*. See DECK.

CAMBIO, an Italian word which ſignifies *exchange*; commonly uſed at Provence, and in ſome other countries, particularly Holland.

CAMBIST, a name given in France to thoſe who trade in notes and bills of exchange. The word *cambiſt*, though a term of antiquity, is even now a technical word, of ſome uſe among merchants, traders, and bankers. Some derive it from the Latin *cambium*, or rather *cambio*.

CAMBLET, or CHAMBLET, a ſtuff ſometimes of wool, ſometimes ſilk, and ſometimes hair, eſpecially that of goats, with wool or ſilk: in ſome, the warp is ſilk and wool twiſted together, and the woof hair.

The true or oriental *camblet* is made of the pure hair of a ſort of goat, frequent about Angora, and which makes the riches of that city, all the inhabitants whereof are employed in the manufacture and commerce of *camblets*.

It is certain we find mention in middle age writers of ſtuffs made of camel's hair, under the denominations of *cameletum* and *camelinum*, whence probably the origin of the term; but theſe are repreſented as ſtrangely coarſe, rough, and prickly, and ſeem to have been chiefly uſed among the monks by way of mortification, as the hair-ſhirt of later times. Du-Cange, Gloſſ. Lat.

We have no *camblets* made in Europe of the goats hair alone; even at Bruſſels, they find it neceſſary to add a mixture of woollen thread.

England, France, Holland, and Flanders, are the chief places of this manufacture. Bruſſels exceeds them all in the beauty and quality of its *camblets*: thoſe of England are reputed the ſecond.

CAMBLETS, *figured*, are thoſe of one colour, whereon are ſtamped various figures, flowers, foliages, &c. by means of hot irons, which are a kind of moulds, paſſed, together with the ſtuff, under a preſs. Theſe are chiefly brought from Amiens and Flanders: the commerce of theſe was anciently much more conſiderable than at preſent.

CAMBLETS, *water*, thoſe which, after weaving, receive a certain preparation with water; and are afterwards paſſed under a hot-preſs, which gives them a ſmoothneſs and luſtre.

CAMBLETS, *waved*, are thoſe whereon waves are impreſſed, as on tabbies; by means of a calender, under which they are paſſed and repaſſed ſeveral times.

The manufacturers, &c. of *camblets*, are to take care they do not acquire any falſe and needleſs plaits; it being almoſt impoſſible to get them out again. This is notorious, even to a proverb: we ſay, a perſon is like *camblet*, he has taken his plait.

CAMBNITES *lapis*, a name given by the *Writers of the Middle Ages* to a ſtone, of which they record virtues which appear to favour too much of imaginary ones, ſuch as the curing the dropſy by being tied to the arm: it ſeems to have been only a cloudy and leſs valuable kind of brown cryſtal.

CAMBOGIA, in *Botany*, a genus of the *polyandria monogynia* claſs; the corolla is made up of four petals, the calyx has four leaves, and the fruit is a kind of apple containing eight cells, with ſingle ſeeds.

CAMBRASINES, in *Commerce*, fine linen made in Egypt, of which there is a conſiderable trade at Cairo, Alexandria, and Roſetta, or Raſchit. They are called *cambraſines*, from their reſemblance to cambrics.

CAMBRIC, in *Commerce*, a ſpecies of linen made of flax, very fine and white; the name of which was originally derived from the city of Cambray, where they were firſt manufactured. They are now made at other places in France.

The manufacture of *cambrics* hath long ſince proved of extraordinary advantage to France. For many years it appeared that England did not in this article contribute leſs than 200,000*l.* per annum to the intereſt of France. This proved motive ſufficient to induce the parliament of Great Britain to enact many ſalutary laws to prevent this great loſs of our wealth. See 18 Geo. II. c. 36. and 21 Geo. II. c. 26. See alſo ſtat. 32 Geo. II. c. 32. and 4 Geo. III. c. 37. which regulates the *cambric* manufactory, not long ſince introduced into Winchelſea in Suſſex; but very ſoon aboliſhed. The *cambrics* now allowed in this country are manufactured in Scotland and Ireland. Any perſons convicted of wearing, ſelling (except for exportation), or making up for hire any *cambric* or French lawns, are liable to a penalty of 5*l.* by the two firſt ſtatutes cited above.

CAMBRIDGE *Manuſcript*, a copy of the Goſpels and Acts of the Apoſtles in Greek and Latin. Beza found it in the monaſtery of Irenæus at Lyons in the year 1562, and gave it to the univerſity of Cambridge in 1582. It is a quarto ſize, and written on vellum; ſixty-ſix leaves of it are much torn and mutilated, ten of which are ſupplied by a later tranſcriber. Beza conjectures, that this *manuſcript* might have exiſted ſo early as the time of Irenæus: Wetſtein apprehends, that it either returned or was firſt brought from Egypt into France; that it is the ſame copy which Druthmar, an ancient expoſitor who lived about the year 840, had ſeen, and which, he obſerves, was aſcribed to St. Hilary; and that R. Stephens had given a particular account of it in his edition of the New Teſtament in 1550. It is uſually called Stevens's ſecond manuſcript. Mill agrees with F. Simon in opinion, that it was written in the weſtern part of the world by a Latin ſcribe, and that it is to a great degree interpolated and corrupted: he obſerves, that it agrees ſo much with the Latin Vulgate, as to afford reaſon for concluding, that it was corrected or formed upon a corrupt and faulty copy of that tranſlation. From this and the CLERMONT copy of St. Paul's Epiſtles, Beza publiſhed his larger Annotations in 1582. See Wetſtein's Prolegomena to his folio edition of the New Teſt. vol. i. p. 28. Kuſter's edition of Mill's Teſtament, Proleg. p. 132. Mill Præfat. in New Teſt. Amſt. 1735.

CAMEA. See CAMÆA.

CAMEHUIA. See CAMAIEU.

CAMEL, *Camelus*, in the Linnæan ſyſtem of *Zoology*. This is a diſtinct genus of animals; the great character of which is the want of horns, which all the other genuſes of the *pecora* have: they have ſix cutting teeth in the lower jaw and none in the upper; and the upper lip is divided like that of a hare. The hoofs are ſmall.

The word is formed from the Greek καμηλος, which ſignifies the ſame; and, according to Nicod, from the Hebrew *gamal*; but according to others from καμπυλον, on account of the bunch on his back.

There are four ſpecies of *camels*: 1. The *camel*, with one bunch on its back, called the DROMEDARY. 2. The Bactrian *camel*, with two bunches. 3. The Peruvian *camel*, called GLAMA, and by ſome *elaphocamelos*, with a pectoral bunch. And, 4. The PACOS, uſually called the Indian or Peruvian ſheep, without any bunch at all.

The dromedary is chiefly uſed for riding; the Bactrian *camel*, or that with two bunches on its back, for travelling with loads.

The *camel* is a domeſtic beaſt of burden, of a gentle diſpoſition, much uſed for carriage in divers parts of Aſia; and making the chief riches of the Arabs.

In Perſia they only diſtinguiſh two ſorts of *camels*, viz. the ſouthern, which are ſmaller, and not fit to carry above ſeven hundred weight; and the northern, which are bigger, and able to carry twelve or thirteen hundred weight.

The name *camel*, among us, is vulgarly reſtrained to that ſort which has but one bunch on the back; the appellation *dromedary* being given to thoſe which have two. In this we follow the example of Solinus, contrary to Pliny, Ariſtotle, and the generality of ancient naturaliſts.

The bunch on the *camel*'s back is not formed by the cavity of the *ſpina dorſi*, but is uſually ſaid to be a callous ſort of fleſh. The academiſts of Paris found it mere hair; and that when this was preſſed cloſe down, the creature appeared no more bunch-backed than a ſwine.

Pliny affirms, that the *camel* can endure four days without drink; whence Perſius gives it the appellation *ſitiens*. They can live on the little ſhrubs which the deſerts produce, and are ſatisfied for a whole day with half a gallon of beans and barley, or balls made of the flour. The fleſhy foot of the *camel* is formed for travelling on the hot ſands, which would parch and deſtroy the hoof. Pococke's Deſcript. of the Eaſt, vol. i. p. 208. Shaw's Travels, p. 239.

Camel's milk is ſaid to be ſovereign againſt the dropſy, for which purpoſe the Arabs drink a pint per day for three weeks.

Native *ſal* AMMONIAC is commonly ſuppoſed to be the urine of *camels*.

The Turks reckon the fleſh of the young *camel* delicious food; but prohibit the uſe of it to Chriſtians, leſt the breed ſhould be deſtroyed.

Camels caſt their hair in the ſpring, which is gathered up with great care, on account of the traffic thereof, which is very conſiderable. When left bare of hair, they pitch them over to defend them from the flies.

They ſpin the *camel*'s hair and weave it into ſtuffs: it is ſometimes alſo uſed with other hairs in making of hats. The beſt hair is that from the *camel*'s back.

Camels are chiefly uſed in CARAVANS; and they travel for fifteen or ſixteen hours without ſtopping, at the rate of two miles and a half an hour. They are very apt to ſlide; for which reaſon, in paſſing ſlippery ways, their leaders ſtrew carpets under them, ſometimes to the number of a hundred, one before another.

The *camel* that carries Mahomet's ſtandard, which the caravan of pilgrims offer yearly on the tomb of their prophet, is exempted the reſt of its life from all ſervices. It is even pretended that this happy beaſt will riſe again at the general reſurrection, and enjoy the pleaſures of paradiſe.

On medals, the *camel* is the ſymbol of Arabia, when found on the coins of any other nation. Thus, on a medal of the gens Plautia, we find a woman's head with a mural crown, *A. Plautius Æd. Cur. S. C.* and on the reverſe, *Judæus*; and in the exergue, *Bacchius*; the device, a man on his knees holding with his right hand a *camel* by the bridle, and, with the left, a branch of palm. It alſo denotes alliance with Arabia.

CAMEL, in *Mechanics*, a kind of machine uſed in Holland for raiſing or lifting ſhips.

The *camel* was invented by a burgomaſter of Amſterdam, towards the cloſe of the laſt century. It took the denomination from its heavineſs or ſtrength.

Its uſe is to raiſe veſſels, in order to bring them over the Pampus, which is at the mouth of the river Y, where the ſhallowneſs of the water hinders large ſhips from paſſing.

CAMEL's *hay*, *fænum camelorum*, an appellation given to the plant *ſcænanthus*, or *juncus odoratus*. See SCÆNANTH, and ISCHÆMUM.

CAMELEON, CHAMÆLEON, in *Natural Hiſtory*, a little animal, famous among the ancient and modern writers, for a faculty it is ſuppoſed to have, of changing its colour, and aſſuming thoſe of the objects near it.

It is a ſpecies of the LIZARD, with a ſhort, round, incurvated tail, and two or three toes joined together.

There are four diſtinct varieties of this animal: 1. The Arabian kind, which is ſmall, and hardly exceeding the green lizard in ſize: this is of a whitiſh colour, variegated with yellowiſh and reddiſh ſpots. 2. The Ægyptian, which is twice as large as the Arabian, and is of a middle colour between the whitiſh hue of the Arabian and a fair green: this changes its colour to a paler or deeper yellow. 3. The Mexican. And, 4 a kind ſometimes ſhewn about as a ſight, and met with by J. Faber Lynceus at Rome, which differed from all the others. The Arabian and Mexican *cameleons* ſeldom exceed ſix inches in length; the Ægyptian is nine or more. The head is very like that of ſome fiſhes, and is joined almoſt immediately to the breaſt, the neck being extremely ſhort, and having at the ſides two cartilaginous eminences, in the manner of fiſhes. It has a creſt ſtanding up in the middle of the forehead, and two others over the eyes, and between the creſt there are two remarkable depreſſions; the noſe and mouth running from the eyes with a double edge to the end of the ſnout, reſemble thoſe of a frog: at the extremity of the noſe there are two perforations, which ſeem to ſerve as noſtrils; the mouth being always kept cloſe ſhut, and the creature appearing to have no power of reſpiring but by means of theſe. Its mouth is furniſhed with teeth, or rather with continued denticulated bones. Theſe are of no ſervice to the creature in eating, ſince it preys on flies, and ſwallows them whole; but may ſerve for its defence in holding faſt a ſtick in its mouth, which, according to Ælian, this creature does, placing the ſtick croſs-ways, to prevent its being ſwallowed by ſerpents.

The ſtructure and motion of this creature's eyes is very ſurpriſing; they are very large, and ſet in large cavities, appearing to be large ſpheres, of which one half ſtands out of the head, and is covered with a thin ſkin, perforated with a ſmall hole at the top, through which is ſeen a very vivid and bright pupil, ſurrounded with a yellow iris; this hole is properly a longitudinal ſlit, which the creature opens more or leſs wide at pleaſure, and the eye ſeems fixed to this eye-lid, ſo as to follow all its motions, not turning round within it, as in other creatures. The motion of the eyes of this creature is not leſs ſingular than their ſtructure, ſince it can turn them ſo as to ſee what paſſes either far backward, on either ſide, or directly behind it, without at all moving the head, which is fixed to the ſhoulders; and the creature can give one eye all theſe motions, while the other is perfectly ſtill. The trunk of the body is properly all breaſt, for the creature has no belly, its ribs being continued to the *ilia*; the feet have all five toes, two behind, and three before, the hinder ones being as large as the others. This creature moves as ſlow as the tortoiſe, which appears very ſingular, as its legs are ſufficiently long, and it has no great weight of body to carry; but it is ſaid, that on trees, in its wild ſtate, it moves very nimbly. Its tail, when inflated, is round as that of a rat or ſnake; when empty, it is very lank, and has three longitudinal ridges running along it, which are owing to the apophyſes of the ſpine. This tail is a great ſafety to the creature on trees, as it twiſts it round the branches when in any danger of falling. See *Tab. of Quadrupeds and Serpents*, N° 29.

The accounts given by the ancients, and later writers, of the long hollow tongue of the *cameleon*, which it can dart with ſuch celerity to take flies, by means of a ſpongy nodule at the end, is found, on experience of thoſe who have kept the creature alive, to be true. M. de la Hire thinks that it is provided with two kinds of muſcles, the one circular and the other longitudinal, by the action of the former of which it is extended, and contracted by that of the latter. Thoſe among the former, therefore, who ſuppoſed the *cameleon* lived on the air only, were greatly miſtaken; ſome, of late, have alſo favoured this opinion, becauſe of the long time the creature will live without food; but this is the caſe with all the ſerpent kind alſo, which yet we know to eat ſolid food when they can get it.

The tongue is half the length of the animal; conſiſting of a white fleſh, round as far as the tip, which is flat and hollow; ſomewhat like an elephant's *proboſcis*, or trunk; and accordingly, ſome call it a *trunk*.

The thickneſs of its body is not to be determined, as the creature alters that at pleaſure, whilſt it more or leſs inflates its body; and this inflation not only goes through the whole body, but into the legs and tail. This inflation is not at all like the breathing of other animals, for the body when thus puffed out will remain ſo two hours, only gradually and inſenſibly ſinking all the time, and afterwards will be inflated again, but much more quickly than it ſubſided. It is able a long time to continue either of theſe ſtates, but more frequently remains empty for a conſiderable ſpace, in which time, though it appeared before in good caſe, it looks miſerably lean and lank, and its back-bone may be clearly ſeen, its ribs counted, and even the large tendons of the feet diſtinctly obſerved by the naked eye through the ſkin. The back-bone, however, is not ſerrated, as many have affirmed, but makes, in this its lean ſtate, a plain ſharp ridge, and the whole animal looks ſo miſerably meagre, that it has not unaptly been called a living ſkin.

Naturaliſts are very little agreed, as to the reaſon or manner of its change of colour: ſome, as Seneca, maintain it done by ſuffuſion; others, as Solinus, by reflection; others, as the Carteſians, by the different diſpoſition of the parts that compoſe the ſkin, which give a different modification to the rays of light. Kircher aſcribes the change of colour in the *cameleon* to the power of imagination in the animal, becauſe it loſes it when dead: others, as Dr. Goddard, aſcribe the change to the grains of the ſkin; which, in the ſeveral poſtures, he thinks, may ſhew ſeveral colours; and, when the creature is in full vigour, may have, as he terms it, *rationem ſpeculi*; that is, the effect of mirrors, and reflect the colours of bodies adjacent.

The animal having it in its power to fill the ſkin more or leſs, has it in its power not only to alter the tone and texture of the fibres, upon which their reflexive quality, in a great meaſure, depends; but alſo to bring parts into ſight which before lay concealed, or to conceal ſuch as before lay open: and it is more than probable, that the parts which are ordinarily covered, are of a ſomewhat different colour from thoſe conſtantly open to the air.

On theſe principles, probably, all the phænomena in the *cameleon*'s colour may be ſolved. The animal, it is evident, has a power to reflect different-coloured rays from the ſame parts; alſo to make certain parts reflect, and to prevent others reflecting: and hence that variety, that medley of colours.

See an account of a particular ſpecies of *cameleon*, by Dr. Parſons, Phil. Tranſ. vol. lviii. N° 29 an. 1768.

Matthiolus relates ſeveral ſuperſtitious notions of the ancients touching the *cameleon*. Pliny aſſures us, that Democritus had compoſed a whole book of ſuch follies. This is not the only animal poſſeſſed of the property of changing its colour; Grew mentions another ſort of lizard, which, when he ſwells with anger, changes his colour from green to a kind of ruſſet. The like is ſaid of the *naque mouſche*, an inſect in the iſland of Nevis.

CAMELEON, CHAMÆLEON, in *Aſtronomy*, one of the conſtellations of the ſouthern hemiſphere, near the pole, and inviſible to us.

The ſtars in this conſtellation, according to Sharp's Catalogue, are ten; their magnitude, ſituation, longitude, and latitude, are as follow.

Situation of the ſtars.	Signs.	Longitud.			Latitude.			Magnitude
		°	′	″	°	′	″	
In the fore-feet.	♐	1	31	33	63	35	41	5
In the neck.	♏	28	26	37	63	56	38	5
In the back.		26	30	16	68	4	29	5
In the hind-feet.	♐	1	43	44	67	47	15	5
In the root of the tail.		3	33	49	71	1	05	5
5.								
		3	39	49	70	37	07	5
In the middle of the tail.		0	16	42	73	25	56	5
		1	38	50	73	0	25	6
In the extremity of the tail.	♏	25	22	29	75	24	22	5
		27	4	53	75	1	52	5

CAMELITA *bos*, in *Natural Hiſtory*. See BISON.

CAMELLIA, in *Botany*, a name given by Linnæus to a genus of plants mentioned in Kempfer's Japan, under the name of *tſubaki*. It belongs to the claſs of *monadelphia polyandria*. The characters of the genus are theſe: the perianthium is compoſed of ſeveral leaves, and is of a roundiſh figure, and imbricated, being formed of a number of roundiſh ſcales, the internal ones growing gradually larger than the others, and all of them hollowed and deciduous.

The flower is compoſed of five petals of an oval figure, and growing together at the baſe. The ſtamina are a great number of filaments that ſtand erect, and are formed in the lower part into a ſort of corona, which is larger than the ſtyle. They are free at the top, and are ſhorter than the flower; the antheræ are ſimple; the piſtil has a roundiſh germen, the ſtyle is pointed, and of the ſame length with the ſtamina, and the ſtigma is acute and bent; the fruit is a turbinated woody capſule, with ſome furrows on its ſurface.

CAMELOPARDAL, in *Zoology*, an animal of a very ſingular kind, and ſeeming properly to belong to no known genus of animals, but to be perfectly *ſui generis*. It is called *cameloparдalis* by Latin authors, *geraffa* and *zurnapa* by eaſtern nations. Linnæus makes it a ſpecies of the *cervus*, or *ſtag* kind, with ſimple horns, and fore-legs very long. See a letter concerning a ſpecies of this animal found about the Cape of Good Hope, by captain Carteret, in the Philoſophical Tranſactions, vol. lx. Nº 3. an. 1770.

It is not certainly known whether it chews the cud or not; but as its hoofs are cloven, as it has horns on its forehead, as it wants the fore-teeth in its upper-jaw, and feeds on vegetables, it is probable that it does.

It is a ſingular, elegant, and beautiful creature, and is very remarkably tame and tractable, even ſcarce leſs ſo than a ſheep, and ſeems intended by nature for a domeſtic, not a ſavage animal. Its head is wholly of the make of a ſtag's, but differs in ſize, and has two little obtuſe horns, which are not more than ſix fingers-breadth long, and are hairy: the male and female both have theſe, and the latter is diſtinguiſhed by having them ſhorter than the former. Its ears are larger, and like thoſe of the ox-kind; its tongue is alſo like that of an ox, and it wants the fore-teeth in the upper-jaw. Its neck is remarkably long, ſtrait, and ſlender, in a grown animal. The neck is uſually ſeven feet long, and the meaſure from the tail to the top of the head eighteen feet; and when it ſtands erect, its head is ſixteen feet from the ground; it has a ſmall mane; its legs are very ſlender, and the fore-legs very long; the hinder ones very ſhort, ſo that the creature ſeems always to ſtand upright.

Its hoofs are cloven exactly as thoſe of the ox, its tail reaches down to its hams, and is rounded and covered with very thick hairs; the middle of its body is ſlender; it is very like the camel in all its natural properties: when it runs it holds the two fore-feet together, it lies down on the belly, and claps its neck down on the thighs and breaſt in the manner of the camel. As it ſtands it can ſcarce reach to eat the graſs, unleſs its fore-legs are very far expanded, and that is a poſture of great pain to it; ſo that nature ſeems to have allotted it to feed in its wild ſtate on the leaves of trees, which its long neck will very well enable it to get at. It is very beautifully ſpotted all over its body in the manner of the leopard.

The velvety covering of its horns ſeems to make it of the ſtag kind, but its ſhape is wholly different from thoſe of that genus.

It is found in Ethiopia, and other parts of Africa. The horns and hoofs raſped, pulveriſed, and taken inwardly, are good for the epilepſy, ſtop a looſeneſs, and reſiſt poiſon.

CAMELOPARDALUS, in *Aſtronomy*, a new conſtellation of the northern hemiſphere, formed by Hevelius, conſiſting of 32 ſtars firſt obſerved by him, ſituate between Cepheus, Caſſiopeia, Perſeus, the two Bears, and Draco, and containing 58 ſtars in the Britiſh Catalogue.

Situation of the ſtars.	Bayer's Char.	Signs.	Longitud.			Latitude. North.			Magnitude.
			°	′	″	°	′	″	
		♊	10	40	50	31	34	11	6
			11	57	8	30	57	5	5
Between the hind-feet.			11	51	59	30	33	30	6
Below the left knee of the hind foot.			13	54	51	34	1	34	6
			14	49	40	32	23	14	6
5.									
			15	12	14	32	55	15	6
In the hoof of the left foot.			14	57	53	30	51	6	5
			15	18	2	30	13	18	7
			Unknown			Unknown			4.5
			16	56	13	37	23	52	5.4
10.									
			17	10	19	35	53	33	5
			17	11	35	35	56	21	6
			16	26	51	29	24	50	4.5
			18	48	48	39	29	29	5
			19	10	41	34	52	28	6
15.									
			19	46	30	34	15	35	6
			Unknown			Unknown			6
			21	12	38	33	52	7	6
			22	26	2	40	45	10	6
			21	58	11	33	6	0	7
20.									
			22	45	38	38	30	20	6.7
			22	13	47	32	57	25	7.8
			23	17	28	38	1	18	6
			22	54	2	33	8	35	6
			22	59	14	31	25	25	7.8
25.									
			23	27	23	32	39	57	5.6
			Unknown			Unknown			5.6
			23	33	54	33	28	10	6.7
			24	8	37	33	27	0	5.6
			24	28	8	35	29	42	6
30.									
			24	54	31	36	24	40	5
			24	50	27	32	13	50	5
			25	17	21	32	10	48	7
			25	38	28	31	51	4	6
			Unknown			Unknown			5.6
35.									
Between the fore-feet.			27	28	28	42	15	17	6
			27	16	30	35	28	0	5.6
			27	25	43	35	42	20	7
			Unknown			Unknown			6.7
			28	7	9	36	33	20	6.7
40.									
		♋	1	46	33	38	39	55	7
			2	28	40	44	23	20	4.5
			2	36	32	45	43	21	4.5
			8	5	53	36	17	5	6
			8	8	30	36	30	15	7
45.									
			8	13	50	36	38	33	7
			8	28	38	37	20	14	6
			11	18	43	37	26	30	6
			11	24	46	40	48	38	5
			14	12	32	28	36	20	6
50.									
			11	4	9	43	25	45	5
			14	49	5	34	57	10	5
			14	28	50	8	49	14	6
			16	5	29	3	56	55	6
			Unknown			Unknown			5
55.									
			16	39	40	39	21	30	6
			16	9	28	11	28	30	5
			Unknown			Unknown			5

CAMERA *Æolia*, a contrivance for blowing the fire, for the fuſion of ores, without BELLOWS; by means of water falling through a funnel into a cloſe veſſel, which ſends from it ſo much air or vapour, as continually blows the fire: if there be the ſpace of another veſſel for it to expatiate in by the way, it there lets fall its humidity, which otherwiſe might hinder the work.

This contrivance was named *camera Æolia* by Kircher. Hook, Phil. Coll. Nº 3. p. 80.

CAMERA *lucida*, a contrivance of Dr. Hook for making the image of any thing appear on a wall in a light room, either by day or night.

Opposite to the place or wall where the appearance is to be, make a hole of at leaſt a foot in diameter, or if there be a high window with a caſement of this dimenſion in it, this will do much better without ſuch hole, or caſement opened. At a convenient diſtance, to prevent its being perceived by the company in the room, place the object or picture intended to be repreſented, but in an inverted ſituation. If the picture be tranſparent, reflect the ſun's rays by means of a looking-glaſs, ſo as that they may paſs through it towards the place of repreſentation; and to prevent any rays from paſſing aſide it, let the picture be encompaſſed with ſome board, or cloth. If the object be a ſtatue, or a living creature, it muſt be much enlightened by caſting the ſun's rays on it, either by reflection, refraction, or both. Between this object and the place of repreſentation put a broad convex glaſs, ground to ſuch a convexity, as that it may repreſent the object diſtinctly in ſuch place. The nearer this is ſituate to the object, the more will the image be magnified on the wall, and the further the leſs; ſuch diverſity depending on the difference of the ſpheres of the glaſſes. If the object cannot be conveniently inverted, there muſt be two large glaſſes of proper ſpheres, ſituate at ſuitable diſtances, eaſily found by trial, to make the repreſentations erect. This whole apparatus of object, glaſſes, &c. with the perſons employed in the management of them, are to be placed without the window or hole, ſo that they may not be perceived by the ſpectators in the room, and the operation itſelf will be eaſily performed. Phil. Tranſ. N° 38. p. 741, ſeq.

Camera *obſcura*, or *dark chamber*, in *Optics*, a machine, or apparatus, repreſenting an artificial eye; whereon the images of external objects, received through a double convex glaſs, are exhibited diſtinctly, and in their native colours, on a white matter placed within the machine, in the focus of the glaſs.

The firſt invention of the *camera obſcura* is aſcribed to Baptiſta Porta. See his Magia Naturalis, lib. xvii. cap. 6. firſt publiſhed at Frankfort, about the year 1589, or 1591. The firſt four books of this work were publiſhed at Antwerp in 1560.

Camera *obſcura, the uſe of the*, is manifold: it ſerves to very good purpoſes in explaining the nature of viſion; and hence it is that ſome call it *the artificial eye*. It affords very diverting ſpectacles; both by exhibiting images perfectly like their objects, and each cloathed in their native colours; and by expreſſing, at the ſame time, all their motions; which latter, no other art can imitate. By means of this inſtrument, eſpecially by the third contrivance under-mentioned, a perſon unacquainted with deſigning, will be able to delineate objects with the greateſt accuracy and juſtneſs; and another well verſed in painting, will find many things herein to perfect his art.

Camera *obſcura, the theory of the*, is contained in the following propoſition.

If an object AB (*Tab. Optics, fig.* 16.) radiate through a ſmall aperture C, upon a white wall oppoſite to it; and the place of radiation behind the aperture *b* C *a* be dark; the image of the object will be painted on the wall, in an inverted ſituation.

For, the aperture C being very ſmall, the rays iſſuing from the point B will fall on *b*; thoſe from the points A and D will fall on *a* and *d*: wherefore ſince the rays iſſuing from the ſeveral points are not confounded, they will by reflection exhibit its appearance on the wall. But ſince the rays AC and BC interſect each other in the aperture, and the rays from the loweſt points fall on the higheſt, the ſituation of the object will of neceſſity be inverted.

Hence, ſince the angles at D and *d* are right, and the vertical ones at C are equal; B and *b*, and A and *a*, will be alſo equal; conſequently, if the wall, where the object is delineated, be parallel to it, $ab : AB :: dC : DC$. That is, the height of the image will be to the height of the object, as the diſtance of the image from the aperture is to the diſtance of the object from the ſame.

Camera *obſcura, conſtruction of a*, wherein the images of external objects ſhall be repreſented diſtinctly, and in their genuine colours, either in an inverted, or an erect ſituation. 1. Darken a chamber, one of whoſe windows looks into a place ſet with various objects; leaving only a little aperture open in the one ſhutter. 2. In this aperture fit a lens, either plano-convex, or convex on both ſides; ſo as to be a portion of a large ſphere. 3. At a due diſtance, to be determined by experience, ſpread a paper, or white cloth, unleſs there be a white wall for the purpoſe; for on this the images of the deſired objects will be delineated invertedly. 4. If it be rather deſired to have them appear erect, it is done either by means of a concave lens placed between the centre and the focus of the firſt lens; or by receiving the image on a plane ſpeculum inclined to the horizon under an angle of 45°; or by means of two lenſes included in a draw-tube, in lieu of one.—Note, if the aperture doth not exceed the bigneſs of a pea, the objects will be repreſented, even though there be no lens at all uſed.

To render the images clear and diſtinct, it is neceſſary the objects be illumined by the ſun's light ſhining on the objects from the oppoſite quarter; ſo that, if the proſpect is weſtern, the phænomena will be beſt in the forenoon; if eaſtern, in the afternoon; if northern, when they are the brighteſt, about noon: a ſouthern aſpect is the leaſt eligible of any: they will be ſtill brighter, if the ſpectator firſt ſtay a quarter of an hour in the dark. Care muſt likewiſe be taken, that no light eſcape through any chinks; and that the wall be not too much illumined. Farther, the greater diſtance there is between the aperture and the wall, the larger and more diſtinct will the images be; but the rays becoming, thus, too much dilated, the brightneſs of the image is weakened, till at length it becomes inviſible.

Camera *obſcura, conſtruction of a portable.* 1. Provide a little cheſt, or box of dry wood (*Tab. Optics, fig.* 17.) of the figure of a parallelopiped; its breadth about ten inches, and its length two or more feet, according to the different magnitude of the diameter of the lenſes. 2. In the plane BD fit a ſliding tube EF with two lenſes; or, to ſet the image at a leſs diſtance from the tube, with three lenſes convex on both ſides; the diameter of the two outer, or forwarder, to be $\frac{6}{10}$ of a foot; that of the inner leſs, v. gr. $\frac{4}{10}$. 3. Within the cheſt, at a proper diſtance from the tube, ſet up an oiled paper, perpendicularly, GH, ſo as images thrown upon it may be ſeen through. Laſtly, in I make a round hole, ſo that a perſon may look conveniently through it with both eyes.

If then the tube be turned towards the objects (the lenſes being at their proper diſtance, to be determined by experiment), the objects will be delineated on the paper GH, erect as before.

If the machine be ſo contrived, that a looking-glaſs may paſs from G to C, the image will be reflected upon a rough glaſs plane placed horizontally at AB, with its unpoliſhed ſide upwards, and a copy of it may be ſketched out with a black-lead pencil. The horizontal glaſs plane reſts on two grooves in the ſides of the box, and this, as well as the looking-glaſs, may be lodged in a drawer at the bottom of the machine. This box is covered with an horizontal lid, under which are two wings, which open to right angles at each ſide of it, in order to ſhade the image upon the rough glaſs: oiled paper ſtrained in a frame is ſometimes uſed inſtead of the rough glaſs; a metalline ſpeculum is preferable to the looking-glaſs.

Camera, *another portable*, may be thus made. 1. In the middle of a ciſtula, or cheſt (*Tab. Optics, fig.* 18.) raiſe a little turret, either round or ſquare HI, open towards the object AB. 2. Behind the aperture, incline a little plain mirror *a b*, to an angle of 45°, which may reflect the rays, A *a* and B *b*, upon a lens convex on both ſides G, included in a tube GL; or the lens may be fixed in the aperture. 3. At the diſtance of the focus thereof, place a table covered with a white paper EF, to receive the image *αβ*. Laſtly, in NM make an oblong aperture to look through, and an opening may be made in the ſide of the box for the convenience of drawing.

This kind of *camera* may eaſily be converted into a *ſhew-box*, for viewing prints. Place the print at the bottom of the box, with its upper part inwards, where it is enlightened through the front, left open for this purpoſe, either by day or candle-light; and the print may be viewed through the aperture in HI: the lens uſed in this ſhew-box ſhould be large enough to admit both eyes to ſee the print or picture at once; and it would be convenient to have it moveable, in order to ſuit different eyes. See a variety of contrivances for this purpoſe deſcribed by Mr. Harris, in his Optics, b. ii. § 4. A conſiderable improvement in the *camera obſcura* has been lately made by Mr. Storer, for which he has obtained a patent: this inſtrument, which he calls a *delineator*, is formed of two double convex lenſes and a plane mirror, fitted into a proper box. One lens is placed cloſe to the plane mirror, and making with it an angle of 45°: the other lens is placed at right angles to the former, and is fixed in a moveable tube: if the moveable lens be directed towards the object to be viewed or copied, and moved nearer to or farther from the plane mirror, till the image is diſtinctly formed on a greyed glaſs, laid upon that ſurface of the upper lens which is next the eye, it will be found more ſharp and vivid than thoſe formed in the common *cameras*; becauſe the image is taken up ſo near the upper lens: by increaſing the diameter of the lenſes, and uſing thoſe of a ſhort focus, the effect will be much heightened.

CAMERARIA, in *Botany*, a genus of the *pentandria monogynia* claſs; ſo called by Plumier, in honour of Camerarius, a celebrated botaniſt of Nuremberg. Its characters are theſe: the flower is of one leaf, ſalver-ſhaped, and divided at the top into five acute ſegments; it hath five ſhort inflexed ſtamina. In the bottom of the tube are ſituated two roundiſh germina, which afterward become two long, taper, leafy capſules, filled with oblong cylindrical ſeeds. There are two ſpecies, which are natives of the Weſt Indies; and muſt therefore be kept in a bark ſtove, but in warm weather ſhould have plenty of freſh air.

CAMERARIUS, or *Chamberlain*, an officer who had the care of the DORMITORY in ancient religious houſes.

CAMERLINGO, or CAMARLINGO, the chamberlain of the pope's court, or the perſon who has the adminiſtration of the apoſtolical chamber.

The word imports as much as keeper of the chamber, or treaſurer; though the *camerlingo* has divers other juriſdictions which have no relation to the office of treaſurer. The name anciently denoted a *cubicularius*, or gentleman of the bed-chamber; but this is now expreſſed by *cameriere*.

The *camerlingo* is the moſt conſpicuous officer in the court of Rome; becauſe all the revenues of the holy ſee are managed by the chamber of which he is preſident.

This office was anciently performed by the archdeacon of Rome, a dignity which was ſuppreſſed by pope Gregory VII. as of too great power and intereſt; inſomuch that he could often controul the pontiff himſelf, and generally by his intrigues raiſed himſelf to the papacy. In his ſtead was placed a cardinal, under the title of *camerlingo*, who is aſſiſted in his function by twelve prelates called clerks of the chamber, *clerici di camera*.

The cardinal *camerlingo*, on the death of a pope, does not enter the conclave with the reſt, to aſſiſt at the election of a new one, but ſtays without, keeps poſſeſſion of the pope's apartment in the Vatican, and whenever he goes abroad is attended with the Swiſs guards, like the pope himſelf. He even coins money in his own name, and with his own arms; and, in fine, is a kind of vice-pope, governing the eccleſiaſtical ſtate during the vacancy of the holy ſee.

The cardinals have alſo their *camerlingo*, or treaſurer of their college, diſtinct from that of the pope: the former is elected every year, whereas the latter is for life. The perſon choſe to this office has the receipt of all the revenues belonging to the college, which he is to diſtribute at the end of the year in equal portions to the cardinals then at Rome; thoſe who are abſent having no ſhare therein after they have been ſix months from court.

CAMERONIANS, a ſect or party in Scotland, who ſeparated from the Preſbyterians in 1666, and continued to hold their religious aſſemblies in the fields.

The *Cameronians* took their denomination from Richard Cameron, a famous field-preacher, who, refuſing to accept the indulgence to tender conſciences, granted by king Charles II. as ſuch an acceptance ſeemed an acknowlegment of the king's ſupremacy, and that he had before a right to ſilence them, made a defection from his brethren, and even headed a rebellion, in which he was killed. His followers were never entirely reduced till the Revolution, when they voluntarily ſubmitted to king William.

The *Cameronians* adhered rigidly to the form of government eſtabliſhed in 1648.

CAMERONIANS, or CAMERONITES, is alſo the denomination of a party of Calviniſts in France, who aſſerted, that the cauſe of men doing good or evil proceeds from the knowlege which God infuſes into them; and that God does not move the will phyſically, but only morally, in virtue of its dependence on the judgment of the mind.

They had this name from John Cameron, a famous profeſſor, firſt at Glaſgow, where he was born in 1580, and afterwards at Bourdeaux, Sedan, and Saumur; at which laſt place he broached his new doctrine of grace and free-will, which was followed by Amyraut, Cappel, Bocart, Daille, and others of the moſt learned among the reformed miniſters, who judged Calvin's doctrine on theſe heads too harſh.

The *Cameronians* are a ſort of mitigated Calviniſts, and approach to the opinion of the ARMINIANS. See UNIVERSALISTS, *hypothetical*.

CAMES, a name given to the ſmall ſlender rods of caſt-lead, of which the glaziers make their turned lead.

Their lead being caſt into ſlender rods of twelve or fourteen inches long each, is called the *came*; ſometimes alſo they call each of theſe rods a *came*, which being afterwards drawn through their vice, makes their turned lead.

CAMILLI and CAMILLÆ, in *Antiquity*, boys and girls of ingenuous birth, who miniſtered in the ſacrifices of the gods; and eſpecially thoſe who attended the *flamen dialis*, or prieſt of Jupiter.

The word ſeems borrowed from the language of the ancient Hetrurians, where it ſignified miniſter, and was changed from *caſmillus*.

The Tuſcans alſo gave the appellation *Camillus* to Mercury, in quality of miniſter of the gods.

CAMINI, or *yerva* CAMINI, an American herb, the ſame with what is otherwiſe called PARAGUAY, or *yerva con-pallos*.

CAMIS, or KAMIS, in the *Japoneſe Theology*, denote deified ſouls of ancient heroes, who are ſuppoſed ſtill to intereſt themſelves in the welfare of the people over whom they anciently commanded.

The *camis* anſwer to the heroes in the ancient Greek and Roman theology, and are venerated like the ſaints in the modern Romiſh church.

Beſides the heroes or *camis* beatified by the conſent of antiquity, the *mikaddos*, or pontiffs, have deified many others, and continue ſtill to grant the apotheoſis to new worthies; ſo that they ſwarm with *camis*: the principal one is *Tenſio Dai Sin*, the common father of Japan, to whom are paid devotions and pilgrimages extraordinary.

CAMISADE, in the *Art of War*, an attack by ſurprize, in the night, or at the point of day; when the enemy are ſuppoſed in bed.

The word is ſaid to have taken its riſe from an attack of this kind; wherein, as a badge, or ſignal to know one another by, they bore a ſhift, in French called *chemiſe*, or *camiſe*, over their arms.

CAMISARDS, or CAMISARS, an appellation given by the French to the Calviniſts of the Cevennes, who formed a league, and took up arms, in their own defence, in the year 1688. The etymology of the name is diſputed; but it is moſt probably formed from *camiſade*. See the preceding article.

CAMLET. See CAMBLET.

CAMMOCK, in *Botany*. See REST-*harrow*.

CAMMOROS, in *Botany*, a name given by ſome of the old writers to the poiſonous plant called by the Romans *cicuta*, or hemlock.

Cacomoros was a common name among the Greeks for hemlock; and this *cammoros* is the ſame word, only ſpoke according to the Doric dialect.

As hemlock was a poiſonous plant, it ſoon became a cuſtom to call other poiſonous plants alſo by its name; and *cammoros* became hence a name for the mandrake, and ſome of the nightſhades, with ſome authors. Dioſcorides has called one kind of aconite or wolf's-bane by this name, and others have adapted it to other ſuch plants; but the more judicious have only given it as an additional epithet to theſe, expreſſing their being poiſonous, and have added the peculiar name of the plant before it.

Many of the moderns, and even ſome among the ancients, have erred greatly in confounding the *cammoros* with the *cammaros*, which is an inſect in figure reſembling the root of this aconite.

CAMOCLADIA, in *Botany*, a genus of the *triandria monogynia* claſs: the calyx and corolla are divided into three parts; the drupe is oblong, with a two-lobed nucleus.

CAMOMILE. See CHAMOMILE.

CAMP, a ſpacious poſt, or ſpot of ground, where an army reſts, intrenches itſelf, or plants a piquet-watch, to lodge ſecure either in tents, or barracks.

The *camp* is ſometimes covered by an intrenchment; ſometimes only by the advantages of its poſt: ſometimes it is incloſed with *chevaux de friſe* laid acroſs each other; the ordinary practice of the old prince of Orange.

The chief ſkill of a general lies in the art of encamping well: this the Romans were unacquainted with, till the war with Pyrrhus; from whoſe *camp* they learned to model their own. Till then, they knew not how to poſt themſelves to advantage, nor with any order in their *camp*.

An *encampment*, or *ſtanding camp*, is always to have the advantage of water, forage, or fuel; with the means of covering and retrenching itſelf.

Where the grounds are equally dry, thoſe *camps* are always moſt healthful which are pitched on the banks of large rivers; becauſe in the hot ſeaſon ſituations of this kind have a ſtream of freſh air from the water, ſerving to carry off the moiſt and putrid exhalations. On the other hand, next to marſhes, the worſt *encampments* are on low grounds cloſe beſet with trees: for then the air is not only moiſt and hurtful in itſelf, but, by ſtagnating, becomes more ſuſceptible of corruption. However, let the ſituation be ever ſo good, *camps* are frequently rendered infectious by the putrid effluvia of rotten ſtraw, and the privies of the army; more eſpecially if the bloody flux prevails, in which caſe the beſt method of preventing a general infection is to leave the ground with the privies, foul ſtraw, and other filth of the *camp* behind. This is to be frequently done, if conſiſtent with the military operations; but when theſe render it improper to change the ground often, the privies ſhould be made deeper than uſual, and once a day a thick layer of earth thrown into them till the pits are near full, and then they are to be well covered, and ſupplied by others. It may alſo be a proper caution, to order the pits to be made

made either in the front or rear, as the then ſtationary winds may beſt carry off their effluvia from the *camp*. Moreover, it will be neceſſary to change the ſtraw frequently, as being not only apt to rot, but to retain the infectious ſteams of the ſick. But if freſh ſtraw cannot be procured, more care muſt be taken in airing the tents as well as the old ſtraw.

An army always encamps fronting the enemy, and generally in two parallel lines, about five hundred yards diſtant; the horſe and dragoons on the wings, and the foot in the center. Sometimes three or four brigades encamp between the two lines, and are called the body of RESERVE. The artillery and bread waggons are in the rear of the two lines. See PARK *of Artillery*.

A regiment of foot, conſiſting of ten companies, is allowed, for encampment, one hundred and fifty yards in front, viz. five yards for pitching the tents of the two flank companies, twenty yards for four double rows of tents, thirty-five for the grand ſtreet, and ninety for four ſmaller ſtreets; but when the flank companies are detached, the eight battalion companies require an extent of an hundred and twenty yards, viz. five for two ſingle rows of tents, fifteen for three double rows, and an hundred for four ſtreets: the depth of the *camp* is two hundred and ninety yards: the quarter-GUARD tents are placed in a line with thoſe of the two center companies, fronting each other, and about the diſtance of an hundred yards from the front of the regiment: the officers tents front outwards towards the bell of arms; the bells of arms of the regiment front the poles of the ſerjeants tents; the colours are placed in the center of the grand ſtreet, in a line with the bells of arms: captains and ſubalterns pitch in the rear of their reſpective companies: the captain-lieutenant as captain in the rear of the colonel's company: the field officers front the centers of the two ſtreets on the right and left of the battalion: the colonel fronts the colours, at the diſtance of about an hundred yards: the ſtaff-officers front the ſtreets on the right and left of the grand ſtreet: the bat-men's tents front their horſes: the grand ſutler is placed in rear of the colonel at the diſtance of about fifty yards: the kitchens ſtand ſingly or in pairs behind their reſpective companies; and the front poles of the tents or huts of the petit ſuttlers are in a line with the centers of the kitchens; and the *rear*-GUARD's tents front outwards: when circumſtances admit, the neceſſaries ſhould be an hundred paces behind the rear-guard. If field pieces with artillery-men are attached to the battalions, the intervals are thirty yards. This diſpoſition of encampment is taken from the grand *camp* at Cox-Heath in 1778.

A ſquadron of horſe is allowed thirty paces for its *camp*, and thirty for an interval, or more, if the ground will admit of it. See *Standard*, and *Grand*-GUARD.

The order and contrivance of the Roman *camp* was admirable. Its figure was a ſquare, divided into two principal parts: in the upper part were the general's pavilion, or *prætorium*, and the tents of the chief officers; in the lower, thoſe of the inferior degree were placed.

On one ſide the *prætorium* ſtood the *queſtorium*, or apartment of the treaſurer of the army; and near this the *forum*, both for a market-place, and the aſſembling of councils. On the other ſide of the *prætorium* were lodged the *legati*; and below it, the tribunes had their quarters, oppoſite to their reſpective legions. Aſide of the tribunes were the *præfecti* of the foreign troops, overagainſt their reſpective wings; and behind theſe were the lodgments of the *evocati*, then thoſe of the *extraordinarii* and *ablecti equites*, which concluded the higher part of the *camp*.

Between the two partitions was a ſpot of ground called *principia*, for the altars and images of the gods, and probably alſo the chief enſigns.

The middle of the lower partition was aſſigned to the Roman horſe; next to whom were quartered the *triarii*, then the *principes*, and cloſe by them the *haſtati*; afterwards the foreign horſe, and, laſtly, the foreign foot.

They ſortified their *camp* with a ditch and parapet, which they termed *foſſa* and *vallum*: in the latter, ſome diſtinguiſh two parts, viz. the agger or earth, and the ſudes or wooden ſtakes driven in to ſecure it.

The *camps* were ſometimes ſurrounded with walls made of hewn ſtone; and the tents themſelves formed of the ſame matter.

The Roman *camps* ſometimes gave the origin to cities, which were formed of them, and often took their denomination from thoſe whoſe *camps* they had been. This chiefly happened when any army continued long in a place, eſpecially in the winter, where they were obliged to build many works, and fortify themſelves exactly. Thus the Caſtra Cornelia, a city of Africa, not far from Utica, was originally the *camp* of Cornelius Scipio. Liv. lib. xxix. cap. 35.

Antiquarians obſerve, that all the modern towns among us, whoſe names end in *ceſter*, or *cheſter*, were originally theſe *caſtra hyberna* of the Romans.

In the Grecian *camps*, the moſt valiant of the ſoldiers were placed at the extremities; the reſt in the middle, that the ſtronger might be as a guard to the weaker, and ſuſtain the firſt onſets. Thus Achilles and Ajax are poſted by Homer at the ends of the Grecian *camp* before Troy, as bulwarks on each ſide. Il. λ. ver. 806.

In *camps* for continuance, they erected altars to the gods, places for public aſſemblies, courts of juſtice, and the like.

According to Plutarch, the Lacedæmonians alone had no ſtage-players, buffoons, dancers, or ſongſtreſſes in their *camps*. Yet the Spartan lawgiver allowed his people greater liberty in the *camp* than in the city, to allure them to ſerve with more delight in the wars. Hence their exerciſes were more moderate, their fare leſs hard, and their actions leſs ſeverely noted when in the field than at home; ſo that they were the only people in the world to whom war gave repoſe. Plut. in Cleom. & in Lycurg.

The Spartan *camp* was of a circular figure, which was preſcribed by Lycurgus as the beſt fitted for defence, contrary to the Roman rule, whoſe *camps* were always quadrangular. All angular forms were rejected by Lycurgus, by reaſon the angles are neither fit for ſervice, nor defenſible, unleſs guarded by a river, mountain, wall, or other work.

The magnificence of the Turkiſh court appears more in the *camp* than in the ſeraglio: the tents of the great officers appear ſo many palaces, both for extent, ornament, and coſtly furniture; having all the accommodations both of city and country. Each grandee has two ſets of tents; one of which is advanced a conac, or day's journey, before the other; ſo that leaving one tent in the morning, they find another ready furniſhed in the evening.

In the front of the Turkiſh *camp* are quartered the janizaries, and other foot, whoſe tents encompaſs their aga. In the rear are the quarters of the ſpahis and other horſemen. The body of the *camp* is poſſeſſed by the ſtately tents or pavilions of the *vizier* or general, *reis effendi* or chancellor, *kabija* or ſteward, the *teſterdar baſcha* or lord treaſurer, and *kapiſler kabiaſee* or maſter of the ceremonies.

In the middle of theſe tents is a ſpacious field, wherein are erected a building for the *divan*, and a *haſna* or treaſury.

When the ground is marked out for a *camp*, all wait for the pitching of the tent *lailac*, the place where the courts of juſtice are held; it being the ſituation of this that is to regulate the diſpoſition of all the reſt.

CAMP, *city*, *caſtra urbana*, was a place near the city-wall, not far from the *via nomentana*, where the prætorian guards were encamped; whence it was alſo called the *prætorian camp*, *caſtra prætoria*, or *prætoriana*. The like we alſo read of at Jeruſalem, called by St. Luke abſolutely the *camp*, ϖαρεμβολη. By which we are doubtleſs to underſtand the *caſtra antonia*, which Joſephus tells us, was afterwards uſed as a caſtle.

CAMPS, *mooned*, *caſtra lunata*, thoſe made in figure of a half-moon.

CAMP, *naval*, *caſtra nautica*, or *navalia*, denoted a ſtation of ſhips.

CAMP, *ſtanding*, *caſtra ſtativa*, was that wherein they deſigned to continue longer in a place; and therefore more pains was taken to fortify and regulate it.

The Roman *camps*, in a march, were alſo called in the middle age *manſiones*.

CAMP, *ſummer*, *caſtra æſtiva*, among the Romans, was ordinarily light and moveable; ſo that they might be ſet up or taken down, and removed in a night. In which caſe it was alſo called ſimply *caſtra*.

CAMP, *winter*, *caſtra hyberna*, or winter quarters, were uſually taken up in ſome city or town; or elſe ſo contrived as to make almoſt a town of themſelves.

CAMPS, *tertiated*, *caſtra tertiata*, thoſe which were a third part longer than broad, which Hyginus repreſents as the Roman model. *Caſtra in quantum fieri potuerit tertiata eſſe debebant—ut puta in longum duo millia quadringenti, in latum mille ſexcenti pedes.*

CAMP, *flying*, is a ſtrong body of horſe or dragoons, to which are ſometimes added foot; commanded uſually by a lieutenant-general.

This always keeps the field, making frequent motions both to cover the garriſons in poſſeſſion, and to inſult and keep the adverſary in continual alarm, and oblige him to make diverſions.

CAMP is alſo uſed among the Siameſe and Eaſt Indians, for a quarter of a town aſſigned to foreigners, wherein to carry on their commerce.

In theſe *camps*, each nation forms itſelf a kind of city apart, in which their ſtore-houſes and ſhops are, and the factors and their families reſide.

The Europeans at Siam, and in moſt other cities of the Eaſt, are exempted from this reſtraint, and allowed to live in the cities or ſuburbs, as they find them moſt commodious.

CAMP *colour-men*, are ſoldiers appointed to attend and aſſiſt the quarter-maſter general, in marking out, and keeping the *camp* clean, receiving and diſtributing proviſions, &c.

The *camp colour-men*, are drawn a man out of a company, and are exempt from all other duty during the campaign: each carries either a ſpade or a hatchet.

CAMP *diſeaſes*, *Morbi caſtrenſes*, thoſe chiefly prevalent in armies. Under *camp*, or *field diſeaſes*, come the plague, malignant fever, ſcurvy, flux, &c. Willius, phyſician to the king of Denmark, has a treatiſe on *camp diſeaſes*. See DISEASE, and SOLDIER.

The *camp diſeaſe*, *morbus caſtrenſis*, abſolutely ſo called, is a malignant fever. Dudley Digges died of the *camp* DISEASE, which raged in the garriſon at Oxford, in 1643. On which Ed. Greaves, phyſician to king Charles II. has a treatiſe expreſs under the title of Morbus Epidemicus, or the New Diſeaſe.

The *camp fever* is the ſame with what is otherwiſe called the Hungarian FEVER, and bears a near affinity to the petechial fever. See BILIOUS *fever*.

CAMP *flux*, a name frequently given to the dyſentery; not as if it were of a different kind in armies, but becauſe it is more uſual there than elſewhere.

CAMP *duty*, in its utmoſt extent, includes every part of the ſervice performed by the troops during the campaign. But in a more particular ſenſe, denotes the guards ordinary and extraordinary kept in *camps*.

A great part of the *camp duty* is performed in the ſame manner as that of a garriſon.

CAMP *fight*, or KAMP *fight*, in *Law Writers*, denotes the trial of a cauſe by duel, or a legal combat of two champions in the field, for deciſion of ſome controverſy.

In the trial by *camp fight*, the accuſer was, with the peril of his own body, to prove the accuſed guilty; and by offering him his glove, to challenge him to this trial, which the other muſt either accept of, or acknowledge himſelf guilty of the crime whereof he was accuſed.

If it were a crime deſerving death, the *camp fight* was for life and death: if the offence deſerved only impriſonment, the *camp fight* was accompliſhed when one combatant had ſubdued the other, ſo as either to make him yield, or take him priſoner. The accuſed had liberty to chuſe another to fight in his ſtead, but the accuſer was obliged to perform it in his own perſon, and with equality of weapons.

No women were permitted to be ſpectators, nor men under the age of thirteen. The prieſt and the people who looked on, were engaged ſilently in prayer, that the victory might fall to him who had right. None might cry, ſhriek, or give the leaſt ſign; which in ſome places was executed with ſo much ſtrictneſs, that the executioner ſtood ready with an axe to cut off the right hand or foot of the party that ſhould offend herein.

He that, being wounded, yielded himſelf, was at the other's mercy either to be killed or ſuffered to live. But if life were granted him, he was declared infamous by the judge, and diſabled from ever bearing arms, or riding on horſeback. Veſteg. Reſt. Dec. Intell. cap. iii. p. 51.

CAMP *hoſpital*. See HOSPITAL.

CAMP *law*, a method of deciding controverſies by duel or CAMP *fight*.

CAMPAIGN, a military term, ſignifying the ſpace of time during which armies are maintained, yearly, in the field.

The Germans begin their *campaign* very late; uſually waiting for harveſt: the French are always early, and begin ſometimes in winter, by which they have reaped great advantages.

The beginning of every *campaign* is conſiderably more unhealthy than if the men were to remain in quarters. After the firſt fortnight or three weeks encampment, the ſickneſs decreaſes daily; the moſt infirm being by that time in the hoſpitals, the reſt more hardened, and the weather growing daily warmer. This healthy ſtate continues throughout the ſummer, unleſs the men get wet cloaths or wet beds; in which caſe a greater or leſſer degree of the dyſentery will appear, in proportion to the preceding heats. But the moſt ſickly part of the *campaign* begins about the middle or end of Auguſt, whilſt the days are ſtill hot, but the nights cool and damp, with fogs and dews: then, if not ſooner, the dyſentery prevails; and though its violence is over by the beginning of October, yet the remitting fever gaining ground, continues throughout the reſt of the *campaign*, and never entirely ceaſes even in winter-quarters till the froſts begin.

At the beginning of a *campaign* the ſickneſs is ſo uniform, that the number may be nearly predicted; but, for the reſt of the ſeaſon, as the diſeaſes are then of a contagious nature, and depend ſo much upon the heats of ſummer, it is impoſſible to foreſee how many may fall ſick from the beginning to the end of autumn. It is alſo obſerved, that the laſt fortnight of a *campaign*, if protracted till the beginning of November, is attended with more ſickneſs than the firſt two months of the encampment: ſo that it is better to take the field a fortnight ſooner, in order to return into winter-quarters ſo much the earlier.

As to winter-expeditions, though ſevere in appearance, they are attended with little ſickneſs, if the men have ſtrong ſhoes, quarters, fuel, and proviſions.

Long marches in ſummer are not without danger, unleſs made in the night, or ſo early in the morning as to be over before the heat of the day.

CAMPANA *floræ*, in *Botany*, a name given by Helwing, and ſome other of the German authors, to the plant we call *pulſatilla*, or the *paſque flower*. It was named *campana floræ*, or Flora's bell, by Helwing, becauſe of its being the ſignal of the approach of ſpring. In the Linnæan ſyſtem, this is a ſpecies of the ANEMONE. Its characters, according to Miller, are as follow: the flower hath a leafy involucrum, ending in many points; it hath two orders of petals, three in each, and a great number of ſlender ſtamina, about half the length of the petals, terminated by erect twin ſummits; and a great number of germina collected in a head. The germina afterward become ſo many ſeeds, having long hairy tails ſitting upon the oblong receptacle. There are four ſpecies.

We generally find the *pulſatilla* on dry and barren places, as ſandy hills, ſterile downs, and the like; but in Pruſſia it is moſt frequent in woods, and among pines and firs, and often is found in a looſe, ſpungy, and wet ſoil. There is in Pruſſia, a very remarkable ſpecies of it, which has a white flower; the leaves are of the jagged kind, and reſemble thoſe of the anemone; and the back part of the petals is tinged with a faint blue.

The whole genus of the *pulſatillas*, are of an acrid and cauſtic quality, approaching to that of the ranunculus; and, if they are given internally, without proper correctors, are poiſonous; but like the colchicum root, and ſome other of thoſe cauſtic plants, when given with proper mixtures, and in proper doſes, it proves a very valuable alexipharmic: externally it is of great ſervice in cleanſing foul ulcers.

CAMPANACEIA, in *Botany*, an order of plants in the Fragmenta Methodi Naturalis of Linnæus.

CAMPANIAN *diſeaſe*, *Morbus campanus*, in *Antiquity*, is variouſly explained by modern writers. Some will have it only a ſort of tubercles, or warts on the face, to which the people of Campania were liable. Others maintain it to be the venereal diſeaſe; and hence draw an argument againſt the ſuppoſed novelty of that malady. Dacier will have it to be ſomething ſtill worſe; the Campanians, it ſeems, were addicted to a ſort of commerce too abominable to be named, *ore morigeri erant*. Whence it is, Plautus repreſents them as more pathic or paſſive than the Syrians themſelves. Hor. Sat. v. lib. i. ver. 62. cum not. Dacier.

CAMPANIFORMIS *flos*, in *Botany*, the term uſed for a flower reſembling a bell in ſhape, and making the character of one of Mr. Tournefort's genuſes. See *Tab.* I. *of Botany, Claſs* 1. See BOTANY.

CAMPARCIUM. See CHAMPART.

CAMPANOLOGIA, from *campana*, *bell*, and λογος, *ſcience*, the art or ſcience of ringing bells.

CAMPANULA, in *Botany*, the bell-flower, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower is of one leaf, ſhaped like a bell, ſpreading at the baſe. In the bottom is ſituated a five-cornered nectarium, which is joined to the top of the receptacle; it hath five ſhort ſtamina. Below the receptacle is ſituated the angular germen; the empalement afterward becomes a roundiſh angular capſule, which in ſome ſpecies have three, in others five cells; each having a hole toward the top, through which the ſeeds are ſcattered when ripe.

The different ſorts of this plant make beautiful ornaments for chimnies, and other places, being very tall, very much branched, and full of large and beautiful flowers, which retain their beauty a long time.

They are propagated by ſowing their ſeeds in March, in a bed of light and undunged ſoil, or by parting the roots; but the latter method, being the more expeditious, is moſt practiſed. Almoſt every ſlip, taken from the roots in September, and in March, will thrive; but the plants raiſed from ſeeds are ſeen to produce the fineſt flowers: they are very tedious, however, this way, being three or four years before they flower. They ſhould, therefore, be tranſplanted the September after their ſowing into nurſery-beds, which ſhould be of a light ſoil and not wet; they ſhould be ſet here at ſix inches ſquare; and, in froſty weather, the whole beds ſhould be covered with mats, which will greatly ſtrengthen the roots. In the September of the third year, they ſhould be removed into pots, and ſheltered, during the ſevere weather, in glaſs frames; or elſe in wet weather, the pots muſt be turned ſideways; and in very cold, they muſt be ſet under a warm wall, and covered with haum, and ſurrounded with a little dung on the outſides of the pots, to preſerve the roots from the froſts. Theſe plants will often ſucceed without this care, but with it they produce their flowers in ſuch beauty and plenty, as amply to reward it.

Campanula *lychnidea*. See **Convolvulus**.

CAMPANULATA *corolla*, in *Botany*, denotes bell-ſhaped flowers.

CAMPEACHY-WOOD, a kind of wood brought from Yucatan, a province in America, and uſed in dying.

The heart of the tree, which alone is uſed, is at firſt red; after it has been felled ſome time, it becomes black; and, if ſteeped in water, gives a black tincture, which may be uſed in writing.

It is very heavy, and burns admirably, and gives a clear laſting flame. See **Logwood**.

Campeachy-wood, ſeems to be the ſame with what is otherwiſe called **brasil**. It takes the former denomination from the city Campeachy, about which it grows in greateſt plenty.

CAMPESTRE, in *Antiquity*, a ſort of cover for the privities, worn by the Roman ſoldiers in their field exerciſes; being girt under the navel, and hanging down to the knees.

The name is ſuppoſed to be formed from *campus*, the field or place where the Roman ſoldiers performed their exerciſes.

CAMPHOR, or **Camphire**, a vegetable, concrete, tranſparent, friable, inflammable, odoriferous, volatile ſubſtance, of an acrid, aromatic taſte, eaſily ſoluble in ſpirit of wine: procured from a kind of laurel called *laurus camphorifera*, frequent in the iſlands of Borneo, and Japan, and the neighbouring mountainous coaſts of India; reſembling a walnut-tree. See **Bay**-*tree*.

The word comes from the Arabic *capur*, or *caphur*; which ſignify the ſame thing.

All the parts of the tree are impregnated with *camphor*; but it is principally extracted from the roots by diſtillation. Neumann ſays, that it is obtained by diſtilling the roots, and ſometimes the wood, and leaves, with water, in large iron pots, fitted with earthen heads ſtuffed with ſtraw: the *camphor* concretes among the ſtraw in its cryſtalline form; this is called *rough camphor*, and looks like Eaſt Indian ſaltpetre, or common bay-ſalt. In this ſtate it is imported into Europe, in caniſters; and the Dutch take care that it comes all refined by ſublimation, and prepared to our hands.

Camphor, *manner of refining crude*.—It is ſublimed in low flat-bottomed glaſſes placed in ſand: the *camphor* concretes, in the upper part of the belly of the glaſs, into a ſolid cake, which, after the veſſel has been broke, is pared with a knife, and is the refined *camphor* of the ſhops. *Rough camphor* may be commodiouſly and effectually purified by diſſolving it in rectified ſpirit of wine: the ſpirit is recoverable by diſtillation, and the remaining *camphor* may be melted into a cake in the bottom of the veſſel, or of another glaſs. Neumann's Chemical Works, by Lewis, p. 319, 320.

Camphor is neither a ſalt nor a gum, ſince it is not ſoluble in water; nor is it a reſin, ſince it does not yield by diſtillation either a phlegm or oil, or an acid ſpirit, as all reſins do; much leſs does it leave a *caput mortuum* like thoſe bodies. It totally vaniſhes and evaporates in the open air; in hot water, it firſt runs and then evaporates; and in ſpirit of wine, or ſpirit of nitre, it wholly diſſolves. It is no oil, becauſe it is not unctuous to the touch, but is a firm, dry, cryſtallized matter; in its evaporation in the air, it leaves no remainder; and in cloſe veſſels over the fire, it riſes entire without diſtillation, and appears at the top of the veſſel in a dry form. It is ſubject to no ſeparation of parts, and takes no empyreumatic ſmell; in mixing with concentrated ſpirit of nitre, it makes no ebullition, but placidly reſolves into a ſort of oil. This is extremely different from the effect of all vegetable oils, which are known to efferveſce violently with this acid, and ſome even to take fire, and are finally converted by it into a dry reſin. When broken, it appears bright, ſmooth, and ſaponaceous, but not unctuous to the touch; it conſiſts of a copious inflammable principle, a ſmall portion of water, and yet leſs of a very fine and ſubtile earth, mixt intimately together. Act. Eruditor. 1727. p. 524.

The common ways of keeping it from evaporation, are by burying it in linſeed, millet, pepper, or the like; but the rational way is, by keeping it from the external air; this is beſt done by wrapping it up in a paper or bladder, and putting it then into a leaden box, or an earthen, or glaſs veſſel ſet in a cool place. Or it may be preſerved in large quantities, only by papering it up carefully, and putting it in wooden veſſels in a cellar. Notwithſtanding that it is a body ſo nicely and intimately combined, in its own texture, yet it is ready at all times for medicinal uſe; and as it is not eaſy to give it any preparation, ſo it needs none. In its natural ſtate, it readily mixes with all oils and inflammable ſpirits, and this without fear of evaporation; it has no change of colour in ſolution with ſpirit of nitre, but, when diſſolved with oil of vitriol, it becomes brown, and finally red; and if water be added to either of the ſolutions, the *camphor* is precipitated in its proper and ſolid form: it may, however, be abſolutely diſſolved, by long maceration, and frequent drawing over by the retort, with either of theſe menſtruums.

Camphor has various uſes: as in fire-works; in making varniſh, which proves an excellent preſervative of animal and vegetable bodies, as it reſiſts worms and other inſects. The ſubſtance of it alſo laid among clothes, will preſerve them from moths. In the courts of the eaſtern princes, it is burnt, together with wax, to illumine the night. It is exceedingly inflammable, ſo as to burn and preſerve its flame in water; and in burning it conſumes wholly, leaving no *ſcoria* behind: but its principal uſe is in medicine.

Camphor is uſed in medicine as ſedative and antiſeptic; it ſucceeds well in many convulſions and other nervous affections. It is ſucceſsfully uſed as a powerful antiſeptic. The two medicinal preparations of *camphor*, in uſe now in the ſhops, are the ſolution of it in wine and in oil; the one called camphorated ſpirit of wine, the other oil of *camphor*.

The preparation of the firſt is by bare mixture, and requires no diſtillation, whether ſalt of tartar be or be not added to it.

The oil of *camphor* is either prepared by ſolution, or ſublimation; the firſt is, either by diſſolving *camphor* in the nitrous acid, or in ſome expreſſed vegetable oil, or by ſeparating the oil which ſwims upon the ſurface of a ſtrong ſolution of *camphor* in ſpirit of wine. To prepare the other, one part of *camphor* is to be mixed with three parts of bole armenic, and put over the fire in a retort. The ſublimed *camphor* is to be again mixed with freſh bole, and this ſo often repeated till no more *camphor* is found to be ſublimed in the proceſs; from this, the liquid matter, ſeparated by diſtillation, is to be ſeparated, and the oil preſerved.

Camphor may alſo be diſſolved in oil of turpentine, or mixed with Venice ſoap, and thus diſtilled, and, finally, rectified. All theſe oils are ſtrongly empyreumatic, and therefore the *camphor*, in its natural ſtate, is greatly preferable to them all. *Camphor* water, and the flowers of *camphor*, are alſo greatly inferior to the crude ſubſtance. When *camphor* is to be mixed with powders, it ſhould be gently moiſtened, in the rubbing, with ſpirit of wine; when it is to be mixed with aqueous menſtruums, it ſhould be rubbed with blanched almonds, or incorporated with the yolk of an egg.

Dr. Shaw recommends a mixture of nitre and *camphor*, as a quieter, inſtead of opium.

The learned Fr. Hoffman extols the virtues of *camphor* given internally, as a moſt excellent diſcutient, reſiſting putrefaction, and as the chief alexipharmic. He adviſes it in malignant fevers, and in the venereal diſeaſe: in inflammations he adds nitre. See his Diſſertation, *De Camphoræ uſu interno ſecuriſſimo et præſtantiſſimo.*

Camphor is the moſt efficacious diaphoretic known; its great ſubtilty diffuſing itſelf through the ſubſtance of the parts, almoſt as ſoon as the warmth of the ſtomach has ſet it in motion. It is uſed alſo in caries of the bones, as a detergent in wounds, to reſiſt gangrenes, &c. When mixed with the ſubtile parts of cantharides, it prevents their injuring the bladder; its exquiſite fineneſs enabling it to follow them into all the meanders of the veſſels, and to ſheath their aſperities.

Dr. Quincy obſerves, that *camphor* begins to be mixed, and that to good purpoſe, with mercurials, to guard againſt their ſtimulating properties, and to ſend them into the fineſt paſſages, to operate by fuſion, and the force of impuſe. For not only *mercurius dulcis*, or calomel, may be hereby reſtrained from manifeſt operation in the glands about the mouth; but alſo the mineral turbith, which of itſelf acts very ſtrongly by ſtool and vomit, when mixed with *camphor*, will be much leſs felt in thoſe reſpects; and will go into the fartheſt circuit of motion, and promote the cutaneous diſcharge, in a more efficacious manner than any medicine of leſs ſpecific gravity.

M. Lemery endeavoured at a chemical analyſis of *camphor*, but in vain; either its parts were too fine and volatile to be carried to any greater degree of purity or ſubtilty by any chemical proceſs; or it was owing to the cloſe union of its principles, which led him to ſuſpect that it muſt be an oil, and a volatile ſalt, that they could not be ſeparated.

He found, that *camphor* was heavier than ſpirit of wine, of the ſame ſpecific gravity with oil of turpentine, and lighter than oil of olives. Mem. Acad. Paris, 1708.

Camphor, he obſerves, does not diſſolve in aqueous or phlegmatic liquors, but in ſulphureous ones it does; not in alcalines, nor even in ſome acids; but in ſpirit of nitre it diſſolves perfectly, and without commotion. This diſſolution is ordinarily called OIL *of camphor*; and it is to this the medicinal virtue of *camphor* in wounds, gangrenes, and caries, is aſcribed. It is not taken internally, for fear of its ſharpneſs and corroſiveneſs; though M. Lemery has found good effects from two or three drops by the mouth, in obſtructions and fits of the mother: in theſe caſes, indeed, he generally mixed it with as much oil of amber.

There is a common verſe to the diſcredit of *camphor*, as if its ſmell emaſculated:

Camphora *per nares caſtrat odore mares.*

But the proverb, according to Scaliger and Tulpius, is falſe.

Camphor, being boiled in *aqua vitæ*, in a cloſe place, till the whole be evaporated; if a lighted torch or candle be introduced, the air in the whole place will immediately catch fire, and appear in a flame, without doing any damage to the place or the ſpectators.

It has been found in Ceylon, that the root of the tree which yields cinnamon, yields, by inciſion, a matter that has a ſtrong ſmell of *camphor*, and many of its virtues; whence naturaliſts, by miſtake, have ſuppoſed that all *camphor* came from that tree.

Modern chemiſts have diſcovered, that many aromatic plants, as thyme, roſemary, ſage, and almoſt all the labiated kind, yield a ſubſtance of the nature of *camphor*, which may be extracted, although in ſmall quantities.

What is called *artificial camphor*, is prepared with gum ſandarach, and white vinegar diſtilled, kept twenty days in horſe-dung, and afterwards expoſed a month to the ſun to dry; at the end of which, the *camphor* is found, in form of the cruſt of a white loaf.—This is alſo called *juniper gum*, *white varniſh*, and *maſtic*.

CAMPHOR-*julep*. See JULEP.

CAMPHORA, the *camphor-tree*, is a ſpecies of the *laurus* or BAY, which grows naturally in Japan, and ſeveral parts of India. It is a tree of middling ſtature, with oval, ſpear-ſhaped leaves, having three longitudinal veins which unite above the baſe. Theſe are male and female on different trees. The *camphor*-tree requires no artificial heat in winter, but will thrive very well in a warm, dry green-houſe.

CAMPHORATA, a medicinal plant, the *camphoroſma* of Linnæus; called, in Engliſh, ſtinking ground-pine; reputed cephalic and nervine; though little uſed in the modern practice.

It takes the name from its ſmell, which bears ſome reſemblance to that of camphor.

The *camphorata Monſpelienſis*, growing by the road-ſides in Languedoc, and eſpecially about Montpelier, has been lately produced as a ſpecific for the dropſy and aſthma. M. Burlet has given its hiſtory, analyſis, and an account of its virtues. A. D. S. an. 1703. p. 65. H. 53. For its characters ſee CAMPHOROSMA.

CAMPHORATED, denotes a thing tinctured, or impregnated with CAMPHOR.

Spirit of wine *camphorated*, is a remedy frequently applied externally in caſes of inflammations, &c.

CAMPHOROSMA, in *Botany*, a genus of the *tetrandria monogynia* claſs: the calyx is pitcher-ſhaped and indented; there is no corolla, and the capſule contains a ſingle ſeed. See CAMPHORATA.

CAMPICURSIO, in the *Ancient Military Art*, a march of armed men for ſeveral miles, from and back again to the camp, to inſtruct them in the military pace. This exerciſe was nearly akin to the *decurſio*, from which it only differed, in that the latter was performed by horſemen, the former alſo by foot.

CAMPIDOCTORES, or CAMPIDUCTORES, in the *Roman Army*, were officers who inſtructed the ſoldiery in the diſcipline and exerciſes of war, and the art of handling their weapons to advantage. Theſe are alſo ſometimes called *campigeni*, and *armidoctores*.

CAMPIDUCTOR, in *Middle Age Writers*, ſignifies the leader or commander of an army, or party.

CAMPION, *Lychnis*, in *Botany*, a genus of the *decandria pentagynia* claſs. Its characters are theſe: the flower has five petals, whoſe tails are the length of the empalement. It has ten ſtamina, which are alternately ranged, and faſtened to the tails of the petals. In the centre is ſituated an almoſt oval germen: the empalement afterward becomes an oval capſule with one cell, opening with five valves, filled with roundiſh ſeeds. There are eight ſpecies of this plant, which, for the beauty of their flowers, are cultivated in our gardens; they are very hardy plants, and are eaſily propagated either by parting the roots, or by the ſeed. See *Tab. of Botany*, *Claſs* 8.

The roots ſhould be parted in the latter end of Auguſt, or beginning of September, and planted in a light dry ſoil.

If they are to be raiſed from ſeed, they ſhould be ſown in March upon a bed of light freſh earth, and in May the young plants ſhould be removed into another bed of the like earth, at about ſix inches diſtance from each other, and watered and ſhaded till they have taken root; after which they will require no farther care, but to be kept clear from weeds; and at the end of the September following they may be removed, for the laſt time, into the borders where they are to ſtand, and they will flower in the June and July following; when, if their ſeeds are ſuffered to ripen, they will ſow themſelves, and come up without any further trouble.

CAMPION, *viſcous*, or *ſilene*, in *Botany*, a genus of the *decandria trigynia* claſs. Its characters are theſe: the flower has a permanent empalement, which is indented at the top in five parts. It has five plain obtuſe petals, indented at their points, and a nectarium compounded of two ſmall indentures in the neck of each petal, conſtituting a crown to the chaps; and ten awl-ſhaped ſtamina, inſerted alternately to the tail of the petals above each other, terminated by oblong ſummits. In the centre is ſituated a cylindrical germen, ſupporting three ſtyles, which are longer than the ſtamina, crowned by ſtigmas that are reflexed againſt the ſun: the germen afterward becomes a cloſe cylindrical capſule with three cells, opening at the top five ways, encloſing many kidney-ſhaped ſeeds. There are fourteen ſpecies, which are cultivated in gardens, beſide others which are diſregarded.

CAMPION, *wild*. See AGROSTEMA.

CAMPIPARS. See CHAMPART.

CAMPITÆ, in *Church Hiſtory*, an appellation given to the DONATISTS, on account of their aſſembling in the fields for want of churches.

For a ſimilar reaſon, they were alſo denominated *Montenſes* and *Rupitani*.

CAMPIUSA, in *Botany*, a name given by Myrepſus and others to the plant we call SCABIOUS.

CAMPOIDES, in *Botany*, a name given by Rivinus to a plant compriſed by Linnæus under the genus of *ſcorpiurus*, the *ſerpioides* of other authors. See CATERPILLARS.

CAMPUS, in *Antiquity*, a field or vacant plain in a city not built on, left vaeant either on account of ſhews, combats, exerciſes, or other uſes of the citizens.

CAMPUS *Maii*, in *Ancient Cuſtoms*, an anniverſary aſſembly of our anceſtors, held on May-day; where they confederated together for defence of the kingdom againſt all its enemies.

CAMPUS *Martius*, a large plain field in the ſuburbs of ancient Rome, lying between the Quirinal and Capitoline mounts, and the Tyber; thus called becauſe conſecrated to the god Mars, and ſet apart for military ſports and exerciſes, to which the Roman youth were trained; as the uſe and handling of arms, and all manner of feats of activity.

Here the races were run, either with chariots or ſingle horſes; here alſo ſtood the *villa publica*, or palace for the reception of ambaſſadors, who were not permitted to enter the city. Many of the public *comitia* were held in the ſame field, part of which, for that purpoſe, was cantoned out. The place was alſo nobly decorated with ſtatues, arches, columns, porticos, and the like ſtructures.

CAMPUS *Martius* is alſo uſed in a more general ſenſe by *Middle Age Writers*, for any large plain open place near a great city, wherein the inhabitants were trained to the exerciſe of arms. Of ſuch we find mention at Verona, Triers, Dornic, and even Conſtantinople.

Among the French, *campus martius* was an appellation given to the yearly aſſemblies of the people called by the kings, either for enacting new laws, or deliberating on the great affairs of the nation. They were thus denominated, either becauſe uſually held in the month of March, or in imitation of the *campus martius* of the Romans, which was allotted for the like uſe. In after-times, they were called *campus majus*, and, by corruption, *campus madius*, and *magius*, becauſe the time of holding them was altered by Pepin to the month of May.

Under the third line of kings, their aſſemblies took the denomination of ſtates general, *etats generaux*.

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A new *canal* for conveying the waters of the Nile from Æthiopia into the Red ſea without paſſing into Ægypt, was projected by Albuquerque, viceroy of India, for the Portugueſe, in order to render Ægypt barren and unprofitable to the Turks.

M. Gaudereau attributes the frequency of the plague in Ægypt, of late days, to the decay, or ſtopping up of theſe *canals*; which happened upon the Turks becoming maſters of the country.

In China, there is ſcarce a town or village but has the advantage either of an arm of the ſea, a navigable river, or a *canal*, by which means navigation is rendered ſo common, that there are almoſt as many people on the water as the land.

The *great canal of China*, is one of the wonders of art, made about 800 years ago. It runs from north to ſouth quite croſs the empire; beginning at the city Canton. By it all kinds of foreign merchandize entered at that city are carried directly to Pekin, a diſtance of 825 miles. Its breadth and depth are ſufficient to carry barks of conſiderable burden, which are managed by ſails and maſts, as well as towed by hand. On this *canal* the emperor is ſaid to employ 10,000 ſhips, abating one, for a reaſon very peculiar. It paſſes through, or by, 41 large cities; there are in it 75 vaſt locks, and ſluices to keep up the water, and paſs the barks and ſhips where the ground will not admit of ſufficient depth of channel, beſides ſeveral thouſand draw and other bridges.

F. Magaillane aſſures us, there is paſſage from one end of China to the other, the ſpace of 600 French leagues, always either by *canals* or rivers, except a ſingle day's journey by land, neceſſary to croſs a mountain; an advantage which this Jeſuit, who made the voyage himſelf, obſerves is not to be found in any other ſtate of the univerſe. Nouv. Relat. de Chine, chap. 8.

The *canal of Languedoc*, called alſo the *canal of the two ſeas*, as ſerving to join the Mediterranean and Cantabrian ſeas, was firſt propoſed under Francis I. but begun and finiſhed under Louis XIV. By means of it, a ready communication is made between the two fertile provinces of Guyenne and Languedoc. The *canal* is 64 leagues long, extended from Narbonne to Tholouſe, and receiving ſeveral little rivers in the way, ſupported at proper intervals with 104 ſluices. In ſome places it is conveyed over aquæducts and bridges of incredible height, built on purpoſe, which give paſſage underneath to other rivers. What is moſt extraordinary is, that in ſome places, for a mile together, a paſſage is dug for it through the rock. The expence was thirteen millions of livres, of which the king contributed near ſeven millions; the province of Languedoc the reſt.

The *canal of Briere*, called alſo *canal of Burgundy*, begun under Henry IV. and finiſhed in the reign of Louis XIII. makes a communication between the Loire and the Seine, and ſo to Paris; to the great advantage of all this part of France, and even to Burgundy itſelf. This *canal* has 42 ſluices.

The *canal of Orleans* was begun in 1675, for eſtabliſhing a communication between the Seine and the Loire. It is conſiderably ſhorter than that of Briere, having only 20 ſluices.

The *canal of Bourbon* was but lately undertaken; its deſign being to make a communication from the river Oiſe to Paris.

The *new canal of the lake Ladoga*, cut from Volhowa to the Neva, whereby a communication is made between the Baltic, or rather ocean, and the Caſpian ſea, was begun by the czar Peter I. in 1719: by means of it, the Engliſh and Dutch merchandize are eaſily conveyed into Perſia, without being obliged to double the Cape of Good Hope. There was a former *canal* of communication between the Ladoga lake and the river Wolga, whereby timber and other goods had been brought from Perſia to Peterſburg; but the navigation of it was ſo dangerous, that a new one was undertaken.

In England, that ancient *canal* from the river Nyne, a little below Peterborough, to the river Witham, three miles below Lincoln; called by the modern inhabitants *Caerdike*; may be ranked among the monuments of the Roman grandeur, though it is now moſt of it filled up. It was 40 miles long; and ſo far as appears from the ruins, muſt have been very broad and deep; ſome authors take it for a Daniſh work. Morton will have it made under the emperor Domitian. Urns and medals have been diſcovered on the banks of this *canal*, which ſeem to confirm that opinion. Hiſt. Northampton. ch. 10.

The *canal* for ſupplying London with water by means of the New River, was undertaken and begun by Mr. (afterwards Sir Hugh) Middleton, in the year 1608, and finiſhed in five years. This *canal* commences near Ware, in Hertfordſhire, and takes a courſe of 60 miles before it reaches the ciſtern at Iſlington, which ſupplies the ſeveral water-pipes that convey it to the city and parts adjacent. In ſome places it is 30 feet deep, and in others it is conveyed over a valley between two hills, by means of a trough ſupported by wooden arches, and riſing above 23 feet in height. See *New River* COMPANY.

The *Duke of Bridgewater's canal*, projected and executed under the direction of Mr. Brindley, was begun ſoon after he had obtained an act for this purpoſe in 1759. It was firſt deſigned for conveying coals from a mine on his grace's eſtate to Mancheſter, but has ſince been applied to many other uſeful purpoſes of inland navigation. This *canal* begins at a place called Worſley-mill, about ſeven miles from Mancheſter, where the duke has cut a baſon capable of holding all his boats, and a great body of water which ſerves as a reſervoir or head to his navigation. The *canal* runs through a hill by a ſubterraneous paſſage, big enough for the admiſſion of long flat-bottomed boats, which are towed by a rail on each hand, near three quarters of a mile, to the coal-works. There the paſſage divides into two channels, one of which goes off 300 yards to the right, and the other as many to the left; and both may be continued at pleaſure.

The paſſage is, in ſome places, cut through the ſolid rock, and in others, arched over with brick. Air-funnels, ſome of which are near 37 yards perpendicular, are cut, at certain diſtances, through the rock to the top of the hill. The arch at its entrance is about ſix feet wide, and about five feet high from the ſurface of the water; it widens within, ſo that in ſome places the boats may paſs one another, and at the pits it is ten feet wide. When the boats are loaded and brought out of the baſon, five or ſix of them are linked together, and drawn along the *canal* by a ſingle horſe or two mules. The *canal* reaches Mancheſter in a courſe of nine miles; it is broad enough for the barges to paſs or go a-breaſt, and on one ſide there is a good road for the paſſage of the people, and horſes or mules employed in the work. The *canal* is raiſed over public roads by means of arches, and it paſſes over the navigable river Irwell near fifty feet above it, ſo that large veſſels in full ſail paſs under the *canal*, whilſt the duke's barges are at the ſame time paſſing over them. This *canal* joins that which paſſes from the river Merſey towards the Trent, taking in the whole a courſe of 34 miles.

The *Lancaſter canal* begins near Kendal, and terminates near Eccleſton, comprehending the diſtance of 72½ miles.

The *canal* from Liverpool to Leeds is 108⅓ miles: that from Leeds to Selby, 23¼ miles; from Cheſter to Middlewich, 26¾ miles; from the Trent to the Merſey, 88 miles; from the Trent to the Severn, 46½ miles. The Birmingham *canal* joins this near Wolverhampton, and is 24¼ miles: the Droitwich *canal* is 5½ miles: the Coventry *canal*, commencing near Litchfield, and joining that of the Trent, is 36¼ miles: the Oxford *canal* breaks off from this, and is 82 miles. The Cheſterfield *canal* joins the Trent near Gainſborough, and is 44 miles.

A communication is now formed, by means of this inland navigation, between Kendal and London, by way of Oxford; between Liverpool and Hull, by the way of Leeds; and between the Briſtol channel and the Humber, by the junction formed between the Trent and the Severn. Other ſchemes have been projected, which the preſent ſpirit of improvement will probably ſoon carry into execution, of opening a communication between the German and Iriſh ſeas, ſo as to reduce a hazardous navigation of more than 800 miles by ſea, into a little more than 150 miles by land; and alſo of joining the Iſis with the Severn.

There are many obvious advantages which accrue from theſe inland navigations. By diminiſhing the price of carriage, and facilitating the communication between remote parts of the country, they greatly conduce to the improvement and extenſion of our manufactures and commerce. They likewiſe tend, in a variety of ways, to advance and perpetuate the value of eſtates near which they paſs, by the eaſe with which manure may be procured, by the eſtabliſhment of manufactures, and by the cheap conveyance of their produce to large towns and ſea-ports: not to add, that they ſerve as drains for moiſt lands, and that they furniſh a ſupply of water for thoſe that are dry. And beſides, navigable *canals* give employment to the induſtrious labourer, as well as the ingenious artiſan.

We alſo read of divers projects and undertakings of *canals*, which were never atchieved. Demetrius Poliorcetes, Julius Cæſar, the emperors Caligula and Nero, attempted in vain to cut through the iſthmus, whereby Peloponneſus is joined to the reſt of Greece, and make a *canal* of communication between the Ionian and Ægean ſeas. Plin. Nat. Hiſt. lib. iv. cap. 4.

Seleucus Nicanor had a deſign to make a *canal* between the Euxine and Caſpian ſeas. Lucius Verus, who commanded the Roman army in Gaul under Nero, attempted to make a *canal* between the Moſelle and the Rhine.

The Spaniards have ſeveral times had in view the digging a *canal* through the iſthmus of Darien, from Panama to Nombre de Dios, to make a ready communication between the Atlantic and the South ſea, and thus afford a ſtraight paſſage to China and the Eaſt Indies.

CANAL is alſo applied to the furrows on the face of, or underneath a LARMIER; ſometimes alſo called porticos; and fitted up with reeds or flowers. Sometimes to thoſe cavities, ſtraight or winding, made on the caulicoles of a capital. See SOFFITA.

CANALS are alſo uſed for the flutings of a column or pilaſter.

CANAL *of the volute*, in the Ionic capital, is the face of the circumvolutions, incloſed by a liſtel.

CANAL, *Canalis*, in *Anatomy*, a duct, or paſſage, through which any of the juices, or fluids of the body flow.

Under *canals* are included all kinds of veſſels, as arteries, veins, nerves, &c. See ARTERY, VEIN, &c.

The hole or perforation through the *vertebræ* of the neck, whereby the ſpinal marrow communicates with the brain, is by ſome called the ſacred or great *canal*, ἱερα συριγξ.

CANALES *ſemicirculares*, in *Anatomy*, are three *canals* in the labyrinth of the ear; which open by as many orifices into the *veſtibulum*.

They are of three different ſizes, *major*, *minor*, and *minimus*. In different ſubjects, they are frequently different, but are always alike in the ſame: the reaſon, Valſalva ingeniouſly conjectures to be, that as a part of the tender auditory nerve is lodged in theſe *canals*, ſo they are of three ſeveral ſizes, the better to ſuit all the variety of tones; ſome of the *canals* ſuiting ſome tones, and others others. And though there be ſome difference in the form and ſize of theſe *canals* in different perſons; yet, leſt there ſhould be any diſcord in the auditory organs, theſe *canals* are always in exact conformity to one another, in the ſame man.

CANALICIUM *aurum*, or CANALIENSE, that gold whic is dug out of mines, or veins under ground.

CANALICULATE *leaf*, among *Botaniſts*. See LEAF.

CANALICULATE *ſtalk*. See STALK.

CANALIS is uſed by *Surgeons* for an oblong, concave inſtrument, in which to put a broken limb, leg, or thigh. It is made either of braſs, wood, or earthen ware, ſometimes even of ſtraw fitted with linen cloth.

CANALIS, or CANALICULUS *arterioſus*, in *Anatomy*, a veſſel, obſerved in *fœtuſes*, but which, after delivery, grows uſeleſs, and diſappears. It is a little tube, which, joining the pulmonary artery and aorta, ſerves to convey the blood out of one into the other, without paſſing through the lungs. See FOETUS.

Dr. Agricola deſcribes a valve at the entry of the *canalis arterioſus* into the *aorta deſcendens*, compoſed of four ſides. Two of them prevent its being ſhut till after birth, and the other two prevent its being thruſt off from the orifice of the *canalis arterioſus*.

There have been ſome diſputes between Meſſieurs Mery, Buiſſiere, Rohault, and others, about the real uſe of the *canalis arterioſus*, as well as of the *foramen ovale*. See FORAMEN *ovale*.

CANALIS *naſalis*, a kind of *ſulcus* or furrow formed in the *oſſa unguis* and *maxillaria*, whereby a mucous humour is conveyed from the *puncta lacrymalia* to the noſe.

CANALIS *venoſus*, a duct in the liver of a fœtus, whereby a communication is maintained between the porta and cava; which, becoming uſeleſs after the birth, gradually dries up. Drake and Heiſter.

CANALIS, in *Zoology*. See TUBULUS *marinus*.

CANARIA *lappa*, in *Botany*, a name given by the ancient Romans ſometimes to the rough fruit of the common aparine or clivers, and ſometimes to the plant itſelf. Pliny calls the plant *lappa* and *lappago*; and the fruit of it, *lappæ boariæ*, *lappæ canariæ*, and *lappæ caninæ*.

CANARIES, in *Muſic*, an old Engliſh air, having a ſprightly movement of two ſtrains, with eight bars in each; and three quavers in a bar; the firſt pointed.

CANARIUM, from *canis*, *dog*, in *Antiquity*, a Roman ſacrifice, wherein dogs of a red or ruddy colour were ſacrificed, for a ſecurity of the fruits of the earth againſt the raging heats, and diſorders of Sirius in the dog-days.

CANARIUM, in *Botany*, a genus of the *diœcia pentandria* claſs: the calyx has two leaves, and the corolla conſiſts of three petals.

CANARY-*bird*, *Paſſer Canarienſis*, a ſpecies of ſinging-birds, greeniſh yellow in colour, formerly brought only

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The *canal of Egypt*, for a communication between the Nile and the Red ſea, was begun, according to Herodotus, by Necus ſon of Pſammeticus, who deſiſted from the attempt on an anſwer from the oracle, after having loſt ſix ſcore thouſand men in the enterprize. It was reſumed and completed by Darius ſon of Hyſtaſpes, or, according to Diodorus and Strabo, by Ptolemy Philadelphus; who relate, that Darius relinquiſhed the work on a repreſentation made to him by unſkilful engineers, that the Red ſea being higher than the land of Egypt, would overwhelm and drown the whole country. It was wide enough for two galleys to paſs a-breaſt; its length was four days ſailing. Diodorus adds, that it was alſo called *Ptolemy's river*; that this prince built a city at its mouth on the Red ſea, which he called *Arſinoe*, from the name of his favourite ſiſter; and that the *canal* might be either opened or ſhut, as occaſion required: policy probably had ſome ſhare in the diſuſe to which it afterwards fell. Diod. Sic. Bibl. lib. i. Strab. Rer. Geog. lib. xvii. Herodot. Hiſt. lib. ii.

It ſeems to have been opened afreſh about the year 635, under the caliph Omar. Elmacin indeed ſays, that a new *canal* was then made for the conveyance of the corn of Ægypt to Arabia; but this is more naturally underſtood of a renewal of the ancient one, the navigation of which, towards the decline of the Roman empire, had been much neglected. The ſame author adds, that it was ſtopped again on the ſide next the Red ſea by the caliph Abugiafar Almanzor II. of the family of Abbas, in the year of the Hegira 150, anſwering to the year of Chriſt 775. There are ſome traces of it ſtill ſubſiſting: M. Boutier, in 1703, diſcovered the end which ariſes out of the moſt eaſterly branch of the Nile. Hiſt. Acad. Scienc. ann. 1703. p. 110, ſeq.

A new *canal* for conveying the waters of the Nile from Æthiopia into the Red ſea without paſſing into Ægypt, was projected by Albuquerque, viceroy of India, for the Portugueſe, in order to render Ægypt barren and unprofitable to the Turks.

M. Gaudereau attributes the frequency of the plague in Ægypt, of late days, to the decay, or ſtopping up of theſe *canals*; which happened upon the Turks becoming maſters of the country.

In China, there is ſcarce a town or village but has the advantage either of an arm of the ſea, a navigable river, or a *canal*, by which means navigation is rendered ſo common, that there are almoſt as many people on the water as the land.

The *great canal of China*, is one of the wonders of art, made about 800 years ago. It runs from north to ſouth quite croſs the empire; beginning at the city Canton. By it all kinds of foreign merchandize entered at that city are carried directly to Pekin, a diſtance of 825 miles. Its breadth and depth are ſufficient to carry barks of conſiderable burden, which are managed by ſails and maſts, as well as towed by hand. On this *canal* the emperor is ſaid to employ 10,000 ſhips, abating one, for a reaſon very peculiar. It paſſes through, or by, 41 large cities; there are in it 75 vaſt locks, and ſluices to keep up the water, and paſs the barks and ſhips where the ground will not admit of ſufficient depth of channel, beſides ſeveral thouſand draw and other bridges.

F. Magaillane aſſures us, there is paſſage from one end of China to the other, the ſpace of 600 French leagues, always either by *canals* or rivers, except a ſingle day's journey by land, neceſſary to croſs a mountain; an advantage which this Jeſuit, who made the voyage himſelf, obſerves is not to be found in any other ſtate of the univerſe. Nouv. Relat. de Chine, chap. 8.

The *canal of Languedoc*, called alſo the *canal of the two ſeas*, as ſerving to join the Mediterranean and Cantabrian ſeas, was firſt propoſed under Francis I. but begun and finiſhed under Louis XIV. By means of it, a ready communication is made between the two fertile provinces of Guyenne and Languedoc. The *canal* is 64 leagues long, extended from Narbonne to Tholouſe, and receiving ſeveral little rivers in the way, ſupported at proper intervals with 104 ſluices. In ſome places it is conveyed over aquæducts and bridges of incredible height, built on purpoſe, which give paſſage underneath to other rivers. What is moſt extraordinary is, that in ſome places, for a mile together, a paſſage is dug for it through the rock. The expence was thirteen millions of livres, of which the king contributed near ſeven millions; the province of Languedoc the reſt.

The *canal of Briere*, called alſo *canal of Burgundy*, begun under Henry IV. and finiſhed in the reign of Louis XIII. makes a communication between the Loire and the Seine, and ſo to Paris; to the great advantage of all this part of France, and even to Burgundy itſelf. This *canal* has 42 ſluices.

The *canal of Orleans* was begun in 1675, for eſtabliſhing a communication between the Seine and the Loire. It is conſiderably ſhorter than that of Briere, having only 20 ſluices.

The *canal of Bourbon* was but lately undertaken; its deſign being to make a communication from the river Oiſe to Paris.

The *new canal of the lake Ladoga*, cut from Volhowa to the Neva, whereby a communication is made between the Baltic, or rather ocean, and the Caſpian ſea, was begun by the czar Peter I. in 1719: by means of it, the Engliſh and Dutch merchandize are eaſily conveyed into Perſia, without being obliged to double the Cape of Good Hope. There was a former *canal* of communication between the Ladoga lake and the river Wolga, whereby timber and other goods had been brought from Perſia to Peterſburg; but the navigation of it was ſo dangerous, that a new one was undertaken.

In England, that ancient *canal* from the river Nyne, a little below Peterborough, to the river Witham, three miles below Lincoln; called by the modern inhabitants *Caerdike*; may be ranked among the monuments of the Roman grandeur, though it is now moſt of it filled up. It was 40 miles long; and ſo far as appears from the ruins, muſt have been very broad and deep; ſome authors take it for a Daniſh work. Morton will have it made under the emperor Domitian. Urns and medals have been diſcovered on the banks of this *canal*, which ſeem to confirm that opinion. Hiſt. Northampton. ch. 10.

The *canal* for ſupplying London with water by means of the New River, was undertaken and begun by Mr. (afterwards Sir Hugh) Middleton, in the year 1608, and finiſhed in five years. This *canal* commences near Ware, in Hertfordſhire, and takes a courſe of 60 miles before it reaches the ciſtern at Iſlington, which ſupplies the ſeveral water-pipes that convey it to the city and parts adjacent. In ſome places it is 30 feet deep, and in others it is conveyed over a valley between two hills, by means of a trough ſupported by wooden arches, and riſing above 23 feet in height. See *New River* COMPANY.

The *Duke of Bridgewater's canal*, projected and executed under the direction of Mr. Brindley, was begun ſoon after he had obtained an act for this purpoſe in 1759. It was firſt deſigned for conveying coals from a mine on his grace's eſtate to Mancheſter, but has ſince been applied to many other uſeful purpoſes of inland navigation. This *canal* begins at a place called Worſley-mill, about ſeven miles from Mancheſter, where the duke has cut a baſon capable of holding all his boats, and a great body of water which ſerves as a reſervoir or head to his navigation. The *canal* runs through a hill by a ſubterraneous paſſage, big enough for the admiſſion of long flat-bottomed boats, which are towed by a rail on each hand, near three quarters of a mile, to the coal-works. There the paſſage divides into two channels, one of which goes off 300 yards to the right, and the other as many to the left; and both may be continued at pleaſure.

The paſſage is, in ſome places, cut through the ſolid rock, and in others, arched over with brick. Air-funnels, ſome of which are near 37 yards perpendicular, are cut, at certain diſtances, through the rock to the top of the hill. The arch at its entrance is about ſix feet wide, and about five feet high from the ſurface of the water; it widens within, ſo that in ſome places the boats may paſs one another, and at the pits it is ten feet wide. When the boats are loaded and brought out of the baſon, five or ſix of them are linked together, and drawn along the *canal* by a ſingle horſe or two mules. The *canal* reaches Mancheſter in a courſe of nine miles; it is broad enough for the barges to paſs or go a-breaſt, and on one ſide there is a good road for the paſſage of the people, and horſes or mules employed in the work. The *canal* is raiſed over public roads by means of arches, and it paſſes over the navigable river Irwell near fifty feet above it, ſo that large veſſels in full ſail paſs under the *canal*, whilſt the duke's barges are at the ſame time paſſing over them. This *canal* joins that which paſſes from the river Merſey towards the Trent, taking in the whole a courſe of 34 miles.

The *Lancaſter canal* begins near Kendal, and terminates near Eccleſton, comprehending the diſtance of $72\frac{1}{2}$ miles.

The *canal* from Liverpool to Leeds is $108\frac{1}{3}$ miles: that from Leeds to Selby, $23\frac{1}{4}$ miles; from Cheſter to Middlewich, $26\frac{3}{4}$ miles; from the Trent to the Merſey, 88 miles; from the Trent to the Severn, $46\frac{1}{2}$ miles. The Birmingham *canal* joins this near Wolverhampton, and is $24\frac{1}{4}$ miles: the Droitwich *canal* is $5\frac{1}{2}$ miles: the Coventry *canal*, commencing near Litchfield, and joining that of the Trent, is $36\frac{1}{4}$ miles: the Oxford *canal* breaks off from this, and is 82 miles. The Cheſterfield *canal* joins the Trent near Gainſborough, and is 44 miles.

A communication is now formed, by means of this inland navigation, between Kendal and London, by way of Oxford; between Liverpool and Hull, by the way of Leeds; and between the Briſtol channel and the Humber, by the junction formed between the Trent and the Severn. Other ſchemes have been projected, which the preſent ſpirit of improvement will probably ſoon carry into execution, of opening a communication between the German and Iriſh ſeas, ſo as to reduce a hazardous navigation of more than 800 miles by ſea, into a little more than 150 miles by land; and alſo of joining the Iſis with the Severn.

There are many obvious advantages which accrue from theſe inland navigations. By diminiſhing the price of carriage, and facilitating the communication between remote parts of the country, they greatly conduce to the improvement and extenſion of our manufactures and commerce. They likewiſe tend, in a variety of ways, to advance and perpetuate the value of eſtates near which they paſs, by the eaſe with which manure may be procured, by the eſtabliſhment of manufactures, and by the cheap conveyance of their produce to large towns and ſea-ports: not to add, that they ſerve as drains for moiſt lands, and that they furniſh a ſupply of water for thoſe that are dry. And beſides, navigable *canals* give employment to the induſtrious labourer, as well as the ingenious artiſan.

We alſo read of divers projects and undertakings of *canals*, which were never atchieved. Demetrius Poliorcetes, Julius Cæſar, the emperors Caligula and Nero, attempted in vain to cut through the iſthmus, whereby Peloponneſus is joined to the reſt of Greece, and make a *canal* of communication between the Ionian and Ægean ſeas. Plin. Nat. Hiſt. lib. iv. cap. 4.

Seleucus Nicanor had a deſign to make a *canal* between the Euxine and Caſpian ſeas. Lucius Verus, who commanded the Roman army in Gaul under Nero, attempted to make a *canal* between the Moſelle and the Rhine.

The Spaniards have ſeveral times had in view the digging a *canal* through the iſthmus of Darien, from Panama to Nombre de Dios, to make a ready communication between the Atlantic and the South ſea, and thus afford a ſtraight paſſage to China and the Eaſt Indies.

CANAL is alſo applied to the furrows on the face of, or underneath a LARMIER; ſometimes alſo called porticos; and fitted up with reeds or flowers. Sometimes to thoſe cavities, ſtraight or winding, made on the caulicoles of a capital. See SOFFITA.

CANALS are alſo uſed for the flutings of a column or pilaſter.

CANAL *of the volute*, in the Ionic capital, is the face of the circumvolutions, incloſed by a liſtel.

CANAL, *Canalis*, in *Anatomy*, a duct, or paſſage, through which any of the juices, or fluids of the body flow.

Under *canals* are included all kinds of veſſels, as arteries, veins, nerves, &c. See ARTERY, VEIN, &c.

The hole or perforation through the *vertebræ* of the neck, whereby the ſpinal marrow communicates with the brain, is by ſome called the ſacred or great *canal*, ιερα συριγξ.

CANALES *ſemicirculares*, in *Anatomy*, are three *canals* in the labyrinth of the ear; which open by as many orifices into the *veſtibulum*.

They are of three different ſizes, *major*, *minor*, and *minimus*. In different ſubjects, they are frequently different, but are always alike in the ſame: the reaſon, Valſalva ingeniouſly conjectures to be, that as a part of the tender auditory nerve is lodged in theſe *canals*, ſo they are of three ſeveral ſizes, the better to ſuit all the variety of tones; ſome of the *canals* ſuiting ſome tones, and others others. And though there be ſome difference in the form and ſize of theſe *canals* in different perſons; yet, leſt there ſhould be any diſcord in the auditory organs, theſe *canals* are always in exact conformity to one another, in the ſame man.

CANALICIUM *aurum*, or CANALIENSE, that gold whic is dug out of mines, or veins under ground.

CANALICULATE *leaf*, among *Botaniſts*. See LEAF.

CANALICULATE *ſtalk*. See STALK.

CANALIS is uſed by *Surgeons* for an oblong, concave inſtrument, in which to put a broken limb, leg, or thigh. It is made either of braſs, wood, or earthen ware, ſometimes even of ſtraw fitted with linen cloth.

CANALIS, or CANALICULUS *arterioſus*, in *Anatomy*, a veſſel, obſerved in *fœtuſes*, but which, after delivery, grows uſeleſs, and diſappears. It is a little tube, which, joining the pulmonary artery and aorta, ſerves to convey the blood out of one into the other, without paſſing through the lungs. See FOETUS.

Dr. Agricola deſcribes a valve at the entry of the *canalis arterioſus* into the *aorta deſcendens*, compoſed of four ſides. Two of them prevent its being ſhut till after birth, and the other two prevent its being thruſt off from the orifice of the *canalis arterioſus*.

There have been ſome diſputes between Meſſieurs Mery, Buiſſiere, Rohault, and others, about the real uſe of the *canalis arterioſus*, as well as of the *foramen ovale*. See FORAMEN *ovale*.

CANALIS *naſalis*, a kind of *ſulcus* or furrow formed in the *oſſa unguis* and *maxillaria*, whereby a mucous humour is conveyed from the *puncta lacrymalia* to the noſe.

CANALIS *venoſus*, a duct in the liver of a fœtus, whereby a communication is maintained between the porta and cava; which, becoming uſeleſs after the birth, gradually dries up. Drake and Heiſter.

CANALIS, in *Zoology*. See TUBULUS *marinus*.

CANARIA *lappa*, in *Botany*, a name given by the ancient Romans ſometimes to the rough fruit of the common aparine or clivers, and ſometimes to the plant itſelf. Pliny calls the plant *lappa* and *lappago*; and the fruit of it, *lappæ boariæ*, *lappæ canariæ*, and *lappæ caninæ*.

CANARIES, in *Muſic*, an old Engliſh air, having a ſprightly movement of two ſtrains, with eight bars in each; and three quavers in a bar; the firſt pointed.

CANARIUM, from *canis*, *dog*, in *Antiquity*, a Roman ſacrifice, wherein dogs of a red or ruddy colour were ſacrificed, for a ſecurity of the fruits of the earth againſt the raging heats, and diſorders of Sirius in the dog-days.

CANARIUM, in *Botany*, a genus of the *dioecia pentandria* claſs: the calyx has two leaves, and the corolla conſiſts of three petals.

CANARY-*bird*, *Paſſer Canarienſis*, a ſpecies of ſinging-birds, greeniſh yellow in colour, formerly brought only from the *Canary* iſlands, but of late chiefly from Germany and Switzerland; which laſt, called alſo German-birds, are preferred to the former. The chief place for breeding *canary-birds* is Inſpruck and its environs, from whence they are ſent to Conſtantinople, as well as every part of Europe. They are a ſpecies of the *fringilla.*

Canary-birds are diſtinguiſhed by different names at different times and ages: ſuch as are about three years old are called *runts*; thoſe above two, are named *eriffs*; thoſe of the firſt year under the care of the old ones, are termed *branchers*; thoſe that are new-flown, and cannot feed themſelves, *puſhers*; and thoſe brought up by hand, *neſtlings.*

The *Canary-birds* may be bred with us, and, if treated with proper care, they will become as vigorous and healthful as in the country from whence they have their name. The cages in which theſe birds are kept are to be made of either walnut-tree or oak, with bars of wire; becauſe theſe, being woods of ſtrength, do not require to be uſed in large pieces. The common ſhape of cages, which is cylindric, is very improper for theſe birds; for this allows little room to walk, and without that the birds uſually become melancholy. The moſt proper of all ſhapes is the high and long, but narrow.

If theſe birds eat too much, they grow over-fat, loſe their ſhape, and their ſinging is ſpoiled; or at leaſt they become ſo idle, that they will ſcarce ever ſing. In this caſe their victuals is to be given them in a much ſmaller quantity, and they will by this means be recovered, by degrees, to all their beauty, and will ſing as at firſt.

At the time that they are about to build their neſts, there muſt be put into their cages ſome hay, dried thoroughly in the ſun: with this muſt be mixed ſome moſs dried in the ſame manner, and ſome ſtag's hair; and great care is to be taken of breeding the young, in the article of food. As ſoon as the young birds are eight days old, or ſomewhat more, and are able to eat and pick up food of themſelves, they are to be taken out of the cage in which they were hatched, and each put ſeparately into another cage, and hung up in a room where it may never have an opportunity of hearing the voice of any other bird. After they have been kept thus about eight days, they are to be excited to ſing by a bird-pipe; but this is not to be blowed too much, or in too ſhrill a manner, leſt they ſing themſelves to death.

For the firſt fifteen days the cages are to be covered with a black cloth, and for the fifteen days following with a green one. Five leſſons in a day from the pipe are ſufficient for theſe young creatures; and they muſt not be diſturbed with ſeveral ſounds at the ſame time, leſt they confound and puzzle them: two leſſons ſhould be given them early in the morning, one about the middle of the day, and two more at night.

The genius and temper of the ſeveral birds of this kind are very different. The males are almoſt always melancholy, and will not ſing unleſs they are excited to it by hearing others continually ſinging about them. The male bird of this kind will often murder the female put to him for breeding; and when there are ſeveral females together with the males, they will often do the ſame to one another from jealouſy. It is therefore not eaſy to manage the article of their breeding well in this particular, unleſs in this manner: let two female birds be put into one cage, and when they have lived together ſome time, they will have contracted a ſort of love for one another, which will not eaſily be diſſolved. Put a male bird into the cage with theſe two, and every thing will go well; their friendſhip will keep them from quarrelling about his favours, and from danger of his miſchievous diſpoſition; for if he attacks one of them, in order to kill her, the other will immediately take her part; and, after a few of theſe battles, the male will find that they are together an overmatch for him at fighting, and will then diſtribute his favours to them, and there will not fail of being a young breed or two, which are to be taken away from their parents, and educated as before directed. Some males watch the time of the female's laying, and devour the eggs as faſt as ſhe depoſits them; and others take the young ones in their beak, as ſoon as hatched, and cruſh them to death againſt the ſides of the cage, or ſome other way deſtroy them. When a male has been known once to have been guilty of this, he is to be ſhut up in a ſmall cage, in the middle of the large one in which the female is breeding her young, and thus he will often comfort her with ſinging all day long, while ſhe ſits upon the eggs or takes care of the young ones; and when the time of taking away, to put them into ſeparate cages, is come, the male is to be let out, and he will always after this live in friendſhip with the female.

If the male become ſick during the time of the female's ſitting or bringing up her young, he muſt be removed immediately, and only brought to the ſide of her cage at certain times, that ſhe may ſee him, till he is perfectly cured; and then he is to be ſhut up again in his cage in the middle.

Canary birds are various in their notes; ſome having a ſweet ſong, others a lowiſh note, others a long ſong, which is beſt, as having the greateſt variety of notes: but they ſing chiefly, either the titlark, or nightingale notes. See SONG *of birds.*

CANARY-*graſs.* See PHALARIS.

CANARY-*weed.* See ARCHIL.

CANATTE CORONDE, a name given by the Ceyloneſe to a peculiar kind of cinnamon growing in that iſland: this is eſteemed the ſecond kind in value, and the name they give to it ſignifies bitter and aſtringent cinnamon. The bark of this kind of cinnamon-tree comes off very eaſily, and is of a very fragrant ſmell when freſh, but it has a bitter taſte. It is not very common in the iſland, and is not eaſily diſtinguiſhed on the tree from the beſt cinnamon. The trees which yield the eight different kinds of cinnamon, ſo very various in flavour and virtue, are all ſo like one another, that it requires a great deal of attention to diſtinguiſh them. The root of this kind of cinnamon-tree yields a very fine ſort of camphor. Phil. Tranſ. N° 409.

CANAVAY, in *Natural Hiſtory*, a name given by the inhabitants of the Philippine iſlands to a ſea-bird which is deſcribed as being of the bigneſs of a pigeon, and laying its eggs on the naked rocks, where it ſits and hatches them. Some ſuppoſe this bird no other than the common king-fiſher. But this is ſcarce probable; as we have no account of its being very beautifully coloured; and this is a circumſtance which can hardly have eſcaped thoſe who mentioned it, being ſo very remarkable. It is much more probably ſome ſea-bird wholly unknown in this part of the world.

CANCAMUM, in the *Materia Medica*, a name given by the Greeks to a gum or reſin, and continued down to the preſent age, though not without ſome uncertainty in its ſignification. The Arabian writers in general have looked on the word *cancamum* as a ſynonymous term for gum lack, which the Greeks have called *lancha* and *lacha*, and Avicenna, *loch.*

CANCELIER, in *Falconry*, is when a light-flown hawk, in her ſtooping, turns two or three times upon the wing, to recover herſelf before ſhe ſeiſes.

CANCELLARIUS, in *Antiquity.* See CHANCELLOR.

CANCELLI, in *Building*, lattices, or a ſort of windows made with croſs bars of wood or iron, chequer-wiſe.

The term is alſo applied to the baluſters or rails which compaſs a court of juſtice, a communion-table, or the like.

CANCELLI, in a *Military Senſe*, the ſame with BARRIER.

CANCELLING, in the *Civil Law*, an act whereby ſome former deed is rendered null, and void.—This is otherwiſe called *reſciſſion.*

The word comes from the Latin *cancellare, to encompaſs*, or *pale a thing.*

In the proper ſenſe of the word, *to cancel*, is to deface an obligation, by paſſing the pen from top to bottom, or acroſs it; which makes a kind of chequer lattice, which the Latins call *cancelli.*

CANCELLUS, in *Ichthyology*, the *wrong heir*, is a very ſmall ſpecies of CRAY-*fiſh*, which the French call *hermit*, or *St. Bernard the hermit*, becauſe it ſhuns others, and retires into the firſt ſhell it meets with. Its body is ſomewhat long, but in general, much reſembling a ſpider, except that it is a little thicker. It is found in the ſlime near rocks, encloſed commonly in a ſhell as big as a nut, of a conic figure, thick, very hard, rugged, furrowed, and grey without-ſide, but ſmooth and white within. This ſhell is ſo well adapted to the animal, that it is a hard matter to force it out of its encloſure. Some waſh it, dreſs it, and eat it. It contains abundance of volatile ſalt; it is aperitive, and good for the ſtone. The oil prepared from it is brought from America, and is uſed for the rheumatiſm.

In the American iſlands they find a much larger ſpecies of *cancellus*, being three or four inches long. It is called the *ſoldier*, becauſe it poſſeſſes and fortifies itſelf in a ſhell which is not its own. Its natural ſhell leaving its hinder parts naked, it employs itſelf, as ſoon as it is ſtrong enough, in ſearching out another which may be proportioned to its ſize; into which it ſtuffs its back parts and adjuſts itſelf. But as it grows larger, and finds itſelf confined, it is obliged from time to time to go in ſearch of others: and it is good diverſion for the curious, to obſerve how he ſtops at all the ſhells he meets with, to conſider them; and when he finds one fit for his purpoſe, how he quits his own, and with great precipitation crouds into his new tenement, as if he was aſhamed of being naked: and if two of theſe animals are ſtripped at the ſame time, to enter the ſame ſhell, they fight until the weakeſt gives way.

The inhabitants fiſh for them, ſtring them up by the head, and expoſe them to the ſun, which diſſolves them all but the ſolid parts; which diſſolved ſubſtance or oil is eſteemed excellent for rheumatiſms, to which the ſavages are very ſubject.

CANCER, in *Aſtronomy*, one of the twelve ſigns of the zodiac; ordinarily repreſented on the globe in form of a crab, and in aſtronomical books denoted by a figure much reſembling that of the number ſixty-nine; thus, ♋.

The reaſon generally aſſigned for its name as well as figure, is a ſuppoſed reſemblance which the ſun's motion in this ſign bears to that of the crab-fiſh. As the latter walks backwards, ſo the former in this part of his courſe begins to go backwards, or recede from us, though the diſpoſition of ſtars in this ſign is by others ſuppoſed to have given the firſt hint to the repreſentation of a crab.

The ſtars in the ſign *cancer*, Ptolemy makes 13; Tycho, 15; Bayer and Hevelius, 29; Mr. Flamſtead, no leſs than 83.—Their order, names, places, longitude, latitude, magnitude, &c. in the Britannic Catalogue, are as follows:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.	Latitude.	Magnitude.
			° ′ ″	° ′ ″	
		♋	23 49 13	4 52 46 S	6
In the extremity of preced. north foot.	ω		22 49 38	4 43 11 N	6
			24 24 46	3 12 35 S	6
Subſequent, and more ſouthern.	ω		23 4 11	4 27 15 N	6
			24 45 35	4 0 21 S	6
5.					
	χ		22 54 28	7 11 26 N	5
			24 10 40	1 35 13 N	8
In the preced. and more ſoutherly leg.			26 18 34	7 5 30 S	6
	μ		24 36 38	2 16 21 N	7
In the preced. north foot, ſouth.	μ		25 9 26	1 19 13 N	5.
10.					
			24 7 46	7 8 1 N	6
			27 1 42	6 24 35 S	6
In the ſecond north leg, upper	ψ		24 47 23	5 36 4 N	6.7
under	ψ		24 54 49	5 18 44 N	4
	ψ		24 35 27	9 27 22 N	5
15.					
Againſt the tail, Ptolem. 25th. II.	ζ		27 0 22	2 17 52 S	5.6
Agſt. the extrem. of the 2d ſo. foot	β		29 56 19	10 19 6 S	4.3
The north of the 3d north foot.	χ		26 38 3	7 27 32 N	6
In the origin of the 3d north foot.	λ		27 29 33	4 20 33 N	6
In the back, behind the tail.	d		29 27 6	1 2 39 S	6
20.					
		♌	1 20 11	8 31 32 S	6
The firſt in the 4th north foot.	φ	♋	27 52 28	8 25 43 N	6.7
The ſecond.	φ		28 10 32	7 30 00 N	6
In the orig. of preced. north. claw	υ		28 44 18	5 10 36 N	6
Subſequent and more ſoutherly.	d	♌	0 20 24	2 7 51 S	6
25.					
The laſt of three.	φ	♋	28 7 13	8 27 31 N	6
		♌	1 34 58	6 22 16 S	6
The ſecond.	υ	♋	29 15 40	4 53 45 N	6.7
		♌	1 39 24	4 45 26 S	6.7
The third.	υ	♋	29 55 6	4 59 48 N	6
30.					
The preced. ſo. of □ of the breaſt.	θ	♌	1 24 44	0 47 46 S	6.5
Fourth and ſubſequent.	υ		0 15 14	5 5 16 N	7.8
Preced. north in the □ of the breaſt	η		1 5 29	1 32 33 N	6.7
			3 38 01	8 31 50 S	6
			1 53 19	0 52 1 N	7
35.					
The preced. in the 3d ſouth. foot.	c		4 49 27	8 39 1 S	6
The ſubſequent.	c		5 4 30	8 40 4 S	6
Nebulous ſtars in the middle of the breaſt, called *Præſepe*.	o		2 50 50	1 18 18 N	8
			2 53 10	1 31 18 N	6
			2 53 53	1 34 10 N	6
40.					
In the cloud.	ε		3 05 25	1 6 22 N	7
	c		3 05 9	1 18 37 N	7.8
Subſeq. no. in the □ called *N. Aſellus*.	γ		3 13 0	3 9 41 N	4
			4 2 35	0 3 15 S	6
Preced. in the 4th ſouth foot.	A		5 29 46	5 20 36 S	6
45.					
			1 11 49	12 10 46 N	6
South. ſtar in □ called *S. Aſellus*.	δ		4 23 40	0 3 46 N	4
In the north claw.	ι		2 0 53	10 23 40 N	5
In the extrem. of the 4th ſo. foot.			6 32 22	7 44 58 S	6
Subſequent in the ſouthern foot.	A		6 31 37	5 38 58 S	6
50.					
Firſt over the northern claw.	σ		2 12 44	14 18 33 N	6
			6 27 0	1 37 15 S	6
Firſt of thoſe following the northern claw.	S		3 23 2	10 15 12 N	6
			6 37 10	2 16 16 S	7
Second.	S	♌	3 26 1	10 21 47 N	6
55.					
			° ′ ″	° ′ ″	
Third.	S		3 41 1	10 24 34 N	6
Preced. in the mid. of the n. claw	ι		3 6 12	12 35 34 N	5.6
Fourth.	S		4 10 51	10 8 24 N	6
Second.	σ		2 59 35	14 59 41 N	5.6
That preced. the ſouthern claw.	α		8 46 33	5 30 32 S	4.5
60.					
2d and ſubſ. in middle of the claw			3 59 42	12 29 1 N	6
1ſt in the orig. of the ſouth claw	ο		8 2 56	1 53 16 S	6
Second and ſouthern.	ο		8 3 51	1 36 45 S	6
Third.	σ		3 40 50	14 40 46 N	6
In the ſouthern claw.	α		9 10 34	5 6 27 S	4
65.					
The laſt of four.	σ		4 7 2	14 37 46 N	6
Fifth of thoſe following the northern claw.	S		5 30 37	10 30 5 N	6.7
			8 36 41	0 7 56 N	6
In the northern eye.	ν		6 42 12	7 14 33 N	6
Laſt of thoſe following the northern claw.	S		6 0 40	10 37 48 N	6.7
70.					
			9 17 40	0 39 31 N	7
In the extr. of the apert. of the northern claw.	τ		6 18 14	12 34 6 N	6.7
			10 20 20	1 13 45 S	6
			10 37 7	1 55 52 S	6
			7 23 58	9 46 2 N	6.7
75.					
Subſeq. in the ſouthern claw.	κ		11 50 44	5 36 8 S	.5
In the ſouthern eye.	ξ		8 52 45	5 23 24 N	5.6
			10 11 15	1 0 54 N	6
			9 7 14	5 24 49 N	8
			10 39 19	1 45 5 N	7
80.					
In the apert. of the ſouth. claw.	π		11 41 7	1 8 31 S	7
			12 19 48	0 58 45 S	6
			12 20 54	1 56 7 N	6

CANCER, *Tropic of*, in *Aſtronomy*, a leſſer circle of the ſphere parallel to the equator; and paſſing through the beginning of the ſign *Cancer*. See TROPICS.

CANCER, in *Ichthyology*. See CRAB, and SQUILLA.

CANCER, in *Medicine*, a roundiſh, hard, ragged, immoveable tumour, of an aſh, or livid colour; encompaſſed round with branched turgid veins, full of black foul blood; ſituate chiefly in the glandulous parts: ſo called, as ſome will have it, from the reſemblance which the turgid veins ſhooting from it bear in figure to the crab-fiſh; or, as others ſay, becauſe, like that fiſh, when once it has got hold, it is ſcarce poſſible to drive it away.

A *cancer* differs from a *ſchirrhus*, in that the latter is without pain. See SCHIRRHUS.

Cancers alſo differ from thoſe called ſimply *cancerous ulcers*, or tumours, which, though of a like general nature, vary in many circumſtances.

Cancers appear with ſuch a diverſity, that it ſeems impoſſible to give a definition which ſhall agree to all. Some have a round, unequal, livid, painful hardneſs; others are flat without lividity, and ſometimes indolent. The variety ariſes chiefly from their riſe, and the different parts they are ſeated in; as the breaſt, womb, lips, noſe, eyes, ears, &c. Phil. Tranſ. Nº 260. p. 476.

Some reſtrain *cancers* to thoſe on women's breaſts, which alone exhibit the appearance of crabs; and give the name *carcinoma*, and *cancerous ulcer*, to thoſe on the other parts.

It begins without any pain, and appears, at firſt, like a chich-pea; but grows apace, and ſoon becomes very painful.

The *cancer* ariſes principally on the lax glandulous parts, as the breaſts and emunctories: it is moſt frequent in women, eſpecially ſuch, ſays Stolterſoth, as are barren, or live ſingle. The reaſon of its appearing in the breaſts more than other parts, is, that being full of glands, with lymphatics and blood-veſſels among them, the ſmalleſt contuſion, compreſſion, or punction, extravaſates thoſe liquors; which growing, by degrees, acrimonious, form the *cancer*. Hence it is ſaid that a *cancer* is that in the glands, which a caries is in the bones, and a gangrene in the fleſhy parts. The *cancer*, however, is ſometimes found in other ſoft, ſpongy parts of the body; and there have been ſome found in the gums, belly, neck of the matrix, ureter, lips, noſe, cheeks, abdomen, thighs, and even the ſhoulders.

A *cancer* ariſing on the legs, is called a *lupus*; on the face, or noſe, a NOLI *me tangere*.

Cancers are divided, according to their ſeveral ſtages, into *occult*, and *open* or ulcerated.

CANCERS, *occult*, are thoſe not arrived at their ſtate, or not yet burſt.

It is a famous aphoriſm, that occult *cancers* are better uncured than cured; and that the patient will live longer with them than without them. Hippocr. Aphor. 38. § 6. But phyſicians are not to be deterred by an old aphoriſm; they attempt not only a palliative, but a radical cure: the former partly by externals of the narcotic kind, to allay the pain, and hinder the ſpreading of the *cancer*; partly by internals, the chief of which are the *diaphoreticum Poterii*, martials, ſeveral preparations of earth-worms, and tincture of antimony, but eſpecially the juice of the *ſolanum lethale*, which is a topic of great fame for the palliative cure of *cancers*. It was the great ſecret of Percival Willoughby. Gendron improves it by the addition of *ſaccharum ſaturni*. The true cure of *cancers*, according to this writer, is either by exſection or amputation of the part, or by the application of cauteries. The former may be uſed where the tumour is moveable, and its baſe terminates abruptly, does not adhere to the adjacent parts, and conſequently has ſent no filaments to the ſame; as is the caſe in all *cancers* ariſing from ſchirrhous or ſcrophulous tumours.

But the true *cancers*, he obſerves, are ſeldom extirpated with ſucceſs; and the operation would be leſs in repute, if ſchirrhi, ſtrumæ, and other ſimilar tumours were not frequently miſtaken for *cancers*. Phil. Tranſ. N° 260.

Cancers, *ulcerated*, are known by their roughneſs and fulneſs of holes, through which ouſes a filthy, ſtinking, glutinous matter, frequently yellowiſh; by their pungent pain, which reſembles the pricking with a thouſand pins; and by their blackneſs; the ſwelling of the lips of the ulcer; and the veins about it, which are blackiſh, tumid, and varicous.

Sometimes the extremities of the blood-veſſels are gnawed off, and the blood iſſues out. In a *cancer* of the breaſt, the adjacent fleſh is ſometimes ſo conſumed, that one may ſee into the cavity of the *thorax*. It occaſions a ſlow fever, a loathing, oftentimes faintings, ſometimes a dropſy, and laſtly, death.

The generality of authors aſcribe the cauſe of *cancers* to an acid ferment which firſt coagulates the juices in the glands, and afterwards corrodes and ulcerates the part. Gendron, refuting this theory, ſubſtitutes another; the *cancer*, according to him, is not a diſeaſe of the fluids, but of the ſolids. It ariſes from a diſorder of the lymphatic and excretory veſſels of the glands, which becoming by ſome accident impervious, and ceaſing to filtrate and convey their liquors, by degrees degenerate into a compact horny maſs, capable of germination and ulceration. What ſeems to confirm this origin is, that in grown *cancers* there is always found a hard callous ſubſtance not unlike horn, with blood-veſſels diſſeminated through it, which yet are ſmaller and narrower than before the formation of the hardneſs. This calloſity is found in cutaneous *cancers*, though it there extends itſelf in a different manner, appearing at firſt like a ſmall wart, from which ſpring cutaneous filaments. When the ulceration has made ſome progreſs, theſe appear like pinheads in the fleſh, which are no other than the extremities of the filaments. This ſubſtance, always found in true *cancers*, according to M. Gendron, is the *cancer* itſelf, formed by the tranſmutation of the glandular and lymphatic veſſels. On this principle he reſolves the ſpreading of a *cancer* into a vegetation performed by the conveyance of the nutritious juices through the ramifications of the tumour, as through horns, nails, or the like ſubſtances. The pain proceeds from the compreſſion of the nervous parts, as that in corns, and the lividity from the obſtruction of the blood; not as commonly ſuppoſed from a cauſtic ſalt, which would ſoon cauſe an eſchar. Gend. Recherch. ſur la Nat. &c. des *Cancers*, cap. 3. Act. Erud. Lipſ. an. 1701.

The *cancer* is one of thoſe diſeaſes for which no competent remedy has been yet found, not even when taken early, or in its occult ſtate. The moſt that medicine can do, is to palliate, or keep it back by diet and general remedies. Le Clerc, Treat. Chir. Operat. chap. viii. p. 198, ſeq. where the operation of cutting off a cancerous breaſt is deſcribed.

However, in the Memoirs of the Royal Academy of Sciences, mention is made of the radical cure of three inveterate *cancers*, by an infuſion of the leaves of plumbago in olive oil; theſe *cancers* had been deemed incurable by reaſon of their adherence to bony parts. Mem. Acad. Sc. 1739.

Cancers are ſometimes internal. We have hiſtories of two ſuch in the Philoſophical Tranſactions, from which Dr. Burton endeavours to deduce the diagnoſtics of a *cancer* within the abdomen. N° 464.

Cancers, *to prevent*.—When there is danger of an approaching *cancer*, the acrimony of the blood is, if poſſible, to be corrected by the uſe both of internal and external remedies, and a ſtrict regimen in regard to diet is to be obſerved. Broths and ſoups made of the fleſh of young animals, and with proper herbs boiled in them, as ſcorzonera, and the others of that tribe, are very beneficial in theſe caſes; the moſt wholeſome drink is either fair water, or a decoction of China root, or ſarſaparilla, or the like; and when the pains are violent from the ſchirrhus, which is now threatening to become a *cancer*, white poppy ſeeds may be added in conſiderable quantities to the decoction, and it may be ſweetened with a proper quantity of ſyrup of diacodium. Two or three times a day alſo ſhould be taken a doſe of Gaſcoin's powder, ſalt of wormwood, native cinnabar, crude and diaphoretic antimony; adding to each doſe, as there ſhall be occaſion, half a grain of laudanum, to aſſuage the violence of the pain. Great benefit is alſo ſometimes received in this caſe by taking either the powder or juice of millepedes, with ſperma ceti.

Purges alſo of the mercurial kind frequently do great ſervice, as does alſo bleeding and cupping frequently in the ſpring and autumn. A thin plate of lead well impregnated with quickſilver may alſo be very conveniently worn on the part with great advantage; for this method cannot but weaken the ſenſe of pain, and may often prevent a *cancer*.

If the application of the plate of lead ſhall prove inſufficient, plaſters and ointments compoſed of ſuch ingredients as are known to aſſuage pains may alſo be applied; the following are of this kind, and are frequently found of ſervice. Take of the *unguentum diapompholygos*, two ounces; of opium, half a ſcruple; mix theſe into an ointment, and frequently rub the part affected with it; or take of an amalgama of quickſilver and lead two ounces, mix this with a ſufficient quantity of ointment of roſes, or any the like unguent, then ſpread a part of it on a linen rag, and apply it in the manner of a plaſter to the part: or take litharge vinegar, an ounce; expreſſed oil of henbane ſeeds, poppy ſeeds, and the infuſed oil of roſes, of each two ounces; mix them by a long and continued ſtirring together into an ointment, adding toward the end of the operation purified opium from ſix to ten grains, as the urgency of the ſymptoms may require; this is to be ſpread in like manner on linen rags, and applied at times to the part.

If the daubing of theſe ointments is diſliked, a refrigerent plaſter may be uſed in their ſtead; ſuch is the lead plaſter of Mynſycht, and plaſters of red lead, or pompholyx, or the excellent plaſter made by the following preſcription: take of the freſh and depurated juices of henbane, garden-poppy, and water-hemlock, of each four ounces; boil theſe to a thickneſs over a gentle fire, adding toward the end of the boiling eight ounces of white wax, and one ounce of oil of roſes, and make the whole into a plaſter: or take of ſugar of lead, of ceruſe of the amalgamation of quickſilver and lead, and of the expreſſed oil of henbane ſeed, and infuſed oil of roſes, of each two ounces; make theſe into a plaſter. If the pains are very violent, a ſmall quantity of opium may be added to either of theſe plaſters. Heiſter's Surg. 223.

Soultzer, phyſician to the duke of Saxe-Gotha, after obſerving that an effectual cure for a *cancer* is ſtill among the *deſiderata* of phyſic, and that mercury, antimony, and all alteratives, as well as the *belladona* and *cicuta*, have generally failed, recommends the following poultice: take carrots freſh gathered, and reduce them to a coarſe powder, ſqueeze out the juice and warm the pulp, and apply it in the form of a thick poultice, ſo that it may touch the ulcers in every part; and let the whole be covered with a warm napkin. The dreſſing muſt be renewed twice in every four hours, and the ulcers cleaned with lint dipped in a warm decoction of hemlock. This application, he ſays, will abate the pain, take away the loathſome ſmell, diminiſh the ſuppuration, and produce the diſcharge of a laudable pus. By continuing the uſe of it, the callous edges of the ulcers will be ſoftened, the tumour diminiſh, and at length diſappear; new fleſh will be generated, a cicatrix will be formed, and the cure completed. The extract of hemlock may be ſafely adminiſtered at the ſame time. See an account of the effects of the *cicuta* and a carrot-poultice upon a *cancer* of the breaſt, in the Med. Obſ. and Inq. vol. iv. art. 31.

The *ſanies* of a *cancer*, when the carrot-poultice has failed, has been ſweetened by *fixed air*, applied externally, the pain mitigated, and a better digeſtion produced. Dr. Percival remarks, from repeated trials, that the progreſs of *cancers* ſeems to be checked by the fixed air; but, he adds, it is to be feared, that a cure cannot thus be effected. Prieſtley on Air, vol. I. Appendix, p. 302.

Cancer, in a more vague ſenſe, is extended to all **ulcers** diſpoſed to putridity.

Such are the moſt inveterate, malignant, cavernous, fiſtulous, varicous, and colliquative ulcers. The Arabs call the *elephantiaſis* the univerſal *cancer*. Celſus even ranks the gangrene and ſphacelus in the claſs of *cancers*.

Others include the caries of bones in the number. Ephem. Acad. N. C. dec. 1. an. 1. p. 8.

Cancers are by ſome divided into *primitive* and *degenerate.*

Cancers, *primitive*, are thoſe which come of themſelves, appearing at firſt about the bigneſs of a pea, and only painful at intervals; but growing bigger, and more troubleſome by degrees.

Cancers, *degenerate*, are thoſe which ſucceed obſtinate, ill-managed tumours, or impoſthumes. Theſe commence ulcerated *cancers*, without ever having been occult ones.

Cancer *albus*, the white *cancer*, is uſed by French writers for a white chalky recrement, ſometimes found adhering to the tongue, and internal parts of the mouths of children, and which, unleſs timely bruſhed away, is apt to ulcerate.

In which ſenſe, it ſeems to amount to the ſame with APHTHÆ.

Cancer is alſo applied to a ſpecies of BANDAGE for the head, and divided into ſeveral parts, reſembling the legs of a crab-fiſh.

Cancer, in the *Military Art.* See ARIES.

CANCRIFORM, *Cancriformis*, the ſame with *cancroides*, or *cancerous.*

Wedelius has a diſcourſe of hard rebellious *cancriform* tumours. Ephem. Acad N. C. dec. 2. an. 1. obſ. 12.

CANCRINE *verſes*, the ſame with RETROGRADE.

CANCROMA, in *Ornithology*, a genus of birds of the order of *grallæ*; having a gibbous beak, and the upper jaw in the form of a boat turned upwards. Linnæus reckons two ſpecies, the *cochlearia*, and the *cancrophaga*; the former is found in Guiana, and the latter in the Braſils.

CANDELARES, in *Botany*, an order of plants in the Fragmenta Methodi Naturalis of Linnæus.

CANDELARIA, in *Botany*, a name by which ſome authors have called the great white MULLEIN.

Candelaria, in *Entomology*, is a ſpecies of inſect, belonging to the genus of *fulgora*, and order of *hemiptera* in the Linnæan ſyſtem. It is common in China.

CANDERROS, in the *Materia Medica*, a name of an Eaſt Indian gum, not much known among us, though ſometimes imported. It has much of the appearance of common amber, only that it wants its yellow colour, being white and pellucid; we ſometimes ſee it turned into toys of various kinds, which are very light, and of a good poliſh. Garcias and ſome other authors tell us, that the people of Borneo, and ſome other places where camphor is produced, have the art of adulterating the crude camphor, which they ſend over to us with large quantities of this gum.

CANDIDATE, a perſon who ſets up for ſome poſt or place, either of honour or profit.

The word is formed of *candidus, white*; on account of a white ſhining garment, *toga candida*, wherein thoſe who aſpired to preferments in ancient Rome, were habited at the time of their appearing for the ſame, eſpecially at the public aſſemblies, in order to diſtinguiſh them from the croud.

The white gown worn by *candidates* was looſe and ungirded, nor was there any cloſe garment under it, which ſome interpret as done with deſign to avoid any ſuſpicion people might have of bribery; though Plutarch rather thinks it done to gain the affections of the people, by ſueing in ſuch an humble garb; or elſe that ſuch as had received wounds in the ſervice of their country, might more eaſily demonſtrate thoſe tokens of their courage and fidelity.

The Roman *candidates* uſually declared their pretenſions a year before the time of election, which was ſpent in making intereſt and gaining friends. Various arts of popularity were practiſed for this purpoſe, and frequent circuits made round the city, and viſits and compliments to all ſorts of perſons, the proceſs of which formed what was called AMBITUS.

Candidati *principis*, were thoſe who were recommended to any offices by the emperors. Alſo an office in the court of the emperor of Conſtantinople, anſwering to a ſecretary of ſtate among us.

The *candidatus principis* was alſo denominated *Quæſtor principis* or *Auguſti.*

Candidate *of baptiſm*, in the *Ancient Church*, was called CATECHUMEN.

Candidates, in the COLLEGE *of Phyſicians*, London, is the order of members out of whom the fellows are choſen.

The *candidates* muſt be natives of England, doctors of phyſic, admitted to the degree in our own univerſities, and ought to have practiſed phyſic four years before they are admitted into the order. The number of *candidates* is never to exceed twelve.

Candidate, in *Academical Orders* or *Degrees*, denotes a perſon to whom, after full examination, and the performance of inaugural exerciſes, licence is granted to take up the higheſt or doctoral dignity when he pleaſes. See DEGREE, DOCTOR, LICENTIATE, &c.

Candidati *milites*, were an order of ſoldiers of tall ſtature, who ſerved as the emperor's body guards, to defend him in fight. They were thus denominated, becauſe cloathed in white, either that they might be the more conſpicuous, and their actions more taken notice of, or becauſe they were conſidered as in the way to higher preferments. Cedrenus obſerves, that it was the younger Gordian who inſtituted the *candidati*, as alſo the *protectores* and *ſcholares*. The *ſcholares* were choſen out of the troops, and conſiſted of perſons who beſt underſtood the art of war; and out of theſe *ſcholares* were choſen the *candidati*, who were ſuch as were talleſt and ſtrongeſt, and had moſt of the martial air; and were proper to inſpire terror, ſays the Chronicon of Alexandria. The *protectores* were a middle order.

CANDLE, a cotton or linen wick, looſely twiſted, and covered with tallow, wax, or ſpermaceti, in a cylindrical figure; which being lighted at the end, ſerves to illumine a place in the abſence of the ſun.

The word *candle* comes from *candela*, and that from *candor*, of *candeo, I burn*; whence alſo the middle-age Greek κανδηλα.

A *tallow candle*, to be good, muſt be half ſheep's tallow and half bullock's; the fat of hogs makes them gutter, give an ill ſmell, and a thick black ſmoke.

Tallow candles are of two kinds; the one *dipped*, the other *moulded:* the firſt, which are thoſe in ordinary uſe, are of an old ſtanding; the latter are ſaid to be the invention of the Sieur le Brez, at Paris. The manufacture of the two kinds is very different, excepting in what relates to melting of the tallow, and making the wick, which is the ſame in both.

Candles, *method of making*. The tallows, being weighed and mixed in their due proportion, are cut or hacked into pieces, to facilitate their melting, and thrown into a pot or boiler, having a cavity of ſome depth running round the top, to prevent its boiling over. Being thus perfectly melted and ſkimmed, a certain quantity of water is thrown in, proportioned to the quantity of tallow; this ſerves to precipitate the impurities of the tallow, which had eſcaped the ſkimmer, to the bottom of the veſſel. The tallow, however, intended for the firſt three dips, muſt have no water; becauſe, the dry wick, imbibing the water readily, makes the *candles* ſpit and crackle in the burning. The melted tallow is now emptied through a ſieve into a tub, having a tap for letting it out, as occaſion requires. The tallow thus prepared, may be uſed after having ſtood three hours; and will continue fit for uſe twenty-four hours in ſummer, and fifteen in winter.

For the wicks, they are made of ſpun cotton, which the chandlers buy in ſkeins; and wind off three or four together, according to the intended thickneſs of the wick, into bottoms, or clues, whence they are cut out with an inſtrument contrived for that purpoſe, into pieces of the length of the *candle* required; then put on the ſticks, or broches, or elſe placed in the moulds, as the *candles* are intended to be either dipped or moulded.

Candles, *making of dipped*. The liquid tallow is drawn off from the tub above-mentioned, into a veſſel called the mould, ſink, or abyſs, of an angular form, perfectly like a priſm, except that it is not equilateral; the ſide on which it opens being only ten inches high; and the others, which makes its depth, fifteen. On the angle, formed by the two great ſides, it is ſupported by two feet, and is placed on a kind of bench, in form of a trough, to catch the droppings, as the *candles* are taken out at each dip. At a convenient diſtance from this, is ſeated the workman, who takes two ſticks, or broches, at a time, ſtrung with the proper number of wicks, viz. ſixteen, if the *candles* are to be of eight in the pound; twelve, if of ſix on the pound, &c. and holding them equidiſtant, by means of the ſecond and third finger of each hand, which he puts between them, he immerges the wicks two or three times for their firſt lay, and, holding them ſome time over the opening of the veſſel to let them drain, hangs them on a rack, where they continue to drain and grow hard. When cooled, they are dipped a ſecond time, then a third, as before; only for the third lay they are but immerged twice, in all the reſt thrice. The operation is repeated more or leſs times, according to the intended thickneſs of the *candles*. With the laſt dip they neck them; i. e. plunge them below that part of the wick where the other lays ended.

It muſt be obſerved, that during the operation, the tallow is ſtirred from time to time, and the ſtock ſupplied with freſh tallow. When the *candles* are finiſhed, their peaked ends, or bottoms, are taken off; not with any cutting inſtrument, but by paſſing them over a kind of flat brazen plate, heated to a proper pitch by a fire underneath; which melts down as much as is requiſite.

Candles, *method of making mould*. Theſe *candles* are made in moulds of different matters: braſs, tin, and lead, are the moſt ordinary. Tin is the beſt, and lead is the worſt. Each *candle* has its mould, conſiſting of three pieces, the neck, ſhaft, and foot: the *ſhaft* is a hollow metal cylinder, of the diameter and length of the *candle* propoſed: at the extremity of this is the *neck*, which is a little metallic cavity, in form of a dome, having a moulding within ſide, and pierced in the middle with a hole big enough for the wick to paſs through. At the other extremity is the *foot*, in form of a little tunnel, through which the liquid tallow runs into the mould. The neck is ſoldered to the ſhaft, but the foot is moveable, being applied when the wick is to be put in, and taken off again when the *candle* is cold. A little beneath the place where the foot is applied to the ſhaft, is a kind of ſtring of metal, which ſerves to ſupport that part of the mould, and to prevent the ſhaft from entering too deep in the table to be mentioned hereafter. Laſtly, in the hook of the foot, is a leaf of the ſame metal, ſoldered within ſide, which advancing into the centre, ſerves to keep up the wick; which is here hooked on, preciſely in the middle of the mould. The wick is introduced into the ſhaft of the mould by a piece of wire, which being thruſt through the aperture of the hook, till it come out at the neck, the wick is tied to it; ſo that in drawing it back, the wick comes along with it, leaving only enough a-top for the neck; the other end is faſtened to the hook, which thus keeps it perpendicular. The moulds, in this condition, are diſpoſed in a table pierced full of holes, the diameter of each being about an inch: theſe holes receive the moulds inverted, as far as the ſtring in the foot. Being thus placed perpendicularly, they are filled with melted tallow (prepared as before) drawn out of the tap into a tin pot, and thence poured into the foot. After the moulds have ſtood long enough to cool, for the tallow to have arrived at its conſiſtence, the *candle* is taken out, by taking off the foot, which brings the *candle* along with it. Thoſe who aim at perfection in their work, bleach or whiten their *candles*, by faſtening them on rods or broches, and hanging them out to the dew, and earlieſt rays of the ſun, for eight or ten days: care being taken to ſcreen them in the day-time from the too intenſe heat of the ſun; and in the night from rain, by waxed cloths.

Candles, *wax*, are made of a cotton or flaxen wick, ſlightly twiſted, and covered with white or yellow wax. —Of theſe there are ſeveral kinds; ſome called *tapers*, uſed to illumine churches, and in proceſſions, funeral ceremonies, &c. and others uſed on ordinary occaſions.

For the firſt kind, their figure is conical, ſtill diminiſhing from the bottom, which has a hole to receive the point in the candleſtick, to the top, which ends in a point: the latter kind are cylindrical. The firſt are either made *with a ladle*, or *with the hand*.

Candles, *wax, manner of making with the ladle*. The wicks being twiſted, and cut off at the proper length, a dozen of them are tied by the neck, at equal diſtances, round an iron circle, ſuſpended directly over a large baſon of copper tinned, and full of melted wax: a large ladle full of this wax is poured gently, by inclination, on the tops of the wicks, one after another; ſo that running down, the whole wick is thus covered; the ſurplus returning into the baſon, where it is kept warm by a pan of coals underneath it. They thus continue to pour on the wax, till the *candle* arrive at its deſtined bigneſs: ſtill obſerving, that the three firſt ladles be poured on at the top of the wick, the fourth at the height of $\frac{3}{4}$, the fifth at $\frac{1}{2}$, and the ſixth at $\frac{1}{4}$; by which means the *candle* arrives at its pyramidal form. The *candles* are then taken down hot, and laid aſide of each other, in a feather-bed folded in two, to preſerve their warmth, and keep the wax ſoft: they are then taken and rolled, one by one, on an even table, uſually of walnut-tree, with a long ſquare inſtrument of box, ſmooth at the bottom. The *candle* being thus rolled and ſmoothed, its big end is cut off, and a conical hole is made in it.

Candles, *wax, manner of making by the hand*. The wick being diſpoſed, as in the former, they begin to ſoften the wax, by working it ſeveral times in hot water, contained in a braſs caldron, tinned, very narrow and deep. A piece of the wax is then taken out, and diſpoſed, by little and little, around the wick, which is hung on a hook in the wall, by the extremity oppoſite to the neck; ſo that they begin with the big end, diminiſhing ſtill, as they deſcend towards the neck. In other reſpects, the method is the ſame here, as in the former caſe; only that they are not laid in the bed, but are rolled on the table, juſt as they are formed. It muſt be obſerved, however, that in the former caſe, water is always uſed to moiſten the ſeveral inſtruments, to prevent the wax from ſticking; and in the latter, lard, or oil of olives, for the hands, table, &c.

Candles, *wax cylindrical*, are made either with the *ladle*, or *drawn*. The firſt kind are made of ſeveral threads of cotton, looſely ſpun, and twiſted together, covered with the ladle, and rolled, as the conical ones, but not pierced.

Candles, *wax, drawn*, are ſo called, becauſe actually drawn, in the manner of wire, by means of two large rollers, or cylinders of wood, turned by a handle, which turning backwards and forwards ſeveral times, paſs the wick through melted wax, contained in a braſs baſon; and at the ſame time through the holes of an inſtrument, like that uſed for drawing wire, faſtened at one ſide of the baſon: ſo that, by little and little, the *candle* acquires any bulk, at pleaſure, according to the different holes of the inſtrument through which it paſſes: by this method, may four or five hundred ells at length be drawn, running. The invention of this was brought from Venice by Pierre Bleſimare, of Paris, about the middle of the laſt century.

The aſcent of the tallow up the wick in a burning *candle*, may be reſolved into the ſame principle of filtration, or attraction, as that of water up a heap of aſhes, or even up a capillary tube. The wick of a *candle* is but ſlightly twiſted, that all its hairs may be eaſily come at; which being very ſmall, and abounding in ſulphur, ſoon take the flame; and the flame by its heat rarifying the air, and diſſolving the tallow underneath, makes the globules thereof aſcend into the rarified ſpaces of the wick, and theſe, with the air about it, prove food for the flame.

The Roman *candles* were at firſt little ſtrings dipt in pitch, or ſurrounded with wax; though afterwards they made them of the papyrus, covered likewiſe with wax; and ſometimes alſo of ruſhes, by ſtripping off the outer rind, and only retaining the pith.—For religious offices, wax *candles* were uſed; for vulgar uſes, thoſe of tallow. Serv. ad Æn. lib. i. v. 731. Plin. Nat. Hiſt. lib. xvii cap. 37. Lord Bacon propoſes *candles* of divers compoſitions and ingredients, as alſo of different ſorts of wicks; with experiments of the degrees of duration, and light of each. Good houſewives bury their *candles* in flour, or bran, which it is ſaid increaſes their laſting, almoſt half.—Some ſpeak of perpetual *candles* made of ſalamander's wood. Bac. Nat Hiſt. Cent. 4. § 369. and Cent. 8. § 774

If any chandlers mix with their wares any thing deceitfully, &c. the *candles* ſhall be forfeited. Stat. 23 Eliz. and a tax or duty is granted on *candles*, by 8 and 9 Anne, cap. 6. made for ſale, of 8*d.* per pound, for thoſe made with wax, and one penny a pound for all other *candles*, beſides the duty upon tallow, by 8 Anne, cap. 9. The makers of *candles* are not to uſe melting houſes, without making a true entry, on pain of 100*l.* and to give notice of making *candles* to the exciſe officer for the duties; and of the number, &c. or ſhall forfeit 50*l.* ſtat. 11 Geo. I. cap. 30. See alſo 23 Geo. II. cap. 21. and 26 Geo. II. cap. 32.

Candles, for which the duty hath been paid, may be exported, and the duty drawn back; but no draw-back ſhall be allowed on the exportation of any foreign *candles* imported. 8 Ann. cap. 9. 23 Geo. II. cap. 21.

It is obſervable, in *Optics*, that the flame of two candles joined, give a much ſtronger light than both of them ſeparate. The obſervation was ſuggeſted by Dr. Franklin. Probably the union of the two flames produces a greater degree of heat, whereby the vapour is attenuated, and the particles of which light conſiſts more copiouſly emitted. Prieſtley's Hiſt. of Viſion, p. 807.

Candles, *medicinal, candelæ fumales*, are compoſitions of odoriferous, aromatic, and inflammable matters, as benzoin, ſtorax, olibanum, turpentine, and the like, mixed up with mucilage of tragacanth, and formed into maſſes in ſhape of *candles*. The *effluvia* and odours whereof, when burnt, are ſuppoſed to be ſalutary to the breaſt, &c.

Candles for caruncles of the urinary paſſage, are made of wax and turpentine melted, and wicks dipt into the ſame, till brought to the due thickneſs; then ſmeared over with an unguent of ceruſs, and precipitate and butter of antimony; to be thruſt up the yard till they reach the *caruncula*. See Bougie.

Candle-*tree*, in the Weſt Indies, a tree of whoſe fruit boiled to a thick fat conſiſtence, are made good *candles*. It ſeems to be the ſame as the

Candle-*berry-tree*, *Myrica*, in *Botany*, a denomination of an aromatic evergreen, from whoſe berries are drawn, by boiling, a green wax, of which *candles* are made. It is alſo called the *Virginia myrtle*. It is a genus of the *dioecia tetrandria* claſs. Its characters are theſe: the male flowers are upon different plants from the female; and are produced in a looſe, oblong, oval catkin, imbricated on every ſide; under each ſcale is ſituated one moon-ſhaped flower, having no petal, but hath four or ſix ſhort ſlender ſtamina, terminated by large twin ſummits, whoſe lobes are bifid. The female flowers have neither petal nor ſtamina, but an oval germen ſupporting two ſlender ſtyles, crowned by ſingle ſtigmas. The germen afterward becomes a berry with one cell, encloſing a ſingle ſeed. There are ſeveral ſpecies.

The firſt ſort grows naturally upon bogs in many parts of England, particularly in the northern and weſtern counties; as alſo in Windſor Park, and near Tunbridge Wells. This riſes, with many ſhrubby ſtalks, near four feet high, which divide into ſeveral ſlender branches, garniſhed with ſtiff ſpear-ſhaped leaves of a light green, ſmooth, and a little ſawed at their points, emitting a fragrant odour when bruiſed.

Moſt of the other ſorts grow naturally in North America, where, as is before obſerved, the inhabitants get a ſort of green wax from the berries, which they make into candles. The method is deſcribed by Mr. Cateſby, in his Natural Hiſtory of Carolina.

Candle-*wood*, ſlips of pine about the thickneſs of the finger, uſed in New England, and other colonies, to burn inſtead of *candles*, giving a very good light.

The French inhabitants of the iſland of Tortuga uſe ſlips of yellow ſantal wood for the ſame purpoſe, and under the ſame denomination of *bois de chandelle*, which yields a clear flame, though of a green colour.

Candle, *ſale*, or *auction by inch of*. See Inch *of Candle*.

There is alſo a kind of *Excommunication by inch of* Candle; wherein the time a lighted *candle* continues burning, is allowed the ſinner to come to repentance; but after which he remains excommunicated to all intents and purpoſes.

CANDLEMAS, a feaſt of the church, held on the ſecond of February, in memory of the Purification of the Bleſſed Virgin.

It takes its name either from the number of lighted candles uſed by the Romiſh church, in the proceſſions of this day; or becauſe, before *maſs*, the church conſecrated *candles* for the whole year. This ceremony was prohibited in England, by an order of council in 1548.

Candlemas is alſo called, in ancient writers, *Hypapante*; and among moderns, the *Purification*.

Some will have this feaſt to have been inſtituted by pope Gelaſius, in lieu of the heathen lupercalia; and that proceſſion was thereon made with lighted *candles* round the fields and grounds, by way of exorciſm. Hence Bede ſays, "It is happy for the church to have changed "the luſtrations of the heathens, held in the month of "February, around the fields, for the proceſſions with "hallowed *candles*, in remembrance of that divine light "wherewith Chriſt illuminated the world, whence he "was ſtiled by Simeon, *a light to lighten the Gentiles*." Others aſcribe the origin of *Candlemas* to pope Vigilius, in the year 536, and ſuppoſe it ſubſtituted for the feaſt of Proſerpine, held with burning tapers by the heathens in the beginning of February.

CANDLESTICK, a houſhold utenſil, contrived to hold one, or more lighted candles. Larger, and more ſtately *candleſticks*, contrived for holding a great number of candles, are called *branches* and *girandoles*; and when made of glaſs, *luſtres*.

The *golden candleſtick* was the richeſt utenſil in the Jewiſh tabernacle. It was made of ſolid gold, and weighed a talent; and, according to Cumberland, the value of it, excluſive of the workmanſhip, was 5076 pounds. It contained ſeven lights, ſix branching out in three parts from the upright ſtem, and one on the top of it.

This ſacred utenſil was, after the Babyloniſh captivity, placed in the Temple; and when the Temple was deſtroyed, it was depoſited in the Temple of Peace built by Veſpaſian; and the repreſentation of it ſtill remains on the triumphal arch, at the foot of mount Palatine, on which Veſpaſian's triumph is delineated.

Candlestick, *water*, a kind of jet or fountain raiſed on a foot which ſupports a little baſon reſembling the diſk of a *candleſtick*, down which the water falls into another larger baſon.

CANDO, Cundi, or Condi, in *Commerce*, a long meaſure uſed in ſeveral parts of the Eaſt Indies, particularly at Goa, the capital of the Portugueſe ſettlements there. Silk and woolen ſtuffs are meaſured by the *varre*, and linen by the *cando*. The *cando* uſed in Pegu is equal to the Venetian ell.

CANDOU, in *Botany*; *Purchaſii*, *Jonſt. Dendrol. Arbor Maldivenſis*, a tree much like the cork-tree, and of the height of the walnut-tree. The trunk is fungous, and lighter than cork; the bark whitiſh, and it bears no fruit.

CANDY, in ſpeaking of Sugar, denotes a preparation of that ſubſtance, made by melting, and cryſtallizing it ſix or ſeven times over, to render it hard and tranſparent.

Candying makes an operation in *Pharmacy*, as well as confectionary; thoſe ſimples which are preſerved in ſubſtance by boiling in ſugar being ſaid to be *candied*: though the performance of it is now transferred to the confectioner from the apothecary, to whom originally it belonged.

Candy *carrot*. See Spignel.

Candy *tuft-tree*. See Iberis.

Candy *lion's foot*. See *Candia* Lion's *foot*.

CANE, in *Commerce*, the ſame with reed, called among botaniſts arundo. See Bamboe and Reed.

Canes make a conſiderable article in commerce. There are imported two ſorts, viz. *walking*, and *rattan canes*.

Canes, *walking*, are ſaid by Bradley to be joints of the roots of a ſort of reed, called *canna Indica*. This plant ſhoots in joints about three or four feet long, near the ſurface of the ground, and at every knot produces great numbers of fibres, by which it receives its nouriſhment. The joints are made ſtrait by the fire, which occaſions thoſe ſhades or clouds frequently ſeen in them. Bradley thinks the *cane-tree* might be propagated here by planting ſome of the roots with their knots in artificial bogs, &c.

Canes may be ſtained like tortoiſe ſhell, by a mixture of aqua fortis and oil of vitriol, laid on them at ſeveral times, over live coals, to cauſe it to penetrate the deeper, and afterwards giving them a gloſs with a little ſoft wax, and a dry cloth. Boyle.

Canes, *rattan*, are a ſmaller ſort brought from China and Japan, very tough; which being ſplit, are uſed for making of *cane* chairs. They are the produce of a reed called *rottang Malabarica minor*, or leſſer rattan. Theſe when dry, being ſtruck againſt each other, will give fire, and are uſed accordingly in ſome places in lieu of flint and ſteel. Being twiſted together they make cordage of them. The Chineſe and Japaneſe veſſels are ſaid to have their cables made of them, which are leſs liable to rot in the water than hemp. Phil. Tranſ. N° 244. p. 326. and N° 267. p. 717.

Cane, *ſugar*. See Sugar-*cane*.

Cane, *dumb*. See Wake-*robin*.

Cane, *fiſhing-rod*. See Reed.

Cane, *Indian*. See Canna.

Cane-*apple*, in *Natural Hiſtory*, a name given by the common people of Ireland to the *arbutus*, or ſtrawberry-tree. See Arbutus.

Cane, Canna, a long meaſure, frequent in Italy, Spain, and the ſouth parts of France; of greater or leſs length, according to the places where it is uſed.

At Naples, the *canna* is equal to ſeven feet $3\frac{1}{2}$ inches, Engliſh meaſure; the *canna* of Tholouſe, and the upper Languedoc, is equal to the *vara* of Arragon, and contains five feet $8\frac{2}{3}$ inches; at Montpellier, in Provence, Dauphine, and the Lower Languedoc, to ſix Engliſh feet $5\frac{1}{2}$ inches.

CANELLA *alba*, in *Botany*, the ſame with what is otherwiſe called cortex *winteranus*.

CANENTES, in *Natural Hiſtory*, a name uſed by ſome of the older writers for a ſpecies of foſſile ſhell not known to us in its recent ſtate, but deſcribed by Klein under the name of the *tubulus marinus concameratus*, and by other of the late authors under thoſe of *polythalamium* and *orthoceratites*.

CANEPHORÆ, Κανηφοροι, from κανης, a *reed*, and φερω, *I bear*, in *Antiquity*, were two virgins of quality at Athens, kept in Minerva's temple in the Acropolis, who at the feaſt of the Panathenæa, carried baſkets on their heads with ſomething ſecret or myſterious therein, and delivered to them by the prieſteſs.

The baſkets were uſually crowned with flowers, myrtles, &c.—The *Canephoræ*, in theſe ceremonies, always marched the firſt, the prieſt next, and the choir of muſic followed.

The learned are at variance about the contents of the baſkets borne by the *Canephoræ*. Some will have it, that neither they, nor the prieſteſs herſelf, knew what was in them. Others conjecture that they contained the things neceſſary for ſacrifice, &c.

There were alſo *Canephoræ* in the ceremonies of Ceres and Bacchus. Thoſe in the Bacchanalia carried golden baſkets, in which were divers ſorts of firſt fruits, &c. Among ancient monuments, we find mention of divers figures of *canephoræ*. In that famous cornelian called Michael Angelo's ring, there are three *Canephoræ* with their baſkets on their heads.

The appellation *Canephoræ* was alſo given to virgins at Athens, when, becoming marriageable, they preſented certain baſkets full of little curioſities to Diana, in order to procure leave to quit her train, and change their ſtate of life.

CANEPHORIA was a ceremony, which made part of a feaſt celebrated by the Athenian virgins on the eve of their marriage-day. The *Canephoria*, as practiſed at Athens, conſiſted in this; that the maid, conducted by her father and mother, went to the temple of Minerva; carrying with her a baſket full of preſents, to engage the goddeſs to make the marriage happy; or rather, as the ſcholiaſt of Theocritus has it, the baſket was intended as a kind of honourable amends made to that goddeſs, the protectreſs of virginity, for abandoning her party; or it was a ceremony to appeaſe her wrath.

CANES, in Egypt and other Eaſtern countries, a poor ſort of buildings for the reception of ſtrangers and travellers. People are accommodated in theſe with a room at a ſmall price, but with no other neceſſaries; ſo that, excepting the room, there are no greater accommodations in theſe houſes than in the deſerts, but that there is a market near.

CANES *Venatici*, in *Aſtronomy*, the *Grey-hounds*, two new conſtellations, firſt eſtabliſhed by Hevelius, between the tail of the Great Bear, and Bootes' arm, above the Coma Berenices. The firſt is called *aſterion*, being that next the Bear's tail; the other *chara*. They comprehend 23 ſtars, of which Tycho only obſerved two. The longitudes and latitudes of each are given by Hevelius.

In the Britiſh Catalogue they are 25. See the following table.

Situation of the ſtars.	Signs.	Longitud.			Latitude.			Magnitude
		°	′	″	°	′	″	
	♍	0	5	26	48	46	37	6
In the left fore-foot of *Chara*.		10	6	58	38	14	50	5
		4	51	40	45	37	30	6
		10	28	15	40	35	50	6
		3	28	28	48	6	27	6
5.								
Under the head of *Chara*, next to the cheek.		3	13	4	37	45	58	5
		4	40	42	48	40	20	7
In the fore-head of *Chara*, under the tail of Urſa Major.		13	26	0	40	33	2	4.5
		14	44	48	40	37	30	6.7
		17	11	33	39	51	30	6
10.								
		0	59	54	47	56	40	6
Under the tail of the Bear.		20	13	22	40	7	18	2.3
		25	43	4	33	56	36	4.5
In the back of *Chara*.		23	59	56	39	0	24	5
		23	7	40	41	40	15	6.5
15.								
		23	4	40	41	51	44	6
		23	13	58	41	40	35	6
		21	42	17	43	40	3	6
		22	47	38	44	14	12	7
		23	27	40	44	12	24	6
20.								
		15	54	2	51	47	16	6
		Unknown			Unknown			6
		24	24	5	44	7	2	7
		20	1	0	52	52	0	5.6
		23	3	2	50	51	40	5

CANGA, in the *Chineſe Affairs*, a wooden clog borne on the neck, by way of puniſhment for divers offences.

The *canga* is compoſed of two pieces of wood notched, to receive the criminal's neck; the load lies on his ſhoulders, and is more or leſs heavy according to the quality of his offence. Some *cangas* weigh 200 pounds; the generality from 50 to 60 pounds. The mandarins condemn to the *canga*. Sentence of death is ſometimes commuted for by the penalty of the *canga*.

CANI, *grotto del*. See GROTTO *del Cani*.

CANIA, in *Botany*, a name given by Pliny, and ſome other authors, to the common ſtinging nettle.

CANICULA, in *Zoology*, the name by which Ariſtotle, and ſince him Rondeletius, Aldrovandus, and ſome others, have called the CATULUS.

CANICULA was alſo uſed by Pliny, and the old Romans, for that fiſh which the Italians expreſs by the ſame ſort of diminutive name, at this time the *lamiola*. It is the *galeus* CANIS of authors, the fiſh we in Cornwall call the *tape*. It is a ſpecies of SQUALUS, called by Artedi the *ſqualus*, with the noſtrils placed near the mouth, and with ſmall foramina near the eyes.

CANICULA is a name given to one of the ſtars of the conſtellation CANIS *major*; called alſo ſimply the *Dog-ſtar*; by the Greeks, *Σειριος*, *Sirius*.

Pliny and Galen alſo give the appellation Procyon to the *canicula*; though, in propriety, PROCYON is the name of another ſtar, in the Leſſer Dog.

Canicula is the tenth in order in the Britannic Catalogue; in Tycho's and Ptolemy's it is the ſecond. It is ſituate in the mouth of the conſtellation, and is of the firſt magnitude; being the largeſt, and brighteſt, of all the ſtars in the heavens. Its longitude, latitude, &c. ſee among thoſe of the other ſtars of CANIS *major*.

From the riſing of this ſtar, that is, its emerſion from the ſun's rays, which now happens about the twenty-ſixth day of Auguſt, the ancients reckoned their *dies caniculares*, or dog-days.

The Egyptians and Ethiopians began their year at the riſing of *canicula*; reckoning to its riſe again the next year, which is called the *Annus Canarius*.

CANICULAR *days*, properly denote a certain number of days, preceding and enſuing the heliacal riſing of *Canicula*, or the Dog-ſtar, in the morning.

Some authors tell us, from Hippocrates and Pliny, that the day the *Canicula* riſes, the ſea boils, wine turns ſour, dogs begin to grow mad, the bile increaſes and irritates, and all animals grow languid; and that the diſeaſes ordinarily occaſioned in men by it, are burning fevers, dyſenteries, and phrenſies.

The Romans ſacrificed a brown dog every year to *Canicula* at its riſing, to appeaſe its rage. They ſuppoſed *Canicula* to be the occaſion of the ſultry weather, uſually felt in the dog-days; Homer's Il. lib. xxii. v. 22. but by miſtake: in five or ſix thouſand years more, *Canicula* may chance to be charged with bringing froſt and ſnow; for it will riſe in November or December; and he actually riſes with the ſun on different days, in different horizons.

However, the almanac-makers uſually mark the beginning of the *canicular* days about the 30th of July, and their end about the 7th of September.

CANICULAR *year*, denotes the Egyptian natural year, which was computed from one heliacal riſing of *canicula* to the next.

This is alſo called *annus canarius*, and *annus cynicus*; by the Egyptians themſelves the *Sothic year*, from *Soth*, a denomination given by them to Sirius. Some alſo call it the *heliacal year*.

The *canicular* year conſiſted ordinarily of 365 days, and every fourth year of 366 days, by which it was accommodated to the civil year. The reaſon of their choice of *canicula* before the other ſtars, to compute their time by, was not only the ſuperior brightneſs of that ſtar, but becauſe its heliacal riſing was in Egypt a time of ſingular note, as falling on the greateſt augmentation of the Nile, the reputed father of Egypt. Epheſtion adds, that from the aſpect of *Canicula*, its habit and colour, the Egyptians drew prognoſtics concerning the riſe of the Nile; and, according to Florus, predicted the future ſtate of the year. So that the firſt riſing of this ſtar was yearly obſerved with great attention. Bainbrigge, Canicul. cap. 4. p. 26.

CANICULUM, or CANICULUS, in the *Byzantine Antiquities*, a golden ſtandiſh, or ink-veſſel, decorated with precious ſtones, wherein was kept the ſacred *encauſtum*, or red ink, wherewith the emperors ſigned their decrees, letters, &c.

The word is by ſome derived from *canis* or *caniculus*; alluding to the figure of a dog, which it repreſented; or rather becauſe it was ſupported by the figures of dogs. By Salmaſius from *κανιον*, an *inkhorn*.

The *caniculum* was under the care of a particular officer of ſtate, hence called *caniclinus* or *canicleus*, who was in great requeſt. Du-Cange will have the *caniclinus* to have been the ſame with the LOGOTHETA.

CANICUM, in *Botany*, a name given by Avicenna, and ſome other authors, to the ſmall celandine, or PILEWORT.

CANINA *lappa*, in *Botany*, a name given by ſome of the old Roman authors to the fruit of the aparine or gooſegraſs. They are called by others *lappæ boariæ*, and *lappæ canariæ*, and the plant *lappa* and *lappago*. See CLEAVERS.

CANINANA, in *Zoology*, the name of a ſpecies of ſerpent found in America, and eſteemed one of the leſs poiſonous kinds. It grows to about two feet long, and is green on the back, and yellow on the belly. It feeds on eggs and ſmall birds; the natives cut off its head and tail, and eat the body as a delicate diſh. Ray.

CANINE, in a general ſenſe, ſomething that relates to dogs.

Dr. Douglas gives frequent compariſons between the *canine* muſcles and the human.

The voice of perſons ſeized with the *hydrophobia* is frequently uttered with a *canine* hoarſeneſs, and bears ſome reſemblance to the barking of a dog. Dr. Liſter accounts for the cynical appearances in the *hydrophobia* from a ſuppoſition, that the patient has undergone ſomewhat of a transformation into the *canine* nature, or that certain of the organical parts of his body, eſpecially the *gula*, tongue, &c. are diſpoſed after the manner of a dog. Phil. Tranſ. N° 207, and N° 147.

CANINE *appetite*, *appetentia*, or *fames canina*, amounts to much the ſame with *bulimia*, though the more exact writers make a diſtinction between the two. See BULIMY.

We have a late ſurpriſing inſtance of the *canine* appetite, mentioned in the Philoſophical Tranſactions, N° 476. p. 366, & ſeq. and p. 381.

CANINE *laughter*, *riſus caninus*, that wherein the lips are drawn far back, and the mouth much extended.

CANINE *ligament*, is that whereby the prepuce of the human PENIS is faſtened to the *glans*, otherwiſe called the FRÆNUM.

Canine *madneſs*, *rabies canina*, is uſually ſuppoſed the ſame with HYDROPHOBIA, though ſome diſtinguiſh, applying the former denomination where the patient raves, or has loſt all uſe of reaſon; the latter, where he ſtill retains his reaſoning faculty, only his members are ſubject to certain involuntary convulſive motions, as thoſe of an epileptic or aguiſh perſon. See MANIA.

The *rabies canina* is never without the *hydrophobia*, but the latter frequently without the former.

Canine *ſulphur*, a ſort of native SULPHUR diſcovered near Reggio, intermixed with earthy or ſtony matters; thus called by reaſon that dogs are ſo fond of it, as to dig it out of the earth.

Canine *teeth*, Canini *dentes*. See TEETH.

CANINUS *muſculus*, the ſame as ELEVATOR *labii ſuperioris*.

Caninus *ſerpens*, in *Zoology*, a name given by ſome writers to the *mauballa* of the Ceyloneſe, a ſnake that flies at every thing that comes in its way, in the manner of our dogs.

CANIS, *dog*, in the Linnæan ſyſtem of *Zoology*, makes a diſtinct, but very large *genus* of animals, of the order of *feræ*, and claſs of *mammalia*, taking in all the dog-kind, which this author only accounts ſo many varieties, and other diſtinct *ſpecies*. The characters of this *genus* are, that the ſeveral ſpecies of it have ſix upper fore-teeth; that the lateral ones are longer than the others; the intermediate ones of a lobated figure. There are alſo ſix fore-teeth in the lower-jaw, of which the lateral ones are lobated; the canine teeth are ſingle and incurvated; the grinders are ſix or ſeven in number.

The ſpecies are the common DOG, the WOLF, the HYÆNA, the FOX, the ALOPEX, the LAGOPUS, the JACKALL, or *lupus aureus*, the *Mexican* DOG, or *American mountain cat*, with a tail bent downwards, and an aſh-coloured body, variegated with brown and yellow ſpots; and the THOUS.

Canis *Major*, *the Great Dog*, in *Aſtronomy*, a conſtellation of the ſouthern hemiſphere, below Orion's feet, though ſomewhat to the weſtward of him; whoſe ſtars Ptolemy makes 29; Tycho obſerved only 13; Hevelius 21; in the Britannic Catalogue they are 31. Their order, names, places, longitude, magnitude, &c. are as follow.

Names and ſituations of the ſtars.	Bayer's Ch.	Signs.	Longitud. °	′	″	Latitude. °	′	″	Magnitude
In the preced. poſterior foot	ζ	♋	3	7	4	53	24	24	3
In the extrem. of the anterior foot	β		2	52	58	41	17	47	2
Inform. under the poſterior foot	λ		4	12	39	56	44	8	4
Preced. of two in the lower knee	ξ		6	20	54	46	36	17	5
Subſeq. and ſouth of the ſame	ξ		7	21	25	46	5	36	5
5.									
	ν		7	16	48	41	46	23	5
South. in the upper knee	ν		7	25	41	42	21	25	5
North. in the ſame knee	ν		7	41	57	41	19	24	5
Exceeding bright one in mouth, *Sirius*.	χ		9	49	1	39	32	8	1
In the ham of the right leg	κ		12	12	14	53	55	0	6
10.									
			9	59	38	37	19	38	5
South. and preced. in the breaſt	ς		10	57	2	43	53	19	6
In the lower leg	κ		14	5	36	55	12	5	4
In the north ear	θ		11	52	53	34	44	34	5
Preced. of the contig. in the breaſt	π		12	55	4	42	55	33	6
15.									
Preced. of two in the ſhoulder	ο		13	50	34	46	48	52	5
South. of the contig. in the breaſt	π		13	25	49	43	3	24	6
In the head	μ		12	44	29	36	41	50	4
Third of thoſe following in breaſt	π		13	34	29	42	46	32	6
South. in the neck	τ		13	13	37	39	42	0	4
20.									
Bright one under belly, between thighs	ι		16	24	46	51	23	57	2.3
			17	12	31	50	16	0	4
North. of two in the neck	γ		15	17	41	38	1	50	3
Subſeq. of two in the ſhoulder	ο		16	41	25	46	10	13	5.4
Bright one in middle of the body	δ		19	3	30	48	29	37	2.3
25.									
			20	12	26	47	53	49	7
			20	59	52	48	12	38	7
			21	18	34	48	36	51	5
			21	56	10	46	15	37	6
			22	3	25	46	38	30	5
30.									
Bright one in the tail	η	♋	25	12	16	50	38	56	2.3

Canis *Minor*, the *Little Dog*, in *Aſtronomy*, a conſtellation of the northern hemiſphere; called alſo by the Greeks, *Procyon*, and by the Latins *Antecanis*, and *Canicula*.

The ſtars in the conſtellation *Canis minor*, are in Ptolemy's Catalogue 2; in Tycho's 5; in Hevelius's 13. Their order, names, places, longitude, latitude, magnitude, &c. in the Britiſh Catalogue, which contains 14, are as follow.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud. °	′	″	Latitude °	′	″	Magnitude
		♋	16	48	3	10	16	12	6.7
In the head	ε		17	19	58	12	36	42	6
North. in the neck	β		17	51	52	3	31	30	3
South. in the neck	γ		18	1	23	12	51	51	6
Under theſe as in the ſhoulder	η		18	18	14	14	49	14	6
5.									
Informis, over the neck	ο		17	56	31	9	45	18	6
North. againſt preced. poſt. foot	δ		20	10	40	19	37	58	6
Middle	δ		20	14	7	18	13	51	6
South	δ		20	28	33	18	6	22	6
In the thigh, *Procyon*	α		21	30	31	15	57	55	1.2
10.									
Informis, towards the tail	π		21	56	22	10	20	15	6
In the hind-leg			23	22	23	8	15	17	5.6
			25	19	47	18	53	0	5
		♋	26	57	30	18	6	10	6

Canis *carcharias*, in *Natural Hiſtory*, a name given by Rondeletius, and other authors, to that ſpecies of ſhark called the *lamia*, or white ſhark by others, or *carcarias*, *lamia*, &c. See *Tab. of Fiſhes*, N° 3.

Canis *galeus*, in *Zoology*, the name of a large fiſh of the ſhark kind. It has three rows of extremely ſharp teeth; the eyes are ſmall for the ſize of the fiſh, the pupils are proportionably ſmall, and the iris of a fine bright ſilver colour, with a caſt of blue or green. It is brought to market in Rome, and is ſometimes caught alſo on our own coaſts, as about Penzance in Cornwall. It is extremely fond of human fleſh, and will venture to leap up even upon the ſhore for it.

Canis *volans*, in *Zoology*, the name of an animal properly of the bat or veſpertilio kind, and diſtinguiſhed by Linnæus by the name of *veſpertilio cauda nulla*, the bat without a tail.

CANKER, ſometimes denotes a ſpeck made by a ſharp humour, which gnaws the fleſh almoſt like a cauſtic; very common to children, in their mouth eſpecially.

Canker ſeems alſo popularly uſed for a GANGRENE, or beginning mortification.

Canker is alſo a diſeaſe in dogs, which ſeizes their ears.

Canker, in hawks, breeds in the throat and tongue, occaſioned by foul feeding. It is cured by waſhing the mouth with honey and white wine boiled together, then ſtrewing it with chervil-powder.

Canker, in horſes, is a loathſome ſorrance, which, if it continue long uncured, ſo feſters and putrifies the part, that it will eat to the very bone; and if it happens to come upon the tongue, will cut it aſunder; lighting upon the noſe it devours the griſtle through.

Canker, in trees, a term uſed by our farmers to expreſs a wound or blemiſh in the trunk of a tree, which does not heal up by nature, but will encreaſe and damage, if not endanger, the whole tree. Theſe wounds are ſometimes occaſioned by accidents, as blows, or by the branches of one tree galling another by the motion they are put into by the winds; if this latter be the caſe, the offending branch muſt be cut off, or drawn another way, or elſe all remedies are vain.

The wound muſt be cut and enlarged every way to the quick, and all the decayed wood muſt be taken clean out; then the whole internal ſurface of the wound muſt be filled up with tar mingled with oil, and after this it muſt be filled up with clay and horſe-dung mixed together, or with horſe-dung alone, which many eſteem beſt of all. In this caſe the dung muſt be bound over with a rag; hogs dung is by many preferred to horſe-dung for this purpoſe; and it is proper to add to this application the keeping of the roots cool and moiſt, by laying fern and nettles about them. If the *canker* be only in one of the boughs of the tree, the ſhort way is to cut off the bough at once. If that be a large one, it ſhould be cut off at ſome diſtance from the body of the tree; but if a ſmall one it ſhould be cut off cloſe. The adding a coat of dung, and pond or river mud, about the roots of trees, if they are ſubject to this from their ſtanding in a dry barren land, as is often the caſe, is a very good cure. See BARK, and DISEASES *of Plants*.

Canker *worm*. See SCARABÆUS.

CANNA, in *Botany*, *indian* Cane, a *flowering-reed*, a genus of the *monandria monogynia* claſs. Its characters are theſe: the flower hath one petal, which is divided into ſix parts; the three upper ſegments are erect, and broader than the lower, two of which are erect, and the other turns back, and is twiſted. It hath one ſpear-ſhaped ſtamen, riſing as high as the petal, having the appearance of a ſegment. Below the empalement is ſituated a roundiſh, rough germen; which becomes an oblong, roundiſh, membranaceous capſule, having three longitudinal furrows, crowned by the empalement, which hath three cells filled with round, ſmooth ſeeds. There are three ſpecies.

All the ſorts are propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be tranſplanted into ſeparate ſmall pots,. and plunged in a moderate hot-bed of tanner's bark.

CANNA, in the *Ancient Pharmacy* and *Botany*, denoted the *calamus aromaticus*, or, according to others, *caſſia fiſtula*.

CANNA alſo denotes a ſort of long meaſure, otherwiſe called by modern authors a CANE, by the Latins *calamus*, and in Scripture a reed.

CANNABINA, in *Botany*. See *Baſtard* HEMP.

CANNABIS. See HEMP.

CANNACORUS, in *Botany*. See CANNA.

CANNEL-*coal*, a black bituminous foſſil, frequent in Staffordſhire and Lancaſhire, of a fine hard texture, ſo as to receive a poliſh, and become of ſervice for divers works inſtead of ivory, but chiefly uſed for fuel, as affording a brighter and purer flame than the common *ſea*-COAL.

Dr. Woodward takes our *cannel-coal* to be the ſame with the *lapis* AMPELITES of the ancients, and the *lapis* OBSIDIANUS of ſome later writers.

Cannel-coal, or, as ſome call it, *canal-coal*, is alſo found in Cumberland, and ſome other counties of the North.—It is of ſo cloſe a texture, that it will take a tolerable poliſh. The choir of the cathedral of Litchfield is ſaid to be in a great meaſure paved with *canal-coal* for the black, and alabaſter for the white, which when clean reſembles marble. It alſo turns like ivory into many pretty works, as ink-ſtandiſhes, ſalts, candleſticks, &c.

In diſpoſing it for fire regard is had to the grain. If they would have it burn ſlow, they lay it flatwiſe on the fire; if clear, they ſet it edgewiſe, in which caſe it burns as light as a candle.

CANNEQUINS, in *Commerce*, white cotton cloths brought from the Eaſt Indies. They are a proper commodity for trading on the coaſt of Guinea, particularly about the rivers Senega and Gambia. Theſe linens are folded ſquare wiſe, and are about eight ells long.

CANNEVAROLA, in *Zoology*, a name by which Aldrovandus, and ſome other authors, have called the leſſer reed-SPARROW, called by others *ficedula cannabina*, and, by Mr. Ray, *paſſer arundinaceus minor*.

CANNIBAL, or CANIBAL, is uſed by modern writers for an ANTHROPOPHAGUS, or man-eater, more eſpecially of the Weſt Indies.

CANNOCK, or CANNOT-*ſtone*, a baſe ſort of iron-oar, in Staffordſhire mines, of which the worſt metal is made.

CANNON, in *War*, a military engine for throwing iron, lead, or ſtone bullets, by force of gunpowder, to a place directly oppoſite to the axis of the cylinder whereof it conſiſts. See *Tab. Gunnery*, *fig.* 1.

The word ſeems derived from the Italian *cannone*, an augmentation of *canna*, *cane*; becauſe a *cannon* is long, ſtrait, and hollow, like a cane.

The firſt *cannons* were called *bombardæ*, from *bombus*, by reaſon of their noiſe. They were conſtructed of ſeveral pieces of iron adapted to each other lengthways, and hooped with iron rings, and employed in throwing ſtone bullets of a prodigious weight; accordingly their bore was enormouſly large, and they were very inconvenient for uſe.

The parts and proportions of a *cannon* about eleven feet long, are its barrel, or cavity, nine feet; its fulcrum, or ſupport, fourteen, and its axis ſeven; the bore, or diameter of the mouth, ſix inches, and two lines the play of the ball; the diameter of the ball therefore ſix inches, and its weight thirty-three pounds ⅓. In preſent practice, the diameter of a ſhot is divided into twenty equal parts, and that of the bore is twenty-one of theſe parts: the French uſe the proportion of twenty-ſix to twenty-ſeven; and Mr. Muller recommends a kind of medium between both; or that of twenty-four to twenty-five. The metal thick about the mouth, two inches, and at the breech ſix. It weighs about five thouſand ſix hundred pounds: its charge is from eighteen to twenty pounds. It carries, point-blank, ſix hundred paces; and loads ten times in an hour, ſometimes fifteen; in a day one hundred and twenty times. Its bed fifteen feet broad, and twenty long, for the rebound. It requires twenty horſes to draw it. See CALIBRE, GUN, and WINDAGE.

Larrey makes braſs *cannon* the invention of J. Owen; and ſays, the firſt known in England, were in 1535; and iron *cannon* was firſt caſt in England in 1547. *Cannons*, however, he owns, were known before; and obſerves, that at the battle of Creſſi, in 1346, there were five pieces of *cannon* in the Engliſh army, which were the firſt that had been ſeen in France. Mezeray alſo ſays, that king Edward ſtruck terror into the French army, by five or ſix pieces of *cannon*; it being the firſt time they had ſeen ſuch thundering machines.

In the liſt of aids raiſed for the redemption of king John of France, in 1368, mention is made of an officer in the French army called *maſter of the king's cannons*, and of his providing four great *cannons* for the garriſon of Harfleur. Father Daniel (dans la Vie de Philip V. dit de Valois, tom. ii.) produces a proof from the records of the chamber of accompts at Paris, that *cannon* and gunpowder were uſed in the year 1338.

Du-Cange even finds mention of the ſame engines in Froiſſart, and other French hiſtorians ſome time earlier. The Germans carry the invention of *cannon* farther back, and attribute it to Albertus Magnus, a Dominican monk, about the year 1250. Iſaac Voſſius rejects all theſe conjectures, and finds *cannons* in China almoſt ſeventeen hundred years ago. According to him, they were mounted by the emperor Kitey, in the year of Chriſt 85. The ancients had their fiery tubes, or *cannæ*, which being loaden with pitch, ſtones, and iron-balls, were exploded with a vehement noiſe, ſmoke, and great effect, though much inferior to our bombs.

Cannons are made cylindrical, that the motion of the ball may not be retarded in its paſſage; and that the powder, when on fire, may not ſlip between the ball and the ſurface of the *cannon*, which would hinder its effect. Wolfius would have the *cannon* always decreaſe towards the mouth or orifice; becauſe the force of the powder always decreaſes, in proportion to the ſpace through which it is expanded. The *cannons* made after the Spaniſh manner, had a cavity, or chamber, at the bottom of the barrel, which helped their effects. But the *cannon* are now made with a plain cylindrical bore without any CHAMBER. A *cannon* is found to recoil two or three paces after exploſion; which ſome account for from the air's ruſhing violently into the cavity, as ſoon as it is diſcharged of the ball: but the real cauſe is, the powder's acting equally on the breech of the *cannon*, and the ball. For a battering-piece, whoſe ball is thirty-ſix pounds, there muſt be two cannoneers, three chargers, and thirty pioneers.

Cannons are diſtinguiſhed from the diameters of the balls they carry; but this diſtinction is different in different nations. The proportion of their length to their diameter, depends rather on experience, than any reaſoning *à priori*; and has been accordingly various, in various times and places: the rule is, that the gun be of ſuch a length, as that the whole charge of powder be on fire before the ball quit the piece. If it be made too long, the quantity of air to be driven out before the ball, will give too much reſiſtance to the impulſe; and that impulſe ceaſing, the friction of the ball againſt the ſurface of the piece will take off ſome of its motion. Formerly, *cannons* were made much longer than at preſent; till ſome made by chance 2½ feet ſhorter than ordinary, taught them that the ball moves with a greater impetus through a leſs ſpace than a larger. This Guſtavus king of Sweden proved by experience in 1624, when an iron-ball, forty-eight pounds weight, was found to go farther from a new ſhort *cannon*, than another ball of ninety-ſix pounds out of an old, longer piece: whereas, in other reſpects, it is certain the larger the bore and ball, the greater the range.

Profeſſor Euler apprehends, that the alteration in the length of *cannon* has not been ſupported by proper experiments; ſo that we may be allowed to infer, that thoſe of the preſent conſtruction will throw a ſhot with a greater velocity than the longer *cannon* did. And he is of opinion, that the principal reaſon for laying aſide the uſe of very long and heavy *cannon* was the great difficulty of tranſporting them from place to place with an army. Principles of Gunnery inveſtigated, &c. p. 246. See alſo on this ſubject, Robins's Tracts, vol. i. p. 248, &c.

The names of the ſeveral *cannons*, their length, their weight, and that of their balls, as they obtain among us, are as in the following table; though their names are generally derived, eſpecially in naval uſe, from the weight of the ball which they diſcharge: thus a piece that diſcharges a ball of twenty-four pounds, is called a twenty-four pounder, &c.

Names of Cannon.	Weight of an iron ball.	Weight of the Cannon.	Length of the Cannon.
Cannon Royal	48 *lb.*	8000*lb.*	12 *Feet.*
Demi-cannon large	36	6000	12
Demi-cannon ordinary	32	5600	12
Demi-cannon leaſt	30	5400	11
Culverin largeſt	20	4800	12
Culverin ordinary	17 *lb.* 5 *oz.*	4500	12
Culverin leaſt	15	4000	11
Demi-culverin ordinary	10 11	2700	11
Demi-culverin leaſt	9	2000	10
Saker ordinary	6	1500	10
Saker leaſt	4 12	1400	8
Minion largeſt	3 12	1000	8
Minion ordinary	3 4	800	7
Falcon	2 8	750	7
Falconet	1 5	400	6
Rabinet	8	300	5.6 *Dig.*
Baſe	5	200	4.6

Cannon Royal is otherwiſe called *Cannon of Eight.*

The velocity of a ball or bullet, diſcharged from a *cannon*, was formerly ſuppoſed to be only about 500 or 600 feet in a ſecond of time. See BULLET. But Mr. Robins, Muller, and others, have ſince found, that it is much greater; or from 1000, even to 2000 feet, according to the length of the piece, the charge and the weight of the bullet. See VELOCITY.

The greateſt range of a *cannon* is ordinarily fixed at an elevation of 45°. Dr. Halley ſhews it to be at 44½.

It ſhould be remarked, that this range ſuppoſes the initial velocity to be very ſmall, becauſe every different velocity and ball require a different elevation to produce the greateſt range; from 45° downwards gradually to 30°, or even leſs in very great velocities. See VELOCITY *initial.*

M. S. Julian adjuſts the ranges of the ſeveral pieces of *cannon*, from the weight of the ball they bear, the charge of gunpowder being always ſuppoſed in a ſubduple ratio of the weight of the ball: thus,

Weight of a leaden ball.	Horizontal range.	Greateſt range.	Weight of a leaden ball.	Horizontal range.	Greateſt range.
33 *lib.*	600 *paces*	6000	12	450	5000
24	700	6000	8	400	1500
16	800	8000	2	150	1500

For the proportions of the lengths of guns, weight of ball, and ranges, deduced from later experiments and concluſions, ſee GUN.

For the ſeveral parts of a *cannon*, ſee ASTRAGAL, BASE-*ring*, BREECH, CALIBER, CASCABEL, CHASE, MUZZLE, OGEE, REINFORCED *ring*, TRUNNIONS, &c. See alſo GUN and GUNNERY.

CANNON, *boring of*, has lately been uſed inſtead of the method of caſting them hollow by means of a mould. The machine for this purpoſe, as well as for ſmoothing the inner ſurface, which is ſometimes done after they have been caſt hollow, is compoſed of a rectangular frame of timber, ABCD (ſee *Tab. Gunnery*, *fig.* 3.), fixed upon a ſolid plank EE, which is raiſed eight or ten feet above the floor of the workſhop. This frame contains two upright beams F*f*, F*f*, placed level and exactly parallel to each other, and ſtrongly fixed to the pieces of wood G, G, with their ends reſting on the croſs-bars that connect the ſides of the frame. Their length ſhould be about three times that of the *cannon* to be bored. In the inner ſide of theſe beams are two grooves, to which are applied two bars of wood 22, 22, which are connected together by the traverſe pieces 33, 33, 33, between which the *cannon* H is faſtened, ſo that the whole incloſed frame 22, 22, with the piece of ordnance fixed to it, may ſlide in the grooves of the beams F*f*, F*f*; being raiſed or lowered by means of the ropes and pullies K*k*, K*k*, fixed above to the upper part of the frame, and below to the breech of the *cannon*. The rope belonging to each block of pullies coils round an axis YY, bearing at each end the cogged wheels M, M. Each of theſe wheels lays hold of a trundle N, N, containing the ſame number of rounds: the trundles are fixed on a common axis ZZ, the ends of which paſs beyond the ſides of the frame, and bear ſpoked wheels *o*P, *o*P, by means of which the workmen turn the whole machine; and thus elevate or depreſs the *cannon* with the frame to which it is annexed at pleaſure. On the floor of the workſhop, directly under the frame F*f*F*f*, a block of ſtone is faſtened in the ground; and this ſupports a plate of iron or copper, placed exactly level and under a line, ſuppoſed to be parallel to the beams F*f*, F*f*, dividing the ſpace between them on either ſide into equal parts, and coinciding with the true axis of the *cannon.*

The inſtrument for boring is repreſented in *fig.* 6. The upper part of it *a* is formed with a double ſlope, and it is open at *d* for admitting the ſquare part *b* of the trunk, which is a ſtrong bar of iron, round at the part which is to enter the *cannon*, and terminating at its lower part in a pivot, which reſts on the plate R. About three or four feet above the plate, the trunk of the borer is ſquare, and bears upon it a ſtrong box of wood or iron S, through which levers, as TS, paſs, that are turned by men or horſes. The box or trough *v* ſerves to receive the pieces of metal that are taken off in the operation. By this motion, and the preſſure of the *cannon* on the point of the borer, it is gradually bored, till the *cannon* ſinks, by the contrivance already deſcribed, to a certain mark on the borer, which anſwers to the required depth of its bore. It is then elevated, till the borer may be taken out. When the borer is removed, an inſtrument formed for ſmoothing the inner ſurface of the *cannon* is ſubſtituted in its room. This is repreſented by D (*fig.* 7.) It is made of copper, and of a cylindric figure: in the middle there is a ſquare hole capable of admitting the ſquare, and a ſmall portion of the pyramidal part B of the trunk of the borer. This cylindric piece has four grooves, parallel to its axis, into which are fixed cutting inſtruments of tempered ſteel, repreſented by CC. This inſtrument ſerves to enlarge the inſide of the *cannon*, and to ſmooth it, by turning the trunk which ſupports it in the ſame manner as when the piece was bored. When this four-edged ſquarer has paſſed into the piece, another of five, and then another of ſix ſharp edges is made to enter it: the laſt of theſe pares off all the inequalities which the others had left, and gives to the inſide of the *cannon* that perfectly cylindrical and poliſhed figure which it ought to have. The *cannon*, after being thus bored and ſmoothed, is ſent to the chaſers, by whom it is finiſhed: with them the touch-hole is bored, and there it is prepared for being mounted on its carriage: and nothing remains, previous to its being uſed, but proving it. The method of caſting ſolid *cannon*, and boring them with this machine, was adopted, becauſe ſeveral inconveniences attending the other method of caſting them hollow on a mould were avoided by it: the firſt of theſe inſtruments was conſtructed at Straſburgh, and remained long a ſecret, though it is now pretty generally uſed. One of theſe machines will ſerve for three furnaces. Encyclopedie, art. ALESOIR.

A machine of this kind, with ſome little variation in the poſition of it, has very lately been introduced into this country, and is now generally uſed, for iron and braſs guns. The gun to be bored lies with its axis parallel to the horizon, and in that poſition, is turned round its axis by means of wheel-work, moved by one or more horſes. The borer is laid, as above deſcribed, in the direction of the axis of the gun, and is incapable of motion in any direction except that of its length; and in this direction it is conſtantly moved by means of a ſmall rack-wheel, kept in proper motion by a man, who thus makes the point of the borer ſo to bear againſt the part of the gun that is boring, as to pierce and cut it. The outſide of the gun is ſmoothed at the ſame time by men with inſtruments fit for the purpoſe, whilſt it turns round, ſo that the bore may be exactly in the centre of the metal.

For the *Methods of caſting Cannons*, ſee FOUNDERY.

As for the metal of *cannons* it is either iron, or a mixture of copper, tin, and braſs: the tin is added to the copper, to make the metal more denſe and compact: ſo that the better or heavier the copper is, the leſs tin is required. Some to a hundred pounds of copper, add ten of tin, and eight of braſs: others, ten of tin, five of braſs, and ten of lead.

What are commonly called *braſs-cannon*, are not made of pure braſs; they cannot be made either of this, or of pure copper; but it is always found neceſſary to mix with theſe metals ſome coarſer ones, in order to make the whole run the cloſer and ſounder: ſuch are lead, and what the founders call pot-metal. As bell-metal is a mixture of copper and tin, ſo pot-metal is copper and lead. About twenty pounds of lead is uſually put to a hundred weight of pot-metal, but about ſix pounds is ſufficient for a hundred weight of gun-metal, and is of vaſt ſervice.

Guns are now uſually made of iron, becauſe they are found to be much ſtronger and more durable, as well as cheaper than the compoſition with braſs. Mr. Muller, however, contends for the uſe of the latter, eſpecially for ſhips, as being, upon the whole, cheaper, and more ſerviceable than the former. Treat. of Artill. p. 18.

Braudius deſcribes a method of making *cannon* of leather, on occaſion: and it is certain the Swedes made uſe of ſuch in the long war of the laſt century; but theſe burſt too eaſily to have much effect.

It is found by experience, that of two *cannons* of equal bore, but of different lengths, the longer requires a greater charge of powder than the ſhorter, in order to reach the ſame range. The ordinary charge of a *cannon*, is for the weight of its gunpowder to be half that of its ball. See CHARGE.

Cannon are ſometimes cooled by ſmeering them with ſheep-ſkin dipped in water mixed with vinegar. Without this precaution they are apt to burſt after many diſcharges. It is alſo requiſite to clean them with the ſpunge, that no fire may be left behind to endanger the next charge of powder.

After each thirty diſcharges, the *cannon* is to be cooled, with two pints of vinegar, mixed with four of water, poured into the barrel; the touch-hole being firſt ſtopped.

CANNONS, *ordinary*, are thoſe of the common or middling length, each according to the proportions of its kind; e. g. 32 calibers for a culverin.

CANNONS, *extraordinary*, are thoſe which are longer than the uſual proportion allowed to their ſpecies; e. gr. from 32 to 48 or 50 calibers for a culverin.

Cannon, *baſtard*, thoſe which are ſhorter than ordinary, whether they be of the whole cannon, cannon, or demi-cannon, or quarter-cannon kind. Such, e. gr. are culverins from 32 to 26 calibers.

Some call thoſe *baſtard-cannons* which are longer than ordinary *cannons*, yet do not reach the length of culverins. But theſe ought rather to be called *extraordinary cannons*, or baſtard-culverins.

Cannons longer than ordinary are alſo called *ſlings*, *drakes*, &c. as thoſe ſhorter are called *cuts*.

Cannons, *reinforced*, or *fortified*, thoſe ſtronger and thicker in metal than ordinary, which have their metal at the touch-hole one diameter thicker, in the middle five or ſix eighths, and at the neck three eighths.

All chambered *cannons* are reinforced.

Cannon, *ſhip*, are ſtronger in metal than thoſe uſed by land, on account of the neceſſity they are often under of being charged with chain-ſhot. They lie on ſhip-carriages, having four ſmall wheels, without ſpokes, with two ropes to ſtop their running back, and bring them again to their place upon the battery.

Cannon *of courſe*, or *Chaſe*-**Cannon**, in a galley, is the largeſt, middlemoſt, and moſt effective of the guns placed in the prow, or chaſe of the veſſel, and which delivers its ſhot over the very ſtem, generally carrying a ſhot of 33 or 34 pounds weight. It is a long piece, and recoils all along the middle of the galley to the maſt.

Cannon-*mouth of a bit*, in the *Manege*, denotes a round, long piece of iron, ſometimes compoſed of two pieces coupled together, and bent in the middle. See **Bit**.

Cannon-*mouths*, in the *Manege*, are contrived to keep a horſe in ſubjection, being ſo ordered that they riſe gradually toward the middle, and aſcend toward the palate, that the void ſpace left underneath may afford a liberty to the tongue.

CANNONADE, in *Military Language*, is the application of artillery to the purpoſes of ſeiſing or deſtroying a ſhip, battery, or fortreſs.

CANNONEER, or **Cannonier**, an officer in the artillery, who has the care of charging, pointing, and firing a cannon.

The *cannoneer* is the ſame with what is otherwiſe called *gunner*; in the ſtreights, *captain*; and in other places, *conneſtable*.

CANNULA, or **Canula**, in *Chirurgery*, a little tube, or pipe, which the ſurgeons leave in wounds and ulcers, that they chooſe not to heal up; becauſe ſtill ſuppurating. The *cannula* is to be made of gold, ſilver, or lead; and is perforated, that the pus, entering within it, may fall upon a ſponge, dipped in ſpirit of wine, and placed at the orifice, to keep the ulcer warm, and to prevent the external air from entering: ſome of theſe *cannulæ* have rings, whereby to keep them faſt in the wound; and others have holes with ribbands through them, to bind them down. Some are round, others oval, others crooked.

There is a particular kind of *cannula*, formed taper-wiſe, with a ſcrew faſtened to one end, in manner of a cock: its uſe is for the diſcharge of the water out of the abdomen, after tapping, in an aſcites, or dropſy. To this end it is inſerted into the body, through a hole made near the navel, with a pointed inſtrument, and ſometimes a punch; and is faſtened into its place by a bandage, and guarded from any injury of the cloaths, &c. by a caſe or cover. It has this advantage over the common tapping; that by means thereof, the water is drawn out when, and in what meaſure, the patient pleaſes. See **Paracenteſis**.

There is likewiſe a kind of copper, or iron *cannulæ*, made for the more convenient application of actual cauteries: they are made very ſhallow, and are, in effect, little more than hoops; through the aperture whereof, the actual cautery is conveyed; which, by this means, is kept from damaging the adjacent parts.

Cannula, or **Canola**, in *Eccleſiaſtical Writers*, was a tube of ſilver, or other metal, wherein were put the relics, which the pope ſent as preſents to princes, &c.

Cannula, or **Canola**, was alſo a ſort of ſiphon, through which they anciently ſucked the wine in the euchariſt.

CANOE, a name given to the little boat uſed by the ſavages in both Indies, as well as by the negroes in Guinea; made chiefly of the trunks of trees dug hollow; ſometimes of pieces of bark faſtened together.

The common *canoes*, among the Indians, are thoſe made of trees hollowed; being either greater or leſs, according to the ſize of the tree they are made of. They are rowed with paddles, and rarely carry ſails; the loading is laid at the bottom: but having no ballaſt, they are frequently turned upſide down. They have no rudder, the want of which is ſupplied by the hind oars. The negroes of Guinea uſe the ſame ſort of *canoes*, though made in a different manner. They are long-ſhaped, having only room for one perſon in width, and ſeven or eight in length; they ſhew little wood above the water: thoſe who row are extremely dextrous, not only in giving the ſtrokes with cadence and uniformity, by which their *canoes* ſeem to fly along the ſurface of the water; but alſo in balancing the veſſel with their bodies, and preventing their overturning, which otherwiſe, on account of their lightneſs, would continually happen. Add, that when they are overturned, they have the addreſs to turn them up again in the water itſelf, and mount them anew. They venture as far as four leagues to ſea, but dare not venture further.

They are uſually ſixteen feet long, and a foot or two wide, though there are ſome larger, as far as thirty-five feet long, five wide, and three high, uſed for the carriage of cattle, and expeditions in war. They are fitted with ſails made of ruſhes.

On return from a voyage, the *canoes* are not left in the water, but preſently drawn aſhore, where they are hung by the two ends, and left to dry; in which ſtate they are ſo light, that two men will eaſily carry them on their ſhoulders.

The *canoes* of the Canadeſe are made of the bark of the birch-tree, ſometimes large enough to hold four or five perſons. Thoſe of the ſavages of Terra del Fuego, and the other iſlands of the ſtraits of Magellan, are alſo of bark, and faſhioned with great ſkill, from ten to ſixteen feet long, and two wide, capable of holding eight men, who row ſtanding, with a ſurpriſing ſwiftneſs.

In the repoſitory of the Royal Society is the model of a Greenland *canoe*, covered with ſeal-ſkins, and reſembling a great bladder; ſo as that, however the waves daſh over it, the perſon in it ſits ſafe. It is rowed with a ſingle paddle.

CANON, a perſon who poſſeſſes a prebend, or revenue allotted for the performance of divine ſervice, in a cathedral, or collegiate church.

Canons are of no great antiquity: Paſchier obſerves, that the name *canon* was not known before Charlemagne; at leaſt, the firſt we hear of, are in Gregory de Tours, who mentions a college of *canons*, inſtituted by Baldwin XVI. archbiſhop of that city, in the time of Clotharius I. The common opinion attributes the inſtitution of this order to Chrodegangus, biſhop of Metz, about the middle of the eighth century.

Originally *canons* were only prieſts, or inferior eccleſiaſtics, who lived in community; reſiding by the cathedral church, to aſſiſt the biſhop; depending entirely on his will; ſupported by the revenues of the biſhoprick; and living in the ſame houſe, as his domeſtics, or counſellors, &c. They even inherited his moveables, till the year 817, when this was prohibited by the council of Aix-la-Chapelle, and a new rule ſubſtituted in the place of that which had been appointed by Chrodegangus, and which was obſerved for the moſt part in the Weſt till the twelfth century. By degrees, theſe communities of prieſts, ſhaking off their dependence, formed ſeparate bodies; whereof the biſhops, however, were ſtill heads. In the tenth century, there were communities or congregations of the ſame kind, eſtabliſhed even in cities where there were no biſhops: theſe were called *collegiates*, as they uſed the terms *congregation* and *college* indifferently: the name *chapter*, now given to theſe bodies, being much more modern. Under the ſecond race of the French kings, the *canonical*, or collegiate life, had ſpread itſelf all over the country; and each cathedral had its chapter, diſtinct from the reſt of the clergy.

They had the name *canon* from the Greek *κανων*, which ſignifies three different things; *a rule*, *a penſion* or *fixed revenue to live on*, and *a catalogue* or *matricula*; all which are applicable to them.

In time, the *canons* freed themſelves from their rules, the obſervance relaxed, and, at length, they ceaſed to live in community: yet they ſtill formed bodies; pretending to other functions beſides the celebration of the common office in the church; yet aſſuming the rights of the reſt of the clergy; making themſelves as a neceſſary council of the biſhop; taking upon them the adminiſtration of a ſee during a vacancy, and the election of a biſhop to ſupply it. There are even ſome chapters exempt from the juriſdiction of the biſhop, and owning no head but their dean. After the example of cathedral chapters, collegiate ones alſo continued to form bodies, after they had abandoned living in community.

Canons are of various kinds; as,

Canons, *cardinal*, which are thoſe attached, and, as the Latins call it, *incardinati* to a church, as a prieſt is to a pariſh.

Canons, *domicellary*, were young *canons*, who, not being in orders, had no right in any particular chapters.

Canons, *expectative*, were ſuch as, without having any revenue or prebend, had the title and dignities of *canons*, a voice in the chapter, and a place in the choir; till ſuch time as a prebend ſhould fall.

Canons, *foreign*, were ſuch as did not officiate in the canonries to which they belonged.—To theſe were oppoſed *manſionary canons*, or *canons reſidentiary.*

Canons, *lay* or *honorary*, are ſuch among the laity, as have been admitted, out of honour and reſpect, into ſome chapter of *canons.*

Canons *regular*, are *canons* that ſtill live in community; and who, like religious, have, in proceſs of time, to the practice of their rules, added the ſolemn profeſſion of vows.

They are called *regulars*, to diſtinguiſh them from thoſe *ſecular canons* who abandon living in community, and at the ſame time, the obſervance of the *canons* made as the rule of the clergy, for the maintenance of the ancient diſcipline.

The *canons* ſubſiſted in their ſimplicity till the eleventh, ſome ſay the twelfth century, when ſome of them, ſeparating from the community, took with them the name of *canons*, or *acephalous prieſts*, becauſe they declined to live in community with the biſhop; and thoſe who were left, thenceforth acquired the denomination of *canons regular*, and adopted moſt of the profeſſions of the rule of St. Auguſtine. This order of *regular canons of St. Auguſtine*, was brought into England by Adelwald, confeſſor to Henry I. who erected a priory at Noſtel in Yorkſhire, and obtained for them the church of Carliſle as an epiſcopal ſee, with the privilege of chuſing their own biſhop. They were ſingularly protected and encouraged by Henry I. who gave them the priory of Dunſtable in 1107, and by queen Maud, who, in the following year, gave them the priory of the Holy Trinity in London. It appears, that under the reign of Edward I. they had fifty-three priories.

Canons, *tertiary*, thoſe who had only the third part of the revenues of the canonicate.

Canon, in an *Eccleſiaſtical Senſe*, is a LAW or rule, either of doctrine or diſcipline, enacted eſpecially by a council, and confirmed by the authority of the ſovereign.

Canons are properly deciſions of matters of religion; or regulations of the polity and diſcipline of a church, made by COUNCILS, either general, national, or provincial.

Such are the *canons* of the council of Nice, or Trent, &c. See CONSTITUTIONS.

There have been various collections of the *canons* of the Eaſtern councils; but four principal ones, each ampler than the preceding. The firſt, according to Uſher, A. D. 380, containing only thoſe of the firſt œcumenical council, and the firſt provincial ones: they were but 164 in number. To theſe, Dionyſius Exiguus, in the year 520, added the fifty *canons* of the apoſtles, and thoſe of the other general councils. The Greek *canons* in this ſecond collection, end with thoſe of the council of Chalcedon; to which are ſubjoined thoſe of the council of Sardica, and the African councils. The fourth and laſt collection comes down as low as the ſecond council of Nice; and it is on this that Balſamon and Zonaras have commented. See Hardouin's Acta Conſiliorum et Epiſtolæ decretales ac Conſtitutiones Summorum Pontificum, in 11 tomes; commencing with the year 34, and terminating in 1714. Prol. Paris, 1715.

Canons, *Apoſtolical*, are thoſe which have been uſually aſcribed to St. Clement. Bellarmin, Baronius, &c. will have them to be genuine *canons* of the apoſtles: Cotelerius obſerves, that they cannot be aſcribed to the apoſtles or Clement, becauſe they are not received with other books of Scripture, are not quoted by the writers of the firſt ages, and contain many things not agreeable to the apoſtolical times: Hincmar, De Marca, Beveridge, &c. take them to be framed by the biſhops who were the apoſtles diſciples in the ſecond or third century; S. Baſnage is of opinion, that they were collected by an anonymous writer in the fifth century; but Daille, &c. maintain them to have been forged by ſome heretic in the ſixth century; and S. Baſnage conjectures, that ſome of them are ancient, and others not older than the ſeventh century. The Greek church allow only eighty-five of them, and the Latins only fifty; though there are eighty-four in the edition given of them in the Corpus Juris Canonici.

Canon is alſo uſed for the authoriſed catalogue of the Sacred Writings. See BIBLE.

The ancient *canon*, or catalogue of the books of the Old Teſtament, was made by the Jews, and is ordinarily attributed to Ezra; who is ſaid to have diſtributed them into the LAW, the PROPHETS, and the HAGIOGRAPHA, to which our Saviour refers, Luke, chap. xxiv. ver. 44. The ſame diviſion is alſo mentioned by Joſephus, cont. Appion.

This is the *canon* allowed to have been followed by the primitive church, till the council of Carthage; and, according to St. Jerom, this conſiſted of no more than twenty-two books; anſwering to the number of the Hebrew alphabet; though at preſent they are claſſed into twenty-four diviſions, containing Geneſis, Exodus, Leviticus, Numbers, Deuteronomy, Joſhua, Judges, Samuel, Kings, Iſaiah, Jeremiah, Ezekiel, the twelve minor Prophets, the Pſalms, the Proverbs, Job, Canticles, Ruth, Lamentations, Eccleſiaſtes, Eſther, Daniel, Ezra comprehending the book of Nehemiah and the Chronicles. However, this order is not univerſally obſerved either among Jews or Chriſtians: nor were all the books above enumerated admitted into the *canon* in Ezra's time. It is moſt likely, ſays Dr. Prideaux, that the two books of Chronicles, Ezra, Nehemiah, Eſther, and Malachi, were added in the time of Simon the Juſt, when the *canon* was completed. Connection, &c. vol. ii. p. 476, &c.

But that council enlarged the *canon* very conſiderably, taking into it the books which we call apocryphal; which the council of Trent has further enforced, enjoining all theſe to be received as books of Holy Scripture, upon pain of anathema, and being attainted of hereſy. The Romaniſts, in defence of this *canon*, ſay, that it is the ſame with that of the council of Hippo, held in 393; and with that of the third council of Carthage, in 397, at which were preſent forty-ſix biſhops, and, among the reſt, St. Auguſtine; who declared that they received it from their fathers.

Their *canon* of the New Teſtament perfectly agrees with ours. See Hardouin's Collect. tom. i. p. 968. art. 47.

This *canon* conſiſts of books that are well known; ſome of which have been univerſally acknowledged; ſuch are the four Goſpels, the Acts of the Apoſtles, thirteen Epiſtles of St. Paul, one Epiſtle of St. Peter, and one Epiſtle of St. John: and others, concerning which doubts were entertained, but which were afterwards received as genuine; ſuch are the Epiſtle to the Hebrews, that of James, the ſecond of Peter, the ſecond and third of John, that of Jude, and the Revelation. Theſe books were written at different times, and they are authenticated, not by the decrees of councils, or infallible authority, but by ſuch kind of evidence as is thought ſufficient in the caſe of any other ancient writings. They were very extenſively diffuſed; they were read in every Chriſtian ſociety; they were valued and preſerved with care by the firſt Chriſtians; they were cited by Chriſtian writers of the ſecond, third, and fourth century, as by Irenæus, Clement the Alexandrian, Tertullian, Origen, Euſebius, &c. and their genuineneſs is proved by the teſtimony of thoſe who were contemporary with the apoſtles themſelves, and by tradition. The four Goſpels, and moſt of the other books of the New Teſtament, were collected either by one of the apoſtles, or ſome of their diſciples and ſucceſſors, before the end of the firſt century. The catalogue of *canonical* books furniſhed by the more ancient Chriſtian writers, as Origen about the year 210, Euſebius and Athanaſius in 315, Epiphanius in 370, Jerome in 382, Auſtin in 394, and many others, agrees with that which is now received among Chriſtians. For the time of writing the ſeveral books of the New Teſtament, ſee the titles of the books themſelves; as the Goſpel of St. MATTHEW, MARK, &c.

Some of the fathers diſtinguiſh the inſpired writings into three claſſes; PROTO-*canonical*, DEUTERO-*canonical*, and APOCRYPHAL.

Canon, *paſchal*, a table of the moveable feaſts, ſhewing the day of EASTER, and the other feaſts depending on it, for a cycle of nineteen years.

The *paſchal canon* is ſuppoſed to be the calculation of Euſebius of Cæſarea, and to have been done by order of the council of Nice.

Canon, in *Monaſtic Orders*, a book wherein the religious of every convent have a fair tranſcript of the rules of their order, frequently read among them as their local ſtatutes.

This is alſo called *Regula*, as containing the rule and inſtitution of their order.

The *canon* differs from the MISSALE, MARTYROLOGIUM, and NECROLOGIUM.

Canon, again, is uſed for the catalogue of ſaints acknowledged and canonized in the Roman church.

Canon is alſo uſed, by way of excellence, in the Romiſh church, for the ſecret words of the maſs, from the preface to the *Pater*; in the middle of which the prieſt conſecrates the hoſt. The common opinion is, that the *canon* of the maſs commences with *Te igitur*, &c. The people are to be on their knees, hearing the *canon*; and are to rehearſe it to themſelves, ſo as not to be heard.

Canon, in the *Ancient Muſic*, is a rule or method of determining the intervals of notes.

Ptolemy, rejecting the Ariſtoxenian way of meaſuring the intervals in muſic, by the magnitude of a tone (which was ſuppoſed to be formed by the difference between a diapente and a diateſſaron), thought that muſical intervals ſhould be diſtinguiſhed, according to the ratios or proportions which the ſounds terminating thoſe intervals

vals bear to one another, when conſidered according to their degree of acuteneſs or gravity; which, before Ariſtoxenus, was the old Pythagorean way. He therefore made the diapaſon conſiſt in a double ratio; the diapente, in a ſeſquialterate; the diateſſaron, in a ſeſquitertian; and the tone itſelf, in a ſeſquioctave; and all the other intervals, according to the proportion of the ſounds that terminate them: wherefore taking the *canon* (as it is called) for a determinate line of any length, he ſhews how this *canon* is to be cut accordingly, ſo that it may repreſent the reſpective intervals: and this method anſwers exactly to experiment, in the different lengths of muſical chords. From this *canon*, Ptolemy and his followers have been called *Canonici*; as thoſe of Ariſtoxenus were called *Muſici*.

Canon likewiſe denotes a muſical compoſition, in which the parts follow each other in the ſame melody and intervals.

Canon, in *Geometry* and *Algebra*, a general rule for the ſolution of all caſes of a like nature with the preſent inquiry. Thus every laſt ſtep of an equation is a *canon*; and, if turned into words, becomes a rule to ſolve all queſtions of the ſame nature with that propoſed.

Canon, *natural, of triangles*, is a table of ſines, tangents, and ſecants together: ſo called, becauſe ſerving principally for the ſolution of triangles.

Canon, *artificial, of triangles*, is a table wherein the logarithms of ſines and tangents are laid down. See Sine, under which article the method of conſtructing the *natural* and *artificial canon* will be explained.

Canon *Law*, a collection of eccleſiaſtical conſtitutions, deciſions, and maxims, taken partly from Scripture, partly from the ancient councils, and partly from the decrees of popes, and the reports and ſayings of the primitive fathers, whereby all matters of polity in the Roman church are regulated.

The *canon law* that obtained throughout the Weſt, till the twelfth century, was the collection of *canons* made by Dionyſius Exiguus in 520, the capitularies of Charlemagne, and the decrees of the popes, from Siricius to Anaſtaſius.—No regard was had to any thing not compriſed in theſe; and the French ſtill maintain the rights of the Gallican church to conſiſt in their not being obliged to admit any thing elſe, but to be at liberty to reject all innovations made in the canonical juriſprudence ſince that compilation, as well as papal decrees before Siricius.

Indeed, between the eighth and eleventh centuries, the *canon law* was mixed and confounded with the papal decrees, from St. Clement to Siricius; which till then had been unknown: this gave occaſion to a new reform, or body of the *canon law*; which is the collection ſtill extant, under the title of Concordia Diſcordantium Canonum, firſt made by Ivo in 1114, and perfected in 1151, by Gratian, a Benedictine monk, from texts of Scripture, councils, and ſentiments of the fathers, in the ſeveral points of eccleſiaſtical polity; and containing thoſe conſtitutions which have been denominated, by way of eminence, the Decrees, and forming the firſt part of the *canon law*. It is now generally known by the name of the Decretum of Gratian, which was formed in imitation of the Pandects of Juſtinian; and is a confuſed immethodical compilation, full of errors and forgeries.

The ſecond part of the *canon law* conſiſts of the decrees of the popes, from the time of pope Alexander III. to pope Gregory IX. and publiſhed, under the auſpices of that pope, about the year 1230, in five books, entitled Decretalia Gregorii Noni.

In 1298, pope Boniface VIII. continued the papal decrees as far as his time, under the title of Sextus Decretalium. To theſe, pope John XXII. added the Clementines, or the five books of the conſtitutions of his predeceſſor Clement V. firſt publiſhed about the year 1317. And to all theſe were afterwards added twenty conſtitutions of the ſaid pope John, called the Extravagantes; and ſome other conſtitutions of his ſucceſſors, called Extravagantes Communes. Theſe are uſually called the Decretals.

All theſe compoſe the body of the *canon law*; which, including the Comments, make three volumes in folio; the rule and meaſure of church government. Indeed, with us, ſince the Reformation, the *canon law* has been much abridged and reſtrained; only ſo much of it obtaining, as is conſiſtent with the common and ſtatute laws of the realm, and the doctrine of the eſtabliſhed church. Beſides the foreign *canon law*, we have our *legatine* and *provincial* constitutions. In the reign of Henry VIII. it was enacted, that the *canon law* ſhould be reviewed; and till that review took place, ſuch canons, conſtitutions, ordinances, and ſynodals provincial as had been made, and were not repugnant to the law of the land or king's prerogative, ſhould ſtill be uſed and executed. The review was propoſed again in the reign of Edward VI. and of queen Elizabeth; but as it was never accompliſhed, the authority of the *canon law* in England depends upon the ſtatute of the 25 Henry VIII. c. 19. which was repealed indeed by queen Mary, and again revived by 1 Eliz. c. 1.

As to the conſtitutions and *canons* made in the convocation of the province of Canterbury in 1603, ratified by the king, and ſoon after adopted in the province of York; theſe never obtained a parliamentary confirmation; and it has been therefore adjudged, upon the principles of law and the conſtitution, that they do not bind the laity, however the clergy may regard them. Strange's Rep. 1057.

CANONARCHA, or **Canonarchus**, a dignity in the Greek church, anſwering to the precentor in the Latin, or chanter in the Engliſh church.

The word is formed from *κανων* and *αρχη*, *beginning*, or *governing*; becauſe it belongs to this officer to ſet the canons, or church hymns, and to direct the choir in ſinging them.

A like officer we alſo find in the ancient monaſteries, under the denomination *canonarcha*, whoſe buſineſs was to beat the ſemantrum, or wooden inſtrument, whereby the monks were called to the choir to ſing canons. There appear to have been ſeveral *canonarchæ* in the ſame monaſtery.

CANONE *al ſoſpiro*, in the Italian *Muſic*, a canon, the parts of which ſucceed each other by a *ſoſpiro*, that is, the time of a crotchet.

CANONESS, in the *Romiſh Church*, a woman who enjoys a prebend, aſſixed, by the foundation, to maids; without their being obliged to renounce the world, or make any vows.

There are few of theſe, except in Flanders and Germany: they are rather looked upon as a ſeminary and retreat of girls for marriage, than an engagement for the ſervice of God.

Canonesses *of St. Auguſtine*, or *Regular* **Canonesses**, are a kind of religious, who follow the rules of St. Auguſtine; of which there are various congregations.

The order of *canoneſſes* was firſt inſtituted by Lewis the Meek, in the beginning of the ninth century.

CANONICA, in *Philoſophical Hiſtory*, an appellation given by Epicurus to his doctrine of logic.

It was called *Canonica*, as conſiſting of a few canons, or rules, for directing the underſtanding in the purſuit and knowledge of truth.

Epicurus's *Canonica* is repreſented as a very ſlight and inſufficient logic, by ſeveral ancients who put a great value on his ethics and phyſics.

The ſtreſs of Epicurus's *Canonica* conſiſts in his doctrine of the *criteria* of truth.

All queſtions in philoſophy are either concerning words or things: concerning things we ſeek their truth, concerning words their ſignification: things are either natural or moral; and the former are either perceived by ſenſe, or by the underſtanding. Hence, according to Epicurus, ariſe three *criterions* of truth, viz. ſenſe, anticipation, or prænotion, and paſſion. The great canon, or principle, of Epicurus's logic is, that the ſenſes are never deceived; and therefore that every ſenſation, or perception of an appearance, is true. Stanley's Hiſt. Phil. p. xiii. p. 35.

Canonica is alſo uſed by ſome ancients to denote the art of muſic.

Canonica is more particularly uſed to denote that ſpecies of muſic, which does not determine the intervals of ſounds by the ear, but by a canon, or ſtretched chord. See Canon.

CANONICAL, ſomething that belongs to, or partakes of the nature of a rule or canon.

Canonical amounts to much the ſame with what we otherwiſe call regular.

Canonical is an appellation more peculiarly given to thoſe writings which have been received as the rule of our faith and practice, and comprehended in the canon, or catalogue of the Scriptures.

In which ſenſe, *canonical* ſtands contradiſtinguiſhed from *apocryphal*.

The conditions then requiſite to conſtitute a book *canonical* are, that it be admitted to be written by divine inſpiration, and that it be ſolemnly accepted, and conſigned by the church for a perpetual guide or rule of faith and practice.

Divines generally hold, that thoſe books only of the New Teſtament are to be accounted *canonical*, which were either written, or at leaſt approved and authorized, by the apoſtles.

Formerly they were not ſo well diſtinguiſhed as among us. In the firſt ages of the church, Dodwell obſerves, the genuine writings of the apoſtles uſed to be bound up together with thoſe now called ſpurious, and apocryphal; ſo that it was not manifeſt, by any public judgment, which of them was to be preferred to the other; but later times thought fit to make a ſeparation.

The Jews allow of no book for *canonical*, but thoſe written before or ſoon after the return from the Babyloniſh captivity, when the gift of prophecy ceaſed among them.

Euſebius lays down three marks, by which the ſpurious writings forged by heretics, under the names of the apoſtles, were diſtinguiſhed from the genuine and *canonical*. Hiſt. Ecleſ. lib. iii. cap. 25.

Canonical, *poſt*, or *deutero*-Canonical. See Canon, and Deutero-*Canonical*.

Canonical is alſo an appellation given to thoſe epiſtles in the New Teſtament, more frequently called catholic, or general epiſtles.

Canonical, *canonicus*, was alſo an appellation given to all the officers and miniſters of a church or monaſtery, from the biſhop or abbot to the meaneſt ſervant, including prieſts, monks, virgins, and all who were entered in canon, that is, in the matricula or regiſter of the church.

Canonical *horſes*, *canonici equi*, was an ancient tax, or tribute, impoſed on certain provinces, whereby they were obliged to furniſh the emperor with ſo many horſes to mount his cavalry.

Canonical *hours*, are certain ſtated times of the day, conſigned, more eſpecially by the Romiſh church, to the offices of prayer and devotion. Such are *mattins*, *lauds*, *ſixth*, *ninth*, *veſpers*. In our country the canonical hours are from eight to twelve in the forenoon, before or after which marriage cannot be legally performed in any pariſh-church.

Canonical *inſtitution*, a regular and legitimate collation to a benefice, agreeable to the rules of the canon-law.

Canonical *letters*, in the *Ancient Church*, were a ſort of teſtimonials of the orthodox faith, which the biſhops and clergy ſent each other, to keep up catholic communion, and diſtinguiſh orthodox Chriſtians from Arian, and other heretics.

When they had occaſion to travel into other dioceſes, or countries, dimiſſory and recommendatory letters, alſo letters of peace, &c. were ſo many ſpecies of *canonical letters*. See Dimissory.

Canonical *liberty*, a freedom to which certain churches are left, being governed by the ancient canons and uſages eſtabliſhed before the papal hierarchy was carried to its height: ſuch is that which, of later days, the French call the *Gallican liberty*.

Canonical *life*, the method or rule of living preſcribed by the ancient clergy who lived in community.

The *canonical life* was a kind of medium between the monaſtic and clerical lives.

Canonical *obedience*, is that ſubmiſſion which by the eccleſiaſtical laws the inferior clergy are to pay to their biſhops, and religious, to their ſuperiors.

Canonical *portion*, ſo much of the effects of a perſon deceaſed, as the canons allow to the pariſh church to which he belonged.

Canonical *puniſhments* are thoſe which the church may inflict: ſuch are excommunication, degradation, and penance, in Roman catholic countries; alſo faſting, alms, whipping, &c.

Canonical *purgations*, were ancient methods of proving innocency, by ordeal, purgation, &c.

Canonical *ſins*, in the *Ancient Church*, thoſe which were capital or mortal: ſuch eſpecially were idolatry, adultery, murder, hereſy, and ſchiſm.

CANONICUM, in a general ſenſe, denotes a tax, or tribute.

Canonicum is more particularly uſed in the Greek church for a fee paid by the clergy to biſhops, archbiſhops, and metropolitans, for degrees and promotions.

Canonicum alſo denotes a due of firſt-fruits, paid by the Greek laity to their biſhops, or, according to Du-Cange, to their prieſts. The *canonicum* is aſſeſſed according to the number of houſes, or chimnies, in a place.

The emperor Iſaac Comnenus made a conſtitution for regulating the *canonicum* of biſhops, which was confirmed by another made in 1086, by his nephew Alexis Comnenus. A village containing thirty fires, was to pay for its *canonicum*, one piece of gold, two of ſilver, one ſheep, ſix buſhels of barley, ſix of wheat-flour, ſix meaſures of wine, and thirty hens. Du-Cange, Gloſs. Gr. tom. i. p. 578.

CANONIST, a perſon ſkilled in, or who makes profeſſion of the ſtudy and practice of the canon-*law*.

Canoniſts and *Civilians* are uſually combined in the ſame perſons. And hence the title of *doctor juris utriuſque*, or *legum doctor*, uſually expreſſed in abbreviature, LL. D. or J. U. D.

CANONIZATION, a declaration of the pope, whereby, after a great deal of ſolemnity, he enters into the liſt of ſaints ſome perſon who has lived an exemplary life, and wrought miracles; or, as is often the caſe, performed ſome ſingular ſervice for the church, in which a principal part of this kind of merit conſiſts.

The word *canonization* ſeems to be of later origin than the thing; there being no inſtance of the uſe of the word before the twelfth century, whereas St. Uldaricus was *canonized* in the tenth. The term is formed from *canon*; becauſe the primitive *canonizations* were only orders of the popes, or biſhops, whereby perſons eminent for piety, &c. were inſerted in the *canon* of the maſs, that they might be commemorated in the ſervice: becauſe, in thoſe days, the uſe of martyrologies was unknown in the church.

Mabillon diſtinguiſhes two kinds of *canonization*; a *general*, and *particular*, the firſt made by a general council, or a pope; the ſecond, by a biſhop, a particular church, or a provincial council.

There are inſtances likewiſe of *canonizations*, or at leaſt of ſomething very like them, by abbots.

At firſt, only martyrs were *canonized*; but by degrees they came to confeſſors, &c.

Canonization anciently conſiſted in inſerting the ſaint's name in the ſacred diptychs, or *canon* of ſaints; in appointing a proper office for invoking him, and erecting churches under his invocation, with altars for maſs to be celebrated on; taking up the body from the place of its firſt burial, and the like ceremonies: by degrees, other formalities were added; and proceſſions were made with the ſaint's image in triumph; the day of his death was declared a feaſt; and to render the thing ſtill more ſolemn, Honorius III. in 1225, added ſeveral days indulgence to a *canonization*.

It is a great diſpute among the learned, when the right of *canonization*, which it is owned was anciently common to ordinaries, eſpecially metropolitans and princes, with the pope, became firſt peculiar to the pope. Some ſay, Alexander III. made this reſerve to the holy ſee. The Jeſuits of Antwerp, in their Propylæum, aſſert, it was not eſtabliſhed till two or three ages ago; and then by a mere cuſtom, which paſſed tacitly into a law; which appears not to have been generally received in the tenth and eleventh centuries. This, however, is pretty certain, that it was generally allowed before pope Alexander III.; but ſince his time we read of no ſaints *canonized* by any but the popes: and the archbiſhop of Vienne in France, and his ſuffragans, acknowlege it in an authentic manner in the year 1231, by a letter written to Gregory IX. deſiring him to *canonize* Stephen, biſhop of Die, who died in 1208. *Quia nemo*, ſay they, *quantalibet meritorum prærogativa polleat, ab eccleſia Dei pro ſancto habendus, aut venerandus eſt, niſi prius per ſedem apoſtolicam ejus ſanctitas fuerit approbata.*

CANONRY, or Canonicate, the benefice filled by a *canon*.

Canonicate is diſtinguiſhed from prebend, in that the prebend may ſubſiſt without the *canonicate*, whereas the *canonicate* is inſeparable from the prebend. It is to the *canonicate*, not to the prebend, that the right of ſuffrages, and other privileges, are annexed. See Prebend.

CANOPUS, in *Aſtronomy*, a bright ſtar of the firſt magnitude in the rudder of Argo, a conſtellation of the ſouthern hemiſphere. See Argo.

The longitude of *Canopus*, as given by Halley, for the year 1700, is 10° 52′ of Cancer, and its ſouthern latitude, 72° 49′. F. Noel, in 1697, found its right aſcenſion 93° 54′, its declination ſouthwards, 52° 29′. F. Feuille, in the beginning of March 1709, obſerved the declination of *canopus* 52° 30′ 4″. F. Thomas, in January 1682, found the declination 52° 31′ 33″, its right aſcenſion 93° 32′ 20″, longitude, 8° 52′, of Cancer, latitude ſouthern, 75° 55′. Wolf. Lex. Math. p. 303, ſeq. Mem. Acad. Scienc. ann. 1693. p. 390, ſeq.

CANOPY, in *Architecture* and *Sculpture*, a magnificent kind of decoration, ſerving to cover, and crown an altar, throne, tribunal, pulpit, chair, or the like. See Baldachin.

The word is formed from the barbarous Latin *canopeum*, of κωνωπειον, *a net ſpread over a bed to keep off the gnats*, from κωνωψ, *a gnat*.

Canopies are alſo borne over the head in proceſſions of ſtate, after the manner of umbrellas.

The *canopy* of an altar is more peculiarly called Ciborium.

The Roman grandees had their *canopies*, or ſpread veils, called *thenſæ*, over their chairs: the like were alſo in temples over the ſtatues of the gods. The modern cardinals ſtill retain the uſe of *canopies*.

CANOSA, in *Zoology*, the name by which Salvian, and ſome other authors have called the canis *galeus*, and *muſtelus levis*, a kind of ſhark.

CANQUES, in *Commerce*, a ſort of cotton cloth made in China; with this cloth they make that firſt garment next their ſkin, which is properly their ſhirt.

CANSCHY, in *Botany*, is the name of a tree in Japan, from which the inhabitants of that country make their paper. See a particular account of the proceſs, from the

Ephem. N. C. in the Coll. Acad. P. Etr. tom. iv. p. 144.

CANSTRISIUS, an officer in the church of Conſtantinople, whoſe buſineſs is to take care of the patriarchs pontifical veſtments, aſſiſt in robing him, and during maſs to hold the incenſe pot, and ſprinkle holy water among the people, while the hymn of the Trinity is ſinging. The word is alſo written *Canſtrinſius*, it is uſually derived from *caniſtrum*, a name which ſome ſuppoſe given to the incenſe pot, others to the kind of baſket in which the patriarchs veſtments were kept. Du-Cange.

CANT, a quaint, affected manner of ſpeaking, or writing, adapted chiefly to the lower ſort.

Cant is originally derived from *Andrew Cant*, a Cameronian preacher in Scotland, who, by exerciſe, had obtained the faculty of talking in the pulpit in ſuch a tone and dialect as was underſtood by none but his own congregation.

Cant, or *Canting language*, is alſo applied to words and phraſes affected by particular perſons, or profeſſions for low ends, and not authorized by the eſtabliſhed language. *Cant* is not reſtrained to the ſtyle of gypſies, thieves, and beggars, but poſſeſſes a large department in the politer provinces of the Engliſh language.

An anonymous author has given a *canting* dictionary, comprehending all the terms uſed in the ſeveral tribes of gypſies, beggars, ſhoplifters, highwaymen, footpads, and other clans of cheats and villains, with a collection of ſongs in the *canting* dialect. Lond. 1725, 8vo.

A writer in the Tatler, aſſigns divers ſources of *cant*-words; as *phizz*, *hippo*, *mobb*, *pozz*, *bamm*, &c. Tatl. N° 230.

The Sea-Language will moſt of it come under the denomination of *cant*; and the like holds of the terms in alchemy, heraldry, not to ſay in aſtrology, or even chemiſtry, pharmacy, &c. In reality, the difference between a *cant*-term, and a technical term is not eaſy to aſſign, unleſs we chooſe to reſtrain the former to words introduced out of folly, affectation, or impoſture; and the latter to ſuch as are introduced for the ſake of clearneſs, preciſion, and ſignificancy.

Cant is alſo uſed to denote a ſale by auction.

The origin of the word, in this ſenſe, is dubious; it may come, according to ſome, from *quantum*, how much; according to others, from *cantare*, to ſing, or cry aloud; agreeably to which, we ſometimes alſo call it an *out-cry*.

Cant is alſo a term uſed by ſome carpenters, principally in ſhip-building; when a piece of timber comes the wrong way in their work, they ſay *cant* it; i. e. turn it over.

Accordingly, *cant-timbers* are thoſe which are ſituated at the two ends of a ſhip: and they are ſo called, becauſe they are *canted*, or raiſed obliquely from the keel, and are hereby diſtinguiſhed from thoſe whoſe planks are perpendicular to it.

Cant is alſo popularly uſed for an angle, or corner.

CANTABRIAN, the ancient language of the north-eaſtern part of Spain, in uſe before the country was ſubdued by the Romans.

Dr. Wallis ſeems to make the *Cantabrian* the ancient language of all Spain: which, according to him, like the Gauliſh, gave way to a kind of broken Latin called *romance*, or *romanſhe*; which by degrees was refined into the Caſtilian or preſent Spaniſh. But we can hardly ſuppoſe, that ſo large a country, inhabited by ſuch a variety of people, ſpoke all the ſame language.

The ancient *Cantabrian*, in effect, is ſtill found to ſubſiſt in the more barren and mountainous parts of the province of Biſcay, Aſturias, and Navarre, as far as Bayonne, much as the Britiſh does in Wales; but the people only talk it: for writing, they uſe either the Spaniſh or French, as they happen to live under the one or the other nation. Some attribute this to a jealouſy of foreigners learning the myſteries of their language; others to a poverty of words and expreſſions. The *Cantabrian* does not appear to have any affinity with any other known language, abating that ſome Spaniſh words have been adopted in it for things whoſe uſe the Biſcayens were antiently unacquainted with. Its pronunciation is not diſagreeable.

The Lord's prayer, in the *Cantabrian* tongue, runs thus: *Gure aita ceruetan aicena, ſanctifica bedi hire icena, ethor bedi hire reſuma, eguin bedi hire vorondatea cervan becala lurrean ere*, &c.

CANTABRICA, in *Botany*, a name by which different authors call two different ſpecies of plants. The *cantabrica* of Pliny is the ranunculus. The *cantabrica* of Turner, the clove gilliflower.

Cantabrica is alſo a name uſed by Cluſius and ſome others for the little narrow-leaved bind-weed. See Convolvulus.

CANTABRUM, in *Antiquity*, a large kind of flag uſed by the Roman emperors, diſtinguiſhed by its peculiar colour, and bearing on it ſome words, or motto of good omen, to encourage the ſoldiers.

CANTALIVERS, in *Architecture*, pieces of wood framed into the front, or ſides of a houſe, to ſuſtain the mouldings and eaves over it.

Cantalivers are the ſame with modillions, except that the former are plain, and the latter carved. They are both a kind of cartouſes ſet at equal diſtances under the corona of the cornice of a building.

Cantaliver-Cornice, is a cornice with *cantalivers* or modillions under it.

Thoſe which project much are now out of faſhion, and with good reaſon, eſpecially in London, as they darken, by their hanging over, the upper chambers at leaſt; and are apt to ſpread, and communicate fire, in caſe of a misfortune of that kind; beſides, that in the preſent mode of building, uſe, conveniency, and ſimplicity are more ſtudied than ornament.

CANTAR, or **Cantaro**, an eaſtern weight, of different value in different places, equivalent at Acra in Turky to 603 pounds, at Tunis and Tripoli to 114 pounds.

Cantar is alſo an Egyptian weight, which is denominated a *quintal*, and conſiſts of a hundred, or of an hundred and fifty *rotolos*, according to the goods they are to weigh.

Cantaro is alſo an Egyptian weight, which at Naples is equivalent to 25 pounds, at Genoa to 150 pounds. At Leghorn there are three kinds of *cantaros*, one weighing 150 pounds, another 151, and a third 160 pounds.

Cantaro is alſo a Spaniſh liquid meaſure, in uſe eſpecially at Alicant, containing three gallons.

Cantaro is alſo a meaſure of capacity, uſed at Cochin, containing four rubies, the rubi 32 rotolos.

CANTATA, in *Muſic*, a ſort of ſong, or compoſition, intermixed with recitatives, airs, and variety of motions: ordinarily intended for a ſingle voice, with a thorough baſs; ſometimes for two, three, or more voices, with one or more violins, or other inſtruments.

The *cantata* paſſed from Italy into France, and thence to us: it has ſomething in it extremely fantaſtical and capricious, and ſeems only to pleaſe by its variety. The word is Italian, where it ſignifies the ſame thing.

CANTATRICES, in *Middle Age Writers*, hired weepers, and waiters at funerals.

CANTEENS, in *Military Language*, are tin veſſels in the form of ſquare bottles, uſed for carrying water to ſupply the ſoldiers in camp.

CANTEL, *cantellum*, in *Ancient Engliſh Writers*, denotes a cuſtom of ſelling by the lump, without tale or meaſure. Spelman derives the word from *quantillum*, and defines it by over meaſure, or what is added over and above ſtrict meaſure. Kennet derives it from the old word *cant*, a hundred, q. d. the ſale of about a hundred weight; anſwering to what we now call the taking of a hundred pound on content; as when we take it in a bag, ſealed up, without telling the pieces.

CANTERBURY-BELL, in *Botany*. See Convolvulus.

CANTERII, or **Cantherii**, in *Ancient Architecture*, rafters or joiſts of a houſe, which reach down from the ridge to the eaves.

CANTHARÆ, among the *Ancients*, a kind of candleſtick. See Branch.

CANTHARIAS *lapis*, in *Natural Hiſtory*, a name given by ſome writers to a foſſile ſubſtance ſuppoſed to reſemble a beetle. We ſometimes meet with parts of the ichthyperia or bony parts of fiſhes, which are ridged longitudinally, much in the manner of the outer wing of ſome of the beetle tribe; and from their ſize and ſhape, which is an oblong, or oval one of the bigneſs of a common beetle, and ſometimes of the largeſt, and at others of the very ſmalleſt kinds, theſe have been called by ſome petrified beetles and *cantharicæ lapides*; others have extended the name to ſuch ſpecies of amber as have in them the body or any fragment of the beetle of any ſpecies.

CANTHARIDES, in *Medicine*, a kind of poiſonous inſects, with wings and feet like beetles; much uſed as an epiſpaſtic for the raiſing of bliſters.

The ſtimulating power of *cantharides* is cauſed by a very acrid reſinous ſubſtance contained in theſe inſects, two ſcruples of which Neumann extracted from four ounces of *cantharides* by ſpirit of wine.

The word is formed from *cantharus*, the name of a ſort of beetle, and called alſo *ſcarabæus venenoſus*. The *cantharides* are properly a ſpecies of the beetle or ſcarab kind.

Cantharides, called alſo *Spaniſh flies*, though they ought rather to be denominated *Spaniſh beetles*, are produced from a kind of little worms, hatched on wheat, the leaves of the poplar, &c. There are various kinds of *cantharides*, but all of a greeniſh and golden hue; the beſt are thoſe which appear with different colours, having yellow lines running acroſs their wings, thick, and freſh. They are killed by expoſing them over a very ſtrong vinegar, which is made to boil for that purpoſe; after which they are dried, and may be preſerved a year or two.

Cantharides are very ſharp and corroſive, abounding with a ſub-a ſubtile, cauſtic, volatile ſalt; whereby they become exceedingly injurious to the bladder, ſo as to ulcerate it, even when applied externally, if ſuffered to lie on too long. They are much commended in fevers, as they raiſe and ſtrengthen a low trembling pulſe, give relief in delirious ravings, ſoporiferous ſtupors, loſs of reaſon, &c. (the common ſymptoms of high and dangerous fevers): they often alſo reduce continual fevers to regular and diſtinct remiſſions; and ſo make way for the bark; cleanſe and open the obſtructed glands and lymphatics; bring on critical ſweats, &c.

Dr. Morgan accounts for theſe effects of *cantharides* thus: « The ſubtile and volatile pungent parts, of which the « *cantharides* conſiſt, being carried into the blood, and « paſſing with the lymph or ſerum into the glandular « pipes, act there by diſſolving, attenuating, and rare- « fying the viſcid coheſions of the lymph; and by ſti- « mulating the nervous coats of the veſſels, they throw « off their ſtagnant viſcidities, and thus reſtore the cir- « culation and free drain of lymph from the arteries to « the veins; cleanſe the expurgatory glands, and bring « on critical ſweats and urines. Thus, the extremely « ſubtle, active, and pungent volatile ſalts, derived from « the *cantharides*, purge the glands and lymphatics uni- « verſally; much after the ſame manner as common ca- « thartics do the guts.” Philoſoph. Princip. of Medicine, p. 304.

The ancients held them a poiſon when taken internally, undoubtedly on account of their tendency to ulcerate the bladder. Yet ſome moderns, as Langius, Bartholin, and others, have ventured to give them internally, ſupported by the authority of Hippocrates, who appears to have given them in dropſies and jaundices: and in the Philoſophical Tranſactions, we have inſtances of their internal uſe, and that with ſucceſs, by Mr. Young, in dropſical and other caſes; ſometimes mixed with camphor, and ſometimes without; only well waſhed down with large draughts of poſſet, ptiſan, emulſions, or the like. The form wherein he tells us he uſes to adminiſter this fiery inſect, is that of a ſoft pill, or bolus, compoſed of three *cantharides præpar. Troch. e Myrrha* ʒ ß. *Sem. Amei.* gr. vi. *Rob. Cynoſb. q. ſ.* This, in ſtubborn ſuppreſſions of the menſes and lochia, in difficult childbirth, and retention of the ſecundines, he finds does wonders: he adds, that the heat or pain it occaſions in the neck of the bladder, is much ſhort of what he has an hundred times ſeen, and ſometimes felt, from the application of an epiſpaſtic to the back.

Groenvelt has a treatiſe expreſs on the ſafe internal uſe of *cantharides*, wherein he recommends them, eſpecially againſt ulcers in the bladder; for which he ſuffered a perſecution from the college of phyſicians, though further experience has ſhewn he had juſtice on his ſide.

Dr. Morgan propoſes a tincture of *cantharides*, made with the *elixir vitrioli*, as good in the DIABETES.

Their principal uſe, however, is in veſicatories, to raiſe bliſters on the ſkin; and by that means to turn off and diſcharge ſome flux of ill humours.

Cantharides are ſometimes applied to the temples for the tooth-ach: the farriers uſe them in ſeveral diſeaſes of horſes. They muſt be choſen new, dry, and whole: they will not keep above two years, without ſpoiling or mouldering into a duſt, which is of no uſe.

CANTHARIS. See GLOW-*worm.*

CANTHARUS *of a* FOUNTAIN, among Roman *Writers*, denotes the part, or apparatus, out of which the water iſſued.

It was made in divers forms, ſometimes in that of a ſhell, at other times in that of an animal, which yielded water at its mouth, eyes, and the like.

CANTHARUS, in *Eccleſiaſtical Writers*, denotes a fountain, or ciſtern, in the middle of the *atrium*, before the ancient churches, wherein perſons waſhed their hands and faces before they entered.

CANTHARUS, in *Zoology*, the name of a ſea-fiſh much reſembling the ſparus and ſargus in ſhape, but of a duſkier and blacker colour, covered with ſmall ſcales, and not marked with the annular black ſpots which both thoſe fiſhes have near the tail. It is common in the Mediterranean, and is frequently brought to market in Rome, &c. being eſteemed a very well taſted fiſh.

The *cantharus* of the ancients is called by Artedi the *ſilver-eyed* SPARUS, with longitudinal and parallel yellow lines on each ſide. Gaza calls this fiſh *ſcarabæus.*

CANTHARUS *unctuoſus.* See *Oil* BEETLE.

CANTHUS, in *Anatomy*, the corner, or angle of the EYE; formed by the commiſſure or joining of the upper and lower eyelids.

That corner next the noſe, is called the *great*, *inner*, and *domeſtic canthus*; and by ſome phyſicians the *fountain.*—The other, towards the temples, is called the *little*, or *external canthus.*

CANTHUS, in *Chemiſtry*, the lip of a veſſel; or that part of the mouth of a veſſel, which is a little hollowed, or depreſſed, for the eaſy pouring off a liquor.

Hence, to pour by decantation, is to pour through that place.

CANTICLES, a canonical book of the Old Teſtament, otherwiſe called the Song of Solomon; by the Jews, the Song of Songs, *Canticum Canticorum.*

The Book of *Canticles* is uſually ſuppoſed to be an epithalamium compoſed by Solomon, on occaſion of his marriage with the king of Egypt's daughter. But thoſe who penetrate further into the myſtery, pretend to find it the marriage of Jeſus Chriſt with human nature, the church, and good men.

On this principle the *Canticles* is held to be a continued allegory, wherein, under the terms of a common wedding, a divine and ſpiritual marriage is expreſſed.

The Jews themſelves, apprehending the book liable to be underſtood in a groſs and carnal manner, prudently prohibited the reading of it before the age of thirty, and the ſame uſage anciently obtained in the Chriſtian church. Orig. Præf. in Cant. Teod. Op. tom. i. p. 985. Hierom. in Ezek. Wolf. Bib. Heb. tom. i. p. 126.

Among the ancients, Theodore Mopſuetanus rejected the book of *Canticles*, as not divine. Divers rabbins have alſo queſtioned its being written by inſpiration. It is alledged, that the name of God is not once found in it. Mr. Whiſton has a diſcourſe expreſs to prove, that the *Canticles* is not a ſacred book of the Old Teſtament. He alledges it indeed to have been written by king Solomon, the ſon of David, but aſſerts, that it was compoſed at the time when that prince, blinded by his concubines, was ſunk in filthy love, and even idolatry. This he chiefly infers from the general character of vanity and diſſoluteneſs which reigns through the *Canticles*, in which there is not, according to Whiſton, one thought that leads the mind toward religion, but all is worldly and carnal, to ſay no worſe. For the myſtic ſenſe, he aſſerts it to be without any foundation, and that the book is not cited as canonical by any writer before the deſtruction of Jeruſalem. Mr. Whiſton will have it to have been taken into the canon between the years 77 and 128, when allegories came in vogue, and the rabbins began to corrupt the text of Scripture.

CANTIMARONS, or CATIMARONS, a kind of floats or rafts, uſed by the inhabitants of the coaſt of Coromandel to go a fiſhing in, and to trade along the coaſt. They are made of three or four ſmall canoes, or trunks of trees dug hollow, and tied together with cacao ropes, with a triangular ſail in the middle, made of matts. The perſons who manage them are almoſt half in the water, there being only a place in the middle a little raiſed to hold their merchandiſe; which laſt particular is only to be underſtood of the trading *cantimarons*, and not of thoſe who go fiſhing.

CANTING-*arms*, among *Heralds*, are thoſe ARMS which expreſs their owner's ſurname.

Theſe anſwer to what the French call *armes parlantes*; they are a ſort of rebuſes, and are never preſumed to be noble.

CANTING-*quoins*, in *Ship Building*, the ſame as *cantic-quoins.* See QUOIN.

In Harris's Lex. Techn. they are called *canoigne coins*, but this ſeems an error of the preſs. Manwayring calls them *cantick-quoynes.*

CANTO denotes a part or diviſion of a poem, anſwering to what is otherwiſe called a book.

The word is Italian, where it properly ſignifies ſong.

Taſſo, Arioſto, and ſeveral other Italians, have divided their longer or heroic poems into *cantos.* In imitation of them Scarron has alſo divided his Gigantomachia, and Boileau his Lutrin, into *chants*, or ſongs. The like uſage has been adopted by ſome Engliſh writers, as Butler, who divides his Hudibras, and Dr. Garth his Diſpenſary, into *cantos.* A late tranſlator of part of Virgil's Æneid has even ſubdivided a book of Virgil into ſeveral *cantos.*

CANTO, in the *Italian Muſic*, ſignifies a ſong: hence *canto ſimplice* is where all the notes or figures are equal, called alſo *canto fermo*: *canto figurato*, that where the figures are unequal, and expreſs different motions.

CANTO alſo ſignifies the treble part of a ſong; hence *canto concertante*, the treble of the little chorus; *canto ripieno*, the treble of the grand chorus, or that which ſings only now and then, in particular places.

Canto ſignifies the firſt treble, unleſs ſome other word be added to it, as *ſecondo*; in which caſe it denotes the ſecond treble.

CANTON, a quarter of a city, conſidered as ſeparated and detached from the reſt.

The word ſeems formed from the Italian *cantone*, a *ſquare ſtone*, or *corner ſtone.*

CANTON is alſo more frequently uſed for a ſmall country, or diſtrict, under its ſeparate government.

Such are the thirteen Swiſs *cantons*; each of which forms a republic apart; but all are leagued together, and conſtitute what is called the Helvetic body.

CANTON, in *Heraldry*, is one of the nine honourable ordinaries; being a ſquare portion of the eſcutcheon parted from the reſt.

It has not any fixed proportion; though regularly it ſhould be leſs than a quarter: it is often only a ninth part, and uſed as an addition, or difference, frequently to expreſs baſtardy. The *canton* is ſometimes placed at the right corner, and ſometimes at the left; in which latter caſe, it is called a *canton ſiniſter*. Its form is expreſſed in *Tab. Herald. fig.* 12.—He bears ermin, a *canton* argent, charged with a chevron gules.

CANTON is alſo uſed for the ſpaces left between the branches of a croſs or ſaltier.

CANTONED, a word uſed in *Architecture*, when the corner of a building is adorned with a pilaſter, an angular column, ruſtic quoins, or any thing that projects beyond the naked of the wall.

CANTONED, **CANTONNE´**, or **CANTONIZED**, in *Heraldry*, is when the four *cantons*, or ſpaces round a croſs, or ſaltier, are filled up with any pieces.—He bears gules, a croſs argent, *cantoned* with four ſcallop ſhells.

The word is alſo uſed when there are little pieces in the *cantons*, or ſpaces, of any principal figure of an eſcutcheon. Thus the ſaltier of Lenox is *cantoned* with four roſes.

CANTONING, in *Middle Age Writers*, denotes the dividing a thing into hundreds, or ſelling it by hundred weights, or hundreds in tale.

CANTONING, in the *Military Art*, is a method of quartering troops in a town, where the garriſon is ſo numerous, that ſeveral regiments muſt be quartered on the inhabitants for want of caſerns, or barracks, to contain them.

In this caſe they divide the town into as many parts as there are regiments to be ſo quartered, that the officers and ſoldiers of each may have a diſtinct part to themſelves. This, in the military phraſe, is called *cantoning of a town*.

CANTRED, or **CANTREY**, denotes a diſtrict or diviſion of an HUNDRED towns or villages.

The word is Britiſh, compounded of *cant*, *hundred*, and *trev*, or *tref*, *town* or *village*.

In Wales the counties are divided into *cantreds*, as thoſe in England are into hundreds. Angleſey, in particular, is divided into three *cantrevs* or *cantreds*, which are each ſubdivided into ſix *comots* or *commotes*, each *commote* containing about ſixty *trevs* or townſhips. The general partition of Wales into *cantrevs* and *comots* is very ancient. Rowl. Monaſt. Ant. Eſſ. § 10. p. 110, &c.

CANVAS, or **CANVASS**, a coarſe ſort of linen or hempen cloth, uſually woven open, and regularly, in little ſquares; ſerving for divers domeſtic purpoſes, and eſpecially for the ground of tapeſtry-work, and painting.

We have divers ſorts and denominations of *canvas*, moſt of them imported from abroad; as Dutch, Barras, and Heſſian *canvas*; packing *canvas*; guttings and ſpruce *canvas*; poledavies, ebbing, or Queenſborough *canvas*; working *canvas*, for botts or cuſhions, narrow, broad, and broadeſt.

CANVAS alſo is the cloth on which painters uſually draw their pictures; the *canvas* being ſmoothed over with a ſlick-ſtone, then ſized, and afterwards whited over, makes what the painters call their *primed cloth*, on which they draw their firſt ſketches with a coal or chalk, and afterwards finiſh with colours.

CANVAS is alſo a name ſometimes given to ſail-cloth.

CANVAS-*bags*, in the *Military Art*, contain about a cubic foot of earth or ſand, with which they are filled. Their uſe is to raiſe a parapet in haſte, or to repair one, when beaten down. See SACKS *of earth*.

CANVAS is alſo uſed, among the French, for the model, or firſt words, whereon an air, or piece of muſic, is compoſed, and given to a poet to regulate and finiſh. The *canvas* of a ſong, contains certain notes of the compoſer, which ſhew the poet the meaſure of the verſes he is to make. Thus Du Lot ſays, he has *canvas* for ten ſonnets againſt the Muſes.

CANULA. See CANNULA.

CANUTI *avis*. See TRINGA.

CANZONE, in the *Italian Muſic*, in the general, ſignifies a ſong; particularly a ſort of Italian ode, or lyric poem, conſiſting of ſeveral ſtanzas, through all which the ſame order and diſpoſition of verſes, meaſures, and rhimes, are obſerved as in the firſt.

The *canzone* is uſually very long, and may be ſet to muſic in much the ſame ſtyle with the CANTATA.

The *canzone* is a compoſition ſomewhat reſembling, but leſs elaborate, than the MADRIGAL. It admits of little figures and points, and ſeldom exceeds three parts; though the name is ſometimes given to a ſong for one voice.

There are alſo pieces of ſymphony without words, called *canzone*, much the ſame with ſonatas.

The word *canzone* in ſonatas ſerves to indicate that the airs it is put under are airs of briſk movement; ſuch as are the uſual figures otherwiſe marked with ALLEGRO.

CANZONETTA denotes a little *canzone*. See CANZONE. The word is a diminutive of the Italian *canzona*, or *canzone*.

CANZURI, a name given by ſome authors to a peculiar kind of camphor more eſteemed than any other ſort. Some have ſuppoſed it thus called from *Kanzur* or *Chanzur*, the name of a place where they ſuppoſe it to be produced, which ſeems the more probable opinion, though Scaliger rejects it, and will have it that this fine camphor had its name from a certain gum called *canzur*, which, according to Garcias, and ſome others, is frequently mixed with the camphor by the people who collect it for ſale.

This gum, he ſays, is called alſo *canderros*; and that it is ſomewhat like the crude amber, only that it is whiter. There is this great objection to this being the true ſenſe of the word, that it expreſſes an adulterated kind, which it is ſcarce probable ſhould be true of that which all the authors who have mentioned this kind of camphor, have agreed in calling the beſt and moſt excellent of all the ſorts.

CAOUANNE, in *Zoology*, the name of a ſpecies of tortoiſe very much reſembling the JURUCUA of the Braſilians, but having a thicker ſhell, and a harſh, tough, and ſtringy fleſh, of a very bad taſte.

CAOUKE, in the *Turkiſh Dreſs*, a high ſtiff turban, worn by the odabaſhees, or heads of the chambers of janizaries, when they go in proceſſion.

CAOUTCHOUC, in *Natural Hiſtory*, is one name, among many more, given to a very elaſtic reſin; the produce of a tree which grows along the banks of the river of the Amazons. This tree grows to a very great height, perfectly ſtraight, having no branches, except at top, which is but ſmall, covering no more than a circumference of ten feet. Its leaves bear ſome reſemblance to thoſe of the *manioc* (*juca foliis cannabinis*): they are green on the upper part, and white beneath. The ſeeds are three in number, and contained in a pod, conſiſting of three cells, not unlike thoſe of the *ricinus*, or *palma Chriſti*; and in each of them there is a kernel, which being ſtripped and boiled in water produces a thick oil or fat, anſwering the purpoſes of butter in the cookery of that country. The juice, which is applied to a great variety of uſes, is gathered chiefly in time of rain, becauſe, though it may be collected at all times, it flows then moſt abundantly. It is extracted from the tree by ſimple inciſion, and flows in the form of a milky liquor. The means employed to inſpiſſate and indurate it, M. de la Borde ſays, are kept a profound ſecret. M. Bomare, and others, affirm, that it thickens and hardens gradually by being expoſed to the air; and as ſoon as it acquires a ſolid conſiſtence, it manifeſts a very extraordinary degree of flexibility and elaſticity. Accordingly the Indians make boots of it, which water cannot penetrate, and which when ſmoaked have the appearance of real leather. Bottles are alſo made of this ſubſtance, to the necks of which are faſtened hollow reeds, ſo that the liquor contained in them may be ſquirted through the reeds or pipes by preſſure. One of theſe filled with water is always preſented to each of the gueſts at their entertainments, who never fail to make uſe of it before eating. This whimſical cuſtom led the Portugueſe in that country to call the tree that produces this reſin *pao de xirringa*, and hence the name of *ſeringat* is given both to the tree, and to its reſinous production.

Flambeaux, an inch and a half in diameter, and two feet long, are likewiſe made of this reſin, which give a beautiful light, have no bad ſmell, and burn twelve hours. A kind of cloth is alſo prepared from it, which the inhabitants of Quito apply to the ſame purpoſes as our oil-cloth and ſail-cloth. It is formed, by means of earthen moulds, into a variety of figures for uſe and ornament. Ever ſince this reſin has been known in Europe, its chemical qualities, and other intereſting properties, have been very diligently inveſtigated. It was ſoon found that it may be ſoftened by warm water; but it could neither be diſſolved in water, nor in ſpirit of wine; and though it may be diſſolved in certain oils, yet the ſolution remains ſoft, of a viſcous conſiſtence, and totally incapable of being reſtored to a ſolid and elaſtic ſtate. Many attempts were made for diſſolving this ſubſtance, without deſtroying its peculiar properties. M. Macquer, in particular, employed various oils, camphire, and different kinds of ſalts, for this purpoſe, without effect. He made uſe of Papin's digeſtor, and of the milky juices of ſome of our European plants, and particularly of the *milk-thiſtle*, without ſucceſs. In ſome of theſe operations, the reſin was not at all affected; and, in others, it was altered or deſtroyed. At laſt he had recourſe to the *vitriolic æther*, which quickly and eaſily diſſolved this anomalous ſubſtance; forming with it a tranſparent tincture, and after evaporation leaving the reſin behind, poſſeſſed of its former conſiſtence, elaſticity, and other properties, and of ſuch a form as he choſe to give it, while in its liquid ſtate. He obſerves, however, that two pints of the beſt æther, obtained by rectifying eight or ten pints of the common æther by a gentle heat, muſt be uſed, in order to the ſucceſs of the operation. The diſtinguiſhing properties of this ſubſtance, viz. its ſolidity, flexibility, and elaſticity, and its quality of reſiſting the action of aqueous, ſpirituous, ſaline, oily, and other common ſolvents, render it extremely fit for the conſtruction of tubes, catheters, and other inſtruments, in which theſe properties are wanted. In order to form this reſin into ſmall tubes, M. Macquer prepared a ſolid, cylindrical mould of wax, of the deſired ſize and ſhape; and then dipping a pencil into the ætherial ſolution of the reſin, daubed the mould over with it, till he had covered it with a coat of reſin of a ſufficient thickneſs. The whole piece is then thrown into boiling water; by the heat of which the wax is ſoon melted, and riſes to the ſurface, leaving the reſinous tube completely formed behind. This ſubſtance is very uſeful in drawing, &c. for eraſing the ſtrokes of black lead pencils, and is popularly called *rubber*, and *lead-eater*. A reſin ſimilar to this was not long ſince diſcovered by M. Poivre, in the Iſle of France; and there are various milky juices extracted from trees in America and elſewhere, which by previous mixtures and preparations are formed into an elaſtic reſin, but of an inferior quality to that of Cayenne. Hiſt. del' Acad. Roy. des Scienc. 1763. Ib. 1768. Ib. 1769.

CAP, a garment ſerving to cover the head, and made nearly of the figure thereof.

The æra of *caps* and hats is referred to the year 1449, the firſt ſeen in theſe parts of the world being at the entry of Charles VII. into Rouen: from that time they began, by little and little, to take place of the hoods, or chaperoons, that had been uſed till then. M. le Gendre, indeed, goes further back; they began, ſays he, under Charles V. to let fall the angles of the hood upon the ſhoulders, and to cover the head with a cap, or bonnet: when this cap was of velvet, they called it *mortier*; when of wool, ſimply *bonnet*: the firſt was laced, the latter had no ornament, beſides two horns, raiſed a moderate height, one of which ſerved in covering and uncovering. None but kings, princes, and knights, were allowed the uſe of the *mortier*.

The *cap* was the head-dreſs of the clergy and graduates. Paſquier ſays, that it was anciently a part of the hood worn by the people of the robe; the ſkirts whereof being cut off, as an incumbrance, left the round *cap* an eaſy commodious cover for the head; which round *cap* being afterwards aſſumed by the people, thoſe of the gown changed it for a ſquare one, firſt invented by a Frenchman, called Patrouillet: he adds, that the giving of the *cap* to the ſtudents in the univerſities, was to denote, that they had acquired full liberty, and were no longer ſubject to the rod of their ſuperiors; in imitation of the ancient Romans, who gave a *pileus*, or *cap*, to their ſlaves, in the ceremony of making them free: whence the proverb, *Vocare ſervos ad pileum.* Hence, alſo, on medals, the *cap* is the ſymbol of liberty, whom they repreſent holding a *cap* in her right hand, by the point.

The Romans were many ages without any regular covering for the head: when either the rain or ſun was troubleſome, the lappet of the gown was thrown over the head; and hence it is that all the ancient ſtatues appear bareheaded, excepting ſometimes a wreath, or the like. And the ſame uſage obtained among the Greeks, where, at leaſt during the heroic age, no *caps* were known.

The ſorts of *caps* or covers of the head in uſe among the Romans on divers occaſions, were the *pitra*, *pileus*, *cucullus*, *galerus*, and *palliolum*; the differences between which are often confounded by ancient as well as modern writers.

The French clergy wear a ſhallow kind of *cap*, called *calotte*, which only covers the top of the head, made of leather, ſattin, worſted, or other ſtuff.

The *red cap* is a mark of dignity allowed only to thoſe who are raiſed to the cardinalate.

The ſecular clergy are diſtinguiſhed by black leathern *caps*, the regulars by knit and worſted ones.

The Chineſe have not the uſe of the hat, like us; but wear a *cap* of a peculiar ſtructure, which the laws of civility will not allow them to put off: it is different for the different ſeaſons of the year: that uſed in ſummer, is in form of a cone, ending at top in a point. It is made of a very beautiful kind of mat, much valued in that country, and lined with ſatin: to this is added, at top, a large lock of red ſilk, which falls all round as low as the bottom; ſo that, in walking, the ſilk fluctuating regularly on all ſides, makes a graceful appearance: ſometimes, inſtead of ſilk, they uſe a kind of bright red hair, the luſtre whereof no weather effaces. In winter they wear a pluſh *cap*, bordered with martlet's, or fox's ſkin; as to the reſt, like thoſe for the ſummer. Nothing can be neater than theſe *caps*; they are frequently ſold for eight or ten crowns; but they are ſo ſhort, that the ears are expoſed.

Cap, *ſquare*.—The *cap* or bonnet, is a mark, or ornament of certain characters: thus churchmen, and the members of univerſities, ſtudents in law, phyſic, &c. as well as graduates, wear *ſquare caps*. In moſt univerſities, doctors are diſtinguiſhed by peculiar *caps*, given them in aſſuming the doctorate. Wickliff calls the canons of his time *bifurcati*, from their *caps*. Paſquier obſerves, that, in his time, the *caps* worn by the churchmen, &c. were called *ſquare caps*; though, in effect, they were round, yellow *caps*.

The *cap* is ſometimes alſo uſed as a mark of infamy: in Italy the Jews are diſtinguiſhed by a *yellow cap*; at Lucca by an *orange* one. In France, thoſe who had been bankrupts were obliged ever after to wear a *green cap*, to prevent people from being impoſed on in any future commerce. By ſeveral arrets in 1584, 1622, 1628, 1688, it was decreed, that if they were at any time found without their *green cap*, their protection ſhould be null, and their creditors impowered to caſt them into priſon: but the ſentence is not now executed.

Cap *of maintenance*, one of the regalia or ornaments of ſtate belonging to the kings of England, before whom it was carried at the coronation and other great ſolemnities; and alſo of the mayors of ſeveral cities in England.

Cap *of a gun*, is a piece of lead which is put over the touch-hole of a gun, to keep the priming from being waſted or ſpilt.

To cap, is ſaid of a ſhip in the trials of the running of ſetting of currents.

Cap, in a ſhip, is a ſquare piece of timber, put over the head, or upper end of a maſt, having a round hole to receive the maſt. By theſe *caps*, the top-maſts, and top-gallant-maſts, are kept ſteady and firm in the treſſel-trees, where their feet ſtand; as thoſe of the lower-maſts do in the ſteps. See *Tab. Ship. fig.* 1. *n.* 31. 58. 76. 101. 113. 143. and *fig.* 1. *n.* 15.

Cap, in *Chemiſtry*, ſignifies the piece which terminates the top of a *melting* FURNACE.

Cap, or *great* **Cap**, in *Chirurgery*, a denomination of a kind of compendious bandage, ſerving for almoſt all occaſions of the head, being in figure not unlike a helmet.

Among chirurgical inſtruments we meet with a ſilver *cap*, *pileolus argenteus* (though of late alſo made of wood, or even white wax), perforated at both ends, applied to the paps of nurſing women, when ulcerated, for the more commodious giving of ſuck.

Cap, in *Phytology*, a name given to the huſk or green ſucculent coat which covers the upper part of a nut, and connects it to the parent tree.

The *cap* conſiſts of a pilling and parenchyma derived from the bark, and ramulets from the ligneous body of the branch.

Cap *of a* MUSHROOM, is the head or ſuperior part expanded over the footſtalk, ſomewhat in manner of a canopy, or umbrella.

Cap, *black*, in *Zoology*. See Pewit.

Cap, *Neptune's*. See Neptune.

Cap, *prieſt's*, in *Fortification*. See Bonnet *à prêtre*.

Cap-*merchant*, in a trading ſhip, is the ſame officer who is called purſer on board a man of war. The French call him writer (*ecrivain*). He is appointed by the merchant to whom the ſhip belongs, to take care that nothing be embezzled or ſquandered away.

CAPACITY, in a general ſenſe, an aptitude, or diſpoſition to retain or hold any thing.

Our law allows the king two *capacities*, a *natural*, and a *political*: in the firſt he may purchaſe land to him, and his heirs; in the latter, to him, and his ſucceſſors.—The clergy have the like.

CAPARASON, or **Caparison**, the covering or cloathing laid over an horſe; eſpecially a ſumpter, or horſe of ſtate.

The word is Spaniſh, being an augmentative of *cape*, *caput*, *head*.

Anciently the *caparaſons* were a kind of iron armour, wherewith horſes were covered in battle.

CAPASH, a kind of head-dreſs worn by the women of Candia. It is of a ſtiffened fine muſlin, and is made ſo as to ſtand up very high, and extends out a great way on the right ſide. Pococke's Egypt. vol. ii. part ii. p. 10.

CAPE, in *Geography*, a head-land; or a piece of land running out beyond the reſt, into the ſea.

Sicily was called by the ancients *Trinacria*, by reaſon of its three *capes*, or promontories, repreſented on medals, by three mens legs joined together at the top of the thigh, and bent in the knee; which pretty nearly reſembles the triangular figure of that iſland.

Cape, in *Law*, a writ touching plea of lands and tenements; ſo termed, from the word which carries the chief intention or end of it.

Cape is of two kinds, the *magnum* and *parvum*; which in their effect are alike, as to the taking hold of things immoveable; though in certain circumſtances they differ: 1. In that the *cape magnum*, or *grand cape*, lies before; and the *cape parvum*, or *petit cape*, after appearance. 2. *Cape magnum* ſummons the defendant to anſwer the default; and beſides to the demandant: *cape parvum* only to the default. It is called *petit cape*, not becauſe of its ſmall force; but becauſe contained in few words.

Cape *magnum* is thus defined in the old Nat. Brev. "Where a man hath brought a *præcipe quod reddat* of a "thing that touches plea of land, and the tenant makes "default of the day to him given in the original writ; "then this writ ſhall be for the king to take the land "into his hands: and if the tenant come not at the day "given him by the writ, he loſes his land."

Cape *parvum*, or *petit cape*, is thus defined, ibid. "Where "the tenant is ſummoned in plea of land, and comes "at the ſummons, and his appearance is recorded; and "at the day given him, prays the view; and having it "granted, makes default; then ſhall this writ iſſue for "the king, &c."

Cape *ad valentiam*, a ſpecies of *cape magnum*, ſo called from the end to which it tends: it is thus deſcribed, "Where "I am impleaded of lands, and I vouch to warrant an-"other, againſt whom the ſummons *ad warrantandum* "hath been awarded, and the ſheriff comes not at the "day given; then, if the defendant recover againſt me, "I ſhall have a writ againſt the vouchee; and ſhall re-"cover ſo much in value of the lands of the vouchee, if "he has ſo much: otherwiſe, I ſhall have execution of "ſuch lands and tenements as deſcend to him in fee; "or, if he purchaſe afterwards, I ſhall have a re-ſum-"mons againſt him: and if he can ſay nothing, I ſhall "recover the value."

CAPEDUNCULA, in *Roman Antiquity*, the veſſels wherein the ſacred fire of Veſta was preſerved. See Vestals.

CAPELAN, in *Zoology*, a name given by ſome authors to the ſmall ſpecies of whiting called by the Venetians *matlo*, and by others the *aſellus omnium minimus*, and *merlangus*.

CAPELINE, a kind of bandage uſed by the French ſurgeons in caſes of amputations; conſiſting of a roller with two equal heads.

CAPELLA, in *Aſtronomy*, a bright ſtar of the firſt magnitude, in the left or preceding ſhoulder of the conſtellation Auriga.

Capella, in *Ornithology*. See Lapwing.

CAPER-*buſh*, *Capparis*, in *Botany*, a genus of the *polyandria monogynia* claſs. Its characters are theſe: the flower hath four large roundiſh petals, and a great number of ſlender ſtamina. In the midſt of theſe ariſe a ſingle ſtyle, longer than the ſtamina, with an oval germen, which afterward becomes a fleſhy turbinated capſule with one cell, filled with kidney-ſhaped ſeeds. There are ten ſpecies. The firſt is the common *caper*, whoſe full-grown flower-bud is pickled, and brought to England annually from Italy and the Mediterranean. This is a low ſhrub, which generally grows out of the joints of old walls, the fiſſures of rocks, and among rubbiſh, in moſt of the warm parts of Europe.

Some ſay the plant grows in Oxfordſhire, and might doubtleſs be propagated in other places. In England, broom-buds pickled are frequently ſubſtituted for *capers*.

When the *capers* are budded for flowering, the ſhoots are cut away, and the leaves and flower-buds ſtript off; and being paſſed through a ſieve, the *capers* are thereby ſeparated from the leaves.

This is a ſpeedy way, without which they would come too dear for common uſe.

They are dried in a ſhady place; then infuſed in vinegar; to which, at laſt, ſalt is added: after which they are put up in barrels to be uſed as a pickle, chiefly in ſauces; and ſometimes alſo in medicine, as being very aperitive, and entering certain compoſitions for diſeaſes of the ſpleen.

All the *capers* ſold throughout Europe, are brought from about Toulon, in France; except ſome ſmall ſalt *capers* from Majorca, and a few flat ones from about Lyons.

The bark of the *caper*-tree, when dried, is much preſcribed by the French phyſicians in oppilations of the ſpleen.

Caper, *bean*. See Bean-*caper*.

Capers, *long*, are the ſtyle or piſtil of the flower which grows into a fruit, long and round like an olive or acorn when ripe, containing divers hard brown ſeeds, like the acini of grapes.

Capers, *capuchin*, are produced by a plant formerly brought from India; thus called, becauſe the bottom of the calix of the flower reſembles the *capouche* of the religious of St. Francis.

Caper is alſo a veſſel uſed by the Dutch, for cruiſing and taking prizes from the enemy.

In which ſenſe, *caper* amounts to the ſame with privateer.

Capers are commonly double officered, and crowded with hands even beyond the rates of ſhips of war, becauſe the thing chiefly in view is boarding the enemies.

CAPH, a Jewiſh meaſure of capacity for things eſtimated by Kimchi at the 30th part of the log, by Arbuthnot at the 16th part of the hin, or 32d of the ſeah, amounting to five eighths of an Engliſh pint.

The *caph* does not occur in Scripture as the name of any meaſure.

CAPHAR, a toll, or duty, impoſed by the Turks on the Chriſtian merchants, who carry or ſend merchandiſes from Aleppo to Jeruſalem.

The *caphar* was firſt ſettled by the Chriſtians themſelves, when maſters of the Holy Land, for the ſupport of troops and forces poſted in the more difficult paſſes, to watch the Arabs, and prevent their pillages. But the Turks, who have continued, and even raiſed the toll, abuſe it; exacting arbitrary ſums of the Chriſtian merchants and travellers, on pretence of guarding them from the Arabs; with whom they yet frequently keep an underſtanding, and even favour their robberies.

CAPHURA, the ſame with *camphor*. The Arabians call it caphur and cofor. The authors who have written firſt of the navigation and trade of the Eaſt Indies, have diſtinguiſhed three kinds of camphor, which they ſay are put to different uſes, and bear a different price in the Indies. See Camphor.

CAPI-AGA, or Capi-Agassi, a Turkiſh officer, who is governor of the gates of the Seraglio; or grand maſter of the Seraglio.

The *capi-aga* is the firſt dignity among the white eunuchs: he is always near the perſon of the grand ſignior: he introduces embaſſadors to their audience: nobody enters, or goes out of the grand ſignior's apartment, but by his means. His office gives him the privilege of wearing the turban in the Seraglio, and of going every where on horſeback. He accompanies the grand ſignior to the apartment of the ſultanas, but ſtops at the door without entering. His appointment is very moderate; the grand ſignior bears the expence of his table, and allows him at the rate of about ſixty French livres per day; but his office brings him in abundance of preſents; no affair of conſequence coming to the emperor's knowledge, without paſſing through his hand. The *capi-aga* cannot be baſhaw when he quits his poſt.

CAPIAS, a writ, or proceſs, which is of two ſorts; one before judgment, called *Capias ad reſpondendum*; granted in an action perſonal, when the ſheriff, upon the firſt writ of diſtreſs, returns, *Nihil habet in balliva noſtra.*

The other is a writ of execution after judgment, which is alſo of various kinds; as, *Capias ad ſatisfaciendum*, *Capias pro fine*, *Capias utlagatum*, &c.

Capias *ad ſatisfaciendum*, is a writ of execution after judgment; lying where a man recovers in an action perſonal, as for debt, damage, &c. in which caſes, this writ iſſues to the ſheriff, commanding him to take the body of him againſt whom the debt is recovered; who is to be kept in priſon till he make ſatisfaction.

It is uſual to take out this writ, where the defendant hath no lands nor goods, whereof the debt recovered may be levied: and when the body is taken upon a *Ca. Sa.* and the writ is returned and filed, it is an abſolute and perfect execution againſt the defendant, and no other execution can be againſt his lands and goods. But this is unleſs the defendant eſcape, or die in execution, &c. for where a perſon dies in execution, his lands and goods are liable to ſatisfy judgment, by ſtat. 21 Jac. I. c. 24.

Capias *pro fine*, is where one being by judgment fined to the king, upon ſome offence againſt a ſtatute, does not diſcharge it according to the judgment: by this writ, therefore, his body is to be taken, and committed to priſon till he pay the fine.

It is uſed in other caſes, for not making out ſome pleas in civil actions. 3 Rep. 12.

CAPIAS *utlegatum*, a writ which lies againſt one outlawed upon any action, perſonal or criminal; by which the ſheriff is ordered to apprehend the party outlawed, for not appearing on the exigent, and keep him in ſafe cuſtody till the day of return; when he is to preſent him to the court, to be there further ordered for his contempt.

CAPIAS *in Withernam*. See WITHERNAM.

CAPIAS *conductos ad proficiſcendum*, an original writ, which lies, by the common law, againſt any ſoldier who has covenanted to ſerve the king in war, and appears not at the time and place appointed. It is directed to two of the king's ſerjeants at arms, to arreſt and take him wherever he may be found; and to bring him *coram concilio noſtro*, with a clauſe of aſſiſtance.

CAPIATUR, *judgment quod*. When the plaintiff had obtained judgment, it was formerly conſidered that the defendant ſhould be either amerced, for his wilful delay of juſtice in not immediately obeying the king's writ, by rendering the plaintiff his due; or be taken up, *capiatur*, to pay a fine to the king, in caſe of any forcible injury. But now, by ſtat. 5 and 6 W. and M. c. 12. no writ of *capias* ſhall iſſue for this fine, but the plaintiff ſhall pay 6*s*. 8*d*. and be allowed it againſt the defendant in his other coſts. In the court of common pleas, they enter that the fine is remitted; but in the court of king's bench, they take no notice of any fine or *capias* at all.

CAPICATINGA, in the *Materia Medica*, a name by which ſome authors have called the *acorus Aſiaticus*, or Aſiatic ſweet-flag.

CAPIDODIUS, in *Ichthyology*, a name given by Paulus Jovius, and ſome others, to the fiſh we call the GRAMPUS, and the generality of authors the ORCA. According to the Artedian ſyſtem, it is a ſpecies of the *delphinus* or dolphin; and it is diſtinguiſhed by that author by the name of the dolphin with the ſnout bending upwards, and with broad ſerrated teeth.

CAPIGI, a porter, or door-keeper of the Turkiſh Seraglio. There are about five hundred *capigis*, or porters in the Seraglio, divided into two companies; one conſiſting of three hundred, under a chief called *Capigi-Baſſa*, who has a ſtipend of three ducats per day; the other conſiſts of two hundred, diſtinguiſhed by the name of *Cuccicapigi*, and their chief *Cuccicapigi-Baſſa*, who has two ducats. The *capigis* have from ſeven to fifteen aſpers per day; ſome more, others leſs. Their buſineſs is to aſſiſt the janizaries in the guard of the firſt and ſecond gates of the Seraglio; ſometimes all together; as when the Turk holds a general council, receives an embaſſador, or goes to the moſque; and ſometimes only in part; being ranged on either ſide, to prevent people entering with arms, any tumults being made, &c. The word, in its original, ſignifies *gate*.

CAPILLAMENT, literally ſignifies *hair*, being formed of the Latin *capillus*, of *caput*, q. d. *hair of the head*. Hence the word is figuratively applied to ſeveral things, which, on account of their length, or their fineneſs, reſemble hairs: as,

CAPILLAMENTS *of the nerves*, the fine fibres, or filaments, whereof the nerves are compoſed.

CAPILLAMENTS, in *Botany*, more uſually called STAMINA, are thoſe ſmall threads, or hairs, which grow up in the middle of flowers; and are headed with little knobs, called APICES.

Bradley ſeems to reſtrain *capillaments* to the ſmaller flowers; and *ſtamina* (which he corruptly calls *apices)* to the larger.

CAPILLAMENT is alſo applied to the ſtrings or threads about the roots of plants.

CAPILLARY, of the Latin *capillus*, *a hair*, is applied to ſeveral things, to intimate their exceeding ſmallneſs, or fineneſs, reſembling that of a hair.

CAPILLARY *veſſels*, in *Anatomy*, are the leaſt, minuteſt, inſenſible ramifications of the veins and arteries; which, when cut, or broken, yield but very little blood.

The *capillary* veſſels ſhould be conceived as vaſtly finer than hairs: they are beſt compared to the threads of cobwebs, and are ſometimes called *evaneſcent* veſſels.

CAPILLARY, or CAPILLACEOUS *plants*, a ſpecies of plants, thus denominated from their form, and manner of growth, as having no principal ſtalk, or ſtem, with branches, &c. ſhooting out of the ſame; but growing from the ground, like hairs from the head: and bearing their ſeed in little tufts, or prominences, on the backſide of their leaves.

The principal of theſe is, the *capilla veneris*, or ADIANTUM; from which the reſt take their name.

This genus is placed in Linnæus's twenty-fourth claſs, entitled *Cryptogamia*; where he has ranged the ferns, maidenhairs, polypodium, &c. with the moſs, muſhroom, and all thoſe plants which do not produce flowers conſpicuous to the naked eye; being either concealed in their fructification, or ſo ſmall as not to be perceived without the help of glaſſes. The firſt order of this claſs is ferns, &c. moſt of which have their flowers and ſeeds on the backs of their leaves.

Capillary plants amount to much the ſame with what are otherwiſe denominated ACAULOSE plants. See Phil. Tranſ. Nº 186. p. 284.

All the *capillaries* are reputed of uſe in medicine, eſpecially in the making of pectoral ſyrups; to which, wonderful virtues are attributed. But, in effect, only the *capillary* of Montpelier, *adiantum album Monſpelienſe*, and that of Canada, *adiantum album Canadenſe*, are regularly uſed for that purpoſe: the reſt only ſerve to counterfeit them.

CAPILLARIS or CAPILLATA, *Arbor*, an ancient tree at Rome, on which the feſtal virgins when ſhaven for their office, hung up their hair, and conſecrated it to the gods.

CAPILLARY is alſo uſed by *Mineraliſts* in ſpeaking of ores which ramify or ſhoot out fine branches like threads.

In which ſenſe it amounts to the ſame with what is otherwiſe called *arboreſcent* and *ſtriated*. Woodward ſpeaks of *capillary* or arboreſcent ſilver, and iron; Grew deſcribes a piece of pure *capillary* copper from the mine at Heragrunt, the ſeveral ſtriæ, or capilli of which are ſhort, of a reddiſh golden colour, growing together almoſt like thoſe of the little ſtone-moſs.

CAPILLARY *roots*. See FIBROSE *roots*.

CAPILLARY *tubes*, in *Phyſics*, are little pipes, whoſe canals are the narroweſt poſſible; not ſuch, whoſe diameters do not exceed that of a common hair; for none ſuch can be made. The uſual diameter of *capillary* tubes, is a half, third, or fourth of a line: though Dr. Hook aſſures us he drew tubes in the flame of a lamp much ſmaller, as fine almoſt as a thread of a cobweb.

CAPILLARY *tubes*, *the aſcent of water*, *&c. in*, is a famous phænomenon which has long embarraſſed the philoſophers. Let one end of a ſmall tube, open at both ends, be immerged in water, and the liquor within the tube will riſe to ſome ſenſible height above the external ſurface: or immerge two or more tubes in the ſame fluid, one of them a *capillary* one, and the other conſiderably larger; the water will aſcend conſiderably higher in the *capillary* tube than the other, in the reciprocal ratio of the diameters of the tubes, both in open air and in vacuo. See ASCENT.

Mr. Hauksbee, and others, have recourſe to the attraction of the annuli of the concave ſurface of the tube; to which opinion Dr. Morgan ſubſcribes.

But ſince in every *capillary* tube, the height to which the water will ſpontaneouſly aſcend, is reciprocally as the diameter of the tube; it follows, that the ſurface, containing the ſuſpended water, is always a given quantity. But the column of water ſuſpended in every tube, is as the diameter of the tube: therefore, if the attraction of the containing ſurface be the cauſe of the water's ſuſpenſion; it will follow, that equal cauſes produce unequal effects; which is abſurd. And, again, not only his ſolution, but his phænomenon alſo, is extended too far: for it is not in all fluids that the phænomenon obtains; but in mercury the very contrary is found; that fluid in a tube not riſing ſo high as the level of that in the veſſel; and the defect being found the greater, as the tube is ſmaller.

We muſt, therefore, recur to Dr. Jurin's ſolution of this phænomenon, which is well ſupported by experiments. "The ſuſpenſion of the water (on that gentleman's "ſyſtem) is owing to the attraction of the periphery of "the concave ſurface of the tube, to which the upper "ſurface of the water is contiguous, and adheres;" this being the only part of the tube, from which the water muſt recede upon its ſubſiding; and conſequently the only one which, by the force of its coheſion and attraction, oppoſes the deſcent of the water. This he ſhews to be a cauſe proportional to the effect; becauſe the periphery, and the ſuſpended column, are both in the ſame proportion as the diameter of the tube. The ſuſpenſion thus accounted for, the ſeemingly ſpontaneous aſcent will eaſily be ſolved: for ſince the water that enters a *capillary* tube, as ſoon as its orifice is dipped therein, has its gravity taken off by the attraction of the periphery, with which its upper ſurface is in contact, it muſt neceſſarily riſe higher; partly by the preſſure of the ſtagnant water, and partly by the attraction of the periphery, immediately above that which is already contiguous to it. Phil. Tranſ. abr. vol. iv. p. 423, &c. Nº 355. or Cotes's Hyd. and Pneum. Lect. p. 265.

Some doubt whether the law holds throughout, of the aſcent of the fluid being always higher as the TUBE is ſmaller; Dr. Hook's experiments, with tubes almoſt as fine as cobwebs, ſeem to ſhew the contrary. The water in theſe, he obſerves, did not riſe ſo high as one would have expected. The higheſt he ever found was at 21 inches above the level of the water in the baſon, which is much ſhort of what it ought to have been by the law above mentioned.

Capillary tubes which naturally diſcharge water only in ſeparate drops, yield, when electrified, a continued and accelerated ſtream; and the acceleration is proportional to the ſmallneſs of the tube: and the effect of electricity is ſo conſiderable, that it produces a continued ſtream from a very ſmall tube, out of which the water had not before been able to drop. Prieſtley's Hiſt. Electr. 8vo. vol. i. p. 171. ed. 3d.

Capillary *veſſels*. Many ſmall veſſels of animal bodies have been diſcovered by the modern invention of injecting the veſſels of animals with a coloured fluid, which upon cooling grows hard. But though moſt anatomiſts know the manner of filling the large trunks, few are acquainted with the art of filling the *capillaries*. Mr. Monro has given us what he, after many trials, has found moſt ſucceſsful, in the Medic. Eſſ. Edinb. vol. i. art. 9. where he enters into a very nice detail of the operation, to which we muſt refer the curious. Some particulars we ſhall give under the head INJECTION.

Capillary *worms*, in children, are the ſame with what are otherwiſe called CRINONES, *comodones*, and *dracunculi*.

Capillary *fracture*. See CAPILLATION.

CAPILLATION, or Capillary *fracture*, according to ſome writers, is a fracture in the ſkull, ſo ſmall that it can ſcarce be perceived; but yet it often proves mortal. See FRACTURE.

CAPILLITIUM *Veneris*, in *Phyſiology*, denotes a meteor appearing in the air, in form of fine threads reſembling a ſpider's web.

Some think that the *capillitium Veneris* derives its origin from a cloud, the watery parts of which having been exhaled by the ſun's heat, only the earthy and ſulphureous parts are left behind, which ſhoot into this figure.

It is ſometimes alſo found hanging about woods and coppices, or even extended on the ground like a fine net, frequently enough miſtaken for ſpiders webs.

CAPILLUS. See HAIR.

Capillus *Veneris*. See ADIANTUM.

CAPIPLENIUM, from *caput*, *head*, and *plenus*, *full*, is uſed by ſome authors for a catarrh; but more properly, by the Italian phyſicians, for a continual heavineſs of the head, frequent at Rome, and almoſt endemic.

CAPISCOLUS, or Capischolus, in *Eccleſiaſtical Writers*, denotes a dignitary in certain cathedrals, who had the ſuperintendency of the choir, or band of muſic, anſwering to what in other churches is called CHANTER or *precentor*.

The word is alſo written *cabiſcolus*, and *caputſcholæ*, q. d. *the head of the ſchool*, or *band of muſic*.

The *capiſcolus* is alſo called *ſcolaſticus*, as having the inſtruction of the young clerks and choriſters, how to perform their duty.

CAPISTRUM, among the *Ancient Muſicians*, was a kind of headſtall, or bridle made of leather, faſtened round the head, which paſſing over the mouth, compreſſed the lips and cheeks ſo cloſe, that the perſon, whatever effort he made, could not give his pipe, or flute, above the due quantity of wind requiſite to make it ſpeak.

The figure of a muſician equipt with a *capiſtrum*, is given by Salmaſius, who maintains it to be that of Marſyas the ſatyr, who, according to Plutarch, was the inventor of this inſtrument; in virtue of which he had even dared to contend with Apollo. It was copied from an ancient ſeal, formerly belonging to Velſerus. Plut. Sympoſ. lib. vii. cap. 8. Salmaſ. Exerc. ad Solin. p. 585.

Some pretend that the uſe of the *capiſtrum* was to hide the deformity of bloated cheeks, and a gaping mouth, eſpecially where the teeth were bad; others, that it was intended to ſave the lips and cheeks from being extended ſo as to endanger burſting; others, to fortify the part, that it might yield the ſtronger noiſe. But the chief uſe appears to have been, to temper and moderate the breath, and prevent its animating the pipe beyond the due pitch. See PHORBÆA.

The chemiſts give the denomination *capiſtrum auri* to BORAX.

Capistrum, in *Surgery*, a headſtall, or bandage uſed in caſe of injuries of the head, eſpecially fractures of the jaw.

CAPITA, or Capitum, in *Antiquity*, denotes a tax among the Romans for the maintenance of the horſes in the army, levied according to the number of heads thereof.

Capita, *diſtribution by*, is ſuch a diſtribution, that every man has an equal ſhare of *perſonal* eſtate, when all the claimants claim in their own rights, as in equal degree of kindred, and not *jure repreſentationis*. Blackſt. Com. vol. ii. p. 517.

Capita, *ſucceſſion by*, is that where the claimants are next in degree to the anceſtor, in their own right, and not by right of repreſentation. Blackſt. Com. vol. ii. p. 218.

CAPITAL, of the Latin *caput*, is uſed on various occaſions, to expreſs the relation of a head, chief, or principal: thus,

Capital *city*, intimates the principal CITY of a kingdom, province, or ſtate; as, London is the *capital*, or *capital city* of England; Moſcow, of Ruſſia; Conſtantinople, of the Ottoman empire; Rouen, of Normandy, &c. See METROPOLIS.

M. Bayle has a diſcourſe on the advantages of being born and living in the *capital* of the country.

Capital *court*, *capitalis curia*, the chief manor-houſe, or place-houſe where the lord of the manor holds his COURT; called alſo in Kent the court-lodge.

Capital court is ſometimes uſed for the ſame with *capital* MESSUAGE.

Capital *honour*, *capitalis honor*, denotes the chief honour, or prime barony of the whole county, as that in ancient times uſually enjoyed by the count or earl of ſuch county.

Capital *lord*, *capitalis dominus*, the lord of the fee, from whom the eſtate is held by inferior tenants.

Capital *picture*, in *Painting*, denotes one of the moſt excellent pieces of any celebrated maſter.

F. Chamillard gives a liſt of the pieces of each famous painter, and the places where they are found.

Capital, or Capital *ſtock*, in *Commerce*, is the fund, or ſtock, of a trading company, or corporation; or the ſum of money which they jointly furniſh, or contribute, to be employed in trade.

It is alſo uſed to denote the ſtock which a merchant or tradeſman employs in buſineſs on his own account.

The power given by parliament to the South-ſea company, to increaſe their *capital*, was the ſource of all the miſchief which enſued in the year 1720.

Capital, in *Money Matters*, denotes the ſum of money put out to intereſt.

In which ſenſe it amounts to the ſame with *principal*, and ſtands oppoſed to *intereſt*.

Capital *crime*, is that which ſubjects the criminal to a *capital* puniſhment; i. e. to the loſs of life, either natural, or civil.

Capital *lees*, are the ſtrong lees made by the ſoap-boilers from pot-aſhes.

They are alſo uſed, in *Surgery*, as a cauſtic; and to make the *lapis infernalis*.

Capital *letters*. See CAPITALS.

Capital *medicines*, in *Pharmacy*, are the great, or principal preparations of the ſhops: theſe are remarkable for the number of their ingredients, and their extraordinary virtues; ſuch as Venice treacle, mithridate, &c.

Capital, in *Architecture*, the uppermoſt part of a column, or pilaſter, ſerving as the head, or crowning thereof; placed immediately over the ſhaft, and under the entablature.

Capital *of a column*, properly, is that whoſe plan is round. Whereas the CAPITAL *of a pilaſter* is that whoſe plan is ſquare, or at leaſt rectilinear.

The *capital* is a principal and eſſential part of an order of column, or pilaſter: it is made differently in the different orders; and is that which chiefly diſtinguiſhes and characteriſes the orders themſelves.

Capital, *Tuſcan*, is the moſt ſimple and unadorned: its members, or parts, are but three; viz. an abacus; under this, an ovolo, or quarter-round; and under that, a gorge, or colarino. The gorge, or neck, terminates in an aſtragal, or fillet belonging to the fuſt, or ſhaft.—See *Tab. Archit. fig.* 24.

The character of this *capital*, whereby it is diſtinguiſhed from the Doric, &c. is, that the abacus is ſquare, and quite plain, and has no ogee, or other moulding; and that there are no annulets under the ovolo.

Indeed, authors vary a little as to the character of the Tuſcan *capital*. Vignola gives the abacus a fillet, in lieu of an ovolo; Vitruvius and Scamozzi add an aſtragal and fillet, between the ovolo and neck; Serlio only a fillet; Philander rounds the corner of the abacus. In the Trajan column there is no neck; but the aſtragal of the ſhaft is confounded with that of the *capital*.

The height of this *capital* is the ſame with that of the baſe, viz. one module, or ſemidiameter. Its projecture is equal to that of the cincture at the bottom of the column; viz. eight fifths of the module. See COLUMN.

Capital, *Doric*, beſide an abacus, an ovolo, and a gorge, in common with the Tuſcan, has three annulets, or little ſquare members, underneath the ovolo, in lieu of the aſtragal in the Tuſcan; and a talon, cima, or ogee, with a fillet over the abacus. See *fig.* 25.

Authors vary too, as to the characters of this *capital*: Palladio, Vignola, &c. put roſes under the corners of the abacus, and in the neck of the *capital*.

The height of this *capital*, Vitruvius, &c. make one module;

dule; and its projecture thirty-ſeven minutes and an half.—See *Tab. Archit. fig.* 25.

CAPITAL, *Ionic*, is compoſed of three parts: an abacus, conſiſting of an ogee, and a fillet; under this a rind, which produces the volutes, or ſcrolls, the moſt eſſential part of this *capital*; and, at the bottom, an ovolo, or quarter-round: the aſtragal, under the ovolo, belongs to the ſhaft. The middle part is called a *rind*, or bark, from its ſuppoſed reſemblance to the bark of a tree laid on a vaſe, whoſe brim is repreſented by the ovolo, and ſeeming to have been ſhrunk up in drying, and to have twiſted into the volutes.

The ovolo is adorned with eggs, as they are ſometimes called, from their oval form: the Greeks call it the *echinos*.

The height of this *capital*, M. Perrault makes eighteen minutes; its projecture, one module, ſeven tenths.—See *Tab. Archit. fig.* 26.

The differences in the character of this *capital* flow moſtly from the different management of the volutes; and conſiſt in this: that in the antique, and ſome of the modern, the eye of the volute anſwers not the aſtragal of the top of the ſhaft, as Vitruvius, and moſt of the moderns, make it: that the face of the volutes, which uſually make a flat, is ſometimes curved and convexed, ſo that the circumvolutions go advancing outwards; as is frequent in the antique: that the border, or rim of the ſcroll in the volute, is ſometimes not only a plain ſweep, as ordinarily; but the ſweep is accompanied with a fillet: that the leaves which inveſt the balluſter, are ſometimes long and narrow; ſometimes larger and broader: that the two faces of the volutes are ſometimes joined at the outer corner; the balluſters meeting in the inner, to make a regularity between the faces on front and back of the building, with thoſe of the ſides: that among the moderns, ſince Scamozzi, the Ionic *capital* has been altered, and the four faces made alike, by taking away the balluſter, and hollowing all the faces of the volutes inwards, as in the compoſite: that Scamozzi, and ſome others, make the volutes to ſpring out from the ovolo, as from a vaſe, after the manner of the modern compoſite; whereas in the antique the bark paſſes between the ovolo and abacus quite ſtrait, only twiſting at its extremities, to form the volute. And, laſtly, that of late years the ſculptors have added a kind of little feſtoons, ſpringing from the flower whoſe ſtalk lies on the firſt circumvolution of the volute; and ſuppoſed to repreſent the locks of hair hanging down on both ſides of the face. See IONIC.

CAPITAL, *Corinthian*, is much the richeſt: it has no ovolo; and its abacus is very different from thoſe of the Tuſcan, Doric, or Ionic; as having its faces circular, and hollowed inward, with a roſe in the middle of each ſweep: inſtead of an ovolo, and annulets, here is only a brim of a vaſe; and the neck is much lengthened and enriched with a double row of eight leaves in each, bending their heads downwards; and between them, ſmall ſtalks ariſing: whence ſpring the volutes; which do not reſemble thoſe of the Ionic *capital*; and which, inſtead of the four in the Ionic, are here ſixteen: four on each ſide, under the four horns of the abacus, where the volutes meet in a ſmall leaf, which turns back towards the corner of the abacus. The leaves are divided, each making three ranges of leſſer leaves, whereof they are compoſed: each leſſer leaf is, again, generally parted into five, called *olive-leaves*; ſometimes into three, and called *laurel-leaves*: the middle leaf, which bends down, is parted into eleven. In the middle, over the leaves, is a flower, ſhooting out between the ſtems and volutes, like the roſe in the abacus. The height of this *capital* is two modules and one third; and its projecture, one and ſeven thirds.

The differences in the character of this *capital* are, that in Vitruvius, &c. the leaves are in form of the acanthus; whereas, in the antique, they are more ordinarily olive-leaves: that their leaves are uſually unequal, the undermoſt being made commonly talleſt, ſometimes the ſhorteſt; though ſometimes they are all equal. Sometimes the leaves are ruffled; ſometimes quite plain: the firſt row generally belly out towards the bottom, but are ſometimes ſtrait; ſometimes the horns of the abacus are ſharp at the corners, which ſeems agreeable to the rules of Vitruvius; but they are more commonly cut off. There is ſome difference too, in the form and ſize of the roſe: again, the volutes are ſometimes joined to each other; ſometimes wholly ſeparate: ſometimes the ſpires of the volutes continue twiſting even to the end of the ſame courſe; and ſometimes they turn back again near the centre, in the form of an S.—See *Tab. Archit. fig.* 21. and 27.

CAPITAL, *Compoſite*, is ſo called, becauſe compoſed of members borrowed from the *capitals* of the other columns. It takes a quarter-round, or ovolo, from the Doric; an aſtragal under this, together with volutes, or ſcrolls, from the Ionic; and a double row of leaves from the Corinthian, which it reſembles in moſt other things; conſiſting, generally, of the ſame members, and the ſame proportions. In the middle of the abacus is a flower; and under the thorns, leaves which return upward, as in the Corinthian: indeed, inſtead of ſtalks in the Corinthian, the Compoſite has ſmall flowers, lying cloſe to the vaſe, or bell; twiſting round towards the middle of the face of the *capital*, and terminating in the roſe.

The height of the Compoſite *capital* is two modules and one third; and its projecture, one module and two thirds, as in the Corinthian.—See *Tab. Archit. fig.* 28.

The differences of the character of this *capital* conſiſt in this; that the volutes, which ordinarily deſcend, and touch the leaves, are, in ſome works of the antique, ſeparate from them: that the leaves, which are generally unequal in height, the lower rank being talleſt, are ſometimes equal: that the volutes of the moderns generally ſpring out of the vaſe; whereas, in the antique, they ordinarily run ſtrait the length of the abacus, over the ovolo, without ſtriking into the vaſe: that the volutes, whoſe thickneſs is contracted in the middle, and enlarged above and below in the antique, have their ſides parallel in the works of the moderns: and, laſtly, that the volutes, which have been hitherto, both by the ancients and moderns, made as if ſolid, are now much lighter, and more airy; the folds ſtanding hollow, and at a diſtance from each other.

For the proportions of the ſeveral members of the *capitals* of columns, ſee COLUMN. See alſo each member under its proper head; as ABACUS, ACANTHUS, VOLUTE, &c.

Some architects diſtinguiſh the Tuſcan and Doric *capitals*, which have no ornaments, by the title of *capitals of mouldings*; and the three others, which have leaves and ornaments, they call *capitals of ſculpture*.

CAPITAL, *Angular*, is that which bears the return of an entablature, at the corner of the projecture of a frontiſpiece.

CAPITAL, *Folded*, in *Architecture*, that of a pilaſter in a re-entering angle, whether right or obtuſe.

CAPITAL, *Mutilated*, that whoſe projecture is leſs on one ſide than on another, as being too near ſome adjacent body or angle.

CAPITAL, *Attic*, that which has water-leaves in the gorgerin.

CAPITALS, *Symbolical*, thoſe adorned with the attributes of heathen deities. Such are moſt of the antique *capitals*, in which we find thunderbolts and eagles for Jupiter, trophies for Mars, lyres for Apollo, &c. Such alſo among the moderns are thoſe which bear the arms and devices of a nation, the marks of a victory, a dignity, or the like.

CAPITAL *of a Balluſter*, is that part which crowns the balluſter; which ſometimes bears a reſemblance to the *capitals* of ſome columns, particularly the Ionic.

CAPITAL *of a Niche*, is a kind of little canopy over a ſhallow niche, covering or crowning a ſtatue.

CAPITAL *of a Triglyph*, is the plat-band over the triglyph; called, by Vitruvius, *tænia*. It is ſometimes alſo a triglyph which does the office of a *capital* to a Doric pilaſter.

The *capitals* of triglyphs, according to Vitruvius, are to be a ſixth part of the module. Over them is to be placed a corona.

CAPITAL, in *Chemiſtry*, ſignifies the head of an ALEMBIC.

CAPITAL *of a Baſtion*, in *Fortification*, is a line drawn from the angle of the polygon to the point of the BASTION.

The *capitals* of baſtions are from thirty-five to forty fathoms long, from the point of the baſtion to the point where the two demigorges meet.

CAPITAL *of a Lanthorn*, the covering which terminates the lanthorn of a dome, either in the figure of a bell, as that of the Sorbonne; or of a cupola, or a ſpiral, as that of the church of Sapienza at Rome.

CAPITAL *of a Mill*, the covering thereof in form of a cone, which turns vertically on the round tower, in order to expoſe the ſails to the wind.

CAPITALS, in *Printing*, large or initial letters, wherein titles, &c. are compoſed; and with which all periods, verſes, &c. commence.

All proper names of men, countries, kingdoms, terms of arts, ſciences, and dignities, uſually begin with *capitals*.

The ancient MSS. both Greek and Latin, are written wholly in *capitals*.

In the early days of printing, there were alſo ſeveral editions of books in *capitals*, as of Homer, the Greek Anthology, Apollonius, &c. Johannis Laſcaris ſeems to have brought the ancient printers to give editions in *capitals*.

Capitalis *reflexa*, in *Surgery*. See Capeline.

CAPITANA, or Captain *galley*, the chief or principal galley of a ſtate, not dignified with the title of a kingdom.

The *capitane* was anciently the denomination of the chief galley of France, which the commander went on board of. But ſince the ſuppreſſion of the office of captain general of the gallies in 1669, they have no *capitana*, but the firſt galley is called *reale*, and the ſecond *patrone*.

CAPITANEATE, in a general ſenſe, the ſame with capitania.

Capitaneates, in Pruſſia, are a kind of noble feuds, or eſtates, which, beſides their revenue, raiſe their owners to the rank of nobility. They are otherwiſe called *ſtaroſties*. Bibl. Germ. tom. vi. p. 11.

CAPITANEI, or Catanei, in Italy, was a denomination given to all dukes, marquiſſes, and counts, who were called *capitanei regis*. The ſame appellation was alſo given to perſons of inferior rank who were inveſted with fees, formerly diſtinguiſhed by the appellation *valvaſores majores*. Du-Cange.

CAPITANEUS, in *Ancient Law Writers*, denotes a tenant in capite, or chief.

Capitaneus *eccleſiæ*, the ſame with *advocate*. Du-Cange, Gloſſ. Lat. tom. i. p. 802.

CAPITANIA, the office or dignity of a captain, and more eſpecially a perpetual feud. See Capitaneate.

Capitania is alſo a denomination given to the twelve governments eſtabliſhed by the Portugueſe in Braſil.

CAPITATÆ *Plantæ*, in *Botany*, are thoſe plants whoſe flowers are fiſtular, compoſed of many edged and hollow little flowers. They were thus called by Mr. Ray, becauſe their ſcaly calyx (or cup of the flower) moſt uſually ſwells out into a large and round head, containing within it the pappous ſeed: as in the carduus, centaury, knapweed, cinara, cirſium, lappa major, cyanus, &c.

CAPITATION, a tax, or impoſition, raiſed on each perſon, in conſideration of his labour, induſtry, office, rank, &c. This kind of tribute is very ancient, and anſwers to what the Greeks called επικεφαλαιον; the Latins, *capita*, *capitatio*, and *tributum*, or *tributum capitis*, or *capitulare*. By this term, taxes on the perſon are diſtinguiſhed from taxes on merchandiſe, which were called *vectigalia*, *quia vehebantur*.

Capitation alſo denotes a certain ſum of money impoſed per head, in exigencies of ſtate.

CAPITATUS, in *Ichthyology*, a name given by Johannes Cuba, and ſome others, to that fiſh which we commonly call the bull-head, and miller's thumb, the *cottus* and *gobio capitatus* of authors. It is of the genus of the *cotti*, according to the Artedian ſyſtem, and is diſtinguiſhed by that author by the name of the ſmooth ſcaleleſs *cottus*.

CAPITE, in *Law*, an ancient tenure, whereby a perſon held of the king immediately, as of his crown, either by knight's ſervice, or ſoccage.

By a ſtatute, 12 Car. II. c. 24. all ſuch tenures by knight's ſervice of the king, or of any other perſon, knight's ſervices *in capite*, or soccage, with all rights, &c. are annulled.

Capite *cenſi*, in *Antiquity*, the loweſt rank of Roman citizens, who in public taxes were rated the leaſt of all, being ſuch as were never worth above 365 aſſes.

They were ſuppoſed to have been thus called, becauſe they were rather counted and marſhalled by their heads than their eſtates. Aul. Gell. lib. vii. cap. 13.

The *capite cenſi* made part of the ſixth claſs of citizens, being below the *proletarii*, who formed the other moiety of that claſs.

The *capite cenſi* were not enrolled in the army, as being judged not able to ſupport the expences of war; for in thoſe days the ſoldiers maintained themſelves. It does not appear that before Caius Marius any of the Roman generals liſted the *capite cenſi* in their armies. Salluſt. Jug. p. 135.

CAPITIS *nonus*, in *Anatomy*, the name given by Fallopius to one of the muſcles of the head, deſcribed by Albinus under the name of the *rectus capitis internus major*, and by Winſlow and others under that of the *rectus capitis anterior longus*. See Head.

Capitis *par tertium*, in *Anatomy*, a name given by Fallopius and others of his time, to a muſcle ſince called, by Winſlow, complexus *minor*, and *maſtoidæus lateralis*; and, by Cowper and Albinus, *trachelomaſtoidæus*.

CAPITO, in *Ichthyology*, the *chub*; it is alſo called by ſome authors the *cephalus* and *ſqualus*, and *cyprinus*, and in ſome parts of England the *chevin*. It is a longer-bodied fiſh than the carp; and its head is black, large, and ſomewhat flat.

It has no teeth either in the jaws, palate, tongue, or throat; its tail is forked, and all its fins are of a bluiſh black colour. Its belly is ſomewhat prominent; it is a river-fiſh, and loves the covert of old ſtumps of trees and hollow banks, and gives the angler much diverſion; it will not live in ponds; it ſpawns in May, and is in beſt ſeaſon in April, when full of ſpawn, but is never a very delicate fiſh. Ray. See Chub.

Capito is alſo a name given by ſeveral authors to the *mugil* or *mullet*. Gaza ſeems to have given riſe to this error: he found the word cephalus in Ariſtotle as the name of the mullet, and tranſlated it by the word *capito*; not conſidering that he by that name confounded this fiſh with another, namely, the chub.

Capito *anodromus*, in *Ichthyology*. See Zerta.

Capito *cæruleus*, the blue *chub*, a fiſh common in the Danube, and other of the large rivers in Germany, and frequently called the jentling.

Capito *rapax*, in *Zoology*, a name given by ſome authors to the corvus *piſcis*, a fiſh of the ſhape of our river-chub.

CAPITOL, Capitolium, in *Antiquity*, a famous fort, or caſtle, on the Mons Capitolinus at Rome, wherein was a temple dedicated to Jupiter, thence alſo denominated *Capitolinus*, in which the ſenate anciently aſſembled; and which ſtill ſerves as the city-hall, or town-houſe, for the meeting of the conſervators of the Roman people.

It had its name, *capitol*, from *caput*, *a man's head*; ſaid to have been found freſh, and yet bleeding, upon digging the foundation of the temple, built in honour of Jupiter. Arnobius adds, that the man's name was Tolus; whence *caputtolium*.

The firſt foundations of the *capitol* were laid by Tarquin the Elder, in the year of Rome 139. His ſucceſſor, Servius, raiſed the walls; and Tarquin the Proud finiſhed it, in the year 221: but it was not conſecrated till the third year after the expulſion of the kings, and eſtabliſhment of the conſulate. The ceremony of the dedication of the temple was performed by the conſul Horatius, in 246.

The *capitol* conſiſted of three parts: a nave, ſacred to Jupiter; and two wings, or iſles, to Juno and Minerva. It was aſcended by ſtairs; Lipſius reckons one hundred in number, becauſe there were ſo many in the aſcent of the Tarpeian rock. The frontiſpiece and ſides were encompaſſed with galleries, wherein thoſe, who had the honour of a triumph, entertained the ſenate at a magnificent banquet, after the performance of ſacrifice to the gods. Both inſide and outſide were enriched with numerous ornaments; the ſtatue of Jupiter, with his golden thunderbolt, his ſceptre, and crown, were the moſt diſtinguiſhed.

In the ſame *capitol* there were, likewiſe, a temple to Jupiter the Guardian, and another to Juno; with the mint: and on the deſcent of the hill was the temple of Concord.

The *capitol* was burnt under Vitellius, and rebuilt under Veſpaſian: it was burnt a ſecond time by lightning, under Titus; and was again reſtored by Domitian.

Anciently, the name *capitol* was likewiſe applied to all the principal temples, in moſt of the colonies throughout the Roman empire: as, at Conſtantinople, Jeruſalem, Carthage, Ravenna, Capua, &c.

CAPITOLINE *Games*, *Ludi* Capitolini, were annual games, or combats, inſtituted by Camillus, in honour of Jupiter Capitolinus; and in commemoration of the capitol's not being ſurpriſed by the Gauls.

Plutarch tells us, that a part of the ceremony conſiſted in the public cryer's putting up the Hetrurians to ſale by auction: they alſo took an old man, tying a golden bulla to his neck, ſuch as were worn by their children, and expoſed him to the public deriſion Feſtus ſays, they dreſſed him in a prætexta, hung a bulla at his neck; not as accounting him a child, but becauſe this was an ornament of the kings of Hetruria.

There was alſo another kind of *capitoline* games, called *agones capitolini*, inſtituted by Domitian, and celebrated each five years; wherein there were rewards and crowns beſtowed on the victorious poets, and put on their heads by the emperor himſelf. Theſe games became ſo celebrated, that the manner of accounting time by luſtres, which had obtained till then, was changed; and they began to count by *capitoline* games, as the Greeks by olympiads. The feaſt was not for poets alone, but alſo for athletæ, orators, hiſtorians, comedians, muſicians, &c.

CAPITOLINI, in *Roman Antiquity*, a college of men reſiding in the capital and arx, to whom was committed the care of celebrating the Capitoline games.

CAPITOUL, or Capitol, an appellation given to the chief magiſtrates of Tholouſe, who have the adminiſtration of juſtice and policy both civil and mercantile in the city.

The *capitouls* at Tholouſe are much the ſame with the echevins at Paris, and the conſuls, bailiffs, burgermaſters, mayors, and aldermen, &c. in other cities. In ancient acts they are called *conſules capitularii*, or *capitolini*, and their body *capitulum*. From this laſt come the words *capitularii* and *capitouls*. The appellative *capitolini* aroſe hence, that they have the charge and cuſtody of the town-houſe, which was anciently called *capitol*.

The office only laſts one year, and ennobles the bearers. In ſome ancient acts they are called *capitulum nobilium Toloſæ*. Thoſe who have borne it, ſtyle themſelves afterwards burgeſſes. They are called to all general councils, and have the *jus imaginum*; that is, when the year of their adminiſtration is expired, their pictures are drawn in the town-houſe; a cuſtom which they have retained from the ancient Romans, as may be ſeen in Sigonius.

CAPITOULATE, an appellation given to the ſeveral quarters or diſtricts of the city of Tholouſe, each under the direction of a CAPITOUL; much like the wards of London, under their aldermen.

Tholouſe is now divided into eight *capitoulates* or quarters, which are ſubdivided into *moulans*, each of which has its tithing-man, whoſe buſineſs is to inform the *capitoul* of what paſſes in his tithing, and to inform the inhabitants of the tithing, of the orders of the *capitoul*.

CAPITULA *ruralia*, denote chapters held by the rural dean and clergy within the precincts of each deanry, anciently held every three weeks, then once a month, and more ſolemnly once a quarter.

CAPITULAR, or CAPITULARY, denotes an act paſſed in a chapter, either of knights, canons, or religious.

The *capitularia*, or *capitulars* of Charlemagne, Charles the Bald, &c. are the laws, both eccleſiaſtical and civil, made by thoſe emperors in the general councils, or aſſemblies of the people: which was the way in which the conſtitutions of moſt of the ancient princes were made; each perſon preſent, though a plebeian, ſetting his hand to them.

Some diſtinguiſh theſe from laws; and ſay, they were only ſupplements to laws.—They had their name, *capitulars*, becauſe divided into *capitula*, chapters, or ſections. In theſe *capitulars* did the whole French juriſprudence anciently conſiſt.—In proceſs of time, the name was changed for that of *ordonnances*.

Some diſtinguiſh three kinds of *capitulars*, according to the difference of their ſubject-matter: thoſe on eccleſiaſtical affairs, are really canons, extracted from councils; thoſe on ſecular affairs, real laws; thoſe relating to particular perſons, or occaſions, private regulations.

CAPITULATION, a treaty made with the garriſon, or inhabitants of a place beſieged; whereby they ſurrender themſelves up, on certain articles and conditions ſtipulated with the beſiegers.

Before a ſurrender, the governor of the garriſon gives orders for beating the CHAMADE, and for fixing one or more white colours on the rampart; one of which remains either on the breach or rampart, during the time of negociation. When the chamade is beat, the fire ceaſes on both ſides, and the governor ſends ſome officers of diſtinction to the commander in chief of the beſiegers, who deliver to him the conditions on which the governor propoſes to ſurrender the town: and as a ſecurity for theſe officers, the beſiegers ſend a like number into the town. If the governor's conditions are not ſatisfactory to the general of the beſiegers, he preſcribes the conditions of ſurrender; threatening to allow no conditions, if thoſe propoſed are not complied with within a certain time. If the conditions are too hard, the officers return, and the drums are beat upon the rampart, for the recommencement of hoſtilities. During the ſuſpenſion of arms, no work ſhould be done for the ſecurity either of the beſieged or beſiegers; however, ſtratagems are counted lawful, and ſhould be guarded againſt.

If the terms of *capitulation* are agreed upon, the governor ſends two or three of his principal officers into the camp, and the general ſends the ſame number and of the ſame rank into the town, as a ſecurity for accompliſhing the *capitulation*. When every thing is finiſhed, the hoſtages on both ſides return. The conditions of the beſieged are of various kinds, according to their circumſtances. A garriſon ſhould have proviſion and ammunition at leaſt for three days, to be entitled to a compoſition, without which they are to be made priſoners of war; but this ſhould be known, before the *capitulation* is ſigned. When the *capitulation* is ſettled, an officer of artillery from the beſiegers comes into the place with an officer of artillery from the garriſon, who takes an inventory of all the artillery and ammunition remaining; and a commiſſary of proviſions takes an account of the proviſions. When the beſieged have delivered a gate of the place to the beſiegers, the firſt regiment of the army enters and mounts guard. When the garriſon leaves the place, the army of the beſiegers is put under arms, and ranged in two files, at the head of which are the general and principal officers, between which the garriſon paſſes. See farther on this ſubject, Muller's Math. &c. vol. vi. p. 197, &c.

CAPITULATION denotes alſo a kind of treaty, *pacta conventa*, or original contract, drawn up by the electors, before the election of an emperor; which the emperor is to ratify before his coronation, and to obſerve inviolably in the courſe of his reign.

Theſe imperial *capitulations* have only been obtained ſince the time of Charles V. They were occaſioned by the jealouſy the German princes had entertained of the too great power of the emperor. Frederick, duke of Saxony, ſurnamed the Wiſe, paſſes for the author of the imperial *capitulations*; who, declining the empire, which was offered him after the death of Maximilian, adviſed the electors to chooſe Charles V. under ſuch conditions as might ſecure the liberty of the empire.

The deſign of the *capitulation* is, on the one hand, to prevent the emperor from abuſing his power to the oppreſſion of the people; and on the other, to prevent the people from breaking in on the juſt rights of the emperor. The imperial *capitulations* are conſidered as fundamental laws of the empire; and though the drawing up, preſenting, procuring the ſignature, and taking care of the execution of it, be committed to the electors, it is reputed the act of the ſtates of the empire.

The king of the Romans alſo, when elected, ſigns the emperor's *capitulation*, as being in right of ſuch election to ſucceed to the empire after the death of the emperor.

CAPITULUM, in *Anatomy*, a little head, eſpecially of a bone, anſwering to the Greek *condylus*.

CAPITULUM, in *Botany*, the head, or compound flower, of any plant; being compoſed of many leaves and threads, or ſtamina, cloſely connected in a globous, circular, or diſcous figure; as the flowers of bluebottles, ſcabious, carduus, &c.

CAPITULUM, in the *Ancient Military Art*, was a tranſverſe beam, wherein were holes through which paſſed the ſtrings whereby the arms of huge engines, as balliſtæ, catapultæ, and ſcorpions, were played or worked. Vitruv. de Arch. lib. i. cap. 1.

CAPITULUM, in *Eccleſiaſtical Writers*, denoted part of a chapter of the Bible read and explained.

In which ſenſe they ſaid, *ire ad capitulum, to go to ſuch a lecture*. Afterwards the place or apartment where ſuch theological exerciſes were performed, was denominated *domus capituli*.

CAPWARD, in *Zoology*; in Portugueſe, a *water-dog*, which is deſcribed to be an amphibious animal, with a body like a hog, a head like a hare, and without a tail. It keeps itſelf almoſt continually on its poſteriors, like an ape. It is found in Braſil; it lives all day in the ſea, and at night comes aſhore to ravage the gardens, and to root up the trees: the fleſh is wholeſome food.

CAPIVI. See BALSAM.

CAPNELÆON, from καπνος, *ſmoke*, and ελαιον, *oil*, among *Ancient Naturaliſts*, denotes a ſpecies of reſin, which flows ſpontaneouſly, being warmer, thinner, and more fluid than all other ſorts of reſins, ſo as nearly to approach the nature of oil, and evaporating plentifully on being expoſed to the fire; whence the denomination, which imports as much as ſmoking oil. It is ſometimes alſo called *piſſanthos*, or flower of pitch.

CAPNICON, in *Antiquity*, chimney-money, or a tax which the Roman emperors levied for ſmoke, and which of conſequence was due from all, even the pooreſt, who kept a fire. This was firſt invented by Nicephorus.

CAPNISTON, among *Ancient Phyſicians*, denotes oil whoſe fumes rendered aromatic by burning ſpices, are conveyed to a part affected.

CAPNITIS, or CAPNITAS *jaſpis*, in the *Natural Hiſtory of the Ancients*, the name of a ſpecies of chalcedony, of a browniſh ground, clouded with a large miſt of blackiſh, looking like a column of ſmoke. The ancients alſo called our common chalcedony a jaſper, not allotting any peculiar generical name to theſe miſty ſtones; and the name they gave this ſpecies very happily expreſſed its character, becauſe it looks exactly as if obſcured by a cloud of thick ſmoke.

It is very common in the Eaſt Indies, and is ſometimes found in Germany and France, but is ſeldom worked into any thing better than knife-hafts.

CAPNOIDES, in *Botany*. See FUMITORY.

CAPNOMANCY, a kind of divination by means of ſmoke, uſed by the ancients in their ſacrifices.

The word comes καπνος, *ſmoke*, and μαντεια, *divination*. The general rule was, when the ſmoke was thin, and light, and roſe ſtrait up, it was a good omen: if the contrary, it was an ill one.

There was alſo another ſpecies of *capnomancy*, conſiſting in the obſervation of the ſmoke riſing from poppy and jeſſamin-ſeed, caſt upon lighted coals.

CAPO, in *Ichthyology*, a name given by Paulus Jovius and ſome others to the fiſh called *coccyx* by the ancient Greeks, *cuculus* by the Latin writers, and by ſome *lyra*. It is a ſpecies of the *triglæ*, diſtinguiſhed by Artedi by the name of the *red trigla*, with a bifid ſnout, and with the coverings of the gills ſtriated.

Capo *negro*. See Duck.

Capo *roſſo*. See Duck.

CAPOC, in *Commerce*, a ſort of cotton, ſo fine and ſo ſhort, that it cannot be ſpun. It is uſed in the Eaſt Indies to line palanquins, to make beds, matraſſes, cuſhions, pillows, &c.

CAPOLLIN, in *Botany*; *Mexicanorum Hernandez, ſeu Ceraſus dulcis Indica*. It is a tree of moderate bigneſs, with leaves like thoſe of an almond, or our country cherry-tree. The flowers hang down in bunches, which are ſucceeded by fruit reſembling our cherries. It bloſſoms in the ſpring, and bears fruit all the ſummer; it requires a temperate climate, and grows in gardens and fields in Mexico, as well ſpontaneouſly as by cultivation.

The juice of the young buds mollifies the tongue when parched by heat. A decoction of the bark being expoſed to the ſun for fifteen days, and the weight of a dram of it taken, cures the dyſentery. The powder helps inflammations. In times of dearth, they make bread and drink of the fruit; but it affords an aliment inclining to melancholy, giving a rankneſs to the breath, and making the teeth black. There are three ſpecies of this tree, which differ only in fruit; but all of them hang in cluſters.

CAPON, a cock chicken caſtrated young, generally as ſoon as left by the dam.

The word is formed from the Latin *capo*, of the Greek *καπων*, which ſignify the ſame.

Capons, beſides their uſe for the table, ſerve to lead chickens, ducklings, turkey-pouts, pea-hens, pheaſants, or partridges, in lieu of their natural dams, over which they have ſeveral advantages, by the largeneſs of their body, which will brood, or cover, thirty or forty young.

Capon's*-tail graſs*. See Festuca.

CAPONE, in *Ichthyology*, a name given by the Italians to the fiſh called the *hirundo* and *corvus* by authors, and by Artedi made a ſpecies of the *trigla*. It is diſtinguiſhed from the reſt of this genus by that author, under the name of the *trigla* with an aculeated head, and with three appendages on each ſide to the pectoral fins.

CAPONIERE, or Caponniere, in *Fortification*, is a paſſage from one work to another, ten or twelve feet wide, covered on each ſide by a parapet, terminating in a ſlope or glacis.

In dry moats, the paſſage from the curtain to the ravelin, or that from the covert-way to the arrows or detached redoubts, are called *caponieres*.

Single parapets raiſed at the entrance of the ditch, before the ravelin, behind which are placed ſmall cannons and men, to diſpute the paſſage over the ditch, are likewiſe called *caponieres*.

The *caponiere* differs from the coffer, in that the latter poſſeſſes the whole breadth of the ditch, whereas the former only takes up a part of it. See Coffer.

Caponieres are partly under ground, and partly above it. They are ſo well ſcreened at the top, that no bomb or carcaſs can penetrate them.

CAPOT, at *Picquet*, is when one of the gameſters wins all the cards, in which caſe he gains forty points.

CAPPADINE, in *Commerce*, a ſort of ſilk flock, taken from the upper part of the ſilk-worm cod, after the true ſilk has been wound off. It is alſo called *laſſis* and *carbaſs*, becauſe ſlight ſtuffs under thoſe names are made of it.

CAPPANUS, in *Natural Hiſtory*, the name given by ſome authors to the ſea-worm, which bores into the bottoms of ſhips.

In order to prevent the pernicious effects of this worm, ſeveral ſhips have lately been ſheathed with copper.

CAPPARIS, in *Botany*. See Caper-*buſh*.

CAPPEROL *Coronde*, a name given by the Ceyloneſe to a peculiar kind of cinnamon, eſteemed the third in value: this has a very ſtrong taſte and ſmell of camphor, and its name with the natives ſignifies camphorated cinnamon. The tree which produces it, grows very plentifully in many parts of the iſland of Borneo, but is not met with in the eaſtern parts of it. This is often ſold to the Danes and Engliſh who come to trade on the coaſts of Coromandel; it is prohibited exportation from the iſland, but ſo long as only one port is open, there are people enough who will carry out great quantities of it.

There is a ſpecies of canella very much reſembling this kind of cinnamon-tree, which grows very frequently on the continent of India toward Goa; and another canella or wild cinnamon on the coaſt of Malabar, in many reſpects reſembles this. The barks of all theſe trees are greatly inferior to the true cinnamon in ſmell, taſte, and virtue; yet they are too often ſold to the leſs judicous traders in theſe things, either alone or mixed with the ſeveral better kinds of cinnamon, to the great damage of all that afterwards buy them. Phil. Tranſ. N°. 409.

CAPRA, in *Aſtronomy*, a denomination given to the ſtar Capella; and ſometimes alſo to the conſtellation Capricorn.

Some repreſent *Capra*, or the *ſhe-goat*, as a conſtellation in the northern hemiſphere, conſiſting of three ſtars, compriſed between the 45th and 55th degree of latitude. The poets ſay, it is Amalthea's goat, which ſuckled Jupiter in his infancy. Horace, making mention of it, calls it, *Inſana ſidera Capræ*.

Capra *Saltans*, or Capræ *Saltantes*, in *Meteorology*, a fiery meteor, or exhalation, which ſometimes appears in the atmoſphere, and is not fired in a ſtrait line, but with inflexions, and windings in and out, reſembling the caperings of a goat.

The *capræ ſaltantes* are not ſo called from their figure, which is various, ſometimes round, ſometimes long, but from their moving by jerks ſomewhat like the leaps of that animal; and from the little languets of fire which hang at, and ſometimes fall from them, which antiquity has been pleaſed to fancy like the beard or locks of a goat's hair.

Ariſtotle diſtinguiſhes the *capra* from the trabs, in that the latter proceeds with an uniform motion, the former with an irregular one, and as it were by jumps. Ariſt. Met. lib. i. cap. 5. Mem. Ac. Inſcr. tom. vi. p. 95.

The *capræ* ſeem to be very low, yet ſometimes fly ſo high, that meteorologiſts have placed them in the upper region, though not ſo conſtantly, but they are ſometimes alſo found in the middle region.

Of globular *capræ* we have divers inſtances, in ancient as well as modern naturaliſts. Such was the flame ſaid by Seneca to have been ſeen in form of a huge ball, about the bigneſs of the moon, when Paulus Æmilius waged war againſt Perſeus. Such another, he tells us, was ſeen at the death of Auguſtus; another on the tragedy of Seijanus, another at the death of Germanicus. Such was that ſeen about Michaelmas 1676, by no leſs than twelve counties at once; it is deſcribed by Mr. Naſh, as it appeared near Seighford in Staffordſhire, as of a globular figure moving by jerks, and making ſhort reſts at every one of them, letting fall drops of fire, which were parts of its body; for it decreaſed in magnitude the farther it went, and the oftener it dropped, till at length it wholly diſappeared. Senec. Nat. Queſt. lib. i. cap. 1. Phil. Tranſ. N° 135. p. 863, ſeq. Plott. Nat. Hiſt. Stafford. cap. 1. § 40.

Capra *trituratoria*, in *Ancient Huſbandry*, was a kind of iron log, made in the figure of a goat, which was laid on the *tribula*, to make it more effectual in ſeparating the corn from the ears, the ancient way of threſhing.

Capra, in *Zoology*. See Goat.

CAPRARIA, *Sweet-weed*, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Its characters are theſe: the flower is bell-ſhaped, of one leaf, divided at the top into five equal parts; it hath four ſtamina, which are inſerted in the baſe of the petal, and but little more than half ſo long; two of the lower being ſhorter than the other. It hath a conical germen, which afterward becomes an oblong conical capſule, compreſſed at the point, having two cells divided by a partition, filled with roundiſh ſeeds. We have but one ſpecies, which grows naturally in the warm parts of America, where it is often a troubleſome weed.

CAPREA, in *Zoology*. See *Roe* Deer.

CAPREOLATÆ *plantæ*, are ſuch plants as turn, wind, and climb along the ſurface of the earth, and ſticks or trees, by means of their *capreoli*, or tendrils: as gourds, melons, cucumbers, &c.

CAPREOLI, in the *Ancient Architecture*, a ſort of raſters or timbers ſerving to ſuſtain the *canterii*, either in buildings, or machines.

They were thus called, not, as Philander imagines, from their reſemblance to the *capreoli*, or tendrils of vines, but from the affinity of their form and office to wild goats; as theſe butt and repel things with their horns, ſo do the former oppoſe their heads or horns to the weight of the *canterii*.

CAPREOLUS, in *Anatomy*, denotes the *helix*, or outer ambit of the ear.

Capreolus, in *Botany*, the claſper, or tendril, by which vines, peas, and ſuch like creeping plants, faſten themſelves to thoſe things which ſtand near, or are deſigned to ſupport them. This is alſo ſometimes called *clavicula*.

Capreolus, in the *Ancient Huſbandry*, a kind of iron hoe or inſtrument with two forks or fangs, wherewith to ſtir and move the ground.

Capreolus, in *Zoology*. See *Roe* Deer.

CAPRICE, in *Muſic*, is ſometimes uſed for an irregular compoſition, which ſucceeds rather by the force of genius, than obſervation of the rules of art.

The word is French, where it ſignifies humourouſneſs, fantaſticalneſs. Some deduce it from the Italian *capriccio*, and that from the Latin *capra, goat*, to whoſe wantonneſs it is ſuppoſed to bear alluſion. Morhof. Polyhiſt. tom. i. lib. ii. cap. 1.

Caprice is applied in *Architecture* to an edifice of a ſingular taſte, and deviating much from the common rules of building.

CAPRICORN, in *Aſtronomy*, according to ſome, the tenth ſign of the zodiac; from which alſo the tenth part of the ecliptic takes the ſame denomination.

The character whereby *Capricorn* is repreſented in aſtronomical writing, is ♑.

The ancients accounted *Capricorn* the tenth ſign, and when the ſun arrived thereat, it made the winter ſolſtice, with regard to our hemiſphere; but the ſtars having advanced a whole ſign towards the eaſt, *Capricorn* is now rather the eleventh ſign; and it is at the ſun's entry into Sagittary, that the ſolſtice happens: though the ancient manner of ſpeaking is ſtill retained.

This ſign is repreſented on ancient monuments, medals, &c. as having the fore-part of a goat, and the hind-part of a fiſh; which is the form of an ægipan; and ſometimes, ſimply, under the form of a goat.

The ſtars in the conſtellation of *Capricorn*, in Ptolemy's and Tycho's Catalogue, are 28; in that of Hevelius 29; though it is to be obſerved, one of thoſe in the tail, of the ſixth magnitude, marked in Tycho's book the twenty-ſeventh, was loſt in Hevelius's time. Mr. Flamſtead, in the Britannic Catalogue, gives 51 ſtars in *Capricorn*. The order, names, longitudes, latitudes, magnitudes, &c. whereof, are as follow.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude
			°	′	″	°	′	″	
		♑	28	6	58	7	27	4N	6
In the extrem. of the preced. horn	ξ		28	10	28	7	13	18N	6
			29	11	41	7	15	34N	6
			27	26	1	2	3	23S	6
Preced. ſtar in the ſubſeq. horn	1. α		29	27	19	7	1	31N	4
5.									
The laſt of the contiguous ſtars	2. α		29	32	21	6	58	6N	3
That under the right eye	σ		28	21	44	0	29	29N	6
The middle ſtar in ſubſeq. horn	ν	♒	0	7	9	0	36	51N	6
Moſt ſouth of 3 in ſubſeq. horn	β	♑	29	43	57	4	37	27N	3
Foremoſt of three in the noſe	π	♒	0	23	55	0	56	6N	6
10.									
North of theſe	S		0	51	9	1	14	17N	6
South of thoſe in the noſe	ο		0	54	10	0	26	9N	5.6
			3	28	57	3	19	30N	6
North of two in the neck	τ		3	58	44	3	23	26N	6
More ſouth	υ		3	20	53	0	15	46N	6
15.									
That under the upper knee	ψ		2	50	11	6	58	23 S	5
			3	50	59	3	22	34 S	6
In the lower and bent knee	ω		3	37	5	8	55	5 S	6
			6	47	24	0	28	9 S	6.7
			7	34	24	1	51	10 S	6.7
20.									
			8	17	2	0	29	37 S	6
Prec. and N. of 3 in mid. of body	η		8	25	55	2	57	43 S	5
Preced. of 2 in the back	θ		9	31	40	0	33	0 S	5
That in the ſhoulder	A		7	30	46	8	3	38 S	6
South in the middle of the body	1. χ		8	57	52	4	31	8 S	6
25.									
Second in the middle of the body	2. χ		9	24	57	3	36	46 S	6
Subſequent	3. χ		9	22	7	3	58	9 S	6
Laſt of 3 in middle of the body	φ		10	42	44	4	29	50 S	6
			12	10	39	0	43	40N	6
			12	2	31	2	7	23 S	6
30.									
			12	16	0	1	39	3 S	7
Subſeq. of 2 in the back	ι		13	21	50	1	20	13 S	5
			12	33	35	5	17	25 S	6
Laſt of contiguous ones under belly	ζ		12	36	49	6	57	36 S	5
			13	8	8	5	50	27 S	6
35.									
Subſeq. of the ſame	b		13	15	20	6	31	45 S	6
			15	10	57	5	22	15 S	6
			15	8	37	5	31	19 S	6
Preced. in ſouth fin	ε		15	52	52	4	56	56 S	4
Preced. in root of the tail	γ		17	27	42	2	31	18 S	4
40.									
			15	42	16	8	53	38 S	6
North part of the tail	1. d		18	40	49	0	9	13 S	6
Subſeq. in ſouth fin	κ		17	19	5	4	48	36 S	5
North part of the tail	2. d		18	53	46	0	37	44 S	6
Subſequent			19	0	0	1	1	54 S	6
45.									
North in extrem. of the tail	1. c		21	5	31	4	13	51N	6
Another, ſubſequent	2. c		21	19	31	3	56	38N	6
Middle in north part of the tail	λ		20	41	4	1	57	24N	5
Subſeq. in root of the tail	δ		19	13	14	2	32	19 S	3
			23	36	58	1	38	24N	6
50.									
Subſeq. in north part of the tail	μ		21	29	12	0	39	10 S	5

Capricorn, *tropic of*, a leſſer circle of the ſphere, parallel to the equator; paſſing through the beginning of *Capricorn*. See **Tropic**.

Capricorn-*beetle*, the Engliſh name of a ſpecies of *cerambyx*. See **Beetle**.

CAPRICORNUS, in *Zoology*. See **Mordella**.

CAPRIFICATION, a name given in the iſlands of the Archipelago to a peculiar method of propagating and ripening the fruits of the domeſtic fig-trees, by means of inſects. Plin. Hiſt. Nat. lib. xv. cap. 19.

M. Tournefort aſſures us, that this method is ſtill practiſed every year in moſt of the Grecian iſlands; and he admired the patience of thoſe who ſpent above three months in carrying the flies from one fig-tree to another. *Caprification* is formed from *caprificus*, the wild fig-tree, from whoſe fruits the inſects are produced, which are the chief inſtruments of *caprification*. This tree bears three different ſpecies of fruit, called *fornites*, *cratirites*, and *orni*, which anſwer no other purpoſe but that of facilitating the above operation. The *fornites* appear in Auguſt, and contain little worms, hatched from eggs depoſited by flies; in October and November, theſe worms become flies, which pierce the ſecond figs called *cratirites*, which do not appear till the end of September: theſe figs continue till the month of May following, and furniſh a lodgment for the eggs of the ſecond claſs of flies. In May, the third ſpecies of figs, called *orni* appear; and when they are grown to a certain ſize, and begin to open at the eye, they are pierced by the flies produced by the *cratirites*, or winter figs. When the worms bred in theſe ſpring figs are transformed into flies, which happens in the months of May or July, the peaſants gather them, and tranſport them to the garden fig-trees. The ſucceſs of the *caprification* depends on this circumſtance; and therefore they viſit their wild fig-trees, and their garden fig-trees, every morning, to examine the eye of the fig; by which they judge when the flies are about to iſſue from the wild figs, and when they may be applied ſo as to pierce the garden figs. They are then depoſited on ſuch trees as are fit to receive them, and enter the fruit by the eye, where they lay eggs, the worms of which cauſe the garden figs to attain their proper degree of bigneſs and maturity. The conſequence of this operation is, that garden fig-trees, which would ſcarcely yield twenty-five pounds of ripe figs, and fit for drying, yield two hundred and eighty pounds.

As to the manner whereby the puncture of the flies contribute to the maturation of the fruit, poſſibly it may be by lacerating the veſſels, and extravaſating the nutritious juice when they depoſit their eggs; or when with the egg they alſo convey ſome liquor which gently ferments with the juice of the fig, and ſoftens its pulp. Even the Provence and Paris figs ripen much ſooner by wounding their buds with a ſtraw or feather dipped in oil-olive; plums and pears alſo wounded by inſects, are found to ripen the ſooneſt, and in theſe the pulp about the wound is more exquiſite than the reſt. Mem. Acad. Scienc. ann. 1705. p. 447, ſeq.

Caprification is alſo applied in a leſs proper ſenſe to the art of propagating the palm-tree. Act. Erudit. Lipſ. 1721. p. 84.

CAPRIFICUS, in *Botany*, a term by which ſome authors, particularly Pliny, call the leſſer SPURGE or *eſula*. Ger. Emac. Ind. 2.

CAPRIFOLIUM, the *honey-ſuckle*. See **Honey**-*ſuckle*.

CAPRIMULGUS, in *Zoology*. See *Churn*-**Owl**.

CAPRIOLES, in *Horſemanſhip*, are leaps which a horſe makes in one and the ſame place, without advancing forwards; and that in ſuch manner that when he is in the air, at the height of his leap, he yerks or ſtrikes out with his hind-legs as near and even togther, and as far out as he can ſtretch them; in which action, he clacks, or makes a noiſe with them.

The word comes from *capreolus*, a diminutive of *capra*, *goat*.

The *capriole* is the moſt difficult of all the high-raiſed airs: there are ſeveral kinds of *caprioles*; as a *right capriole*, *back capriole*, *ſide capriole*, *broken capriole*, the *open capriole*, &c.

CAPRISCUS, the *goat-fiſh*. See **Goat-fish**.

CAPSARIUS, from *capſa*, *ſatchel*, in *Antiquity*, a ſervant who attended the Roman youth to ſchool, carrying a ſatchel with their books in it, ſometimes alſo called *librarius*.

Capsarius was alſo an attendant at the baths, to whom perſons committed the keeping of their cloaths.

Capsarius, from *capſa*, *cheſt*, among the Roman *Bankers*, was he who had the care of the money-cheſt, or coffer.

CAPSICUM, in *Botany*, a genus of the *pentandria monogynia* claſs; *Guinea*, or *Bonnet pepper*. Its characters are theſe: the flower hath but one petal, which is wheel-ſhaped, and hath five ſmall ſtamina. It hath an oval germen, which afterward becomes a ſoft fruit or capſule, of an indeterminate figure, having two or more cells divided by intermediate partitions, to which adhere many compreſſed kidney-ſhaped ſeeds.

Guinea pepper is more uſed as a ſauce, and in pickle, than in phyſic, being frequently put into fiſh-ſauce, or into any thing that is flatulent and windy; for which purpoſe it is ordered divers ways, either green or ripe, pickled, or rubbed to powder with ſalt. A decoction of it with pennyroyal is commended by ſome to expel a dead child. The ſkins boiled, and uſed as a gargle, are good againſt the tooth-ach; a cataplaſm of the ſeeds, powdered and mixed with honey, applied to the throat, is good for the quinſy.

CAPSQUARES, in *Gunnery*, ſtrong plates of iron, which come over the trunnions of a gun, and keep it in the carriage.

Theſe are faſtened by hinges to the prize-plate, that they may lift up and down. They form a part of an arch in the middle, to receive a third part of the thickneſs of the trunnions; for two-thirds of them are let into the carriage, and the other end is faſtened by two iron wedges, which are called the *fore-locks* and *keys*.

CAPSTAN, a large maſſy column ſhaped like a truncated cone, and placed perpendicularly on the deck of a ſhip, and turned by levers, or bars, which paſs through holes pierced in its upper extremity; ſerving, by means of a cable which winds round the barrel, to draw up burdens faſtened to the end of the cable. See *Tab.* III. *Mechanics*, *fig.* 70.

The word is alſo written *capſtand*, *capſtern*, and even *capſtow*. It is formed from the French *cabeſtan*, which ſignifies the ſame.

The power of the *capſtan* is reducible to that of the AXIS *in peritrochio*

De Camus conſiders the *capſtan* as a perpetual LEVER.

By the *capſtan* veſſels are drawn aſhore, and hoiſted up to be refitted; anchors weighed, and ſails hoiſted, &c.

There are commonly two *capſtans* in a ſhip of war; the *main-capſtan* placed behind the main-maſt, ſtanding on the firſt deck, and reaching four or five feet above the ſecond: this is alſo called *double-capſtan*, becauſe it has two drum-heads, and ſerves two decks for drawing of anchors; and becauſe its force may be doubled by applying hands on each deck. It has bars, whelps, &c. for turning and ſtopping it. See *Tab. Ship. fig.* 2. *n.* 32. or *Tab.* III. *Mechanics*, *fig.* 71.

And the *jeer-capſtan*, or *little-capſtan:* this ſtands on the ſecond deck, between the main-maſt and the mizzen: its uſe is, chiefly, to heave upon the jeer-rope, or to heave upon the viol, to hold off by when the anchor is weighed; and on other occaſions where a leſs force is required, than to weigh the anchors, &c. See *n.* 33, or *fig.* 70. *Tab.* III. *Mech.*

The French call that an *Engliſh capſtan* where there are only half-bars uſed; and which, for that reaſon, is only half perforated: this is thicker than the others.

There is alſo a *flying capſtan*, which may be moved from place to place.

The parts of a *capſtan* are, the foot *d*, which is the loweſt part; the ſpindle *f*, the ſmalleſt part of which turns round in an iron ſocket, called the ſaucer; the whelps, *b*, a ſort of brackets ſet into the body of the *capſtan* cloſe under the bars, and reaching downwards from the lower part of the drum-head to the deck; the barrel A, the main body of the whole; the *drum*-head *c*, which is a broad cylindric piece of wood fixed above the barrel and whelps, in which are the holes for the bars to be put into; the bars, which are ſmall pieces of timber by which the men heave; the pins, as *e*, which are little bolts of iron, thruſt perpendicularly through the holes of the drum-head, and through a correſpondent hole in the end of the bar, made to receive them when the bars are fixed; the pawls, which are pieces of iron bolted to one end of the beams of the deck, cloſe to the body of the *capſtan*, but ſo as that it have liberty to turn about every way; and againſt them do the whelps of the *capſtan* bear; ſo as that by them the *capſtan* may be ſtopped from turning back. There are alſo hanging pawls, as *g*, *g*, *fig.* 71. which reach from the deck above to the drum-head immediately beneath it; and laſtly, the ſwifter, which is a rope paſſed horizontally through holes in the outer ends of the bars and drawn tight, deſigned to keep the men ſteady whilſt they work, and to afford room for a greater number to work at once.

The terms belonging to the uſe of the *capſtans* are, *rig the capſtan*, i. e. fix the bars in their reſpective holes; *heave the capſtan*, i. e. go round with it heaving on the bars; *ſurge the capſtan*; and *come up capſtan*, that is, ſlacken the cable which you heave by; in a like ſenſe they alſo ſay, *launch out the capſtan*; *pawl out the capſtan*, ſignifies, ſtop it from going back.

CAPSULA, or **CAPSELLA**, denotes a bag, pouch, or receptacle of divers kinds of things.

The word is a diminutive of the Latin *capſa*, literally ſignifying, a little box, or caſe; particularly a bag, or ſatchel, wherein boys carry their books, &c. to ſchool.

CAPSULA, or **CAPSULE**, among *Botaniſts*, a ſpecies of *pericarpium* compoſed of dry elaſtic valves, which uſually burſt open at the points: this kind of PERICARPIUM ſometimes contains only one cell or cavity, ſometimes more; in the firſt caſe it it called *unilocular*; in the ſecond, *bilocular*, *trilocular*, &c. according to the number of cells in it for the reception of ſeeds.

Thoſe plants whoſe ſeeds are incloſed in *capſulæ*, are denominated *angioſpermous*; and thoſe whoſe ſeeds have no *capſules*, *gymnoſpermous*.

CAPSULA *communis*, or *of the Porta*, in *Anatomy*, is a membrane ariſing from the *peritonæum*, and incloſing the trunk of the *vena porta* after its entrance into the liver, as a caſe, or cover; dividing itſelf into the ſame number of branches, and accompanying all, even in its ſmalleſt ramifications.

The ſame *capſula*, or membrane, likewiſe incloſes the *porus bilarius*, and other veſſels of the liver; whence it takes the name of *capſula communis*.

CAPSULA *cordis*, a membrane inveſting the heart: more uſually called the *pericardium*.

CAPSULÆ *atrabilariæ*, in *Anatomy*, called alſo *renes ſuccenturiati*, and *glandulæ renales*, are two glands ſituate near the kidneys: called *atrabilares*, from a black liquor found in their cavity; and *ſuccenturiati* and *renales*, from their poſition. They are about the bigneſs of a *nux vomica*; their figures are ſomewhat various; in ſome bodies round, in others triangular, ſquare, &c. The membrane wherewith they are covered is very fine: their cavity is pretty large for their bulk. Their uſe is very obſcure; probably it is to ſecrete the black humour found in their cavity, which, being afterwards diſcharged by their duct into the emulgent, mixes with the blood; and ſerves, according to ſome, as a ferment; according to others, only to dilute its thickneſs: in a *fœtus* they are almoſt as big as the kidneys.

CAPSULA *of the cryſtalline.* See CRYSTALLINE.

CAPSULÆ *ſeminales*, are the ſame with VESICULÆ *ſeminales*.

CAPSULA, in *Chemiſtry*, is an earthen veſſel, in form of a pan; wherein things are frequently placed, that are to undergo very violent operations of the fire.

CAPSULATE *plants*, **CAPSULATÆ** *plantæ*, are ſuch as have a tetrapetalous regular flower, conſiſting of four diſtinct petala in each flower, and which bear their ſeeds in ſhort *capſulæ:* by which they are diſtinguiſhed from the *ſiliquoſæ*, which have their ſeed in long caſes, or pods.

CAPTAIN, a military officer, whereof there are various kinds and degrees, diſtinguiſhed by their commands: as,

CAPTAIN *of a company*, or *troop*, is an inferior officer, who commands a company of foot, or troop of horſe, under the colonel.

In the like ſenſe, we ſay, a *captain* of dragoons, of grenadiers, of marines, of invalids, &c.

In the horſe and foot guards, the *captains* are ſtiled *colonels*; being uſually perſons of rank, and general officers of the army. In the colonel's company of a regiment, i. e. the firſt company, or that whereof he himſelf is *captain*, the commanding officer is called *captain-lieutenant*.

The duty of this officer is to be careful to keep his company full of able-bodied ſoldiers, to viſit their tents and lodgings, to ſee what is wanting, pay them well, cauſe them to keep themſelves neat and clean in their cloaths, and to keep their arms bright. He has power in his own company of making ſerjeants and corporals.

CAPTAIN, *ſecond*, one whoſe command having been taken away, that is joined to another *captain*, to ſerve under him, and receive pay as a *captain* reformed.

Among the French, there are alſo *ſecond captains*, who never had companies of their own.

CAPTAIN *en pied*, a *captain* kept in pay, that is not yet reformed.

The expreſſion, though altogether French, occurs ſometimes.

CAPTAIN-*lieutenant*, is he who commands a troop, or company, in the name and place of ſome other perſon, who has the commiſſion, with the title, honour, and pay thereof; but is diſpenſed withal, on account of his quality, from performing the functions of his poſt.

Thus, the colonel, being uſually likewiſe *captain* of the firſt company of his regiment, that company is commanded by his deputy, under the title of *captain-lieutenant*. So in England, France, &c. the king, prince, dauphin, &c. have uſually the titles, dignities, &c. *of captains of the guards*, *gens d'armes*, &c. the real duty of which offices is performed by *captains-lieutenant*.

CAPTAIN, *reformed*, is one, who, upon a reduction of the forces, has his commiſſion and company ſuppreſſed; yet is continued *captain*, either as ſecond to another, or without any poſt or command at all.

CAPTAIN *of the guides*, an officer appointed for providing guides for the army. Of theſe he ought always to have a ſufficient number with him, who know the country very well; that they may guide the army on a march, or go with convoys, parties, baggage, artillery, and detachments. To provide ſuch the *captain* ought to have a party of horſe to go to the adjacent villages, caſtles, or forts, to bring boors to his quarters, and keep them under a guard, till the army comes to another ground, where he may be provided with others. He ought to underſtand ſeveral languages, eſpecially that of the country in which the army is.

Captain-*general* of an army, is the general or commander in chief.

Captain-*general of Great Britain* is the higheſt military poſt in our army.

In Holland the office of *captain-general* is uſually joined with that of STADTHOLDER, and though, by the perpetual edict paſſed in 1667, the two offices were for ever disjoined; ſo that whoever was poſſeſſed of one, was rendered incapable of the other: this regulation laſted but five years.

Captain *of militia*, is he who commands a company of militia or trained-bands.

Captain-*baſhaw*, ſignifies the Turkiſh high-admiral. See BASHAW.

He poſſeſſes the third office in the empire, and is inveſted with the ſame power at ſea, that the vizir has on ſhore. Solyman II. inſtituted this office in favour of the famous Barbaroſſa; with abſolute authority over the officers of the marine and arſenal, whom he may puniſh, caſhier, or put to death, as ſoon as he is without the Dardanelles. He commands in chief in all the maritime countries, cities, caſtles, &c. and at Conſtantinople is the firſt magiſtrate of police in the villages on the ſide of the Porte, and the canal of the Black ſea. The mark of his authority is a large Indian cane, which he carries in his hand, both in the arſenal and in the army.

The *captain-baſhaw* enjoys two ſorts of revenues; the one fixed, and the other caſual. The firſt ariſes from a capitation of the iſlands of the Archipelago, and certain governments in Natolia and Gallipoli. The latter conſiſts in the pay of the men who die during the campaign; in a fifth of all prizes made by the begs; in the profits accruing from the labour of the ſlaves, whom he hires as rowers to the grand ſignior; and in the contributions he exacts in all places where he paſſes.

Captain *reis*, or **Capidan** *reis*, an appellation given by the Turks to the grand pilot, anſwering to pilot royal among the French.

Captain *of a ſhip* is a ſea-officer, whereof we make two kinds; the one of a ſhip of war, the other of a trading veſſel; though, in propriety, the title *captain* belongs only to the commander of ſhips of war.

Captain *of a ſhip of war*, is the commanding officer of a ſhip, gally, fire-ſhip, or the like.

The *captain of a man of war* is held equivalent to that of a colonel at land. The *captain* is accountable for the ſhip, if loſt or taken by his miſconduct; and his province extends to the military government, navigation, and equipment of the ſhip which he commands, and to the conduct of the inferior officers and men, which he is required to ſuperintend and regulate.

In admiral ſhips, and all ſhips of the firſt rate, the French have two *captains*, two lieutenants, and two enſigns.

The pay of ſea *captains*, in the Engliſh ſervice, was formerly ſmall, which defect was made up to them, by indulging them in many privileges not now allowed, as plundering of prizes, taking convoy monies, and even carrying merchants goods, plate, &c. King James II. taking this laſt privilege away, in lieu thereof granted them an annual allowance of table monies, almoſt equal to their whole former pay. But this not taking place by reaſon of the abdication, king William III. in 1693, ordered the pay of the *captains* to be doubled, but the fund for this failing at the peace of Ryſwick, a new eſtabliſhment was made in 1700, whereby nearly one third was retrenched from the ſea-pay, and that of a firſt-rate fixed at 1*l.* of a ſecond rate at 16*s.* of a third rate at 13*s.* 6*d.* of a fourth rate at 10*s.* of a fifth rate at 8*s.* of a ſixth rate at 6*s.* *per* day.

Captain *of a merchant-ſhip*, is the maſter thereof; or he who has the command or direction of the ſhip, her crew, lading, &c. This officer is more uſually called the *maſter*; eſpecially in ordinary voyages.

On the Mediterranean he is called the *patron*, or *patroon*; and in long voyages, as to the Eaſt Indies, South-ſea, &c. the *captain*.

The proprietot of the veſſel appoints the *captain*, or maſter; and the *captain* is to form the crew, and chooſe and hire the pilots, mates, ſeamen, &c. though when the proprietor and maſter reſide on the ſame ſpot, this is uſually done in concert with the proprietor.

Captains *of port*, in the French *Marine Affairs*, officers eſtabliſhed in ſome conſiderable ſea-ports where there are arſenals. To them belong the command of the guard of the place, the watching of the ſea, and the care and cuſtody of the veſſels brought into port.

There are ſuch *captains* at Toulon, Rochfort, Breſt, Havre, Dunkirk, and Port Lewis. They are to take care of mooring the king's ſhips, and oblige all to give the due ſalutes.

CAPTAINRY, *capitainerie*, in the French *Law*, denotes the government or command of a royal palace, and the lands dependent thereon.

The name is alſo applied to the office of *captains* of chaces or woods. Such are the *captainries* of Fontainbleau, the wood of Boulogne, &c.

CAPTION, in *Law*, is when a commiſſion is executed, and the commiſſioners names ſubſcribed to a certificate, declaring when and where ſuch commiſſion was executed.

The *caption* uſually commences with theſe words, *Virtute iſtius commiſſionis nos*, &c. or, *Executio iſtius commiſſionis patet in quadom ſchedula annexata*, &c. or, *Capt. & cogn. die.* &c. or, *Capt. fuit hæc reſponſ.*

Theſe *captions*, and the executions of the commiſſions, muſt now be in Engliſh, by 4 Geo. II. cap. 26.

CAPTIVE, a SLAVE, or perſon taken by the enemy in war, or by a PIRATE or corſair.

Captives, *captivi*, among the Romans, differed from *dedititii*, as the former were taken by force, whereas the latter ſurrendered themſelves.

By the *Lex Cornelia*, a Roman citizen taken *captive*, in caſe he returned, was reputed as having never been taken; if he died in captivity he was reputed for dead the moment he was taken: in the former caſe he recovered all his rights, and even the dominion over his children; in the latter his ſon became free from the time of his father's detention. Juſtin. Inſt. lib. i. tit. xii. § 5.

Formerly, *captives* in war became the ſlaves of thoſe who took them; and though ſlavery, ſuch as obtained among the ancients, be now aboliſhed, ſome ſhadow of it ſtill ſubſiſts in reſpect of priſoners of war, who are reputed the property of their captors, and have no right to liberty, but by conceſſion from them, or till their ranſom is paid. Negro-ſervants, likewiſe, who are purchaſed when *captives*, continue in ſome degree the property of the maſters who buy them; though the property conſiſts rather in the perpetual ſervice, than in the body or perſon of the captive. Blackſt. Com. vol. ii. p. 402.

The Romans uſed their *captives* with great ſeverity; their necks were expoſed to the ſoldiers to be trampled on, and their perſons afterwards ſold by public auction.

Captives were frequently burnt in the funeral piles of the ancient warriors, as a ſacrifice to the infernal gods. See BURIAL.

Thoſe of royal or noble blood had their heads ſhaven, and their hair ſent to Rome, to ſerve as decorations in female toys, &c. They were led in triumph loaden with chains through Rome, in the emperors train, at leaſt as far as the foot of the Capitoline mount, for they were not permitted to aſcend the ſacred hill, but carried thence to priſon. Thoſe of the prime quality were honoured with golden chains on their hands as well as feet, and golden collars on their necks. If they made their eſcape, or killed themſelves, to avoid the ignominy of being led in triumph, their images or effigies were frequently carried in their place.

Captivity is uſed, in *Scripture*, to denote the puniſhment inflicted by Providence on the Jews for their idolatry and wickedneſs. The principal *captivities*, if we omit the Egyptian bondage, from which they were reſcued by Moſes, are the Aſſyrian and Babyloniſh. The Aſſyrian *captivity* was that of the ten tribes, begun in the reign of Pekah king of Iſrael, and completed by Shalmaneſer. 2 Kings, xv. 29. 2 Kings, xvii. 5, 6.

The greater part of the ten tribes were loſt in this *captivity*, which put a period to the kingdom of Iſrael; though ſome of them returned with thoſe of Judah and Benjamin, upon the decree of Cyrus, to their own land.

The Babyloniſh *captivity* was that of the kingdom of Judah, or of the two tribes who adhered to the houſe of David. This was begun by Nebuchadnezzar, and completed by Nebuzaradan. 2 Chron. xxxvi. 6, 7. 2 Kings, xxv. 8. Jerem. lii. 30. This laſted ſeventy years, and terminated in the famous decree of Cyrus, in the year before Chriſt 536, for reſtoring the Jews to their own land, and for rebuilding Jeruſalem and the Temple. Ezra, i. 1. 3.

Some have computed theſe years from the fourth of Jehoiakim to the firſt iſſuing of Cyrus's decree. 2 Kings xxiv. 10, &c. others from the deſtruction of Jeruſalem to the publication of Darius's decree for building the Temple, in the fourth year of his reign, Zechar. vii. 1. either of which computations will give ſeventy years: or again, they may be computed from the twenty-third year of Nebuchadnezzar to the firſt Paſſover celebrated in the new

Temple, in the ſeventh year of Darius's reign. Prid. Conn. vol. i.

CAPTIVITY, *princes of the*, are heads or chiefs of the Jewiſh nation, appointed for the adminiſtration of juſtice among them, during their captivity both in the Eaſt and Weſt, ſince the deſtruction of their Temple by the Romans.

The prince of the *captivity* in the Eaſt, is ſaid to have had the government of the Jews who dwelt at Babylon, in Chaldæa, Aſſyria, and Perſia. The prince of the *captivity* in the Weſt, had the direction of thoſe who lived in Judæa, Egypt, Italy, and other parts of the Roman empire.

The former were called *rabbana*, and were ſuppoſed to have deſcended from David, in a direct line by the males; the latter called *rabban*, only deſcended from David by the females.

The Jews, we are told by Prideaux, after the loſs of their authority, ſtill kept up the title, and for many ages had a perſon of the houſe of David reſident about Babylon, who, under the name of the head of the *captivity*, was acknowleged and honoured as a prince among that people, and had ſome ſort of juriſdiction, as far as was conſiſtent with the ſubordination they were under, always inveſted in him, and ſometimes even a ratification of it was obtained from the ſovereigns of the country. Something of this pageantry is ſaid to be ſtill kept up; perhaps that they may be furniſhed with an anſwer to the Chriſtians, when they urge the prophecy of Jacob againſt them; the ſcepter they pretend being ſtill preſerved among them in the head of the *captivity*. See ÆCHMALOTARCHA.

CAPTURE, a prize, or prey; particularly that of a ſhip taken at ſea.

Captures made at ſea were formerly held to be the property of the captors after a poſſeſſion of twenty-four hours; but the modern authorities require, that before the property can be changed, the goods muſt have been brought into port, and have continued a night *intra præſidia*, in a place of ſafe cuſtody, ſo that all hope of recovering them was loſt. Blackſt. Com. vol. ii. p. 401. See PRIZE and PRIVATEER.

CAPTURE alſo denotes an arreſt, or ſeizure of a criminal, debtor, &c. at land.

CAPUCHE. See COWL, and next article.

CAPUCHINS, religious of the order of St. Francis, in its ſtricteſt obſervance.

The *capuchins* are thus called, from *capuce*, or *capuchon*, a *ſtuff cap*, or *cowl*, wherewith they cover their heads; and which they added to the ordinary Franciſcan habit.

They are cloathed with brown or grey; are always barefooted; and never to go in a coach, nor ever ſhave the head.

The *Capuchins* are a reform made from the order of Minors, commonly called *Cordeliers*, ſet on foot in the ſixteenth century by Matthew de Baſſi, a religious obſervant of the monaſtery of Monteſiaſcone, who, being at Rome, ſaid he was advertiſed ſeveral times from Heaven, to practiſe the rule of St. Francis to the letter. Upon this he made application to pope Clement in 1525, who gave him permiſſion to retire into a ſolitude; and not only him, but as many others as would embrace the ſtrict obſervance; which ſome did accordingly. In 1528, they obtained the pope's bull. In 1529, the order was brought into complete form; Matthew was elected general, and the chapter made conſtitutions. In 1543, the right of preaching was taken from the *Capuchins* by the pope; but in 1545, it was reſtored to them again with honour. In 1578, there were ſeventeen general chapters in the order of *Capuchins*.

The *Capuchins* were at firſt reſtrained from ſpreading out of Italy; but Charles IX. of France, writing to pope Gregory XIII. to demand ſome *Capuchins*, that pope, by a bull, dated in 1575, took off the prohibition, and granted them leave to ſettle any where. The cardinal of Lorraine built them a convent at Meudon, and Henry III. another at Paris, in the rue St. Honoré. F. Zach. de Boverio has written the annals of the *Capuchins* in Latin, in three volumes folio, from the year 1524 to 1634.

CAPUCHIN is alſo the name of a particular ſpecies of pigeon, in ſhape and make much like the jacobine or jack, but ſomething larger than that; its beak alſo is longer; and it has a tolerable hood of feathers on the back part of its head, but has no cravat or chain down the ſhoulders as that ſpecies has. Its marks are the ſame with the jacobine, and it ſeems to be no other than a baſtard breed between that and a common pigeon.

CAPUCIATI, an appellation given to the followers of Wickliff in the fourteenth century, by reaſon they did not uncover themſelves before the hoſt, but kept on their *capuce*, or cap uſed in thoſe times. Spondanus ſpeaks of the *capuciati*, under the year 1387.

CAPUCIATI is alſo the denomination of a faction which appeared in Auvergne in 1183, having at their head a carpenter named Durand; thus called becauſe they wore the image of the Virgin in their white linen capuces, as the badge of their engagement.

CAPUCINE, in *Botany*, the name by which the French call the CARDAMINDUM, or *naſturtium Indicum*, a plant commonly kept in our gardens for the beauty of its flower, and its uſe in ſallads and pickles.

CAPUENA, in *Zoology*, the name of a fiſh caught in the American ſeas among the rocks, and about the ſhore, and eſteemed a very delicate one for the table. It is of a long and rounded ſhape: its uſual length is about five inches.

CAPUT. See HEAD.

CAPUT *baroniæ*, the head of the BARONY, in *Ancient Cuſtoms*, denotes the ancient or chief ſeat, or caſtle of a nobleman, where he made his uſual reſidence, and held his court: ſometimes alſo called *caput honoris*, or the head of the honour.

The *caput baroniæ* could not be ſettled in dowry; nor could it be divided among the daughters, in caſe there were no ſon to inherit; but was to deſcend entire to the eldeſt daughter, *cæteris filiabus aliunde ſatisfactis*.

CAPUT *concutiens*, in *Anatomy*, the name given by Douglas, and ſome others, to a muſcle, deſcribed by Albinus under the name of the *intertranſverſarius colli*, among ſome others of the ſame nature, which he diſtinguiſhes according to their ſituation into *priores* and *poſteriores*. This being of the former number. Winſlow calls it the TRANSVERSALIS *ſecundus anterior*.

CAPUT *cordis*, a name ſometimes given to the upper and larger ſide of the HEART, otherwiſe called its BASIS.

CAPUT *draconis*, a denomination given by ſome to a fixed ſtar of the firſt magnitude, in the head of the conſtellation DRACO, called alſo by the Arabs *raſaben* and *eltanin*. See NODE.

CAPUT *gallinaginis*, or *galli gallinacei*, *cock's head*, is a kind of ſeptum, or ſpongious border, at the extremities or apertures of each of the *veſiculæ ſeminales*; ſerving to prevent the ſeed coming from one ſide, from ruſhing upon, and ſo ſtopping, the diſcharge of the other.

Some will have its uſe to be, to prevent the impulſe of the ſeed from dilating the orifices of the *veſiculæ*, and ſo ouſing out, except when aſſiſted by the compreſſion of the ſurrounding parts; as in copulation: but this, according to Dr. Drake, is rather the office of a diſtinct caruncle placed at each orifice, and acting as a valve.—See *Tab. Anat. (Splanch.) fig.* 8. *lit. q.*

CAPUT *jejunii*, a name given to Aſh-Wedneſday, as being the firſt day of the LENT-*faſt*.

CAPUT *lupinum*. An outlawed felon was anciently ſaid to have *caput lupinum*, and might be knocked on the head like a *wolf*, becauſe having renounced all law, he was to be dealt with as in a ſtate of nature: but now the wilful killing of ſuch a one is murder, unleſs in the endeavour to apprehend him.

CAPUT MEDUSÆ, a northern conſtellation included in that of PERSEUS.

CAPUT *mortuum*, in *Chemiſtry*, the *fæces* remaining of any body, after all the volatile and humid parts, as the phlegm, ſpirit, ſalt, &c. have been extracted therefrom, by force of fire. As theſe *fæces*, or *reſidua*, are very different, modern chemiſts ſpecify them more particularly, by adding a term expreſſive of their qualities; as *earthy* reſiduum, *charry* or *ſaline* reſiduum, &c.

What remains after diſtillation is properly called *fæces*. This, before it be *caput mortuum*, muſt likewiſe have paſſed the retort, or open fire.

The *caput mortuum*, called alſo *terra damnata*, is found in form of a friable, porous matter, without taſte or ſmell: it is ranked among the chemical elements; and ſuppoſed to conſtitute the dry, fixed, earthy, and ſolid part of all mixed bodies. As an element, it is more commonly expreſſed by the name *earth*.

It is what the chemiſts call a *paſſive element*, or *principle*; ſerving as the baſis or ſupport of the active ones.

The term is ſometimes more immediately reſtrained to the remains of vitriol, after diſtillation; otherwiſe called *colcothar vitrioli*.

The *caput mortuum* is never pure, but there is ſtill ſome active principle remaining in it, and particularly a fixed SALT.

Thus the *colcothar vitrioli*, expoſed to the air, is reconverted into vitriol.

CAPUT *moventium ſecundus*, in *Anatomy*, a name given by Fallopius, and others, to a muſcle called by Albinus *biventer cervicis*, and by ſome the *complexus*.

CAPUT *porcinum*, *ſwine's head*, a denomination given by the Romans to an order of BATTLE more frequently called *cuneus*.

CAPUT *purgia*, a barbarous term uſed by ſome phyſicians to denote medicines which cleanſe the head, either in the way of ſneezing, more frequently called *errhines*; or by chewing in the way of ſalivation, called APOPHLEGMATIZANTS. See ERRHINA and STERNUTATIVE.

CAPUTIATI. See CAPUCIATI.

CAPYBARA, in *Zoology*, the name of an animal found in many parts of America, and ſomewhat approaching to the nature of the river-horſe, but with ſo much of the general figure of the hog-kind, that Margrave, and ſome others, have called it the *porcus marinus*, or ſea-hog. It is of the ſize of a half-grown hog, meaſuring in length, from the head to the rump, about two feet: its belly is as prominent as that of a fat hog. It has no tail, its feet are wholly like thoſe of the hog, but that the fore ones have four claws each, and the hinder ones only three. Its head is very thick, and proportionably too large for the body; its eyes are large and black, its ears ſmall and round; the lower jaw is ſhorter than the upper, and each has two long crooked teeth that ſtand out a finger and a half from the jaw, and are buried two fingers in it; but theſe do not ſhew themſelves outwardly when the mouth is ſhut. It feeds on vegetables, and its fleſh is eaten by the Indians, but is not well taſted. Ray.

CAR. See CARR.

CARA, in *Botany*, a name given by the old Roman authors to a plant with large and eſculent roots. We are told that the ſoldiers of Cæſar, in ſome of their marches, when diſtreſſed for proviſions, made a ſort of bread of the root of the *cara*. And we learn from Paulus Ægineta, and Dioſcorides, that this plant was of the *paſtinacha*, or parſnip kind. It was probably the *elaphoboſcum*, or wild parſnip, which has roots long and thick, and of as good a taſte as the garden parſnips, only that they are not ſo tender. It is ſuppoſed by ſome that our word carrot is derived from this *cara*.

CARABE, or KARABE, denotes yellow AMBER.

CARABINE, a ſmall ſort of fire-arm, ſhorter than a fuſil, ond carrying a BULLET of twenty in the pound; borne by the light horſe, hanging at a belt over the left ſhoulder. The *carabine* is a kind of medium between the piſtol and the muſquet; and bears a near affinity to the harquebuſs, only that its bore is ſmaller.

It was formerly made with a match-lock, but of late only with a flint-lock.

The barrel is two feet and a half long, and is ſometimes furrowed ſpirally within, which is ſaid to add to the range of the piece.

CARABINEERS, a ſort of light horſe, carrying longer *carabines* than the reſt; and uſed ſometimes as foot, like the dragoons. The French have formed entire corps of theſe *carabineers*, choſen out of the whole cavalry, and better paid than the reſt. There are but few of them in the Engliſh army.

CARABUS, in *Zoology*, the name of a genus of four-winged flies, belonging to the Linnæan order of *coleoptera*, whoſe *antennæ* are oblong, ſlender, and ſetaceous; the thorax is ſomewhat convex, marginated, of a cordated figure, and truncated in the hinder part.

CARACALLA, in *Antiquity*, a long garment, having a ſort of capuchin, or hood a-top, and reaching to the heels; worn equally among the Romans by the men and the women, in the city and the camp.

Spartian and Xiphilin repreſent the emperor Caracalla as the inventor of this garment, and hence ſuppoſe the appellation *Caracalla* was firſt given him. Others, with more probability, make the *Caracalla* originally a Gallic habit, and only brought to Rome by the emperor abovementioned, who firſt enjoined the ſoldiery to wear it. The people called it *Antoninian*, from the ſame prince, who had borrowed the name of Antoninus.

The *Caracalla* was a ſort of caſſock, or ſurtout. Salmaſius, Scaliger, and after them Du-Cange, even take the name *Caſaque* to have been formed from that of *Caraque*, for *Caracalla*. This is certain from St. Jerom, that the *Caracalla*, with a retrenchment of the capuchin, became an eccleſiaſtical garment. It is deſcribed as made of ſeveral pieces cut and ſewed together, and hanging down to the feet; but it is more than probable there were ſome made ſhorter, eſpecially out of Rome, otherwiſe we do not ſee how it could have fitted the ſoldiers purpoſes.

CARACALLA, in *Botany*. See *Kidney*-BEAN.

CARACARA, in *Zoology*, the name of a Braſilian bird of the genus of the hawk, called by the Portugueſe *gavicaou*. It is properly of the ſparrow-hawk kind, but of the ſize of a kite. They are great deſtroyers of the poultry. See *Tab. of Birds*, N° 4.

CARACOL, in the *Manege*, a motion which a cavalier makes half round; or a half-turn from left to right; changing hands; that his enemy may be uncertain on which ſide he intends to attack; whether in front or flank. The word comes from the Arabic *garagol*, and that from the Hebrew *carac*, *involvere*: but we have it immediately from the Spaniſh, where *caracol* ſignifies properly a *ſnail*, and figuratively the evolution deſcribed above.

CARACOL is alſo the half-turn each horſeman in an army makes after his diſcharge, to paſs from the front of the ſquadron to the rear.

CARACOL is ſometimes alſo uſed in *Architecture*, for a ſtair-caſe in a heliacal, or ſpiral form.

CARACOLI, in *Commerce*, a factitious metal whereof the natives of the Caribbee iſlands make a kind of ornament, in form of a half-moon, which is called by the ſame name. The metal is brought from the *Terra Firma*; and the common opinion is, that it is compoſed of gold, ſilver, and copper; but the mixture is ſo perfect, that a metal reſults from the whole which never ruſts nor tarniſhes, how long ſoever kept either in the ſea, or the ground. The Engliſh and French goldſmiths have made frequent attempts to imitate it. Thoſe who have ſucceeded beſt, uſe ſix parts of ſilver, three of purified copper, and one of gold. But the curious find all the imitations much inferior in beauty to the original metal of the ſavages.

M. Hauterire, procurator-general of Martinico, makes the *caracoli* to be a compound of gold only with a ſort of copper found in the *Terra Firma* of America. F. Labat takes it for a native, or ſimple metal. The Americans alſo make rings, buckles, cane-heads, and the like, of *caracoli*. A. D. S. an. 1724. p. 26. It is there recommended as a remedy for the head-ach. Hiſt. 28.

CARACT, or CARAT, a denomination given to the weight, which expreſſes the degree of goodneſs, fineneſs, and perfection, or imperfection of GOLD.

The word is alſo written *carract*, *carrat*, *karract*, and *karrat*. Its original is conteſted: but we chooſe to follow Kennet, who derives it from *carecta*, a term which this author obſerves anciently denoted any weight, and came not till of later days to be appropriated to that which expreſſes the fineneſs of gold, and the gravity of diamonds.

The mint-men fix the higheſt purity and perfection of gold at twenty-four *carats*; and the ſeveral degrees are eſtimated from the diviſions hereof, which are called *grains*: but it is to be obſerved, that what care ſoever is taken in purifying gold, to clear it from droſs, it can never be brought to twenty-four *carats*; but ſtill comes ſhort, at leaſt $\frac{1}{4}$ of a *carat*, or a grain: this grain they call a *ſixteenth*; and this ſixteenth they ſubdivide into two eighths; and each of thoſe eighths into two ſixteenths: on which calculation, they ſay, gold may be purified as far as the firſt ſixteenth of the ſecond eighth, but no further.

Gold of twenty-two *carats*, is that which has twenty-two parts of fine gold, and two of ſilver, or other metal; or that which, in refining, loſes two parts in twenty-four of its weight. The goldſmiths generally work in gold of twenty-two *carats*; that being the ſtandard gold of this kingdom. By the laws of France they are prohibited from working in gold below twenty-three *carats*. In England, the *carat* is divided into four grains; in Germany, into twelve parts; and in France, into thirty-two. The Chineſe reckon by TOUCHES, a hundred of which correſpond to our twenty-four *carats*.

Carat fine, as above, is the twenty-fourth part of the goodneſs of a piece of pure gold.

Carat price is the twenty-fourth part of the value of an ounce or mark of gold.—They alſo ſometimes ſay, the *carat weight*, which is the twenty-fourth part of the weight of the ounce or mark. Two troy grains make a *carat* grain.

CARAT is alſo the weight uſed in weighing diamonds, pearls, and precious ſtones; where it conſiſts of four grains. In this ſenſe, the word is by ſome ſuppoſed to be derived from κερατιον, a fruit which the Latins call *ſiliqua*, and we *carob bean*; each of which may weigh about four grains of wheat: whence the Latin *ſiliqua* has alſo been uſed for a weight of four grains.

The *carat* by which jewellers eſtimate the weight of diamonds and pearls, is about $\frac{1}{150}$ of a troy ounce. Jeffreys on Diamonds.

Hence the *carat* is about $3\frac{1}{5}$ grains troy.

Carats are divided into halves, quarters, or grains; and farther, into eighths, ſixteenths, and thirty-two parts. Id. ibid.

CARAGACH, in *Commerce*, a cotton that comes from Smyrna, by the way of Marſeilles.

CARAGANA, in *Botany*. See *Bitter*-VETCH.

CARAGROUCH, a ſilver coin of the empire, weighing nine drams, which does not quite amount to a French crown, of three livres Tournois.

CARAGUATA, a Braſilian name, by which ſome authors have called the common great aloe.

From an inciſion made in the ſhoots of this plant, there flows a great quantity of liquor, whereof the Braſilians make wine, vinegar, honey, and ſugar.

CARAGUATA is alſo a ſort of thiſtle which grows in Braſil, and in ſome other parts of America. The leaves of this plant being ſteeped in water, and afterward well waſhed and rubbed, afford a kind of flax very fine and ſtrong, proper for ſeveral manufactures. The Americans make fiſhing-nets of it.

CARAITES, a ſect among the ancient Jews: whereof there are ſtill ſome ſubſiſting in Poland, Ruſſia, Conſtantinople, Cairo, and other places of the Levant; whoſe diſtinguiſhing tenet and practice it is, to adhere cloſely to the words and letter of the Scripture, excluſive of allegories, traditions, and the like.

Leo of Modena, a rabbin of Venice, obſerves, that of all the hereſies among that people, before the deſtruction of the temple, there is none now left but that of the *Carraim*, a name derived from *Micra*, which ſignifies the pure text of the Bible; becauſe of their keeping to the Pentateuch, obſerving it to the letter, and rejecting all interpretations, paraphraſes, and conſtitutions of the rabbins. Aben Ezra, and ſome other rabbins, treat the *Caraites* as Sadducees; but Leo de Juda calls them, more accurately, Sadducees reformed; becauſe they believe the immortality of the ſoul, paradiſe, hell, reſurrection, &c. which the ancient Sadducees denied. He adds, however, that they were doubtleſs originally real Sadducees, and ſprung from among them.

M. Simon, with more probability, ſuppoſes them to have riſen hence; that the more knowing among the Jews oppoſing the dreams and reveries of the rabbins, and uſing the pure texts of Scripture to refute their groundleſs traditions, had the name of *Carraim* given them; which ſignifies as much as the barbarous Latin, *Scripturarii*; i. e. people attached to the text of Scripture. The other Jews give them the odious name *Sadducees*, from their agreement with thoſe ſectaries on the head of traditions. Scaliger, Voſſius, and Spanheim, rank the *Caraites* among the Sabeans, Magi, Manichees, and Muſſulmen, but by miſtake: Wolfgang, Fabricius, &c. ſay, the Sadducees and Eſſeni were called *Caraites*, in oppoſition to the Phariſees: others take them for the Doctors of the law ſo often mentioned in the Goſpel: but theſe are all conjectures. Joſephus and Philo make no mention of them; which ſhews them to be more modern than either of thoſe authors. In all probability, this ſect was not formed till after the collection of the ſecond part of the Talmud, or the Gemara; perhaps not till after the compiling of the Miſchna in the third century.—The *Caraites* themſelves pretend to be the remains of the ten tribes led captive by Shalmaneſer. Wolfius, from the Memoirs of Mardacheus, a *Caraite*, refers their origin to a maſſacre among the Jewiſh doctors, under Alexander Jannæus, their king, about one hundred years before Chriſt: becauſe Simeon, ſon of Schetach, and the queen's brother, making his eſcape into Egypt, there forged his pretended traditions; and, at his return to Jeruſalem, publiſhed his viſions; interpolating the law after his own fancy, and ſupporting his novelties on the notices which God, he ſaid, had communicated by the mouth of Moſes, whoſe depoſitary he was: he gained many followers; and was oppoſed by others, who maintained, that all which God had revealed to Moſes was written. Hence the Jews became divided into two ſects, the *Caraites* and *Traditionaries:* among the firſt, Juda, ſon of Tabbai, diſtinguiſhed himſelf; among the latter, Hillel. Wolfius reckons not only the Sadducees, but alſo the Scribes, in the number of *Caraites*. But the addreſs of the Phariſees prevailed againſt them all; and the number of *Caraites* decreaſed: Anan, indeed, in the eighth century, retrieved their credit a little; and rabbi Schalomon in the ninth. They ſucceeded pretty well till the fourteenth; but ſince that time they have been declining.

The *Caraites* are but little known; their works coming only into very few hands, even among the greateſt Hebraiſts. Buxtorf never ſaw more than one; Selden two; but Mr. Trigland ſays, he has recovered enough to ſpeak of them with aſſurance. He aſſerts, that ſoon after the prophets had ceaſed, the Jews became divided on the ſubject of works, and ſupererogation: ſome maintaining their neceſſity from tradition; whilſt others, keeping cloſe to the written law, ſet them aſide; and it was from theſe laſt that *Caraitiſm* commenced. He adds, that after the return from the Babyloniſh captivity, the obſervation of the law being to be re-eſtabliſhed, there were ſeveral practices found proper for that end; and theſe, once introduced, were looked upon as eſſential, and appointed by Moſes; which was the origin of Phariſaiſm; as a contrary party, continuing to keep cloſe to the letter, founded *Caraitiſm*.

The modern *Caraites*, Leo of Modena obſerves, have their ſynagogues, and ceremonies; they pretend to be the ſole proper Jews, or obſervers of the laws of Moſes; calling the reſt by the term *Rabbanim*, or *followers of the Rabbins:* theſe hate the *Caraites* mortally; refuſing to ally, or even to converſe with them, and treating them as *mamzerim*, or baſtards; becauſe of their rejecting the conſtitutions of the rabbins relating to marriages, repudiations, purifications of women, &c. This averſion is ſo great, that if a *Caraite* would become a rabbiniſt, he would never be received by the other Jews.

The *Caraites*, however, do not abſolutely reject all kind of traditions; but only ſuch as do not appear well grounded. Selden, who is very expreſs on this point, in his Uxor Hebraica, obſerves, that beſides the mere text, they have certain interpretations, which they call *hereditary*, and which are proper traditions. Their theology only ſeems to differ from that of the other Jews, in that it is purer, and clearer of ſuperſtition: they give no credit to the explications of the Cabbaliſts, chimerical allegories, nor to any conſtitutions of the Talmud, but what are conformable to the Scripture, and may be drawn from it by juſt and neceſſary conſequences.

Peringer obſerves of the *Caraites* in Lithuania, that they are very different, both in aſpect, language, and manners, from the rabbiniſts, wherewith that country abounds. Their mother tongue is the Turkiſh; and this they uſe in their ſchools and ſynagogues. In viſage they reſemble the Mahometan Tartars. Their ſynagogues are placed north and ſouth; and the reaſon they give for it, is, that Shalmaneſer brought them northward: ſo that, in praying, to look to Jeruſalem, they muſt turn to the ſouth. He adds, that they admit all the books of the Old Teſtament; contrary to the opinion of many of the learned, who hold that they reject all but the Pentateuch.

Caleb, a *Caraite*, reduces the difference between them and the rabbiniſts to three points: 1. In that they deny the oral law to come from Moſes, and reject the Cabbala. 2. In that they abhor the Talmud. 3. In that they obſerve the feaſts, as the ſabbaths, &c. much more rigorouſly than the rabbins do. To this may be added, that they extend the degrees of affinity, wherein marriage is prohibited, almoſt to infinity.—See on this ſubject, Relandi Antiq. Hebræor. part ii. cap. 9. § 12. Trigland. de Sectâ Karæoram. Baſnage's Hiſt. of the Jews, book ii. chap. 8, 9.

CARAMANGCE, a drug which comes from China. The Tonquineſe value it very much.

CARANDA, in the *Materia Medica*, a name uſed by ſome authors for the tamarind-tree.

CARANNA, a hard, brittle, reſinous gum, brought from ſome parts of the Weſt Indies, as Carthagena and New Spain; of an aromatic flavour; and ſometimes uſed in medicine as a cephalic.

The trees from which it runs, are like the palm-tree. When it is freſh, it is white; but as it grows ſtale, it becomes greyiſh inclining to green, in which condition it is ſent to Europe, where the white is ſeldom to be met with. It is brought in lumps wrapped up in leaves. To be of the beſt quality, it muſt be ſoft, of a pleaſant aromatic ſmell, and as white as ſnow. As this gum is very dear, it is ſeldom ſold unadulterated; and other ſorts are often ſubſtituted in its ſtead, which have not the ſame properties. When applied to the head, it has an extraordinary virtue to relieve it from pain; which renders it highly valuable. It produces the ſame effects in the joints; and is ſo much eſteemed in medicine, that it is become a proverb in pharmacy to ſay, Whatever the *tacamahaca* has not cured, the *caranna* will.

The Americans make a balm of it, which they pretend to be a ſovereign remedy for the cure of wounds, and the hæmorrhoids or piles.

CARANTIA, in the *Materia Medica*, a name given by ſome authors to the CAROB, or *ſiliqua dulcis*, the ſweet-pipe.

CARAPACE, the thick, ſolid, firm ſhell, which covers the turtle or tortoiſe; and to which adhere thoſe fine tranſparent ſhells, which are known under the name of tortoiſe-ſhell, of which ſnuff-boxes and ſeveral ſorts of inlaid work are made.

CARAPO, in *Zoology*, the name of a fiſh, of which there are two kinds caught in many parts of the lakes of America. The firſt has a long and thin body, of the ſhape of a knife-blade, the back being thick, the belly very thin and narrow; the tail is pointed; and the uſual ſize of the fiſh is a foot in length, and two fingers broad in the broadeſt part. The head is flat and pointed, and the lower jaw runs out a little farther than the upper; the mouth is very narrow, and the bottom jaw is furniſhed with very ſmall and ſharp teeth; the upper is toothleſs; its eyes are very ſmall; and it is covered with little ſcales. It is of a brown colour, with a faint admixture of red, and the back and head are ſomewhat blackiſh; there runs a duſky line all along the ſides in their middle, and under this the fiſh is ſpeckled with black ſpots of the ſize of a ſeed of muſtard.

The ſecond kind no way differs from the firſt, but that it is much narrower in proportion to its length, and has no ſpots. They are both eatable. Margrave.

CARAPOPEBA, in *Zoology*, the name of a ſmall ſpecies of lizard, common in the Braſils, and eſteemed a poiſonous animal. Its body is of a liver colour, and has ſeveral white ſpots. There are marks of white on the tail, variegated with ſome ſmall quantity of yellow; the eyes are remarkably bright and vivid. Ray.

CARARA, a weight at Leghorn, and in other parts of Italy, uſed in the ſale of wool and cod-fiſh, equivalent to ſixty pounds of that country.

CARASSIUS, in *Zoology*, the name of a genus of leather-mouthed fiſhes of the carp or bream kind, of which there are three ſpecies. It is a ſmall freſh-water fiſh, of about three, four, or five inches long, with a flatted body, and a riſing back; it reſembles the bream indeed in ſhape very nearly, but is ſomewhat thicker; its colour is a pale yellow, and its belly of a deeper yellow, without any redneſs. The mouth is ſmall and round; and the eyes ſmall, and ſunk in their orbit. See CRUCIAN, and CYPRINUS.

CARATH, in the *Materia Medica*, a name given by the Arabian writers to the ACACIA.

CARAT, CARRAT, or CARACT. See CARACT.

CARAVAN, or CARAVANNE, in the Eaſt, a troop or company of travellers, merchants, and pilgrims, who for their greater ſecurity march in a body through the deſerts, and other dangerous places, infeſted with Arabs and robbers.

The word comes from the Arabic *cairawan*, or *cairoan*; and that from the Perſian *kervan*, or *cârvân*, *negotiator*, *a trader* or *dealer*. Vid. Peritiſ. Itin. Mund. ed. Hyde. p. 61.

There is a chief, or aga, who commands each *caravan*, and has under him a number of janizaries, or other forces, ſufficient for their defence. The *caravans* encamp every night near wells, or rivulets known to the guides; and obſerve a diſcipline as regular as in war. They chiefly uſe camels for their vehicles, becauſe of their enduring much fatigue, eating little, and paſſing three or four days without drinking.

The grand ſignior gives one fourth part of the revenue to Egypt, to defray the expence of the *caravan* that goes yearly to Mecca to viſit Mahomet's tomb: the devotees, in this *caravan*, are from forty thouſand to ſeventy thouſand; accompanied with ſoldiers to protect them from the pillage of the Arabs, and followed with eight or nine thouſand camels, laden with all neceſſary proviſions for ſo long a paſſage acroſs deſerts.

Days journeys are diſtinguiſhed in the Eaſt, into journeys of *horſe-caravan*, and *caravans of camels*: thoſe of horſes are equal to two of camels.

There are four regular *caravans* which go yearly to Mecca; the firſt from Damaſcus, compoſed of the pilgrims from Europe and Aſia; the ſecond from Cairo, for the Mahometans of Barbary; the third from Zibith, a place near the mouth of the Red Sea, where thoſe of Arabia and India meet; the fourth from Babylon, where the Perſians aſſemble. Moſt of the inland commerce in the Eaſt is carried on by *caravans*. The late czar, Peter the Great, eſtabliſhed a trade between Ruſſia and China by means of a *caravan*. M. Bougnon, geographer of the duke of Lorraine, has given a treatiſe of the *caravans* of merchants in Aſia, wherein he ſhews of what they are compoſed; how many ſorts there are; the ſeveral uſes of the different ſorts of animals in them; the price given for them; the officers and men appointed to conduct them, and the pay of each; with their manner of marching, halting, fighting, treating, &c.

In the heavy *caravans*, to five hundred elephants there are a thouſand dromedaries, and at leaſt two thouſand horſes, eſcorted by four thouſand cavaliers. Two men are required to lead each elephant; five to three dromedaries; and ſeven to twelve camels. Such a number of ſervants joined with the officers and paſſengers, the number whereof is not limited, renders the body very formidable; the paſſengers indeed are not obliged to fight, but in caſe they refuſe, proviſion will ſcarce be allowed them afterwards, even for their money.

As few of the Arab princes have any other ſubſtance than what they can get by pillage, they keep continually ſpies on foot, to give them intelligence of the departure and motions of *caravans*, which they frequently attack with ſuperior forces: in caſe of repulſe, they come to an accommodation; but if the *caravan* be beaten, it is abſolutely plundered, and the whole guard made ſlaves; though more indulgence is ſhewed to ſtrangers. The taking of a ſingle *caravan* ſometimes enriches a prince for ever.

The profits to be made in a *caravan*, during its march, are often incredible; Mr. Bougnon gives inſtances where, by repeated bargains and exchanges, a perſon has made twenty thouſand crowns out of a ſingle gold watch, and thirty *louis d' ors*.

Any dealer is at liberty to form a company, in order to make a *caravan*. He in whoſe name it is raiſed, is conſidered as the *caravan-bachi*, or chief of the *caravan*, unleſs he appoint ſome other in his place. If there be ſeveral merchants equally concerned, they elect a *caravan-bachi*; after which they appoint officers to conduct the *caravan*, and decide all controverſies which may ariſe during the journey.

There are five ſorts of *caravans*, viz.

CARAVAN, *heavy*, compoſed of elephants, dromedaries, camels, and horſes.

CARAVAN, *light*, in which there are but few elephants.

CARAVAN, *ordinary*, that in which there are no elephants.

CARAVAN *of horſes*, that in which there are neither camels nor dromedaries, but only horſes.

CARAVANS, *ſea*, are companies of merchant veſſels, loaden with goods, and convoyed by ſhips of war.

CARAVAN is alſo an appellation given to the voyages, or campaigns, which the knights of Malta are obliged to make at ſea, againſt the Turks and Corſairs; in order to arrive at the commanderies and dignities of the order. They are thus called, becauſe the knights have frequently ſeized the *caravan* going from Alexandria to Conſtantinople.

CARAVANIER, a perſon who leads the camels and other beaſts of burden uſed in the *caravans* of the Eaſt.

CARAVANSERA, a large public building, or inn, deſtined to receive and lodge the *caravans*.

The word comes from the Arabic *cairawan*, or Perſian *karwan* or *cârvân*, *a caravan*, and *ſerai*, *a large houſe*.

Of theſe *caravanſeras*, or, as Chardin calls them, *caravanſerai*, there are a great number throughout the Eaſt; erected out of the charity and magnificence of the princes, &c. of the ſeveral countries.

Thoſe of Schiras and Caſbin, in Perſia, are ſaid to have coſt ſixty thouſand crowns each. They are open to people of all religions and countries, without any queſtions aſked, or any money required.

The *caravanſerai* are uſually huge ſquare buildings, with a ſpacious court in the middle thereof. They are encompaſſed with galleries and arches, under which runs a kind of banquette, or elevation, ſome feet high, where travellers reſt themſelves, and make their lodgings as well as they can; their baggage, and the beaſts that carry them, being faſtened to the foot of the banquette. Over the gate, there is frequently a ſort of little chambers; which the *caravanſeraſkier* lets out, at a very dear rate, to ſuch as have a mind to be retired.

Though the *caravanſeras* ſerve in lieu of inns, yet there is this eſſential difference between them and our inns, that the traveller finds nothing at all in the *caravanſera*, neither for himſelf, nor his cattle; but muſt carry all his proviſions and neceſſaries with him. They are chiefly built in dry, barren, deſert places; and are generally furniſhed with water from a great diſtance, and at a vaſt expence; there being no *caravanſera* without its well of water. There are ſeveral of them in cities: where they ſerve not only as inns, but as ſhops, warehouſes, and even exchanges.

There are ſome *caravanſeras* where moſt things may be had for money; and as the profits of theſe are conſiderable, the magiſtrates of the cities to whoſe juriſdiction they belong, take care to ſtore them well: they have an inſpector, who fixes the price of lodging, without appeal. There are few cities in the Eaſt without their *caravanſerai*; eſpecially within the dominions of Turky, Perſia, and the Great Mogul. Thoſe of Conſtantinople, Iſpahan, and Agra, the capitals of three empires, are diſtinguiſhed for their magnificence and commodiouſneſs.

In Turky, none but the grand ſignior's mother and ſiſter, with the viſiers and baſhaws, who have been in three battles againſt Chriſtians, are allowed to build a *caravanſera*.

CARAVANSERASKIER, the director, ſteward, or intendant of a *caravanſera*.

At Iſpahan there are *caravanſeras* in manner of halls or exchanges, where goods are laid up, and expoſed to view; for which the *caravanſeraſkier* is accountable, in conſideration of a certain fee.

CARAVEL; thus they call a ſmall veſſel on the coaſt of France, which goes to fiſh for herring on the banks. They are commonly from twenty-five to thirty tons burden. Thoſe which are deſigned for the ſame fiſhery in the Britiſh channel, are called by the French *trinquarts*: theſe are from twelve to fifteen tons burden.

CARAUNA, in *Zoology*, the name of a ſmall Braſilian fiſh, in many reſpects approaching to the turdus kind. Its colour is a fine bright red, all over ſpotted with very ſmall black ſpots.

CARAWAY, *Carum*, in *Botany*, a genus of the *pentandria digynia* claſs. Its characters are theſe: it hath an umbellated flower, compoſed of ſeveral ſmall umbels, which are formed as rays to the general umbel; neither of which have any involucrum: the flower hath five heart-ſhaped petals, and five hairy ſtamina. The germen is ſituated under the flower, which becomes an oblong channelled fruit, dividing into two parts, each having an oblong furrowed ſeed. There are two ſpecies.

The common *caroway*, whoſe ſeed is uſed both medicinally and in the kitchen, grows naturally in ſome of the rich meadows in Lincolnſhire and Yorkſhire, and is ſometimes found in paſtures near London. It is alſo cultivated in ſome places.

The ſeed of the *carui*, or *caraway*, is narrow, longiſh, furrowed on the back, and of a briſk aromatic taſte.

It is one of the greater hot ſeeds, and is eſteemed ſtomachic, and diuretic; it diſpels wind, and ſtrengthens digeſtion, &c. The Engliſh and Germans make great uſe of it; particularly in biſcuits, comfits, ſeed-cakes, and other foods, and confections.

CARBASA *Caryſtia*, a term uſed by many of the ancient writers to expreſs pieces of cloth made of the *linum incombuſtibile*, or aſbeſtos ſtone, which being found plentifully about Caryſtium, was thence called by the name of the place. Pauſanias calls it *linum Carpaſum*, for the ſame ſort of reaſon; Carpaſus, a town in the iſland of Cyprus, being a place famous for affording large quantities of the ſtone in its neighbourhood.

CARBENSIS *aqua*, in the *Materia Medica*, the name of a mineral water of Germany, of which Hoffman from Petzlerus has given the following account. All about the place of its origin, and along the canals through which it paſſes, it depoſits an earthy and ferruginous matter, which concretes into a ſtony hardneſs. When any alcaline liquor, whether fixed or volatile, is added to theſe waters, they become turbid, and precipitate a whitiſh earthy matter to the bottom of the veſſel; after the evaporation of the water they leave a *ſal enixum*, and an alcaline earth; two quarts of them yield two ſcruples and ten grains of the earth, and twelve grains of the ſalt. If it be kept for any time in a glaſs, or earthen veſſel, it depoſits a ſediment of a yellow ochreous earthy matter, and when immediately taken from the ſpring, it changes to a bluiſh brown colour, on being mixed with galls. It contains a very large portion of a ſubtile mineral ſpirit; for if a long-necked veſſel be filled half full with it, and the orifice ſtopped with the thumb, the whole, on a little ſhaking, ſends up a froth to the top; and when the thumb is taken off, the water ſquirts out to ſeveral feet diſtance. It makes an efferveſcence on mixing oil of vitriol with it; but this laſts but a very little time. From the whole, it ſeems to contain a large quantity of calcareous earth, and ſome ſmall portion of ferruginous matter; whence it purges both by ſtool and urine, though moſtly the latter way: the former operation, which is pretty conſtant, is owing to this alcaline earth meeting with an acid in the *prima via*, and being by it changed into a bitter purging ſalt, of the nature of Glauber's.

CARBEQUI, or *Aſper of copper*, a coin which is current in the province of Georgia in Aſia; particularly at Teſſlis, the capital.

CARBO *aquaticus*. See CORMORANT.

CARBONADE, or CARBONADO, in *Cookery*, fleſh, fowl, or the like, ſeaſoned, and broiled on the coals.

CARBUNCLE, among *Ancient Naturaliſts*, is a ſort of ſtone, whereof Pliny and Theophraſtus relate many fabulous wonders.

The name is formed of the Latin *carbunculus*, q. d. *a burning coal*. Pliny, treating of the *carbuncle*, diſtinguiſhes twelve ſorts of it.

Many of the ancients, and ſome of the moderns after them, have ſuppoſed the *carbuncle* to be taken from the dragon's head; and we read of many cavaliers, who went to combat with dragons, on purpoſe to gain this invaluable jewel.—Vartoman aſſures us, that the king of Pegu uſed no other light in the night-time, but that of his *carbuncle*, which caſt a blaze like that of the ſun.

CARBUNCLE, among *Modern Lapidaries*, is a ſtone of the ruby kind, very rare, and of a rich, glowing blood-red colour.

The diſtinguiſhing character of the *carbuncle* is, that it is a gem of great hardneſs, and of a deep red with an admixture of ſcarlet. It was known among the ancients by the name ανθραξ, which was uſed metaphorically to ſignify that this gem was in ſome lights of a fire colour; the proper ſignification of the word being a piece of lighted charcoal.

The *carbuncle* is uſually found pure and faultleſs, and is of the ſame degree of hardneſs with the ſapphire, being ſecond only to the diamond. It is ever found naturally of an angular figure, ſmaller at one end than at the other, and at that ſmall end tapering to a pointed pyramid, compoſed of the ſame number of planes with the column, which is ſix, and thoſe uſually very unequal. It is found adhering by its baſe to a heavy and hard ferruginous ſtone of the emery kind, and is always more finely coloured toward the point than in the baſe of the column.

Its uſual ſize is near a quarter of an inch in length, and two thirds of that in diameter in its thickeſt part. It bears the force of fire unaltered, not parting with its colour by it, as do moſt of the gems; nay, it even will not be at all affected by fire, nor become in the leaſt degree paler. It is found only in the Eaſt Indies, ſo far as is yet known, and that but very rarely.

The diſtinctions between the ſeveral red gems are very nice, and their names in ſome degree arbitrary. Many authors have confounded the *carbuncle* with the ruby, and determined with Garcias, that every ruby which exceeded twenty-four caracts in weight, was properly a *carbuncle*. This gem, however, is by all trials proved to be evidently the *carbuncle* of the ancients, and eſſentially different from the ruby in wanting the purpliſh tinge into which the colour of that gem goes off, as is extremely evident in all the deep ones; this going off into a true ſcarlet, and for that reaſon giving the colour of a lighted charcoal in the ſun, which neither the ruby, garnet, nor any other gem can do which has the blue or purple caſt.

The fineſt *carbuncles* are ſaid to be produced in the iſland of Ceylon, the king of which country is poſſeſſed of a *carbuncle* a palm broad, and three inches thick, of the brightneſs of fire.

Some include GRANATES and HYACINTHS under the claſs of *carbuncles*.

CARBUNCLE, in *Medicine*, is a malignant tumour, ariſing ſometimes on one part, and ſometimes on another; accompanied with a painful heat, mortification, lividneſs, and at laſt a blackneſs of the part.

The Greeks call it ANTHRAX; the Latins *carbunculus*, ſometimes alſo *carbo*; and the French *charbon*; all importing *coal*; from the reſemblance of its ſcab to a coal of fire. It is ſometimes peſtilential, and ſometimes not. When it ariſes without puſtules, it is properly called *pruna*; when with, *ignis Perſicus*.

It uſually begins with one or more puſtules, under which is formed a putrid ulcer; ſometimes with a ſcab, without any puſtule; the ulcer being formed under the ſcab. Within the tumour is a kernel, very painful; ſometimes red, and ſometimes livid, or blackiſh.

The *carbuncle* is owing to a ſharp, cauſtic, malignant, ſaline humour, which gnaws and corrupts the part whereon it is diſcharged.

CARBUNCLE is alſo, in *Medicine*, ſometimes uſed for the *furunculus*, or BOIL.

This is more particularly called the *benign carbunculus*, by way of contradiſtinction from that which is of the *malignant* kind.

CARBUNCLE is alſo frequently uſed to denote a ſmall eruption, which, coming on any part of the body, ſoon diſcharges its contents, and afterwards appears in form of a cruſty tubercle, of the ſize of a millet-ſeed, ſurrounded with a red fiery circle.

CARBUNCLE, *peſtilential*. This is an inflammation that ariſes in time of peſtilential contagion, with a veſicle or bliſter, almoſt like thoſe which are cauſed by burning; but this inflammation generally terminates in a mortification, and putrifies the adjacent parts down to the bone, all about becoming as black as a coal.

This kind of inflammation always breaks out very ſpeedily, ſometimes even in an hour or two, attended with the moſt intolerable heat and pain. On opening it, there is always diſcharged a darkiſh limpid or watery ſanies, and the fleſh underneath is of a black colour, the mortification having then already ſeized it, and ſpreading more and more by degrees; but in thoſe who recover, the mortification at length ſtops, and the putrified fleſh ſuppurates, and parts from the ſound.

The ſize and number of theſe inflammations in the ſame patient, are both very various and uncertain; there is no part of the body but what they may infeſt; and they are generally, if not always, accompanied by buboes.

The immediate cauſe of theſe is a violent inflammation, excited in the blood by the peſtilential venom; and the inflammation, from the nature of the caſe, is ever ſpeedy, and always followed by ſphacelation and a corruption of the parts. What is remarkable, is, that the parts and juices do not ſuppurate into matter, as is uſual in other tumours, but whatever is internally corrupted, ſeparates and entirely falls off: for the inflamed parts ſuppurate at the margin of the inflammation, ſo that if the patient does not die ſuddenly, the ſphacelated parts are ſeparated, and naturally thrown off.

Carbuncles are always a worſe ſymptom than buboes in theſe caſes, eſpecially if the eruptions turn directly either livid or black; but if they are red firſt, and then gradually turn to a citron colour, the danger is leſs.

Thoſe *carbuncles* alſo which ariſe in the face, neck, breaſt, or arm-pits, are always accounted the worſt, and uſually kill the patient.

The chief buſineſs of internal medicines, in this caſe, is to keep the patient in a conſtant breathing ſweat; and the buſineſs to be aimed chiefly at in external applications, is to procure, as ſoon as poſſible, the ſeparation of the ſphacelated parts from the ſound. Some, therefore, uſe ſcarification alone in this caſe, and that with very good ſucceſs; for, by making a great number of inciſions in the corrupted parts, they let out the peſtilential venom which corrupted the blood. Others on the ſame occaſion uſe alſo, as a cataplaſm, a mixture of two ounces of flour and half an ounce of vinegar, made with water or ſkimmed milk into a proper form, and with an ounce of honey, and an ounce of powder of ſaffron; thoſe ingredients are to be thoroughly mixed in, and the cataplaſm to be applied warm, and renewed frequently, till the whole *carbuncle* ſeparates and falls off from the ſound parts; and this is a much better and ſafer method of extirpating the *carbuncle*, than by cutting it out at once, by which operation ſome have been known to have been killed upon the ſpot. When the greateſt part of the *carbuncle* is, however, of its own accord ſeparated from the ſound parts, the part where it adheres may always be ſafely divided with the ſcalpel; and this, indeed, is abſolutely neceſſary.

If an ill-conditioned and luxuriant fleſh grows internally in this caſe, either of itſelf, or from the extirpation of the *carbuncle* being made too ſoon, this muſt ever be neceſſarily entirely conſumed by the application either of the Ægyptian ointment, or of the following: take two ſpoonfuls of honey, the yolks of two eggs, and of burnt alum, gentian, and birthwort-root in powder, each an ounce; make the whole into an ointment.

If the inflammation diſpoſes the adjacent parts to a gangrene, it will be moſt proper to uſe the following application: take ſalt of wormwood, half an ounce; of the herb ſcordium, and of elder and chamomile flowers each a handful; and of river-water two pints and a half: when theſe have been well boiled and ſtrained, mix with the liquor ſix ounces of camphorated ſpirit of wine, and two ounces of Venice treacle; and let this be applied hot to the parts, by means of double linen rags being well wetted in it, and repeated frequently till the violence of the inflammation abates.

When the mortified fleſh of the *carbuncle* has ſeparated itſelf from the ſound part, it is neceſſary to cleanſe the ulcer perfectly with digeſtive ointments, leſt any of the matter remain there, and mix itſelf again by degrees with the blood; and this deterging of the ulcer is always to be continued till there remain no more ſymptoms of the peſtilential infection in the patient; and after this the wound may be healed like other ulcers. Heiſter.

Carbuncle, *Carbunculus*, alſo denotes a ſort of ſandy matter found in Hetruria, formed of a hard earth of the ſame name, concocted in the viſcera of the mountains, by the heat of the ſubterranean vapours.

Pliny and Varro ſpeak of the *carbunculus*, as a peculiar kind of hot, dry, lean ſoil.

Carbuncle, in *Heraldry*, a charge, or bearing, conſiſting of eight radii, or ſpokes; four whereof make a common croſs, and the other four a ſaltier. See *Tab. Herald. fig.* 13.

Some call theſe radii *battons*, or *ſtaves*; becauſe round, and enriched with buttons, or pearled, like pilgrims ſtaves; and frequently tipped, or terminated with fleurs-de-lis. Others blazon them, royal ſceptres, placed in ſaltier, pale and feſſe.

CARBUNCULATION, the blaſting, or ſcorching of the new-ſprouted buds of trees, or plants, either by exceſſive heat, or exceſſive cold.

It happens chiefly in the ſpring and autumnal ſeaſons, when vegetables being covered with dewy vapours, a ſudden cold comes on them, which, congealing thoſe vapours, the nutritious juice of the plant is coagulated, and the texture of its fibres deſtroyed.

CARCAJOU, in *Zoology*, a ſpecies of quadrupeds in North America; ſmall, but very ſtrong and furious: ſee the deſcription of it by M. Saraſſin, in Hiſt. Acad. Sc. 1713.

CARCAPULI, in *Botany*, the Indian yellow orange of Malabar. This is a tall ſpreading tree; the trunk as much in compaſs, as two men can encircle with their arms. The leaves ſtand by pairs on the ſprays, at the extremities of which appear yellowiſh and tetrapetalous flowers, which are void of ſmell, but of a ſouriſh taſte. The calyx conſiſts of four pale concave leaves; and the fruit, which hangs by a pedicle an inch long, is big, round, and diſtinguiſhed by eight or ten exuberances like ribs; with a ſmall head at the top, ſtriated in like manner with ſmall ribs. It is firſt green, then yellow, and when ripe, whitiſh; and has an acid ſweetneſs of taſte. The ſeeds are contained in the middle of the pulp; and are oblong, flattiſh, and of a dark azure colour.

This fruit, according to Acoſta, as to ſize and ſhape, is like a quince with the rind taken off, and conſiſts in like manner of grumous parts, but not ſeparable, as in the quince; it is covered with a thin, light, and ſhining rind. It is dried, and exported from Malabar to other countries.

It is commonly eaten, and the inhabitants commend it much for medicinal uſes: but it is moſt eminent for ſtopping a flux of the belly, of what kind ſoever, eſpecially that contracted by exceſſive venery.

Carcapuli *Linſchotani*. C. Bauhine confounds this with the preceding; but they differ in flower and fruit, though agreeing in other reſpects. The firſt bears an acid, ſulcated, gold-coloured fruit, as big as an apple; the latter produces a round ſweet fruit, of the bigneſs of a cherry: the firſt is called by the natives ſimply *ghoraka*, the other *kanna ghoraka*. They both afford gum gutta, but the latter the beſt. But this gum gutta, ſays Dr. Syen, muſt not be confounded with the common gum gutta, which, as Bontius aſſures us, is collected from a plant which is near akin to the *Eſula Indica*, and is called by the Indians *Lonam Cambodia*, becauſe it grows plentifully in the country of Cambodia.

CARCARIAS *canis*. See **Shark**.

CARCASE, the corpſe, or body of a dead animal. Thus, we ſay, the *carcaſes* of the ſoldiers, horſes, &c. were ſeen long afterwards on the field of battle.

The *carcaſe* of a fowl, capon, partridge, leveret, rabbet, &c. is what remains thereof, after the four members, or limbs, viz. the legs and wings, have been cut off.

Carcase, in *Architecture*, is the ſhell, or ribs of a houſe; containing the partitions, floors, rafters, &c. made by the carpenter, &c. The *carcaſe* is otherwiſe called the **framing**.

CARCASSE, or **Carcuss**, in *War*, a kind of bomb, either oblong, and oval, or circular; conſiſting of a ſhell, or caſe, ſometimes of iron, with holes; but more commonly of a coarſe ſtrong canvas, pitched over, and girt with iron hoops; filled with combuſtible matters, as hand-granadoes, ends of muſquets, loaded piſtols, and preparations of gunpowder, &c. Its uſe is to be thrown out of a mortar, to ſet houſes on fire, and do other execution.

It has the name *carcaſſe*, becauſe the circles which paſs from one ring, or plate, to the other, ſeem to repreſent the ribs of a human *carcaſe*.

The oblong *carcaſſes* are now diſuſed, on account of the uncertainty of their flight: the round ones are compoſed of pitch, ſaltpetre, ſulphur, and corned powder.

In lieu of the ancient *carcaſſes*, a new ſort has been introduced made of iron bands, or ribs, which incloſe a canvas bag, filled with combuſtible matter, hardly to be extinguiſhed.

We have alſo a third ſort of *carcaſſes*, of a late invention, for the ſea-ſervice, differing in nothing from a bomb, except in their being filled with a compoſition like that above mentioned, and having five holes all primed with powder and quick-match, which take fire from the flaſh of the mortar, and communicating it to the compoſition, cauſe it to burn vehemently from thoſe holes.

CARCERES, in *Antiquity*, were the liſts, or barriers of the circus, within which the horſes were confined, till the ſignal was given by the magiſtrate for ſtarting.

The word is Latin, ſuppoſed to be formed *a coërcendo*, as they ſerved as a reſtraint to the horſes ready to run.

The number of *carceres* was twelve. In the early days of Rome they were made of wood, which Claudius afterwards changed for marble. They were kept faſt with bolts, ſuſtained by ropes, which, the moment the ſignal was given, flew open all at once. Some think that only four were uſed at a time. Suet. in Claud. cap. xxi. n. 6.

CARCINIUM *Opalinum*, a new genus of marine animal, diſcovered by Mr. Banks and Dr. Solander, in their paſſage to Madeira, which ſhone in the water with colours that exceeded in variety and brightneſs any thing they had ever ſeen. The beautiful colouring and ſplendour of theſe animals were equal to thoſe of an **opal**; and from their reſemblance to that gem, they gave this denomination to the genus. One of them lived ſeveral hours in a glaſs of ſalt water, ſwimming about with great agility, and diſplaying at every motion a change of colours almoſt infinitely various. See **Dagysa**.

CARCINOMA, in *Medicine*, a tumour more uſually called a **cancer**.

The word comes from καρκινος, *cancer*, and νεμω, *depaſco, to feed upon.*

Carcinoma is ſometimes uſed to denote a diſorder of the *tunica cornea* of the eye, wherein the little veins of the part appear turgid and livid.

CARCINOMATOUS, the ſame with **cancerous**.

Schirrhi and ſtrumæ, which are formed of the humours ſtopped by their viſcidity, or coagulated by an acid, as alſo polypuſes, wherein the veſſels retain their order and diſtribution, are originally different from *carcinomatous* tumours, which, according to Gendron, ariſe from an indiſpoſition of the glandular veſſels. Yet, when the ſtructure of the veſſels is once deſtroyed, the former degenerate into a hard indiſſolvable lump, capable of germination, ſo that they loſe their former nature, and become cancerous. Phil. Tranſ. N° 260. p. 479.

CARD, in the *Woollen Manufactory*. See CARDING.

The word ſeems formed from the Latin *carduus (fullonum)* which denotes the fuller's teazle; a kind of thiſtle whoſe head is uſed to ſmooth and range the nap of cloth, &c. Skin. Etym. Angl. in voc.

There are divers ſorts of theſe *cards*, as ſtock-*cards*, hand-*cards*, wool-*cards*, tow-*cards*, &c.

Cards for wool in England, may not be imported, nor the wire taken out of old *cards*, to be put into new leather and boards, in order for ſale; upon forfeiture thereof, or of the value, if not ſeized: but may be amended for the proprietor's own uſe, or for tranſportation only.

CARD-*playing*. See CARDS.

CARDAMINDUM, in *Botany*. See CRESSES.

CARDAMINE, in *Botany*, a genus of the *tetradynamia ſiliquoſa* claſs; lady's ſmock. The characters are theſe: the flower hath four oblong petals placed in form of a croſs; it hath ſix ſtamina, four of which are the length of the empalement, the other two, which are oppoſite, being much longer. It hath a cylindrical germen, which afterward turns to a long, compreſſed, cylindrical pod, with two cells, opening in two valves which twiſt ſpirally, and caſt out the ſeeds when ripe by their elaſticity. There are ten ſpecies. Miller's Gard. Dict.

This plant is alſo known by the names of *cuckow-flower*, and *meadow-creſſes*. It is a kind of NASTURTIUM, and is pungent and diſcuſſive; but is not uſed either in compoſition, or common preſcription. Dr. Baker recommends it to the trial of phyſicians as an antiſpaſmodic remedy, in the Medical Tranſact. vol. i. p. 442.

CARDAMOMUM, or CARDAMON, medicinal ſeeds of the aromatic kind, contained in capſulæ, or pods, brought from the Eaſt Indies; and uſed in the compoſition of Venice treacle, and many other medicines. Their pungency and aromatic ſmell are cauſed by an eſſential oil. Neumann.

This ſeed is diſtinguiſhed into three kinds, according to the ſeveral ſizes of the pods; viz. *majus*, *minus*, and *maximum*; or great, leſſer, and greateſt: but the taſte, ſmell, colour, and form of the grain, is the ſame in all; being of a purple colour, angular, of a ſharp biting taſte, and a ſtrong penetrating ſmell.—The laſt kind is alſo called *grains of paradiſe*; but the firſt excels the reſt, both in ſmell, taſte, and virtue: it is this that enters the compoſition of the theriaca.

The *cardamoms* warm, and deterge: they ſtrengthen the nobler parts, diſſipate wind, and help digeſtion; and are uſed in diſeaſes of the brain, ſtomach, and womb.

CARDANES, in *Natural Hiſtory*, the name of a ſmall inſect reſembling a beetle, of a very ſweet ſmell, and very ſoft to the touch. It is very ſwift in its motions, and is of a blackiſh colour, having two ſhort wings, which do not nearly reach to the tail; it is likewiſe remarkable for having the tail of the ſame ſhape with the head, ſo that, when it ſtands ſtill, it looks as if it had two heads, one at each end.

CARDASS, a ſort of card, proper for carding flocks of ſilk, to make cappadine of it. It is alſo the name which the French give to thoſe flocks of ſilk.

CARDASSES, is alſo the name which in the cloth manufactories of Languedoc, they give to a ſort of large card, which is uſed for carding the dyed wool, deſigned for making cloth of mixed colours.

CARDERS, in the *Woollen Manufactory*, are perſons who prepare wool, &c. for ſpinning, &c. See CARDING and CLOTH.

Carders, ſpinners, weavers, fullers, ſheermen, and dyers, not performing their duty in their occupations, ſhall yield to the party grieved, double damages; to be committed until payment. One juſtice to hear and determine complaints.

Carders, combers, ſorters, ſpinners, or weavers, conveying away, embezzling, or detaining any wool or yarn, delivered by the clothier, or any other perſon, ſhall give the party grieved ſuch ſatisfaction, as two juſtices, mayor, &c. ſhall think fit: if not able or willing to make ſatisfaction, for the firſt offence to be whipped, or ſet in the ſtocks in ſome market-town, or in any other town where the offence is committed: the ſecond offence to incur the like, or ſuch further puniſhment by whipping, &c. as juſtices ſhall think proper. Conviction by one witneſs on oath, or confeſſion.

CARDIA, in *Natural Hiſtory*, a genus of ſhell-fiſh, the ſhell of which is formed of two ovals, and reſembles the figure of a heart at cards: the valves are equal and gibboſe. Of this genus are ſeveral ſpecies; under it are comprehended the cockles, ark-ſhells, &c. together with the *pectines inauriti*, or ſcallops without ears. See HEART-*ſhell*.

CARDIACA. See MOTHER-*wort*.

CARDIACS, CARDIACA, in a general ſenſe, comprehend all medicines beneficial to the heart; whether internally, or externally applied.

The word comes from *καρδια*, *cor*; the heart being reputed the immediate ſeat of their operation.

CARDIACS, in a more particular ſenſe, denote medicines which raiſe the ſpirits, and give preſent ſtrength and chearfulneſs. Theſe amount to the ſame with what are popularly called *cordials*.

Cardiacs are ſuppoſed to produce their effect, by putting the blood into a gentle fermentation, whereby the ſprings, before decayed, are repaired and invigorated; and the tone and elaſticity of the fibres of the veſſels reſtored: the conſequence of which is a more eaſy and briſk circulation. See CORDIAL.

CARDIACUS *plexus*, in *Anatomy*, a plexus, or piece of net-work, formed of a ramification of the *par vagum*, or eighth pair of nerves.

CARDIALGIA, CARDIALGY, in *Medicine*, a violent ſenſation of heat, or acrimony, attended with a conſtrictory pain, felt towards the upper or left orifice of the ſtomach, though ſeemingly at the heart; ſometimes accompanied with palpitations of the heart, fainting, and a propenſion to vomit: better known by the name of *cardiac paſſion*, or HEART-*burn*.

The word is compounded of *καρδια*, which denotes either the *heart*, or the left orifice of the ſtomach, and *αλγος*, *pain*.

It is otherwiſe called *cardiogmus*; though ſome diſtinguiſh, reſtraining the latter to the ſeverer degrees of this diſorder, which riſe to palpitations and fevers, and *cardialgia* to the ſlighter acceſſes of it.

Phyſicians divide this diſtemper into the idiopathic and ſymptomatic; the firſt, which is alſo called by ſome the *cardialgia nauſeoſa*, takes its riſe from crudities in the *primæ viæ*, and is often owing to worms; the other uſually is owing to a ſuppreſſion of the menſtrual, or hæmorrhoidal diſcharges. Theſe differ greatly in degree, the ſymptomatic being much the moſt violent, as the *viſcera* and *vena porta* are brought into conſent with it; but the moſt violent degree of the *cardialgia* is that which is attended with fainting: in this the whole meſentery is drawn into conſent, and is affected with ſpaſmodic contractions. Sometimes alſo in the idiopathic *cardialgia* there is a great apprehenſion of ſuffocation; this ariſes from the conſent of the *diaphragm* and *pericardium*.

CARDIALGIA, *ſigns of a*. Theſe are a ſenſation of preſſure and tenſion about the pit of the ſtomach, a ſtraitneſs and anxiety of the *precordia*, and often there comes on a nauſea, and ſometimes actual vomiting. When there are worms in the caſe, water comes into the mouth in great quantities, and the mucous matter is felt in the bottom of the jaws, as if a piece of ſomething cold lay there. Heat and cold often return ſucceſſively and ſuddenly on the perſon, and the complaint is always worſe upon an empty ſtomach, and mitigates on taking a full meal; whenever the patient can belch alſo, it gives him conſiderable relief for the time; and finally, where the commotions of blood in the *vena porta* are in fault, there is uſually a ſlight touch of a fever attending it.

CARDIALGIA, *perſons ſubject to the*. Theſe are principally valetudinary people, who have foulneſſes of the *primæ viæ*; ſometimes hypochondriac perſons have it to a very great degree, theſe people being uſually troubled with flatulencies; women ſubject to hyſteric complaints alſo, and ſuch as have ſuppreſſions of the menſes, often fall into it; and not uncommonly infants, in caſes of worms.

The cauſe of the complaint is either flatulency or a foulneſs in the ſtomach and inteſtines, which occaſion a reciprocal laxation and ſtricture of the tone of the ſtomach and inteſtines, and other parts which are drawn into conſent.

The occaſional cauſes of its coming on, are coſtiveneſs and the retention of flatulencies; ſudden cooling of the abdomen when the body is hot; coarſe foods, and ſuch as are hard of digeſtion; and the ſwallowing the victuals in large quantities without chewing it: the change of a common coarſe diet into a finer, will ſometimes occaſion it; and ſometimes the ſuppreſſing a violent paſſion of anger, while eating. Tender conſtitutions are in general moſt ſubject to it.

CARDIALGIA, *prognoſtics in a*. This, in its ſimple ſtate and firſt ſtages, is no very terrible complaint; but its long continuance often brings on habitual faintings, and ſometimes there is danger of congeſtions of the blood, and inflammations. The ſymptomatic kind is more difficult of cure, as well as more violent than the idiopathic; for this often is but of ſhort duration, whereas the other frequently becomes habitual, and brings on convulſions, eſpecially in caſes where hot medicines have been given in it, with intent to ſtrengthen the tone of the ſtomach. There have alſo been inſtances where vomits given to hypochondriac perſons have brought on deliriums, and even abſolute madneſs.

CARDIALGIA, *method of curing the.* In the idiopathic *cardialgia*, the peccant matter is to be prepared and corrected by reſolvent, abſtergent, and inciding medicines, ſuch as the *tartarus tartariſatus*, and vitriolated tartar; after this the acrid aromatics are to be given, among which common pepper is one of the very beſt; with this may be given the acrid roots, as thoſe of pimpernel, arum, and the like; and with all theſe it will be very proper to drink at certain intervals wine made hot, and aromatiſed with the ſpices. Muſtard-ſeed is particularly recommended by ſome on this occaſion; and, in many caſes, the common abſorbents ſerve in the place of correctors, by rendering the matter ſoft and pulpy.

After a few days taking theſe things, if there be no contra-indication in the caſe, it will be very proper to give a vomit; to which purpoſe two or three grains of tartar emetic, with ſome of the tartariſed tartar, is a very proper medicine. Where there are worms in the caſe, after the bitter digeſtives have been given, ſuch things are to follow as will deſtroy thoſe animals, as *mercurius dulcis*, and the like; after theſe things, it will be very proper to give the *theriaca* every night in ſmall doſes, by way of anodyne; and after all this, the tone of the parts is to be ſtrengthened by chalybeates, with the common bitters.

In caſes of the ſymptomatic *cardialgia*, attended with fainting, the hot medicines preſcribed in the laſt caſe are wholly to be abſtained from; and in their place the temperating nitrous ones are to be taken, with a little cinnabar, and the digeſtive ſalts impregnated with a few drops of the eſſential oils of the ſpices. Medicines of this kind are always of ſingular ſervice in caſes of ſtraitneſs and conſtriction of the *præcordia*, and diſorders of a like kind, from whatever cauſe, and in either ſex. In the intermediate days during a courſe of theſe, the patient is to take ſome purgatives of the gentler kind, and afterwards the common chalybeates and bitters for reſtoring the tone of the parts; and, finally, the beſt of all preſervatives againſt a return of this complaint, are bleedings at the ſpring and autumnal ſeaſons. Junker Conſp. Med. p. 580, &c.

CARDINAL, a term ſerving to expreſs the relation, or quality, of prime, principal, or moſt conſiderable.

The word is formed of the Latin *cardo*, *a hinge*; it being on theſe fundamental points, that all the reſt of the ſame kind are ſuppoſed to turn.

Thus, juſtice, prudence, temperance, and fortitude, are called the four *cardinal virtues*, as being the baſis of all the reſt.

CARDINAL *flower*, in *Botany*, *Lobelia*, a genus of the *ſyngeneſia monogamia* claſs. Its characters are theſe: the empalement of the flower is cut into five linear ſegments, the two upper being larger than the other. The flower is of one petal, with a long cylindrical tube, a little curved; and is divided at the brim into five ſegments, two of which compoſe the upper lip, and are ſmaller than the three lower which compoſe the under. It hath five awl-ſhaped ſtamina, terminated by oblong ſummits, which coaleſce at the top in form of a cylinder, but open in five parts at their baſe; it has an acute germen, ſituated below the flower, ſupporting a cylindrical ſtyle, crowned by a hairy obtuſe ſtigma. The germen afterward becomes an oval capſule, opening at the top, filled with ſmall ſeeds.

This genus is the *rapuntium* of Tournefort.

CARDINAL *Points*, in *Coſmography*, are the four interſections of the horizon with the meridian, and the prime vertical circle. See POINT.

Of theſe, two, viz. the interſections of the horizon and meridian, are called *North* and *South*, with regard to the poles they are directed to.

To determine the places of theſe points, ſee MERIDIAN *line*.

The other two, viz. the interſections of the horizon, and firſt vertical, are called *Eaſt* and *Weſt*.

The *cardinal points*, therefore, coincide with the four *cardinal* regions of the heavens; and are 90° diſtant from each other. The intermediate points are called COLLATERAL POINTS.

CARDINAL *Points of the Heavens*, or, *of a Nativity*, are the riſing, and ſetting of the ſun, the zenith, and nadir.

CARDINAL *Signs*, in *Aſtronomy*, are Aries, Libra, Cancer, and Capricorn. See SIGN.

CARDINAL *Winds*, are thoſe that blow from the *cardinal* points.

CARDINAL *Numbers*, in *Grammar*, are the numbers one, two, three, &c. which are indeclinable; in oppoſition to the ordinal numbers, firſt, ſecond, third, fourth, &c. See NUMBER.

CARDINAL, in *Zoology*, a name given in Louiſiana to a bird, from the ſhining red of its plumage and capuchin, &c. It keeps its neſt all winter, in which it ſtores up proviſion during the ſummer, to the quantity ſometimes of a Paris buſhel, which is artfully depoſited, and covered firſt with leaves, and then with ſmall branches, &c. See Melanges D'Hiſt. Natur. tom. iv. p. 283.

CARDINAL is more particularly uſed for an eccleſiaſtic prince, one who has a voice, both active and paſſive, in the Roman conclave, at the election of a pope.

Some ſay, the *cardinals* were ſo called from the Latin *incardinatio*, which ſignifies the adoption in any church made of a prieſt of a foreign church, driven thence by misfortune; and add, that the uſe of the word commenced at Rome and Ravenna; the revenues of the churches of which cities being very great, they became the common refuge of the unhappy prieſts of all other churches.

The *cardinals* compoſe the pope's council, or ſenate: in the Vatican is a conſtitution of pope John, which regulates the rights and titles of the *cardinals*; and which declares, that as the pope repreſents Moſes, ſo the *cardinals* repreſent the ſeventy elders, who, under the pontifical authority, decide private and particular differences.

Cardinals, in their firſt inſtitution, were only the principal prieſts, or incumbents of the pariſhes of Rome. In the primitive church, the chief prieſt of a pariſh, who immediately followed the biſhop, was called *preſbyter cardinalis*; to diſtinguiſh him from the other petty prieſts, who had no church, nor preferment: the term was firſt applied to them in the year 150; others ſay, under pope Silveſter, in the year 300. Theſe *cardinal* prieſts were alone allowed to baptize, and adminiſter the euchariſt. When the *cardinal* prieſts became biſhops, their cardinalate became vacant; they being then ſuppoſed to be raiſed to a higher dignity.—Under pope Gregory, *cardinal* prieſts, and *cardinal* deacons, were only ſuch prieſts or deacons, as had a church or chapel under their particular care: and this was the original uſe of the word. Leo IV. in the council of Rome, held in 853, calls them *preſbyteros ſui cardinis*; and their churches, *patrochias cardinales*.

The *cardinals* continued on this footing till the eleventh century: but as the grandeur and ſtate of his holineſs became then exceedingly augmented, he would have his council of *cardinals* make a better figure than the ancient prieſts had done. It is true, they ſtill preſerved their ancient title; bnt the thing expreſſed by it was no more. It was a good while, however, before they had the precedence over biſhops, or got the election of the pope into their hands: but when they were once poſſeſſed of thoſe privileges, they ſoon had the red hat and purple; and growing ſtill in authority, they became at length ſuperior to the biſhops, by the ſole quality of being *cardinals*.

Du-Cange obſerves, that originally there were three kinds of churches: the firſt or genuine churches were properly called *pariſhes*; the ſecond, *deaconries*, which were chapels joined to hoſpitals, and ſerved by deacons; the third were ſimple *oratories*, where private maſſes were ſaid, and were diſcharged by local and reſident chaplains. He adds, that to diſtinguiſh the principal, or pariſh churches from the chapels, and oratories, the name *cardinales* was given them. Accordingly, pariſh churches gave titles to *cardinal* prieſts; and ſome chapels alſo, at length, gave the title of *cardinal deacons*.

Others obſerve, that the term *cardinal* was given not only to prieſts, but alſo to biſhops and deacons who were attached to certain churches; to diſtinguiſh them from thoſe who only ſerved them *en paſſant*, and by commiſſion. Titular churches, or benefices, were a kind of pariſhes, i. e. churches aſſigned each to a *cardinal* prieſt; with ſome ſtated diſtrict depending on it, and a font for adminiſtering of baptiſm, in caſes where the biſhop himſelf could not adminiſter it.—Theſe *cardinals* were ſubordinate to the biſhops; and accordingly, in councils, particularly that held at Rome in 868, ſubſcribed after them.

It was not, however, only at Rome, that prieſts bore this name; for we find there were *cardinal* prieſts in France: thus, the curate of the pariſh of St. John de Vignes is called in old charters, the *cardinal* prieſt of that pariſh.

The title of *cardinal* is alſo given to ſome biſhops, *quatenus* biſhops; e. g. to thoſe of Mentz and Milan: the archbiſhop of Bourges is alſo, in ancient writings, called *cardinal*; and the church of Bourges a *cardinal* church. The abbot of Vendome calls himſelf *cardinalis natus*.

The *cardinals* are divided into three claſſes, or orders; containing ſix biſhops, fifty prieſts, and fourteen deacons; making in all, ſeventy: which conſtitute what they call the *ſacred college*. The *cardinal* biſhops, who are, as it were, the pope's vicars, bear the titles of the biſhopricks aſſigned to them; the reſt take ſuch titles as are given them: the number of *cardinal* biſhops has been fixed; but that of *cardinal* prieſts and deacons, and conſequently the ſacred college itſelf, is always fluctuating. Till the year 1125, the college only conſiſted of fifty-two, or fifty-three: the council of Conſtance reduced them to twenty-four; but Sixtus IV. without any regard to that reſtriction, raiſed them again to fifty-three, and Leo to ſixty-five. Thus, as the number of *cardinal* prieſts was anciently fixed to twenty-eight, new titles were to be eſtabliſhed, in proportion as new *cardinals* were created.—As for the *cardinal* deacons, they were originally no more than ſeven, for the fourteen quarters of Rome; but they were afterwards increaſed to nineteen, and after that were again diminiſhed.

According to Onuphrius, it was pope Pius IV. who firſt enacted, in 1562, that the pope ſhould be choſen only by the ſenate of *cardinals:* whereas, till that time, the election was by all the clergy of Rome. Some ſay, the election of the pope reſted in the *cardinals*, excluſive of the clergy, in the time of Alexander III. in 1160. Others go higher ſtill, and ſay, that Nicholas II. having been elected at Sienna, in 1058, by the *cardinals* alone, occaſioned the right of election to be taken from the clergy, and people of Rome; only leaving them that of confirming him by their conſent; which was at length, however, taken from them. See his decree for this purpoſe, iſſued in the Roman council of 1059, in Hardouin's Acta Conciliorum, tom. vi. pt. i. p. 1165. Whence it appears, that the *cardinals* who had the right of ſuffrage in the election of his ſucceſſors, were divided by this pontiff into *cardinal biſhops* and *cardinal clerks:* meaning by the former the ſeven biſhops who belonged to the city and territory of Rome; and by the latter, the *cardinal preſbyters* or miniſters of the twenty-eight Roman pariſhes, or principal churches. To theſe were added, in proceſs of time, under Alexander III. and other pontiffs, new members, in order to appeaſe the tumults occaſioned by the edict of Nicholas II.

The *cardinals* began to wear the red hat at the council of Lyons, in 1243. See Conclave. The decree of pope Urban VIII. whereby it is appointed, that the *cardinals* be addreſſed under the title of *eminence*, is of the year 1630; till then, they were called *illuſtriſſimi*.

See further concerning the origin and rights of *cardinals* in Onuphrius, Duarenus, Ciaconus.

Aubery has given the General Hiſtory of *Cardinals*, in five volumes, 4to.

Cardinal has alſo been applied to ſecular officers.

Thus, the prime miniſters in the court of the emperor Theodoſius, are called *cardinales*. Caſſiodorus, lib. vii. Formul. 31. makes mention of the *cardinal* prince of the city of Rome; and in the liſt of officers of the duke of Bretagne, in 1447, we meet with one Raoul de Thorel, *cardinal* of Quillart, chancellor, and ſervant of the viſcount de Rohan: which ſhews it to have been an inferior quality.

CARDINALITIUS, in *Zoology*, a name given by ſome to the *coccothrauſtes Indica criſtata*, commonly called the Virginian NIGHTINGALE.

CARDING, in the *Manufactories*, a preparation of wool, cotton, hair, or flax, by paſſing it between the iron points, or teeth, of two inſtruments, called *cards*, to comb, diſentangle, and range the hairs or fibres thereof; and to diſpoſe it for ſpinning, &c.

Before the wool be *carded*, it is oiled, or greaſed with oil; whereof, one fourth of the weight of the wool is required, for wool deſtined for the woof of ſtuffs; and one eighth for that of the warp. See Cloth.

CARDIOGMUS, is ſometimes uſed for CARDIALGIA.

Cardiogmus, in a more reſtrained ſenſe, denotes a peculiar ſpecies of CARDIALGIA, attended with an anxiety of the *præcordia*, and a painful heavineſs, cauſed by a flatulent diſtention of the abdomen and ſtomach, which compreſſes the *diaphragm*.

CARDIOIDE, in *Geometry*, is thus formed; let the diameter AB (*Tab. Analyſis, fig.* 38.) of the circle AMBA, revolve about the point A, and on AB produced let B*a*, MN, AD, MN, &c. be always equal to AB; then will the point *a* deſcribe a curve, which from its figure reſembling a heart, is called *cardioide*.

From the conſtruction it appears, that $AN = BA + AM$, and that NMAN is always double of the diameter AB, and is biſected by the circle in M.

This curve is algebraical; if $AB = a$, $aE = x$, $EN = y$, its equation will be,

$$\begin{aligned} y^4 - 6ay^3 + 12x^2y^2 - 6ax^2y + x^4 \\ + 12a^2y^2 - 8a^3y + 3a^2x^2 = 0 \end{aligned}$$

For the method of drawing tangents, and other properties of this curve, ſee Phil. Tranſ. N° 461. ſect. 8. See alſo Mem. Acad. Scienc. 1705, where M. Carré firſt propoſed this curve.

CARDIOSPERMUM, in *Botany*, the name by which Linnæus calls that genus of plants named CORINDUM by Tournefort and other authors. See *Heart*-Pea.

CARDISCE, in *Natural Hiſtory*, the name of a ſtone mentioned by the old authors, and called alſo *encardia*. Pliny tells us, there were three kinds of it; the one black, in which there was the plain figure of a heart delineated in white; another green in that part where the heart was figured; and the third white all over, except that the heart is marked in black. We know of no ſuch ſtones as theſe at preſent, unleſs they are to be ſought for among the agates, the various and accidental courſe of the veins in which, repreſent ſometimes a thouſand ſingular figures, among which imagination may eaſily trace hearts, eyes, and the like. Our modern writers underſtand by this name a very different ſtone, more uſually called BUCARDITES, from its reſembling the heart of an ox.

Plott deſcribes a ſtone of this kind, found near Stoken Church, ſo exactly like the heart of a man, that the very trunks of the deſcending and aſcending parts of the *vena cava*, with a part of the *aorta*, were repreſented in it, in their due poſition. Nat. Hiſt. Oxf. chap. v. § 154.

CARDIUM, in *Zoology*, a genus of worms in the Linnæan ſyſtem, belonging to the order of *teſtacea*.

CARDO, in *Anatomy*, the ſecond *vertebra* of the neck; ſo called, becauſe the head turns upon it.

CARDONIUM, among *Ancient Phyſicians*, denotes wine medicated with herbs.

It is made by pouring muſt, or new wine on the herbs.

CARDOON, a ſpecies of wild ARTICHOKE.

CARDOPATIUM, in *Botany*, a name applied by ſome authors to the *carline-thiſtle*.

CARDS.—*Playing* Cards, are little pieces of fine thin paſte-board, whereon are printed divers points and figures; a certain number, or aſſemblage of which, ſerve for the performance of divers games: as baſſet, ombre, picquet, whiſt, &c. A full pack conſiſts of fifty-two *cards*.

A pack is always wrapped up in a piece of paper, on which are printed the name, ſign, dwelling-place, &c. of the maker; with the label of the ſtamp-office of England, ſignifying that the ſtamp-duty has been paid, and that there is a penalty of 10*l*. for every pack ſold unlabelled.

Among ſharpers, divers ſorts of falſe or fraudulent *cards* have been contrived; as marked *cards*, breef *cards*, corner-bend, middle-bend, &c.

Cards, *marked*, are thoſe where the aces, kings, queens, and knaves, are marked on the corners of the backs with ſpots of different number and order, either with clear water, or water tinged with pale Indian ink, that thoſe in the ſecret may diſtinguiſh them. Aces are marked with ſingle ſpots on two corners oppoſite diagonally; kings with two ſpots at the ſame corners; knaves with the ſame number tranſverſed, &c.

Cards, *breef*, are thoſe which are either longer or broader than the reſt; chiefly uſed at whiſt and picquet.

The broad *cards* are uſually for kings, queens, knaves, and aces; the long for the reſt. Their deſign is to direct the cutting, to enable him in the ſecret to cut the *cards* diſadvantageouſly to his adverſary, and draw the perſon unacquainted with the fraud, to cut them favourably for the ſharper. As the pack is placed either endways or ſideways to him that is to cut, the long or broad *cards* naturally lead him to cut to them. Breef *cards* are ſometimes made thus by the manufacturer; but in defect of theſe, ſharpers pare all but the breefs with a razor or pen-knife.

Corner-bend, denotes four *cards* turned down finely at one corner, to ſerve as a ſignal to cut by.

Middle-bend, or *Kingſton-bridge*, is where the tricks are bent two different ways, which cauſes an opening or arch in the middle, to direct likewiſe the cutting.

The inventor of *cards* is not known, nor even the age when they firſt appeared; but by the matter they were always made of, viz. leaves of paper, they ſhould ſeem to be much poſterior to the time of Charlemagne. They were probably invented about the year 1390, to divert Charles VI. then king of France, who was fallen into a melancholy diſpoſition. By the four ſuits or colours, the inventor might deſign to repreſent the four ſtates or claſſes of men in the kingdom. The *cœurs* or hearts denote the *gens de chœur*, choir-men or eccleſiaſtics. The nobility or prime military part of the kingdom, are repreſented by the ends or points of lances or pikes, which, through ignorance of the meaning of the figure, we have called ſpades. By diamonds are deſigned the order of citizens, merchants, and tradeſmen. The trefoil leaf, or clover glaſs, corruptly called clubs, alludes to the huſbandmen and peaſants. The four kings are David, Alexander, Cæſar, and Charles; repreſenting the four celebrated monarchies of the Jews, Greeks, Romans, and Franks under Charlemagne. The queens repreſent Argine (for Regina, queen by deſcent), Eſther, Judith, and Pallas; which are typical of birth, piety, fortitude, and wiſdom. The knaves denoted the ſervants to the knights: others apprehend that the knights themſelves were denoted by theſe *cards*, becauſe Hogier and Lahire, two names on the French *cards*, were famous knights at the time when they were ſuppoſed to be invented.

The method of making playing *cards* ſeems to have given the firſt hint to the invention of printing; as appears from the firſt ſpecimens of printing at Haerlem, and thoſe in the Bodleian library.

Cards, *making of.* The cutting of the moulds, or blocks, for theſe *cards*, is preciſely the ſame as that uſed for the firſt books; and a ſheet of wet or moiſt paper is laid on the form or block, which is firſt lightly bruſhed over with an ink, made of lamp-black mixed with ſtarch and water; and then rubbed off with a round liſt, in the hand. The court-*cards* they colour by help of ſeveral patterns, called *ſtaneſiles*; conſiſting of papers cut through with a pen-knife; within the apertures, or inciſions of which, the ſeveral colours, as red, &c. are ſeverally applied (for at the firſt printing, the *card* has only a mere outline). Theſe patterns are painted with oil colours, to keep them from wearing out by the bruſhes: being laid on the paſte-board, they ſlide a bruſh full of colour looſe over the pattern; which, leaving the colour within the apertures, forms the face or figure of the *card*.

This, very probably, was the way of the firſt printing at Haerlem; as might have been diſcovered long ago, if it had been conſidered, that the great letters in our old manuſcripts of nine hundred years ago, are apparently done by the illuminers, after this method of *card-making*.

Cards and dice may, upon ſufficient ſecurity, be exported without paying the ſtamp-duty. 10 Ann. c. 19. § 170. 5 Geo. I. c. 19. § ult.

Playing *cards* may not be imported. 10 Ann. c. 19. § 165. See Stamps.

Cards, in *Manufacture.* See Card.

CARDUELIS, in *Zoology*, the name of a very well known bird, called in Engliſh the GOLD-*finch*, and by the old naturaliſts the *chryſomitres* and *acanthis*; the firſt from its yellow head, and the laſt from its feeding among thiſtles.

CARDUS, in *Botany*, a name given by the Romans to the plants called *cactos* by the Greeks. Theſe words were ſometimes uſed by both as the general names of the thiſtle kind, and in that ſenſe the word *cardus* and *carduus* are the ſame; but ſome of the Roman authors have uſed this as the Greeks did *cactos*, in a more limited ſenſe, expreſſing by it only the artichoke. This they knew both in its wild ſtate, and in its garden ſtate; the wild plant was very prickly, and the garden one much larger in all its parts, and ſmooth.

Columella is almoſt the only author among the ancients who ſeems to make the *cactos* and *cinara* different plants; but his diſtinction turning only upon the one being prickly, the other not, it comes to no more than that *cactus* was the name of the plant in its wild ſtate, and *cinara* in its garden ſtate.

CARDUUS, in *Natural Hiſtory* and *Botany*, a name common to divers ſpecies of plants, in Engliſh called THISTLES.

Carduus *Benedictus.* See *Bleſſed* Thistle.

Carduus *Fullonum*, or *Fuller's weed.* See Teazel.

CAREENING, a term, in the *Sea-Language*, uſed for the laying a veſſel on one ſide, to caulk, ſtop up leaks, and refit or trim the other ſide.

The word comes from *cariner*, which ſignifies the ſame, formed of the Latin *carina*, *the keel of a ſhip*.

A ſhip is ſaid to be brought to a *careen*, when the greateſt part of her lading, &c. being taken out, and a pontoon, or another veſſel lower than herſelf, laid by her ſide, ſhe is haled down to it as low as occaſion requires, and there kept, by the weight of ballaſt, ordnance, &c. as well as by ropes, leſt it ſhould ſtrain her maſts too much. This is done with deſign to trim her ſides, or bottom, to caulk her ſeams, or to mend any fault ſhe has under water. Hence, when a ſhip lies on one ſide in ſailing, ſhe is ſaid to *ſail on the careen*.

Ships of war are generally *careened* every three years.

The *half careen* is when they can only *careen* half the ſhip; not being able to reach ſo low as the bottom of the keel.

CAREER, or Carier, in the *Manege*, a place incloſed with a barrier, wherein they run the ring.

The word is alſo uſed for the race, or courſe of the horſe itſelf, provided it does not exceed two hundred paces.

In the ancient circus, the *career* was the ſpace which the bigæ, or quadrigæ, were to run at full ſpeed, to gain the prize. See Circus.

Career, in *Falconry*, is a flight or tour of the bird, about one hundred and twenty yards. If it mounts more, it is called a *double career*; if leſs, a *ſemi career*.

CARELIA, in *Botany*, a name given by ſome to the *baſtard-hemp* AGRIMONY, OR AGERATUM.

CAREOPULI, in *Botany*, a name given by ſome authors to the tree which affords us the gamboge, the *gutta gamba*, and *gambogium* of the ſhops.

CARET, in *Grammar*, a character in this form (ʌ) denoting that there is ſomething inſerted, or interlined, which ſhould regularly have come in where the character is placed.

CARETTA, in *Zoology*. See Tortoise.

CARETTI, in *Botany*, a name by which many authors have called the *acacia glorioſa*, or the tree which produces the marſao, or bezoar-nuts.

CAREX, in *Botany*, a word uſed by Linnæus as the name of a genus of plants, of the *monoecia triandria* claſs; comprehending thoſe called *cyperoides* by Tournefort and others, and the *ſcirpoides* of other authors. The characters of the genus are theſe: it produces male and female flowers, in moſt ſpecies, on the ſame plant; the male flowers are digeſted into a long ſpike; the cup is an oblong and imbricated amentum, conſiſting of acute, hollow, and lanceolated ſcales, each containing one flower; there is no corolla; the ſtamina are three erect, ſetaceous filaments, of the length of the cup; the antheræ are oblong, and not pendulous, but erect.

In the female flowers the cup is the ſame as in the male; there are no petals, but there is an inflated oblong nectarium; the germen is three-ſquare, and is placed within the nectarium; the ſtyle is very ſhort; the ſtigmata are ſometimes three, ſometimes but two; they are long, crooked, pointed, and hoary. The nectarium grows larger when the flower is fallen, and contains the ſeed in it; the ſeed is ſingle, of an acute, and ſomewhat oval form, three-cornered, and has one of its angles uſually much ſmaller than the others. The *ſcirpoides* of authors uſually have the male and female flowers on the ſame plant.

CARGADORS, a name given by the Dutch to a kind of brokers who make it their ſole buſineſs to find freight for ſhips which want loading, and veſſels for merchants or paſſengers who want conveyance to ſuch or ſuch a place.

CARGO, the lading or FREIGHT of a ſhip.

Cargo, *ſortable*, is that which contains ſomething of every ſort neceſſary to furniſh the tradeſmen of the place it is ſent to, with parcels fit to fill their ſhops, and invite their cuſtomers.

Officers and ſailors on board a veſſel are allowed to carry a ſmall *cargo* or *pacotille*, not exceeding a certain bulk or weight, for their own account, without paying any freight.

Cargo is ſometimes alſo uſed for an INVOICE of the goods wherewith a ſhip is laden.

Cargo alſo denotes a weight uſed in Spain and Turky, amounting to about three hundred Engliſh pounds.

CARIA, in *Natural Hiſtory*, a name given by authors to a very miſchievous ſpecies of ant, common in ſome parts of the Eaſt Indies. This creature is larger than our ant, and is the common food of a great many other animals, as the ſquirrels, ſerpents, lizards, and a great many birds. In order to defend itſelf from ſo many enemies, it enters into large communities, which together erect great hills of earth, of five or ſix feet high. The fields in ſome places are full of theſe, and it is in vain to attempt beating them down, ſince they would be immediately made up again; the creature builds them with firm and tough clay, which it wets as it uſes it; and the walls or outer caſe is built ſo thick and firm, that ſcarce any rain can hurt them.

There is another ſpecies of the *caria* much ſmaller than this, which builds in the peoples houſes, not in the fields. In the center of the habitation of this creature there is uſually found a ſort of comb, or collection of cells, reſembling a honey-comb. Obſervations ſur l'Aſie, p. 380.

CARIAMA, in *Zoology*, the name of a Braſilian bird of the ſize of the heron, and, like that bird, frequenting watery places. It makes a loud noiſe like the turkey, and is a very valuable and well-taſted fowl. Marcgrave's Hiſt. of Braſil.

CARIATIDES, or Cariates, in *Architecture*. See Caryatides.

CARIBOU, in *Zoology*, an American animal of the ſtag kind.

CARICA, in *Botany*. See Papaw.

Carica, among *Ancient Naturaliſts*, denotes a kind of fig peculiar to Syria; ſometimes alſo the dried fig. It is alſo uſed in ancient writers to denote the fruit of the palm-tree, otherwiſe called *cariata*, which was ſent annually by clients, on New Year's day, as a preſent or acknowlegement to their patrons.

CARICATURA, in *Painting*, a loading, or exaggerating of the defects of an object repreſented, with a concealment of the beauties or advantages of it; yet ſo as ſtill to preſerve a reſemblance. Vid. Spectat. Nº 537.

The word is Italian, formed of *carica*, a *load*, *burden*, or the like.

CARICOUS, or CARYCOUS *tumour*, a ſwelling reſembling the figure of a fig; ſuch as are frequently found in the piles.

The word comes from *carica*, a kind of fig; which is from *Caria*, a country where they are frequent, and from whence they are ſometimes brought.

Quincy repreſents the *caricous* tumor as the ſame with what Hippocrates called *carycoides*, which ſeems to be a miſtake; καρυκοειδες, in Hippocrates, denoting an excrement of a bloody colour, reſembling a kind of condiment or confection, anciently called *caryca*, made of blood, and invented by the Lydians.

CARICUM, in *Pharmacy*, a catharectic medicine, which deterges ſordid ulcers, and eats away proud fleſh. Hippocr. de Ulceribus. It is prepared of black hellebore, ſandarach, *ſquama æris*, waſhed lead, ſulphur, orpiment, and cantharides: theſe being mixed, are made up with oil of cedar into a liquid medicine. Sometimes there is added arum, in decoction or juice, or the powder of it mixed with honey. The dry medicine, or powder, for the ſame purpoſe, is prepared of the ſame ingredients, omitting the oil of cedar, and the honey: it is alſo made of black hellebore and ſandarach only.

CARIES, in *Medicine*, a ſolution of continuity in a bone, attended with a waſte of its ſubſtance, occaſioned by ſome acrimonious matter corroding it.

The *caries* is a kind of rottenneſs, or putrefaction, peculiar to the hard, or bony parts of the body; anſwering to a gangrene or mortification in the ſoft, or fleſhy part; or, according to others, to an abſceſs, or ulcer.

Caries ariſe either from a conſtant afflux of vicious humours, or from their extreme acrimony; or from a bruiſe, compound fracture, luxation, ulcer, venereal diſorder, corroſive medicines, or from their being ſtripped or laid bare of their fleſh, and long expoſed to the air, &c. This diſorder, if not quickly remedied, ſpreads and communicates itſelf to the neighbouring parts of the bone, and makes the ſame progreſs that ulcers do in the ſofter parts.

There are ſeveral ſpecies of *caries* in the bones. The learned Mr. Monro mentions ſeven which he has ſeen. Theſe he diſtinguiſhes by the appellations of, 1. The dry or gangrenous *caries*. 2. The worm-eaten *caries*, or ulcer of the bones. 3. The carnous *caries*, or ulcer of the bones with hyperſarcoſis. 4. The phagedenic *caries*, with hyperſarcoſis. 5. The ſcrophulous *caries*. 6. The ſchirro-cancrous *caries*. 7. The ſpreading cancrous *caries*.

He enters into a curious detail of the ſeveral natures of theſe kinds of *caries*, and of the topical management. A ſpeedy and ſafe ſeparation of all the corrupted part is the principal indication to be purſued. See Medic. Eſſ. Edinb. vol. v. art. 24. Abridg. vol. ii. p. 150, ſeq. where he ſhews the analogy between theſe diſeaſes of the bones to thoſe of other parts of the body. This is not ſurpriſing, ſince bones have the ſame general texture, and are only diſtinguiſhed from other parts by a greater ſolidity or firmneſs.

A *caries* differs from a SPINA *ventoſa*, in that the latter begins within the ſubſtance of the bone, and proceeds outward; whereas the former begins on the ſurface, and proceeds inward.

Caries are divided into *idiopathic* and *ſymptomatic*.

CARIES, *idiopathic*, or *ſimple*, is an eroſion of a bone, happening without any other diſeaſe, commonly owing to ſome external cauſe, rarely to an internal one, as the afflux of humours.

CARIES, *ſymptomatic*, that which ofteneſt happens to perſons deeply affected with ſome other diſorder, eſpecially the ſcurvy, or venereal diſeaſe.

Caries may alſo be divided in reſpect of their degree.

Thoſe in the firſt degree diſcover a yellow fattineſs on the ſurface of the bone; in the ſecond a blackneſs; in the third a roughneſs, and inequality of the bone, cauſed by a multitude of foramina or little holes; in the fourth the corruption penetrates deeper through the whole ſubſtance, which it ſeems as it were to diſſolve.

A *caries* is properly a diſorder, in which the bone, from whatever cauſe, is deprived of its perioſteum, and having loſt its natural heat and colour, becomes fatty, yellow, brown, and at length black; this is the firſt and lighteſt degree of the diſorder, and is what, according to Celſus, the ancients called *os vitiatum*, and the *nigrities oſſium*. But the greater degree of this diſorder is where the bone is eroded and eaten, and becomes uneven by reaſon of the number of ſmall holes, of which it is full, when it diſcharges a filthy ſanies, whoſe acrimony ſoftens, relaxes, and deſtroys the fleſhy parts that grow round it. This is a true *caries*, or ulcer of the bone, and every bone in the body is ſubject to this diſorder; and though this ulcer may appear to be ever ſo ſafely or happily healed, yet it too often happens that after the cicatrix is formed, and has been ſo for ſome time, a new abſceſs will be made, the whole diſorder will return afreſh, and the acrimonious and corrupted matter, which continually ouſes out from the carious bone, being collected within, will produce many very grievous ſymptoms, and deſtroy the neighbouring fleſh again: but the worſt of all *caries*, and that in which the caſe may indeed be almoſt pronounced deſperate, is that which falls upon the joints, or thoſe parts of the bones that lie very deep, becauſe in this caſe there is no acceſs for the hands to clean the bone, and there is no remedy but amputation of the limb.

Many methods have been attempted for the cure of a *caries*; the firſt and mildeſt is applied to the ſlighteſt degree of the diſeaſe, and is performed by the application of ſpirituous remedies, ſuch as ſpirit of wine, Hungary-water; or, by ſlight balſamics, ſuch as the powder of birthwort, florentine, iris, myrrh, or aloes. Either of theſe powders is to be ſprinkled on the part, after the ſanies has been carefully wiped away with dry lint, and this continued till the cure is perfected. In a *caries* that penetrates ſomewhat deeper, ſtronger remedies take place, ſuch as powder of euphorbium, or its eſſence, made in well rectified ſpirit of wine; or oil of cloves, cinnamon, or guaiacum; either of theſe may be touched on with a pencil, or laid upon dry lint, and applied: ſome alſo uſe the corroſive medicines, the phagadenic water, and ſpirit of vitriol, or of ſulphur; and, in the place of theſe, a ſolution of quickſilver in *aqua fortis* may be uſed with great ſucceſs. When, by theſe means, an exfoliation of the bone has been produced, the buſineſs is then to treat it with balſamics.

A ſecond method of cure for a greater degree of *caries*, is perforating the bone with the trepan, and dreſſing the part afterwards either with balſamics, or with dry lint. By theſe means the exfoliation of the bone is forwarded, and new veſſels puſh themſelves through the *foraminula*, which, joining with the neighbouring fleſh, make a new covering for the bone.

The third method of cure is performed by the raſpatory, or chiſſel, taking off the corrupted or vitiated part of the bone, till all beneath appears white or ruddy, and ſound; and the fourth, which is the moſt ancient, and the moſt ſpeedy, and certain method, is by the actual cautery, burning down the vitiated part of the bone. This method, however, is not neceſſary, except in great degrees of this diſorder; and in performing it great care muſt be taken not to injure the neighbouring ſoft parts: for this reaſon, an aſſiſtant ſhould always draw back the lips of the wound both ways, while this is performed; and if the opening be not wide enough, it ſhould be opened and enlarged by ſpunge tents before, or widened by the knife, till the bone lies fair, and the part muſt be carefully wiped firſt with dry lint, from the ſanies; and if there be any fungous fleſh, that muſt alſo firſt be removed. One application of the cautery, when the diſorder is conſiderable, will ſeldom prove ſufficient; it uſually requires to be repeated ſeveral times, at proper intervals; and if the *caries* be of ſuch extent that one cautery will not cover it all over, the firſt muſt be applied to the middle, and the ſucceeding towards its edges. This operation is not attended with any great pain, if care be taken not to injure the adjacent ſoft parts; for the bones are, in themſelves, free from any ſenſe of pain. Where the cranium is the ſeat of this diſorder, the cautery is attended with great hazard, as it is alſo in a *caries* of the ribs, or ſternum, from the neighbourhood of parts of the utmoſt conſequence to life. The carpus and tarſus alſo will very badly admit of cauterizing, becauſe of the neighbourhood of the tendons and ligaments, which it is ſcarce poſſible to avoid injuring in the operation. After cauterizing, the part is to be dreſſed with dry lint only, or if the patient complains of great heat in the part, the lint may be dipped in ſpirit of wine before it is applied; afterwards balſamics are to be applied, till the part exfoliates; and then, if the cure be perfect, the vacuity will ſoon be filled with new ſound fleſh. But if the bone remains bare, or the fleſh it is covered with be ſoft and ſpungy, and does not adhere ſufficiently to the ſubjacent bone, or where the bone remains diſcoloured; in either of theſe caſes the cure will not be complete, but the diſorder will break out again, unleſs prevented. In theſe caſes, therefore, the work muſt be all done over again, the ſpungy fleſh removed, and the actual cautery again applied, before the cure is finiſhed. Heiſter.

Anatomiſts, in diſſecting of bodies, frequently find *carious* bones; particularly thoſe of the jaws, legs, &c. where nothing of that kind was ſuſpected during the perſon's life-time, nor any diſorder felt therefrom. Mr. Cheſelden conjectures, that the cure of a *carious* bone might be directly attempted, without waiting, as our ſurgeons uſually do, for an exfoliation.

CARIGOI, or **Carigueya**, in *Zoology*, the name by which ſome authors have deſcribed a very remarkable American animal, more uſually known by the name of the OPOSSUM.

CARILLONS, a ſpecies of CHIMES frequent in the Low Countries, particularly at Ghent and Antwerp, and played on a number of bells in a belfrey, forming a complete ſeries or ſcale of tones and ſemitones, like thoſe on the harpſichord and organ. There are petals communicating with the great bells, upon which the *carilloneur* with his feet plays the baſe to ſprightly airs, performed with the two hands upon the upper ſpecies of keys. Theſe keys are projecting ſticks, wide enough aſunder to be ſtruck with violence and velocity by either of the hands edgeways, without the danger of hitting the neighbouring key. The player is provided with a thick leather covering for the little finger of each hand, to guard againſt the violence of the ſtroke. Theſe *carillons* are heard through a large town. Burney.

CARIMPANA, in *Botany*, the name of an Indian palm-tree, deſcribed in the *Hortus Malabaricus*, the leaves of which, when full grown, are thirty feet long, and nine feet broad, or more, if carefully extended.

CARINA, a Latin term, properly ſignifying the KEEL of a ſhip; or that long piece of timber running along the bottom of the ſhip, from head to ſtern; upon which the whole ſtructure is built, or framed.

Carina is alſo frequently uſed for the whole capacity or bulk of a ſhip; containing the hull, or all the ſpace below the deck.

Hence the word is alſo ſometimes uſed, by a figure, for the whole ſhip.

Carina is alſo uſed in the ancient architecture.—The Romans gave the name *carina* to all buildings in form of a ſhip, as we ſtill give the name *nave* to the middle or principal vault of our Gothic churches; becauſe it has that figure.

Carina, among *Anatomiſts*, is uſed to denote the *ſpina dorſi*. As likewiſe for the fibrous rudiments, or embryo of a chick, appearing in an incubated egg.

The *carina* conſiſts of the entire *vertebræ*, as they appear after ten or twelve days incubation.

It is thus called, becauſe crooked, in form of the keel of a ſhip. Botaniſts alſo, for the like reaſon, uſe the word *carina*, to expreſs the lower petalum of a PAPILIONACEOUS flower.

Carina is alſo uſed, by ſome *Chemiſts*, for the twentieth part of a drop.

Carinæ were alſo weepers; or women hired, among the ancient Romans, to weep at FUNERALS: they were thus called from *Caria*, the country whence moſt of them came.

CARINATED *leaf*, in *Botany*, expreſſes a leaf whoſe back reſembles the keel of a ſhip.

CARIOUS, the ſtate of a bone putrified or rotten. See Caries.

Horchius gives the hiſtory of a *tophus*, taken out of a *carious* bone. Ephem. Acad. N. C. Dec. 2. ann. 10. Obſ. 167. p. 177.

CARIPI, a kind of cavalry in the Turkiſh army. The *caripi*, to the number of about 1000, are not ſlaves, nor bred up in ſeraglios or ſeminaries, like the reſt; but are generally Moors, or renegado Chriſtians, who having followed adventures, and being poor, and having their fortune to ſeek, by their dexterity and courage have arrived at the rank of horſe-guards to the grand ſignior. They march with the Ulufagi on the left hand, behind him: their pay is twelve aſpers *per* day.

The word *carapi* ſignifies *poor*, and *ſtranger*; an appellation ſaid by Chalcondylas to have been given them, becauſe chiefly brought out of Egypt, Africa, &c.

CARISSIMI, in *Antiquity*, a quality, or appellation, given by the emperors to preſidents, governors of provinces and others.

CARISTIA. See Charistia.

CARITAS.—The *poculum caritatis*, or grace-cup, was an extraordinary allowance of wine, or other liquors, wherein the religious, at feſtivals, drank in commemoration of their founder and benefactors.

CARK, or **Carke**, a certain quantity, or meaſure, of wool, equal to a thirtieth part of a SARPLAR.

CARL. See Churle.

CARLIN, **Carline**, or **Caroline**, a ſmall ſilver coin, current in Naples and Sicily, equivalent to about four pence Engliſh.

CARLINA, or **Carolina**, a plant of the THISTLE-kind, ſaid to have been diſcovered by an angel to Charlemagne, to cure his army of the plague; whence its denomination.

CARLINÆ *radix*, in the *Materia Medica*, the name of a root kept in the ſhops in ſome places, and diſtinguiſhed into two kinds, the white and the black; the white is the root of the common *carline-thiſtle*, which produces no ſtalk, the other of the *carlina cauleſcens*, called the black chamelion thiſtle.

The white *carline* root is of the thickneſs of one's thumb, and is often two feet long; it is brown on the outſide, and white within, and ſhould be choſen plump, firm, and well dried. It is accounted a very efficacious medicine in peſtilential diſeaſes.

The black is a ſmaller and ſhorter root than the white, and is much leſs eſteemed in medicine. The plant which produces the white grows very frequent with us on hilly places, and is a very ſingular plant, producing a number of fine long prickly and jagged leaves, and, in the center of them, a large purple flower, of the thiſtle kind, but growing cloſe to the ground; the other is very frequent in France, but is not met with in England.

Carline is eſteemed a very powerful ſudorific and alexipharmic. Schroder tells us alſo, that it is good againſt worms, and in dropſies; and that it is a powerful emmenagogue and diuretic.

CARLINES, or **Carlings**, in a ſhip, two pieces of timber lying fore and aft, along from one beam to another, directly over the keel; ſerving as a foundation for the whole body of the ſhip. On theſe the ledges reſt, whereon the planks of the deck, and other matters of carpentry, are made faſt. The *carlines* have their ends let into the beams called *culver-tail-wiſe.*—See *Tab. Ship. fig.* 2. *n.* 29. 37. 60. and 92.

Carline-*knees* are timbers going athwart the ſhip, from the ſides to the hatch-way, ſerving to ſuſtain the deck on both ſides.

CARLOCK, or **Charlock**, in *Botany*, a ſpecies of the Radish.

Carlock, a ſort of fiſh-glue, or iſinglaſs, imported from Archangel. It is made with the ſturgeon's bladder; and is uſed for clarifying wine, as alſo in dying. The beſt comes from Aſtracan, a city in Muſcovy, at the mouth of the river Wolga, where they catch great quantities of ſturgeon.

Carlostadians. See Carolostadians.

CARLSBAD *Water*, ſo called from a ſmall town of that name on the confines of Bohemia, remarkable for its warm mineral ſprings, of which there is an account in Phil. Tranſ. vol. l. part i. Nº 4. anno 1757. See WATER *mineral*.

CARMEL, *Knights of Mount*, are a military order of knights Hoſpitallers, inſtituted in 1607, by Henry IV. of France, under the title, habit, and rule of *our Lady of mount Carmel*, and in conſequence of a bull of pope Paul V. in 1608, united to the order of St. Lazarus of Jeruſalem, with all its commandaries, priories, and other goods for its endowment.

The founder propoſed it to conſiſt of one hundred French gentlemen, who ſhould be obliged, in times of war, to march cloſe to the kings of France, as their guard.

Authors are much divided, whether to call this a new inſtitution, or a reſtoration of that of St. Lazarus; though it is generally accounted a new inſtitution. See LAZARUS.

CARMELITES, or *White Fryars*, an order of religious, making one of the four tribes of mendicants, or begging fryars; and taking both the name and origin from *Carmel*, a mountain of Syria, formerly inhabited by the prophets Elias and Eliſha, and by the children of the prophets; from whom this order pretend to deſcend in an uninterrupted ſucceſſion.

The manner in which they make out their antiquity has ſomething in it too ridiculous to be rehearſed. Some among them pretend they are deſcendants of J. C. Others go further, and make Pythagoras a *Carmelite*, and the ancient Druids regular branches of their order.

Phocas, a Greek monk, ſpeaks the moſt reaſonably; he ſays, that in his time, viz. in 1185, Elias's cave was ſtill extant on the mountain; near which were the remains of a building, which intimated there had been anciently a monaſtery; that ſome years before, an old monk, a prieſt of Calabria, whoſe name was Berthold, by revelation, as he pretended, from the prophet Elias, fixed there, and aſſembled ten brothers. In 1209, Albert, patriarch of Jeruſalem, gave the ſolitaries a rigid rule; which Papebroch has ſince printed. In 1217, or, according to others, 1226, pope Honorius III. approved and confirmed it; though it was afterwards mitigated, by Innocent IV. S. Louis brought ſome of theſe *Carmelites* with him from the Holy Land into France. Many of the popes give them the title of *Brothers of the bleſſed Virgin.*

The *Carmelites* came into England in the year 1240, and erected a great number of monaſteries. Their firſt houſes were at Alnwick in Northumberland, and Ailesford in

Kent. In England and Wales they had about forty houſes. This order is eminent for the devotion of the ſcapulary, for its miſſions, and for the great number of ſaints with which it has ſtocked the Romiſh church. In the laſt century, there were four canonizations in this order, viz. of S. Thereſa, S. Andrew Corſin, S. Mag. de Pazzi, and S. J. de la Croix.

The order of the *Carmelites* is divided into two branches, viz. *Carmelites of the ancient obſervance*, called the *mitigated*, or *moderate*; and thoſe of the *ſtrict obſervance*, called *Bare-footed Carmelites.*

The *ancient obſervance* has only one general, under whom are forty provinces; and the congregation of Mantua, which has a vicar-general.

Bare-footed **CARMELITES** are a reform of the ancient *Carmelites*, ſet on foot in 1540, by St. Thereſa; ſo called from their going bare-footed.

She began with the convents of nuns, whom ſhe reſtored to the primitive auſterity of the order, which had been mitigated by Innocent IV. in 1245, and at length carried the ſame reform among the fryars. Pius V. approved the deſign, and Gregory XIII. confirmed the reform in 1580.

There are two congregations of bare-footed *Carmelites*, which have each their general, and their ſeveral conſtitutions: the one *the congregation of Spain*, divided into ſix provinces; the other called *the congregation of Italy*, comprehending all the reſt, not depending on Spain.

CARMEN, an ancient term among the Latins, uſed, in a general ſenſe, to ſignify a verſe; but in a more peculiar ſenſe to ſignify a ſpell, charm, form of expiation, execration, &c. couched in a few words, placed in a myſtic order, on which its efficacy depended.

Pezron derives *carmen* from the Celtic *carm*, the ſhout of joy, or the verſes which the ancient bards ſung, to encourage the ſoldiers before the combat; adding, that the Greek χαρμη, ſignifies combat and joy: which is true: but then it does not come from the Celtic *carm*, but from χαιρω, I rejoice.

Some fetch the origin of the poetical *carmina*, or verſes, hence; and ſay, they took that name from their reſemblance to theſe ſpells: others, on the contrary, ſay, that the ſpells had their origin from the poetical verſes, and took their name from their reſemblance to thoſe: it is at leaſt certain, that many of the ancient charms, wherewith diſeaſes were ſuppoſed to be cured, were metrical verſes, to which, in thoſe ages, greater efficacy was aſcribed than to mere words or proſe.

Vigenere, again, derives *carmen* from *Carmenta*, becauſe that propheteſs couched her predictions in verſes, or ſhort periods: but others ſay, the propheteſs took the name *Carmenta* from *carmen*, on the ſame account.

CARMEN, was anciently a denomination given to precepts, laws, prayers, imprecations, and all ſolemn formulæ, couched in a few words, placed in a certain order, though written in proſe.

In which ſenſe it was, that the elder Cato wrote a *Carmen de moribus*, which was not in verſe, but proſe.

CARMEN *ſaliare*, a ſet of ancient verſes compoſed by Numa, ſung by the SALII, accompanied by the claſhing of *Ancylia*, or ſacred bucklers. See ANCYLE.

CARMEN alſo denotes a form of prayer, or words whereby divers among the ancients devoted themſelves. Such was that of the Decii, ſpoken of by Pliny, Hiſt. Nat. lib. xxxviii. cap. 2.

CARMENIAN *wool*, a denomination given to a kind of goat's hair, brought from Carmenia, or Caramania, a country of Aſia Minor.

CARMENTALIA, a feaſt among the old Romans, celebrated annually on the 11th of January, in honour of *Carmenta*, or *Carmentis*, a propheteſs of Arcadia, mother of Evander, with whom ſhe came into Italy, ſixty years before the Trojan war.

The ſolemnity was alſo repeated on the 15th of January, which is marked in the old calendar by *Carmentalia relata.*

This feaſt was eſtabliſhed on occaſion of a great fecundity among the Roman dames, after a general reconciliation with their huſbands, with whom they had been at variance, in regard of the uſe of coaches being prohibited them by an edict of the ſenate.

It was the women who celebrated this feaſt: he who offered the ſacrifices, was called *Sacerdos Carmentalis.*

Authors are divided about the origin of the word *Carmenta*: Vigenere ſays, the propheteſs was ſo called *quaſi carens mente*, out of her ſenſes; by reaſon of the enthuſiaſm ſhe frequently fell into. Others ſay, ſhe took her name from *carmen*, verſe; becauſe her prophecies were couched in verſes: but Vigenere, as before noted, maintains *carmen* to be derived from *Carmenta.*

CARMES, *Eau de*, the Carmelite water, famous in France, and moſt parts of Europe, for its extraordinary cordial virtues. It is ſaid to be extremely reviving, to be good in all ſorts of fits, apoplexies not excepted; and to relieve the gout when it attacks the ſtomach. The Carmelites at Paris, who make conſiderable advantage by vending this water, keep the preparation of it a great ſecret.

CARMINATIVES, in *Medicine*, are remedies, whether ſimple or compound, uſed in colics, and other flatulent diſtempers, to diſpel the wind.

Numbers appear to be ſtrangers to this term, as it does not appear to carry in it any thing expreſſive of the medicinal efficacy of thoſe ſimples which paſs under the denomination. This term had certainly its riſe when medicine was too much in the hands of thoſe jugglers, who, for want of true knowledge in their profeſſion, brought religion into the party: and what through their ignorance they were not able to do by rational preſcription, they pretended to effect by invocation, and their intereſt with heaven. Which cant being generally, for ſurprize ſake, couched in ſome ſhort verſes, the word *carmen*, which ſignifies a verſe, was uſed alſo to mean an inchantment; which was frequently made uſe of to ſatisfy the people of the operation of a medicine they could not account for. And as thoſe medicines now under this name, are of quick efficacy, and the conſequences thereof in many inſtances ſurpriſing; the moſt violent pains, ſometimes ariſing from pent-up wind, immediately ceaſing upon its diſperſion; ſuch medicines as give relief in this caſe, are more properly termed *carminatives*, as if they cured by inchantment.

How they expel wind may be conceived, when we conſider that all the parts of the body are perſpirable. Sanctorius, in his *Medicina Statica*, determines all we call wind in the bowels to be ſuch perſpirable matter as makes its eſcape through the coats of the ſtomach and inteſtines. Between the ſeveral membranes likewiſe of the muſcular parts, ſuch matter may break out and lodge for ſome time. Now, whatever will rarify and render ſuch collections of vapours thinner, muſt conduce to their utter diſcharge out of the body, and conſequently relieve thoſe uneaſineſſes ariſing from their detenſion. And as all thoſe things that paſs under this denomination are warm, and conſiſt of very light ſubtil parts, it is eaſy to conceive how a mixture of ſuch particles may agitate and rarify thoſe flatulencies, ſo as to facilitate their expulſion, eſpecially conſidering thoſe grateful ſenſations which ſuch medicines gives to the fibres, and which cannot but invigorate their tonic undulations ſo much, that by degrees the obſtructed wind is diſlodged, and at laſt quite diſpelled. But if the obſtruction be not great, the rarefaction of the wind upon taking ſuch a medicine, is often ſo ſudden, and likewiſe its diſcharge, that it goes off like the exploſion of gunpowder.

All the things under this claſs, being warm and diſcuſſive, are much uſed in the compoſition of cathartics, of the rougher ſort eſpecially; for the irritation occaſioned by thoſe, would be ſcarcely tolerable, without the mitigation of ſuch grateful ingredients. Many likewiſe of this ſort, are in the compoſition of diſcuſſive topics.

The four *carminative* flowers, are thoſe of chamomile, melilot, motherwort, and dill: beſide angelica, fennel, lovage, aniſe, caraway, coriander, cummin, &c. which all agree in their *carminative* qualities; and are therefore uſed in compoſitions of that intention.

CARMINE, a bright red or crimſon colour, bordering ſomewhat on purple, uſed by painters in miniature; and ſometimes by painters in oil, though rarely, by reaſon of its exceſſive price, and becauſe it will not mix with oil, ſo as to have the due effect in this kind of painting. *Carmine* is the moſt valuable product of the *cochineal meſtique*: it is a *fecula* or ſediment, ſubſiding to the bottom of the water, wherein are ſteeped COCHINEAL, CHOUAN, and AUTOUR: ſome add ROUCOU, but this gives the *carmine* too much of the orange caſt. For this purpoſe thirty-ſix grains of *chouan* are boiled up three times in two pints and a half of rain or river water; then five drams of *cochineal* are put into the water, ſtrained through a linen cloth from the preceding liquor, and boiled up three times; to this eighteen grains of the huſk of *roucou*, and the ſame quantity of rock-alum, are added, and it is boiled up once: the liquor is filtrated through a linen cloth, and ſuffered to ſtand for ſeven or eight days; the *fæces* dried in the ſun, or a ſtove, will be the *carmine.* However, the *chouan* and *autour*, as well as the *roucou*, are now generally omitted. Runckel directs firſt to communicate a ſcarlet dye to fine wool, by boiling it in equal proportions of bran water and common water, with a mixture of alum and tartar, for two hours: half a pound of wool will require one pound of alum, and half a pound of pulverized tartar: the wool muſt then be drained, and having boiled four ounces of cochineal with two ounces of tartar, in a mixture of bran water and common water, the wool muſt be put in and boiled for an hour and a half, and it will take the colour. The *carmine*

mine may be extracted from the wool by boiling it in a ſtrong lye of pot-aſh, till it has loſt its colour: then paſs the lye through a filtrating bag, and pour a ſolution of two pounds of alum in water into the coloured lye; and the dye will thicken; and, when it is again filtrated, the *carmine* will remain in the filtre: and the operation may be repeated as often as it is found neceſſary. Encyclopedie.

To be good, it muſt be almoſt an impalpable powder.

As this colour is prepared by diſſolving cochineal in an alkaline lixivium, and precipitating the ſolution by alum, it conſiſts of the colouring matter of cochineal, adhering to the earth of alum: the beſt comes from France, where the method of preparing it is kept a profound ſecret.

Some make *carmine* with Braſil or Fernambouc wood, and gold leaf, beat in a mortar, and ſteeped in white-wine vinegar; the ſcum ariſing from this mixture, upon boiling, when dried, makes a ſort of *carmine*: but this kind is much inferior to the former. See DYING.

CARNABADIUM, in the *Materia Medica* of the ancients, a name given to a drug frequently mentioned by the Greek and Arabian writers. It is properly an Arabian word which the Greeks have adopted, and given a Greek termination to, writing it Καρναβάδιον. Guillandini ſuppoſes this to be the ſame with the *durunegi*, or *doronicum*, of the ſame authors; but nothing can be more abſurd than ſuch an opinion, an examination of theſe writers themſelves ſhewing that they commonly uſed it for caraway or carui ſeed, and ſometimes for the Æthiopian cummin ſeed.

CARNARIUM, a charnel-houſe, or repoſitory for the bones of the dead.

CARNATIONS, in *Gardening*. See DIANTHUS.—Theſe flowers are propagated two ways, the one by ſeed, the other by layers; the firſt of theſe methods is the way to raiſe new flowers, the other is the way to preſerve and multiply thoſe of former years.

For the raiſing them from ſeed, great care muſt be taken to produce good ſeed.

When they are in the flower the fineſt kinds ſhould be marked, and all the layers that can be, ſhould, during the time of their flowering, be laid down from them: toward the latter end of Auguſt theſe will have taken root, and they are then to be taken off, and planted out into pots, two in each pot. The method of laying them is this. Slip off the leaves from the lower part of the ſhoot intended to be laid, and cut a ſlit in one of the middle joints, and cut off the tops of the leaves, and cut out the ſwelling part of the joint, where the ſlit is made; then raiſe the earth about the place a little, and bend down the ſlit part of the joint into it, keeping the top upright, and faſten it in its place by a hooked ſtick, ſtuck into the ground over it, and cover it with earth; then give it a gentle watering, as often as is neceſſary, and in ſix weeks the layers will have taken ſo much root as to be ready to tranſplant.

They require ſhelter in the winter-ſeaſon, and as it is difficult to ſhelter a large number in their pots, which are uſually nine inches over, it may be a better way to plant them out in Auguſt in very ſmall pots, ſheltering a number of theſe during the winter in a frame; and in the middle of February they may be tranſplanted into the pots they are to flower in: theſe, in April, ſhould be ſet out upon a ſtage of boards, open to the ſouth-eaſt, but defended from the weſt winds, and not too near trees, walls, or buildings, where they are to flower.

CARNATION-*tree*. See *Alpine* COLTSFOOT.

Spaniſh CARNATION, in *Botany*. See BARBADOES *Flower-fence*.

CARNATION, among *Dyers*; to dye a *carnation*, or red roſe colour, take liquor of wheat bran a ſufficient quantity, alum three pounds, tartar two ounces; boil them and enter twenty yards of broad cloth; after it has boiled three hours, cool and waſh it: take freſh clear bran liquor a ſufficient quantity, madder five pounds; boil and ſadden according to art.

The Bow dyers know that the ſolution of jupiter, or delved tin, being put in a kettle to the alum and tartar, in another proceſs, makes the cloth, &c. attract the colour into it, ſo that none of the cochineal is left, but the whole is abſorbed by the cloth.

CARNATION, *Fleſh-colour*, in *Painting*, is underſtood of all the parts of a picture in general, which repreſent fleſh; or thoſe parts of human figures which are naked, and without drapery.

Titian and Corregio, in Italy, and Rubens and Van Dyke in Flanders, excelled in *carnations*.

It may be here obſerved, that the word *carnation* is not properly uſed for any particular part of the perſon painted, but for the whole nudity of the piece. See COLOURING.

CARNEDDE, in *Britiſh Antiquity*, denote heaps of ſtones ſuppoſed to be druidical remains, and thrown together on occaſion of confirming and commemorating a covenant. Gen. xxxi. 46. They are very common in the iſle of Angleſey: and were alſo uſed as ſepulchral monuments, in the manner of *tumuli*: for Mr. Rowland found a curious urn in one of theſe *carnedde*. Whence it may be inferred that the Britons had the cuſtom of throwing ſtones on the deceaſed. From this cuſtom is derived the Welch proverb, *Karn ardyben*, ill betide thee. Rowland's Mona Antiqua Reſtaurata.

CARNEIA, in *Antiquity*, a feſtival in honour of Apollo, ſurnamed Carneus, held in moſt cities of Greece, but eſpecially at Sparta, where it was firſt inſtituted.

The reaſon of the name, as well as the occaſion of the inſtitution, is controverted. It laſted nine days, beginning on the 13th of the month Carneus. The ceremonies were an imitation of the method of living, and diſcipline uſed in camps.

CARNEL.—The building of ſhips firſt with their timber and beams, and after bringing on their planks, is called *carnel-work*, to diſtinguiſh it from clinch-work.

Veſſels alſo which go with mizzen-ſails inſtead of main-ſails, are by ſome called *carnels*.

CARNELIAN. See CORNELIAN.

CARNEUM *operculum*, in *Anatomy*, a name given by ſome writers to a muſcle of the *abdomen*, called by Veſalius the *principium recti abdominis*; and by Fallopius, the *muſculus carnoſus*. It is now generally known by the name of PYRAMIDALIS.

CARNEY, a diſeaſe in horſes, wherein their mouths become ſo furred that they cannot eat.

CARNICULA is uſed by ſome for a caruncle, more particularly for that fleſhy ſubſtance which inveſts the teeth.

CARNID, in *Natural Hiſtory*, a name given by Averrhoes to what is called ZARNICH by more ancient writers.

CARNIFEX, among the *Romans*, the common executioner.

By reaſon of the odiouſneſs of his office, the *carnifex* was expreſly prohibited by the laws from having his dwelling-houſe within the city.

In middle age writers *carnifex* alſo denotes a butcher.

Under our Daniſh kings, the *carnifex* was an officer of great dignity; being ranked with the archbiſhop of York, earl Goodwin, and the lord ſteward. Flor. Wigorn. ann. 1040. *Rex Hardecanutus Alfricum Ebor. Archiep. Goodwinum comitem, Edricum diſpenſatorem, Thrond ſuum* carnificem, *& alios magnæ dignitatis viros Londinum miſit.* Spelm. Gloſſ. p. 125.

CARNIFICATION, the making of, or turning to fleſh.

Phyſicians gives inſtances of the *carnification* of BONES, that is, where the bones loſe their natural conſiſtence, and become ſoft and fleſhy. This is a tranſmutation which is the reverſe of OSSIFICATION.

CARNIFORMIS *abceſſus*, an abſceſs with a hardened orifice, which generally riſes where the muſcles apply themſelves to the joints.

CARNIVAL, or CARNAVAL, a ſeaſon of mirth and rejoicing, obſerved with great ſolemnity by the Italians, and particularly at Venice.

The word is formed of the Italian *carnavale*; which Du-Cange derives from *carn-a-val*, becauſe the *fleſh* is then put into the *pot*, in order to make amends for the ſeaſon of abſtinence enſuing. Accordingly, in the corrupt Latin, he obſerves, it was called *carnelevamen*, and *carniſprivium*; as the Spaniards ſtill denominate it, *carnes tollendas*.

The *carnival* time commences from Twelfth-day, and holds till Lent. Feaſts, balls, operas, concerts of muſic, intrigues, marriages, &c. are chiefly in *carnival* time.

CARNIVOROUS, CARNIVORUS, an epithet applied to thoſe animals which naturally ſeek, and feed on fleſh.

It is a diſpute among naturaliſts, whether or no man be naturally *carnivorous*? Some contend that the fruits of the earth were intended as his ſole food; and that it was neceſſity in ſome places, and luxury in others, that firſt prompted him to feed upon his fellow-animals. Pythagoras and his followers looked on it as a great impiety; and ſtrictly abſtained from all fleſh, from the notion of a metempſychoſis; and their ſucceſſors, the Bramins, continue the ſame to this day.

The conſideration Gaſſendus chiefly inſiſts on, why man ſhould not be *carnivorous*, is the ſtructure and conformation of our teeth; the moſt of them being either inciſores or molitores; not ſuch as *carnivorous* animals are furniſhed with, proper to tear fleſh; except the four *canini*: as if nature had rather prepared us for cutting herbs, roots, &c. than for eating meat.

To which may be added, that when we do feed on fleſh, it is not without a preparatory coction, by boiling, roaſting, &c.

And even then, as Dr. Drake obſerves, it is the hardeſt of digeſtion of all other foods, and is prohibited in fevers, and many other diſtempers: and laſtly, that children are rather averſe to all animal foods, till their palates become vitiated by cuſtom; and the breeding of worms in them is generally aſcribed to the too haſty eating of fleſh.

To theſe arguments, Dr. Wallis ſubjoins another; which is, that all quadrupeds which feed on herbs or plants, have a long colon, with a cœcum at the upper end of it, or ſomewhat equivalent, which conveys the food, by a long and large progreſs, from the ſtomach downwards, in order to its ſlower paſſage and longer ſtay in the inteſtines; but that in *carnivorous* animals ſuch cœcum is wanting, and inſtead thereof there is a more ſhort and ſlender gut, and quicker paſſage through the inteſtines. Now, in man, the cœcum is very viſible: a ſtrong preſumption, that nature, who is ſtill conſiſtent with herſelf, did not intend him for a *carnivorous* animal. It is true, the cœcum is but ſmall in adults, and ſeems of little or no uſe; but in a fœtus, it is much larger in proportion: and it is probable, our cuſtomary change of diet, as we grow up, may occaſion this ſhrinking.

To the arguments uſed by Dr. Wallis and others, to prove that man is not naturally *carnivorous*, Dr. Tyſon anſwers, that if man had been deſigned by nature not to be *carnivorous*, there would doubtleſs have been found ſomewhere in the globe, people who do not feed on fleſh; and as hiſtory ſeems not to furniſh any inſtance hereof, may not we ſay, that what is done univerſally by the whole ſpecies, is natural? For what the Pythagoreans did in abſtaining from fleſh, was on the principle of a tranſmigration, a miſtake in their philoſophy, not a law of nature: and though in ſome countries, men feed more ſparingly on fleſh than in others, this is owing to their own choice, from the advantage they perceive by it. He adds, that *carnivorous* animals are not always without a colon and *cœcum*; nor are all animals *carnivorous* which have thoſe parts; but that the carigueya, or opoſſum, for inſtance, has both a colon and a cæcum, yet feeds on poultry, and other fleſh; whereas the hedge-hog has neither colon nor cæcum, and therefore ought to be *carnivorous*, yet it feeds only on vegetables; add, that hogs, which have both, will feed on fleſh greedily enough when they can get it; and that rats and mice, which have large cœca, feed on bacon, as well as bread and cheeſe.

And, from the multitude of *carnivorous* animals which want thoſe parts, and of non-*carnivorous* which have one or both, no ſafe concluſion can be drawn; ſince we might as well argue, that becauſe the neat-kind, ſtag-kind, goat-kind, and ſheep-kind, which live on herbage, have four ſtomachs, therefore all thoſe which have not four ſtomachs were not deſigned by nature to be graminivorous; whereas the horſe-kind and hare-kind have but one ſtomach, yet feed on graſs like the former: add, that in many animals which live on the ſame ſort of food, the ſtructure of the ſtomach is found very different; and that in others which live on different foods, ex. gr. on fleſh, on fruits, on graſs, &c. the ſtomachs are found ſo like, that it is difficult to aſſign any difference between them; and if we cannot make a judgment what food is moſt natural to an animal from the ſtructure of its ſtomach, which is the part moſt concerned in digeſting it, much leſs can we judge from the colon or cæcum, which are parts remote from the ſtomach, and ſeem rather as a cloaca for the reception of the fæces, than of uſe for digeſting or diſtributing the food.

In fine, ſince man has all manner of teeth, fit for the preparation of all ſorts of food, ſhould it not rather ſeem that nature intended we ſhould live on all? And as the alimentary duct in the human-kind is fitted for digeſting all ſorts of food, may we not rather conclude that nature did not intend to deny us any? Phil. Tranſ. Nº 269, p. 775. Abridg. vol. v. p. 10.

CARNIUS, in *Chronology*, the Syracuſian name for the Athenian month METAGITNION; which was the ſecond of their year, and anſwered to the latter part of our July and beginning of Auguſt.

CARNOSUS, *muſculus*, in *Anatomy*, a name given by Fallopius and others to a muſcle, called by Veſalius the beginning of the ſtraight muſcle of the abdomen, and now generally known by the name of PYRAMIDALIS.

CARNOSA *Membrana*, } in *Anatomy*; ſee PANNICULUS
CARNOSUS *Panniculus*, } *Carnoſus*, and MEMBRANE.

CARNOSITY is uſed by ſome authors, for a little fleſhy excreſcence, tubercle, or wen, formed in the urethra, the neck of the bladder, or yard, which ſtops the paſſage of the urine.

Carnoſities are very difficult of cure: they are not eaſily known, but by introducing a probe into the paſſage, which there meets with reſiſtance. They uſually ariſe from ſome venereal malady ill managed.

CARNOSUM *folium*, in *Botany*. See LEAF.

CARNUBIA, in the *Materia Medica*, a name by which ſome authors have called the *carob*, or ſweet pipe.

CARO, in *Anatomy*, &c. See FLESH.

CARO *muſculoſa quadrata*, in *Anatomy*, a muſcle ſo called by Fallopius and Spigelius, but more popularly PALMARIS *brevis*.

CAROB, or ST. JOHN'S *Bread*, *ceratonia*, in *Botany*, a genus of the *polygamia polyoecia* claſs. Its characters are theſe: it is male and female on diſtinct trees; the male flowers have no petals, but a fleſhy germen ſituated within the receptacle, which becomes a long, fleſhy, compreſſed pod, divided by tranſverſe partions, each having one large, roundiſh, compreſſed ſeed. We have but one ſpecies, which is a native of the ſouthern parts of Europe, where it grows in the hedges, and produces a great quantity of long, flat, brown-coloured pods, which are thick, mealy, and of a ſweetiſh taſte.

Theſe pods are eaten by the poorer ſort of inhabitants in a ſcarcity of other food; but they are apt to looſen the belly, and cauſe gripings in the bowels. They are directed by the college of phyſicians as ingredients in ſome medicinal preparations.

CAROB is alſo a goldſmith's ſmall weight, amounting to the 24th part of a grain. It is alſo called *prime*.

CAROCHA, a name which the Spaniards and Portugueſe give to a kind of mitre made of paper or paſteboard, on which are painted flames of fire, and figures of demons, worn by thoſe who are condemned to death by the tribunal of the INQUISITION. See ACT *of faith*.

CAROENON, καροινον, ſometimes alſo called *carenum*, denotes wine boiled down, till a third be evaporated.

CAROLI, among ſome phyſicians, denote venereal puſtules on the penis; called alſo *caries pudendorum*.

CAROLINE, is a ſilver coin of Sweden, with the legend, *ſi deus pro nobis quis contra*. See COINS.

CAROLINE, is alſo a name given to the four books compoſed by order of Charlemagne, to refute the ſecond council of Nice, with regard to the worſhip of IMAGES. They contain one hundred and twenty heads of accuſation againſt that council, drawn up by the biſhops of France, and firſt publiſhed in 1549, by M. du Tillet, biſhop of Meaux, under the title of Elia Phylira.

CAROLOSTADIANS, or CARLOSTADIANS, an ancient ſect, or branch of Lutherans, who denied the real preſence of Chriſt in the euchariſt.

They were thus denominated from their leader Andrew Caroloſtadius, who having originally been archdeacon of Wittemberg, was converted by Luther, and was the firſt of all the reformed clergy who took a wife; but diſagreeing afterwards with Luther, chiefly in the point of the ſacrament, founded a ſect apart. The *Caroloſtadians* are the ſame with what are otherwiſe denominated SACRAMENTARIANS, and agree in moſt things with the ZUINGLIANS.

CAROLUS, an ancient Engliſh broad piece of gold, ſtruck under king Charles I. whoſe image and name it bears. Its value has been eſtimated at twenty-three ſhillings ſterling; though at the time when it was coined, it is ſaid to have been only rated at twenty ſhillings.

CAROLUS is uſed for a ſmall copper French coin, mixt with a little proportion of ſilver, firſt ſtruck by Charles VIII. of France, whence it took its name; being, at the time when it ceaſed to be current, valued at ſix *deniers*.

CAROPI, in *Botany*, a name given by the inhabitants of the Philippine iſlands to a plant more uſually known among authors by the name of TUGUS, a plant greatly eſteemed by the natives, and ſuppoſed by Camelli to be the true *amomum* of the Greeks, ſo much valued in thoſe ancient times.

CAROTEEL, in *Matters of Commerce*, denotes a certain weight or quantity of divers kinds of goods, ex. gr. of cloves, from four to five hundred weight; of currants, from five to nine hundred weight; of mace, about three hundred weight; and of nutmegs, from ſix to ſeven and an half hundred weight.

CAROTIC is uſed by ſome writers to denote thoſe who are ſeized with the CARUS.

CAROTIDS, in *Anatomy*, two arteries of the neck, on each ſide, ſerving to convey the blood from the aorta to the brain.—See *Tab. Anat. (angeiol.) fig.* 1. n. 5. 5. 13. 13. *(oſteol.) fig.* 5. 1. 1. 2. 3. 3. *lit.* xx. yy. *(ſplanch.) fig.* 12. *lit.* p.

The *right carotid* ariſes from the ſubclavian, juſt where that ſprings out of the porta; but the left immediately out of the aorta. They both lie pretty deep, and being defended by the aſpera arteria, paſs free from any compreſſure, and without ſending out almoſt any branches, ſtrait to the cranium. Juſt before their arrival there, they ſend forth the external *carotid*; and paſſing the os petroſum, proceed on with ſome circumvolutions, till laying aſide their muſcular membrane, and giving branches to the dura mater, they paſs along the cranium, defended by the ſides of the ſella-turcica, and dura mater: and ſending branches to the outer parts of the pia mater, and the nerves, they at laſt reach the cerebrum; where dividing into infinite ramifications, they are loſt in the cortical part; or perhaps proceed even into the medullary part thereof.

Hippocrates and the ancients placed the ſeat of drowſineſs in theſe arteries, whence they had the name *carotids*, i. e. *ſoporariæ*, from *καρος*, *drowſineſs*. For the ſame reaſon they were alſo called *lethargicæ*, and *apoplecticæ*.

CAROUGE, in *Botany*, a ſiliquous fruit, ſweet and good to eat, when arrived to a proper degree of maturity. The tree which bears it grows in Spain, and in ſeveral places of the Mediterranean. The fruit is of great uſe in fattening beaſts of burden, and is often given them inſtead of barley or oats: it is of ſome uſe in medicine, on account of its pectoral virtue, being taken in a decoction. The Spaniards call it *garroba*, or *algarrova*.

CARP, in *Ichthyology*. See CYPRINUS.

The *carp*, which was firſt brought into England by Leonard Maſchal, about the year 1514, is the moſt valuable of all kinds of fiſh for the ſtocking of ponds, becauſe of its quick growth and great increaſe. If the breeding and feeding of this fiſh were more underſtood and practiſed, the advantages would be very great, and fiſh-ponds become as valuable an article as gardens. The gentleman who has land in his own hands, may, beſide furniſhing his own table and ſupplying his friends, raiſe a great deal of money, and very conſiderably improve his land at the ſame time, ſo as to make it yield more this way than by any other employment whatever. The ſale of *carp* makes a part of the revenue of the nobility and gentry in Pruſſia, Pomerania, Brandenburg, Saxony, Bohemia, Mecklenburgh, and Holſtein.

For this purpoſe particular attention ſhould be paid to the ſoil, water, and ſituation of the *carp*-pond: the beſt kind of ponds are thoſe which are ſurrounded by the fineſt paſtures and corn-fields of a rich black mould, having ſoft ſprings on the ſpot, or running-water, that is neither too cold, nor impregnated with acid, calcareous, ſelenitic, or other mineral particles. The water indeed may be ſoftened by expoſing it to the air and ſun in a reſervoir, or by forming an open channel for it at ſome diſtance from the pond. They ſhould likewiſe be ſheltered againſt the eaſterly and northern winds, and be fully expoſed to the influence of the ſun.

It is found by experience moſt convenient to have three kinds of ponds for *carp*: viz. the ſpawning-pond, the nurſery, and the main pond. The firſt ſort of pond muſt be well cleared of all other kinds of fiſh, eſpecially thoſe of the rapacious kind, ſuch as the pike, perch, eel, and trout, and alſo of all the newts of lizards and the water-beetles. It ſhould be ſupplied with ſoft water, and be expoſed to the ſun and air. A pond of one acre requires three or four male *carp*, and ſix or eight female ones, and in the ſame proportion for each additional acre. The beſt *carp* for breeding are thoſe of five, ſix, or ſeven years old, in good health, with full ſcale, fine full eyes, and a long body, and without any blemiſh or wound. The pond ſhould be ſtocked on a fine calm day, towards the latter end of March or in April. *Carp* ſpawn in May, June, or July, according to the warmth of the ſeaſon; and for this purpoſe they ſwim to a ſhady, warm, ſheltered place, where they gently rub their bodies againſt the ſandy ground, graſs, or oſiers, and by this preſſure the ſpawn iſſues out. At the ſpawning ſeaſon all kinds of fowl ſhould be kept from the ponds. The young fry, hatched from the ſpawn by the genial influence of the ſun, are left in this pond through the whole ſummer, and even the next winter, if the pond is deep enough to prevent their ſuffocation under the ice in a ſevere winter; otherwiſe the breeders and the fry are put into ſeparate ponds, more convenient for their wintering.

The ſecond kind of ponds are the nurſeries: the young fiſh ſhould be removed into the nurſery in March or April, on a fine calm day: a pond of an acre will admit a thouſand or twelve hundred of this fry. When they are firſt put in, they ſhould be well watched and driven from the ſides of the pond, leſt they become the prey of rapacious birds. In two ſummers they will grow ſo much as to weigh four, five, ſometimes ſix pounds, and to be fleſhy and well-taſted.

The main-ponds are the laſt ſort: *carp* are put into theſe, that meaſure a foot, head and tail incluſive. Every ſquare of fifteen feet is ſufficient for one *carp*; their growth depends on the room and the quantity of food allowed them. The beſt ſeaſons for ſtocking the main ponds are ſpring and autumn: *carp* continue to grow for a long time, and to a very conſiderable ſize and weight. Mr. Forſter mentions one which he had ſeen in Pruſſia above a yard long, and of twenty-five pound weight; and two or three hundred between two and three feet long, and which, he was told, were of between fifty and ſixty years ſtanding: Geſner mentions an inſtance of one that was an hundred years old: theſe were tame, and came to the ſhore in order to be fed, and ſwallowed with eaſe a piece of white bread of the ſize of half a halfpenny roll. Ponds ſhould be well ſupplied with water during winter, and when they are covered with ice, holes ſhould be opened every day for the admiſſion of freſh air, through want of which *carp* frequently periſh. See *Carp*-FISHING.

Carp are ſometimes fed, during the colder ſeaſon, in a cellar: the fiſh is wrapped up in a quantity of wet moſs, ſpread on a piece of net, and then gathered into a purſe, in ſuch a manner, however, as to allow him room to breathe. The net is then plunged into water, and hung up to the cieling of a cellar: the dipping muſt at firſt be repeated every three or four hours, but afterwards it need only be plunged into the water once in about ſix or ſeven hours. Bread ſoaked in milk is firſt given him in ſmall quantities; in a ſhort time the fiſh will bear more and grow fat by this treatment. Many have been kept in this way, breathing nothing but air, for ſeveral days ſucceſſively. Phil. Tranſ. vol. lxi. pt i. Art. xxxvii. p. 310, &c.

CARP, *golden*. See GOLD-*fiſh*.

CARP-*ſtone*, *Lapis carpionis*, a kind of gem ſaid to be found in the fauces, by others in the back-bone, of the *carp* fiſh, about the ſize of a pea, of a triangular figure, and white colour without, but yellow within. It is ſuppoſed to be of uſe againſt the ſtone, and ebullitions of the bile, being taken in powder, or held in the mouth.

CARP-*meals*, a coarſe kind of cloth, made in the northern parts of England.

CARPACK, in the *Ægyptian Dreſs*, a ſort of red cap turned up with fur, which ſome make a cuſtom of wearing in common, though it is properly a part of the dreſs of the interpreters only, the ſame cap with muſlin tied round it being more properly the common dreſs.

CARPÆA, from Καρπαια, a kind of dance, or military exerciſe, in uſe among the Athenians and Magneſians, performed by two perſons; the one acting a labourer, the other a robber.

The labourer, laying by his arms, goes to ſowing and plowing; ſtill looking warily about him, as if afraid of being ſurpriſed: the robber at length appears, and the labourer, quitting his plough, betakes himſelf to his arms, and fights in defence of his oxen. The whole was performed to the ſound of flutes, and in cadence.

Sometimes the robber was overcome, and ſometimes the labourer; the victor's reward being the oxen and plough. The deſign of the exerciſe was, to teach and accuſtom the peaſants to defend themſelves againſt the attack of ruffians.

CARPASIUM *linum*. See LINUM *Carpaſium*.

CARPASUM, or CARPASIUM, in the *Materia Medica* of the ancients, the name of a poiſonous gum, exſudating from a tree, ſo like myrrh in appearance that many periſhed by the error of uſing it inſtead of myrrh, or mixed among it. We are, at this time, wholly ignorant of its nature; but that it was a gum exſudating from a tree is plain from the account of Dioſcorides, who calls it *opocarpaſum*, as we do the flowing balm of Gilead, *opobalſamum*. The wood of the tree which produced it, he calls *xylocarpaſum*, in the ſame manner as the other wood is called *xylobalſamum*. This wood was little leſs poiſonous than the *carpaſum*, or gum itſelf.

Galen tells us that the *carpaſum* was like myrrh of the very pureſt and fineſt kind; and that thoſe people who were moſt curious of all to have fine myrrh, often met with the *carpaſum* among it, and gave death, inſtead of relief, to the perſons they adminiſtered it to. We find, by the words of Galen, that this gum was not only like myrrh, but was alſo brought from the ſame places, and was often mixed with it. The fineſt myrrh uſually had moſt of this poiſon among it, and we may collect from the ſame account that it was a ſweet-ſcented gum, for otherwiſe no body could have miſtaken it for myrrh. Galen de Med. Simpl. lib. vii.

CARPENTER, an artificer whoſe buſineſs is to cut, faſhion, and join timber and other wood for the purpoſes of building.

The word is formed from the French *charpentier*, which ſignifies the ſame, formed of *charpente*, which denotes timber; or rather from the Latin *carpentarius*, a maker of *carpenta*, or carriages.

CARPENTERS *Work*, in *Architecture*, includes the framing, flooring, roofing; the foundation, carcaſe, doors, windows, &c.

Company of CARPENTERS. See COMPANY.

CARPENTER'S *Joint rule*. See RULE.

CARPENTER, *ſhip*, a perſon employed in the docks, in the conſtruction and repairing of veſſels.

CARPENTER *of a ſhip*, is an officer at ſea, whoſe buſineſs is to have things in readineſs for keeping the veſſels in repair; and to attend the ſtopping leaks, fiſhing maſts or yards, alſo calking, careening, breaming, and the like. He is to watch the timber of the veſſel that it does not rot;

conſult frequently with other officers on the ſtate of the maſts, yards, &c. and in time of battle he is to have plugs, tompions, and planks ready, for repairing breaches made by the enemy's cannon.

The *carpenter* has a mate under him, and a crew or gang to command on neceſſary occaſions.

CARPENTRY, the art of cutting, framing, and joining, large pieces of wood, for the uſes of BUILDING.

Carpentry is one of the arts ſubſervient to architecture, and is divided into two branches, *houſe-carpentry*, and *ſhip-carpentry*; the firſt employed in raiſing, framing, roofing, flooring, &c. of houſes, &c.

The ſecond in the conſtruction of veſſels for ſea; as ſhips, barks, barges, boats, &c.

The rules and practices in *carpentry*, as to planing, ſawing, morteſſing, tenanting, ſcribing, paring, moulding, &c. are much the ſame as thoſe in joinery: ſo likewiſe are the tools, or inſtruments, and the ſtuff is the ſame in both; all the difference between the two arts conſiſting in this, that joinery is uſed in the ſmaller and more curious works; and *carpentry* in the larger, ſtronger, and coarſer.

Fr. Pyrard aſſures us, that the art of *carpentry* is in its greateſt perfection in the Maldive iſlands: their works there, he obſerves, are ſo artfully managed, that they will hold tight and firm without either nails or pins. He adds, they are ſo curiouſly put together, that nobody can take them aſunder, but thoſe acquainted with the myſtery.

CARPENTUM, in *Antiquity*, a denomination common to divers ſorts of vehicles, anſwering to coaches as well as waggons, or even carts among us.

The *carpentum* was originally a kind of carr or vehicle wherein the Roman ladies were carried; though in aftertimes it was alſo uſed in war.

Some derive the word a *carro*; others from *Carmenta*, mother of Evander, by a converſion of the *m* into *p*, *carpentum* for *carmentum*. Thus Ovid, Faſt. lib. i.

Nam prius Auſonias matres Carpenta vehebant
Hæc quoque ab Evandri dicta parente reor.

CARPERA, in *Ichthyology*, a name given by Cuba, and ſome other writers on fiſhes, to the CARP. See CYPRINUS.

CARPERITARIA, in *Botany*, a name uſed by ſome authors for the barbarea or winter-creſs, a wild plant common in hedges in ſpring.

CARPESIA, in the *Materia Medica of the Ancients*, a name given to a kind of ſpice, or aromatic drug, often mentioned by Ægineta and others, and made an ingredient in cordial and ſtomachic medicines. This was a vegetable ſubſtance, being the top ſhoots of young twigs of an odoriferous ſhrub, growing in Pamphylia, and ſmelling very like the fineſt cinnamon.

As the ancients uſed both this drug and cubebs, it is certain that had they both been the produce of the ſame tree, they muſt have known it; and this it is plain they did not know, for they have no where named any ſuch thing; but, on the contrary, they have expreſly ſaid, that the *carpeſia* was the ſhoots of a tall tree, which produced no fruit. Avicenna gives alſo this account, and adds, that it grew, in his time, on mount Lebanon, and that the part gathered for this uſe was certain twigs, very long, cylindric, and but little thicker than a needle, which had a very fragrant ſmell.

CARPESIUM, in the *Materia Medica*, a name given by ſome authors to *cubebs*. See CARPESIA.

CARPET, a ſort of covering, worked either with the needle, or on a loom; to be ſpread on a table, trunk, an eſtrade, a paſſage, or a floor.

Perſian and Turky *carpets* are thoſe moſt prized; eſpecially the former: *carpets* that had a hair or ſhag on one ſide only, were called by the ancients *tapetes*; ſuch as had a ſhag on both ſides, were called *amphitapetes*. Engliſh *carpets*, eſpecially thoſe of Axminſter, are much valued.

Among *Jockeys*, to *ſhave the carpet*, is to GALLOP very cloſe, or near the ground; a fault foreigners charge on Engliſh horſes.

Figuratively, an affair, propoſal, &c. are ſaid to be brought on the *carpet*, or tapis, when they are under conſideration, &c.

CARPET-*knights*, a denomination given to gown-men, and others, of peaceable profeſſions, who, on account of their birth, office, or merits to the public, or the like, are, by the prince, raiſed to the dignity of knighthood.

They take the appellation *carpet*, becauſe they uſually receive their honours from the king's hands in the court, kneeling on a *carpet*. By which they are diſtinguiſhed from knights created in the camp, or field of battle, on account of their military proweſs.

Carpet-knights poſſeſs a medium between thoſe called *truck*, or *dunghill-knights*, who only purchaſe, or merit the honour by their wealth; and *knights-bachelors*, who are created for their ſervices in the war.

CARPINUS, in *Botany*. See HORNBEAM.

CARPIONE, in *Ichthyology*, a name given by Salvian to the fiſh called by other writers *carpio lacus Benaci*. It is the ſame with that fiſh called in ſome parts of England the *red* CHARRE. Artedi diſtinguiſhes it from the other ſpecies of SALMON, by calling it the ſmall *ſalmon* with five rows of teeth in the palate.

CARPOBALSAM, or CARPOBALSAMUM, the fruit of the tree which yields the true oriental balm, or balſam; very much reſembling, both in figure, ſize, and colour, that of turpentine.

The word comes from καρπος, *fruit*; and βαλσαμος, *balſam*.

The *carpobalſamum* is an oblong fruit with a ſhort footſtalk, a brown wrinkled rind, marked with four ribs; of a grateful taſte and ſmell.

It is ſeldom found in ſhops; ſome ſubſtituting Jamaica pepper, and others cubebs, in its place.

CARPOBOLUS, *Lycoperdon*, in *Botany*. See PUFF-*ball*.

CARPOCRATIANS, a branch of the ancient Gnoſtics, ſo called from *Carpocrates*, who in the ſecond century revived, and improved upon, the errors of Simon Magus, Menander, Saturnus, and other GNOSTICS.

He owned, with them, one ſole principle, and father of all things, whoſe name, as well as nature, was unknown. The world, he taught, was created by angels, vaſtly inferior to the firſt principle. He oppoſed the divinity of Jeſus Chriſt; making him a mere man, born of Joſeph and Mary, according to the ordinary courſe of nature, though poſſeſſed of uncommon gifts, which ſet him above other creatures. He inculcated a community of women; and taught, that the ſoul could not be purified, till it had committed all kinds of abominations, making that a neceſſary condition of perfection; that all actions were indifferent in their own nature, and were rendered good or evil by the opinions of men, or the laws of the ſtate.

CARPOS, Καρπος, *fruit*. The word in this ſenſe is too well known and underſtood to admit of any explanation; but it is neceſſary to obſerve that the old Greek writers did not keep ſtrictly to the ſenſe of the word, limiting it, as we do, to that part of a plant of a tree which ſucceeds the flower, and in which the ſeeds are contained; but they often uſed it in a larger ſenſe, and expreſſed by it the eſculent part of a plant, though it did not ſerve to this purpoſe.

CARPUM *flectentium interior*, in *Anatomy*, a name given by Spigelius to the muſcle called by Albinus *ulnaris internus*, and by Winſlow, *internus cubitalis*.

CARPUS, in *Anatomy*, the WRIST; or that part between the palm of the hand, and the arm.—See *Tab. Anat.* *(Oſteol.) fig.* 3. *n.* 9. and 7. *n.* 12. See WRIST.

The Arabians call it *raſceta*; the Latins ſometimes *carpiſmus*.

CARR, *carrum*, in the *Middle Age*, denoted any ſort of vehicle, or carriage, either by land or ſea.

CARR, CARRUS, a kind of rolling throne, uſed in TRIUMPHS, and at the ſplendid entries of princes.

The word is from the ancient Gauliſh, or Celtic, *carr*; mentioned by Cæſar, in his Commentaries, under the name *carrus*.

Plutarch relates, that Camillus having entered Rome in triumph, mounted on a *carr*, drawn by four white horſes, it was looked on as too haughty an innovation.

CARR is alſo uſed for a kind of light, or open chariot. Pontanus obſerves, that Erichthonius was the firſt that harneſſed horſes, and joined them in a *carr*, or chariot.

The *carr*, on medals, drawn either by horſes, lions, or elephants, uſually ſignifies, either a triumph, or an apotheoſis: ſometimes a proceſſion of the images of the gods, at a ſolemn ſupplication; and ſometimes of thoſe of ſome illuſtrious families at a funeral.—The *carr* covered, and drawn by mules, only ſignifies a *conſecration*, and the honour done any one of having his image carried at the games of the Circus.

The *carr* uſed by the ladies was called *pilentum*, *carpentum*, and *baſterna*.

CARRAC, or CARRACA, a name given by the Portugueſe to the veſſels they ſend to Braſil and the Eaſt Indies; being very large, round built, and fitted for fight, as well as burden. Their capacity lies in their depth, which is very extraordinary. They are narrower above than underneath, and have ſometimes ſeven or eight floors; they carry about 2000 tons, and are capable of lodging 2000 men; but of late they are little uſed. Formerly they were alſo in uſe among the knights of Rhodes, as well as among the Genoeſe, and other Italians.

It is a cuſtom among the Portugueſe, when the *carracs* return from India, not to bring any boat or ſloop for the ſervice of the ſhip, beyond the iſland of St. Helena; at which place they ſink them on purpoſe, in order to take from the crew all hopes or poſſibility of ſaving themſelves, in caſe of ſhipwreck.

CARRAGO, in *Antiquity*, a kind of fortification, or defence about a camp, compoſed of carts, waggons, and the like vehicles, chained or faſtened together; chiefly uſed by the barbarous nations.

CARRARA *marble*, among our *Artificers*, the name of a ſpecies of white marble, which is called *marmor* LUNENSE, and *liguſtrium* by the ancients: it is diſtinguiſhed from the Parian, now called the ſtatuary marble, by being harder and leſs bright.

CARRAT, Carat, or Caract. See Caract.

CARRIAGE, a vehicle for the conveyance of perſons, goods, &c. from place to place.

Carriage *of a cannon*, is the frame, or timber-work, whereon it is mounted; ſerving to point and direct it for ſhooting, and to convey it from place to place; of which there are three ſorts; viz. thoſe uſed in garriſons, at ſea aboard ſhips, and in the field. The two firſt differ only in ſome iron rings, and alſo that the trucks or wheels of garriſon carriages are made of caſt iron, whereas thoſe of ſhip carriages are of wood. Both have the ſame irons, except the breech-rings, which are peculiar to the latter.

Carriage, *the*, *of a field-piece*, conſiſts of two wheels, which carry long and ſtrong wooden beams, or cheeks, between which the cannon is as it were framed, moving on its trunnions as on a centre: when it is required to move them, they add a vant-train, compoſed of two ſmaller wheels.

The *carriage* conſiſts of the cheeks, the tranſums, the bolts, and plates, the train, the bands, the keys and locks, the bridge, the bed, the hooks, the trunnion-holes, and the cap-ſquare.

The ordinary proportion is, for the *carriage* to have $1\frac{1}{2}$ of the length of the gun; the wheels to be half the length of the piece in height: four times the diameter, or caliber, gives the depth of the planks at the fore-end; in the middle $3\frac{1}{2}$.

The *carriages* for mortars are low, with four wheels, each of one piece, exactly like the *ſea-carriages*.

Carriage, *block*, is a cart made on purpoſe for carrying of mortars, and their beds, from one place to another; and likewiſe for carrying guns in the field, which are too heavy to be tranſported on their own carriages.

Carriages, *truck*, are two ſhort planks of wood, ſupported on two axle-trees, having four trucks, or wheels, of ſolid wood, about a foot and a half, or two foot diameter, for carrying mortars or guns upon a battery, when their own carriages cannot go, and for removing timber, and other burthens; and are drawn by men.

Carriage, *the*, *of a ſhip gun*, conſiſts of four wheels, without ſpokes.

The parts of a *ſea-carriage* are the two cheeks, the axle-trees, bolts, cap-ſquares, commonly called clamps in the ſea-ſervice, hooks, forelocks, trucks, and linſpins. The breadth of the wheels is always equal to that of the cheeks; but the height of the cheeks, and diameter of the trucks, depend on the height of the gun-ports above the deck. See on the ſubject of *carriages* relating to the military art, both as to their conſtruction and the dimenſions of their parts, Muller's Treat. of Artillery, vol. iv. See Galloper, Limber, Tumbrel, &c. See alſo Bed, Breechings, &c. and Howitz, Mortar, &c.

Carriage, in *Agriculture*, denotes a ſort of furrow, cut for the conveyance of water, to overflow, or improve the ground.

Carriages are of two kinds, the main *carriage*, whoſe mouth is of breadth ſufficient to receive the whole ſtream intended; and leſſer *carriage* ariſing from ſpace to ſpace, out of the former.

Carriage alſo ſignifies the removal of goods, or other things, from one place to another, eſpecially with a carr or cart.

Carriage alſo denotes the money or hire paid to a carrier, or other bearer of goods.

Juſtices of peace have power to aſſeſs the price of *carriage* of goods yearly, at their Eaſter ſeſſions; and if any carrier ſhall take above the rates and prices ſo aſſeſſed, he ſhall forfeit 5*l*. 3 and 4 W. and M. cap. 12.

A common carrier having the charge and *carriage* of goods, is to anſwer for the ſame, or the value, to the owner. Co. Lyt. 78. And where goods are delivered to a carrier, and he is robbed of them, he ſhall be charged, and anſwer for them, becauſe of the hire. 1 Roll. abr. 338.

Where goods are ſtolen from a carrier, he may bring an indictment againſt the felon, as for his own goods, though he has only the poſſeſſory, and not the abſolute property; and the owner may likewiſe prefer an indictment againſt the felon. Kel. 39. If a carrier is robbed of goods, alſo either he or the owner may bring an action againſt the hundred to make it good.

The *carriage* of letters is called *poſtage*. See Post.

Carriage *by ſea*, is denominated FREIGHT.

Carriage, *bill of*, *lettre de voiture*, among the French, denotes a paper given to a carrier, expreſſing the quantity and quality of the goods and parcels committed to him, partly to entitle him to receive his hire from the perſon to whom they are directed, and partly that this letter may ſhew whether all be brought, and whether in due time, and in the condition required.

Carriage is alſo uſed to denote a ſpace of ground, over which the inhabitants of New France, and other colonies of North America, who trade with the ſavages uſually by means of canoes, are obliged to carry their boats and proviſions, &c. on their ſhoulders. This they are forced to when they come to places in lakes or rivers, covered with willows, or otherwiſe rendered impracticable to paſs by water, till they meet with ſome new place convenient for reimbarking.

CARRIER, he who undertakes to convey perſons, goods, papers, money, or the like, from place to place, on condition of a certain price either fixed by authority or cuſtom, or left to private agreement. See Carriage.

In Holland *carriers* are called *routiers*, becauſe they always keep the ſame road, or route; ſetting out, and arriving, at fixed hours.

Carrier *pigeon*, a ſort of pigeon uſed, when properly trained up, to be ſent with letters from one place to another.

It is larger in ſize than moſt of the other kinds. Its length from the tip of the beak to the end of the tail being often fifteen inches; but its greateſt weight not twenty ounces. Its fleſh is firm, and its feathers cloſe; it is long-necked, and of a better ſhape than moſt other pigeons. The upper chap of the bill is half covered from the head with a white or blackiſh tuberous furfuraceous fleſh, which projects or hangs over both its ſides, on the upper part neareſt the head, and ends in a point about the middle of the bill. This is called the *wattle*. The eyes are ſurrounded with the ſame ſort of corrugated fleſh for the breadth of a ſhilling, and their iris is red. Their beak is long, ſtraight, and thick; their wattle generally broad acroſs the beak, ſhort from the head toward the point, and tilting forward from the head; and the head narrow, long, and flat; the neck very long and thin, and the breaſt broad; the feather is chiefly black or dun, though there are blues, whites, and pyed.

It has its name from its remarkable ſagacity in returning to the place where it was bred, though carried to great diſtances; from which property it is made uſe of to carry letters to diſtant places, as a ſpeedy and ſafe method of conveyance.

They are trained to this ſervice in Turky and Perſia, and are carried firſt, while young, ſhort flights of half a mile, and afterwards more, till at length they will return from the fartheſt part of the kingdom. Every baſhaw has a baſket of theſe pigeons, bred at the ſeraglio, which, upon any emergent occaſions, as an inſurrection, or the like, he diſpatches with letters, braced under their wings, to the ſeraglio, only ſending out more than one, for fear of accidents. Lightow aſſures us, that one of theſe birds will carry a letter from Babylon to Aleppo, which is thirty days journey, in forty-eight hours. This is alſo a very ancient practice; Hirtius and Brutus, at the ſiege of Modena, held a correſpondence with one another by means of pigeons. And Ovid tells us, that Tauroſthenes, by a pigeon ſtained with purple, gave notice to his father of his victory at the Olympic games, ſending it to him at Ægina. Ælian. Var. Hiſt. lib. ix. cap. 2. Pliny, lib. x. cap. 24.

Anacreon tells us, that he conveyed a billet-doux to his beautiful Bathyllis, by a dove. Ode 9. See Dragoon, and Horse-*man*.

CARRIERE. See Career.

CARROBALISTA, in the *Ancient Military Art*, denotes a ſpecies of *baliſta* mounted on wheels, and drawn by horſes; by which it differed from the *manubaliſta*, which being leſſer and lighter was thrown by the hand.

CARROCIUM, or Carrocerum, in *Middle Age Writers*, denotes the BANNER, or chief flag of an army, which was mounted on a kind of chariot, and drawn by oxen.

CARROT, *Daucus*, in *Botany*, a genus of the *pentandria digynia* claſs. Its characters are theſe: it hath an umbelliferous hermaphrodite flower, which hath five heart-ſhaped petals turning inward, and five hairy ſtamina. The germen ſits under the flower, which afterward becomes a roundiſh ſtriated fruit, covered with ſtinging hairs.

Carrets were introduced into this kingdom by the Flemings, in the reign of queen Elizabeth, and firſt ſown about Sandwich, in Kent. There are two or three ſorts of this plant cultivated for the uſe of the kitchen; and theſe are ſown at ſeveral different ſeaſons of the year, to afford a ſupply of young roots, in all ſeaſons, for the table.

The ſeaſon for ſowing them, for the earlieſt crop, is ſoon after Chriſtmas. They ſhould be ſown in an open ſituation, but near a wall; though if they are ſown cloſe under it, they will be drawn up to ſeed too faſt, and give no good roots: about eight inches diſtant is the propereſt place.

They delight in a warm ſandy ſoil, which ſhould be light, and well dug to a good depth, that the roots may meet with no obſtruction in running down, which makes them grow forked, and ſhoot out lateral branches, eſpecially when the ground has been too much dunged the ſame year that the ſeeds were ſown, which will alſo occaſion their being worm-eaten. The hairyneſs of theſe ſeeds makes them apt to ſtick together in ſmall cluſters, and renders it difficult to ſow them equally: they ſhould therefore be always ſown on a calm day, when there is no wind ſtirring to blow them together, and be well rubbed between the hands to ſeparate them thoroughly: when they are ſown they ſhould be trod in with the feet, and the ground raked level over them.

When they firſt come up, they ſhould be hoed out to four inches diſtance; and a month after this, they muſt be cleared again; and if they are to be drawn while young, they are now to be left at ſix inches diſtance every way: if they are to ſtand to grow large, they muſt be ſeparated to ten inches.

The ſecond ſeaſon for ſowing *carrots* is in February. This muſt be done under a wall or hedge, and on warm banks; but thoſe which are to be in open large quarters, ſhould not be ſown till the beginning of March.

In July they may be ſown again for an autumnal crop, and finally in the end of Auguſt for thoſe which are to ſtand the winter. Theſe laſt will be fit for uſe in March, before any of the ſpring ones; but they are ſeldom ſo tender or well taſted.

In order to preſerve *carrots* for uſe all winter, they are to be dug up in the beginning of November, and laid in a dry place in ſand; and theſe roots being planted again in February, will ripen ſeeds in Auguſt for ſucceeding crops: the longeſt and ſtraiteſt roots are to be choſen for this purpoſe.

The cultivation of *carrots* has lately become a conſiderable branch of agriculture. For this purpoſe the ground ſhould be ploughed early, before the winter begins, that the froſt may mellow the ſoil, and well dunged. The ſeed ſhould be ſown in March or April, ſeparating it firſt by paſſing it through a fine chaff-ſieve. Four pounds of ſeed is ſufficient for an acre. In about ſeven or eight weeks they are fit for hoeing, and in a fortnight after they ſhould be harrowed, which is done without injury to the *carrot* plants. Mr. Billing, an ingenious farmer in Norfolk, obtained from twenty acres and a half of land, of different ſoil, and differently prepared, five hundred and ten loads of *carrots*, which, as experience led him to conclude, were equal in uſe and effect to a thouſand loads of turneps, or three hundred loads of hay. Some of them meaſured two feet long, and from twelve to fourteen inches round.

The ſeaſon for drawing *carrots* is a little after Michaelmas; and the beſt method of drawing them is by breaking the ground about ſix inches deep, with a four-pronged fork; though Mr. Billing has ploughed them up with a narrow-ſhared wheel-plough without injury, and the ſtock was turned into the ground to feed on them, without any farther preparation. Cows, ſheep, horſes, and hogs, become by uſe fond of *carrots*, and are greatly nouriſhed by them. See Billing's Account of the Culture of *Carrots*, 1765. 8vo.

Carrot, *wild*, or *Daucus Sylveſtris*. The ſeeds of this plant are eſteemed one of the moſt powerful diuretics we are acquainted with, of our own growth. They are alſo eſteemed provocatives to venery. They are alſo given in diſorders of the breaſt and lungs, in pleuriſies, in ſtranguries, and in the ſtone and gravel. An infuſion of them in white wine is excellent in hyſterical complaints. Many inſtances are related, in which tea made of the heads or ſeeds of the *wild carrot*, has given great relief in theſe complaints. Ale may be made of it, by adding to nine ounces of the ſeed eighteen ounces of raiſins of the ſun. Theſe muſt be put into a bag, and hung in a veſſel of ſix gallons of good ale, after fermentation. After eight days it will be fine, and it may be drank in the quantity of three pints a day.

See remarks on the uſe of the *carrot* peel-tree, in the Lond. Med. Obſerv. &c. vol. iv. p. 178. 191. and ibid. p. 358.

Carrot, *candy*. See SPIGNEL.

Carrot, *deaðly*, or *ſcorching*. See THAPSIA.

Carrot, *mountain*, a ſpecies of fennel. See FENNEL.

CARROUSAL, or **Carrowsal**, properly a courſe, or conteſt of chariots and horſes: or a magnificent entertainment, on occaſion of ſome public rejoicing; conſiſting in a cavalcade of ſeveral perſons, richly dreſſed, and equipped after the manner of the ancient cavaliers, divided into ſquadrons, meeting in ſome public place, and practiſing juſts, tournaments, and other noble exerciſes.

The word is ſince become of more general uſe, and is given to any merry meetings.

The word comes from the Italian *caroſello*, a diminutive of *carro*, *chariot*. Tertullian aſcribes the invention of *carrouſals* to Circe; and will have them inſtituted in honour of the Sun, her father; whence ſome derive the word from *carrus*, or *currus ſolis*.

The Moors introduced cyphers, liveries, and other ornaments of their arms, with trappings, &c. for their horſes. The Goths added creſts, plumes, &c.

CARR-TAKERS, are officers of the king's houſhold, who, when the court travels, have charge to provide waggons, carts, &c. to tranſport the king's furniture and baggage.

CARRUCA, in *Antiquity*, a ſplendid kind of carr, or chariot, mounted on four wheels, richly decorated with gold, ſilver, ivory, &c. in which the emperors, ſenators, and people of condition, were carried.

The word comes from the Latin *carrus*, or Britiſh *carr*, which is ſtill the Iriſh name for any wheel-carriage.

Carruca, or **Caruca**, is alſo uſed in *Middle Age Writers* for a PLOUGH.

Carruca was alſo ſometimes uſed for *carrucata*. See CARRUCATE.

CARRUCAGE, *carucagium*, a kind of tax anciently impoſed on every plough, for the public ſervice. See CARRUCATE and HIDAGE.

Carrucage, **Carucage**, or **Caruage**, in *Huſbandry*, denotes the ploughing of ground, either ordinary, as for grain, hemp, and flax; or extraordinary, as for woad, dyers weed, rape, and the like.

CARRUCATE, *carrucata*, in our *Ancient Laws* and *Hiſtory*, denotes a plough-land, or as much arable ground as can be tilled in one year, with one PLOUGH.

In Doomſday Inquiſition, the arable land is eſtimated in *carrucates*, the paſture in HIDES, and meadow in ACRES. Skene makes the *carrucata* the ſame with *hilda*, or *hida terræ*; Littleton the ſame with SOC.

The meaſure of a *carrucate* appears to have differed in reſpect of place, as well as time. In the reign of Rich. I. it was eſtimated at 60 acres, and in another charter of the ſame reign at 100 acres: in the time of Ed. I. at 180 acres: and in the 23d of Ed. III. a *carrucate* of land in Burceſter contained 112 acres, and in Middleton 150 acres. Dugd. Mon. tom. ii. p. 107. Kennet, Par. Ant. p. 471. Du-Cange.

By a ſtatute under William III. for charging perſons to the repair of the highways, a plough-land is rated at fifty pounds *per annum*, and may contain houſes, mills, wood, paſture, &c. Stat. 7 and 8 Will. III.

CARRYING, in *Falconry*, ſignifies a hawk's flying away with the quarry.

Carrying is one of the ill qualities of a hawk, which ſhe acquires either by a diſlike of the falconer, or not being ſufficiently broke to the LURE.

Carrying, among *Huntſmen*. When a hare runs on rotten ground (or even ſometimes in a froſt), and it ſticks to her feet, they ſay ſhe *carries*.

Carrying, among *Riding-Maſters*. A horſe is ſaid to *carry* low, when having naturally an ill-ſhaped neck, he lowers his head too much. All horſes that arm themſelves *carry* low, but a horſe may *carry* low without arming. A French branch, or gigot, is preſcribed as a remedy againſt *carrying* low.

A horſe is ſaid to *carry* well, when his neck is raiſed, or arched, and he holds his head high and firm, without conſtraint.

Carrying *wind*, a term uſed by our dealers in horſes to expreſs ſuch a one as frequently toſſes his noſe as high as his ears, and does not carry handſomely. This is called *carrying wind*; and the difference between *carrying* in the wind, and beating upon the hand, is this: that the horſe who beats upon the hand, ſhakes the bridle and reſiſts it, while he ſhakes his head; but the horſe that carries in the wind puts up his head without ſhaking, and ſometimes beats upon the hand. The oppoſite to *carrying* in the wind, is arming and *carrying* low; and even between theſe two there is a difference in wind.

CART, a vehicle mounted on two wheels, drawn by horſes, uſed for the carriage of heavy goods.

Mr. Sharp's *rolling cart* is fixed upon two rollers, running a-breaſt, or parallel with each other, and both placed under the body of the *cart*, working upon pivots like the wheel of a wheel-barrow. The rollers are both cylinders of caſt iron, two feet diameter, and fixteen inches broad. An iron ſpindle paſſes through the center of each roller, upon the ends of which reſt the four planks that ſupport the body of the *cart*.

The word ſeems formed from the French *charrette*, which ſignifies the ſame; or rather the Latin *carreta*, a diminutive of *carrus*. See CARR.

In London and Weſtminſter *carts* ſhall not carry more than twelve ſacks of meal, ſeven hundred and fifty bricks, one chaldron of coals, &c. on pain of forfeiting one of the horſes. 6 Geo. I. cap. 6.

By the laws of the city, carr-men are forbid to ride, either on their *carts*, or horſes. They are to lead, or drive them on foot, through the ſtreets, on the forfeiture of ten ſhillings. Stat. 1 Geo. I. cap. 57.

Criminals are drawn to execution in a *cart*. Bawds, and other malefactors, are whipped at the *cart's* tail.

Scripture makes mention of a ſort of *carts*, or drags, uſed by the Jews, to do the office of threſhing. They were ſupported on low thick wheels, bound with iron, which were rolled up and down on the ſheaves, to break them, and force out the corn. Something of the like kind alſo obtained among the Romans, under the denomination of *plauſtra*, of which Virgil makes mention. Georg. I.

> *Tardaque Eleuſinæ matris volventia plauſtra,*
> *Tribulaque, traheæque*——

On which Servius obſerves, that *trahea* denotes a *cart* without wheels, and *tribula* a ſort of *cart* armed on all ſides with teeth, uſed chiefly in Africa, for threſhing corn. The Septuagint and St. Jerome repreſent theſe *carts* as furniſhed with ſaws, inſomuch that their ſurface was beſet with teeth. David, having taken Rabbah, the capital of the Ammonites, ordered all the inhabitants to be cruſhed to pieces under ſuch *carts*, moving on wheels ſet with iron teeth; and the king of Damaſcus is ſaid to have treated the Iſraelites of the land of Gilead, in the ſame manner. 2 Sam. xii. 31. Amos, i. 3. Calm. Dict. Bibl. tom. i. p. 366.

CART-*bote*, in our *Ancient Cuſtoms*, denotes wood to be employed in making or repairing inſtruments of huſbandry.

CARTE BLANCHE, a French term, ſeldom uſed but in this phraſe, To give, or ſend any one the *carte blanche*; i. e. to ſend him a blank paper, ſigned, for him to fill up with what conditions he pleaſes.

Much like this is the French *blanc ſigne*, a paper without writing, excepting a ſignature at the bottom, given by contending parties to arbitrators, or common friends, to fill up with the conditions they judge reaſonable, in order to end the quarrel.

CARTEL, originally ſignifies a placart, or manifeſto in writing, poſted in public places to notify its contents.

The word comes from the Italian *cartello*, or Latin *cartellus*, which ſignifies the ſame; formed by diminution of *charta*, *paper*.

CARTEL, a letter of defiance, or a challenge to ſingle combat; much in uſe when thoſe combats were practiſed, for the deciding of difficult, and not otherwiſe to be determined, controverſies at law. See DUEL.

The uſe of *cartels*, or challenges to fight, is very ancient, there being divers inſtances of them in Homer, Virgil, and other Greek and Latin poets. Rymer gives the *cartel* which Edward III. ſent to Philip de Valois, challenging him either to fight him, body to body, or an hundred men againſt an hundred, or army to army, within ten days, before the gates of Tournay. Fœd. tom. v.

CARTEL alſo denotes a treaty or agreement between two princes or generals, relating to the exchange of priſoners taken in war.

There are alſo *cartels* ſettled between princes in time of war, for what relates to commerce, that it may be carried on without interruption, notwithſtanding other hoſtilities.

CARTEL is alſo uſed for a ſhip commiſſioned in time of war, to exchange the priſoners of any two hoſtile powers; or to carry any requeſt or propoſal from one to another. The officer who commands her is ordered to carry only a ſingle gun, for the purpoſe of firing ſignals.

CARTEL alſo denotes a meaſure of capacity for corn, uſed in divers parts of France, being of different values from thirty to fifty pounds.

CARTESIAN *Philoſophy*, or CARTESIANISM, the ſyſtem of philoſophy advanced by Des Cartes, and maintained by his followers, the *Carteſians*.

The *Carteſian* philoſophy is founded on two great principles, the one metaphyſical, the other phyſical. The metaphyſical principle is this, *I think, therefore I am.* This principle has been attacked and defended, with great ſpirit, zeal, and partiality, on both ſides: for, though it be true, that we are as ſure by an inward perception or conſciouſneſs, that we exiſt, as that we think; yet it is true, too, that the concluſion of this reaſoning, *I am*, is drawn from the antecedent *I think:* ſince *to think*, ſuppoſes *to be*, or *exiſt*; and the mind ſees clearly the neceſſary connexion between thinking and being.

From our having the idea of a Being infinitely perfect and neceſſarily exiſting, Des Cartes concludes that he actually is, upon whoſe will he makes the certainty of ſelf-evident propoſitions, and of all neceſſary truths to depend. From the knowlege thus eſtabliſhed, he proceeds to deduce a complete knowlege of his effects by neceſſary ſteps; and he rejects all final cauſes from philoſophy. He infers the reality of material objects from the veracity of the Deity.

The phyſical principle of *Carteſianiſm* is this, that *nothing exiſts but ſubſtances:* which appears a dangerous principle to the divines; and is accordingly controverted every day in the ſchools of the catholics; who undertake to prove, that there are abſolute accidents.

Subſtance he makes of two kinds; the one a ſubſtance that thinks, the other a ſubſtance extended. Actual thought, therefore, and actual extenſion, are the eſſence of ſubſtance: ſo that the thinking ſubſtance cannot be without ſome actual thought; nor can any thing be retrenched from the extenſion of a thing, without taking away ſo much of its ſubſtance.

The firſt article is oppoſed by Mr. Locke, who endeavours to ſhew, that thinking is not eſſential to the ſoul, or that its eſſence does not conſiſt in thought; but that there are various occaſions wherein it does not think at all. See DREAM. The latter is ſtrongly oppoſed by the Jeſuits, &c. as inconſiſtent with the doctrine of TRANSUBSTANTIATION; but is much better confuted by the modern writers, from the principle of the Newtonian philoſophy.

The eſſence of matter being thus fixed in extenſion, Des Cartes naturally concludes there is no vacuum, nor any poſſibility thereof in nature; but that the world is abſolutely full: for mere ſpace is precluded by his principle: becauſe extenſion being implied in the idea of ſpace, matter is ſo too. If there were any ſuch a thing as a vacuum, ſays he, it might be meaſured: the vacuum, therefore, is extended, and of conſequence is matter; every thing extended being matter. See VACUUM.

He defines motion to be the tranſlation of a body from the neighbourhood of bodies that are in contact with it, and conſidered as quieſcent, to the neighbourhood of other bodies; and thus deſtroys the diſtinction between abſolute or real, and relative or apparent motion. He maintains that the ſame quantity of motion is always preſerved in the univerſe; becauſe God, he ſays, muſt be ſuppoſed to act in the moſt conſtant and immutable manner. And hence he likewiſe deduces his three laws of motion. See MOTION.

Theſe principles of phyſics once ſuppoſed, Des Cartes explains mechanically, and according to the laws of motion, how the world was formed; and whence the preſent appearances of nature do ariſe. He ſuppoſes, that God created matter of an indefinite extenſion; that he divided this matter into little ſquare portions, or maſſes, full of angles; that he impreſſed two motions on this matter; one, whereby each part revolved round its centre; another, whereby an aſſemblage, or ſyſtem of them, turned round a common centre: whence aroſe as many different vortices, or eddies, as there were different maſſes of matter, thus moving round common centres.

Theſe things thus put into motion, the conſequences, according to Des Cartes, in each vortex, will be as follow: the parts of matter could not move and revolve among each other, without having their angles gradually broken; and this continual friction of parts and angles muſt produce three elements: the firſt, an infinitely fine duſt, formed of the angles broken off; the ſecond, the ſpheres remaining, after all the angular irregularities are thus removed: theſe two make the matter of his firſt and ſecond element. And thoſe particles not yet rendered ſmooth and ſpherical, and which ſtill retain ſome of their angles, and hamous parts, make the third element.

Now the firſt, or ſubtileſt element, according to the laws of motion, muſt take up the centre of each ſyſtem, or vortex, by reaſon of the ſmallneſs of its parts: and this is the matter which conſtitutes the ſun, and the fixed ſtars above, and the fire below. The ſecond element, compoſed of ſpheres, makes the atmoſphere, and all the matter between the earth and the fixed ſtars; in ſuch manner, as that the largeſt ſpheres are always next the circumference of the vortex, and the ſmalleſt next its centre. The third element, or the hooked particles, is the matter that compoſes the earth, all terreſtrial bodies, comets, ſpots in the ſun, &c.

The parts of the ſolar vortex, according to his ſyſtem, increaſe in denſity, but decreaſe in celerity, to a certain diſtance; beyond which he ſuppoſes all the particles to be equal in magnitude, but to increaſe in celerity. He accounts for the gravity of terreſtrial bodies from the centrifugal force of the æther revolving round the earth; and upon the ſame general principles he pretends to explain the phænomena of the magnet, and to account for every other operation in nature.

His ſyſtem, though very artfully concerted, yet carries with it more of the air of a romance, than of a juſt philoſophy. Accordingly, both divines and philoſophers exclaim againſt it: the firſt, becauſe it leads to atheiſm, by furniſhing the maintainers of an eternal matter, with means how, from the laws of motion, to account for the production of the world: though, it is certain, Des Cartes ſuppoſed a Deity; and ſo muſt all who admit his philoſophy; elſe whence will they derive that motion of matter, which of itſelf is deſtitute of any ſuch principle?

But the philoſophers have much better pleas againſt it; and the elements, ſubtile matter, hooked atoms, vortices, and other machines, are now clearly on the ſame footing with the occult quality of the ancient peripatetics. Indeed, Des Cartes, by introducing geometry into phyſics, and accounting for natural phœnomena from the laws of mechanics, did infinite ſervice to philoſophy; and contributed, both by his practice and example, to free it from that venerable ruſt, which in a long ſucceſſion of ages it had contracted: accordingly, to him, in ſome meaſure, is owing the preſent ſyſtem of mechanical, and even the Newtonian philoſophy.

Carteſianiſm was nearly prohibited by an arret of the parliament of Paris; and had been ſo, in effect, but for a burleſque addreſs preſented to the firſt preſident.

René des Cartes, the noble founder of this ſect, was of Bretagne, born in the year 1596. His monument informs us, "That having maſtered all the learning of the ſchools, which proved ſhort of his expectation, he betook himſelf to the army, in Germany and Hungary; and there ſpent his vacant winter hours, in comparing the myſteries and phœnomena of nature, with the laws of mathematics; daring to hope, that theſe might unlock the other. Quitting, therefore, all other purſuits, he retired to a little village near Egmond, in Holland; where ſpending twenty-five years in continual reading and meditation, he effected his deſign."

He was a perſon of great genius and penetration, both as to the invention, and orderly ranging and diſpoſing of things. He began a new method of philoſophy, and finiſhed it, on his own foundation. His reputation in foreign nations appears on his monument; which conſiſts of four faces, inſcribed with ſo many encomiums. It was erected at Stockholm, where he died, in the year 1650, by Monſieur Chanut, the king of France's reſident in that court. But his bones were afterwards removed to Paris, at the charge of M. d'Alibret, who alſo erected a handſome monument over them, in the church of St. Genevieve.

See an accurate account and examination of the *Carteſian* ſyſtem, in Maclaurin's View of Sir Iſaac Newton's Philoſophical Diſcoveries, chap. iv.

CARTHAMUS. See *Baſtard* SAFFRON.

CARTHUSIANS, a branch of the BENEDICTINES, an order of religious, inſtituted by S. Bruno, about the year 1084 (ſome ſay in 1080, and others in 1086), remarkable for the auſterity of their rule, which obliges them to a perpetual ſolitude; a total abſtinence from fleſh, even at the peril of their lives; and to feed on bread, water, and ſalt, one day in every week; and abſolute ſilence, except at certain ſtated times.

Their houſes were uſually built in deſarts, their fare coarſe, and their diſcipline ſevere. It is obſerved, that the monaſtical piety is ſtill better preſerved in this, than in any of the other orders. M. l'Abbé de la Trappe, however, endeavours to ſhew, that the *Carthuſians* do not live up to the auſterity enjoined by the ancient ſtatutes of Guigues, their fifth general. M. Maſſon, general of the order, anſwers the abbé; and ſhews that what he calls the ſtatutes, or conſtitutions of Guigues, are, in reality, only cuſtoms compiled by father Guigues; and that they did not become laws till long after.

The word is formed from *Carthuſianus*, or *Carthuſienſis*, a denomination given them in Latin, from a village in Dauphiny called *Chartreuſe*, in Latin *Cartuſium*, *Caturſium*, as ſome ſay, where the firſt monaſtery of this kind was erected. Hence the French call the religious of this order *Chartreu*, and their convents *Chartreuſes*; an appellation which alſo appears to have anciently obtained in England; whence the name of that celebrated hoſpital, or rather college, in London, the Charter-houſe; by corruption from *Chartreuſe*.

The *Carthuſian* habit is all white within, their ſcapular being joined in the ſides by two pieces of the ſame ſtuff. They wore a hair ſhirt next their ſkin. Their prior and procurator, who may go abroad upon the neceſſary affairs of the houſe, appear in a black cloak down to the ground, and a black hood over the white one; the hood not round, but tapering to a point.

There are few nuns of this order. There have, however, been ſome female *Carthuſian* convents; but the increaſe of them was prohibited in 1368; and there remain only five at this day; four in France, and one at Bruges in Flanders. They were brought into England by Henry II. about the year 1180, and had only nine houſes; their firſt houſe being at Witham in Somerſetſhire.

CARTHUSIAN *powder*, *poudre des Chartreux*. See KERMES *mineral*.

CARTILAGE, in *Anatomy*, a ſmooth, ſolid, uniform, flexible, elaſtic part of an animal; ſofter than a bone, but harder than any other part.

Cartilages ſeem to be nearly of the ſame nature with bones, and only to differ as more or leſs hard. There are ſome very hard, and which even become bony with time; as thoſe, v. g. which form the ſternum. Others are ſofter, and ſerve to compoſe entire parts; as thoſe of the noſe, ears, &c. where an eaſy gentle motion is required; their natural elaſticity ſerving them inſtead of antagoniſt muſcles.

There are others ſofter ſtill, partaking of the nature of ligaments, and thence called *ligamentous cartilages*.

There are *cartilages* of various figures, acquiring various names from the things they reſemble: one is called *annularis*, becauſe it reſembles a ring; another *xiphoides*, from its reſembling the point of a dagger; a third *ſcutiformis*, becauſe made like a buckler; and ſo of the reſt. See each under its proper head.

Cartilages have no cavities for marrow; nor any membranes, or nerves, for ſenſation. Their uſes are to prevent the bones from being damaged or wounded by a continual friction; to join them together by a ſynchondroſis; and to contribute, in great meaſure, to the well forming of ſeveral parts; as the noſe, ears, trachea, eyelids, &c.

Cartilages cover the extremities of bones joined together by moveable articulations, increaſe the volume of ſome of them after the manner of epiphyſes, unite others very cloſely together, and have no immediate adheſion or connection with others. The *cartilages* which belong to the bones differ from each other in ſize, figure, ſituation, and uſe, and may all be ranked under two general heads: thoſe which are cloſely united to bones, and thoſe which are not immediately connected with them. The *cartilages* united to bones are of four kinds; ſome cover both ſides of the moveable articulations, and are very ſmooth and ſlippery; ſome unite the bones to each other, either ſo firmly as to allow no ſenſible motion, as in the ſymphyſis of the *oſſa pubis*, and ſtill more in that by which the epiphyſes are joined to the bones; or in ſuch manner as to allow of different motions, as in thoſe by which the bodies of the *vertebræ* are connected. The firſt eaſily grow hard, but the others appear in ſome degree viſcid, and retain their flexibility.

Some increaſe the ſize and extent of bones, as the cartilaginous portions of almoſt all the true ribs: theſe are articulated with bones; others with *cartilages*, as the *ſeptum narium*; others ſerve only for borders, as thoſe of the baſis of the *ſcapula*, and of the *criſta* of the *os ilium*, the *ſupercilia* of cavities, and thoſe of the ſpinal and tranſverſe proceſſes of the *vertebræ*. Some, in fine, have a ſingular form, as thoſe of the ears, and moſt of thoſe of the noſe; in which laſt, their elaſticity appears moſt ſenſibly. The *cartilages* belonging to the ſecond general claſs, or thoſe not immediately joined to bones, are for the moſt part placed in the moveable joints; and theſe may likewiſe be ſubdivided into ſeveral kinds. Some lie altogether looſe, being neither joined to the articulated bones, nor to the *cartilages* which cover them, but ſlide freely between them in different directions; as thoſe which are placed in the articulation of the *tibia* with the *os femoris*; in that of the lower jaw with the *oſſa temporum*; and in that of the clavicle with the ſternum. Thoſe between the clavicle and acromium, and between the firſt and ſecond *vertebræ* of the neck, are of the ſame kind. Some are partly joined to other *cartilages*, and partly ſlide between the cartilaginous extremities of the articulated bones, as the *cartilage* at the lower extremity of the *radius*. There may alſo be reckoned among the *cartilages*, though not ſo properly, ſeveral of the ſmall ſeſamoide bones, which remain long cartilaginous; and alſo the cartilaginous portions of tendons, which do the ſame office with the ſeſamoide bones. Winſlow.

It is commonly held, that all bones in their original were only *cartilages*, and arrived at the hardneſs of BONES by a gradual induration.

Hence it is, that in ſome caſes the *cartilages* themſelves have been found oſſified; of which a famous inſtance happened ſome years ago at Milan, where a malefactor was judged innocent, and ſaved, becauſe his *aſpera arteria* being turned bony, he was not ſuffocated by the hangman's rope.

CARTILAGES, *articulating*. See JOINT *Cartilages*.

CARTILAGINOUS *fiſhes*, thoſe, whoſe ſpine, or backbone,

bone, is of the conſiſtence of a cartilage, being hollow withal, and containing medulla. See FISH.

Cartilaginous fiſhes are of two kinds; flat, as the raia or ſkate; and long and round, as the *aſellus*, or cod.

CARTILAGINOUS *leaf*, among *Botaniſts*. See LEAF.

CARTON, or, as we pronounce it, CARTOON, in *Painting*, a DESIGN, made on ſtrong paper, to be afterwards calqued through, and transferred on the freſh plaſter of a wall, to be painted in freſco.

The word, in the original French, ſignifies *thick paper*, or *paſte-board*.

CARTON is alſo uſed for a deſign coloured, for working in moſaic, tapeſtry, &c. The *Cartoons* formerly preſerved at Hampton-court, but now in the queen's palace at Buckingham-houſe, are deſigns of Raphael Urbin, intended for a tapeſtry. See Richardſon, in his Eſſay on Painting; where he ſpends a great part of a chapter on the colouring of the *Cartoons*.

CARTOUCH, a wooden caſe about three inches thick, girt round with marlin, and loaden with two, three, or four hundred muſquet-balls, beſides ſix or eight balls of iron of a pound weight; to be fired out of a ſmall ſort of mortar, chiefly for the defence of a paſs, or the like.

The *cartouch* is alſo called by the French *gargouge*, *gargouche*, or *gargouſſe*.

In cannon of caſemates, or other poſts, which defend the paſſage of the ditch, or the like, *cartouches* have a terrible effect: ſince, burſting aſunder, they ſpread the ſhot they are loaden with far and wide. There are divers other forms and compoſitions of *cartouches*, and ſome made for guns.

CARTOUCH is alſo uſed for what is more frequently called a CARTRIDGE.

CARTOUCH alſo denotes an ornament in architecture, ſculpture, &c. repreſenting a ſcroll of paper; being uſually in form of a table, or flat member, with wavings; whereon is ſome inſcription, or device, ornament of armory, cypher, or the like.

It is nearly akin to a modillion; from which it only differs in this, that the latter is uſed under the cornice in the eaves of a houſe, and the former in wainſcotting within doors. Some workmen call the *cartoozes* DENTILS.

The word is French, formed from the Italian *cartoccio*, which ſignifies the ſame.

Cartouches are ſometimes drawn on paper, as in the titles of maps, &c. and are ſometimes made of ſtone, brick, plaſter, wood, &c. for buildings.

CARTOUCHES, in *Heraldry*, a name given to a ſort of oval ſhields, much uſed by the popes and ſecular princes in Italy, and others, both clergy and laity, for painting or engraving their arms on. Many ſuppoſe this form derogatory to the honour of the perſon; but though the ſquare ſhield, with the rounded and pointed bottom, is more in uſe with us, as alſo with the French and Germans, yet this is ſuppoſed more truly the figure of the Roman ſhield worn by the ſoldiery, and therefore more ancient and honourable than either that or the indented ſhield of the Germans.

CARTRIDGE, in the *Military Art*, the charge or load of a fire-arm, wrapped up in a thick paper, paſte-board, or parchment; to be the more readily charged, or conveyed into the piece.

Cartridges are the ſame with what the French call *cartouches*; from which word Skinner ſcruples not to derive *cartridge*.

Thoſe of cannon and mortars are uſually in caſes of paſteboard, or tin, ſometimes of wood, half a foot long; taking up the place of the bullet in the piece, to whoſe caliber the diameter is proportioned. Thoſe of muſquets, piſtols, and ſmall arms, only contain the charge of powder, with a ball wrapped up in thick paper.

Flannel *cartridges* are now preferred, becauſe they do not retain the fire, and are therefore leſs liable to accidents in loading. A parchment cap is made to cover them, in order to prevent the duſt of powder from paſſing through them, which is taken off before they are put into the piece. Mr. Muller recommends for this purpoſe to boil the flannel in ſize. In quick firing, the ſhot is fixed to the *cartridge* by means of a wooden bottom, hollowed on one ſide, ſo as to receive nearly half the ſhot, which is faſtened to it by two ſmall ſlips of tin croſſing over the ſhot, and nailed to the bottom; and the *cartridge* is tied to the other end of this bottom. They are fixed likewiſe in the ſame manner to the bottoms of the grape-ſhot, which are uſed in field-pieces. Syſt. of Math. &c. vol. v. p. 291.

CARTRIDGE-*box*, a wooden or iron caſe covered with leather, holding a dozen or more muſket *cartridges*, borne by the ſoldier on his belt, hanging a little below the right pocket-hole.

CARVA, in *Botany*, a name given by the Indians to one of the kinds of cinnamon-tree. This is of all others the moſt eſteemed among them, and ſerves for the moſt purpoſes. They extract camphor and a liquid oil from the roots; they extract oil of cinnamon from the bark, and from the leaves they make another oil, which is called oil of cloves, and ſold as ſuch. The fruits yield them an oil reſembling that of juniper, and afterwards they extract from them a thick, fat ſubſtance, like wax, ſerving them for the making unguents and plaſters, and alſo for the making their candles.

CARVAGE, *carvagium*, the ſame with CARRUCAGE.

Henry III. is ſaid to have taken *carvage*, that is, two marks of ſilver of every knight's fee, towards the marriage of his ſiſter Iſabella to the emperor.

Carvage could only be impoſed on the tenants *in capite*.

CARVAGE alſo denotes a privilege whereby a man is exempted from the ſervice of *carrucage*.

CARUCATARIUS, in *Ancient Law Books*, he that held land in SOCCAGE, or by plough tenure.

CARUCATE. See CARRUCATE.

CARVER, a cutter of figures or other devices in wood. See CARVING.

Carvers anſwer to what the Romans called *ſculptores*, who were different from *cælatores*, or engravers, as theſe laſt wrought in metal.

CARVER is alſo an officer of the table, whoſe buſineſs is to cut up the meat, and diſtribute it to the gueſts.

The word is formed from the Latin *carptor*, which ſignifies the ſame. The Romans alſo called him *carpus*, ſometimes *ſciſſor*, *ſcindendi magiſter*, and *ſtructor*.

In the great families at Rome, the *carver* was an office of ſome figure. There were maſters to teach them the art regularly, by means of figures of animals cut in wood. The Greeks alſo had their *carvers*, called διατροι, q. d. *deribitores*, or *diſtributors*. In the primitive times, the maſter of the feaſt carved for all his gueſts. Thus in Homer, when Agamemnon's embaſſadors were entertained at Achilles's table, the hero himſelf carved the meat. Of later times, the ſame office on ſolemn occaſions was executed by ſome of the chief men of Sparta. Some derive the cuſtom of diſtributing to every gueſt his portion, from thoſe early ages when the Greeks firſt left off feeding on acorns, and learned the uſe of corn. The new diet was ſo great a delicacy, that to prevent the gueſts from quarrelling about it, it was found neceſſary to make a fair diſtribution. Athen. Deipn. lib. i. cap. 10. Potter. Arch. lib. iv. cap. 10.

CARVING, in a general ſenſe, the art or act of cutting or faſhioning a hard body by means of ſome ſharp inſtrument, eſpecially a chiſſel.

In which ſenſe, *carving* includes ſtatuary and engraving, as well as cutting in wood.

CARVING, in a more particular ſenſe, is the art of engraving or cutting figures in wood.

In this ſenſe, *carving*, according to Pliny, is prior both to ſtatuary and painting. See CUTTING *in wood*.

CARVIST, in *Falconry*. See FALCON.

CARUM, in *Botany*. See CARAWAY.

CARUNCULA, CARUNCLE, a term in *Anatomy*, properly ſignifying a little piece of fleſh, being a diminutive of the Latin *caro*, *fleſh*.

The name *caruncula* is applied to ſeveral parts of the body; as,

CARUNCULÆ *cuticulares alæ*, a name which ſome anatomiſts give the NYMPHÆ.

CARUNCULÆ *lachrymales*, are two little eminences, one in each great canthus, or corner of the EYE; ſeparating the two *puncta lachrymalia*.

Some reſtrain the appellation *lachrymalis* to the *caruncula* in the greater, or inner canthus; calling that in the leſſer canthus *innominata*.

Some have given the name *caruncula* to that pendant fleſhy part, called UVULA, or *columella*.

CARUNCULA is alſo applied to certain fleſhy morſels preternaturally contained in divers parts and humours of the body. We ſometimes meet with capillary *caruncles* excreted with the urine. See TRICHIASIS.

To the head of *carunculæ* alſo belong thoſe fleſhy excreſcences called *polypuſes*. See POLYPUS.

CARUNCULÆ *myrtiformes*, in *Anatomy*, are four little *caruncles*, or fleſhy knobs, about the ſize of myrtle-berries, whence their name; found adjoining to, or rather in the place of the HYMEN, in the parts of generation in women.

Some ſuppoſe them to be largeſt in maids, and to grow leſs and leſs by the uſe of venery; but others, with more probability, make them the conſequences of venery in the firſt copulation; deriving them from the broken membrane of the *hymen*, whoſe fragments ſhrunk up they appear to be.

CARUNCULÆ *papillares*, or *mamillares*, are little protuberances in the inſide of the *pelvis* of the KIDNEYS, made by the extremities of the tubes which bring the ſerum from the glands in the exterior parts, to the *pelvis*.

They were firſt diſcovered by Carpus; and thus called, from their reſembling a little teat or pap. They are in form of acorns heads, and are leſs red than the fleſh, as well as harder than the ſame. They are about the bigneſs of a pea, but larger at top than at bottom; ending, as it were, in a point, in the place where they are perforated to let the urine fall into the *pelvis*.

Carunculæ Urethræ. See Bougie and *Medicinal* Candles.

CARUS, Καρος, in *Medicine*, a ſpecies of lethargic diſeaſe, conſiſting in a profound ſleep, with a ſudden deprivation of ſenſation and motion, and an acute fever.

The *carus* differs from a coma in this, that the patient, in the latter, anſwers when interrogated; but not in the former; from a lethargy it is diſtinguiſhed by the fever which attends it, which the lethargy is free from; and by the return of ſenſation, which the lethargic perſon finds when agitated or pricked: from a proper apoplexy, by the freedom of reſpiration, which is always hurt in an apoplexy: from an epilepſy, in that there is no motion or froth at the mouth in the *carus*: from a ſyncope, by the pulſe, which is high, and the face ruddy; whereas the pulſe is low, and the face cadaverous, in the ſyncope: from an hyſteric ſuffocation, in that the patient hears and remembers things in the latter, not in the former.

CARYATES, in *Antiquity*, a feſtival in honour of Diana, ſurnamed Caryatis, held at Caryum, a city of Laconia. The chief ceremony was a certain dance, ſaid to have been invented by Caſtor and Pollux, and performed by the virgins of the place.

During Xerxes's invaſion, the Laconians not daring to appear and celebrate the cuſtomary ſolemnity, to prevent incurring the anger of the goddeſs by ſuch an intermiſſion, the neighbouring ſwains are ſaid to have aſſembled and ſung paſtorals, or *bucoliſmi*, which is ſaid to have been the origin of bucolic poetry.

CARYATIDES, or Cariates, in *Architecture*, a kind of order of columns, or pilaſters, under the figure of women, dreſſed in long robes, ſerving to ſupport entablatures. See *Tab. Archit. fig.* 38.

The origin of the *Caryatides* is related by Vitruvius: the Greeks, he obſerves, having taken the city *Carya*, led away their women captives; and to perpetuate their ſervitude, repreſented them in their buildings as charged with burdens, ſuch as thoſe ſupported by columns.

Though this *falſe* order, as many call it, differs from the general ſimplicity and plainneſs of the ancients, it is, nevertheleſs, introduced in many of their buildings: the temple of Erictheus, at Athens, affords a beautiful inſtance.

The *Caryatides*, M. le Clerc obſerves, are not now repreſented as among the ancients, viz. as ſymbols of ſlavery, with hands tied before and behind; thoſe characters being ſuppoſed to be injurious to the fair ſex. Among us, they are repreſented as images of juſtice, prudence, temperance, &c. Their legs are always to be cloſe to each other, and even acroſs; their arms are laid flat to the body, or to the head, or at leaſt as little ſpread as poſſible; that as they do the office of columns, they muſt have, as near as poſſible, the figure thereof. Sometimes their arms are cut off, for the greater delicacy; as in the hall of the Swiſs guards in the Louvre: but M. le Clerc does not approve ſuch mutilations.

When inſulated, they ſhould never have any great weight to ſupport; and their entablature and pedeſtal are ordinarily to be Ionic.—When they join to a wall, &c. it is adviſeable to put a conſole over them, which may appear to ſuſtain the weight of their entablature; otherwiſe, as they repreſent women, they do not ſeem ſo proper to ſuſtain great loads.—When they are made in form of angels, the ſame author would have them ſupport the entablature, which in that caſe is to be Corinthian, with their hands.

The ancients made the *Caryatides* frequently to ſupport baſkets, or corbels of flowers; and theſe they called canephoræ, or *ciſtiferæ*.

CARYOCATACTES, in *Zoology*, the name of a bird of the magpie kind, of a browniſh colour, all over beautifully variegated with white triangular ſpots, and very full of white feathers about the anus and origin of the tail. It is common in the mountainous parts of Germany.

CARYOCOSTYNUM, in *Pharmacy*, a kind of purging electary, the two principal ingredients of which, that give the denomination to the whole, are cloves, and coſtus. It works briſkly, and fetches the humours from the moſt remote parts; whence, and by reaſon of its warmth, it is preſcribed againſt rheumatic, arthritic, hydropic, paralytic, &c. diſorders.

CARYOPHYLLATA, *avens*, in *Botany*. See Herb *Bennet*.

CARYOPHYLLEOUS, in *Botany*, a term uſed by Mr. Tournefort to expreſs a ſort of flowers of the pink kind, or reſembling the pink-flowers in ſhape. Theſe are compoſed of ſeveral petals diſpoſed in an orbicular form, and ariſe from the bottom of the cup as from a ſort of tube. See *Tab.* VI. *of Botany*.

CARYOPHYLLON *Plinii*, the fruit of the *caſſia caryophyl'ata*, or cloveberry-tree, whoſe bark is uſed in medicine.

CARYOPHYLLUS, the pink.

Caryophyllus *aromaticus*, in *Botany*, the *clove-ſpice*. See Clove-*tree*.

Caryophyllus *marinus*, a name given by Dr. Woodward to a foſſile *mycetites*, or coralloide body found in ſeveral parts of Germany.

CARYOTA, in *Botany*, the name of a genus of plants deſcribed by the author of the Hortus Malabaricus, under the name of *ſchunda-pana*, and belonging to the *palmæ* of Linnæus. The characters are theſe: it produces male and female flowers in the ſame ear; the male flowers have for their cup the whole compound ſpatha; the flower is divided into three parts, and the petals are very ſmall and ſharp-pointed; the germen of the piſtil is roundiſh, the ſtyle is pointed, and the ſtigma ſimple; the fruit is a roundiſh berry, containing only one cell, in which are contained two large and oblong ſeeds, which are cylindric or rounded on one ſide, and flatted on the other.

CARYSTIUM *linum*. See Linum *caryſtium*.

Carystium *marmor*. See Marmor.

CARYUS, in the *Materia Medica*, a name given by Dioſcorides, and ſome other of the ancient Greeks, to the *eryngium*, or ſea-holly, called by us *eryngo*. It was thus named from its having a ſmall head or cluſter of flowers like a walnut. See Eryngium.

CASA, in *Ancient* and *Middle Age Writers*, is uſed to denote a cottage or houſe.

Casa *Santa*, denotes the chapel of the Holy Virgin at Loretto.

The *Santa Caſa* is properly the houſe, or rather chamber, in which the Bleſſed Virgin is ſaid to have been born, where ſhe was betrothed to her ſpouſe Joſeph, where the angel ſaluted her, the Holy Ghoſt overſhadowed her, and, by conſequence, where the Son of God was conceived, or incarnated.

Of this building the catholics tell many wonderful ſtories, too childiſh to tranſcribe.

The *Santa Caſa*, or holy chamber, conſiſts of one room, forty-four ſpans long, eighteen broad, and twenty-three high. Over the chimney, in a niche, ſtands the image called the great *Madona*, or Lady, four feet high, made of cedar, and, as they ſay, wrought by St. Luke, who was a carver as well as a phyſician. The mantle or robe ſhe has on, is covered with innumerable jewels of ineſtimable value. She has a crown, given her by Lewis XIII. of France, and a little crown for her ſon.

CASCABLE, the knob or button of metal behind the breech of a cannon, as a ſort of handle whereby to elevate and direct the piece: to which ſome add the fillet and ogees as far as the baſe-ring. See *Tab. Gunnery, fig.* 1.

The neck of the *caſcable* is the part which joins it to the breech-mouldings; its diameter is $\frac{1}{4}$ of a calibre; that of the button ſomething more than a calibre. The length of the *caſcable* is always two calibres and a quarter. They are made of various figures, ſometimes like a bunch of grapes, or like the heads of different kinds of animals. The French diſtinguiſh their calibres by the different forms of their *caſcables*; in England they are made with a button and a few breech-mouldings.

CASCADE, a ſteep fall of water, from a higher into a lower place.

The word is French, formed of the Italian *caſcata*, which ſignifies the ſame; of *caſcare, to fall*; and that from the Latin *cadere*.

Caſcades are either natural, as that of Tivoli, &c. or artificial, as thoſe of Verſailles, &c. and either falling with a gentle deſcent, as thoſe of the Sceaux; in form of a buffet, as at Trianon; or down ſteps, in form of a perron, as at St. Clou; or from baſon to baſon, &c.

A natural *caſcade*, falling with a great noiſe, is more properly called a cataract.

CASCANS, or Cascanes, in *Fortification*, are holes and cavities in form of wells, made in the terreplein, near a rampart; from whence a gallery, dug in like manner, under ground, is conveyed, to give air to the enemies mine.

CASCARILLA, a name by which ſome authors have called the Jeſuit's bark: the *quinquina* or *china-china* of other writers.

CASE, ſometimes denotes a veſſel or receptacle in form of a tomb, commonly decorated with gold and ſilver, wherein the body of a ſaint, or ſome relics of it, are preſerved.

In which ſenſe, the word is formed from the French *chaſſe*.

Originally theſe *caſes* were made in the figure of little Gothic churches, purſuant to that ancient Chriſtian maxim, that the ſaints having been the living temple of the Holy Ghoſt, are entitled, after their death, to have their bones encloſed in the figure of the viſible houſe of God.

The *caſe* of St. Genevieve is never brought down without great ceremony, nor except in time of extreme public dangers or calamities.

Case, in *Grammar*, is underſtood of the different inflexions or terminations of nouns; ſerving to expreſs the different ſtates or relations they bear to each other, and to the things they repreſent. For the reaſon of the name, ſee Declension.

There is a great diverſity among grammarians, with regard to the nature and number of *caſes:* they generally find ſix *caſes* even in moſt of the modern languages, which they call the *Nominative*, *Genitive*, *Dative*, *Accuſative*, *Vocative*, and *Ablative:* but this ſeems only in compliance with their own ideas, which are formed on the Greek or Latin, and which they transfer to other languages.

The truth is, if, by *caſe*, be only meant an occaſional change in the termination of a noun, or name, which ſeems to be the juſt idea of *caſe*; there will, in this ſenſe, be juſt as many *caſes* as there are different terminations of nouns in the ſame number, i. e. in ſome languages more, in others leſs, and in others none at all.

Indeed, the generality of authors either have not any preciſe notion of *caſes* at all, or they wander ſtrangely from that notion: for they always reckon five *caſes* of nouns in the Greek, and ſix in the Latin: though ſeveral of theſe *caſes* be frequently alike, as the genitive and dative ſingular, of the firſt declenſion of the Latin; the dative and ablative plural of the ſecond, &c. the genitive and dative dual of the Greek, &c. So that the termination is not the ſole criterion of the *caſe*.

It ſeems, however, much more agreeable to the principles of grammar, which only conſiders words materially, to make as many different *caſes*, as there are changes in the terminations of a name; which would free the Engliſh, and other modern tongues, from the embarraſſment of *caſes*; moſt of them expreſſing the various relations, not by changes in termination, as the ancients; but by the ſituation of the ſubſtantive, as in the nominative and accuſative caſes, or by the appoſition of articles and prepoſitions. On this footing it is certainly wrong to ſay, v. g. that *of a father*, is the genitive *caſe* of father; and *to a father*, the dative; for *of* and *to* are no part of the noun *father*; they are no cloſes or terminations, but articles or modificatives, which ſhew the different relation of the word *father*. And the ſame may be ſaid of the *caſes* of nouns, in the French, Italian, Spaniſh, Portugueſe tongues, &c. Nevertheleſs, the relation of poſſeſſion, which anſwers to the genitive *caſe*, is often expreſſed by a different termination of the ſubſtantive: as "God's grace," or, as it was formerly written, "Godis grace," the grace of God. So that the Engliſh ſubſtantives may be conſidered as having two terminations for *caſes*; that of the nominative, and that of the genitive or poſſeſſive *caſe*. In this reſpect it bears ſome reſemblance to the German, which is probably derived from the ſame Teutonic original.

But it is otherwiſe in the Greek name πατρὸς, or the Latin *patris*; which are real *caſes* of the words πατὴρ, and *pater*, and different from thoſe words: and ſomewhat like this may be ſaid of the Hebrew, Arabic, Armenian, Poliſh, and German languages; which in the ſame number admit of changes, in the terminations of words: and yet in theſe languages, *caſes* are different from what they are in the Greek and Latin. The Hebrew names, for inſtance, are not properly declined by *caſes:* the relation expreſſed by the genitive *caſe*, it is true, occaſions an alteration in them; but then this alteration, inſtead of being in the noun governed, as in the Latin, in the Hebrew is in that which governs; as דְּבַר שֶׁקֶר, *verbum falſitatis*; where the change is not in שֶׁקֶר, *falſitas*, but in דְּבַר for דָּבָר, *verbum.*

It muſt be obſerved, however, that though many of the languages have not properly any *caſes* of nouns; yet moſt, if not all of them, have a kind of *caſes* in their pronouns, without which it would be hard to conceive the connexion, or ſyntax, of a diſcourſe; and which, therefore, make a neceſſary part of grammar: thus, in Engliſh, *I* and *me*; and in French, *Je* and *moi*. See the relations expreſſed by each *caſe*, under its proper head, Nominative, Genitive, Dative, &c.

Case, in *Printing*, a large, flat, oblong frame, placed aſlope, divided into ſeveral compartments, or little ſquare cells; in each of which are lodged a number of types, or letters of the ſame kind; whence the compoſitor takes them out, each as he needs it, to compoſe, and make a page, or form.

A frame of *caſes*, in printing, uſually conſiſts of two pair, viz. an upper and lower, Roman and Italic. A ſhallow *caſe* ſhews the letter beſt, as being leaſt ſhadowed by the ſides of the boxes. A deep *caſe* has the advantage of holding a great number of letters, ſo that the compoſitor need not diſtribute ſo often.

They ſay, *a caſe*, or rather *pair of caſes*, of Greek, of Hebrew, of Pica, &c.

Case of a ſilk-worm, is a lodge framed within its web, wherein to depoſit its *ova*.

Case is alſo uſed for a certain numerous quantity of divers things: a *caſe* of piſtols implies a brace; a *caſe* of glaſs, &c. ſee Glass.

Case is alſo uſed for a frame ſurrounding a door, window, or the like. In which ſenſe we ſay a door-*caſe*, window-*caſe*, &c.

Case, *action upon the*, in *Law*. See Action.

Case, *ſpecial*, in *Law*, relates to a kind of ſpecial verdict, in which the jury generally find a verdict for the plaintiff, but ſubject nevertheleſs to the opinion of the judge or the court above, on a *ſpecial caſe* ſtated by the counſel on both ſides with regard to a matter of law.

Case *ſtated out of Chancery*, reſpects a queſtion of law in the proceſs of any cauſe referred by this court to the opinion of the judges of the court of King's Bench; before whom it is heard, and who certify their opinion to the chancellor in order to a decree.

CASE-HARDENING, a method of preparing iron, ſo as to render its outer ſurface hard, and capable of reſiſting the file, or any edged tool. It is uſed by file-cutters for coarſe files; by gun-ſmiths, to harden the barrels of guns; and by others, on other occaſions.

The proceſs of *caſe-hardening*, which is no other than a ſuperficial converſion of iron into ſteel, depends on the cementation of it with vegetable or animal coals. See Hardening and Steel.

CASE-SHOT, are muſquet-balls, ſtones, old pieces of iron, or the like, put up into caſes, and ſo ſhot out of great guns.

Caſe-ſhot is chiefly uſed at ſea, to clear the enemies decks when they are full of men.

CASEI *di cavallo*, the name of a peculiar cheeſe, famous in Italy and many other places, and made of the milk of the female buffalo, that ſpecies being as commonly tamed and kept there as the ox and heifer with us.

CASEMATE, or Casement, in *Architecture*, the ſame with *cavetto*, denotes a hollow moulding, which ſome architects make one ſixth of a circle, and others one fourth.

Casemate, or Cazemate, in *Fortification*. See Cazemate.

CASEMENT, is uſed in building for a little moveable window uſually within a larger, being made to open or turn on hinges. We ſay, a ſingle *caſement*; a folding *caſement*; a *caſement* with a lock, with a turn-about or turn-buckle; a *caſement* with a cock-ſpur or pull-back at the hind-ſide, wherewith to draw it to.

CASEOUS, ſomething that partakes of the nature or qualities of cheese.

Milk conſiſts of a *caſeous*, a butyrous, and a ſerous part.

Wax, according to ſome naturaliſts, is formed of the *caſeous* parts of the juices of plants, ſeparated by the bees from the ſerous parts, which make the honey. Phil. Tranſ. Nº 224. p. 368.

Cataracts are by ſome divided into milky, and *caſeous*, differing only in the degree of hardneſs or conſiſtence.

Konig gives a caſe of a *caſeous* empyema.

CASERNS, or Cazerns, in *Fortification*, little rooms, or huts, erected between the ramparts, and the houſes of fortified towns, or even on the ramparts themſelves: to ſerve as lodgings for the ſoldiers of the garriſon, to eaſe the garriſon.

There are uſually two beds in each *caſern*, for ſix ſoldiers to lie, who mount the guard alternately; the third part being always on duty.

CASES *reſerved*, in the *Romiſh Polity*, are conſiderable ſins, the abſolution of which is *reſerved* by the ſuperiors to themſelves, or their vicars.

There are ſome *caſes reſerved* by the pope, and others by the biſhops: in convents ſome are *reſerved* by the chapter, &c. None but theſe, or their vicars, can abſolve in ſuch *caſes*; except at the article of death, when all *reſerved caſes* are abſolvable, by the ordinary.

CASH, in *Commerce*, the ſtock or ready money, which a merchant, or other perſon, has in his preſent diſpoſal, to negotiate; ſo called from the French term, *caiſſe*, i. e. *cheſt*, or *coffer*, for the keeping of money.

M. Savary ſhews, that the management of the *caſh* of a company, is the moſt conſiderable article; and that whereon its good or ill ſucceſs chiefly depends.

Cash-*book*. See Book.

CASHEW-*Nut*. See Acajou and Anacardium.

CASHIER, the *caſh-keeper*; he who is charged with the receiving and paying the debts of a ſociety.

In the generality of foundations, the *caſhier* is called *treaſurer*.

CASHIERS *of the Bank*, are officers who ſign the notes that are iſſued out, examine and mark them when returned for payment, &c.

CASHOO, a medicinal and aromatic drug, which is reckoned among perfumes. All that has yet been aſſerted about the origin and compoſition of this drug, is entirely fabulous. What follows will ſufficiently acquaint phyſicians, apothecaries, and druggiſts with what they ought to know of it. *Caſhoo* is extracted from a tree which is called *catee* in the country where it grows, which is a province of Indoſtan called Behar, the capital of which is Patna. This province, which is croſſed by the famous river Ganges, lies a hundred leagues above the kingdom of Bengal. *Caſhoo* is properly an extract made by a decoction and maceration of the ſeveral parts of this tree, and rendered ſolid by evaporation. There are two ſorts of ſimple *caſhoo*, the rough, and the purified or refined; the latter is a compoſition of purified *caſhoo*, mixed with aromatic drugs, and made into lozenges. This *caſhoo* is made for the uſe of the Indians, who chew it either alone, or mixed with pinang or areca. Rough *caſhoo* is a commodity which is brought down the Ganges as far as Bengal; whence it is diſtributed throughout the Indies, where there is a great conſumption of it; and to the Europeans, who ſend it into Europe. What is ſent into Europe, however, is moſtly purified; for *caſhoo* is not uſed rough any where.

Caſhoo is much valued in medicine: among other effects aſcribed to it, is the ſtopping a cough, and ſtrengthening the ſtomach; beſide which it ſweetens the breath, when being reduced to an impalpable powder, mixed with ambergriſe, and mucilages of gum adragant, it is made into paſtils. *Caſhoo* muſt be choſen of a tanned red on the outſide, of a bright red within, very ſhining, and not burnt. Kœmpfer obſerves, that they prepare at Odowara perfumed *caſhoo*, of which they make pills, ſmall idols, flowers, and other figures, which they put into little boxes for ſale. The women are very fond of it, and uſe a great deal of it, becauſe it faſtens the teeth, &c. The thickened juice is carried to Japan, by the Dutch and Chineſe; and after it has been prepared at Macao, or at Odowara, they buy it again, and carry it to other places.

CASI, in the *Perſian Policy*, one of the two judges under the nadab, who decide all religious matters, grant all divorces, and are preſent at all public acts; having deputies in all cities of the kingdom.

CASIA, in *Botany*, the name of a genus of plants, of which there are two ſpecies: 1. The Montpelier poetic *caſia*, called the berry-bearing ſhrub oſyris. See Poet's *caſia*. 2. The tall myrtle-leaved Spaniſh *caſia*.

CASING, among *Hunters*, denotes the ſtripping off the ſkin of a hare, fox, or badger. They ſay, *flay* a deer, *caſe* a hare, and all ſorts of vermin. This is done by beginning at the ſnout or noſe of the beaſt, and ſo turning his ſkin over his ears down to the body, and the very tail.

Casing *of Timber-work*, is the plaſtering a wooden houſe all over on the outſide with mortar, and ſtriking it, yet wet, by a ruler, with the corner of a trowel, or the like inſtrument, to make it reſemble the joints of free-ſtone; by which means, the whole houſe appears as if built thereof. It is beſt done on heart-laths, becauſe the mortar is apt to decay the ſap-laths in a ſhort time. It is commonly laid on at two thickneſſes, the ſecond before the firſt is dry.

CASINGS, a country word for cow-dung dried, and uſed as fewel.

CASK, a piece of defenſive armour, wherewith to cover the head, and neck; otherwiſe called *helmet*, and *head-piece*. The word is French, *caſque*, formed from *caſſicum*, or *caſſicus*, a diminutive of *caſſis*, *a helmet*.

Le Gendre obſerves, that anciently, in France, the *gens d'armes* all wore *caſks*. The king wore a *caſk* gilt; the dukes and counts, ſilvered; gentlemen of extraction wore them of poliſhed ſteel; and the reſt of plain iron.

The *caſk* is frequently ſeen on ancient medals; where we may obſerve great varieties in the form and faſhion thereof; as the Greek faſhion, the Roman faſhion, &c.

F. Joubert makes it the moſt ancient of all coverings of the head, as well as the moſt univerſal: kings, emperors, and even gods themſelves, are figured therewith. That which covers the head of Rome, has uſually two wings, like thoſe of Mercury: and that of ſome kings is furniſhed with horns, like thoſe of Jupiter Ammon; and ſometimes barely bulls or rams horns, to expreſs uncommon force.

Cask, in *Heraldry*, the ſame with helmet.

Cask is alſo uſed as a common name for vessels of divers kinds; in contradiſtinction from the liquor, or other matter contained therein.

Thus a hogſhead of ſpirits, &c. is ſaid to weigh 4 C. ½ and 22 *lb.* *caſk* and liquor; a puncheon, 6 C. ¼ and 2 *lb.* *caſk* and liquor. See Tun, &c.

Cask *of Sugar*, is a barrel of that commodity, containing from eight to eleven hundred weight.—A *caſk* of almonds is about three hundred weight.

No one ſhall tranſport any wine *caſk*, &c. except for victualling ſhips, under a certain penalty, by 35 Eliz.

CASKET, in a general ſenſe, a little coffer, or cabinet.

Caskets, in *Sea-Language*, are ſmall ropes made of ſinnet, and faſtened to gromets, or little rings upon the yards; their uſe is to make faſt the ſail to the yard when it is to be furled.

Caskets, *breaſt*, are the longeſt and higheſt of theſe, or thoſe in the midſt of the yard, betwixt the ties.

CASLEU, in the *Hebrew Chronology*. See Cisleu.

CASPARGUS, in *Ichthyology*, a name given by Salvian, from Ælian, to the fiſh commonly called by authors, *ſparus*, and by the Italians, *ſparo*. It is diſtinguiſhed by Artedi by the name of the plain yellowiſh sparus, with a large annular ſpot near the tail.

CASQUE, in *Natural Hiſtory*, a name given to a kind of murex, called the helmet-ſhell. There are ſeveral ſpecies of this ſhell, and they all approach ſomewhat to a triangular figure, and are ſmoother than the other murexes; yet they have all a ſort of tubercles near the lip.

CASSADA, or **Cassava**, *Jatropha*, in *Botany*, a genus of the *monaecia monadelphia* claſs. Its characters are theſe: it hath male and female flowers on the ſame plant; the male flowers are ſalver-ſhaped, of one petal, whoſe brim is cut into five roundiſh ſegments which ſpread open: they have ten awl-ſhaped ſtamina, five alternately ſhorter than the other. The female flowers which are ſituated in the ſame umbrel, have five petals ſpreading open like a roſe: in the centre is a roundiſh germen with three deep furrows, which afterward becomes a roundiſh capſule with three cells, each containing one ſeed. There are eight ſpecies.

All theſe plants are natives of the warm parts of America, ſo are too tender to thrive in the open air in England. The firſt ſort is cultivated in the Weſt Indies for food; where it is propagated by cutting the ſtalks into lengths of ſeven or eight inches, which take root when planted.

They plant this ſhrub in new grounds deſigned for cacao walks, not only becauſe they are abſolutely neceſſary for a planter as food for his negroes; but alſo to prevent the growing of weeds, and to ſhade the young cacao plants as they come up, which would not otherwiſe be able to bear the exceſſive heat of the ſun: for which reaſon they delay planting the cacao nuts until the *caſſada* ſhrub be grown high enough to ſhade them.

They generally take up the *caſſada* roots within a year or thereabout after planting: at the foot of every ſhrub are found ſeveral roots, of a fleſhy ſubſtance, without any ſenſible fibres. They waſh theſe roots well in water, and having ſcraped them as we do carrots, they raſp them with large copper raſps. The raſpings are afterward put into a bag made of coarſe cloth or ruſhes, and placed under a preſs, to expreſs all the moiſture, which is hurtful to animals, and even poiſonous: they then dry the remaining matter over the fire, and when it is ſufficiently dreſſed, they make it into cakes, which being dried either in the ſun, or by artificial heat, are the *caſſada* bread; which is very nouriſhing, and will keep without moulding, as well as biſcuit.

The uſe of it is apt to contract the throat, if eaten dry, and ſometimes brings on a danger of choaking; the beſt method is to moiſten it in broth, or otherwiſe, before it is eaten, or elſe to have a bottle of water at hand to waſh down every mouthful.

The juice expreſſed in preparing this root for bread, will kill any animal that drinks it crude; but it may be boiled over the fire till a great part is evaporated, and the remainder, if it be far evaporated, will be ſweet, and ſerve in the place of honey; if leſs evaporated, and ſet by to ferment, it will make a very good and wholeſome vinegar. The juice of the roucou or annotto is ſaid to be a counter-poiſon for it.

The thicker cakes of *caſſada* bread are eaten by the poorer ſort: the thinner, called *ſciam*, are eaten by the rich. There is a kind of it which may be eaten raw, and which is now getting into uſe; inſtead of the other, which is a ſpeedy poiſon, if eaten with its juice.

CASSAMUNAIR, or **Cassumuniar**, in *Medicine*, an aromatic vegetable drug, brought from the Eaſt Indies, highly valued as a nervine and ſtomachic, and reputed a ſpecific in epileptic and convulſive diſeaſes. It is ſuppoſed by ſome to be a ſpecies of galangal, by others of zedoary: its true name is not known, that of *caſſamunair* being apparently feigned to hide it: of late it has been imported by the name of *bengalle*.

CASSANDRA, in *Natural Hiſtory*, a name given by ſeveral authors to a very elegant ſea-ſhell of the *concha globoſa*, or *dolium* kind, more uſually known under the name of the LYRA, or harp-ſhell. It is ſuppoſed to be called *caſſandra*, becauſe of its being found on the ſhores of the iſland of Caſſan. There are three ſpecies of it.

CASSAON, in *Zoology*, the name of a ſmall fiſh of the ſhark kind, but leſs miſchievous, called CUCURI by the Braſilians.

CASSATION, in the *Civil Law*, the act of abrogating, or annulling any act or procedure.

The word comes from the Latin *quaſſare, to quaſh*, or *ſhake down*.

The occaſions of *caſſation* are, 1ſt, When a decree is directly contrary to another decree; and both againſt the ſame party. 2dly, When decrees are directly contrary to the expreſs deciſion of ſtatutes, or cuſtoms. 3dly, When the formalities preſcribed by the laws have not been obſerved.

CASSETTES, or COFFINS, in the *Manufacture of China Ware*, are utenſils made of Stourbridge or other good potter's clay with a third of ſand, in which the China ware is baked. They are generally made of a round form, with a flat bottom. They are either turned or formed in a mould. See PORCELAIN.

CASSIA, *wild ſenna*, in *Medicine* and *Pharmacy*, a purgative fruit, brought from the Eaſt, being the produce of a tree of the ſame name, called in Engliſh the *pudding-pipe-tree*.

This is ſometimes more particularly denominated *caſſia fiſtularis*, κασσια συριγξ, by way of diſtinction from another drug called *caſſia lignea*.

It is a genus of the *decandria monogynia* claſs. Its characters are theſe: the flower hath five roundiſh concave petals, which ſpread open; it hath ten declining ſtamina, of which three of the lower are long, and three upper ſhorter; the ſummits of the three lower are large, arched, beaked, and ſeparated at their points. In the centre is ſituated a long taper germen, which afterward becomes a long pod, divided by tranſverſe partitions, each containing one or two roundiſh ſeeds, faſtened to the margin of the upper valve. Miller enumerates ſixteen ſpecies.

There are four kinds of *caſſia*, alike in properties, and nearly in figure; being all in long black pods: but very different, if conſidered with regard to the trees that produce them. Theſe are, the *caſſia* of the Levant, that of Egypt, that of Braſil, and that of the Antilles iſlands.

CASSIA *of the Levant*, is the fruit of a very high tree, whoſe bark is aſh-coloured, its wood very firm, and its grain cloſe; towards the centre, its wood is of an ebony black, towards the circumference yellowiſh: its flowers are yellowiſh, and produce a fruit in form of a long pod, rounded and maſſive; of a reddiſh colour, bordering on black. When ripe, it is full of a black, ſweetiſh pulp, divided by little woody cells: in this pulp are found little hard grains, in manner of ſtones, ſhaped like hearts, which are the ſeeds of the tree. This *caſſia* muſt be choſen new, in large pods, heavy, and of a tan colour; the bark, when broken, fine and white within, full of a black ſoft pulp of a ſweetiſh taſte.

CASSIA *of Egypt*, is like that of the Levant, except that the tree is higher, and the leaves narrower; the fruit ſmaller, and the bark ſofter.

CASSIA *of Braſil*, is the largeſt of all: ſome of the pods are found four or five inches in circumference. This kind is not very common in the ſhops.

CASSIA *of the Iſlands*, is that now chiefly uſed; though heretofore the popular *caſſia* was the Levantine. It is ſent from the Antilles; where it is produced in ſuch abundance, that the veſſels, in their home voyages, uſe it as ballaſt; whence it is, that we find it ſo often foul and dirty: the tree that yields it reſembles a peach-tree. Its flowers, which are yellow, grow in cluſters; and, as they decay, leave behind them a fruit or pod an inch thick, and a foot (ſometimes two) long. The fruit, while in its growth, is green; when ripe, it becomes of a dark violet colour. It is choſen in the ſame manner as that of the Levant.

When the pod is entire, and the pulp not yet taken out, it is moſt properly called *caſſia fiſtularis*, or *caſſia in the cane*. For uſe, the pulp is taken out, and driven through a hair ſieve. The apothecaries have little of the better kind, but what is old, and boiled up with ſugar, to make it keep.

Caſſia, when green, as alſo the flowers of the *caſſia*-tree, are candied in the Levant, and the iſlands; and have almoſt the ſame effects with the common *caſſia*, which is the baſis of moſt of the purgative electaries.

CASSIA, *the tincture of*, is a ſlight infuſion of the pulp with the ſeed.

CASSIA, *the extract of*, is nothing but the pulp ſeparated from the ſhell and the ſeeds; with the addition of a certain quantity of ſugar, to preſerve it from turning ſour. Officinal preparations from *caſſia*, are, the *caſſia extracta cum vel ſine foliis ſenæ*; and the *diacaſſia cum manna*: it is alſo a principal ingredient in the lenitive electary.

CASSIA *Caryophyllata*. See CLOVE-*Tree*.

CASSIA *Lignea*, or XYLOCASSIA, is the bark of a tree much like that which bears the cinnamon; growing promiſcuouſly with it in the iſland of Ceylon: but more properly the cinnamon of Sumatra, Java, and Malabar. Phil. Tranſ. vol. xlvii. p. 301.

The ancients had two kinds of this bark; the κασσία σύριγξ, and the other the *xylocaſia*. But they were only the names of the ſame thing collected in a different manner: however, they are applied by the moderns to different ſubſtances.

The two barks are gathered and dried in the ſame manner; in ſmell and taſte are nearly alike; they are equally ſweet, poignant, and agreeable; and their colour, form, and thickneſs ſcarce differ at all. But the *caſſia* is the fatter, and more mucilaginous; and in chewing diſſolves in the mouth, without leaving any thing woody behind; whereas the woody part of cinnamon ſtill remains, though ever ſo well chewed.—Some authors will have the tree which bears cinnamon bear the *caſſia* too; and make the only difference between them to conſiſt in this, that the firſt comes from Ceylon, and the latter from the coaſt of Coromandel. Of this opinion is Mr. White, who maintains that the difference in their produce is merely the effect of culture, and of the different manner of curing the plant. Phil. Tranſ. vol. l. part ii. N° 116. See CINNAMON.

CASSIA *ſtake*, in the *Glaſs Trade*, is that iron with a piece of wood placed on it, on which they lay the glaſs after they have taken it off the pipes, and on which they turn the glaſs, to faſten the pontee to it.

CASSIANI, a ſect in *Civil Law*, who adhered to the ſyſtem and interpretations of Caſſius, a celebrated lawyer, in oppoſition to thoſe of Proculus, whoſe adherents were denominated *Proculiani*.

CASSIANISM, from *Caſſian*, a teacher in Gaul to thoſe who were called Semipelagians towards the cloſe of the fifth century, is ſometimes uſed for SEMIPELAGIANISM.

CASSIDA, in *Botany*. See SKULL-*cap*.

CASSIDA, in *Zoology*, the name given by Dr. Hill to a genus of BEETLES, called in Engliſh the tortoiſe-beetles, but comprehended by Linnæus under the order of *coleoptera*, in the claſs of inſects. See SCARABÆUS.

Under this genus are comprehended all the clypeated beetles, or thoſe covered with a hard cruſt; of which there are a great many ſpecies.

CASSIDARIUS, in the *Ancient Armories*, he who had the care and cuſtody of the *caſſides*, or helmets.

Spon gives an ancient inſcription found at Rome, on a tomb erected to a *caſſidarius* of the emperor Domitian.

CASSIDONY, a name given by the Italians and Germans to a ſort of beads made of the yellow and red chalcedony, a very beautiful ſtone, or of an agate ſomething reſembling it in colour. They alſo call the ſtones themſelves by this name; but are by no means determinate in the meaning of the word, not reſtraining it to any one peculiar ſpecies.

CASSIDONY, *Stæchas*, in *Botany*; Tourn. Inſt. R. H. 201. tab. 95. Its characters are theſe: the flower has an oval permanent empalement, whoſe brim has ſome obſcure indentures; it is of the lip kind, having a cylindrical tube longer than the empalement, whoſe brim ſpreads open. The upper lip is large, bifid, and open; the under cut into three roundiſh, almoſt equal ſegments. It has four ſtamina within the tube, which are turned aſide, two of them ſhorter than the other, terminated by ſmall ſummits; and a quadrifid germen ſupporting a ſlender ſtyle the length of the tube, crowned by an obtuſe indented ſtigma. The germen turns to four almoſt oval ſeeds, which ripen in the empalement. To which the following notes muſt be added: the flowers are ranged in ſeveral ſeries, and the ſpikes terminated by tufts of leaves. There are three ſpecies. See *Tab*. V. *of Botany*, *Claſs* 4.

Linnæus has joined this genus to *lavendula* or LAVENDER. The flowers of the *ſtæchas* are much uſed in medicine, in diſeaſes of the head and nerves, eſpecially in ſuch as are ſuppoſed to ariſe from cold cauſes. They alſo promote the evacuation by urine, and by the menſes; and in ſome places are eſteemed one of the greateſt antidotes, and given in large doſes againſt the effect of poiſons, and the bites of venomous animals. Meſue, and the Arabians in general, ſpeak of it as a purge, and particularly as good in caſes where phlegm was to be evacuated; though they ſay it did this but ſlowly and weakly. At preſent, we do not acknowlege any purging quality in it. There is a very fragrant oil drawn from the flowers and tops of this plant, in the ſame manner as that from lavender; but it is not much in uſe with us. The flowers are an ingredient in the Venice treacle, mithridate, and ſome other of the officinal compoſitions.

It is to be obſerved that there is another plant, called *ſtæchas*, in the ſhops; and by the writers on the materia medica, this has the epithet *citrina*, for its diſtinction from the *ſtæchas* we have been treating of, which is either called *ſtæchas* without any addition, or *ſtæchas Arabica*. The *citrine ſtæchas* has none of the virtues of this kind, nor is it of the ſame genus of plants, but of the ELICHRYSUM kind.

The ſeveral ſpecies of *ſtæchas* are propagated by ſowing the ſeeds in March, in a bed of dry light earth; when the young plants are about three inches high, they muſt be removed into other beds, and placed at about ſix inches diſtance, watering and ſhading them till they have taken root. They muſt after this be kept clear from weeds, and ſheltered from the ſeverity of the winter by mats, or a light covering of peas, haulm, or other ſuch matter; and in March, or the beginning of April, they may be removed into the places where they are to remain. The poorer the ſoil is, in which they are planted, the better they will ſtand the winter, and the more fragrant will be their flowers. They may be propagated by cuttings planted in ſpring, but the ſeeds ripening very well with us, the raiſing them from thoſe is the much better way.

CASSIDONY, *mountain.* See CUDWEED.

CASSILI, in *Natural Hiſtory*, a name given by the inhabitants of the Philippine iſlands to a ſpecies of water-raven, called alſo *colocolo*.

CASSINE, in the *Military Language*, is a farm-houſe, where a number of ſoldiers have poſted themſelves, in order to make a ſtand againſt the approaches of an enemy.

CASSIOBURY-*buſh*, *Caſſine*, in *Botany*, a genus of the *pentandria trigynia* claſs. Its characters are theſe: the flower hath but one petal, which is cut into five obtuſe ſegments: it hath five ſtamina, which ſpread from each other; and a conical germen, which afterward becomes an umbilicated berry with three cells, each containing a ſingle ſeed. There are two ſpecies.

In South Carolina, it is called *caſſena*, or South ſea thea. The inhabitants of that country do not make ſo great uſe of this tea, as thoſe of Virginia and North Carolina; in the laſt of which the white people have it in as great eſteem as the Indians, and make as conſtant uſe of it.

CASSIOPEA, in *Aſtronomy*, one of the conſtellations of the northern hemiſphere, ſituate next to Cepheus.

In 1572, there appeared a new ſtar in this conſtellation, which at firſt ſurpaſſed in magnitude and brightneſs Jupiter himſelf; but it diminiſhed by degrees, and at laſt diſappeared, at the end of eighteen months. It alarmed all the aſtronomers of that age, many of whom wrote diſſertations on it; among the reſt Tycho Brahe, Kepler, Maurolycus, Lycetus, Gramineus, &c. Beza, the landgrave of Heſſe, Roſa, &c. wrote to prove it a comet, and the ſame which appeared to the Magi, at the birth of Jeſus Chriſt, and that it came to declare his ſecond coming: they were anſwered on this ſubject by Tycho.

The ſtars in the conſtellation *Caſſiopea*, in Ptolemy's Catalogue, are thirteen; in Hevelius's, thirty-ſeven; in Tycho's, forty-ſix; but in the Britannic Catalogue, Mr. Flamſtead makes them fifty-five. The order, names, longitudes, latitudes, magnitudes, &c. whereof are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
	e	♈	21	6	45	56	46	0 N	6
			21	29	16	56	26	10	7
			23	5	5	54	38	32	6
	d		27	42	49	57	10	12	5
North, in the top of the chair back.	τ		26	46	31	52	39	50	5
5.									
		♉	1	9	40	55	7	45	6
South, in the top of the chair back.	ς	♈	26	46	24	51	9	17	6
In the preceding arm of the chair.	σ		25	50	41	49	23	50	6
		♉	3	28	59	53	57	10	6
			6	4	3	55	10	6	6
10.									
In the middle of the chair back, the *lucida cathedræ*.	β		0	48	6	51	13	50	3.2
			5	59	15	52	1	20	6
			12	9	24	55	1	40	6
A ſmall one againſt the hair.	λ		0	22	23	45	38	50	5
In the bottom of the chair back, over the ſeat.	κ		8	20	19	52	14	40	4
15.									
			12	47	47	54	59	48	6
In the head.	ζ		0	47	38	44	42	13	4
In the breaſt, *Schedir*.	α		3	30	23	46	35	53	3
Preced. of the north. in the rod.	ξ	♈	29	10	4	41	25	50	6
South. in the rod.	π		27	6	18	38	19	0	6
20.									
		♉	25	15	54	59	53	43	6
Middle in the rod.	ο	♈	28	10	25	39	17	45	6
		♉	25	14	30	59	41	10	6
In the girdle.	η		5	52	56	47	4	19	4
In the rod, the laſt of the north.	ν		0	41	50	41	16	5	5
25.									
Preced. againſt the navel.	1. υ		8	2	23	47	24	44	7
Over the ſeat of the chair.	γ		9	39	5	48	47	56	3
Laſt of contiguous ones againſt the navel.	2. υ		8	19	26	47	32	20	6
			14	55	6	51	39	20	6
In the left arm.	μ		Unknown			Unknown			5
30.									
			19	30	36	54	13	40	6
			15	46	12	51	13	50	6
That under the hind arm.	θ		7	28	29	43	5	15	4
That preced. the knee to the ſouth.			11	13	16	45	4	7	6
			Unknown			Unknown			7
35.									
	ψ		20	39	40	52	49	50	5.6
That againſt the knee.	δ		13	37	15	46	23	26	3
Preced in north. part of the frame.			23	28	44	54	11	20	6
That following the knee.	χ		14	8	5	44	58	55	6
North. in the frame.	b		27	23	27	55	58	51	6
40.									
			27	26	30	55	24	40	6
	g		25	12	4	53	52	19	6
Laſt of the middle in ſouth. part of the frame.	c		22	34	53	51	50	12	6
			16	31	55	45	30	16	6
That in the leg.	ε		20	26	48	47	31	50	3
45.									
	d		24	51	8	51	38	50	6
		♊	4	49	7	58	6	56	5
	e	♉	27	38	26	53	12	7	5
		♊	3	28	12	57	11	10	6
	f	♉	29	15	53	54	21	4	4.5
50.									
		♊	1	51	18	55	56	45	6
		♉	22	10	15	47	40	34	7
			22	36	15	48	5	0	7
			29	0	43	53	24	15	6
			25	21	24	48	53	6	6
55.									

CASSIS, in *Antiquity*, a plated, or metalline helmet, different from the *galea*, which was of leather.

CASSIS *lævis*, the *ſmooth helmet-ſhell*, a name given by Rumphius, though very improperly, to the genus of ſhells called *dolia* and *conchæ globoſæ*. Theſe have no alliance at all with the helmet-ſhells; and what makes the name ſtill worſe, is, that *caſſis* itſelf is not a generical name, though uſually ſo underſtood, all the *caſſides* or helmet-ſhells being only a peculiar kind of MUREX, as the figure of their mouths, and their rudiments of ſpines or protuberances evidently ſhew.

CASSITERIA, in *Natural Hiſtory*, the name of a genus of cryſtals. The word is derived from κασσιτερος, *tin*; and expreſſes cryſtals which are influenced in their figures by an admixture of the particles of that metal. See *Tab. of Foſſils, Claſs* 3.

Theſe are all pyramidal, without columns, and compoſed only of four ſides or planes. Of this genus there are only two known ſpecies.

CASSOCK, a kind of ſurtout, or long upper garment, worn over the reſt of the habit; particularly by the clergy, and anciently likewiſe by the laity.

The word comes from the French *caſaque*, *a horſeman's coat*: ſome derive them again, by corruption, from a garment of the Coſſacks: others derive the name *caſſock*, as well as the thing, from the ancient *caracalla*, a ſort of upper garment which hung to the heels.

CASSONADE, in *Commerce*, caſk ſugar, or ſugar put into caſks or cheſts, after the firſt purification, but which has not been refined. It is ſold either in powder or in lumps; the whiteſt, and that of which the lumps are largeſt, is the beſt. Many imagine it to ſweeten more than loaf ſugar; but it is certain that it yields a great deal more ſcum.

CASSOWARY, in *Ornithology*, the name of an African bird of the oſtrich kind, but not quite ſo tall, though larger bodied; called alſo by many authors *emeu*, *eme*, or *ema*, and *caſoarius*. It has a crown on the middle of its head; and its head and neck are almoſt naked, having only a few hairs, which are ſet ſtraggling; the ſkin is of a purpliſh blue, but toward the bottom of the neck, on the hinder part, it is a little reddiſh. At the bottom of the neck, there are alſo two fleſhy protuberances which hang over the breaſt; its mouth opens very wide; its legs are very long and very robuſt; it has three toes on each foot, all placed before; it has the rudiments of wings, but they are very ſhort, and have only five quills each, which are almoſt naked. It has no tail; its body is large, and is thinly covered with browniſh feathers, which have more the appearance of briſtles, than of real feathers, to a ſlight obſerver. It is very common in Africa, and is caught alſo in many parts of the Eaſt Indies. It feeds on fleſh or vegetables, and is eaſily made tame. See *Tab. of Birds*, N° 20.

CASSUMUNAR, in the *Materia Medica*, a root approaching to the nature of zedoary, though belonging to a different ſpecies of plants.

We have it from the Eaſt Indies; its ſurface is ſomewhat wrinkled, and is marked at certain diſtances with circular rings, which ſurround it, and riſe prominent above the reſt of the ſurface. It is of a very compact nature, hard and heavy; not eaſily cut through with a knife, or powdered in a mortar. When cut, it ſhews a very ſmooth and ſhining ſurface; and when broken, is found to be much yellower within.

It has a fragrant, aromatic ſmell; and is a very famous medicine in nervous caſes, being accounted an excellent cardiac and ſudorific. It is alſo given as a ſtomachic and carminative with ſucceſs, and is moſtly preſcribed in powder, boluſſes, or infuſions.

CASSYTA, in *Botany*, a genus of the *enneandria monogynia* claſs. The corolla is in the form of a calyx, divided into ſix ſegments: the nectarium is compoſed of three truncated glands encompaſſing the germen: the interior filaments are glandular: and the drupe contains a ſingle ſeed. There is one ſpecies.

CAST is particularly uſed to denote a figure, or ſmall ſtatue of BRONZE.

CAST, among *Wax-Chandlers*, denotes a ladleful of melted wax, poured on the wicks of candles made by the ladle.

CAST, among *Founders*, is applied to tubes of wax, fitted in divers parts of a mould of the ſame matter, by means of which, when the wax of the mould is removed, the melted metal is conveyed into all the parts which the wax before poſſeſſed.

CAST, among *Bowlers*. See BOWLING.

CAST alſo denotes a cylindrical piece of braſs, or copper, ſlit in two, lengthwiſe, uſed by the founders in ſand to form a canal or conduit in their moulds, whereby the metal may be conveyed to the different pieces intended to be caſt.

CAST, among *Plumbers*, denotes a little brazen funnel, at one end of a mould, for caſting pipes without ſoldering, by means of which the melted metal is poured into the mould.

CAST *of the country*, with *Miners*, the colour of the earth.

CAST, in *Falconry*, denotes a ſet or couple of hawks.

To *caſt* a hawk to the perch, ſignifies to ſet her upon it.

CAST, or CASTE, in ſpeaking of the Eaſtern affairs, denotes a tribe, or number of families, of the ſame rank and profeſſion.

The diviſion of a nation into *caſts* chiefly obtains in the empire of the Great Mogul, kingdom of Bengal, iſland of Ceylon, and the great peninſula of India oppoſite thereto. In each of theſe, there are, according to father Martin, four principal *caſts*; viz. the *caſt* of the *bramins*, which is the firſt and moſt noble; the *caſt* of the *rajas*, or princes, who pretend to be deſcended from divers royal families; the *caſt* of the *choutres*, which comprehends all the artificers; and that of the *parias*, the loweſt and moſt contemptible of all: though Henry Lord, it muſt be obſerved, divides the Indians about Surat into four *caſts*, ſomewhat differently from Martin; viz. into BRAMINS, or prieſts; *cuttery*, or ſoldiers; *ſoudery*, which we call banians, or merchants; and *wyſe*, the mechanics, or artificers.

Every art and trade is confined to its proper *caſt*, nor is allowed to be exerciſed by any but thoſe whoſe fathers profeſſed the ſame. So that a taylor's ſon can never riſe to be a painter, nor a painter's ſon fall to be a taylor Though there are ſome employments which are common to all the *caſts*: e. g. every body may be a ſoldier or a merchant. There are alſo divers *caſts* which are allowed to till the ground, but not all.

CASTAGNOLE, in *Ichthyology*, a name given by the Italians to the fiſh called by the generality of authors CHROMIS, and reduced by Artedi to the genus of the SPARUS: he diſtinguiſhes it by the name of the ſparus with the ſecond ray of each belly-fin carried out into a great length.

CASTALDUS. }
CASTALDY. } See GASTALDUS.

CASTALOGNE, or CASTELOGNE, a coverlid made of fine wool, on the weaver's loom.

CASTANEA. See CHESTNUT.

CASTARON, a name given by the old Arabian writers to the ſerrata, or SAW-*wort*.

CASTANETS, CASTAGNETTES, or CASTANETTAS, a kind of muſical inſtrument, wherewith the Moors, Spaniards, and Bohemians, accompany their dances, ſarabands, and guittars. It conſiſts of two little round pieces of wood dried, and hollowed in manner of a ſpoon, the concavities whereof are placed on one another, faſtened to the thumb, and beat from time to time with the middle finger, to direct their motion and cadences. The *caſtanets* may be beat eight or nine times in the ſpace of one meaſure, or ſecond of a minute.

CASTELLAIN, *Caſtellanus*, the lord, owner, or captain of a caſtle; and ſometimes the conſtable of a fortified houſe. Bract. lib. v. tract. 2. c. 16. 3 Edw. I. c. 7. It has likewiſe been taken for him that hath the cuſtody of one of the king's manſion-houſes, called by the Lombards *curtes*, in Engliſh courts; though they are not caſtles or places of defence. 2 Inſt. 31. And Manwood, in his Foreſt Laws, ſays there is an officer of the foreſt called *caſtellanus*.

CASTELLAN, the name of a dignity or office in Poland. The *caſtellans* are ſenators of the kingdom, but ſenators of the lower claſs; and in diets ſit on low ſeats behind the palatines, or great ſenators. They are a kind of lieutenants of provinces, and command a part of a palatinate under the PALATINE.

CASTELLANY, the diſtrict or extent of land under the juriſdiction of a lord caſtellian.

The province of Flanders is divided into ſo many *caſtellanies*, each of which bears the name of the capital; as the *caſtellany* of Liſle, of Ypres, of Ghent, &c. The court of *caſtellany* was anciently compoſed of the caſtellan, a fiſcal, procurator, notary, regiſter, &c.

In Poland, a *caſtellany* is a petty government under the adminiſtration of a CASTELLAN.

CASTELLARIUS, the keeper, or curator, of a caſtellum. Gruter gives an ancient ſepulchral inſcription in memory of a *caſtellarius*.

CASTELLATION, *Caſtellatio*, in *Middle Age Writers*, the act of building a caſtle, or of fortifying a houſe, and rendering it a CASTLE.

By the ancient Engliſh laws, *caſtellation* was prohibited, without the king's eſpecial licence. Du-Cange.

CASTELLORUM *operatio*, caſtle work, or ſervice and labour done by inferior tenants for the building and upholding of caſtles of defence; toward which ſome gave perſonal aſſiſtance, and others paid their contributions. This was one of the three neceſſary charges, to which all lands among our Saxon anceſtors were expreſsly ſubject.

CASTIGATION, *Caſtigatio*, among the Romans, the puniſhment of an offender by blows, or beating, with a wand or ſwitch.

Caſtigation was chiefly a military puniſhment, the power of inflicting which on the ſoldiery was given to the tribunes. Some make it of two kinds; one with a ſtick or cane, called *fuſtigatio*; the other with rods, called *flagellatio*: the latter was moſt diſhonourable.

CASTIGATIONS, in a *Literary Senſe*, denote corrections, or emendations of the text of an ancient writer.

CASTIGATORY. See CUCKING-*ſtool*.

CASTILLAN, a gold coin, current in Spain, valued at fourteen rials and a half.

CASTILLAN alſo denotes a weight uſed by the Spaniards in the weighing of gold, containing the hundredth part of a Spaniſh pound. It is alſo uſed at Buenos Ayres, and the mines of Chili and Potoſi.

CASTING is ſometimes uſed for the quitting, laying, or throwing aſide any thing; thus, deer *caſt* their horns, ſnakes their ſkins, lobſters their ſhells, hawks their feathers, &c. annually.

CASTING *of feathers*, is more properly called *moulting* or *mewing*.

A horſe *caſts* his hair or coat, at leaſt once a year, viz. in the ſpring, when he *caſts* his winter-coat; and ſometimes at the cloſe of autumn, he *caſts* his ſummer-coat, in caſe he hath been ill kept.

Horſes ſometimes alſo *caſt* their hoofs, which happens frequently to coach-horſes brought from Holland; which being bred in a moiſt, marſhy country, have their hoofs too flabby; ſo that coming into a drier ſoil, and leſs juicy provender, their hoofs fall off, and others, that are firmer, ſucceed.

Casting is alſo uſed for overthrowing.

In which ſenſe we ſay, to *caſt* a horſe, an ox, or the like.

Casting is alſo uſed for diſtributing or diſpoſing the parts of a thing to the beſt advantage.

The *caſting* of a building is more properly called **COMPARTITION**.

Theatrical writers ſpeak of *caſting* a play, i. e. diſpoſing the ſeveral parts or characters to proper actors.

Casting *of candles*, ſignifies filling the moulds with tallow.

Casting *a colt* or *foal*, denotes the abortion of a mare.

Casting *of drapery*, among *Painters*, a free, eaſy, negligent way of cloathing a figure.

Casting, in *Falconry*, is any thing given an hawk to purge and cleanſe his gorge.

Of theſe there are two kinds, viz. plumage, i. e. feathers; and cotton: the latter whereof is generally in pellets about the bigneſs of hazel-nuts, made of ſoft fine cotton, and conveyed into her gorge after ſupper. In the morning ſhe will have *caſt* them out; at which time they are to be obſerved, and from the colour and condition they are found in, the ſtate of her body is conjectured. If they be *caſt* out round, white, and not ſtinking, nor very moiſt, it is an indication all is well; if otherwiſe, particularly if black, green, ſlimy, or the like, ſhe is diſtempered. The *caſting* of plumage is obſerved after the ſame manner as that of cotton.

Casting *a figure*, among *Aſtrologers*, the erecting a celeſtial theme, and dividing the heavens into houſes.

Casting, in *Foundery*, is the running of a melted metal into a mould prepared for that purpoſe.

Casting *of gold, ſilver*, or *copper*, in plates. See **Coining**.

Casting, in *Joinery*, &c. Wood is ſaid to be *caſt* or warped, when, either by its drought or moiſture, or the drought or moiſture of the air, or other accident, it ſhoots or ſhrinks; in prejudice to its flatneſs or ſtraitneſs.

Casting *of lead on cloth*, is the uſing a frame or mould covered with woollen cloth and linen over it, to caſt the lead into very fine ſheets.

Casting *of lead on ſand*, is done by means of a large frame or trough nearly full of ſand, which is made perfectly level, and imprinted with any device from moulds preſſed down in the ſand: the lead is then turned out of the kettle into a receiver or trough, and poured on the ſand, whilſt two perſons ſlide a gauge or lath, of ſuch thickneſs as to leave a ſpace between it and the ſand anſwering to the ſubſtance of the lead, along the edges of the frame; the ſurplus runs into reſervoirs by channels made in the ſand.

The goldſmiths uſe the bone of the **cuttle**-*fiſh*, to mould and caſt their leſſer works of gold and ſilver; that bone, when dried, being reducible to a kind of a fine pumice, very ſuſceptible of all impreſſions.

Casting *in ſtuc* or *plaiſter*, is the filling with fine liquid plaiſter, a mould that had been taken in pieces from off a ſtatue or other piece of ſculpture, and run together again. There are two things to be obſerved with regard to the mould: the firſt, that it be well ſoaked with oil before the plaiſter be run, to prevent its ſticking: the ſecond, that each piece whereof it conſiſts, have a packthread, to draw it off the more eaſily when the work is dry.

Casting *of metals, of letters, bells, figures, &c.* See **Foundery**.

Casting, in *Navigation*, denotes the motion of falling off, ſo as to bring the direction of the wind on either ſide of the ſhip, after it had blown for ſome time right a-head.

Casting-*net*, a ſort of fiſhing-net, ſo called becauſe it is to be *caſt* or thrown out, which when exactly done, nothing eſcapes it, but weeds, and every thing within its extent, is brought away.

Casting *a point of traverſe*, among *Seamen*, ſignifies the pricking down on a chart the point of the compaſs any place bears from you; or finding what point of the compaſs the ſhip bears at any inſtant, or what way the ſhip has made.

Casting *of timber-work*. See **Casing**.

CASTLE, *Caſtellum*, in *Ancient Writers*, denotes a town or village ſurrounded with a ditch and wall, furniſhed with towers at intervals, and guarded by a body of troops.

The word is originally Latin, *caſtellum*, a diminutive of *caſtrum*.

Caſtellum originally ſeems to have ſignified a ſmaller fort, for a little garriſon. Though Suetonius uſes the word where the fortification was large enough to contain a cohort.

The *caſtella*, according to Vegetius, were often like towns, built in the borders of the empire, and where there were conſtant guards, and fences againſt the enemy.

Horſley takes them for much the ſame with what were otherwiſe denominated ſtations.

Castle, or **Castle**-*ſteed*, is alſo an appellation given by the country people in the North to the Roman *caſtella*, as diſtinguiſhed from the *caſtra ſtativa*, which they uſually call *cheſters*. Horſley repreſents this as an uſeful criterion, whereby to diſcover, or diſtinguiſh, a Roman camp or ſtation.

Castle, in a modern ſenſe, is a place fortified by nature, or art, either in a city or country, to keep the people in their duty, or to reſiſt an enemy.

A *caſtle* is a ſort of little **citadel**.

Castle, in *Sea Language*, denotes an elevation on the deck of a veſſel; or a part of the deck, fore and aft, raiſed above the reſt.

Fore-**Castle**, *Caſtello di prora*, &c. See **Fore**-*caſtle*.

Hind-**Castle**, *Caſtello di poppa*. See **Poop**.

Castle-Ward, or **Castle-Guard**, *Caſtelgardum*, or *Wardum Caſtri*, an impoſition laid on ſuch as dwell within a certain compaſs about any *caſtle*, towards the maintenance of thoſe who watch and ward the *caſtle*.

The word is ſometimes alſo uſed for the circuit itſelf, inhabited by ſuch as are ſubject to this ſervice.

Castle, *Water*, a piece of hydraulic work finiſhed with one or more fronts of building, with ſeeming windows and the like, containing a reſervoir which gives play to caſcades, &c.

Or, a *water-caſtle* may be defined a receptacle of the public water furniſhed by an **aquæduct**, or otherwiſe, in which are incloſed the cocks of ſeveral water-pipes with a little baſon; contrived to diſtribute and ſend it to different parts.

The *caſtella* of the ancient aquæducts are ſtill viſible at Rome, though half ruined. They are lined with a durable kind of cement, which, according to Pliny, ſurpaſſes in hardneſs the ſtones themſelves. It is made of lime ſlacked in wine, and beaten up with hog's greaſe, and the juice of figs or pitch.

Modern writers on hydraulics treat of the laws of the efflux of water out of *caſtella* into pipes, canals, &c.

Signior Poleni has a treatiſe expreſs on *caſtles*, or reſervoirs, whereby the waters of rivers are derived, the ſides of which *caſtles* are made converging.

CASTOR, in *Zoology*. See **Beaver**.

Castor-*ſkin*. See **Beaver**, &c.

Castor, in *Aſtronomy*, a moiety of the conſtellation **Gemini**; called alſo **Apollo**.

Its latitude northwards, for the year 1700, according to Hevelius, was 10° 4′ 23″; and its longitude, of Cancer, 16° 4′ 14″.

It is alſo called *Raſalgenze, Apollo, Aphellan, Avellar*, and *Anelar*.

Castor *and Pollux*, in *Meteorology*, a fiery meteor, which at ſea appears ſometimes ſticking to a part of the ſhip, in form of one, two, or even three or four fire-balls: when one is ſeen alone, it is more properly called *Helena*; two are denominated *Caſtor and Pollux*, and ſometimes *Tyndaridæ*.

Caſtor and Pollux are called by the Spaniards, *San Elmo*; by the French, *St. Elme, St. Nicholas, St. Clare, St. Helena*; by the Italians, *Hermo*; by the Dutch, *Vree Vuuren*.

Caſtor and Pollux are commonly judged to portend a ceſſation of the ſtorm, and a future calm; being rarely ſeen till the tempeſt is nigh ſpent. *Helena* alone portends ill, and witneſſes the ſevereſt part of the ſtorm yet behind.

When the meteor ſticks to the maſts, yards, &c. they conclude, from the air's not having motion enough to diſſipate this flame, that a profound calm is at hand; if it flutter about, it indicates a ſtorm.

Castor *oil*, in *Pharmacy*. See **Palma** *Chriſti*.

This oil is the product of the **Ricinus** *Americanus fructu racemoſo hiſpido* of Sir Hans Sloane; or of the **Palma** *Chriſti* of Du-Tertre, Frezier, and Labat. It is variouſly prepared in the Weſt Indies. It is drawn from the ſhrub in the manner in which we make birch wine; it is prepared by expreſſion, which is the preferable method; as oils of all kinds have their acrimony heightened by the action of fire. At other times the ſeeds are collected ripe, when moſt replete with this pinguecous juice, cleanſed from the huſks, bruiſed in a mortar, and beat into a paſte. They are then boiled with a ſufficient quantity of water, when the oil riſes to the ſurface, and is ſkimmed off whilſt any continues to appear.

It ſeems particularly adapted for the common complaints of infant children, and the cure of bilious diſorders; and certainly is by all accounts a very valuable medicine. It was known to Dioſcorides and Pliny, who gave it the name of *oleum cicinum*; the Arabs call it *oleum de therva.* Dr. Fraſer has given an account of its preparation and virtues, confirmed by a letter of the Rev. Mr. Monod of Guadaloupe to Dr. Maty, in the Lond. Medic. Obſerv. &c. vol. ii. p. 235.

Dr. Canvane has publiſhed a Diſſertation on *Caſtor Oil*, its hiſtory and virtues, and ſtrongly recommended it in all bilious, calculous, and nephritic diſorders. The doſe for adults is from two to three or four ſpoonfuls, in two ſpoonfuls of pepper-mint water, or the *tinct. ſtomachica* of the London Diſpenſatory. It may be made into a *potio alba* by mixing two or three ſpoonfuls with a ſufficient quantity of the yolk of eggs, to incorporate it thoroughly, and then adding two ounces of ſimple, and two or three drams of compound pepper-mint water. It may be given to children mixed with honey; and it acts ſo mildly, that new-born infants may take it in about a tea-ſpoonful for a doſe.

There is a paper on the effects of *caſtor oil* and the Peruvian bark in the hooping-cough, in the Lond. Med. Obſ. &c. vol. iii. p. 281.

CASTOREA, in *Botany*, the name given by Plumier to a genus of plants ſince called by Linnæus DURANTA.

CASTOREUM, or Castorium, in *Pharmacy*, a medicinal matter incloſed in bags or purſes, near the anus of the caſtor, or beaver; falſely taken for the teſticles of that animal. See Beaver.

The bags in which the *caſtoreum* is contained, are about the bigneſs of a gooſe egg, and found indifferently in males and females; the liquor incloſed ſerves to give the caſtor an appetite, being preſſed out of its receptacles, on occaſion, by the foot: when taken off, the matter dries and condenſes, ſo that it may be reduced to a powder; by hanging in the chimney it ſoon becomes of the conſiſtence of wax. It is oily, of a ſharp, bitter taſte, and a ſtrong diſagreeable ſmell. It is uſed to fortify the head and nervous parts: it raiſes the languiſhing ſpirits, reſiſts poiſons, and provokes the menſes in women. It is uſed in lethargies, apoplexies, vertigos, tremblings, ſuffocations of women, and on other occaſions. Bartholine, and other authors, aſcribe to it a wonderful property of precipitating things to the bottom of the water.

For the choice of *caſtoreum*, the beſt is that of Ruſſia; that of Canada is much inferior; the largeſt bags, and thoſe that ſmell ſtrongeſt, are the moſt eſteemed, eſpecially when heavy, and well fleſhed. Care is to be taken, that it has not been adulterated with honey, or other drugs, to increaſe its weight, which is known by ſqueezing it; the ſophiſticated being ſoftiſh, and yielding a liquid, ſtinking honey; and the natural, hard and heavy, of a briſk ſmell, and full of filaments.

Caſtoreum is uſed in the compoſition of Venice treacle and mithridate, beſide various other hyſteric and cephalic medicines. They draw an oil from it, called *oil of caſtor*; and it is alſo uſed abroad while in its liquid ſtate, to make ſeveral kinds of unguents.

The Ruſſian way of curing *caſtoreum* is deſcribed in the Philoſophical Tranſactions thus: "To prepare the mat-
"ter of the beaver's ſtones (the bags it ſhould be), boil
"a proper quantity of water, with half a ſhovel full of
"wood-aſhes, tie the bags in couples, and put them in
"the boiling water for half a quarter of an hour. Lay
"birch-bark on the fire, and ſmoke the bags well over
"it for an hour, till they be well dried; hang them up
"for a week or more, till perfectly dry and hard; they
"may then be packed up for uſe or exportation."

CASTRAMETATION, the art, or act of encamping, i. e. of placing and diſpoſing an army in camp. See Camp.

The word is more uſed in ſpeaking of the encampments of the ancients, than thoſe of the moderns. It comes from the Latin *caſtrum, camp*, and *metari, to meaſure*, or *lay out*.

CASTRATING *a book*, among *Bookſellers*, is the taking out ſome leaf, ſheet, or the like, which renders it imperfect, and unfit for ſale. The word is alſo applied to the taking away particular paſſages, on account of their obſcenity, too great freedom with reſpect to government, &c.

Castrating is alſo uſed among *Gardeners*, in ſpeaking of melons and cucumbers; where it ſignifies the ſame with PRUNING or PINCHING of other plants.

CASTRATION, in *Chirurgery*, the operation of gelding, i. e. of cutting off the teſticles, and putting a male animal out of a capacity of generation.

Caſtration is much in uſe in Aſia, eſpecially among the Turks, who practiſe it on their ſlaves, to prevent any commerce with their women. The Turks often make a general amputation.

Caſtration alſo obtains in Italy, where it is uſed with a view to preſerve the voice for ſinging. See Eunuch, and Conservatorios.

The Perſians, and other Eaſtern nations, have divers methods of making eunuchs, different from thoſe which obtain in Europe: we ſay, of making eunuchs, for it is not always done among them by cutting, or even colliſion. Cicuta and other poiſonous herbs do the ſame office, as is ſhewn by Paulus Ægineta. Thoſe eunuchiſed in this manner are called *thlibiæ*. Beſides which there is another ſort named *thlaſiæ*, in whom the genitals are left entire, and only the veins which ſhould feed them are cut; by which means the parts do indeed remain, but ſo lax and weak, as to be of no uſe.

Caſtration was for ſome time the puniſhment of ADULTERY.

By the laws of the Viſigoths, ſodomites underwent the ſame puniſhment.

By the civil law, it is made penal in phyſicians and ſurgeons to *caſtrate*, even with conſent of the party, who is himſelf included in the ſame penalty, and his effects forfeited. The offence of mayhem by *caſtration* is, according to all our old writers, felony; though committed upon the higheſt provocation. See a record to this purpoſe of Henry III. tranſcribed by Sir Edward Coke, 3 Inſt. 62. or Blackſtone's Com. vol. iv. p. 206.

Caſtration is ſometimes found neceſſary on medicinal conſiderations, as in mortifications, and ſome other diſeaſes of the teſticles, eſpecially the *ſarcocele* and *varicocele*. Some have alſo uſed it in maniac caſes.

Castration is alſo in ſome ſort practiſed on women. Athenæus mentions, that king Andramytes was the firſt who *caſtrated* women. Heſychius and Suidas ſay Gyges did the ſame thing. Galen obſerves, that women cannot be *caſtrated* without danger of life: and Dalechampius, on the forementioned paſſage of Athenæus, holds, that it is only to be underſtood of ſimple padlocking.

Castration, in reſpect of brutes, is called GELDING, and SPAYING. See alſo Fish.

Castration is alſo uſed by ſome phyſicians for correcting the more violent medicines, eſpecially purgatives. See Correction and Correctors.

Castration alſo denotes the art of retrenching, or cutting away any part of a thing from its whole.

CASTREL, a kind of HAWK reſembling the lanner in ſhape, but the hobby in ſize. The *caſtrel*, called alſo *keſtrel*, is of a ſlow and cowardly kind; her game is the growſe, though ſhe will kill a partridge. See Falconry.

CASTRENSIANI, or Castrenses, in *Antiquity*, an order of ſervants in the Greek emperor's houſhold, to whom belonged the care and ſervice of what related to his table, and clothing. They were thus called either on account of their attending the emperor, when in camp, or becauſe they obſerved a ſort of camp-diſcipline in the court; or rather becauſe they were conſidered as ſoldiers, were paid as ſuch, and had the privileges belonging to the military body. The *caſtrenſiani* were alſo called *caſtrenſes miniſtri*, and *miniſteriani*.

To this order belonged the bakers, butlers, waiters, fullers, taſters, &c. They had a head, or ſuperior, who was called *comes caſtrenſis*, which was a palatine dignity under the chamberlain.

CASTRENSIS, in *Medicine*, an appellation given to certain contagious and epidemic diſeaſes, eſpecially fevers. See Camp-*diſeaſe*, &c.

CASTRUM *Doloris*, in *Middle Age Writers*, denotes a catafalco, or a lofty tomb of ſtate, erected in honour of ſome perſon of eminence, uſually in the church where his body is interred; and decorated with arms, emblems, lights, and the like.

Eccleſiaſtical writers ſpeak of a ceremony of conſecrating a *caſtrum doloris*; the edifice was to be made to repreſent the body of the deceaſed, and the prieſt and deacon were to take their poſts, and ſay the prayers after the ſame manner as if the corpſe were actually preſent.

CASTS may be taken very well from medals on calces of lead melted with ſulphur, which form a blackiſh maſs, conſiderably more tough than ſulphur alone. See an account of the proceſs for making this matter, &c. in Lewis's Commerc. Phil. Techn. p. 354. See *Impreſſions of* Medals.

CASU *Conſimili*, in *Law*, a writ of entry, where a tenant by courteſy, or for life, aliens in fee or in tail, or for another's life: it takes its name hence, that authority being given by ſtat. Weſt. 2. to the clerks in chancery, to make new forms, as often as any new caſe ſhould ariſe, not under any of the old forms; they framed this writ to the likeneſs of the other called *Caſu proviſo*.

Casu *Proviſo*, a writ of entry, given by the ſtatute of Gloceſter, in caſe where a tenant in dower aliens in fee, or for term of life, in tail: and lies for him in reverſion againſt the alienee.

CASUAL, ſomething that happens fortuitouſly, or without any deſign, or meaſures taken to bring it to paſs.

Casual *death*. See Deodand.

Casual *ejector*, in *Law*, a nominal deſcendant in ejectment,

ment, and who continues ſuch until appearance by or for the tenant in poſſeſſion. Blackſt. Com. vol. iii. p. 202.

CASUAL *revenues*, are thoſe which ariſe from forfeitures, confiſcations, deaths, attainders, &c.

CASUAL *theology*, a denomination given by ſome to what is more frequently called caſuiſtry. See CASUIST.

Adam Oſiander, chancellor of the univerſity of Tubingen, has publiſhed a ſyſtem of *caſual theology*, containing the ſolution of dubious queſtions, and caſes of conſcience. Theologia Cauſalis, 6 vols. 4to. Tubing. 1682.

CASUALTY, in the *Tin Mines*, a word uſed to denote the earth and ſtony matter which is, by waſhing in the ſtamping-mills, &c. ſeparated from the tin ore, before it is dried and goes to the crazing mill.

CASUIST, a perſon who profeſſes to reſolve caſes of conſcience. Eſcobar has made a collection of the opinions of all the *caſuiſts* before him.

To *caſuiſtry* belong the deciſion of all difficulties ariſing about what a man may conſcientiouſly do, or not do; what is ſin, or not ſin; what things a man is obliged to do in order to diſcharge his duty, and what he may let alone without breach of it.

M. le Feore, preceptor of Lewis XIII. called the books of the *caſuiſts* the art of quibbling with God; which does not ſeem far from the truth; by reaſon of the multitudes of diſtinctions and ſubtilties with which they abound.

CAT, in *Zoology*. See FELIS.

The *domeſtic cat* is diverſified with an almoſt infinite variety of colours and ſtreaks; but the natural colour, in a wild ſtate, is a brown tawny, variegated with ſtreaks of a pale whitiſh colour. In France the *cats* are all of a bluiſh lead colour, and in the north of Europe they are all white.

CAT, in *Sea Language*, denotes a ſhip formed on the Norwegian model, and employed in the coal-trade. It is diſtinguiſhed by a narrow ſtem, projecting quarters, a deep waiſt, and by having an ornamental figure on the prow. Theſe veſſels uſually carry from four to ſix hundred tons.

CAT, in a ſhip. See CAT-*heads*.

CAT, *ſea*. See SEA-*cat*.

CAT's *eye*, among *Naturaliſts*, a kind of precious ſtone, of a lucid texture, whoſe colours are variable, according to the poſition of the ſtone to the light.

Cat's eye is by the Latins called *oculus cati*, and ſometimes *onycopalus*, as having white zones or rings like the ONYX; and its colours variable like OPAL, from which laſt it differs chiefly by its ſuperior hardneſs.

The *cat's eye* is of a gliſtering grey, interchanged with a ſtraw colour, and anſwers the deſcription given by Pliny of the aſteria, between which and our *cat's eye* there appears no other difference than that the ancients took their denomination from the brightneſs and ſhining of the ſtone, whereas the modern name is taken from the figure of it. See ASTERIA.

CAT-*gut*, a denomination given to ſmall ſtrings for fiddles, and other inſtruments, made of the inteſtines of ſheep or lambs dried and twiſted, either ſingly, or ſeveral together.

Theſe are ſometimes coloured red, ſometimes blue, but are commonly left whitiſh or browniſh, the natural colour of the gut. They are uſed alſo by watch-makers, cutlers, turners, and other artificers. Great quantities are imported into England, and other northern countries, from Lyons and Italy.

CAT-*harpings*, are ſmall ropes running in little blocks from one ſide of the ſhrowds to the other, near the deck: their uſe is to force the ſhrowds, and make them tight, for the greater ſecurity of the maſts, and to afford room for drawing the yards in more obliquely, to trim the ſails for a ſide-wind, when they are ſaid to be cloſe hauled.

CAT-*heads*, in a ſhip, are two ſtrong ſhort beams of timber, which project almoſt horizontally over the ſhip's bows, on each ſide of the bowſprit. One end of the *cat-head* reſts on the fore-caſtle, and is bolted to the beams; the other part projects like a crane, and carries in its extremity two or three ſmall ſheaves, about which a rope called the *cat-fall* paſſes, communicating with the *cat-block*, which alſo contains three ſheaves, and is fitted with a large ſtrong hook, ſometimes called *cat-hook*, which catches the ring of the anchor when it is to be drawn up. The machine formed by this combination of pullies is called the *cat*, and ſerves to pull the anchor up to the *cat-head*, without tearing the ſhip's ſide with its flukes. The *cat-head* alſo ſerves to ſuſpend the anchor clear of the bow, when it is neceſſary to let it go.

CAT's *head* is alſo a denomination given to a ſort of waſte ſtony lumps, not inflammable, found in coal-mines. In theſe there are frequently impreſſions of ferns. Phil. Tranſ. Nº 360. p. 970.

CAT-*holes*, in a ſhip, are over the ports, as right with the capſtan as they can be: their uſe is to heave the ſhip aſtern upon occaſion, by a cable or a hawſer called ſtern-faſt.

CAT *of mountain*, the name of a beaſt of prey approaching to the leopard-kind. See CATUS *Pardus*, and CANIS.

CAT-*mint*. See CATMINT.

CAT's-*paw*, denotes a ſlight breath of wind, perceived at a diſtance in a calm, by the impreſſion made on the ſurface of the ſea, which ſoon decays.

CAT-*ſalt*, a name given by our ſalt-workers to a very beautifully granulated kind of common ſalt. It is formed out of the bittern or leach brine, which runs from the ſalt when taken out of the pan. When they draw out the common ſalt from the boiling pans, they put it into long wooden troughs, with holes bored at the bottom for the brine to drain out; under theſe troughs are placed veſſels to receive this brine, and acroſs them are placed certain ſmall ſticks, to which the *cat ſalt* affixes itſelf in very large and beautiful cryſtals. This ſalt contains ſome portion of the bitter purging ſalt, and is very ſharp and pungent, and is white when powdered, though pellucid in the maſs. It is uſed by ſome for the table, but the greateſt part of what is made of it is uſed by the makers of hard ſoap.

CAT-*ſilver*, a name given to certain foſſile ſubſtances, uſually called alſo *glimmer*, and in Latin, *micæ*. They are various ſpecies of the *bractearia*, or foliaceous talcs, in ſmall ſpangles. See MICA.

CATABAPTIST, a perſon averſe from baptiſm; particularly from that of infants.

The word is compounded of the prepoſition κατα, which, in compoſition, ſignifies *againſt*, and βαπτω, *I waſh*.

CATABASION, in the Greek *Church*, a place under the altar, wherein the relics are kept.

The word is formed from καταϐαινω, *I deſcend*; becauſe they went down into it.

CATABATHMOS, in *Antiquity*, a ſteep valley, dividing Egypt from Africa.

The word is formed from καταϐαινειν, *to deſcend*, on account of the haſtineſs and precipitation of its deſcent.

CATABIBAZON, in *Aſtronomy*, the moon's deſcending node; called alſo DRAGON'S *tail*.

CATABULENSES, in the *Middle Age*, a ſort of miniſters or ſervants of the empire, appointed to conduct the public carriage from one *catabulum*, or ſtage, to another.

The *catabulenſes* appear alſo to have had the charge of conveying the public corn to and from the mills; whence in the Theodoſian code they are joined with bakers.

CATABULUM, in the *Middle Age*, a kind of ſtable or building, wherein beaſts, eſpecially of burden and carriage, were kept for the public ſervice.

The ancient Chriſtians were ſometimes condemned to ſerve in the *catabula*, that is, to work at the cleaning of them, attending the beaſts, &c.

CATAC, in *Botany*, a name by which ſome authors call AGRIMONY.

CATACAUSTIC *curves*, in the *Higher Geometry*, the ſpecies of CAUSTIC *curves* formed by *reflexion*.

CATACHRESIS, a figure in *Rhetoric*, whereby an improper word is uſed inſtead of a proper one.

The word is formed from καταχραομαι, *abutor*, *I abuſe*; of κατα, *againſt*, or *contrary to*; and χραομαι, *I uſe*.

The *catachreſis* is, when for want of a word proper to expreſs a thought, we uſe, or rather abuſe, a word that comes ſomewhat near it: as when we call a perſon who has killed his mother, maſter, or prince, *parricide*; which word, in propriety, is only applicable to him who has murdered his father: and *vir gregis ipſe caper*, is alſo a *catachreſis*.

CATACLASIS, from κατακλαω, *I diſtort*, in *Medicine*, denotes a diſorder of the eye, wherein the eye-lid is inverted by a convulſion of the muſcles that cloſe it; called alſo *campylon*.

CATACLEIS, in *Anatomy*, a cartilaginous bone, or rather a cartilage in the juncture of the *omoplata*, or ſhoulder-blade.

CATACLYSMUS, from κατακλυζω, *I deluge*, a Greek name for a deluge, or inundation of waters.

CATACOMBS, or CATACUMBS, CATACUMBÆ, denote grottos, or ſubterraneous cavities, for the burial of the dead.

Some derive the word from the Greek κατα, and κυμϐος, a *hollow*, *cavity*, or the like.

Catacombs are alſo denominated *cryptæ*, and *cœmeteria*.

Anciently, the word *catacomb* was only underſtood of the tombs of St. Peter and St. Paul; and M. Chaſtelain obſerves, that among the more knowing of the people of Rome, the word *catacomb* is never applied to the ſubterraneous burying-places hereafter to be mentioned, but only to a chapel in St. Sebaſtian, one of the ſeven ſtational churches; where the ancient Roman calendars ſay the body of St. Peter was depoſited, under the conſulate of Tuſcus and Baſſus, in 258.

CATACOMB is more particularly uſed, in Italy, for a vaſt aſſemblage of ſubterraneous ſepulchres about Rome, chiefly at about three miles from that city in the Via Appia, ſuppoſed to be the ſepulchres of the martyrs; and which are viſited accordingly out of devotion; and reliques are taken thence, and diſperſed throughout the catholic countries, after having been firſt baptized by the pope, under the name of ſome ſaint.

Theſe *catacombs* are ſaid by many to be caves, or cells, wherein the primitive Chriſtians hid, and aſſembled themſelves together; and where they interred ſuch among them as were martyred. Each *catacomb* is three feet broad, and eight or ten high; running in form of an alley, or gallery, and communicating with others: in many places, they extend within a league of Rome. There is no maſonry or vaulting therein, but each ſupports itſelf: the two ſides, which we may look on as the parietes, or walls, were the place where the dead were depoſited; which were laid lengthwiſe, three or four rows over one another, in the ſame *catacomb*, parallel to the alley. They were commonly cloſed with large thick tyles, and ſometimes pieces of marble, cemented in a manner inimitable by the moderns. Sometimes, though very rarely, the name of ſome of the deceaſed is found on the tyle: frequently, a palm is ſeen, painted or engraven; or the cypher Xp, which is commonly read *pro Chriſto*.

Mr. Monro, in the Philoſophical Tranſactions, ſuppoſes the *catacombs* to have been originally the common ſepulchres of the firſt Romans, and dug in conſequence of theſe two opinions; that ſhades hate the light, and they love to hover about the places where the bodies are laid.

The *catacombs* of Rome have made the greateſt noiſe in the world; but there are ſuch belonging to many other cities. Biſhop Burnet deſcribes thoſe of Naples, which he ſays are without the city, and much more noble and ſpacious than thoſe of Rome. The like are alſo ſaid to be in the neighbourhood of all the great towns in that part of Italy; and others have been diſcovered at Syracuſe and Catanea in Sicily, and in the iſland of Malta.

The largeſt, and thoſe commonly ſhewn ſtrangers, are the *catacombs* of San Sebaſtiano, thoſe of St. Agneſe, and the others in the fields a little off St. Agneſe: as to the *catacombs* in the church-yards of the Vatican, women are only allowed to go into them one day in the year, viz. on Whitſun-Monday, on pain of excommunication. There are men kept conſtantly at work in the *catacombs*. As ſoon as theſe labourers diſcover a grave, with any of the ſuppoſed marks of a ſaint about it, intimation is given to the cardinal Camerlingo, who immediately ſends men of reputation to the place, where finding the palm, the monogram, the coloured glaſs, &c. the remains of the body are taken up with great reſpect, and tranſlated to Rome. After the labourers have examined a gallery, they ſtop up the entry that leads into it; ſo that moſt of them remain thus cloſed; there being only a few left open, to keep up the trade of ſhewing them to ſtrangers. This, they ſay, is done to prevent people's loſing themſelves in theſe ſubterraneous labyrinths, which has often happened: but more probably to deprive the public of the means of knowing whither and how far the *catacombs* are carried. Monro, in Phil. Tranſ. Nº 265. p. 644.

Laying up the bodies in caves, is certainly the original way of diſpoſing of the dead; and appears to have been propagated by the Phœnicians, throughout the countries to which they ſent colonies: the interring, as we now do, in the open air, or in temples, was firſt introduced by the Chriſtians. When an ancient hero died, or was killed in a foreign expedition, as his body was liable to corruption, and for that reaſon unfit to be tranſported entire, they fell on the expedient of burning, in order to bring home the aſhes, to oblige the manes to follow; that ſo his country might not be deſtitute of the benefit of his tutelage. It was thus burning ſeems to have had its original; and by degrees it became common to all who could bear the expences of it, and took place of the ancient burying: thus *catacombs* became diſuſed among the Romans, after they had borrowed the manner of burning from the Greeks; and now, none but ſlaves were laid in the ground.

Places thus prepared, might afford convenient retreats to the primitive Chriſtians; but could never be built by them. When the empire became Chriſtian, they were again diſuſed; till the reading of ſome author, who mentions them, occaſioned them to be again looked into. —As to the famed cyyher Xp, it is obſerved to have been in uſe among the ancients, long before Chriſtianity aroſe. The abbot Bencini ſays, it was compoſed of the Greek letters XP, under which ſomething myſtical was comprehended; but no author gives any account what that myſtery was.

CATACOUSTICS, from κατα and ακȣω, *I bear*, called alſo CATAPHONICS, the ſcience of reflected ſounds; or that part of acouſtics, which conſiders the properties of echoes.

CATADIOPTRICAL *teleſcope*, the ſame with reflecting TELESCOPE.

CATADROMUS, from κατα and δρεμω, *I run*, in *Antiquity*, a ſtretched ſloping rope in the theatres, down which the FUNAMBULI walked, to ſhew their ſkill.

Some have taken the word to ſignify the hippodrome, or decurſorium, wherein the Roman knights uſed to exerciſe themſelves in running and fighting on horſeback.

But the moſt natural meaning is that of a rope, faſtened at one end to the top of the theatre, and at the other to the bottom, to walk or run down, which was the higheſt glory of the ancient *ſchœnobates*, or *funambuli*. Elephants were alſo taught to run down the *catadromus*. Suetonius ſpeaks of the exploit of a Roman knight, who paſſed down the *catadromus* mounted on an elephant's back. In Ner. cap. xi. p. 5.

CATADUPA, a CATARACT, or water-fall.

The word comes from κατα, *downwards*, and δυπεω, *to make a noiſe by falling*.

The appellation *catadupa* ſeems to have been peculiarly given to a place in Æthiopia joining on Egypt, where the Nile, which here firſt aſſumes that name, ruſhed down a ſteep rock into the ſubjacent plain, with a noiſe ſo impetuous, that the inhabitants are ſaid to have loſt all ſenſe of hearing. Plin. Hiſt. Nat. lib. v. cap. 9. Ammian. Marc. lib. xxii. cap. 34, &c. Senec. Nat. Quæſt. lib. iv. cap. 2.

CATADUPI, Καταδυποι, an appellation given by the ancients to the inhabitants about the cataracts of the Nile. See CATARACT.

The *catadupi* are repreſented as all deaf; being made ſo by the continual din of the falling waters.

CATAFALCO, an Italian term, literally ſignifying *ſcaffold*. It is chiefly uſed for a decoration of architecture, ſculpture, and painting; raiſed on a timber ſcaffold, to ſhew a coffin, or tomb, in a funeral ſolemnity.

CATAGMATICS, medicines proper to ſolder, and unite broken bones; by promoting the formation of a callus.

The word comes from κατα, *againſt*, and αγνυμι, *I break*.

The principal *catagmatics*, are the Armenian bole, gum tragacanth, oſteocolla, Cyprus nuts, frankincenſe, aloes, and acacia. See CONSOLIDATION.

CATAGOGION, Καταγωγιον, a heathen feſtival at Epheſus, celebrated on the twenty-ſecond of January, in which the devotees run about the ſtreets dreſſed in divers antic and unſeemly manners, with huge cudgels in their hands, and carrying with them the images of their gods; in which guiſe they raviſhed the women they met with, abuſed, and often killed the men, and committed many other diſorders, to which the religion of the day gave a ſanction. Du-Cange.

CATAGRAPHA, Καταγραφα, in *Antiquity*, denote oblique figures, or views of men's faces; anſwering to what the moderns call PROFILES.

Catagrapha are ſaid to be the invention of Simon Cleonæus, who firſt taught painters to vary the looks of their figures, and ſometimes direct them upwards, ſometimes downwards, and ſometimes ſidewards or backwards. Plin. Hiſt. Nat. lib. xxxv. cap. 8. cum Not. Harduin.

CATALECTIC, a term in poetry.—The ancients called *catalectic verſes*, thoſe which wanted either feet or ſyllables; in oppoſition to *acatalectics*, which are complete verſes, wanting nothing.

The word comes from κατα and ληγω, *I end*.

CATALEPSIS, CATALEPSY, from καταλαμβανειν, *to occupy*, in *Medicine*, a kind of apoplexy; or a drowſy diſeaſe, wherein the patient is taken ſpeechleſs, ſenſeleſs, and fixed in the ſame poſture wherein the diſeaſe firſt ſeized him; and his eyes open, without ſeeing, or underſtanding.

Catalepſis is the ſame with what is otherwiſe denominated CATOCHE, or *catochus*, and *gelatio*, or *congelatio*.

Some alſo make it the ſame with COMA *vigil*; others will have it different; though wherein the diſtinction lies it is not eaſy to aſſign.

This diſeaſe is very rare, nor is it eaſy to aſſign its cauſe. Boerhaave takes the immediate cauſe to be an immobility of the common ſenſory, in the ſituation of the firſt acceſs; whence comes an abſolute ſtagnation of the blood in the brain, and a ceſſation of all the functions of the brain, as well as thoſe depending thereon; the muſcles alone remaining in their firſt tenſion; and reſpiration, and the pulſe, preſerved, though generally weak.

It is uſually preceded by a long intermitting fever, a melancholic dry temperature, a ſuppreſſion of the menſes, or hæmorrhoids, great frights, and intenſe, continued meditations on one object.

Upon diſſection, the arteries and veins of the cerebrum are found very turgid, and the blood cloſe rammed in them: it is ſometimes cured by copious hæmorrhages of the noſe; ſternutatories, vomitives, and veſicatories, are likewiſe applied to good purpoſe.

It ſeldom paſſes into any other diſeaſe; though ſometimes into an epilepſy, convulſions, madneſs, or atrophy; but it commonly ends in death.

In the Hiſtory of the Royal Academy of Sciences at Paris, we have an account of a woman who had a ſurpriſing *catalepſy*, her members keeping all the poſtures they were put into, as if ſhe had been made of wax. Ann. 1738.

CATALOGUE, a liſt, or enumeration of the names of ſeveral books, men, or other things; diſpoſed according to a certain order.

Catalogues of books are digeſted in different manners, ſome according to the order of the times when the books were printed, as that of Maittaire; others according to their form and ſize, as the common bookſellers *catalogues*; others according to the alphabetical order of the author's names, as Hyde's *Catalogue* of the Bodleian Library; others according to the alphabetical order of matters or ſubjects, which are called real or claſſical *catalogues*, as thoſe of Lipenius and Draudius; laſtly, others are digeſted in a mixed method, partaking of ſeveral of the former, as de Seine's *catalogue* of cardinal Sluſius's library, which is firſt divided according to the ſubjects or ſciences, and afterwards the books in each are recited alphabetically.

The moſt applauded of all *catalogues* is that of Thuanus's library, in which are united the advantages of all the reſt. It was firſt drawn up by the two Puteani in the alphabetical order, then digeſted according to the ſciences and ſubjects, by Iſhm. Bullialdus, and publiſhed by F. Queſnel at Paris in 1679; and reprinted, though incorrectly, at Hamburg, in 1704. The books are here ranged with juſtneſs under their ſeveral ſciences and ſubjects, regard being ſtill had to the nation, ſect, age, &c. of every writer. Add, that only the beſt and choiceſt books in every ſubject are found here, and the moſt valuable editions. Yet the *catalogue* of M. le Telliers, archbiſhop of Rheims' library, made by M. Clement, is not inferior to any publiſhed in our age, either on account of the number and choice of the books, or the method of its diſpoſition. One advantage peculiar to this *catalogue*, is the multitude of anonymous and pſeudonymous authors detected in it, ſcarce to be met with elſewhere. Some even prefer it to Thuanus's *catalogue*, as containing a greater variety of claſſes and books on particular ſubjects. Bibliotheca Thuanea, Par. 1679, 8vo. 2 vols. and Hamb. 1704, fol. and 8vo.

The conditions required in a *catalogue* are, that it indicate at the ſame time the order of the authors and of the matters, the form of the book, the number of volumes, the chronological order of the editions, the language it is written in, and its place in the library; ſo as that all theſe circumſtances may appear at once, in the ſhorteſt, cleareſt, and exacteſt manner poſſible. In this view, all the *catalogues* yet made will be found to be defective.

An anonymous French writer has laid down a new plan of a *catalogue*, which ſhall unite all the advantages, and avoid all the inconveniencies of the reſt. Lett. à l' Abbé ***, ſur un Nouveau Projet de Catalogue de Bibliotheque. Par. 1712.

The Jeſuits of Antwerp have given us a *catalogue* of the popes; which makes what they call their *Propylæum*.

CATALOGUE *of the ſtars*, is a liſt of the fixed ſtars, diſpoſed in their ſeveral conſtellations; with the longitudes, latitudes, &c. of each.

The firſt who undertook to reduce the fixed ſtars into a *catalogue*, was Hipparchus Rhodius, about one hundred and twenty years before Chriſt; in which he made uſe of the obſervations of Timocharis and Ariſtyllus, for about one hundred and eighty years before him. Ptolemy retained Hipparchus's *catalogue*, containing 1026 fixed ſtars; though he himſelf made abundance of obſervations, with a view to a new *catalogue*, A. D. 140. About the year of Chriſt 880, Albategni, a Syrian, brought down the ſame to his time. Anno 1437, Ulugh Beigh, king of Parthia and India, made a new *catalogue* of 1022 fixed ſtars; ſince tranſlated out of Perſian into Latin, by Dr. Hyde. The third who made a *catalogue* from his own obſervations, was Tycho Brahe; who determined the places of ſeven hundred and ſeventy-ſeven ſtars, for the year 1600, which Kepler, from other obſervations of Tycho, afterwards increaſed to the number of one thouſand, in the Rudolphine tables; adding thoſe of Ptolemy, omitted by Tycho, and of other authors, ſo that his *catalogue* amounts to above 1160. At the ſame time, William landgrave of Heſſe, with his mathematicians, Chriſtopher Rothmannus, and Juſtus Byrgius, determined the places of four hundred fixed ſtars, by his own obſervations, with their places rectified for the year 1593; which Hevelius prefers to thoſe of Tycho's. Ricciolus, in his Aſtronomia Reformata, determined the places of one hundred and one ſtars, for the year 1700, from his own obſervations: for the reſt he followed Tycho's *catalogue*; altering it where he thought fit. Anno 1667, Dr. Halley, in the iſland of St. Helena, obſerved three hundred and fifty ſouthern ſtars, not viſible in our horizon. The ſame labour was repeated by F. Noel, in 1710, who publiſhed a new *catalogue* of the ſame ſtars conſtructed for the year 1687.

Bayer, in his Uranometria, publiſhed a *catalogue* of 1160 ſtars, compiled chiefly from Ptolemy and Tycho, in which every ſtar is marked with ſome letter of the Greek alphabet; the biggeſt ſtar in any conſtellation being denoted by the firſt letter, the next by the ſecond, &c. and if the number exceeds the Greek alphabet, the remaining ſtars are marked by letters of the Roman alphabet, which letters are preſerved by Flamſtead and by Senex on his globes. The celebrated Hevelius compoſed a *catalogue* of 1888 ſtars, 1553 of which were obſerved by himſelf; and their places were computed for the year 1660.

The laſt, and greateſt, is the Britannic *catalogue*, compiled from the obſervations of the accurate Mr. Flamſtead; who for a long ſeries of years devoted himſelf wholly thereto. As there was nothing wanting either in the obſerver, or apparatus, we may look on this as a perfect work, ſo far as it goes. It is pity the impreſſion had not paſſed through his own hands: that now extant, was publiſhed by authority, but without the author's conſent: it contains 2734 ſtars. There was another publiſhed in 1725, purſuant to his teſtament; containing no leſs than 3000 ſtars, with their places rectified for the year 1689: to which is added Mr. Sharp's *catalogue* of the ſouthern ſtars not viſible in our hemiſphere, adapted to the year 1726. See vol. iii. of his Hiſtoria Cæleſtis, in which are printed the *catalogues* of Ptolemy, Ulugh Beigh, Tycho, the Prince of Heſſe, and Hevelius; together with an account of each of them in the Prolegomena.

CATALONGAY, in *Botany*, the name given by ſome authors to the plant which produces the *faba ſancti Ignatii*, or St. Ignatius's beans of the ſhops.

CATALLIS *captis nomine diſtrictionis*, in *Law*, a writ, which lies where a houſe is within a borough, for rent iſſuing out of the ſame, and warrants the taking of doors or windows by way of diſtreſs.

CATALLIS *Reddendis*, in *Law*, a writ that lies where goods, being delivered to perſons to keep till a certain day, are not on demand delivered on that day.

CATALS, *Catalla*, denotes goods or CHATTELS.

CATAMARAN, *Catimoran*, in *Sea Language*. See FLOAT.

CATAMENIA, from κατα and μην, *month*, in *Medicine*, women's monthly purgations, called alſo MENSES.

CATANADROMI, in *Ichthyography*, a term of the ſame ſignification with the more common word *anadromi*, the diſtinctive term of a ſet of fiſhes, which at times leave the freſh water for the ſalt, and afterwards return to the freſh water again. See ANADROMOUS.

CATANANCHE, in *Botany*. See *Candia* LION'*s foot*.

CATAPAN, or CATIPAN, a name the later Greeks, about the twelfth century, gave the governor of their dominions in Italy.

Ughellus and others ſay, *catapan* was the ſame with *capitaneus*; formed therefrom by metatheſis, or tranſpoſition: others derive it from κατα, *juxta*, and ϖαν, *omne*; in which ſenſe, *catapan* was a governor-general, or magiſtrate, who had the direction of all: others will have it derived from κατα ϖαντοκρατορα, that is, *next after the emperor*. In which ſenſe, *catapan* was a ſecond maſter, *ſecundus dominus*. Du-Cange derives it from κατεπανω, *captain*; which the Greeks applied to every governor, and even every man of quality.

CATAPASM, a dry medicine, compoſed of a mixture of powders to be ſprinkled on the body.

The word comes from κατα, *in*, and ϖασσω, *I ſprinkle*. There are *catapaſms* of divers kinds: ſome odoriferous, uſed in the way of perfume; others fortifying, applied to the ſtomach, heart, or head; and others eſcharotic, for eating off dead fleſh.

CATAPELTA, an inſtrument of puniſhment, in uſe among the ancients. It conſiſted of a kind of preſs, compoſed of planks, between which the criminal was cruſhed to death.

CATAPELTÆ, in *Ancient Writers*, ſometimes denote arrows, and ſometimes engines wherewith either arrows, ſtones, or even huge pieces of timber were caſt. Pliny aſcribes the invention of the *catapeltæ* to the Syrians; Plutarch and Diodorus to the Sicilians.

It is more frequently written CATAPULTA.

CATAPHORA, in a theme of the heavens, an appellation given to the houſes falling from the third, ſixth, ninth, and twelfth angles. In which ſenſe, the word ſtands oppoſed to *anaphora*.

CATAPHORA, a kind of lethargic, or drowſy diſeaſe; the ſame with what is otherwiſe called COMA. See alſo CARUS.

The word is compounded of κατα, or κατω, *downwards*, and φερω, *to bear*.

CATAPHRACTA, from κατα, and φρασσω, *I fortify*, or *arm*, in the *Ancient Military Art*, a piece of heavy defenſive armour, formed of cloth or leather, fortified with iron ſcales or links, wherewith ſometimes only the breaſt, ſometimes the whole body, and ſometimes the horſe too, was covered.

It was in ancient uſe among the Sarmatians, Perſians, and other Barbarians. The Romans alſo adopted it early for their foot; and, according to Vegetius, kept to it till the time of Gratian, when the military diſcipline growing remiſs, and field exerciſes and labour diſcontinued, the Roman foot thought the *cataphracta*, as well as the helmet, too great a load to bear, and therefore threw both by, chooſing rather to march againſt the enemy bare-breaſted: by which, in the war with the Goths, multitudes were deſtroyed. Tacit. Hiſt. lib. i. cap. 79. Veget. de Re Mil. lib. i. cap. 20.

CATAPHRACTA, among *Surgeons*, denotes a BANDAGE of the thorax; thus denominated from its reſemblance to a Roman breaſt-plate, called *cataphracta*.

CATAPHRACTÆ *naves*, thoſe armed and covered in fight, ſo that they could not be eaſily damaged by the enemy.

They were covered over with boards or planks, on which the ſoldiers were placed to defend them. The rowers ſitting underneath, thus ſkreened from the enemies weapons.

CATAPHRACTUS, denotes a thing defended or covered on all ſides with armour.

CATAPHRACTUS, or **CATAPHRACTARIUS**, more particularly denotes a horſeman, or even horſe, armed with a CATAPHRACTA.

The *cataphracti equites* were a ſort of cuiraſſiers, not only fortified with armour themſelves, but having their horſes guarded with ſolid plates of braſs or other metals, uſually lined with ſkins, and wrought into plumes or other forms. Their uſe was to bear down all before them, to break in upon the enemies ranks, and ſpread terror and havock wherever they came, as being themſelves invulnerable and ſecure from danger. But their diſadvantage was their unwieldineſs, by which, if once unhorſed, or on the ground, they were unable to riſe, and thus fell a prey to the enemy.

CATAPHRACTUS *pogge*, in *Zoology*. See POGGE.

CATAPHRYGIANS, a ſect in the ſecond century, ſo called, as being of the country of Phrygia.

They were orthodox in every thing, ſetting aſide this, that they took Montanus for a prophet, and Priſcilla and Maximilla for true propheteſſes, to be conſulted in every thing relating to religion; as ſuppoſing the Holy Spirit had abandoned the church. See MONTANIST.

CATAPLASM, popularly called *poultice*, an external medicine, in form of a pulp; of a ſoft conſiſtence, like an unguent, or cerat; compoſed of various liquors, parts of plants, oils, unguents, &c. according to the variety of intentions.

The word comes from the Greek καταπλασσω, *illino*, *I ſmear*, or *apply outwardly*.

Its ordinary uſes are, to aſſuage pain, and ſoften, reſolve, diſcuſs, or ſuppurate, matter collected in the external parts of the body.

The common *cataplaſm* for theſe intentions, is compoſed of white bread, milk, yolks of eggs, ſaffron, and oil of roſes.

CATAPLASMA *è cymino*, the *cummin-ſeed cataplaſm*, a form of medicine preſcribed in the late London Diſpenſatory, and meant as a ſubſtitute for the London treacle of former Diſpenſatories, which has of late been uſed only externally, and for ſuch purpoſes as it is thought this will better ſerve for. The compoſition is this: take cummin-ſeeds, half a pound; bay-berries and leaves of ſcordium dried, of each three ounces; of cloves, one ounce; honey, three times the weight of the whole: mix all together into a *cataplaſm*.

CATAPLASMA *maturans*, a form of medicine in the late London Pharmacopœia, ordered to be made in the following manner: take dried figs, four ounces; yellow baſilicon, one ounce; ſtrained galbanum, half an ounce: beat well the figs with a little wine, or ſtrong ſtale beer, and then carefully mix in the ointment, firſt melted with the galbanum.

CATAPOTIA, from καταπινω, *I ſwallow*, dry medicines, in a form fit to be ſwallowed whole; otherwiſe called *pills*.

CATAPULTA, a military machine, uſed among the ancients, for throwing huge ſtones, and ſometimes large darts, and javelins, twelve or fifteen feet long, on the enemy.

The word is originally Greek, from κατα and πελτη, and, according to Heſychius, denotes a ſpear or dart. Hence it is ſometimes alſo written *catapelta*.

The *catapeltæ* were alſo denominated οξυβολεις, becauſe they threw ſharp wooden weapons; whereas thoſe caſt by the *baliſtæ* were obtuſe, viz. ſtones.

The *catapulta* conſiſted of two huge timbers, like maſts of ſhips, placed againſt each other, and bent by an engine for the purpoſe; theſe being ſuddenly unbent again by a ſtroke of an hammer, threw the javelins with incredible force. Its ſtructure, and the manner of working it, are deſcribed by Vitruvius; and a figure of it is alſo given by Perrault. M. Folard aſſerts, that the *catapulta* made infinitely more diſorder in the ranks, than our cannon loaden with cartridges. Vid. Vitruv. de Archit. lib. x. cap. 15. & cap. 18. Perr. Not. ad eund. p. 335.

The *catapulta* is ſaid to be the invention of the Syrians. Some authors make it the ſame with the *balliſta*; others different.

CATAPUTIA, a medicinal plant, commonly called the *leſſer* SPURGE. It purges with ſuch a violence, both upwards and downwards, that few phyſicians now venture to preſcribe it.

CATARACT *of water*, a fall, or precipice, in the channel, or bed of a river; cauſed by rocks, or other obſtacles, ſtopping the courſe of its ſtream: from whence the water falls with a noiſe and impetuoſity.

The word comes from καταῤῥασσω, *I tumble down with violence*; compounded of κατα, *down*, and ῥασσω, *dejicio*, *I throw down*.

Such are the *cataracts* of the Nile, the Danube, Rhine, &c.

In that of Niagara, the perpendicular fall of the water is 137 feet: and in that of Piſtill Rhaiadr, in North Wales, the fall of water is near 240 feet from the mountain to the lower pool.

Strabo calls that a *cataract*, which we call a *caſcade*; and what we call a *cataract*, the ancients uſually called a *catadupa*. Herminius has an expreſs diſſertation, De admirandis mundi Cataractis ſupra & ſubterraneis; where he uſes the word in a new ſenſe; ſignifying, by *cataract*, any violent motion of the elements.

CATARACT, from καταρασσω, *I confound*, in *Medicine*, a ſuffuſion of ſight, ariſing, according to the opinion of the ancients, from a little film, or pellicle, which, ſwimming in the aqueous humour of the eye, and getting before the pupil, intercepts the rays of light.

They ſuppoſed that the *cataract* was formed by a condenſation of the more viſcous parts of the aqueous humour, between the uvea and the cryſtalline: though ſome take it to be a pellicle, detached from the cryſtalline itſelf; which is only an aſſemblage of ſeveral little pellicles, laid over one another.

There are two kinds of *cataracts*, the *genuine* and *ſpurious*; the firſt owing to an humour amaſſed in the eye, coagulated and fixed therein, and deſtroying its uſe: the latter ariſing from fumes or vapours thrown upon the eye by ſome accident; as in a fever, &c. The genuine *cataract* has ſeveral degrees, and ſeveral names: at firſt the patient ſees, as it were, clouds, moats, flies, &c. diffuſed over the objects in view: thus far the *cataract* is called *imaginary*; there being nothing yet appearing to the eye of another perſon. As the ſuffuſion increaſes, the pupil begins to appear of a ſea-green colour; ſometimes like the air full of clouds; and then the *cataract* is called *water*, or *water-fallen*: when the evil is arrived at its height, and the matter is ſufficiently coagulated, the patient loſes all ſight; the pupil ceaſes to be tranſparent, and becomes white, or brown, or of ſome other colour: this laſt ſtate is what we properly denominate a *cataract*.

But the modern anatomiſts and ſurgeons, ſuch as Heiſter, Briſſeau, and others, have adopted and eſtabliſhed a new ſyſtem, with reſpect to the cauſe and ſeat of this diſorder. Obſerving the beginning and progreſs of a *cataract*, it has been found, that at firſt it lies ſo deep as ſcarcely to be diſtinguiſhed; whereas, if it was a membrane or an inſpiſſation of the aqueous humour, and ſituated in the poſterior chamber of the eye behind the iris, it might be eaſily perceived, nor would it appear to lie ſo far within the eye. In the progreſs of the diſorder, and when the patient complains of dimneſs of ſight, a whiteneſs is obſerved very deep on the inſide, without any apparent inſpiſſation of the aqueous humour; a circumſtance which ſeems to prove, that the cryſtalline humour begins to become opake: afterwards the cryſtalline advances towards the hole of the pupil, and the ſight leſſens gradually, till the *cataract* comes near the pupil and cloſes it. No ſuch change of ſituation, it has been obſerved, could take place, were the diſeaſe occaſioned by a membrane produced in the aqueous humour, or by an inſpiſſation of this humour. It has alſo been found in the operation for the *cataract*, that, after it has been depreſſed and the needle raiſed, an opake body, in the form of the cryſtalline humour, appears through the hole of the pupil, adhering to the end of the needle. To which we may add, that, in an operation of this kind, when the eye was drawn out of the orbit and opened, the cryſtalline humour was found in the bottom of the globe of the eye, at the poſterior and inferior part of the pupil, to which place the operator had depreſſed it: it is likewiſe added, that after the *cataract* is depreſſed, the patient cannot ſee without the aſſiſtance of a lens to ſupply the defect of the cryſtalline.

A true *cataract* is therefore defined to be an alteration of the cryſtalline humour, which loſes its natural tranſparence, becomes opake, and at length hinders the rays of light from paſſing to the bottom of the eye, to make the neceſſary impreſſion on the retina. It muſt be remembered, however, that, though the *cataract* is impervious to the rays of light, ſome of them paſs obliquely between the iris and *cataract*, ſo that the eye is ſtill able to diſtinguiſh light and glaring colours. The cryſtalline, in this diſeaſe, is changed into a cream colour, a pearl colour, a yellow colour, or a darkiſh grey, &c. It has been ſaid that it ſometimes becomes greeniſh, though Mr. Sharp, in a great number of *cataracts*, never met with a ſingle inſtance of this kind: and on this account, it is called by the Greeks *glaucoma*, which is the ſame diſeaſe with the *cataract*.

In ſome caſes, the *cataract* adheres to the iris; and if there be a complete adheſion of theſe parts, the eye is incapable of ſeeing at all; and, therefore, as no judgment can be formed of the ſtate of the retina or of the vitreous humour, Mr. Warner thinks, theſe are ſufficient reaſons for forbidding the operation of *couching*; and he obſerves, with reſpect to the operation of dividing the iris from the *cataract*, which was invented and recommended by Mr. Cheſelden, that he never ſaw a ſingle inſtance of ſucceſs from it, and therefore that it is in no circumſtance adviſeable.

Cataracts ſpring from very different cauſes: ſometimes they are the conſequences of blows, wounds, or punctures, but not often. When they are produced by external cauſes, little relief can be obtained from manual operation, becauſe other parts of the eye may be injured, and the diſeaſe is truly complicated. When the *cataract* ariſes from an internal cauſe, it is always the conſequence of obſtructions in the nutrient and ſecreting veſſels of the cryſtalline humour; and when this is the only viſible defect in the eye, the patient derives great advantages from an operation.

Though it be, generally ſpeaking, true, that the cauſe of *cataracts* is the opacity of the cryſtalline humour; yet it is certain, that a real membrane has been ſometimes, though rarely, found, covering the pupil, or the ſocket of the vitreous humour which lies behind the cryſtalline, or formed by a kind of pus extravaſated into the aqueous humour, in conſequence of an inflammation of the choroides.

Cataracts have been diſtinguiſhed, by ſurgeons and oculiſts, into various ſorts; as into recent and inveterate, incipient and confirmed, mature and immature, ſimple and complicated, immoveable and ſhaking, milky and purulent, true and ſpurious, curable and incurable: but moſt of theſe diſtinctions, as far as they relate to the nature of the diſeaſe, have no ſufficient foundation in nature, owing their diverſity of character more to the imagination of writers, than to any real variety of the diſeaſe itſelf.

Celſus, and after him Heiſter, have recommended the uſe of medicinal remedies in an incipient *cataract*. In a caſe of this kind, whatever is capable of attenuating the juices, of unloading the diſtended veſſels, and of driving a portion of their juices to diſtant parts of the body, appears to be capable of doing conſiderable ſervice, though it may be little depended on in a confirmed *cataract*. But when the diſorder is grown mature and inveterate, recourſe muſt be had to manual operation: in order to the ſucceſs of which, much depends on the nature of the diſeaſe, and the degree of its maturity. If the adheſion of the *cataract* to the iris be partial, and the retina be perfect, there will be a ſufficient quantity of the rays of light tranſmitted obliquely, between the iris and the *cataract*, to the lateral parts of the retina, to enable the patient to diſtinguiſh light, and ſometimes too ſuch bodies as are white or red. To judge of this, when the operator cannot diſtinguiſh it by his ſight, let him ſhut the patient's eye, and rub the lids a little; then, ſuddenly opening it, he will perceive the pupil to contract, if the cryſtalline humour does not prevent the action by its adheſion. The general criterion of the fitneſs of *cataracts* for the operation is taken from their colour; the pearl-coloured, and thoſe of the colour of burniſhed iron, are eſteemed proper to endure the needle: and the maturity of the *cataract* may be judged of by its appearing in every part of an equal opacity; by the patient's not diſtinguiſhing an object preſented to him, when he is placed with his back to the light, provided the diſeaſe be not one of thoſe *cataracts*, in which the cryſtalline remains in the middle of the poſterior chamber of the eye. The operator ſhould likewiſe examine the diſeaſed eye expoſed to the light; if he finds the cryſtalline of an equal opacity, let him cloſe the patient's eye with his thumbs, then rub the upper lid of that eye which has the *cataract*, and, keeping the other eye ſhut, let him open the lids: if he finds the light, which falls on the pupil, makes the iris contract; and though expoſed to the ſame light, it dilates to the half, or the quarter, of that degree to which it was contracted; he may be aſſured the *cataract* is ripe.

CATARACTS, *couching of*. This operation is performed by penetrating the globe of the eye with the *couching* needle through the *tunica conjunctiva*, and *albuginea*, at a very ſmall diſtance beyond the circumference of the *tunica cornea*, and as exactly as poſſible in a line with the moſt external part of the circle of the pupil. The needle ſhould be introduced through the coats of the eye, viz. the *tunica conjunctiva*, *albuginea*, *ſclerotica*, *choroides*, and *tunica retina*, with the flat ſurfaces of the inſtrument directed upwards and downwards, as leſs violence will be done to the coats of the eye in this way, than if the blade had penetrated the eye in a tranſverſe direction. The inſtrument ſhould then be cautiouſly puſhed forwards, till it appears behind the pupil, which it will always do, when the eye remains tranſparent, and the eye-lids are kept open. The operator next endeavours to preſs the *cataract* gently downwards, and a little outwards, with the flat ſurface of the inſtrument; and if the *cataract* ſhould not readily ſubmit, the needle muſt be carefully moved under it, and gently raiſed up, by which means the *cataract* may be ſeparated from the *proceſſus ciliares*, and *aranea* below, and at the ſame time be diſengaged from the inferior portion of the *tunica iris*, ſuppoſing it to be ſlightly connected with that membrane. After the *cataract* is thus lifted up, the poſition of the *couching* needle muſt be altered, and directed a little above the upper portion of the circle of the pupil; afterwards inclining the inſtrument downwards, and obliquely outwards. Great care ſhould be taken not to wound the *iris*, or the *proceſſus ciliares*. Thus the *cataract* will ſometimes be ſo effectually diſlodged from the bed of the vitreous humour, and its nutrient veſſels ſo perfectly deſtroyed, as to bring on its gradual decay. When the operation is finiſhed, the patient's eye-lids muſt be ſhut, and covered with a rag, dipped in a ſolution of *ſaccharum ſaturni*, or the *pulvis è ceruſſâ compoſ.* in cold roſe-water, or the *extractum ſaturni* mixed with brandy, which muſt be very gently bound on with a ſoft linen roller. The patient ſhould be let blood, and kept in a dark place during the continuance of the inflammation. He ſhould ſit up for ſome hours after the operation, in order to prevent the riſing of the *cataract*, and live abſtemiouſly, taking only ſuch food as requires little chewing. The *cataract* is ſometimes apt to riſe again, after it has been depreſſed, ſo that it has been neceſſary to repeat the operation; for the prevention of which particular care ſhould be taken to deſtroy as effectually as poſſible the *aranea*, by moving the blade of the inſtrument in different directions. Warner. See *Couching* NEEDLE, and SPECULUM *oculi*.

CATARACTS, *extracting of*. M. Daviel, in 1745, firſt began this operation for the cure of the *cataract*; and out of a hundred and fifteen different operations, a hundred ſucceeded. Though it is ſaid that Mr. St. Yves practiſed it about ſixty years before. It is thus deſcribed by Dr. Hope, who ſaw M. Daviel perform it. After having placed the patient in a right line in the chair, he places himſelf over againſt, and ſomewhat higher than the patient: an aſſiſtant holds the head ſteady, and another keeps the upper eye-lid open, whilſt he, with his left-hand, keeps open the lower eye-lid. Then he takes an inſtrument like a lancet, of a myrtle-form point, a little crooked upwards, and fixed in a handle; and, making the patient look upwards, he pierces the *cornea tranſparens* at its lower circumference, juſt where it joins the *ſclerotica*, and conveys the point of the inſtrument between the *cornea* and *iris* upwards, beyond the pupil. He enlarges this opening on each ſide by the ſame inſtrument; taking out this inſtrument, he introduces another in the ſhape of a narrow lancet, made round at the point, and fixed in a handle; with this he enlarges the opening. When this is removed, he introduces a pair of crooked ſciſſars, with which the opening is enlarged on each ſide by different ſnips, always as near as poſſible to the circumference of the cornea, until he has made the opening round two thirds of the cornea. He then takes out the ſciſſars, and with a ſmall inſtrument like an ear-picker raiſes the cornea, and with a *cataract* needle in his hand, broader and ſtronger than the common, and pointed like a lancet, he cuts the capſula of the cryſtalline through the pupil: then preſſing gently the globe of the eye with his finger from below upwards, the cryſtalline ſlips out of the capſula, and drops out of the eye. The aqueous humour is diſcharged upon the firſt puncture, and the cornea and iris join together. Great ſkill and care are neceſſary, in order to avoid wounding the iris, which would endanger the eye. The whole operation requires about two minutes, and is attended with little or no pain. This operation is in many reſpects preferable to *couching*; as it may be performed at all times, and in all kinds of *cataracts*, whether they are come to maturity or not, and many accidents are avoided. The principal accident to which this operation is liable, is an exceſſive evacuation of the vitreous humour at the time of performing it, which may occaſion a ſinking down of the globe of the eye, a deformity, and an irrecoverable loſs of ſight. Phil. Tranſ. vol. xlvii. p. 530; and Warner's Deſcription of the human Eye, &c. and Diſeaſes, &c. p. 100, &c.

Thoſe who would be farther informed on this ſubject, may conſult Heiſter, Sharp, Warner, &c.

CATARACTA, in *Zoology*, the name of a bird of the LARUS or *ſea-*GULL kind, very much approaching to the nature of our *gannet*, but ſmaller, and with ſhorter and weaker claws. It much reſembles the *goſhawk*. Its back and wings are variegated with brown, yellow, and white; its breaſt and belly are white, variegated with brown ſpots; its wings are long, and, when folded, reach to the end of the tail; its legs are grey; its feet webbed, and its clawks crooked and ſmall. Aldrovand. de Avib.

CATARACTES, in *Zoology*, a name by which ſome authors have called the large SEA-*gull*; called in Cornwall, where it is very common, the GANNET.

CATARRH, in *Medicine*, an extraordinary diſtillation, or defluxion of a ſharp, ſerous humour, from the glands, eſpecially about the head and throat, upon the parts ſubjacent.

The word is formed from καταῤῥέω, *defluo, I flow down.*

Catarrhs are generally occaſioned by a diminution of inſenſible perſpiration on taking cold; the effect whereof is, that the lymph, that ſhould paſs by the ſkin, ouſes out upon thoſe glands; and being thus extravaſated, occaſions irritations, coughs, and all the uſual ſymptoms. See COUGH.

Degory deduces all diſeaſes from *catarrhs*, which he looks upon as the ſeminary of moſt diſorders of the body.

Catarrhs are of as many ſpecies as the parts on which the rheum or matter falls. Hippocrates enumerates eight kinds of defluxions from the head, viz. on the eyes, noſe, ears, breaſt, abdomen, ſpinal marrow, *vertebræ*, and muſcles of the loins, and *os ſacrum*. The moderns allow only of three ſorts under the name of *catarrhs*; the firſt, wherein the matter falls on the noſe, more properly called CORYZA; the ſecond, on the *fauces*, called BRANCHUS; and the third on the *thorax*, or breaſt, more particularly denominated a *catarrh*. The ſum of which is couched in the following diſtich:

Si fluit ad pectus dicatur rheuma catarrhus,
Ad fauces branchus, ad nares eſto coryza.

Etmuller diſtinguiſhes a *hot* and a *cold catarrh*; the firſt attended with an unnatural heat and pain, and a phlogoſis of the whole body; the excreted lymph being exceeding thin and ſharp: in the cold kind, all the ſymptoms are more remiſs.

Catarrhs are cured by ſoftening the ſerous humours, and augmenting tranſpiration, by means of diaphoretics, narcotic medicines, and diuretics. Smoaking of tobacco is recommended as excellent in all *catarrhal* affections: in obſtinate *catarrhs*, recourſe is ſometimes had to iſſues and bliſters.

Catarrhous diſorders, as well as all other feveriſh indiſpoſitions, are to be treated in a very mild and gentle manner. The patient is to be kept moderately warm, either in bed, or by means of a fire; he is to abſtain from medicines which are too hot, draſtic, and productive of commotions, as alſo from a hot regimen; becauſe by theſe the acrid matter is put into commotions, and a fervid diſpoſition conveyed to the parts. The diet is to be ſpare, and the drink tepid and wholeſome. In the decline of the diſeaſe, however, when the excretions are begun, it has been obſerved, that good wine, freely drank, has proved beneficial; as it promotes the circulation of the blood, and maintains an equable perſpiration.

When during the diſorder the fæces are indurated, and the patient coſtive, beſide water-gruel, decoctions of manna, prunes, and raiſins, nothing is more proper than emollient clyſters. When the cough is violent and racking, it is to be allayed with recent oil of ſweet almonds, mixed with ſyrup of maidenhair.

Catarrhs do not ariſe from the head only, but ſometimes alſo from other parts of the body; the lymphatic veſſels, wherein the ſeroſities are contained, as well as the glands that ſeparate them, being diſtributed all over the body.

CATARRH, *ſuffocative*, in *Medicine*, the name of a diſeaſe, which conſiſts in a copious eruption of a ſerous and mucous humour into the veſicles of the lungs; which takes its origin from a ſudden congeſtion of humours about the breaſt, and a flaccid and weak ſtate of the breaſt and lungs.

CATARRH, *ſigns of a ſuffocative*. This diſeaſe always ſeizes the patient at once, without any previous notice; his breath becomes extremely difficult, and the fulneſs of the breaſt is eaſily diſtinguiſhed by a ſound of rattling of a frothy matter at the time of drawing in the breath. There is an immediate debility and loſs of ſtrength and ſpirits, as the patient calls it, but there is in reality a ſpaſmodic tenſion; this is followed by a reſtleſſneſs, ſo that the patient cannot ſuffer his limbs to lie a minute in the ſame poſture or place; and there is always a deſpondency in the mind, and the patient thinks he is certainly going to die. There is uſually either no cough at all, or, at utmoſt, only a very ſlight and inſufficient one, and the very ſtrength to cough is wanting. The breaſt, and even the ribs, are ſenſibly affected by this diſeaſe, and the eyes always look red and tumid.

Perſons ſubject to it. Scarce any one is ever ſeized with this diſeaſe, except ſuch as are, according to the common acceptation of the word, troubled with habitual *catarrhs*, or have for many years been ſubject to defluxions from the head upon the fauces and lungs; and the perſons moſt of all ſubject to it, are old men of a phlegmatic and plethoric habit, and who are of that kind of temperament which ſubjects people, at other times, to palſies and apoplexies. Lean perſons are ſcarce ever afflicted with this diſorder, unleſs they have long laboured under a violent cough, or have ulcerous diſorders of the lungs. Young people are alſo very little ſubject to this diſeaſe, excepting only ſuch as are very corpulent and phlegmatic, and already habituated to large defluxions of this kind. Infants alſo, which are very fat, and have had a ſudden ſuppreſſion of their natural ſweats, ſometimes fall into this diſeaſe, but with them it is not ſo violent.

Cauſes of it. The occaſional cauſes of this diſeaſe are ſeen in what has been already obſerved, but its true origin is to be ſought for in the head, not in the breaſt or lungs; yet, though it is eaſy to ſee what may occaſion a congeſtion of ſuch ſerous humours in the upper parts, it is difficult to ſay how the lungs become rendered fit to receive it all at once in this dangerous manner. It is accidentally brought on in children, as well by the repulſion of their cutaneous eruptions, as by the ſtopping their ſweats; and in grown people, from the omiſſion of habitual bleedings, from coldneſs and dampneſs in the air, from frequent drunkenneſs, and from an injudicious treatment of cutaneous humours, and particularly from drying up runnings of the eyes. Juncker's Conſp. Med. p. 509.

Prognoſtics in it. It is a very terrible diſeaſe, and very ſpeedily proves fatal; for the patient, if not relieved, uſually dies in twenty-four hours. Sometimes it degenerates into a fever, and the patient ſeems cured by the change; but the remedy in this caſe proves as bad as the diſeaſe; for the fever proves incurable, and becomes a ſettled hectic, attended with terrible difficulty of breathing, and finally carries off the patient, after making him endure, for ſome time, a life of terrible pain. Sometimes it goes off into an aſthmatic laxity of the breaſt, attended with a cough, and a continual diſcharge of large quantities of mucous matter by ſpitting; and ſometimes into an abſolutely cachectic flaccidity of the body: and in general, if not carefully treated from the beginning, it either entails ſome of theſe diſorders upon the patient, or leaves him in ſo poor and weak a conſtitution, that he becomes eaſily liable to all the diſeaſes of this kind from the ſlighteſt occaſions.

Grown perſons are ſooner taken off by this diſeaſe than young children, with whom it ſometimes continues above a week or a fortnight. In old people, the fatal event of the diſeaſe is ſo ſudden, that it is often dubious whether it were this diſorder, or an apoplexy; and in general it ſeems probable, that many of the perſons, ſaid to die of apoplexies, die, in reality, of the violent attacks of this terrible diſeaſe.

Method of cure. In the time of the fit a ſtimulating clyſter muſt be given, made of a decoction of marjoram, and other warm herbs, with colocynth, and a few grains of euphorbium, in order to abate the infarction of the breaſt, and give a new courſe to the matter that might add to it;

and when there appears to be a plethora beſides, a vein muſt be immediately opened after the clyſter. After this, if the ſtomach be nauſeating and uneaſy, let a ſcruple of ſalt of vitriol be given as a vomit, with a large quantity of warm water; and if the patient is of a very phlegmatic habit, a few grains of gamboge may be added to this, to carry the humour off downward; or, if the caſe be very preſſing, a draught of a decoction of aſarum, or of tobacco, may be taken, the bad effects of which laſt are taken off by a draught of wine with the ſpices; and all this time there may be frictions and ſinapiſms applied to the lower extremities: and finally, to attenuate and diſcuſs the mucous ſtaſis, gentle alexipharmics and ſudorifics may be given, ſuch as the eſſence of amber, tincture of ſalt of tartar, and tartariſed tincture of antimony; and all nitrous medicines are alſo of the greateſt uſe, as they partly mitigate the cauſes, and partly prepare the humours for evacuation; and after all theſe, the *cortex eleutheriæ* is of great uſe in diſcuſſing and mitigating the pain.

As ſoon as the fit is over, the corroborating medicines are to be given, and all things that can reſtore the parts to their due tone: of this number are the milder chalybeats, and the like; and with theſe analeptics are to be given, to recruit the fleſh and ſtrength, ſuch as emulſions, and a proper diet; and in ſuch as are uſed to wine, the richeſt wines, in moderate quantities, and the higheſt foods, will be of ſervice. If there be perceived a fever after the other ſymptoms are gone off, this muſt be cured by the gentle alexipharmics, and by powders of nitre, and the abſorbents; and if a chronic indiſpoſition ſeems left behind, then the gums, which act as diſcutients, are to be given for ſome time, ſuch as the ammoniacum and ſagapenum, and a warm regimen is to be recommended. And finally, to prevent a return of the diſeaſe, bleeding is very proper in the ſpring and autumn, and purging medicines taken in the intermediate time; the patient muſt alſo avoid all violent paſſions of the mind, and muſt never ſleep in a damp air. We are not to fear bleeding in the time of the fit, becauſe of the patient's complaining of want of ſtrength; for as the danger of ſuffocation is ſudden and imminent, it muſt be ſuddenly removed, and when that is done, the patient's ſtrength will return in good time: the ſame is alſo to be alleged in favour of the violent vomits. In people of a very phlegmatic habit, bleeding is not neceſſary nor proper; but in theſe caſes a vomit is ſafe and right, and uſually gives great relief, eſpecially if the patient has eaten heartily ſome little time before. Juncker. Conſp. Med. p. 513.

CATARRHAL *fever*, a ſecondary or ſymptomatic fever, by means whereof nature endeavours to correct the vitious quality of the lymph, and expel it the body.

There is alſo a malignant *catarrhal* fever, nearly akin to the *petechial* FEVER.

CATASARCA, from κατα, *under*, and σαρξ, *fleſh*, in the Greek *Church*, denotes the undermoſt altar-cloth, or that next the ALTAR.

Over the *cataſarca* is the ANTIMENSA.

CATASCOPIUM, from κατασκοπεω, *I explore*, in *Antiquity*, an exploratory veſſel, anſwering in ſome meaſure to a brigantine among us. See BRIGANTINE.

We find *cataſcopium* uſed in this ſenſe by Cicero, ad Attic. lib. v. ep. 11.

CATASCOPUS, in *Antiquity*, denotes a SPY.

In *Eccleſiaſtical Writers*, *cataſcopus* is ſaid ſometimes to denote an archdeacon.

CATASTA, from καθιςημι, *I place*, in *Antiquity*, a wooden ſcaffold, wherein ſlaves were placed for ſale naked, that thoſe diſpoſed to purchaſe might ſee every limb and part. The word was alſo uſed for an elevation, on which perſons were executed; and for an engine of torture, otherwiſe called EQUULEUS.

The *cataſta* does not appear to have been the ſame with the *equuleus*, but rather a kind of frame or ſcaffold, on which the *equuleus* was mounted, to render the executions more public and viſible. Prudentius calls the *cratis*, or grid-iron, on which ſome of the martyrs were broiled, *ignea cataſta*.

CATASTASIS, in *Poetry*, the third part of the ancient drama; being that wherein the intrigue, or action, ſet on foot in the epitaſis, is ſupported, carried on, and heightened, till it be ripe for the unravelling in the cataſtrophe.

The word comes from κατασασις, *conſtitution*; this being, as it were, the mean, tenor, ſtate, or conſtitution, of the piece.

CATASTROMATA, from καταςρωννυμι, *I cover*, in *Ancient Military Writers*, a ſort of ſcaffolds or floorings in ſhips of war, whereon the ſoldiers were poſted for their defence in fight.

The *cataſtromata* appears to have been chiefly erected over the head and ſtern of the veſſel, it being in theſe parts that the ſoldiers were moſt commonly poſted.

CATASTROPHE, from καταςρεφω, *I finiſh*, in *Poetry*, the change or revolution of a dramatic poem: or the turn which unravels the intrigue, and terminates the piece.

The *cataſtrophe* made the fourth and laſt part in the ancient drama; or that immediately ſucceeding the cataſtaſis.

The *cataſtrophe* is either *ſimple*, or *implex*; whence alſo the fable and action are denominated.

In the firſt there is no change in the ſtate of the principal perſons, nor any diſcovery, or unravelling; the plot being only a mere paſſage out of agitation, to quiet and repoſe. This *cataſtrophe* is rather accommodated to the nature of the epopea, than of tragedy. Indeed we meet with it in ſome of the ancients, but it is rejected by the moderns. In the ſecond, the principal perſon undergoes a change of fortune; ſometimes by means of a diſcovery, and ſometimes without.

The qualifications of this change, or peripetia, are, that it be probable and neceſſary: in order to be probable, it is required to be the natural reſult or effect of the foregoing actions; i. e. it muſt ſpring from the ſubject itſelf, or take its riſe from the incidents; and not to be introduced merely to ſerve a turn. The diſcovery in the *cataſtrophe* muſt have the ſame qualifications as the *cataſtrophe* itſelf, whereof it is a principal part: it muſt be both probable and neceſſary. To be probable, it muſt ſpring out of the ſubject itſelf; not be effected by means of marks, or tokens, rings, bracelets, or by a mere recollection, as is frequently done, both by the ancients and moderns. To be neceſſary, it muſt never leave the perſons it concerns in the ſame ſentiments they had before, but always produce either love or hatred. Sometimes the change conſiſts in the diſcovery; ſometimes it follows at a diſtance; and ſometimes reſults immediately from it, which laſt is the moſt beautiful kind; and thus it is in Œdipus.

Mr. Dryden thinks a *cataſtrophe* reſulting from a mere change in the ſentiments and reſolutions of a perſon, without any further machinery, may be ſo managed as to become exceeding beautiful, nay preferable to any other.—It is a diſpute among the critics, whether the *cataſtrophe* ſhould always fall out happily, and favourably on the ſide of virtue, or not? i. e. whether virtue is always to be rewarded, and vice puniſhed, in the *cataſtrophe?* But the reaſons on the negative ſide ſeem the ſtrongeſt. Ariſtotle prefers a ſhocking *cataſtrophe* to a happy one; becauſe the moving of terror and pity, which is the aim of tragedy, is better effected by the former than the latter.

Boſſu divides the *cataſtrophe*, at leaſt, with regard to the epopea, into the unravelling, or *denouement*, and the *achevement*, or finiſhing; the laſt of which he makes the reſult of the firſt, and to conſiſt in the hero's paſſage out of a ſtate of trouble and agitation, to reſt and quiet. This period is but a point without extent, or duration; in which it differs from the firſt, which comprehends every thing after the knot, or plot laid. He adds, that there are ſeveral unravellings in the piece; becauſe there are ſeveral knots, which beget one another: the finiſhing is the end of the laſt unravelling.

CATCH-FLY, *Silene*, in *Botany*. See CAMPION.

CATCH-LAND, ſuch land, particularly in Norfolk, with reſpect to which it is not certainly known to what pariſh it belongs; ſo that the perſon who firſt gets the tythes there, enjoys it for that year, by right of preoccupation.

CATCH-POLE, or CATCH-POLLE, a term now uſed, by way of reproach, for a BAILIFF's follower, or aſſiſtant. Anciently, it was a term of credit, applied to thoſe we now call *ſerjeants of the mace*, *bailiffs*, or any other that uſe to arreſt men on any action.

CATCH-WORD, among *Printers*, denotes the firſt word of a page, which is put alſo at the bottom of the preceding page, in order to ſhew how the leaves and ſheets follow each other, and facilitate the folding and binding.

The French ſometimes only put the *catch-words* at the end of each ſheet, or even quire or gathering.

CATCHES, in *Clock Work*, thoſe parts of a clock that hold by hooking, and *catching* hold.

CATE, in *Botany*, a name given by ſome authors to the LYCIUM *Indicum*, or Indian thorn.

CATECHESIS, from κατηχεω, *I teach firſt principles*, in a general ſenſe, denotes an inſtruction given any perſon in the firſt rudiments of an art or ſcience, but more particularly in the principles of the Chriſtian religion.

Thoſe who give ſuch inſtructions are called CATECHISTS, and thoſe who receive them CATECHUMENS.

CATECHESIS is alſo uſed for a book containing the rudiments of the Chriſtian religion, adapted to the uſe and inſtruction of novices. See CATECHISM.

The *Catecheſes* of St. Cyril, are the principal works of that father.

CATECHETIC, or **CATECHETICAL**, ſomething that relates to oral inſtruction in the rudiments of Chriſtianity. In the early ages of the church there were *catechetic* ſchools, wherein ſacred learning and philoſophy were taught. Theſe were public auditories, diſtinct from the church, but probably adjoining thereto. In a novel of the emperor Leo, they are called κατηχȣμενα, and repreſented as a ſort of edifices belonging to the church. St. Ambroſe ſpeaks of theſe auditories as held in the baptiſtery. Bingh. Orig. Eccleſ. lib. iii. cap. 10. § 4.

CATECHISM, *Catechiſmus*, in its primary ſenſe, an inſtruction or inſtitution in the principles of the Chriſtian religion, delivered *viva voce*, and ſo as to require frequent repetitions from the diſciple or hearer of what had been ſaid.

Anciently the candidates of baptiſm were only to be inſtructed in the ſecrets of their religion by tradition, *viva voce*, without writing; as had alſo been the uſage among the Egyptian prieſts, and the Britiſh and Gauliſh druids, who only communicated the myſtery of their theology by word of mouth. Shaftſb. Charact. vol. iii. p. 241. not.

CATECHISM is more frequently uſed in modern times, for an elementary book, wherein the principal articles of religion are ſummarily delivered in the way of queſtion and anſwer.

CATECHIST, *Catecheta*, he that catechiſes, i. e. inſtructs novices in the principles of religion.

CATECHIST more particularly denotes a perſon appointed by the church to inſtruct thoſe intended for baptiſm, by word of mouth, in the fundamental articles of the Chriſtian faith.

The *catechiſts* of churches were miniſters uſually diſtinct from the biſhops and preſbyters, and had their auditories or *catechumena* apart. Their buſineſs was to inſtruct the catechumens, and prepare them for the reception of baptiſm. But the *catechiſts* did not conſtitute any diſtinct order of the clergy, but were choſen out of any other order.

CATECHU, a medicinal aromatic ſubſtance brought from the Eaſt Indies; called alſo *cachew*, and *japan-earth*, and when prepared, ranked in the number of perfumes. It is of a dark purple colour; very auſtere upon the palate, ſeeming to melt in the mouth, and leaving ſomewhat of a ſweetiſh taſte behind it. It is the juice of a vegetable, not an earth, as its name imports.

Notwithſtanding the great uſe of *catechu*, before that of coffee and tea, and its being ſtill frequently uſed by many people, eſpecially in France, its nature and origin was long but little known, even among the ableſt phyſicians. Some, from its being called *Japan earth*, ranked it among the medicinal earths, and pretend it is found on the tops of mountains, covered with the roots of cedars, ſerving, as it is ſaid, for their nutrition; and that being waſhed in the rivers, and dried in the ſun, it was formed into a kind of paſte; which, brought into Europe, ſerved as the baſis of ſeveral peſtels, or lozenges, called *cachew*. Others, with more probability, rank it among the gums; and maintain it to be formed of the inſpiſſated decoction of a tree in the Eaſt Indies, called *cachous*; growing chiefly in the kingdom of Cochinchina. Laſtly, others took it to be a factitious compoſition of ſeveral other drugs; eſpecially of the juice of areca, extract of liquorice and calamus aromaticus, and the bark of a tree called by the Indians *catechu*.

Cachew, or *catechu*, is of much eſteem in medicine. It is famous for ſtopping fluxes of all kinds; and among other effects attributed to it, it is ſuppoſed to ſtop a cough, and fortify the ſtomach: beſides its ſweetening and perfuming the breath, when taken in an impalpable powder, mixed with gum tragacanth.

CATECHUMEN, a candidate of baptiſm; or a perſon who prepares himſelf for receiving it.

The word is compounded of κατα, and ηχεω, *I ſound*.

The *catechumens* were diſtinguiſhed from the *fideles*, not only by name, but alſo by their place in the church: they were diſpoſed, with the penitents, in the portico, or gallery, at the extremity of the church, oppoſite to the choir. They were not allowed to aſſiſt at the celebration of the euchariſt; but after ſermon, the deacon diſmiſſed them with this formula, proclaimed three times, *Ite, Catechumeni; miſſa eſt*.

There were divers orders or degrees of *catechumens*, in thoſe churches and ages where the term of catechizing for two or three years was obſerved: but what the preciſe number and appellations of theſe orders were, is not agreed on. See BELIEVERS.

CATECHUMENUM, a name given to an upper gallery in the ancient churches.

The name *catechumenum* was alſo given to a ſort of ſchoolhouſe near the church, where the *catechumens* met to receive the inſtructions of the catechiſts.

CATEGOREMA, from κατηγορεω, *I declare*, is defined a noun ſubſtantive, ſo abſolute and independent, that it may ſtand at the head of a claſs apart.

CATEGOREMA properly denotes the name whereby a CATEGORY, or claſs of beings, is repreſented.

CATEGORIÆ, in *Literary Hiſtory*. Ariſtotle has a book extant under the title of Κατηγοριαι, which Curio, Tonſtius, Vives, and others, deny to be written by him, and aſcribe to Andronicus; but without much foundation, ſince that work is cited as Ariſtotle's by Simplicius, Ammonius, and Lucianus.

CATEGORIARES, a miniſter in the Greek church, whoſe buſineſs it is to publiſh or proclaim the feaſt days. He had alſo the care of the lights, and to ſee the church kept clean.

CATEGORICAL, in a general ſenſe, is applied to thoſe things ranged under a CATEGORY.

CATEGORICAL alſo imports a thing to be ABSOLUTE, and not reſtrained to conditions.

In which ſenſe it ſtands oppoſed to HYPOTHETICAL and CONDITIONAL.

A *categorical* anſwer denotes an expreſs and pertinent anſwer, made to any queſtion or objection propoſed.

CATEGORUMENUM, denotes the PREDICATE, or that part of a propoſition which is affirmed of the ſubject.

Some miſtakenly call this *categorema*.

CATEGORY, in *Logic*, a ſyſtem, or aſſemblage, of all the beings contained under any *genus*, or kind; ranged in order.

The word *category* was borrowed by the ſchools from the *forum*, or courts of juſtice: for as, in a trial, the plaintiff, or proſecutor, in accuſing the criminal, or priſoner, muſt charge him expreſly, or affirm that he did this or that, in poſitive terms: whence the word *category*, viz. from κατηγορειν, *to aver*, or *declare a charge of accuſation*: ſo in the doctrine of *categories* every higher may be expreſly, and abſolutely predicated, or affirmed, of every lower.

The ſchool philoſophers diſtribute all beings, all the objects of our thoughts or ideas, into certain genera, or claſſes, in order to get a more diſtinct and preciſe notion thereof; which claſſes the Greeks call *categories*, and the Latins *predicaments*.

The ancients, after Ariſtotle, generally make ten *categories*: under the firſt, all ſubſtances are compriſed; and all accidents under the nine laſt; viz. quantity, quality, relation, action, paſſion, time, place, ſituation, and habit; which are uſually expreſſed, or ſignified, by the following technical diſtich:

> *Arbor, ſex, ſervos, ardore, refrigerat, uſtos,*
> *Ruri, cras, ſtabo, nec tunicatus ero.*

But as theſe ten *categories* of Ariſtotle, which logicians make ſuch myſteries of, are arbitrary, they are now almoſt excluded. Accordingly, ſome philoſophers think all nature may be better conſidered under theſe ſeven things, ſpirit, matter, quantity, ſubſtance, figure, motion, and reſt: and others make but two *categories*, ſubſtance and attribute, or ſubject and accident. See on the ſubject, and in vindication of the *Categories* of Ariſtotle, Harris's Philoſophical Arrangements, chap. ii.

CATEIA, in *Ancient Writers*, a kind of dart or javelin, in uſe among the ancient Gauls and Germans, made of heavy matter, and therefore not fitted to fly far, but doing great execution where it did reach, having withal an apparatus by which the perſon who threw it might draw it back again. It is ſpoken of by Virgil, Æn. lib. vii. ver. 741.

> *Teutonico ritu ſoliti vibrare* cateias.

CATEMIA, a name given by ſome of the writers of the middle ages to a ſoft black ſtone uſed in the ſoldering of ſilver, and ſome other metals, and more commonly called *horcus lapis*. We do not at this time know what ſtone they mean.

CATENA, in a general ſenſe, a CHAIN.

CATENA, in *Anatomy*, a muſcle, otherwiſe called TIBIALIS *anticus*.

CATENA *patrum*, in *Eccleſiaſtical Writers*, denotes a ſort of commentary on Scripture, compoſed of ſeparate paſſages or interpretations of the fathers, reduced to the order of chapters and verſes of the book.

The firſt who uſed *catena* in this ſenſe was Thomas de Aquinas. The reaſon of the appellation ſeems to be this: that as a chain conſiſts of ſeveral links connected together, ſo do theſe commentaries conſiſt of a number of different paſſages, or the ſentiments and expoſitions of different writers, tacked together ſo as to form one work. Fabr. Bibl. Græc. tom. vii. lib. v. cap. 17.

CATENARIA, in the *Higher Geometry*, a mechanical curve line, which a chain, or rope, forms itſelf into, by its own weight, when hung freely, between two points of ſuſpenſion, whether thoſe points be horizontal or not.

The nature of this curve was inveſtigated by Galilæo, who ſuppoſed it to be the ſame with the parabola; but though Jungius detected this miſtake, it was not diſcovered till the year 1691, when M. J. Bernouilli publiſhed it as a problem in the Acta Eruditorum. Dr. D. Gregory, in 1697, publiſhed a method of inveſtigating the properties before diſcovered by Bernouilli and Leibnitz. Phil. Tranſ. abr. vol. i. p. 39, &c. Where he ſhews, that an inverted *catenaria* is the beſt figure for an arch. Bernouilli Opera, vol. i. p. 48, &c. and vol. iii. p. 491, &c. To conceive the general nature or character of this curve, ſuppoſe a line heavy and flexible (See *Tab. Geom. fig.* 25.) the two extremes of which, F and D, are firmly fixed in thoſe points; by its weight it is bent into a certain curve FAD, which is called the *catenaria*.

Let BD and bd be parallel to the horizon, AB perpendicular to BD, and Dδ parallel to AB; and the points B, b infinitely near to each other. From the laws of mechanics, any three powers in equilibrio, are to one another, as the lines parallel to the lines of their direction (or inclined in any given angle), and terminated by their mutual concourſes: hence, if Dd expreſs the abſolute gravity of the particle Dd (as it will, if we allow the chain to be every way uniform), then Dδ will expreſs that part of the gravity, that acts perpendicularly upon Dd; and by the means of which, this particle endeavours to reduce itſelf into a vertical poſition; and as it proceeds from the ponderous line DA, it is, *cæteris paribus*, proportional to the line AD, which is the cauſe of it. Farther, the lineola $d\delta$, will expreſs the force which acts againſt that conatus of the particle Dd, by which it endeavours to reſtore itſelf into a poſition perpendicular to the horizon, and hinders it from doing ſo. This force is conſtant, being no other than the reſiſtance of the point A; and may therefore be expreſſed by any given right line a. Suppoſing the curve FAD, therefore, as before, whoſe vertex (the loweſt point of the *catena*) is A, axis AB, ordinate BD; fluxion of the axis Dδ=Bb; fluxion of the ordinate $d\delta$; the relation of theſe two fluxions is thus, viz. Dδ : δd :: DA curve : a; which is the fundamental property of the curve, and may be thus expreſſed (putting AB=x, and BD=y, and AD=c)

$$\dot{y}=\frac{a\dot{x}}{c}.$$

CATERER. See PURVEYOR.

CATERGI, the name of the public carriers in the Grand Seignior's dominions, who give earneſt to the merchants, and others, as a ſecurity that they will carry their goods, or not ſet out with them.

CATERPILLAR, *Eruca*, in *Inſectology*. The *caterpillar* ſtate is that through which every butterfly muſt paſs before it arrives at its perfection and beauty, and in the ſame manner all the known winged animals, except only the PUCERON, paſs through a reptile ſtate, none of them, except this, being produced in their winged form. The change from caterpillar to butterfly was long eſteemed a ſort of metamorphoſis, a real change of one animal into another; but this is by no means the caſe. The egg of a butterfly produces a butterfly, with all the lineaments of its parent, only theſe are not diſcloſed at firſt, but, for the greater part of the animal's life, they are covered with a ſort of caſe, or muſcular coat, in which are legs for walking, which only ſuit it in this ſtate; but its mouth takes in nouriſhment, which is conveyed to the included animal, and, after a proper time, this covering is thrown off, and the butterfly, which all the while might be diſcovered in it by an accurate obſerver, with the help of the microſcope, appears in its proper form. Before it paſſes into this ſtate, however, there requires a time of reſt for the wings to harden, and the ſeveral other parts to acquire their proper firmneſs; this is tranſacted in a time of perfect reſt, when the animal lies in what is called the nymph or chryſalis ſtate, in appearance only a lump of unenlivened matter. There is a ſettled and determinate time for each of theſe changes in every ſpecies; but in the ſeveral different kinds the periods are very different. Some *caterpillars* are produced from the eggs of their parent butterfly in ſpring, as ſoon as the trees, on whoſe leaves they are to feed, begin to bud; after a life of thirteen days, they paſs into their chryſalis ſtate; and, after remaining at reſt three weeks in that, they iſſue forth with wings, with all the beauty of their parents.

As ſoon as they arrive at this their final ſtate, their wings are ſcarce dry before they ſeek to copulate or propagate their ſpecies; this done, the male dies, and the female only lives to depoſit her eggs, and then follows him. This is their whole buſineſs; nature never intending that they ſhould eat in this ſtate, has given them no organs for that purpoſe; ſo that they muſt neceſſarily die of hunger ſoon, could they eſcape their natural death, or the great devourers of them the birds. Many ſpecies of theſe ſpring butterflies have no farther being, except in the embryo included in the egg, till the ſucceeding ſpring; they lay their eggs very carefully, and in extremely nice order, round about the ſtalk of a perennial plant, or the young branch of a tree, and there they remain through the heats of the ſummer, and colds of the winter, and are never hatched till the ſucceeding ſpring; and though thus expoſed, it is obſervable that the ſevereſt winters do them no harm. Other ſpecies of theſe are ſooner hatched from the egg, and live the remainder of the ſummer on the leaves of the trees. They, after this, paſs the whole winter in the caterpillar-ſtate, uſually hiding themſelves in ſome ſheltered place, covered with webs of their own ſpinning. Theſe remain torpid all the winter, and, at the return of ſpring, leave their webs as the others do their eggs, and feed a few weeks longer, after which they paſs through the chryſalis ſtate to their perfect form. The butterfly of this ſpecies, therefore, enjoys a much longer time of life than the other which remains ſo long in the egg; though the ultimate duration of the animal, from its excluſion from the parent, till its death, is much the ſame; ſo great a part of it being paſſed in the egg-ſtate by the one, and ſo ſmall a part by the other.

Other ſpecies of theſe animals remain the whole winter in the chryſalis ſtate, and are butterflies in ſpring, and, after paſſing the middle of ſummer in the egg, are *caterpillars* in the autumn. The difference of this ſtage of life is remarkably great, in proportion to the whole duration of the animal; in ſome ſpecies it does not exceed a fortnight, and in others continues eleven months.

There is no ſign of ſex in the animal, while in the caterpillar-ſtate; the propagation of the ſpecies is the buſineſs of the creature in its ultimate perfection, and, till that, theſe parts are never excluded. One female butterfly, when ſhe has been impregnated by the male, will produce three hundred or four hundred eggs, or even more.

There is no way of knowing the different ſexes of theſe little creatures, by viewing the parts; but the whole figure and manner of the animal makes the difference. The females are always larger than the males; they are alſo more ſlow in their motions; and ſome of them have no wings, or, at the utmoſt, only very ſmall ones. The males, however, have a ſort of beards, more beautiful than the *antennæ*, or horns of the females; the female is much ſtronger, as well as bigger, than the male, and not unfrequently, at the approach of danger or diſturbance, flies away with him in the time of copulation.

On diſſecting the female, her *uterus* affords an aſtoniſhing ſight; the number of eggs in the tubes is amazing; but theſe have not all the ſame figure; and in ſome ſpecies, as the ſilk-worm, &c. the eggs are of a beautiful blue; if any yellowiſh ones are ſeen among them, they are judged to be defective. See STIGMATA.

The care of all the butterfly-tribe, to lodge their eggs in ſafety, is ſurpriſing. Thoſe whoſe eggs are to be hatched in a few weeks, and are to live in the *caterpillar* ſtate during part of the remaining ſummer, always lay them on the leaves of ſuch plants as will afford them a proper nouriſhment; but, on the contrary, thoſe whoſe eggs are to remain unhatched till the following ſpring, always lay them on the branches of trees and ſhrubs, and uſually are careful to ſelect ſuch places as are leaſt expoſed to the rigours of the enſuing ſeaſon, and frequently cover them from it in an artful manner. Some make a general coat of a hairy matter over them, taking the hairs from their own bodies for that purpoſe; others hide themſelves in hollow places in trees, and in other ſheltered cells, and there live in a ſort of torpid ſtate the whole winter, that they may depoſit their eggs in the ſucceeding ſpring, at a time when there will be no ſeverities of weather for them to combat. The day-butterflies only do this, and of thoſe but a very few ſpecies; but the night ones, or *phalenæ*, all without exception, lay their eggs as ſoon as they have been in copulation with the male, and die immediately afterwards.

It is well known that the common and natural food of theſe creatures is the leaves and verdure of vegetables; yet as weak and harmleſs as they ſeem, they will many of them deſtroy their fellows whenever they get an opportunity. Reaumur gives us an inſtance of this in twenty *caterpillars* of the oak, which he kept in a box, with a ſufficient quantity of their natural food, yet their numbers daily decreaſed, till at length there remained only one. This is, however, only the caſe in ſome few ſpecies, the generality of theſe animals being very peaceable, many ſpecies living together in the ſame place, without moleſting one another. Theſe ſpecies, however, though freed from theſe dangers, are expoſed to others of a much more terrible kind; the worms or maggots of ſeveral ſorts of flies are frequently found about them, ſome preying upon their outſide, others lodged within them, under the ſkin, but both kinds eating the poor defenceleſs creature up alive. Thoſe which feed on the outſides are eaſily diſcovered, the others are more hid, and frequently the *caterpillar*, which ſeems very hearty and vigorous, and very fleſhy, ſhall be found, upon opening, to be a mere ſkin, the internal parts being all eaten away, and all the food that he ſwallows ſerving only to feed a vaſt number of worms, or maggots, which crawl about at liberty within him. Theſe devouring worms are of many different ſpecies, ſome being of the gregarious, ſome of the ſolitary kinds, and ſome ſpinning webs of their own ſilk to transform themſelves in, others undergoing that change without any ſuch covering. The beautiful *cabbage-caterpillar* is one of thoſe unhappy kinds which frequently are infeſted with the gregarious kinds, large numbers of which ſpin themſelves webs one after another, and afterwards come out in the ſhape of the parent-fly, to whoſe eggs they owed their origin.

Theſe inteſtine enemies are a ſure prevention of the butterfly's appearing at its proper time; and as many of the former naturaliſts, who knew what butterfly to expect from a peculiar ſpecies of *caterpillar* which they preſerved, often ſaw a parcel of flies come out in the place of it, they having no idea that the fly had laid its eggs in the fleſh of the poor creature, ſuppoſed that this was one of the natural transformations of the creature, and that certain ſpecies of *caterpillars* ſometimes produced butterflies, ſometimes ſmall flies.

Theſe, and many other deſtroyers, among which the birds are to be reckoned in the principal place, ſerve a noble purpoſe in preventing the too great numbers of theſe miſchievous animals. Their uſual habitation being the leaves and flowers of plants, they are, in their feeding, much expoſed to all thoſe deſtroyers; yet nature has taken care to preſerve a great number, by making many of them ſo exactly of the colours of the leaves they feed on, that they are not eaſily diſtinguiſhed from them; and by giving others a caution of keeping on the under part of the leaves, and being, by that means, out of ſight. But ſome ſpecies are much leſs expoſed, and of much more miſchief to the plants they feed on, by devouring more eſſential parts of them. Of theſe ſome eat the roots, and others the interior part of the trunk, deſtroying the veſſels that imbibe, and thoſe that diſtribute the juices. Theſe are different from the common *caterpillars*, in that their ſkin is much leſs tough and hard, and theſe are ſecure from our obſervation, and, in general, from their great deſtroyers the birds. They are not, however, abſolutely ſafe from the common dangers of the other ſpecies; for there are a kind of worms that find their food and habitation even in the bodies of theſe.

The root-*caterpillars*, and thoſe which live within the branches of plants, are much more eaſily found out. The roots of ſcrophularia, and the ſtalks of lettuces, and ſome other plants, afford *caterpillars* which ſeem all of the ſame ſpecies. Thoſe found in the lettuces are extremely plentiful ſome years, and deſtroy vaſt quantities of that plant. Theſe uſually have their firſt habitation in the ſtalk, near the root.

Nothing more ſurpriſes us, in regard to inſects, than their induſtry; and in this the *caterpillars* yield to no kind, not to mention their ſilk, the ſpinning of which is one great proof of it. The ſheaths and caſes which ſome of theſe inſects build for the paſſing their transformations under, are, by ſome, made of the ſilk, with their own hair, mixed with pieces of bark, leaves, and other parts of trees, with paper, and other materials; and the ſtructure of theſe is well worthy our attention.

There are others whoſe workmanſhip, in this article, far exceeds theſe. There is one which builds in wood, and is able to give its caſe a hardneſs greater than that of the wood itſelf in its natural ſtate. This is the ſtrange horned *caterpillar* of the willow, which is one of thoſe that eat their *exuviæ*. This creature has extremely ſharp teeth, and with theſe it cuts the wood into a number of ſmall fragments; theſe fragments it afterwards unites together into a caſe, of what ſhape it pleaſes, by means of a peculiar ſilk, which is no other than a tough and viſcous juice, which hardens as it dries, and is a ſtrong and firm cement. The ſolidity of the caſe being thus provided for, we are to conſider, that the *caterpillar* incloſed in it is to become a butterfly, and the wonder is, in what manner a creature of this helpleſs kind, which has neither legs to dig, or teeth to gnaw with, is to make its way out of ſo firm and ſtrong a lodgment as this, in which it is hatched. It has been ſuppoſed by ſome, that the butterfly, as ſoon as hatched, diſcharged a liquor which ſoftened the viſcous matter that holds the caſe together, and ſo its ſeveral fragments falling to pieces, the way out lies open. This is evidently the truth of the caſe, though thoſe who ſuppoſed it, did it by mere conjecture; for, on a ſtrict examination, this liquor is always to be found in the animal, and is of the moſt proper kind for ſuch a ſervice. Reaumur judged, from the effects, that this liquor muſt be of a ſingular nature, and very different from the generality of animal fluids; and in diſſecting this creature in the *caterpillar* ſtate, there will always be ſound near the mouth, and under the *œſophagus*, a bladder, of the bigneſs of a ſmall pea, full of a limpid liquor, of a very quick and penetrating ſmell, and which, upon divers trials, proves to be a very powerful acid; and, among other properties, which it has in common with other acids, it ſenſibly ſoftens the glue of the caſe, on a common application.

It is evident that this liquor, beſides its uſe to the *caterpillar*, remains with it in the chryſalis ſtate, and is the very thing that gives it a power of diſſolving the ſtructure of the caſe, and making its way through in a proper manner, at the neceſſary time. Dr. Boerhaave has adopted the opinion, that there are no true acids in animals, except in the ſtomach, or inteſtines; but this familiar inſtance proves the error of that determination. Phil. Tranſ. abr. vol. ix. p. 39, &c.

Another very curious and myſterious artifice, is that by which ſome ſpecies of *caterpillars*, when the time of their changing into the chryſalis ſtate is coming on, make themſelves lodgments in the leaves of the trees, by rolling them up in ſuch a manner as to make themſelves a ſort of hollow cylindric caſe, proportioned to the thickneſs of their body, well defended againſt the injuries of the air, and carefully ſecured for their ſtate of tranquillity.

Beſides theſe *caterpillars*, which in this manner roll up the leaves of plants, there are other ſpecies which only bend them once, and others which, by means of thin threads, connect many leaves together to make them a caſe. All this is a very ſurpriſing work, but all much inferior to this method of rolling.

The different ſpecies of *caterpillars* have different inclinations, not only in their ſpinning, and their choice of food, but even in their manners and behaviour one to another. Some never part company from the time of their being hatched to their laſt change, but live and feed together, and undergo together their laſt change into the chryſalis-ſtate. Others ſeparate one from another as ſoon as able to crawl about, and each hunts its fortune ſingle; and there are others which regularly live to a certain time of their lives in community, and then ſeparate each to ſhift for itſelf, and never to meet again in that ſtate. Reaumur, Hiſt. Inſect. vol. ii. *paſſim.*

Caterpillars are very deſtructive and pernicious in gardens, particularly thoſe of two ſpecies. The one of theſe is that which afterwards becomes the common white butterfly. This is of a yellowiſh colour, ſpotted with black, and infeſts the leaves of cabbages, cauliflowers, and the Indian creſs, of which it eats off all the tender parts, leaving only the fibres entire, ſo that whole plantions are often ſeen deſtroyed by them in autumn, eſpecially ſuch as are near large buildings, or are crouded with trees. There is no remedy againſt this evil, but the pulling the creatures off before they are ſpread from their neſts, and watching the butterflies, which are daily, in the hot weather, depoſiting their eggs on theſe plants. Theſe, however, feed principally on the outſide of the leaves of the plants, and are therefore the eaſier taken off; but the other kind lives near the center, and therefore is with much more difficulty diſcovered. This is much larger, and the ſkin is very tough, and of a brown colour. It is called, by the gardeners, a grub, and is extremely pernicious. The eggs which produce it are uſually depoſited in the very heart, or center, of the plant, particularly in cabbages; and the creature, when formed, and grown to ſome ſize, eats its way through all the leaves, and leaves its dung in great quantity behind it, which ſpoils the cabbage. This inſect alſo burrows under the ſurface of the ground, and makes ſad havock among young plants, by eating off their tender ſhanks, and drawing them into the holes. This miſchief is chiefly done in the night; but wherever a plant is ſeen thus deſtroyed, if the earth be ſtirred with a finger an inch deep, the creature will be certainly found, and this is the only way of deſtroying them. Miller.

When theſe inſects attack fruit-trees, the beſt method of driving them off is to boil together a quantity of rue, wormwood, and the common tobacco, of each equal parts, in common water; to make the liquor very ſtrong, and ſprinkle it on the leaves and young branches every night and morning, during the time when the fruit is ripening.

In Dr. Hawkeſworth's Account of the Voyages to the South Seas, vol. iii. p. 520, we have the following account of a kind of ſmall green *caterpillar*, which the voyagers found in great numbers, on the true Weſt Indian mangroves. Their bodies were thick ſet with hairs, and they were ranged on the leaves ſide by ſide like files of ſoldiers, to the number of twenty or thirty together. When they touched them, they found that the hair on their bodies had the quality of a nettle, and gave them a much more acute, though leſs durable pain.

Caterpillar, *Connaught*. See *Connaught* Worm.

Caterpillars, *water*, *Erucæ aquaticæ*.—It might ſeem incredible that there is any ſuch creature as a *caterpillar*, whoſe natural habitation is under water; but experience and obſervation prove that there are ſuch, and that they feed on the water-plants as regularly as the common kinds do on thoſe at land. Theſe are not named at random, like many of the aquatic animals of the larger kinds, the ſea-wolf, and the ſea-horſe, &c. which might as well be called any thing elſe as wolves and horſes, but they are properly what they are called, and do not reſpire in the manner of the fiſh-tribe, but by their ſtigmata, as other *caterpillars*. M. Reaumur, in his obſervations, met with two ſpecies of theſe, the one upon the potamogiton, or pond-weed, the other upon the lenticula, or duck-meat. Theſe are both very induſtrious animals; but the firſt being much the larger, its operations are more eaſily diſtinguiſhed.

This, though truly an aquatic animal, ſwims but badly, and does not at all love to wet itſelf. The parent-butterfly lays her egg on a leaf of the potamogiton, and, as ſoon as the young *caterpillar* is hatched, it gnaws out a piece of the leaf of a roundiſh ſhape. This it carries to another part of the ſame leaf, and lays it in ſuch a manner, that there may be a hollow between, in which it may lodge. It then faſtens down this piece to the larger leaf with ſilk of its own ſpinning, only leaving certain holes at which it can put out its head, and get to gnaw any of the leaves that are near. It eaſily gets out, though the aperture be naturally ſmall, ſince a little force from its body bends up the upper leaf, and bends down the lower, both being flexile; and when the creature is out, it has a ſort of down that defends itſelf from being wetted, and the natural elaſticity of the leaves, and of the ſilk, join the aperture up again, ſo that no water can get in. The leaves of this kind of plant are alſo naturally very ſlippery, and not eaſily wetted by water. It ſoon happens, that this habitation becomes too ſmall for the animal, in which caſe it makes juſt ſuch another, and after that, at times, ſeveral others, each being only made fit for it at the ſize it is then of. The changes of this creature into the chryſalis and butterfly ſtate, are in the common method. The butterfly gets out of a chryſalis which was placed on the ſurface of the water, the lightneſs of the animal eaſily ſuſtains it on the water till its wings are dried, and it then leaves that element never to return to it again. Mem. Acad. Par. 1736.

Caterpillars, *wood*, *Erucæ ſylveſtres*, the name of a genus of *caterpillars* which do not live in the manner of others on leaves of trees or plants, or open to our obſervation, but under the bark, in the trunk and branches, and in the roots of trees, and ſometimes in the body of fruits.

Theſe are eaſily diſtinguiſhed from thoſe worms and maggots which are found in roots and fruits, and owe their origin to flies of another kind; but are ſubject to be confounded with a ſort of animals, called by M. Reaumur, *falſe* or *baſtard caterpillars*, which carry a great reſemblance in their figure to the real *caterpillars*, but which have more legs than any of the true ones have, and are finally transformed into four-winged flies, which are not true butterflies.

The butterflies which are the parents of thoſe *caterpillars* which live immured in trees or fruits, lay their eggs on the ſurface, and the young *caterpillars*, when hatched, eat their way in.

What appears ſomething ſurpriſing, however, in this, is, that there uſually is only one *caterpillar* in a fruit, which is large enough to afford food to a large number; and if there are ſometimes found two creatures within, one is uſually a *caterpillar*, the other a worm of ſome other kind. The whole occaſion of which is, that the operation of penetrating into the fruit, is ſo difficult to the young animal, that it ſeldom ſucceeds in it; and though the butterfly depoſits many eggs on each fruit, and theſe all hatch, yet it is only here and there one on a fruit that can find the way into it.

Theſe creatures, when once lodged in their priſon, have nothing to do but to eat up the ſubſtances which incloſe them, leaving the outer hard ſhell unhurt, which ſtill ſerves as a caſe for them: this is a very frequent caſe in the grains of corn, where the farinaceous ſubſtance ſerves as aliment, and the hard outer ſkin becomes a firm hollow caſe afterwards for the animal. The farinaceous ſubſtance in this caſe uſually proves enough for the animal in its *caterpillar* ſtate; but if it does not, the creature has recourſe to a very ſingular expedient; it eats again its own excrements, and finds its now ſtronger ſtomach able to ſeparate nouriſhment from that very matter, which had before paſſed off from its weaker ſtomach undigeſted.

Of theſe ſpecies of *caterpillars*, ſome go out of their priſon in order to change into their chryſalis, and thence into their butterfly ſtate; but the greater number remain there, and paſs through all their changes within.

Theſe *caterpillars*, like all the other kinds, have certain fleſh-eating worms, whoſe parents are of the fly-kind, for their terrible enemies and deſtroyers; and it is not unfrequent, on opening one of theſe ſpoiled fruits, inſtead of the expected *caterpillar*, to find a fly juſt ready to come out; this has been produced from the chryſalis of a worm, which had before found its way into the fruit, and eat up the *caterpillar*, which was the original poſſeſſor of the place. A. D. S. an. 1736; and Reaumur, Hiſt. des Inſ. tom. ii.

Caterpillar-*eaters*, a name given by ſome authors to a ſpecies of worms which are bred in the body of a *caterpillar*, and eat its fleſh: theſe are owing to a certain kind of fly which lodges her eggs in this animal, and they, after their proper changes, become flies like their parents.

M. Reaumur has given us, in his Hiſtory of Inſects, ſome very curious particulars in regard to theſe little worms. This inſect is called the ICHNEUMON of *caterpillars*.

Caterpillars, *Scorpiurus*, in *Botany*, a genus of the *diadelphia decandria* claſs. Its characters are theſe: the empalement of the flower is of one leaf, erect, blown up, lightly compreſſed, ending in five acute points. The flower is of the butterfly-kind; it has a roundiſh ſtandard, indented at the point, where it is reflexed and ſpreading; the wings are looſe, almoſt oval, having obtuſe appendages; the keel is half-moon ſhaped; the belly is gibbous, pointed, and erect, cut in two parts below. It hath ten ſtamina, nine joined, and one ſeparate, terminated by ſmall ſummits; and an oblong taper germen a little reflexed, ſupporting a riſing inflexed ſtyle, terminated by a point for a ſtigma; the germen afterward becomes an oblong, taper, leathery, rough, channelled pod, twiſted in many longitudinal cells, in ſize and appearance of a large *caterpillar*, from whence it had this title, divided within, and on the outſide contracted into knotty joints, each cell containing one ſeed. There are five ſpecies.

All theſe plants are annual, and grow naturally in moſt of the warm countries in Europe, but have been long cultivated in the Engliſh gardens.

Caterpillar-*ſhell*. See Turbo.

CATERVA, in *Ancient Military Writers*, a term uſed in ſpeaking of the Gauliſh or Celtiberian armies, denoting a body of 6000 armed men.

The word *caterva*, or *catervarius*, is alſo frequently uſed by ancient writers to denote a party or corps of ſoldiers in diſorder or diſarray: by which it ſtands diſtinguiſhed from COHORT or *turma*, which were in good order.

CATESBÆA, in *Botany*. See *Lily*-Thorn.

CATHÆRETICS, or Cathæretic *medicines*, are ſuch as ſerve to conſume, and eat off, fungous or proud fleſh growing in wounds, ulcers, and the like.

The word is formed from καθαιρω, ſometimes uſed for *depaſcor*, or *abſumo*, *I eat*, *conſume*, &c. of κατα, and αιρεω, *I take away*.

Cathæretics are otherwiſe denominated SARCOPHAGOUS *medicines*, q. d. *fleſh-eaters*.

Such are red precipitate, burnt alum, *æs uſtum*, blue vitriol, &c.

Cathæretic only differs in degree from CAUSTIC or ſeptic, which are more violent in their operation.

CATHALOGON, in the *Materia Medica*, a name by which ſome call the fruit we know by the name of faint Ignatius's *bean*.

CATHARI, in *Eccleſiaſtical Writers*, ancient Chriſtians, who made profeſſion of greater purity in diſcipline and ſanctity of life than others.

The appellation *Cathari* was chiefly given to the ſect of Novatians.

In after-times, however, the ſame was alſo applied to ſeveral other ſects, who pretended to extraordinary purity, and particularly to a fanatical ſect, who came from Greece into Italy, and were firſt diſcovered in the Milaneſe about the middle of the eleventh century. They were called in France, and other countries, Albigenses, Paterini, and Publicans. See Paulicians and Puritans.

CATHARINE, *Knights of St.* Catharine *of Mount Sinai*, an ancient military order, erected for the aſſiſtance and protection of pilgrims going to pay their devotions to the body of St. *Catharine*, a virgin of Alexandria, diſtinguiſhed for her learning, and ſaid to have ſuffered martyrdom under Maximin.

The body of the martyr having been diſcovered on mount Sinai, cauſed a great concourſe of pilgrims; and travelling being very dangerous, by reaſon of the Arabs, an order of knighthood was erected in 1063, on the model of that of the holy ſepulchre, and under the patronage of St. *Catharine:* the knights of which obliged themſelves by oath to guard the body of the ſaint, keep the roads ſecure, obſerve the rule of St. Baſil, and obey their grand maſter. Their habit was white, and on it were repreſented the inſtruments of martyrdom whereby the ſaint had ſuffered; viz. a half-wheel armed with ſpikes, and traverſed with a ſword ſtained with blood.

CATHARINE, *Fraternity of St. Catharine at Sienna*, a ſort of religious ſociety inſtituted in that city, in honour of St. Catharine, a ſaint famous for her revelations, and for her marriage with Jeſus Chriſt, whoſe wedding ring is ſtill preſerved as a valuable relick. This *fraternity* yearly endows a certain number of deſtitute virgins, and has the privilege of redeeming annually two criminals condemned for murder, and the ſame number of debtors, by paying their debts.

CATHARINE, *Order of St.* in *Modern Hiſtory*, belongs to ladies of the firſt quality in the Ruſſian court. It was inſtituted in 1714, by *Catharine* wife of Peter the Great, in memory of his ſignal eſcape from the Turks in 1711. The emblems of this order are a red croſs, ſupported by a figure of St. *Catharine*, and faſtened to a ſcarlet ſtring edged with ſilver, on which are inſcribed the name of St. *Catharine*, and the motto, *Pro fide & patria.*

CATHARMA, from καθαιρω, *I expiate*, in *Antiquity*, ſome miſerable or flagitious wretch, ſacrificed to the gods as an expiation for the plague, or other calamity. Such was the prophet Jonas, caſt into the ſea; and ſuch does St. Paul wiſh himſelf to be. See ACCURSED.

CATHARMA, Καθαρμα, from καθαιρω, *to purge*, in *Medicine*, imports the excrements purged from any part of the body; as the ſtomach, inteſtines, or bladder.

CATHARMOS, in *Medicine*, of the ſame derivation, implies purgation by medicines, or the cure of a diſorder by ſuperſtitious ceremonies or ſacrifices. The cure of the king's evil by the royal touch, if ſuch a thing had been effected, might be ſaid to be performed by a *catharmos.*

CATHARTICS, or CATHARTIC *medicines*, are remedies which promote evacuation by ſtool.

Cathartics are the ſame with what we otherwiſe denominate *purgatives.*

Cathartics are of three principal kinds, *mild*, *moderate*, and *violent:* the firſt purge gently, as caſſia, manna, tamarinds, rhubarb, ſena, &c. the ſecond pretty briſkly, as jallop, ſcammony, &c. the third ſeverely, as colocynth, hellebore, laureola, &c. See each under its proper article.

Cathartics are likewiſe divided by ſome into cholagogues, phlemagogues, melanagogues, and hydragogues; the firſt ſuppoſed to purge bile, the ſecond pituita, the third melancholy, and the fourth ſeroſities.

For the theory of *cathartics*, and the manner wherein they operate, ſee PURGATIVES.

A ſafe, pleaſant, gentle, and effectual purgative or *cathartic* may be at any time prepared in the following manner. Take a quart of Dulwich water, or any other water of a like kind, diſſolve in this over the fire an ounce of manna, and half an ounce of black tamarinds; ſtrain off the liquor, and let it be taken at ſeveral draughts, at an half hour's diſtance or leſs, the whole being drank in an hour and half, or two hours.

The purging mineral waters act with more eaſe, gentleneſs, and ſafety, than any of the ſhop medicines; all that they require is to be either concentrated by boiling away a part, or elſe quickened as in this manner; and a general trial of a purge of this kind would perhaps encourage the practiſers of phyſic to reject almoſt all the common rough purges in uſe.

CATHARTIC *extract.* See EXTRACTUM *catharticum.*

CATHARTIC *ſalt*, *ſal catharticum amarum*, a denomination given to what we improperly call EPSOM *ſalt.*

CATHEDRA, in a general ſenſe, a chair.

The word is more particularly uſed for a profeſſor's chair, and a preacher's pulpit.

CATHEDRA is alſo uſed for the biſhop's ſee, or throne, in a church.

CATHEDRA, *ex*, a phraſe uſed in ſpeaking of the ſolemn dictates or deciſions of prelates, chiefly the popes, delivered in their pontifical capacity.

The advocates for the papacy maintain, that the pope is infallible *ex cathedra*, a term of modern theology entirely unknown to the ancients. Even thoſe who uſe it do not agree in the explication of it.

CATHEDRAL, a church wherein is a biſhop's ſee, or ſeat. The word comes from the Greek καθεδρα, *chair*, of καθεζομαι, *ſedeo*, *I ſit.*

The denomination *cathedral* ſeems to have taken its riſe from the manner of ſitting in the ancient churches, or aſſemblies of primitive Chriſtians: in theſe, the council, i. e. the elders and prieſts, was called *preſbyterium*; at their head was the biſhop, who held the place of chairman, *cathedralis*, or *cathedraticus*; and the preſbyters, who ſat on either ſide, were alſo called by the ancient fathers, *aſſeſſores epiſcoporum.* The epiſcopal authority did not reſide in the biſhop alone, but in all the preſbyters, of whom the biſhop was preſident.

A *cathedral* therefore, originally, was different from what it is now; the Chriſtians, till the time of Conſtantine, having no liberty to build any temple: by their churches, they only meant their aſſemblies; and by *cathedrals*, nothing more than conſiſtories.—Whence appears the vanity of ſome authors, eſpecially the Spaniards, who pretend their *cathedrals* to have been built in the times of the apoſtles.

CATHEDRATIC *doctor*, *doctor cathedraticus*, denotes a doctor poſſeſſed of a chair or fellowſhip in ſome of the univerſities of Spain.

They ſay a *cathedratic doctor* of Salamanca, of Alcala, &c.

CATHEDRATICUM, in *Eccleſiaſtical Writers*, denotes a ſum of money, amounting to two ſhillings, anciently paid annually by the inferior clergy to their biſhops, or as often as he viſited his dioceſe, *ob honorem cathedræ*, i. e. as an argument of their ſubjection, and for the honour of the biſhop's ſee or CATHEDRA.

This was otherwiſe denominated *ſynodaticum*, and in modern writers PROCURATION.

CATHEDRATICUM alſo denotes a ſum which biſhops newly ordained gave partly to biſhops or patriarchs, by whom they were conſecrated, and partly to the clerks and notaries who officiated on the occaſion.

This was alſo called ενθρονιστικον, as being given on account of the throne, or chair, they had now obtained, and *ſynodaticum*, or SYNODALS.

Biſhops conſecrated by patriarchs or metropolitans, provided their church was not worth leſs than thirty pounds of gold, were to pay an hundred ſolidi by way of *cathedraticum.*

CATHERETIC. See CATHÆRETIC.

CATHERINE. See CATHARINE.

CATHETER, among *Surgeons*, a hollow probe, or inſtrument, uſually of ſilver, ſomewhat crooked; to be introduced into the bladder, in order to ſearch for the ſtone, or to diſcharge the urine when ſuppreſſed.

The word is formed from καθιημι, *immitto*, in regard this inſtrument is uſed to be impelled into the bladder.

Helmont rejects the common metalline *catheter* uſed by Galen and his followers, as cruel, and even noxious; and ſubſtitutes another in its place made of leather. Others have provided a flexible *catheter* made of flatted ſilver, and convoluted, in order to give a continual paſſage to the urine, and to prevent the repetition of the painful operation of paſſing the *catheter* for this purpoſe.

Dr. Hales deſcribes a *catheter* of a new ſtructure contrived for the more advantageous injection of lithontriptics into the bladder: its cavity is divided lengthways by a thin partition into two ſeparate channels, which end in two divaricating branches. By one of theſe branches the *menſtruum* is to be injected into the bladder, in the common, or rather in the hydroſtatical way, while it returns mixed with urine by the other. Hales, Hæmaſtat. p. 212. See STAFF, and LITHOTOMY.

Dr. le Cat, ſurgeon at Rouen, has invented a new *catheter.* See *Tab. Surgery*, *fig.* 1. A is its crooked end, which is ſplit lengthways into two pieces; the concave piece A is fixed, and of the ſame piece with the reſt of the inſtrument, and the convex piece C is moveable, having its fixed point joined by a hinge to the end *a* of the piece A, and its moveable part jointed at *b*, with a piece which makes the end of a ſtrong ſtilet, or wire, that runs through the center of the piece B, where it is rivetted at *e.* This piece B, the wire, and the piece C, are held in the ſituation which the operator puts them in by the ſcrew E, the end of which bears againſt the piece B. This is made of two ſolid plates of ſilver ſoldered together, in the middle of which a groove has been made to lodge the wire. The handle D is ſquare; the body G is almoſt entirely ſolid, leaving in its center but juſt room enough for the paſſage of the wire; this part is ſoldered to the piece D at H. This *catheter* is made of ſilver from the rings incluſive to F; all the reſt, together with the wire, ought to be of the hardeſt gold. *Fig.* 2. exhibits the whole mechaniſm of this *catheter*, by repreſenting it open, and ſuch as it is in the bladder, while the inciſion is making. See a fuller deſcription and account of its uſe in the Philoſophical Tranſactions, vol. xliii. p. 400.

CATHETERISMUS, a chirurgical operation, whereby either ſomething medicinal is injected into the bladder, or ſome foreign body prejudicial to the making of urine, as coagulated blood, a ſtone, or the like, is drawn away, by means of a crooked, tubular inſtrument, called a CATHETER.

CATHETOLIPES, in *Natural Hiſtory*, the name of a genus of foſſils of the claſs of the *ſelenitæ*, but differing from the common kinds in the diſpoſition of the conſtituent plates.

The word is derived from καθετος, *perpendicular*, and λεπις, a *ſcale* or *plate*, and expreſſes a ſet of theſe bodies whoſe plates are ranged perpendicularly. All the known *ſelenitæ*, except thoſe of this genus, are compoſed of a number of parallel plates, or thin flakes, ranged evenly horizontally on one another.

CATHETO-PLATEUS, in *Natural Hiſtory*, a term, with its oppoſite, which is *plagioplateus*, very much uſed by Artedi, and others who adopt his ſyſtem, in the deſcription of fiſhes: they may be very well explained in Engliſh, by the two familiar words, *compreſſed* and *depreſſed*. The heads of fiſhes are the principal part charactered by theſe terms.

CATHETUS, in *Geometry*, a perpendicular, or a line, or radius, falling perpendicularly on another line, or ſurface.

Thus, the *catheti of a rectangle triangle*, are the two ſides that include the right angle.

CATHETUS *of incidence*, in *Catoptrics*, is a right line drawn from a radiant point, perpendicular to the reflecting line, or the plane of the ſpeculum, or mirror.

CATHETUS *of reflexion*, or *of the eye*, a right line drawn from the eye, or from any point of a reflected ray, perpendicular to the plane of reflexion, or of the ſpeculum. See REFLEXION.

CATHETUS, in *Architecture*, is a perpendicular line, ſuppoſed to paſs through the middle of a cylindrical body, as a column.—See *Tab. Archit. fig.* 29. *and* 30.

Cathetus is ſometimes applied to a line in the Ionic capital, paſſing perpendicularly through the eye or center of the VOLUTE.

This is otherwiſe called the axis of the *volute*.

CATHOLIC, from κατα and ὅλος, *whole*, denotes a thing that is univerſal, or general.

Some have ſaid, that Theodoſius the Great firſt introduced the term *catholic* into the church; appointing by an edict, that the title ſhould be applied, by way of pre-eminence, to thoſe churches which adhered to the council of Nice, in excluſion of the Arians, &c.—*Catholiciſm*, however, ſoon changed hands; for under the emperor Conſtantius, Arianiſm became ſo predominant, that the Arians were called the *catholics*. But the term was uſed much more anciently, as by Polycarp and Ignatius. *Ubi fuerit Jeſus Chriſtus*, (ſays the latter) *ibi eſt eccleſia* CATHOLICA. The Romiſh church now aſſumes the diſtinguiſhing appellation of the *catholic* church.

CATHOLIC *king*, is a title which has been long hereditary to the king of Spain. Mariana pretends, that Reccarede firſt received this title after he had deſtroyed Arianiſm in his kingdom, and that it is found in the council of Toledo for the year 589. Vaſcè aſcribes the origin of it to Alphonſus in 738. Some allege that it has been uſed only ſince the time of Ferdinand and Iſabella. Colombiere ſays, it was given them on occaſion of the expulſion of the Moors. The Bollandiſts pretend, it had been borne by their predeceſſors, the Viſigoth kings of Spain; and that Alexander VI. only renewed it to Ferdinand and Iſabella. Others ſay, that Philip de Valois firſt bore the title; which was given him after his death, by the eccleſiaſtics, on account of his favouring their intereſts.

In ſome epiſtles of the ancient popes, the title *catholic* is given to the kings of France, and of Jeruſalem, as well as to ſeveral patriarchs and primates.

CATHOLIC *furnace*, is a little furnace, ſo contrived, as to be fit for all kinds of operations, which do not require an intenſe fire.

CATHOLICIANI, in *Middle Age Writers*, the officials or miniſters of the CATHOLICI, or receivers of the taxes of a dioceſe, ſometimes alſo denominated CÆSARIANI.

CATHOLICON, in *Pharmacy*, a kind of ſoft purgative electary; ſo called, as being ſuppoſed univerſal; or a purger of all humours.

Different authors give different recipes for it: that called *Catholicon Nicolai* was long in uſe; it conſiſts of ſixteen ingredients, the chief whereof are tamarinds, caſſia, ſena, and rhubarb. It was called the double *catholicon*, when there was a double portion of ſena and rhubarb.

The **CATHOLICON** *for* CLYSTERS, only differs from this, in that it had no rhubarb, and that honey was uſed in it inſtead of ſugar.

CATHOLICUS, the title of a dignitary, or magiſtrate, under the Roman emperors, who had part of the adminiſtration, and particularly the care and receipt of the revenues and taxes in Roman dioceſes.

The *catholicus* was the ſame with what was denominated by the Latins *procurator*, and *rationalis Cæſaris*. Such was the *catholicus* of the dioceſe of Africa, mentioned by Euſebius, and other ancient writers.

CATHOLICUS, among *Eccleſiaſtical Writers*, an appellation given to the primates or METROPOLITAN prelates of ſeveral churches in Aſia, ſubject to the ſee of Antioch; but whoſe juriſdiction and dioceſes are of ſuch extent that they have aſſumed the title of *catholici*, q. d. *univerſal biſhops*. See PRIMATE.

CATKIN, among *Botaniſts*, a cluſter of flowers affixed to an axis: in ſome caſes, there are ſquamæ on the axis which do the office of cups; in others the flowers are naked. This is otherwiſe called *julus*, and *amentum*.

CATLIN, among *Surgeons*, is a diſmembring knife, for cutting off any corrupted part of a body.

CATMINT, *Nepeta*, in *Botany*, a genus of the *didynamia gymnoſpermia* claſs. Its characters are theſe: the empalement of the flower is cylindrical, indented into five acute parts at the top. The flower is of the lip kind, with one petal, having an incurved cylindrical tube, gaping at the top. The upper lip is erect, roundiſh, and indented at the point. The under lip is large, concave, entire, and ſawed on the edge: it hath four awl-ſhaped ſtamina, ſituated under the upper lip; two of which are ſhorter than the other. In the bottom of the tube is ſituated a quadrifid germen, which afterward turns to four oval ſeeds, ſitting in the empalement. There are twelve ſpecies.

The whole plant has a ſtrong ſcent between mint and penny-royal. It is called *catmint*, becauſe cats are very fond of it, eſpecially when it is withered; for then they will roll themſelves on it, and tear it to pieces, chewing it with great pleaſure. Miller's Gard. Dict.

It conſiſts of warming and attenuating parts, ſomewhat like penny-royal; and like that is of great ſervice in opening obſtructions of the womb, and helping in the green ſickneſs: as alſo hyſteric fits and vapours. It promotes the birth and lochia, and is by ſome authors commended againſt barrenneſs.

CATOCHE, or CATOCHUS, from κατεχω, *I retain*, in *Medicine*, a kind of waking ſleep; or a vehement diſpoſition of the body to ſleep, without being able to attain it; the eyes ſtill remaining open, and the breath entire, but the body motionleſs, and in the ſame poſture wherein the patient was firſt ſeiſed.

The *catoche* is the ſame with CATALEPSIS. It differs from the COMA and CATAPHORA, in that the eyes are open in the former, and cloſed in the latter. See COMA.

CATOCHITES, in *Natural Hiſtory*, the name of a foſſil mentioned among the ancients, as having great virtues in medicine, and in the cure of wounds. It is ſaid to have been found in Corſica; and Pliny records this remarkable property of it, that if the hand were held upon it for ſome time, it would ſtick to it in the manner of glue. Hence it appears to have been a bitumen.

CATOCYSTUS, in *Natural Hiſtory*, a name given to one of the general diviſions of the *echinodermata*, or ſea hedge-HOGS. Theſe have their aperture for the anus not at the top of the ſhell, as the *anocyſti* have it, but in ſome part of the baſe.

For the more accurately diſtinguiſhing theſe into genera, the baſes of the ſhell are to be divided into the *regular* and *irregular*. The *regular* are thoſe which are round or oval; the *irregular*, thoſe which are made with ſinuſes and angles.

CATODON, in the Artedian ſyſtem of *Ichthyology*, the name given to a genus of the *plagiuri*, or cetaceous fiſhes, the characters of which are theſe: the teeth are placed only in the lower jaw; there is no fin upon the back; and the fiſtule is placed either in the head or the ſnout. The ſpecies of this genus are only two.

This, in the Linnæan ſyſtem, is the name of a ſpecies belonging to the genus denominated *phyſeter*, in the order of *cete*, and claſs of *mammalia*.

The word *catodon* is derived from κατα, *below*, and οδους, *a tooth*; and expreſſes that the fiſh has teeth only in the lower part of its mouth.

CATOMUM, or CATOMUS, from κατα and ωμος, *ſhoulder*, in *Middle Age Writers*, denotes that part of the body below the neck, and between the ſhoulders.

CATOPSIS, in *Medicine*, a diſorder of the ſight; more uſually called MYOPIA.

CATOPTRICS, the ſcience of reflex viſion; or that branch of optics, which delivers the laws of light, reflected from mirrors, or ſpecula.

The doctrine and laws of *catoptrics* are laid down under the head of OPTICS.

The word comes from κατοπτρον, *ſpeculum*; of κατα, and οπτομαι, *video*, *I ſee*.

CATOPTRICAL *Dial*, a dial which exhibits objects by reflected rays. See REFLECTING *Dial.*

CATOPTRIC *Teleſcope*, a teleſcope that exhibits objects by reflexion. See *Reflecting* TELESCOPE.

CATOPTRIC *Ciſtula*, a machine, or apparatus, whereby little bodies are repreſented extremely large; and near ones extremely wide, and diffuſed through a vaſt ſpace; with other agreeable phænomena: by means of mirrors, diſpoſed by the laws of *catreptics*, in the concavity of a kind of cheſt.

Of theſe there are various kinds, accommodated to the various intentions of the artificer: ſome multiply the objects; ſome deform them; ſome magnify, &c.—The ſtructure of one or two of them will ſuffice to ſhew how many more may be made.

To make a CATOPTRIC *Ciſtula to repreſent ſeveral different ſcenes of objects, when viewed at different foramina, or holes.*

Provide a polygonous ciſtula, or cheſt, of the figure of the multilateral priſm ABCDEF (*Tab. Optics, fig.* 19.), and divide its cavity by diagonal planes EB, FC, DA, interſecting each other in the center, into as many triangular locules, or ſhells, as the cheſt has ſides. Line the diagonal planes with plain mirrors: in the lateral planes make round holes, through which the eye may peep within the locules of the cheſt. The holes are to be covered with plain glaſſes, ground within-ſide, but not poliſhed, to prevent the objects, in the locules, from appearing too diſtinctly. In each locule are to be placed the different objects, whoſe images are to be exhibited; then covering up the top of the cheſt with a thin tranſparent membrane, or parchment, to admit the light; the machine is complete.

For, from the laws of reflexion, it follows, that the images of objects, placed within the angles of mirrors, are multiplied, and appear ſome more remote than others; whence the objects in one locule will appear to take up more room than is contained in the whole cheſt. By looking, therefore, through one hole only, the objects in one locule will be ſeen, but thoſe multiplied, and diffuſed through a ſpace much larger than the whole cheſt: thus every new hole will afford a new ſcene: according to the different angles the mirrors make with each other, the repreſentations will be different; if they be at an angle greater than a right one, the images will be monſtrous, &c.

The parchment that covers the machine, may be made pellucid, by waſhing it ſeveral times in a very clear lye, then in fair water, and bracing it tight, and expoſing it to the air to dry. If it be deſired to throw any colour on the objects, it may be done by colouring the parchment. Zahnius recommends verdigriſe ground in vinegar, for green; decoction of Braſil wood, for red, &c. He adds, that it ought to be varniſhed, to make it more pellucid.

To make a CATOPTRIC *Ciſtula to repreſent the objects within it prodigiouſly multiplied, and diffuſed through a vaſt ſpace.*

Make a polygonous ciſtula, or cheſt, as before, but without dividing the inner cavity into any apartments, or locules (*Tab. Optics, fig.* 19.); line the lateral planes CBHI, BHLA, ALMF, &c. with plane mirrors, and at the foramina, or apertures, pare off the tin and quickſilver, that the eye may ſee through: place any objects in the bottom MI, v. g. a bird in a cage, &c.

Here the eye looking through the aperture *hi*, will ſee each object placed at bottom, vaſtly multiplied, and the images removed at equal diſtances from one another. Hence, were a large multangular room, in a prince's palace, lined with large mirrors, over which were plain pellucid glaſſes to admit the light; it is evident the effects would be very ſurpriſing and magnificent.

CATOPTRITES, in *Natural Hiſtory*, a name given by ſome writers to a ſtone of the marble kind, which, when poliſhed, was capable of ſerving as a ſpeculum, either flat, and only uſed to repreſent the images of things; or concave, and uſed as our reflecting burning-glaſſes. The hard black marbles were moſt frequently uſed for this purpoſe; but ſometimes the reddiſh ones, and ſometimes one or other of the jaſpers. All theſe were indiſcriminately called by the name *catoptrites*, when put to this uſe.

CATOPTROMANCY, a kind of divination among the ancients; ſo called, becauſe it conſiſted in the application of a MIRROR.

The word is formed from κατοπτρον, *ſpeculum*, and μαντεια, *divinatio.*

Pauſanias ſays, it was in uſe among the Achaians; where thoſe who were ſick, and in danger of death, let down a mirror, or looking-glaſs, faſtened by a thread, into a fountain, before the temple of Ceres; then, looking in the glaſs, if they ſaw a ghaſtly disfigured face, they took it as a ſure ſign of death; on the contrary, if the face appeared freſh and healthy, it was a token of recovery. Sometimes glaſſes were uſed without water, and the images of things future, they ſay, were repreſented in them.

CATROPITÆ. See AGONISTICI.

CATTECORONDE, in the language of the Ceyloneſe, prickly cinnamon. This is a bark very much reſembling cinnamon, but produced by a tree which differs very much in the ſhape of the leaves, and is full of ſharp thorns, which the true cinnamon-tree is not. The bark has nothing either of the taſte or ſmell of cinnamon, though ſo like it externally. The natives uſe the root, leaves, and bark of this tree externally, to ſoften tumours. Phil. Tranſ. Nº 409. See CASSIA and CINNAMON.

CATTLE, a collective name, importing all quadrupeds, uſed either in tilling the ground, or for the food of man. See BEAST.

Under *cattle* ſome include all quadrupeds which aſſociate, or go in herds; as ſheep, oxen, horſes, hogs, &c. Others define *cattle* to be all tame animals which graze. *Cattle* are ſometimes divided into *great*, comprehending oxen, bulls, cows, calves, horſes, &c. and *ſmall*, including ſheep, lambs, goats, and the like.

CATTLE, *black*, more particularly denote the cow kind. Theſe are alſo denominated *neat cattle.*

The management of *cattle* makes a conſiderable branch of what is called HUSBANDRY.

The diſeaſes of *cattle* make the ſubject of that art, called by the ancients *mulo medicina*, and *veteratoria*; and by us, *farrying.*

Dr. Maneſchelli tells us, that in the plague among the *cattle* in Italy, in 1735, rue, wormwood, garlic, and ſuch other ſtrong-ſmelling plants, hung about their noſes and mouths, were eſteemed preſervatives againſt the infection. Nitrous medicines, gunpowder, ſulphur, and the ſharper aromatics did hurt. Bleeding, crude antimony with ſetons, and a diet of the moſt mild ſoftening herbs did ſervice. Med. Eſſ. Edinb. abrid. vol. ii. p. 502.

The ancient riches conſiſted wholly in the number of *cattle*; whence it is ſuppoſed to be, that the Romans called money by a name formed from that of *cattle, pecunia* from *pecus.*

The importation of *cattle* into England, whether living or dead, is prohibited on pain of forfeiture; but *cattle* may be exported, or even tranſported, paying the duties. Factors, and thoſe who ſell *cattle* for others, are prohibited to buy any, except ſwine or calves, within eighty miles of London; and none ſhall be bought and ſold again in the ſame market, on pain of forfeiture. Stat. 3 and 4 Edw. VI. c. 19. 18 Ch. II. c. 2. 22 Ch. II. c. 13. See DROVERS.

Stealing of *cattle*, or killing them with an intent to ſteal any part of the carcaſſes, or aſſiſting in ſuch offences, are now made felony without benefit of clergy. See 14 Geo. II. c. 6. and ſect. 1.

By *cattle*, in this act, is to be underſtood any bull, cow, ox, ſteer, bullock, heifer, calf, ſheep, and lamb, and no other *cattle* whatever. Stat. 15 and 16 Geo. II. c. 34.

CATTUPHUS, or COSSOPHUS, in *Ichthyology*, a name given by Ariſtotle, and other of the Greek writers, to the fiſh called by the Latin authors *merula* and TURDUS *nigricans.* It is a ſpecies of the *labrus*, eaſily known from all the others by its colour; and called, by authors who acknowlege the generical name *labrus*, the bluiſh black *labrus.*

CATTUS, or CATUS, in the *Ancient Military Art*, a kind of machine or device for covering or ſcreening the men; much, if not entirely the ſame with *vinea.* See MANTELET.

CATULUS, in the *Hiſtory of Fiſhes*, the name of a ſea-fiſh, of which authors deſcribe three ſpecies; the *major, maximus*, and *minimus.* It is properly of the GALEUS kind, and has a variouſly ſpotted ſkin, and a wide and large mouth, furniſhed with ſtrong teeth, ſharp-edged, and hollowed inward. The firſt kind is common in our ſeas, and often caught on the coaſt of Cornwall; and the two others principally in the Mediterranean, though ſometimes alſo in our ſeas. Aldrov. de Piſc. lib. iii. c. 34.

CATURUS, in *Botany*, a genus of the *dioecia triandria* claſs.

CATUS *pardus*, in *Zoology*, the name of a beaſt of prey, called alſo by ſome *catus montanus*, and by us the cat of the mountain; and, in the Linnæan ſyſtem, a ſpecies of the cat called FELIS *pardalis.* It is of the ſize of a maſtiff dog; but it reſembles in all reſpects the common domeſtic cat in ſhape, except that the tail is, in proportion to the creature's ſize, conſiderably ſhorter.

It has upright pointed ears, marked with two brown tranſverſe bars: the colour of the head, and whole upper part of the body, a reddiſh brown, marked with long narrow ſpots on the back, and with ſmall ſpots on the ſides: the belly, chin, and throat are white; the tail barred with black. The length of this animal is two feet and a half; and that of the tail, eight inches.

It is leſs fierce againſt the human ſpecies than many of the other beaſts of prey, and may even be tamed. It naturally grows very fat, and inhabits America. Ray, Syn. Quad.

The *serval* of Buffon differs in few particulars from the preceding: the orbits are white: the ſpots on the body are round. It is fierce and untameable; inhabits the woods in the mountainous parts of India; lives and breeds in trees, and leaps with great agility from one tree to another. See *Tab. Quadrupeds, fig.* 5.

CATUS *zibethicus*, in *Zoology*, a name improperly given to the creature which produces the perfume called civet; it not being of the cat, but of the wolf or dog kind. See CIVET.

CATY, CATI, or CATTI, an Eaſt India weight, uſed eſpecially in China. It is equivalent to one pound five ounces, and two drams Engliſh.

The *caty* is divided into ſixteen *taels*, and the *pic* into an hundred *caties*.

The *caty* is alſo uſed in Japan, Batavia, and other parts of the Indies, where it weighs more or leſs, according as it contains a greater or leſs number of *taels*: the *caty* of Java is equivalent to twenty *taels*; that of Cambaya, to twenty-ſeven; the *caty* of Siam is double that of China, and amounts to about 150 French pounds.

The Chineſe alſo give the denomination *caty* to the Siameſe *ſchan*.

CATY is alſo a ſmall weight whereby the lapidaries of the Eaſt weigh their emeralds, equivalent to three grains.

CATY is alſo a money of account, uſed in Java, and ſome of the neighbouring iſlands, amounting to about nineteen florins Dutch money.

In the iſland of Sumatra, *caty* is ſaid to denote a piece of money valued at ſix ſhillings and eight pence ſterling.

CAVA, in *Anatomy*, the name of a vein, the largeſt in the body, terminating in the right ventricle of the heart; where it opens with a large mouth, to convey to it the blood brought from all the parts of the body, by the branches of the other veins, which all terminate in the *cava*. See *Tab. Anat. (Splanch.) fig.* 1. *lit. o.* 12. *lit. ee. (Angeiol.) fig.* 6. *lit. b.* and *cc*.

At its entrance into the right ventricle, it has three membranous valves, called *tricuſpides*, or *triglochines*, from their triangular figure; ſo accommodated, as to allow the blood's paſſage from the *cava* to the heart, and to prevent its return.

The *cava* is divided into the *aſcending* and *deſcending* parts: the *aſcending cava*, is that which ariſes from the lower parts; ſo called, becauſe the blood hereby conveyed to the heart, mounts, or aſcends. The *deſcending cava* comes from the upper parts; and is ſo called, becauſe the blood hereby brought from the head, and other parts, deſcends.

CAVAGIRO, in *Ichthyology*, the name of a fiſh common in the Mediterranean, and brought to the markets in many places. It is ſomething of the eel ſhape, but thinner and flatter. Ray.

CAVALCADE, a formal, pompous march, or proceſſion of horſemen, equipages, &c. by way of parade, or ceremony, as to grace a triumph, public entry, or the like.

CAVALCADOUR, or CAVALCADEUR, anciently denoted a riding-maſter; but at preſent is diſuſed in that ſenſe, and only employed to denote a ſort of equerries, or officers who have the direction of princes ſtables. The French ſay, *ecuyer cavalcadeur* of the king, the duke of Orleans, &c.

Menage writes it *cavalcadour*, and derives it from the Spaniſh *cavalgador*, *a horſeman*.

CAVALET, in the *Glaſs Art*, a ſmall iron ring which ſurrounds the lumella, or hole in the center of the floor, in the tower of the LEER, uſed for annealing glaſs veſſels.

CAVALIER, or CAVALEER, a horſeman, or perſon mounted on horſeback: eſpecially if he be alſo armed and has a military appearance.

Anciently, the word was reſtrained to a knight, or *miles*. See KNIGHT.

The French ſtill uſe CHEVALIER in the ſame ſenſe.

CAVALIER, in *Fortification*, a mount, or elevation of earth, either round, or oblong; having a platform on the top, bordered with a parapet, to cover the cannon placed on it, and cut with embraſures to fire through; ſerving to overlook and command all around the place.

Cavaliers are generally placed within the baſtions, and made of the ſame form, leaving about five fathoms room between the parapets. They ſerve as a rampart to the baſtion, and their height exceeds that of the baſtion by about ſix or ſeven feet. Sometimes they are placed in the gorges, or behind the curtain, but not often.

CAVALIERS, or CAVALEERS, conſidered as a faction. See TORIES.

CAVALLERIA, among the *Ancient Spaniards*, a kind of tax, or impoſition on the inhabitants of great towns and cities, for the ſupport of horſemen.

CAVALLI *Marini*, in *Natural Hiſtory*, are little dried animals about the length of a man's thumb, found on the ſea-coaſt near Pozzuoli. The head reſembles a horſe's, and the body terminates in a tail like that of a ſhrimp. Women, it is ſaid, uſe them to increaſe their milk.

CAVALRY, a body of ſoldiers, who fight, or march on horſeback.

The word comes from the French *cavaliere*, and that from the corrupt Latin *caballus*, *a horſe*; whence *caballarius*, and *cavallarius*, in the later Latin, and καβαλλαριος, in the Greek.

The *cavalry* is uſually divided into horſe and dragoons. The horſe are either regimental, or independent troops; to which latter ſort belong the horſe-guards; and in France, the gens d'armes and muſketeers who ſerve on horſeback. The dragoons and regimental horſe form what they call the *light cavalry*; the troopers, the *heavy cavalry*. When an army is ranged in order of battle, the *cavalry* is poſted on the wings.

Bodies of *cavalry*, ranged in form of battle, are called *ſquadrons*.

The Romans, in their firſt wars, were unacquainted with the uſe of *cavalry*, and made their whole force conſiſt in infantry; inſomuch that, even in the engagement, they made their horſe diſmount, and fight on foot; never reſuming their horſes, but to purſue the enemy the better when routed. It was the *cavalry* of Pyrrhus, that firſt occaſioned them to alter their ſentiments; but eſpecially that of Hannibal, which ſtruck them with ſuch a terror, that the Roman legions durſt not attack them on even ground.

The chief uſe of the *cavalry* is to make frequent excurſions to diſturb the enemy, intercept his convoys, and deſtroy the country; in BATTLE to ſupport and cover the foot, and to break through, and put the enemy in diſorder; alſo to ſecure the retreat of the foot. Formerly the manner of fighting of the *cavalry* was, after firing their piſtols or carabines, to wheel off, to give opportunity for loading again. Guſtavus Adolphus is ſaid to have firſt taught the *cavalry* to charge through, to march ſtraight up to the enemy, with the ſword drawn in the bridle hand, and each man having fired his piece, at the proper diſtance, to betake himſelf to his ſword, and charge the enemy as was found moſt advantageous. The Grecian *cavalry* were divided into *cataphractæ*, and *non cataphractæ*, i. e. into heavy, and light armed.

Of all the Greeks, the Theſſalians excelled moſt in *cavalry*. The Lacedæmonians inhabiting a mountainous country, were but meanly furniſhed with *cavalry*, till, carrying their arms into other countries, they found great occaſion for horſes to ſupport and cover their foot. The Athenian *cavalry*, for a conſiderable time, conſiſted only of ninety-ſix horſemen: after expelling the Perſians out of Greece, they increaſed the number to three hundred, and ſome time after to twelve hundred, which was the higheſt pitch of the Athenian *cavalry*. Potter. Arch. Græc. lib. iii. cap. 3. tom. ii.

The Turkiſh *cavalry* conſiſts partly of SPAHIS, and partly of horſemen raiſed, and maintained by the ZAIMS and TIMARIOTS.

CAVATUM *Sal*, in the *Materia Medica*, a term uſed by ſome of the old Roman writers, as a name for the fineſt ſort of *ſal* GEMMÆ.

CAVAZION, or CAVASION, called alſo CAVING, in *Architecture*, the underdigging, or hollowing of the earth, for the foundation of a building. Palladio ſays, it ought to be the ſixth part of the height of the whole building. See FOUNDATION.

CAUCALIS. See *Baſtard* PARSLEY.

CAUCII *Nummi*, a baſe ſort of coin, current under the lower empire; thus called becauſe concave, like a little cup, from the barbarous Latin, *caucus*, *a cup*. Haloander and Meurſius are miſtaken in ſaying this coin was ſo called from having the figure of a cup on it. Du-Cange. The *caucii* are the ſame with what are popularly called among the Italians, *medaglie di S. Elena*, ſometimes ſuperſtitiouſly worn by the women.

CAUCON, in *Botany*, a name uſed by Pliny, and ſome other authors, for the *equiſetum*, or HORSE-*tail*.

CAUDA, in a general ſenſe. See TAIL.

CAUDA is ſometimes alſo uſed in *Anatomy* to denote the CLITORIS.

CAUDA *Capricorni*, a fixed ſtar of the fourth magnitude, in the tail of Capricorn; called alſo by the Arabs, *Dineb Algedi*. Se γ under CAPRICORN.

CAUDA *Ceti*, a fixed ſtar of the third magnitude; called alſo by the Arabs, *Dineb Kaetos*. See β under CETUS.

CAUDA *Cygni*, a fixed ſtar of the ſecond magnitude in the

Swan's tail; called by the Arabs, *Dineb Adigege*, or *El-degiagich*. See *α* under Cygnus.

Cauda *Delphini*, a fixed ſtar of the third magnitude, in the tail of the Dolphin. See *ε* under Delphinus.

Cauda *Draconis*, the Dragon's tail, in *Aſtronomy*, the name of the moon's ſouthern, or deſcending NODE.

Cauda *Equina*, in *Anatomy*, a denomination given to the loweſt part of the ſpinal marrow, from the laſt *vertebra* of the *thorax* to the end of the *os ſacrum*.

It is thus denominated from its form, which is ſuppoſed to reſemble a horſe's tail. Its ſubſtance is fibrous, and very tenacious.

Cauda *Equina* alſo denotes a medicinal herb, whoſe leaves are reputed to have a ſtrengthening virtue. This, in Engliſh, is called the HORSE-*tail*. The officinal kind is more particularly called by botaniſts EQUISETUM *majus*, in Engliſh, the great marſh horſe-tail.

Cauda *Leonis*, a fixed ſtar of the firſt magnitude in the Lion's tail; called alſo by the Arabs, *Dineb Eleced*. See *β* under Leo.

It is called alſo *Lucida Cauda*.

Cauda *Urſæ Majoris*, a fixed ſtar of the third magnitude, in the extreme part of the tail of the Great Bear, called alſo by the Arabs, *Alalioth* and *Benenath*. See *η* under Ursa *major*.

Cauda *Urſæ Minoris*, a fixed ſtar of the third magnitude, in the extreme part of the tail of the Leſſer Bear; called alſo the polar ſtar, and by the Arabs, *Alrukabah*. See *α* under Ursa *minor*.

CAUDEBEC, in *Manufactures* and *Commerce*, a ſort of hats, thus called from the town of Caudebec in Normandy, where they manufacture a great number of them. They are made of lamb's wool, of the hair or down of oſtriches, or of camel's hair.

CAUDISONA *Vipera*, in *Zoology*, a name by which authors call the RATTLE-SNAKE.

CAUDIVERBA, in *Zoology*, the name of an animal of the lizard kind, called alſo *uromaſtyx*, but more commonly known among authors by the name CORDYLUS.

CAVE, a ſubterraneous hollow place of a certain extent. Some authors diſtinguiſh between a *cave* and a *cavern*, making the firſt the effect of art, and the latter of nature.

Caves were doubtleſs the primitive habitations; before men brought themſelves to erect edifices above ground, they took ſhelter under it. The primitive manner of BURIAL was alſo to repoſite bodies in *caves*, which appears to have been the origin of the CATACOMBS. Phil. Tranſ. N° 244. p. 344.

Badmington *caves*, in Wiltſhire, conſiſt of a ſeries or row of uniform holes, wherein pieces of armour are ſaid to have been found, whence they are by many ſuppoſed to have been tombs of ancient warriors.

Caves long continued the proper habitation of ſhepherds. Among the Romans, *caves*, *antra*, uſed to be conſecrated to the nymphs, who were worſhipped in *caves*, as other gods in the temples.

The Perſians alſo worſhipped their god Mithras in a natural *cave*, conſecrated for the purpoſe by Zoroaſter.

Kircher, after Gaffarellus, enumerates divers ſpecies of *caves*, divine, human, brutal, natural, and artificial.

Of natural *caves*, ſome are poſſeſſed of a medicinal virtue, as the *Grotto de Serpente*; others are poiſonous or memphitical; others are replete with metalline exhalations, and others with waters.

Divers oracular *caves* occur among the ancients, the fumes of which intoxicated the head, and produced a ſort of furor or madneſs, which was interpreted inſpiration, prophecy, and divination. Such were the ſacred caverns at Delphi, which inſpired the Pythia. Such alſo was the Sybil's *cave* at Cumæ in Campania, ſtill ſhewn near the lake Avernus: though Borrichius takes this to be of modern date, and not the true *Antrum Sibyllæ*, ſo finely deſcribed by Virgil. Homer likewiſe gives a deſcription of Αντρον Νυμφων, the *Cave of the Nymphs*, on which Porphyry has a treatiſe ſtill extant, containing many of the ſecrets of the heathen theology, both natural and ſymbolical. Virg. Æn. lib. vi. Hom. Odyſſ. lib. xiii.

The *cave* of the nymph Egeria, where Numa held nightly converſations with that deity, is ſtill ſhewn at Rome.

The *cave* of Trophonius, originally the manſion of that celebrated Bœotian, became afterwards famous for the oracles which Apollo delivered in it. Pauſanias, who viſited it, gives a large deſcription of the ceremonies obſerved by thoſe who entered the cave to conſult that god. Vid. Potter. Arch lib. ii. cap. 10. p. 290, &c.

Cave, *dead*, *live*, in *Mining*. See Live *cave*.

CAVEA, the place in the ancient theatres where the ſpectators were ſeated.

The *cavea*, called by the Greeks κοιλον, ſtands contradiſtinguiſhed from the *ſcena*, σκηνα, which was the place for the actors.

The *cavea* was divided by partitions into three equal parts, riſing one over another: *ima cavea*, appointed for the people of quality, and magiſtrates; the middlemoſt, *media cavea*, for the commonalty; and the uppermoſt, *ſumma cavea*, for the women.

As the theatres were open at top, porticos were erected behind the *cavea*, where the audience might retire for ſhelter, in caſe of rain.

Cavea alſo denoted the middle part in amphitheatres, otherwiſe called ARENA.

Cavea was alſo uſed for the CAGE or den of a wild beaſt, kept for the amphitheatrical ſhews.

CAVEAR, Cavia, or Kavia, a kind of food, or pickle, in great uſe and repute throughout Muſcovy; and alſo introduced upon the Engliſh table.

It is formed from the Italian *caviale*, or barbarous Greek καϐιαρι, which ſignifies the ſame.

The *cavia*, or *cavear*, is the roe, or ſpawn of the ſturgeon, taken out, ſalted, and dried in the ſun, or by the fire. The Italian merchants ſettled at Moſcow, drive an incredible trade with *cavear*; the fiſh being caught in prodigious quantities at the mouth of the Volga, and other rivers which empty themſelves into the Caſpian ſea. They cure or prepare the roes on the ſpot, and thence ſend them in this form of *cavear* up the Volga to Moſcow, to be there diſtributed throughout that vaſt empire; where it is of wonderful ſervice to the people, on account of the three Lents there obſerved with great ſeverity.

The manner of making the *cavear* is by taking out of the ſpawn of the ſturgeon all the nerves or ſtrings, then waſhing it in vinegar or white wine, and ſpreading it on a table. They dry and ſalt it with the hand, and preſs it in a fine bag, that the liquor may run out; this done, they caſe it up in a veſſel with a hole at bottom, that if there be any moiſture left it may run out. In this ſtate being well preſſed and covered, it is fit for ſale.

Cavear is alſo prepared of the ſpawn of ſome other fiſhes: what we otherwiſe call BOTARGO, is a *cavear* made from a ſort of mullet caught in the Mediterranean.

According to Savary, the beſt *cavear* brought from Muſcovy is that made from the belluga, a fiſh eight or ten feet long, caught in the Caſpian ſea, which is much preferable to that made of the ſpawn of ſturgeon.

The Engliſh import conſiderable quantities of this commodity from Archangel; though not ſo much for home conſumption, as to ſupply the French and Italians. To be good, it ſhould be of a reddiſh brown colour, and very dry. It is eat with oil and lemon; ſometimes with vinegar: ſome eat it alone with bread; and others only as a ſauce, or pickle, like anchovies.

CAVEAT, in *Law*, a bill entered in the eccleſiaſtical court, to ſtop the proceeding of one who would prove a will, or obtain letters of adminiſtration, to the prejudice of another. See Probate.

It is alſo uſed to ſtop the inſtitution of a clerk to a benefice. An inſtitution after a *caveat* entered, is void by the eccleſiaſtical law; but this the temporal courts pay no regard to, and look upon a *caveat* as a mere nullity. Blackſt. Com. vol. iii. p. 246.

CAVEATING, in *Fencing*, the act or art of diſengaging, or ſhifting the ſword from one ſide of the adverſary's ſword to the other.

Caveating is a motion whereby a man brings in an inſtant his ſword which was preſented on any ſide his adverſary's, generally beneath its hilt, to the oppoſite ſide; either from within, or without, or *vice verſa*; or from having its point high, to be low, or the reverſe; and either on the ſame ſide it is preſented in, or the oppoſite ſide.

Caveating is ſo neceſſary a motion in FENCING, that without it, there could be ſcarce any offenſive part, or purſuit. It is withal ſo eaſily performed againſt the ordinary tierce and quart guards, that it gives a conſtant opportunity to make a variety of quick ſubtle FEINTS againſt them, which by reaſon of the ſmall croſs made by the weapons on theſe guards, makes the purſuit very eaſy, and the PARADE or defence very difficult.

The conſideration of this put Sir William Hope on the ſearch of a new method or GUARD, which, by reaſon of its greater croſs on the adverſary's ſword, renders the *caveating*, and making feints more ſlow, and conſequently the parade more certain. See Guard, &c.

CAVEDO, in *Commerce*, a long meaſure uſed in Portugal, and equal to $27\frac{433}{1000}$ Engliſh inches.

CAVELIN, or rather Kaveling; thus they call at Amſterdam, what we and the French ſtile a lot of merchandize.

CAVERN, Caverna. See Grotto.

CAVERNOSA *Corpora*, in *Anatomy*, called alſo *corpora nervoſa*, and *ſpongioſa*, are two cavernous bodies, of an indeterminate length and thickneſs, whereof the *penis* is principally compoſed.—See *Tab. Anat.* (*Splanch.*) *fig.* 8. *lit. aa. bb.* and *tt.*

Their internal ſubſtance is rare, and ſpongy; and when filled with blood and ſpirits, it dilates and ſwells: in which the tenſion or erection of the *penis* conſiſts. See Penis.

Cavernosum *Corpus Urethræ*, a third ſpongious body of the penis; ſo called, becauſe the *urethra*, or urinary paſſage of the *penis*, is incloſed by it. See Penis.

Its figure, contrary to that of the two corpora cavernoſa, is largeſt at its extremities, and leaſt in the middle; its upper part is in the *perinæum*, and is called its *bulb*, from its figure. Its external membrane is thin, and divided lengthwiſe by a *ſeptum*. The middle part of this *corpus* is nearly cylindrical; but the paſſage for the urine is not along the centre, but inclines to its upper part, next the body of the *penis*; its lower extremity, dilating itſelf, forms the *glans*.

Cavernosa *Corpora of the Clitoris*, are two nervous or ſpongy bodies, like thoſe of the *penis*; they have their origin from the lower part of the *os pubis*, on each ſide; and uniting together, conſtitute the body of the clitoris, as the others do that of the *penis*.

Indeed, they have no perforation analogous to that of the *penis*; but they have a *ſeptum*, or membranous partition, running all along between them, and dividing them from the *glans*, to its divarication at the *os pubis*, where they are called *crura clitoridis*.

Cavernosum *Corpus of the Pudendum*. See Reticulare *Corpus*.

CAVERS, in the *Language of Miners*, are any poor people that go about the mines to beg or ſteal ore from the miners.

CAVESON, in the *Manege*, a kind of muſroll, put on a horſe's noſe, which binds or locks him in, and ſerves in breaking, managing, and tutoring him.

The word comes from the Spaniſh *caveça*, or *cabeça*, head.

The *caveſons* for breaking young horſes are uſually of iron, made ſemicircularly, of two or three pieces turning on joints; others are twiſted, others are flat, others hollow in the middle, and indented like ſaws, called *mordants*: though theſe laſt are now baniſhed the academies.—The rope and leathern *caveſons* ſerve for paſſing the horſe between two pillars.

An iron *caveſon* ſpares a young horſe's mouth in the breaking, ſince by means hereof he is accuſtomed to obey the hand, and bend the neck and ſhoulders, without injuring his mouth. All iron *caveſons* are mounted with a head-ſtall, and a throat-band, and two ſtraps, or reins, with three rings: through the middle ring, one rein is paſſed to make a horſe work round a pillar, and through the two ſide rings the other two reins are paſſed, which the rider holds in his hand, or faſtens to his ſaddle to keep the horſe's head in ſubjection.

CAVETTO, in *Architecture*, a hollow member, or moulding, containing a quadrant of a circle, and having an effect juſt contrary to that of a quarter-round: it is uſed as an ornament in cornices.—See *Tab. Archit. fig.* 6.

The word is Italian, and is no more than a diminutive of *cavus*, hollow.

M. Felibien obſerves, that the workmen confound the *cavetto* with a ſcotia, but improperly; the *cavetto* being in effect only half a scotia: yet he himſelf is chargeable with the ſame overſight.

When in its natural ſituation, the workmen frequently call it *gula*, or *gueule*; and when inverted *gorge*.

Cavetto is the ſame with what is otherwiſe denominated a caſement. Moxon ſhews how to deſcribe the *cavetto*, both from the oxygon, and the ſemicircle.

CAUHQ-ROY, in *Natural Hiſtory*, a name given by the natives of the Eaſt Indies to a ſort of foſſil which they calcine, and afterwards give in large doſes in the hiccough, and many other complaints. It is alſo uſed in dying. The Indians boil it in water, and dye or ſtain their cloths with it, to make them appear different from others: it is a kind of ochre, or clayey iron ore, and is found in great abundance in the hills, and iron is ſometimes extracted from it.

CAVIA. See Cavear.

Cavia *cobaya*, in *Zoology*, the name by which the Braſilians, and from them many writers, call the creature commonly known among us by the name of the Guinea-pig.

CAVIDOS, or Cabidos, a Portugueſe long meaſure, uſed in the menſuration of cloth, linen, and the like, equivalent to two foot eleven lines Paris meaſure.

CAVIL, *cavillatio*, is defined by ſome a fallacious kind of reaſon, carrying ſome reſemblance of truth, which a perſon knowing its falſhood, advances in diſpute for the ſake of victory.

The art of framing ſophiſms or fallacies is called by Boethius, *cavillatoria*.

CAVIN, in the *Military Art*, a natural hollow fit to cover a body of troops, and thereby facilitate their approach to a place.

A *cavin* near a place beſieged is of great advantage to the beſiegers; as by help hereof they can open trenches, make places of arms, keep guards of horſe, and the like, without being expoſed to the enemies ſhot.

CAVING. See Cavazion.

CAVITY, among *Anatomiſts* and *Phyſicians*, makes a ſpecies of organical conformation, either *natural*, or *morbid*.

Cavities *of the bones* are of two kinds; the firſt formed from articulation, called *cotyles* and *glenes*; the ſecond for other purpoſes, called *cells*, *caverns*, *foramina*, *foſſæ*, and *ſulci*. Heiſt. Comp. Anat. § 56.

CAUC, Cauk, or Cawk, is uſed by *Miners in the Peak*, to denote a coarſe ſort of ſpar; being a ponderous white ſtone generally found near leadmines, which will draw a white line like chalk, or the galactites. Phil. Tranſ. N° 110. p. 226. Ibid. N° 39. p. 770. It is unſoluble in acids, and fuſible by fire.

The word is formed probably of the German *kaalq*, ſpar.

It is properly no other than a ſparry matter, rendered very coarſe, by being mixed with a large portion of earth. In ſome places it is found more clear and tranſparent than in others: it approaches in this ſtate to the nature of cryſtal, and is called baſtard cauk, and bright cauk. Philoſ. Tranſ. N° 407.

There is a ſingular proceſs mentioned by Dr. Liſter, which is that of vitriſying antimony by its means. This is done with great readineſs and ſpeed by it, and the glaſs, thus made, will produce ſome effect on other metals, which no other glaſs will, nor indeed any other preparation of antimony. The method of preparing it is this: take a pound of antimony, flux it clear; have in readineſs an ounce or two of *cauk* in a lamp red hot; put it into the crucible to the melted antimony, and continue it in fuſion; then caſt it into a clean mortar not greaſed, decanting the clear liquor from the lump of *cauk*. This proceſs gives more than fifteen ounces of glaſs of antimony, like poliſhed ſteel, and bright as the moſt refined quickſilver. The *cauk*, in the mean time, is found to be diminiſhed, not increaſed in its weight, and will never flux with the antimony, though ever ſo ſtrong fire be given it. This is a very odd mineral, and this learned author ſuppoſes it to be allied to thoſe white, milky, and mineral juices which are found in mines. The effect of both is evidently the ſame; for the milky juice of lead mines vitrifies the whole body of antimony, in the ſame manner that the *cauk* does in this experiment. Phil. Tranſ. N° 110.

That there is ſomewhat very peculiar in the *cauk* is plain from this effect on antimony, which no other thing of this kind is poſſeſſed of; for lapis calaminaris, ſulphur vivum, galactites, mundicta, alum ore, ſpar, and many other things have been tried with antimony in the ſame manner, but not one of them has this effect.

CAUKING, in *Architecture*, ſignifies dove-tailing down.

Cauking *time*, in *Falconry*, a hawk's treading time.

Cauking, or Calking *of a ſhip*, implies the driving in oakum, or ſomewhat of that kind, into the ſeams, or commiſſures of the planks, to prevent the ſhip's leaking. It is afterwards covered over with hot melted pitch, or roſin, to prevent its rotting.

Kennet derives the word from the barbarous Latin *Calciatura*, *ſhoeing*.

Cauking-*irons*, denote iron chiſſels for the purpoſe of *cauking* veſſels.

CAUL, in *Anatomy*, a membrane in the abdomen, covering the greateſt part of the guts; called, from its ſtructure, *reticulum*, but moſt frequently omentum.

Caul is likewiſe a little membrane, found on ſome children, encompaſſing the head, when born.

Drelincourt takes this *caul* to be only a fragment of the membranes of the *fœtus*; which ordinarily break at the birth of the child.

Caul, or Caule, among *Mineraliſts*, a reddiſh pink-coloured ſtone, found in the ſtrata of the tin-mines. See Tin.

CAULEDON, from καυλος, *a ſtem*, in *Surgery*, is applied to fractures which happen tranſverſely, wherein the parts of the broken bone ſtart aſunder, ſo as not to lye directly againſt each other.

CAULIAS, an appellation given to the juice drawn from the ſtalk of the *ſilphium*, contradiſtinguiſhed from that drawn from the root of the ſame plant, which is called *rhizias*.

Schroder makes the *caulias* the ſame with our Assa-*fœtida*.

CAULICOLES, Cauliculi, in *Architecture*, denote thoſe eight leſſer branches, or ſtalks, in the Corinthian capital, which ſpring out from the four greater, or principal caules, or ſtalks.—See *Tab. Archit. fig.* 27.

The word comes from the Latin *caulis*, the ſtalk, or ſtem, of a plant.

The volutes of this order are ſuſtained by four caules, or primary branches of leaves; from which ariſe theſe *caulicoles*, or leſſer foliages.

Some authors confound the *caulicoles* with the volutes themſelves; ſome with the helices in the middle, and ſome with the principal ſtalks whence they ariſe.

CAULIFEROUS *herbs*, are ſuch as have a true *caulis*, ſtalk, or trunk, which a great many have not; as the capillaries, &c.

They are ſometimes divided into *cauliferous*, and ACAULOSE.

The former are either perfectly *cauliferous*, as cabbage, or imperfectly, as moſſes.

CAULIFLOWERS, a ſpecies of *braſſica*, are the produce of a kind of cabbage, and have of late years been ſo far improved in England, as to exceed in ſize and goodneſs any that are raiſed in the reſt of Europe. They are in ſeaſon in the months of May, June, and July, but the ſkill of the gardener can continue them much longer. The manner of propagating them is this:

Having procured ſome good ſeed, you muſt ſow it before the middle of Auguſt, upon an old cucumber or melon bed, ſifting earth over the ſeeds to a quarter of an inch thickneſs: if the weather prove very hot and dry, the beds muſt be ſhaded with mats, and be lightly watered at times. In about a week's time the plants will appear above ground, and they muſt be uncovered by degrees, but not expoſed to too much ſun at firſt. In about a month after ſowing, they ſhould be pricked out on another old bed, at two inches diſtance, and ſhaded and watered when firſt tranſplanted; but after this they muſt not be much watered, nor be ſuffered to have too much rain, which will make them black-ſhanked, or rotten in the ſtalks. In this bed they are to remain till the end of October, when they are to be planted out for the winter ſeaſon: they are then to be planted out in rich beds, and thoſe which are to be early ripe are to be ſhaded with bell-glaſſes, two under each glaſs, and toward the latter end of February to be planted out again: the reſt are to be at firſt ſet at a greater diſtance, and to ſtand.

When the *cauliflowers* begin to fruit, they muſt be carefully watched, and ſome of the inner leaves muſt be bent down over the flower, to ſhade it from the ſun, which would otherwiſe turn it yellow. The very fineſt of the *cauliflowers*, which are not looſe and frothy about the edges, and very firm, ſhould be ſaved for ſeed; and the flower ſtems, as they ſhoot out, ſupported with ſticks till the ſeeds are ripened, which muſt then be carefully gathered, and dried for uſe. Mill. Gard. Dict.

CAULINE *leaf*, among *Botaniſts*. See LEAF.

CAULINE *peduncle*, among *Botaniſts*. See PEDUNCLE.

CAULIS, among *Botaniſts*, the ſtalk or ſtem of an herbaceous PLANT; or that part which riſes ſingle above the earth, from which the branches and leaves ſhoot upward.

In trees and ſhrubs this is properly called *caudex*, or trunk; in herbs *caulis*, or ſtalk; in corn and the graſſes, *culmus*, or ſtem.

CAUNGA, in *Botany*, a name given by ſome authors to the *areca*, the tree of whoſe fruit the *terra Japonica* of the ſhops is made.

CAURIS, in *Natural Hiſtory*, a name given by ſome to the genus of ſhells called, by the generality of writers, *porcellana*, and *concha venerea*. It is from a falſe pronounciation of this word *cauris*, that we call theſe ſhells *gowries*. See PORCELAIN *ſhell*.

AURSINES, *Caurſini*, in *Engliſh Hiſtory*, denote Italian bankers or money-changers, who flocked into England, France, and the Netherlands, about the year 1235, calling themſelves the pope's merchants, but driving no other trade than uſury. They were ſeveral times baniſhed the kingdom for their extortions, and re-admitted by the intereſt and intrigues of the popes. Mat. Paris. Hiſt. Angl. p. 403. Du-Cange.

They are alſo called *caorcini*, *caorſini*, *catarcini*, *cawarſini*, and *corſini*. Some will have the name formed from *Cahors*, a city of France, where they flouriſhed more than ordinarily. Others derive it from the *Corſini*, a family of wealthy merchants at Florence.

AUSA *Matrimonii prælocuti*, in *Law*, a writ that lies when a woman gives land to a man in fee, to the intent he ſhall marry her, and he refuſes to do it in a reaſonable time: and in ſuch caſe, for not performing the condition, the entry of the woman into the lands again has been adjudged lawful. The huſband and wife may ſue this writ againſt another, who ought to have married her.

USA *Nobis ſignifices*, in *Law*, a writ directed to the mayor of a town, &c. who, being by the king's writ commanded to make ſeiſin of lands to the king's grantee, delays doing it. The writ requires him to ſhew *cauſe* of the delay.

CAUSALTY, in *Metallurgy*, the lighter part of ſulphureous and earthy ores of metals carried off in the water uſed in waſhing them, and ſubſiding afterwards from it. Boerhaave, Chem. p. 100. n.

In the TIN-*works* the *cauſalty* is thrown in heaps upon banks, which in ſix or ſeven years they work over again, and receive a new ſupply of metal from it. Phil. Tranſ. N° 138. p. 952.

CAUSALITY, in *Metaphyſics*, the power, or action of a CAUSE in producing its effect.

It is a diſpute, among the ſchool-philoſophers, whether, and how the *cauſality* is diſtinguiſhed from the cauſe and effect? Some held it a mode, or modal entity, ſuperadded to the cauſe, &c. others contend for its being the cauſe itſelf, only conſidered *principiative* and *terminative*, &c.

CAUSE, CAUSA, that which contributes to the production of an effect; or that by virtue whereof a thing is done, or from which it proceeds.—In which ſenſe, *cauſe* ſtands eſſentially related to effect.

CAUSE, *Firſt*, is that which acts of itſelf, and from its own proper power, or virtue.—In this ſenſe, God is the only *Firſt Cauſe*.

CAUSES, *Second*, are thoſe which derive the power and faculty of acting, from a firſt *cauſe*.

It is certain the philoſophers are ſtrangely puzzled, and divided about the manner of their agency: ſome maintain them to act by their matter, figure, and motion; others by a ſubſtantial form; many by accidents, or qualities; ſome by matter and form; and others by certain faculties different from all theſe.

CAUSES, in the *School of Philoſophy*, are diſtinguiſhed into,

CAUSES, *Efficient*, which are the agents that produce any effects.

CAUSES, *Material*, the ſubjects whereon the agent works, or whereof the thing is formed: thus, marble is the matter, or *material cauſe* of the ſtatue.

CAUSES, *Final*, are the motives which induce a man to act; or the end for which the thing is done: thus, victory and peace are the *final cauſes* of war. Some add the,

CAUSE, *Exemplary*, which is the model the agent forms, or propoſes, and by which he conducts himſelf in the action: but this is not properly any *cauſe* at all.

CAUSE, *Formal*, the change reſulting from the action; or that which determines a thing to be this, and diſtinguiſhes it from every thing elſe: thus, the ſoul is held the form, or *formal cauſe*, of man, &c.

CAUSES, again, are diſtinguiſhed into *Phyſical*, or *Natural*, and *Moral*.

CAUSE, *Phyſical*, is that which produces a ſenſible corporeal effect: thus, the ſun is the *phyſical cauſe* of heat.

CAUSE, *Moral*, is that which produces a real effect, but in things immaterial: thus, repentance is the *cauſe* of forgiveneſs.

Others define a *phyſical cauſe* to be that which produces its effect by a phyſical virtue; and a *moral cauſe*, that which determines the *phyſical cauſe*, though not neceſſarily, to produce the effect: in which ſenſe, it is alſo called a *diſpoſitive*, *excitative*, and *imputative cauſe*.

Thus, the ſun is the *phyſical cauſe* of light; a ſtone, that breaks the ſkull, is a *phyſical cauſe* of death: and thus the advice, intreaty, commands, or menaces, which determine us, though not neceſſarily, to do, or not to do, any thing, are *moral cauſes*.

In this ſenſe, a *moral cauſe* is only applicable to a free intelligent agent: and it is this notion of a *moral* and *phyſical cauſe* that is the moſt juſt, clear, and diſtinct.

CAUSES, again, are conſidered, either as *univerſal*, or *particular*; *principal*, or *inſtrumental*; *total*, or *partial*; *univocal*, *equivocal*, &c.

CAUSE, *Equivocal*, is that which is of a different kind and denomination from its effect: thus, the ſun is ſaid to be the *cauſe* of the animals it produces.

CAUSE, *Inſtrumental*, is that uſed by the principal to produce its effect; or which is excited to produce an effect, beyond the meaſure of its own perfection.

CAUSE, *Partial*, that which occurs with ſome other in producing the effect.

CAUSE, *Particular*, is that which can only produce a ſingle effect, or a certain kind of effects.

CAUSE, *Principal*, is that which gives motion to the inſtrument, or which does not operate beyond its own natural efficacy.

CAUSE, *Total*, is that which produces the whole effect.

CAUSE, *Univocal*, is that which is of the ſame kind and denomination with its effect: as, a man is the *cauſe* of a man.

Cauſe, *Univerſal*, is that which, by the extent of its power, may produce all effects.

The Carteſians reſolve all phyſical *cauſes* into occaſional ones.

Causes, *Occaſional*, are only the *occaſions*, not the direct *cauſes* of their effects. See Occasion.

The ſoul, ſay thoſe philoſophers, is not able to act on the body; nor the body reciprocally on the ſoul: to keep up an intercourſe between them, God, on occaſion of a motion of the body, impreſſes a ſenſation on the ſoul; and, on occaſion of a ſentiment of the ſoul, impreſſes a motion on the body: the motions, therefore, of the ſoul and body, are only *occaſional cauſes* of what paſſes in the one, or the other. Thus, ſay they, the ſtroke, or percuſſion, is only the *occaſional cauſe* of the motion produced in the body ſtruck; it is God is the direct efficient *cauſe*. And thus the action of objects on our organs is not the efficient *cauſe* of our ideas and perceptions, but merely the *occaſional cauſe*, which determines God to act on the mind, according to the laws of the union of ſoul and body.

Cause, in a *Medical Senſe:* whatever produces a diſeaſe, is called the *cauſe* thereof. This operates, either by inducing a new ſtate of the ſolids and fluids, or by taking away ſomething which is abſolutely requiſite to the exerciſe of ſome function. If a *cauſe* pre-exiſted in ſome meaſure in the body before the effect produced, it is called an internal *cauſe*; but if it exiſted out of the body, and by its application to it produced the diſeaſe, it is called external.

Internal *cauſes* generally injure, firſt the humours, and then the ſolid parts; whereas the external *cauſes* affect the ſolids, and, in conſequence of that, the humours: and this holds univerſally, unleſs perhaps in ſome few diſeaſes produced by poiſon or contagion.

The immediate or proximate *cauſe* is that which taken altogether immediately conſtitutes the preſent diſeaſe; this is always adequate, and ſufficient to the formation of the diſeaſe, whether ſimple or complicated. The preſence of this conſtitutes and continues the diſeaſe; and the abſence of it removes the diſorder, being very little different from the diſeaſe itſelf. The inveſtigation therefore of this is extremely uſeful and very neceſſary.

The remote *cauſe* is that which changes the body in ſuch a manner, as to diſpoſe it for the reception of a diſeaſe upon the acceſſion of another *cauſe*; but it is never adequate or ſufficient to produce a diſeaſe alone: nor would that other *cauſe* the acceſſion of which is neceſſary, be of itſelf ſufficient for the production of the diſeaſe; but both muſt concur. The buſineſs of phyſic therefore, is to eradicate both together, which in conjunction conſtitute the proximate or immediate *cauſe*.

The remote *cauſe* inherent in the body, is called prediſponent, antecedent, and by the Greeks προηγουμένη, and conſiſts principally in temperaments, plethora, and cacochymy. The *cauſe* whoſe acceſſion to the remote *cauſe* excites, and in conjunction with it forms the diſeaſe, is called the procatarctic *cauſe*, or the πρόφασις or occaſion of the diſeaſe. It is ſometimes internal, ſometimes external. Theſe Boerhave reduces to four claſſes.

Firſt, the *ingeſta*, or things entering the body; ſuch as the air, aliments, drink, medicines, poiſons, ſuch things as enter by the pores of the ſkin and noſtrils; by the ſeveral paſſages of the mouth, lungs, œſophagus, ſtomach, inteſtines, and pudenda of women, while in a viſible or inviſible manner; whether by ſteam, draught, deglutition, clyſter, or injection. Secondly, the *geſta*, or things acted, as motion of the whole, or any part of the body, affections of the mind, reſt, both of the body and mind, ſleeping and watching. Thirdly, things retained, or excreted, whether ſalubrious, recrementitious, or morbid. Fourthly, things applied to the body; as air, vapours, fomentations, cloaths, liniments, ointments, plaſters, together with whatever wounds, contuſes, or corrodes.

This diviſion of the non-naturals, as they are called, is different from that of all other writers of inſtitutes.

Causes *and Effects*, in *Law*. In moſt caſes the law hath reſpect to the *cauſe* or beginning of a thing as the principal part, on which all other things are founded: and herein the next, and not the remote cauſe is moſt looked upon, except it be in covinous and criminal things: and therefore that which is not good at firſt, will not be ſo afterward; for ſuch as is the cauſe, ſuch is the effect: e. g. if an infant or feme-covert make a will, and publiſh it, and afterwards die of full age, or ſole, this will is of no force, on account of the original *cauſe* of infancy and coverture, &c.

CAUSEWAY, or **Causey**, a maſſive conſtruction of ſtone, ſtakes, and faſcines; or an elevation of fat, viſcous earth, well beaten; ſerving either as a road, in wet marſhy places; or as a mole, to retain the waters of a pond, or prevent a river from overflowing the lower ground.

The word comes from the French *chauſſee*, anciently wrote *chaulſee*; and that from the Latin *calceata*, or *calcata*; according to Somner, and Spelman, *à calcando*. Bergier rather takes the word to have had its riſe *à peditum calceis, quibus teruntur*.

Causeway, *calcetum*, or *calcea*, more uſually denotes a common hard raiſed way, maintained and repaired with ſtones and rubbiſh.

Causeway, *Devils*, a famous work of this kind which ranges through the county of Northumberland, commonly ſuppoſed to be Roman, though Mr. Horſley ſuſpects it to be of later times. Horſley, Brit. Rom. lib. v. cap. 2. p. 449.

Causeway, *Giants*, is a denomination given to a huge pile of ſtony columns, in the diſtrict of Coleraine in Ireland. See Giant's *Cauſeway*.

CAUSSIDICUS. See Advocate.

CAUSTIA, in *Antiquity*, a kind of woollen cap uſed by the Macedonians; which was ſo ſtrong as ſometimes to ſerve inſtead of a helmet. Mem. Acad. Inſcript. vol. ii. p. 394.

CAUSTICS, from καιω, *I burn*, in *Phyſic*, thoſe medicines, which by their violent activity, and the heat thence occaſioned, deſtroy the texture of the parts to which they are applied.

Cauſtics amount to the ſame with what are otherwiſe denominated *Pyrotics*, and *Eſcharotics*. They are alſo uſually confounded with cauteries, though ſome diſtinguiſh them; reſtraining *cauſtics* to thoſe medicines which do not burn through the part, nor leave an eſchar; and cauteries to thoſe which do.

Cauſtics are uſed to eat off proud fungous fleſh; they alſo penetrate within hard callous bodies, and liquify the humours; and are particularly applied in abſceſſes and impoſthumations, to eat through to the ſuppurated matter, and give it vent: ſometimes, alſo, to make iſſues in parts where cutting is difficult, or inconvenient.

The principal medicines of this claſs are, burnt alum, ſponge, cantharides, and other veſicatories; as alſo orpiment, calx viva, vitriol, aſhes of the fig-tree, the aſh, and wine-lees; the ſalt of the lixivium whereof ſoap is made; ſublimate mercury, red precipitate, &c. See each deſcribed under its proper article.

Cryſtals of *luna*, and *lapis infernalis* made of ſilver and ſpirit of nitre, become *cauſtics* by that mixture.

The ſtrong *cauſtic*, now generally uſed by our ſurgeons, is prepared in this manner: boil ſoap lees to a fourth part of their quantity, then ſprinkle in, while they are boiling, lime that has been kept in a veſſel pretty cloſe ſtopped for ſeveral months; continue to add this lime till all the liquor is abſorbed, and the whole is reduced to a paſte, which is to be kept in a veſſel cloſe ſtopped. The deſign of thus keeping the lime is, that its acrimony may be a little abated.

The common *cauſtic* of quick lime and ſoap-lees, deſerves the preference to any of thoſe compoſed of acid ſpirits. It does not give near ſo much pain, and is not ſo apt to occaſion convulſions, when applied to carious bones. It penetrates better than the dry forms of eroded metals, and does not run ſo much when it melts, as the more liquid acids do. It either is not abſorbed, or its effects are not obſerved in the blood; whereas mercurial preparations frequently raiſe an unexpected ſalivation. Monro, in Med. Eſſ. Edinb. vol. v. art 24.

Heiſter ſays, that the ſhorteſt and moſt approved method of making this is as follows: take pot-aſhes and ſtrong quick-lime, of each ſix ounces; powder them ſeparately, and afterwards mix them together in a large glaſs or earthen veſſel, and diſſolve them in a large quantity of river-water, letting them ſtand an hour or two, that they may diſſolve perfectly; the liquor is then to be filtrated through a linen cloth from its groſs ſediment, and evaporated over the fire in an iron pan; the hard maſs left from this evaporation is to be put into a crucible, and melted over a ſtrong fire till it flows like oil; it is then to be caſt into a mortar or broad pan, and either cut or beat into ſmall pieces before it is quite cold: theſe are the *cauſtic* ſtones. They are to be put into a clean glaſs, and ſtopped very cloſe, and kept in a warm place.

Caustic, *arſenical*. See Magnet.

Caustic, *lunar*, called alſo *lapis cauſticus*, is a preparation of ſilver, ſometimes of copper, uſually made by diſſolving the metal with ſpirit of nitre, evaporating two thirds of the fluid, and boiling the reſt to an oily conſiſtence, which when cold grows hard. See Air *fixed*.

Caustic *curve*. See Curve.

Caustic *fluid*. Some imagine a *cauſtic* fluid, by which the blood is detained in a fluid ſtate, and by which the red globules are formed.

Caustic *glaſſes*. See Burning *glaſſes*.

Caustic, *by reflection*. See *Cauſtic by* Reflection.

Caustic, *by refraction*. See *Cauſtic by* Refraction.

CAUSTICITY, in *Chemiſtry*, denotes a quality belonging to ſeveral ſubſtances, by the acrimony of which the parts of living animals may be corroded and deſtroyed. Bodies which have this quality, taken internally, are true poiſons; and the *cauſticity* of ſome of them is ſo deadly, as, for example, of arſenic, that even their external uſe is proſcribed by prudent phyſicians.

CAUSTICUM *antimoniale*, the name given in the late London Diſpenſatory to what was before called *butter of* ANTIMONY.

CAUSUS, in *Medicine*, denotes a burning FEVER, or a kind of acute continual fever, attended with a vehement heat, and other indications of an uncommon inflammation.

CAUSWAY. See Causeway.

CAUTERY, *Cauterium*, a medicine wherewith to burn, ſear, eat through, or corrode, ſome ſolid part of the body.

The word is originally Greek, καυτηρ, or καυτηριον; formed from καιω, *I burn*.

Cauteries are of two kinds; *actual*, and *potential*.

Cauteries, *actual*, are thoſe which produce an inſtantaneous effect; as fire, or a red-hot iron: theſe are applied in the *fiſtula lochrymalis*, after extirpations of cancers, amputations of legs, or arms, &c. in order to ſtop the hæmorrhages, and produce a laudable ſuppuration. They are ſometimes, alſo, applied to carious bones, abſceſſes, and malignant ulcers; in order to open a paſſage for the diſcharge of the peccant humours. The irons uſed, on theſe occaſions, are ſometimes crooked at the extremity, and that variouſly, according to the various occaſions: whence ſome are called *cultellary*, others *punctual*, others *olivary*, &c.—M. Homberg aſſures us, that a great part of the medicine of the people of Java, and other parts of the Eaſt Indies, conſiſts in burning, or the application of *actual cauteries*; and that there is ſcarce any diſeaſe but they will happily cure thereby.

The *actual cautery*, or hot iron, is frequently applied for the making of iſſues, in parts where cutting is difficult, or inconvenient. It makes a little round hole, which is to be filled up with a pea, or an ivy berry, to keep it open for the humours to paſs through. Pareus deſcribes a method of making *velvet*, or *ſilken cauteries (cauteria ſerica vel holoſerica)*; ſo called, either becauſe they give no pain, or becauſe he purchaſed the ſecret at a dear rate from a certain chemiſt.

In ſome places they *cauteriſe* with burning tow, in others with cotton or MOXA, in others with live coals; others uſe Spaniſh wax; others pyramidal pieces of linen; others gold, or ſilver. Severinus recommends a flame blown through a pipe: but what is uſually preferred among us is a hot iron.

Cauteriſing irons are of various figures, ſome flat, others round, ſome curved, &c. of all which we find draughts in Albucaſis, Scultetus, Ferrara, and others. Sometimes a *cautery* is applied through a capſula, to prevent any terror from the ſight of it. This method was invented by Placentinus, and is deſcribed by Scultetus. In the uſe of all *cauteries*, care is to be taken to defend the neighbouring parts, either by a lamina, defenſive plaſter, or lint moiſtened in oxycrate. Sometimes the hot iron is tranſmitted through a copper cannula, for the greater ſafety of the adjoining parts.

The degrees and manners of *cauteriſing* are varied, according to the nature of the diſeaſe, and the part affected. In a mortification they *cauteriſe* more freely than in any other caſe; in the ſoft parts more ſparingly: in a hæmorrhage, or a caries, they repeat the operation, till an eſchar is induced on the veſſel, or the humidity of the bone is diſcharged.

For the right application of the *actual cautery*, various obſervations are neceſſary. In the firſt place, the ſurgeon ſhould ſee that the ſize and figure of the *cautery* correſpond to that of the diſordered part, and while the patient is preparing for the operation, to let the *cautery* be heating in the fire, and to ſecure the ſound parts, that it may give no more pain than what is abſolutely neceſſary. In caſes of a carious bone, the fleſhy parts are to be drawn aſide, and held out of the way of the iron; and in theſe caſes, as alſo in large hæmorrhages, it is neceſſary to have three or four *cauteries* kept hot together, that if one does not finiſh the operation, there may be no waiting for another.

It has been found that *cauteries* have ſucceeded in apoplexies, when all other means have failed. In this caſe, ſome apply the *cautery* to the *occiput*; but others between the firſt and ſecond *vertebræ* of the neck: others are for *cauteriſing* the meeting of the coronal and ſagital ſutures; and others think it may be beſt done in the ſoles of the feet. Which of all theſe places it ſucceeds beſt in, ſeems yet left to experience to determine. Heiſter's Surgery, p. 318.

Cauteries, *potential*, are compoſitions of CAUSTIC medicines, uſually of quick-lime, ſoap, and the like.

CAUTING *iron*, among *Farriers*, an iron inſtrument, wherewith they cauteriſe and ſear the parts of a horſe which require burning.

CAUTIO, in the *Civil Law*, denotes an aſſurance or ſecurity given or taken for any thing truſted.

CAUTIONE *admittenda*, in *Common Law*, a writ which lies againſt a biſhop, who holds an excommunicated perſon in priſon, notwithſtanding he offers ſufficient ſecurity for obeying the commands of the church for the future.

CAUTIONARY *towns*, places of ſtrength, which one prince or power puts in the poſſeſſion of another, as a ſecurity either for the payment of a debt, or performance of ſome other matter ſtipulated between them.

CAUTO, in *Botany*, a name given by the people of Guinea to a ſhrub common in that part of the world; a decoction of which they uſe as a cure for the running of the reins, or a clap. Phil. Tranſ. Nº 232.

CAUTURIER, in *Anatomy*, a name given by the French writers to a muſcle of the leg; called by the old writers *primus flectentium tibiam*; and by the later writers, Cowper, Albinus, &c. *ſartorius*; by Roſlan, *ſutorius*.

CAXA, a little COIN made of lead, mixed with ſcoria of copper; ſtruck in China, but current chiefly at Bantam, in the reſt of the iſland of Java, and in ſome of the neighbouring iſlands.

It is ſomewhat ſmaller than the French double, and has a ſquare hole through the middle; by means whereof, ſeveral of them are hung on the ſame ſtring: this ſtring, which they call *ſanta*, uſually contains two hundred *caxas*, equivalent to nine French deniers, or ſomewhat leſs than three farthings ſterling. Five ſantas tied together, i. e. a thouſand *caxas*, make a *ſapacou*.—Nothing can exceed the brittleneſs of the *caxa*; a ſtring never falls to the ground without breaking at leaſt ten or twelve pieces. Leaving them a night ſteeped in ſalt-water, they cling ſo firm to one another, that they are not to be ſeparated without breaking one half of them. The Malays call them *cas*; and the Javeſe, *pitis*.

The *caxas* are of two kinds; *great*, and *ſmall*: the *ſmall* are thoſe we have been ſpeaking of; three hundred thouſand whereof are equal to fifty-ſix livres five ſols, French money. The *large*, are *old caxas*; ſix thouſand whereof are equal to the piece of eight, or four ſhillings ſix pence ſterling. Theſe are nearly the ſame with the *caches* of China, and the *caſſies* of Japan.

CAXOU, in *Metallurgy*, a word uſed to expreſs a cheſt of ores of ſilver, or any other metal, that has been burnt, ground, and waſhed, and is ready to be refined.

CAY, in *Zoology*, the name of a ſmall monkey of the Braſils, an extremely ſmall kind, and of a coal black. It lives only in the thick woods, and is uſually found ſitting on the boughs of ſome of the trees which bear pods, the fruit of which it feeds upon. Ray.

CAYANG, in *Botany*, a leguminous plant, cultivated in the Mogul dominions for food. It is a kind of coarſe pulſe; of which the Europeans uſe great quantities on ſhip-board in the Eaſt Indies. It is a ſpecies of the *cytiſus*, called by the Indians there *kiſſery*. Poſtl. Dict. Com.

CAYELAC, a ſweet-ſcented wood, which grows in Siam; the Siameſe and Chineſe burn it in their temples. It is one of the commodities exported from Siam for China.

CAYLUS's *method of painting*. See Encaustic *painting*.

CAYMAN, in *Zoology*, the name of a ſpecies of crocodile found in the ſouthern parts of America, and on the coaſt of Guinea, and more uſually called by authors by its Braſilian name JACARE.

CAYMANUM *lapis*, in *Natural Hiſtory*, the name of a ſtone found in the beds of rivers in many parts of America, and of a yellowiſh colour, veined with red and white.

The Indians have an idle tradition, that it is originally found in the ſtomach of a crocodile, which in their language they call *caymenes*; and thence authors have named it *lapis caymanum*. The natives of America pretend that it has great virtues in medicine, and particularly that it cures quartans by being applied to the wriſt; and, to enhance its value, they pretend to take it from the crocodile.

CAYNTANA, in the *Materia Medica*, a name given by ſome authors to the fruit called FAGARA by other writers.

CAZEMATE, in *Fortification*, a kind of vault, or arch, of ſtone-work, in that part of the flank of a BASTION next the curtain; ſomewhat retired, or drawn back, towards the capital of the baſtion; ſerving as a battery, to defend the face of the oppoſite baſtion, and the moat, or ditch.

The name comes from a vault, formerly made to ſeparate the platforms of the upper and lower batteries; each of which was called, in Italian, *caſa armata*; and, in the Spaniſh, *caſamata:* though others derive the word from *caſa à matti*, *houſe of fools*; Covarruvias, from *caſa* and *mata*, *low houſe*.

The *cazemate*, ſometimes, conſiſts of three platforms, one above another; the higheſt being on the rampart: but they commonly content themſelves to withdraw the laſt within the baſtion.

The *cazemate* is alſo called the *low place*, and *low flank*; as being at the bottom of the wall, next the ditch: ſometimes the *retired flank*; as being that part of the flank neareſt the curtain, and the center of the baſtion. It was formerly covered with an epaulement, or a maſſive body, either round or ſquare, which prevented thoſe without from ſeeing within the batteries; whence it was alſo called *covered flank*.

It is now rarely uſed, becauſe the batteries of the enemy are apt to bury the artillery of the *cazemate* in the ruins of the vault: beſides, the terrible ſmoke, made by the diſcharge of the cannon, renders it intolerable to the men.—Hence, inſtead of the ancient *covered cazemates*, later engineers have contrived open ones, only guarded by a parapet, &c.

CAZEMATE is alſo uſed for a well with ſeveral ſubterraneous branches, dug in the paſſage of the baſtion, till the miner is heard at work, and air given to the mine.

CAZERNS, in *Fortification*. See CASERNS.

CAZIC, or CAZIQUE, a general title given by the Spaniards to the petty kings, princes, and chiefs of the ſeveral countries of America, excepting thoſe of Peru, who are ſtiled *curatas*.

The French call them *caſiques*, a denomination which they alſo give to the chiefs of the Tartarian hords.

The *cazics* in ſome places do the office of phyſicians, and in others of prieſts, as well as captains. The dignity of *cazic* among the Chiites, a people of South America, does not deſcend to children, but muſt be acquired by valour and merit. One of the prerogatives annexed to it is, that the *cazic* may have three wives, while the other people are only allowed one.

Mexico comprehended a great number of provinces and iſlands, which were governed by lords called *caziques*, dependent on, and tributary to the emperor of Mexico: thirty of theſe *caziques* or vaſſals are ſaid to have been ſo powerful, that they could each of them bring an army of an hundred thouſand men into the field.

CAZIMI, among the *Arabian Aſtronomers*, denotes the center or middle of the ſun. A planet is ſaid to be in *cazimi*, when it is not diſtant from the ſun either in longitude or latitude above 17′, or the aggregate of the ſemi-diameter of the ſun's diſk and that of the planet.

This amounts to the ſame with what is otherwiſe called in *corde ſolis*, or in the ſun's heart, which paſſes for a dignity and fortitude of a planet, equal to that of being in its own houſe; whereas in other caſes, a planet's conjunction with the ſun is held detrimental, or a diminution to it; as the ſun, by his ſuperior power, is ſuppoſed to abſorb the virtue of the planet, and even ſcorch or burn it up.

CEANIDES, or CEANTIDES, in *Natural Hiſtory*, a name given by many of the ancients to the ſtone more generally known under the name of *enchymonites*. It was the ſame with our ſparry incruſtations on the walls and roofs of ſubterranean caverns; and, from the opinion of the times, that theſe ſtones brought forth young ones, which was founded on their finding little ones daily produced among them, it became a cuſtom to give this internally to women in labour, as a thing that would, by a ſort of ſympathy, haſten the time.

CEANOTHUS, in *Botany*, a genus of the *pentandria monogynia* claſs; *Euvonymus*, Com. Hort. New Jerſey tea. Its characters are theſe: the flower hath five roundiſh equal petals, which ſpread open, and are leſs than the empalement. It hath five erect ſtamina, placed oppoſite to the petals; and a three-cornered germen, which afterward becomes a dry capſule with three cells, in which are lodged three oval ſeeds. There are three ſpecies.

CEBELL, in *Muſic*, an ancient Engliſh air in duple time of four bars or meaſures repeated at the will of the compoſer; the ſtrains being alternately in the grave and the acute ſeries of notes in the muſical ſcale.

CECROPIA, in *Botany*, a genus of the *diœcia monandria* claſs.

CEDAR *of Lebanon*, in *Botany*. For the characters, ſee LARIX.—Linnæus makes this a ſpecies of the PINE.

The *cedar of Lebanon* is a tree celebrated in antiquity; and what is remarkable, this tree is not found as a native in any other part of the world, ſo far as hath come to knowlege.

This tree is of great beauty, and bears the openeſt expoſures ſo well, that it is a wonder it is not more cultivated in England. The cones of this tree are brought us from the Levant, and, if preſerved entire, will keep their ſeeds many years: theſe cones are to be ſplit open, and the ſeeds picked out: theſe are to be ſown and propagated in the ſame manner as the FIR; only that when the plants begin to ſhoot ſtrong, the leading ſhoot generally inclines to one ſide, and muſt therefore be ſupported by tying it to a ſtake driven upright by its ſide. Theſe trees ſpread greatly, and the ends of their branches bending down, they ſhew very beautifully their upper ſurface, which looks like a green carpet, and as it plays in the wind makes a very elegant appearance; and is therefore a fine tree for planting on an eminence to terminate a viſta.

They thrive beſt of all in a poor ſoil, and are of very quick growth, as appears very plainly by thoſe fine ones in the Phyſic garden at Chelſea, which were planted in the year 1683, and were then not above three feet high; and in the year 1762 meaſured near twelve feet in the girth, at two feet above ground.

Cedar wood is reputed almoſt immortal and incorruptible, a prerogative which it owes chiefly to its bitter taſte, which the worms cannot endure. For this reaſon it was, the ancients made uſe of *cedar* tables to write on, eſpecially for things of importance; as appears from that expreſſion of Perſius, *Et cedro digna locutus.* Sat. i. ver. 42.

A juice was alſo drawn from *cedar*, with which they ſmeared their books and writings, or other matters, to preſerve them from rotting; which is alluded to by Horace: by means of which it was that Numa's books, written on papyrus, were preſerved entire to the year 535, as we are informed by Pliny. Hor. Ars. Poet. ver. 331. Plin. Nat. Hiſt. lib. xii. cap. 13. See CEDRIA.

Solomon's temple, as well as his palace, were both of this wood. That prince gave king Hiram ſeveral cities for the *cedars* he furniſhed him on thoſe occaſions. Cortes is ſaid to have erected a palace at Mexico, in which were 7000 beams of *cedar*, moſt of them 120 feet long, and 12 in circumference, as we are informed by Herrera. Some tell us of a *cedar* felled in Cyprus 130 feet long, and 18 in diameter. It was uſed for the main-maſt in the galley of king Demetrius.

Le Bruyn aſſures us, that the two biggeſt he ſaw on mount Lebanon meaſured one of them 57 palms, and the other 47 in circumference.

In the temple of Apollo at Utica, there were *cedar* timbers of near 2000 years old; which yet were nothing to that beam in an oratory of Diana, at Saguntum in Spain, ſaid to have been brought thither 200 years before the deſtruction of Troy.

Cedar is of ſo dry a nature, that it will not endure to be faſtened with iron nails, from which it uſually ſhrinks, ſo that they commonly faſten it with pins of the ſame wood.

The *cedar* brought from Barbadoes and Jamaica is a ſpurious ſort, of ſo porous a nature, that the wine will leak through it.

That produced in New England is a lofty grower, and makes excellent planks, and flooring that is everlaſting. They ſhingle their houſes with it, and uſe it in all their buildings. This is the *oxycedrus* of Lycia, which Vitruvius deſcribes as having its leaves reſembling thoſe of cypreſs.

The *cedar* of Greece and Aſia was no other than a ſmaller kind of juniper, which, having prickly leaves, was by ſome called *oxycedrus*; and the common juniper was at that time called alſo by the name of *cedar*. The Lycian *cedar* of the Greeks was this juniper kind; but the *cedrium* and *cedrelæum*, which were a kind of pitch and an oil ſeparated from it by melting, were not prepared from this *cedar*, but from the Syrian *cedar*, which was a larger ſhrub, and reſembled the cypreſs; and therefore was confounded with that tree, being called by ſome the wild cypreſs. The *cedrium* was always made from this ſpecies; but the *oleum de cada*, or cade oil, was made from the fruit of the *oxycedrus*, or prickly-leaved juniper, called *cedar* by the Greeks, and growing in their own country.

The *ſhittim* and the *almug* mentioned in Scripture, are uſually ſuppoſed to have been kinds of *cedar*.

Johnſton, in his Dendrographia, is of opinion, that pitch was anciently made of *cedar*, as well as of the pine and fir, grown old and oily. Berkeley's Siris, ſect. 18.

CEDAR, *baſtard*, *of Jamaica*, *Theobroma*, in *Botany*, a genus of the *polyadelphia pentandria* claſs. Its characters are theſe: the empalement of the flower is compoſed of three oval concave leaves, which are reflexed: the flower has five oval petals which ſpread open, and are hollowed like a ſpoon; and from the top of each petal comes out a bifid briſtly ligula, divided like two horns. It has a great number of ſhort ſtamina, joined in five bodies, which are terminated by roundiſh ſummits; and a roundiſh germen ſupporting a ſingle ſtyle the length of the petals, crowned by a ſingle ſtigma. The germen turns to a roundiſh fruit with five angles, opening in five cells, each containing ſeveral ſeeds. We have but one ſpecies, which grows naturally in moſt of the iſlands in the Weſt Indies.

The wood of this tree is white and ductile, and is therefore frequently cut into ſtaves for caſks; the fruit and leaves are good fodder for cattle.

CEDAR *of Barbadoes*, and *Mahogany*, *Cedrus*, in *Botany*. This is properly a genus of the *pentandria monogynia* claſs in the Linnæan ſyſtem. Its characters are theſe: the flower is of one leaf, divided at the top into five parts; with five ſhort ſtamina, which adhere at bottom to the germen. In the center is ſituated the roundiſh germen, which afterward becomes an oval pod having five cells, opening from the bottom upward with five valves, having a double cover, the outer being thick and woody, the inner very thin, which immediately ſurrounds the ſeeds: theſe are thick at the baſe, but upward are flat and thin, like the wings adhering to the ſeeds of firs and pines.

As the *cedar of Libanus* is by Tournefort very properly referred to the genus of *larix*, and all the berry-bearing *cedars* are joined to the junipers; ſo the little *cedrus* is given to this genus, as the plants were mentioned by imperfect titles by moſt of the authors who have treated of them: and as the firſt ſort has been generally known by the appellation of *cedar* in the countries where it naturally grows, ſo the applying the ſame name to thoſe plants which agree in their eſſential characters with it, will connect them properly together.

There are three ſpecies. The firſt is commonly known under the appellation of *cedar*, in the Britiſh iſlands of America, where this tree grows naturally, and is one of the largeſt trees in the country. The trunks of theſe trees are ſo large, that the inhabitants hollow them into boats and periaguas, for which purpoſe they are extremely well adapted: the wood being ſoft, is cut with great facility; and being light, will carry a great weight in the water. It has a fragrant odour, from which the name of *cedar* has been given to it. It is often uſed for wainſcotting of rooms, and to make cheſts, becauſe vermin do not ſo frequently breed in it, as in many other ſorts of wood, it having a bitter taſte. This taſte is communicated to whatever is put into the cheſts, eſpecially when the wood is freſh; for which reaſon it is never made into caſks, becauſe ſpirituous liquors will diſſolve part of the reſin, and thereby acquire a very bitter taſte.

The ſecond ſort is the *mahogany*, the wood of which is now well known in England. This tree is a native of the warmeſt parts of America, growing plentifully in the iſlands of Cuba, Jamaica, and Hiſpaniola: there are alſo many of them on the Bahama iſlands. In Cuba and Jamaica there are trees of a very large ſize, ſo as to cut into planks of ſix feet in breadth; and riſe to a great height, notwithſtanding they are ſometimes found growing on rocks, where there is ſcarcely any earth for their nouriſhment.

The excellency of this wood for all domeſtic uſes, is now ſufficiently known; and it is matter of ſurprize, that the tree ſhould not have been taken notice of, by any hiſtorian or traveller, to this time. The only author who has mentioned this tree is Mr. Cateſby, in his Natural Hiſtory of Carolina and the Bahama Iſlands; although the wood has for many years been brought to England in great quantities.

If the plants are properly managed, they will make conſiderable progreſs in England; ſome are now in Chelſea garden eight or ten feet high, which are but of a few years growth from ſeeds.

CEDAR *of Bermudas*. See JUNIPER.

CEDAR, *white*. See CYPRESS.

CEDAR-*cups*, a ſort of wooden ware brought from the Weſt Indies. They are made out of the wood of the baſtard *cedar*, and appear of a very cloſe and firm grain; but they are really ſo porous, that when any liquor is poured into them, it runs out at the bottom.

CEDILLA, in the Spaniſh and French languages, denotes a ſort of ſmall *c*, to the bottom of which is affixed a kind of virgula, as *ç*, to denote that it is to be pronounced like *s*.

The *cedilla* is called by ſome of our printers a *ceceril*. It is uſed before the vowels *a*, *o*, and *u*; as in *braços*, *choça*, *commença*, *leçon*, *deça*, &c. In the Spaniſh, it is ſometimes uſed at the beginning of a word; as in *çamarra*, *çurzar*, &c.

CEDRA. See CITRON.

CEDRELA, in *Botany*, a genus of the *pentandria monogynia* claſs, including only one ſpecies.

CEDRELATON, in *Botany*, a name given by Pliny to an imaginary tree, and faithfully copied by many authors. The word ſeems evidently formed of *cedrus*, the *cedar*; and *elate*, the *fir-tree*; and hence the original author of the blunder has deſcribed it as a large and high cedar, with few branches: and thoſe who have copied from him, have deſcribed it as being of a middle nature, between the cedar and fir.

CEDRIA, a reſinous liquor iſſuing from the great cedar-tree, or cedar of Lebanon. The word is alſo written *cedrium*, κεδριον, and *cedrinum*, κεδρινον.

Cedria, when good, yields a ſtrong ſmell, is tranſparent, of a thick fatty conſiſtence, ſo that in pouring it out, it does not fall too faſt or freely, but equally drop by drop. It is poſſeſſed of two oppoſite qualities, viz. to preſerve dead bodies, by its drying and conſuming ſuperfluous moiſture without damaging the ſolid parts; and to putrify the ſoft and tender parts of living bodies without exciting any pain.

The *cedria* is properly the tear of the cedar. Some call it the gum, others the pitch of the cedar. The ſame denomination is alſo given to the *cedrelæon*, or oil of the cedars, which differs little from the reſin, except that it is of a thinner conſiſtence.

Pliny, ſpeaking of the cedar, ſays, that the tar of it uſed in embalming was forced out of it by fire, and called in Syria *cedrium*. His words are: *Cujus tanta vis eſt, ut in Ægypto corpora hominum defunctorum eo per fuſa ſerventur.* Dioſcorides calls it the life of the dead, νεκρȣ ζωη. See Phil. Tranſ. vol. liv. p. 12.

CEDRINUM *(Vinum)*, cedar wine; of which there are ſeveral ſorts, whoſe qualities are to be heating, diuretic, and gently aſtringent: but the *laurinum*, or bay-tree wine, is remarkably heating.

CEGINUS, in *Aſtronomy*, a fixed ſtar of the third magnitude, in the left ſhoulder of Bootes. See γ under BOOTES.

CEGOLITES, in *Natural Hiſtory*, a name by which ſome authors have called the *lapis* JUDAICUS, or TECOLITHOS of the ancients.

CEIBA. See COTTON-*tree*.

CEILANESE GODS. See BUDUN and SAKRADEWENDRA.

CEILING, in *Architecture*, the top, or roof, of a lower room; or a covering of plaſter, over laths nailed on the bottom of the joiſts that bear the floor of the upper room; or where there is no upper room, on joiſts for the purpoſe; hence called *ceiling joiſts*.

The word *ceiling* anſwers pretty accurately to the Latin *lacunar*, *every thing over head*.

Plaiſtered *ceilings* are much uſed in England, more than in any other country: nor are they without their advantages, as they make the room lightſome; are good in caſe of fire; ſtop the paſſage of the duſt; leſſen the noiſe over head; and, in ſummer, make the air cooler.

CEILING, in *Sea-Language*, denotes the inſide planks of a ſhip.

CEIMELIA, from κειμαι, *to be laid up*, in *Antiquity*, denotes choice or precious pieces of furniture or ornaments, reſerved or laid up for extraordinary occaſions and uſes.

In which ſenſe, ſacred garments, veſſels, and the like, are reputed of the *ceimelia* of a church. Medals, antique ſtones, figures, manuſcripts, records, &c. are the *ceimelia* of men of letters.

CEIMELIARCHIUM, the repoſitory or place where *ceimelia* are preſerved.

CEIMELIOPHYLAX, from κειμηλιον and φυλαττω, *I keep*, the keeper or curator of a collection of *ceimelia*; ſometimes alſo denominated *ceimeliarcha*.

The *ceimeliarcha*, or *ceimeliophylax*, was an officer in the ancient churches or monaſteries, anſwering to what was otherwiſe denominated *chartophylax*, and *cuſtos archivorum*.

CEIXUPEIRA, in *Zoology*, the name of a fiſh caught in the American ſeas, and eſteemed a very fine and delicate one, though of an enormous ſize. It grows to nine or ten feet long, and to the thickneſs of a man's body; but is chiefly eaten while young. Its body is oblong, and its head flatted. Its mouth is but ſmall for the ſize of the fiſh, and it has no teeth in the jaws; but the whole mouth is thick ſet with ſmall tubercles. Its back and ſides are black, and its belly of a fine bright white. Its fins are all black, except the belly ones, which are white, with a rim of black at their edge. Margrave.

CELANDINE, in *Botany*, *Chelidonium*, a genus of the *polyandria monogynia* claſs. Its characters are theſe: the flower hath four large roundiſh petals: in the center is ſituated a cylindrical germen, attended by a great number of ſtamina. The germen afterward becomes a cylindrical pod, with one or two cells, opening with two valves, and filled with many ſmall ſeeds. There are ſeveral ſpecies.

The firſt ſort is the common *celandine*, which is uſed in medicine, and is eſteemed aperitive and cleanſing, opening obſtructions of the ſpleen and liver; and is of great uſe in curing the jaundice and ſcurvy. This grows naturally on the ſides of banks, and in ſhady places, in many parts of England, ſo is ſeldom cultivated in gardens. Miller's Gard. Dict.

Boccone has very ſtrongly recommended this plant as a ſpecific in the cure of conſumptions: he propoſes the taking it in infuſion, or drinking its juice; and ſays enough in its praiſe to recommend it at leaſt to a fair trial, which would be eaſily made in a country where conſumptions are ſo common. Boccon. de Plant.

Celandine, *leſſer*. See Ranunculus.

Celandine-*tree*, *greater*. See Bocconia.

CELANTES, in *Logic*, a denomination given by the Peripatetics to the Galenical ſyllogiſm; otherwiſe called CALENTES.

CELARENT, among *Logicians*, a mode of ſyllogiſm, wherein the major and concluſion are univerſal negative propoſitions, and the minor an univerſal affirmative. E. gr.

CE *None whoſe underſtanding is limited can be omniſcient.*
LA *Every man's underſtanding is limited.*
RENT *Therefore no man is omniſcient.*

CELASTRUS, in *Botany*. See Staff-*tree*.

CELE, in a general ſenſe, denotes any TUMOUR, but more particularly that proceeding from a RUPTURE or HERNIA.

CELEBATE, or Celibacy, the ſtate of a perſon who lives out of MARRIAGE.

Scaliger derives the word from the Greek κοιτη, *bed*, and λειπω, *linquo*, *I leave*: others ſay, it is formed from *cœli beatitudo*, q. d. *the bleſſedneſs of heaven*.

The ancient Romans uſed all means imaginable to diſcourage *celibacy*. Nothing was more uſual than for the cenſors to impoſe a fine on old bachelors. Dionyſius Halicarnaſſeus mentions an ancient conſtitution, whereby all perſons of full age were obliged to marry. But the firſt law of that kind, of which we have any certainty, is that enacted under Auguſtus, called *Lex Julia de maritandis ordinibus*. It was afterwards denominated *Papia*, *Poppæa*, and more uſually *Julia Papia*, becauſe of ſome new ſanction and amendments made to it under the conſuls Papius and Poppæus. By this law, divers prerogatives were given to perſons who had many children; penalties impoſed on thoſe who lived a ſingle life, as that they ſhould be incapable of receiving legacies, except from their neareſt relations, and not exceeding a certain proportion, &c.

The *celebate* of the clergy, which is ſtill rigorouſly kept up among the Romaniſts, is of a pretty ancient ſtanding. It was firſt propoſed by the council of Nice, but without paſſing; it was, however, in ſome meaſure, admitted by the weſtern councils of Elvira, Arles, Tours, &c. and enjoined by the thirty-third canon of the council of Elvira, though it does not appear that it was either generally or rigorouſly obſerved. Such among the prieſts as piqued themſelves on the faculty of continence, took the hint; inſomuch as, towards the cloſe of the fourth century, there were few but made a profeſſion of a voluntary *celebate*. Syricius iſſued a decree in 385, obliging all prieſts and deacons to obſerve *celibacy*: and it was ſoon after enjoined by the ſynods of each particular nation, and obſerved in moſt of the weſtern churches. In 441, the council of Orange ordered thoſe to be depoſed who did not abſtain from their wives; and Leo the Great, in a letter written about the year 442, extended the law of *celibacy*, which was confined by the decree of this council to deacons, and by the letter of Syricius to deacons and preſbyters, to ſub-deacons likewiſe: but it was Gregory the Great, in 591, who firſt brought eccleſiaſtics to admit the *celebate* as a law. In the council of Trent, it was propoſed to ſet the clergy at liberty again from the yoke of *celebate*; and this was even made an article of the Interim of Charles V. but the pope could not be brought into it.

The obligation of *celibacy* was firſt impoſed on the clergy in England by Henry I. under the influence of pope Calixtus II. and the archbiſhop Anſelm.

CELERES, in *Antiquity*, a body, or regiment, of guards of the ancient Roman kings, eſtabliſhed by Romulus; conſiſting of three hundred youths, choſen from the beſt families of Rome, and approved by the ſuffrages of the *curiæ* of the people, each of which furniſhed ten.

The name comes from *celer*, *quick*, *ready*; and was given them, becauſe of their promptneſs to obey the king.

The *celeres* always attended near the king's perſon, to guard him, to be ready to carry his orders, and to execute them. In war, they made the van-guard in the engagement, which they always began firſt; in retreats, they made the rear-guard. Though the *celeres* were a body of horſe, yet they uſually diſmounted, and fought on foot; their commander was called *tribune*, or *prefect of the celeres*. They were divided into three troops, of one hundred each, commanded by a captain called *centurio*: their TRIBUNE was the ſecond perſon in the kingdom. See Cavalry, &c.

Plutarch ſays, Numa broke the *celeres*: if this be true, they were ſoon re-eſtabliſhed; for we find them under moſt of the ſucceeding kings: witneſs the great Brutus, who expelled the Tarquins, and who was the tribune of the *celeres*.

CELERINUS, in *Ichthyology*, a name by which ſome authors have called the PILCHARD; called by others the *apua membras*, and CHALCIS.

Celerinus is alſo uſed by Bellonius, and ſome other authors, for the common herring. See Clupea.

CELERITY, in *Mechanics*, is the VELOCITY of a moving body; or that affection of a body in MOTION, whereby it is enabled to paſs over a certain ſpace, in a certain time.

CELERY, in *Botany*. For the characters, ſee Apium.

The ſeed of *celery* ſhould be ſown at two or three different times, the better to continue it for uſe through the whole ſeaſon without running up to ſeed. The firſt ſowing ſhould be in the beginning of March, upon a gentle hot-bed; the ſecond may be at the end of the ſame month, which ought to be in an open ſpot of light earth, where it may enjoy the benefit of the ſun; the third time of ſowing ſhould be in the latter end of April, or beginning of May, on a moiſt ſoil; and if expoſed to the morning-ſun only, it will be ſo much the better, but it ſhould not be under the drip of trees. The middle of May, ſome of the plants of the firſt ſowing will be fit to tranſplant for blanching.

The manner of tranſplanting it is as follows: after having cleared the ground of weeds, you muſt dig a trench by a line about ten inches wide, and eight or nine inches deep, looſening the earth in the bottom, and laying it level; and the earth that comes out of the trench ſhould be equally laid on each ſide the trench, to be ready to draw in again to earth the *celery* as it advances in height. Theſe trenches ſhould be made at three feet diſtance from each other; then plant your plants in the middle of the trench, at about four or five inches diſtance, in one ſtrait row, having before trimmed the plants, and cut off the tops of the long leaves: and as they are planted, you muſt obſerve to cloſe the earth well to their roots with your feet, and to water them plentifully until they have taken new root. As theſe plants advance in height, you muſt obſerve to draw the earth on each ſide cloſe to them, being careful not to bury their hearts, nor ever to do it but in dry weather; otherwiſe the plants will rot. When your plants have advanced a conſiderable height above the trenches, and all the earth, which was laid on the ſides thereof, hath been employed in earthing them up; you muſt then make uſe of a ſpade to dig up the earth between the trenches, which muſt alſo be made uſe of for the ſame purpoſe, continuing from time to time to earth it up, until it is fit for uſe. The laſt crop ſhould be planted in a drier ſoil, to prevent its being rotted with too much wet in the winter. You will do well to cover your ridges of *celery* with ſome peaſe-haulm, or ſome ſuch light covering, when the froſt is very hard, which will admit the air to the plants; for if they are covered too cloſe, they will be very ſubject to rot: by this means you will preſerve your *celery* till ſpring; but you muſt remember to take off the covering whenever the weather will permit, otherwiſe it will be apt to cauſe the *celery* to pipe, and run to ſeed. The *celery*, when full blanched, will not continue good above three weeks or a month before it will rot or pipe; therefore, in order to continue it good, you ſhould have, at leaſt, ſix or ſeven different ſeaſons of planting, proportioned to the conſumption.

The other ſort of *celery*, which is commonly called *celeriac*, is to be managed in the ſame manner; excepting that this ſhould be planted on the level ground, or in very ſhallow drills: for this plant ſeldom grows above eight or ten inches high, ſo requires but little earthing up; the great excellency of this being in the ſize of the root, which is often as large as ordinary turnips.

The beſt method to ſave the ſeed of *celery*, is to make choice of ſome long good roots of the upright *celery*, which have not been too much blanched, and plant them out, at about a foot aſunder, in a moiſt ſoil, early in the ſpring; and when they run up to ſeed, keep them ſupported with ſtakes, to prevent their being broken down with the wind: and in July, when the ſeed begins to be formed, if the ſeaſon ſhould prove very dry, it will be proper to give ſome water to the plants, which will greatly help its producing good ſeeds. In Auguſt theſe ſeeds will be ripe, at which time it ſhould be cut up, in a dry time, and ſpread upon cloths in the ſun to dry; then beat out the ſeeds, and preſerve it in bags for uſe.

The qualities of *celery* agree with thoſe of SMALLAGE and PARSLEY, which ſee.

Celery, *wild*, *Apium antarcticum*, was found in conſiderable quantities by Mr. Banks and Dr. Solander, on the coaſt of Terra del Fuego. It is like the garden *celery* in the colour and diſpoſition of the flowers, but the leaves are of a deeper green. The taſte is between that of *celery* and parſley. It is a very uſeful ingredient in the ſoup for ſeamen, becauſe of its antiſcorbutic quality. Hawkeſworth's Voyages, vol. ii. p. 60, &c.

CELESTINS, an order of religious, called alſo the *Congregation of St. Damian*, reformed from the Bernardines, in 1224, by pope Celeſtin V. then only Peter D' Murroni, of Iſernia in Naples; and eſtabliſhed in 1264, by pope Urban IV. and confirmed by Gregory X. in 1274. They were introduced into France by Philip the Fair, who requeſted a dozen of them from the general of their order, by his embaſſador at Naples, in 1300. This order ſtill ſubſiſts in France and Italy.—It is a kind of proverb with them, *Voila un plaiſant Celeſtin.*

CELETES, or **Celetæ**, from κελης, *a race-horſe*, in *Antiquity*, denote ſingle or ſaddle-horſes; by way of contradiſtinction from thoſe yoked or harneſſed together, called *bigarii*, *quadrigarii*, &c.

The ſame denomination is alſo given to the cavaliers, or riders on horſeback; and hence ſome deduce *celeres*, the name of Romulus's guard.

CELEUSMA, or **Celeuma**, in *Antiquity*, the ſhout or cry of the ſeamen, whereby they animated each other in their work of rowing.

The word is formed from κελευειν, *to call*, *to give the ſignal.*

Celeusma was alſo a kind of ſong or formula, rehearſed or played by the maſter, or others, to direct the ſtrokes and movements of the mariners, as well as to encourage them to labour. See Celeustes.

Aquinus, without much foundation, extends the *celeuſma* to the military ſhouts in land armies.

When Chriſtianity got footing, hymns and pſalms were ſung in veſſels, by way of *celeuſma*, in which the words *amen* and *halleluja* were frequently repeated.

CELEUSTES, in *Ancient Navigation*, the boatſwain or officer appointed to give the rowers the ſignal, when they were to pull, and when to ſtop. See Celeusma.

He was alſo denominated *epopeus*, and by the Romans *portiſculus*; ſometimes ſimply *hortator*.

CELIAC *paſſion*. See Coeliac.

CELIBATE. See Celebate.

CELIDOGRAPHIA, the deſcription of the SPOTS which appear on the faces of the ſun and planets.

The word is formed from κηλις, *macula*, *ſpot*, and γραφω, *I deſcribe.*

Signor Bianchini has publiſhed a *celidographia*, or deſcription of the ſpots of the ſun.

CELIMIA, in the *Materia Medica*, a name given by the modern Greeks to the calamine, or *lapis* CALAMINARIS. The Arabians called this ſubſtance *climia*, and ſometimes *calimia*; and *celimia* was but a very ſmall change from this.

CELL, *Cella*, in *Ancient Writers*, denotes a place or apartment uſually under ground, and vaulted; in which were ſtored up ſome ſort of neceſſaries, as wine, honey, wheat, and the like; according to which it was peculiarly denominated *cella vinaria*, *oleria*, *mellaria*, *penaria*, &c.

The word is formed from *celare*, *to conceal.* See Cells.

Cella was alſo uſed for the lodge, or habitation of a common woman or proſtitute, as being under ground; hence alſo denominated *fornix.*

Intravit calidum veteri centone lupanar,
Et cellam vacuam. Juv. Sat. vi. ver. 121.

On which place an ancient ſcholiaſt remarks, that the names of the whores were written on the doors of their ſeveral *cells*; by which we learn the meaning of *inſcripta cella*, in Martial, lib. xi. ep. 46.

Cella was alſo applied to the bed-chambers of domeſtics, and ſervants; probably as being low and narrow.

Cicero, inveighing againſt the luxury of Antony, ſays, the beds in the very *cellæ* of his ſervants were ſpread with pompous purple coverlets.

Cella is alſo applied to the members or apartments of BATHS.

Of theſe there were three principal, called *frigidaria*, *tepidaria*, and *caldaria*. To which may be added a fourth, called *cella aſſa*, and ſometimes *ſudatoria*.

Cella was alſo applied to the *adyta*, or inmoſt and moſt retired parts of the temples, wherein the images of the gods, to whom the edifices were conſecrated, were preſerved. In this ſenſe, we meet with *cella Jovis*, *cella Concordiæ*, &c. Pub. Victor calls them *delubra*; and Pliny by a more comprehenſive name, *ædes*. Hiſt. Nat. lib. xxxv. cap. 10.

The Roman capitol, we are told by Dionyſius, had three ſuch *cellæ*, or chapels; the middlemoſt of which was ſacred to Jupiter, that on the right hand to Minerva, and that on the left to Juno.

Cell is alſo uſed for a leſſer or ſubordinate ſort of monaſtery, dependent on a great one, by which it was erected, and continues ſtill to be governed. The great abbies in England had moſt of them *cells* in places diſtant from the mother-abbey, to which they were accountable, and from which they received their ſuperiors.

The alien priories in England were *cells* to abbies in Normandy, France, Italy, &c.

The name *cell* was ſometimes alſo given to rich and conſiderable monaſteries not dependent on any other. Such was that called *cella vetus*, erected by Otho, ſurnamed the Rich, marquis of Miſnia, in the middle of the twelfth century, the moſt ſplendid abbey in that country.

CELLAR, *Celarium*, in *Ancient Writers*, denotes the ſame with CELLA, viz. a conſervatory of eatables, or drinkables.

Cellar differs from VAULT, as the latter is ſuppoſed to be deeper, the former being frequently little below the ſurface of the ground.

In which ſenſe, *cellarium* only differed from *penus*, as the former was only a ſtore-houſe for ſeveral days, the latter for a long time. Thus it is, the BACTROPERATÆ, a ſort of ancient Cynics, are ſaid by St. Jerome to carry their *cellar* about with them. Hieron. in Matth. cap. 10.

Cellarium alſo denoted an allowance of bread, wine, oil, or other proviſion, furniſhed out of the *cella*, to the uſe of the governor of the province, and his officers, &c. In which ſenſe, the word amounts to much the ſame with ANNONA.

Cellars, in *Modern Building*, are the loweſt rooms in a houſe, the ceilings of which uſually lie level with the ſurface of the ground on which the houſe is built.

Cellars, and other places vaulted under ground, were called by the Greeks *hypogæa*: the Italians ſtill call them *fundi delle caſe.*

As to the ſituation of *cellars*, Sir Henry Wotton ſays they ought, unleſs the whole houſe be cellared, to be ſituated on the north ſide of the houſe, as requiring a cool freſh air.

CELLARER, or **Cellerer**, *Cellelarius*, or *Cellarius*, an officer in monaſteries, to whom belong the care and procurement of proviſions for the convent.

The denomination is ſaid to be borrowed from the Roman law, where *cellarius* denotes an examiner of accounts and expences. Ulpian defines it thus: *Cellerarius, id eſt, ideo præpoſitus ut rationes ſalvæ ſint.*

The *cellerarius* was one of the four *obedientiarii*, or great officers of monaſteries: under his ordering was the *piſtrinum* or bakehouſe, and the *bracinum*, or brewhouſe. In the richer houſes there were particular lands ſet apart for the maintenance of his office, called in ancient writings, *ad cibum monachorum.* The *cellerarius* was a great man in the convent. His whole office in ancient times had a reſpect to that origin: he was to ſee his lord's corn got in, and laid up in granaries; and his appointment conſiſted in a certain proportion thereof, uſually fixed at a thirteenth part of the whole; together with a furred gown. The office of *cellarer* then only differed in name from thoſe of bailiff and minſtrel; excepting that the *cellarer* had the receipt of his lord's rents through the whole extent of his juriſdiction.

Cellarer was alſo an officer in chapters, to whom belonged the care of the temporals, and particularly the diſtributing of bread, wine, and money to canons, on account of their attendance in the choir. In ſome places he was called *cellarer*, in others *burſer*, and in others *currier.*

CELLEPORÆ, in *Botany*, the name of a genus of marine plants, or rather animals; and claſs of worms in the Linnæan ſyſtem. They are of the genus of the *lithophyta*, and have oblong creeping hollows in ſeveral parts. See Coral.

CELLITES, **Cellitæ**, an order of religious, founded at Antwerp in the beginning of the fourteenth century, whoſe patron was Alexius, a Roman; and therefore, in Italy they are called *Alexians*; but in Germany, and the Low Countries, where they have monaſteries, *Cellites*, i. e. people inhabiting in cells. See Lollards.

CELLS, *Cellæ*, *Cellulæ*, are little houſes, apartments, or chambers; particularly thoſe wherein the ancient monks, ſolitaries, and hermits, lived in retirement.

Some derive the word from the Hebrew כלא, i. e. *a priſon*, or *place where any thing is ſhut up.*

The ſame name is ſtill retained in divers monaſteries.

The dormitory is frequently divided into ſo many *cells*, or lodges.

The Carthuſians have each a ſeparate houſe, which ſerves them as a *cell*.

The hall wherein the Roman conclave is held, is divided, by partitions, into divers *cells*, for the ſeveral cardinals to lodge in.

Cells, in *Anatomy*, are little bags, or bladders, where fluids, or other matters, are lodged; called alſo *loculi*, *cellulæ*, &c.

Cells are alſo the little diviſions, or apartments, in honey-combs, where the honey, young bees, &c. are diſtributed: theſe are always regular hexagons.

Cells *of plants*, in *Botany*, are thoſe partitions or hollow parts in the huſks or pods of plants, wherein the ſeed is lodged.

CELLULÆ *Adipoſæ*, in *Anatomy*, the loculi, or little *cells*, wherein the fat of bodies in good habit is contained. See Adeps, and Adiposus.

Theſe are co-extended with the ſkin itſelf, except on the forehead, the eye-lids, *penis*, and *ſcrotum*. In emaciated bodies, theſe *cells*, being unfurniſhed of their fat, appear like a kind of flaccid, tranſparent membrane.

The *cellular membrane* is reticular and adipoſe. The ſubſtance of the reticular part is merely a net-work of ſlender fibres and ſmall membranes, whence it derives its ductility and looſeneſs; ſuch as it is found under the ſkin of the *penis* and *ſcrotum*: in other parts, as under the ſkin of the nates and under the ſoles of the feet, it is loaded with oil, and leſs porous in its ſubſtance. The former part is diſperſed through the whole body, except in the ſubſtance of the bones, brain, and humours of the eye, covering the ſolids of the body, the muſcles, tendons, ligaments, and nerves, and uniting them to one another; and it is even intermixed with the ſubſtance of the ſkin. About the joints, the *cellular membrane* is chiefly reticular, for the ſake of eaſy motion; under the ſkin in general it is adipoſe, between which ſtratum and the ſurface of the muſcular maſs it is looſe, and chiefly reticular. In the *fœtus*, that part only of this membrane is adipoſe, which is upon the outſide of the body: as we grow up, the fat is more equally diſperſed through the body, and its greater quantity in proportion about the *viſcera*. Dr. Hunter is of opinion, that the fat in the body is lodged in a glandular apparatus ſuperadded to the reticular membrane, conſiſting of veſicles or bags for this purpoſe, and of veſſels fitted for ſecretion. See Med. Obſ. vol. i. p. 26, &c.

Cellulæ, in the Colon, a ſort of ſpaces wherein the Excrements continue ſome time before they are voided.

CELLULANUS, a monk inhabitant, or reſident in a cell, or Cella.

He is alſo denominated *concellaneus* and *ſyncelliſta*, by which are imported the relation of fellow-monks, or thoſe who live in the ſame cell or convent.

CELLULAR, or **Cellulose**, an appellation given by Ruyſch, to the ſecond coat of the inteſtines; in which fat is often found. Heiſt. Comp. Anat. § 211. p. 104. Wharton alſo takes notice of a *celluloſe* coat in the Mesentery, wherein fat is contained.

Heiſter thinks that a *celluloſe* coat may alſo be added to the three coats in the human Bladder, by reaſon fat is often found between the outermoſt and muſcular coat, where it is ſecreted, collected, and preſerved in little adipoſe cells.

CELOSIA, in *Botany*, a genus of the *pentandria monogynia* claſs; Amaranth. Its characters are theſe: the flower hath five erect ſharp-pointed petals, which are permanent, ſtiff, and ſhaped like a flower-cup. It hath a ſmall nectarium joined to the border of the germen, to which adhere the five ſtamina, which are terminated by turning ſummits. The empalement afterward becomes a globular capſule with one cell opening horizontally, containing roundiſh ſeeds. There are three ſpecies.

Linnæus has ſeparated the plants of this genus from the amaranths, which have been generally joined with them; becauſe thoſe have male and female flowers on the ſame plants, whereas theſe have only hermaphrodite flowers.

CELSIA, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Linnæus gave it this name in honour of Dr. Celſus, profeſſor at Upſal. We have no Engliſh name for this plant. Its characters are theſe: the flower is of one leaf, with a very ſhort tube, ſpread open above, and cut into five unequal parts; the two upper being ſmall, and the under larger. It hath four hairy ſtamina, which incline toward the upper ſegment of the petal. In the center is ſituated a roundiſh germen, which afterward becomes a roundiſh capſule compreſſed at the top, fitting upon the empalement; and hath two cells, which are filled with ſmall angular ſeeds. We know but one ſpecies of this plant, which is a native of Armenia.

CELTES, in *Ancient Hiſtory*; under this name muſt be underſtood not only the Gallic philoſophers, but all thoſe which anciently flouriſhed in other parts of Europe. The hiſtory of the *Celtic* philoſophy affords nothing certain; nor is the obſcurity in which it is involved to be wondered at, conſidering the remoteneſs of the times. We diſcover nothing either in our own uſages, or from the teſtimony of Latin authors, by which to reſolve our doubts concerning this people; all monuments of thoſe times being deſtroyed, and their dogmas not being committed to writing; as it was their cuſtom to tranſmit them by tradition.

Some of their hymns, however, are reported to be preſerved among thoſe northern nations which have not been ſubject to the revolutions which have ſo often ſubverted the ſouthern parts of Europe. Extracts from the *Edda*, a courſe of poetry for the inſtruction of the Iceland youth, and ſaid to contain the *Celtic* mythology, have been lately publiſhed; though from whence obtained, does not appear. See Druids.

CELTIS, in *Botany*. See Nettle-*tree*.

CEMENT, or Cæment. See Cæment.

CEMENTATION, or Cæmentation. See Cæmentation, and Gold.

CEMETERY, *Cæmeterium*, a dormitory, or ſacred place ſet apart for the burial of the dead.

Chorier obſerves, that under *cæmeterium*, κοιμητηριον, from κοιμαω, *I ſleep*, anciently was comprehended, not only the ſtrict dormitory, or place where the dead were diſpoſed; but all the lands which encompaſſed the pariſh churches, and were contiguous to the real churches. —Perhaps it might be added, that all the church domains were compriſed under *cæmeterium*. This will beſt account for that confiſcation of the *cemeteries*, charged on Valerian.

In the early ages, the Chriſtians held their aſſemblies in the *cemeteries*, as we learn from Euſebius and Tertullian; the latter of whom calls thoſe *cemeteries* where they met to pray, *areæ*. Valerian ſeems to have confiſcated the *cemeteries*, and places deſtined for divine worſhip, which were reſtored again to the Chriſtians by Gallian. In the reſcript of that emperor, which is preſerved by Euſebius, *cemeteries* and places of worſhip are uſed as ſynonymous terms. It being here the martyrs were buried, the Chriſtians choſe thoſe places to have churches in, when leave was given them by Conſtantine to build. And hence ſome derive that rule which ſtill obtains in the church of Rome, never to conſecrate an altar, without putting under it the relics of ſome ſaint. See Burial.

The heathen writers frequently upbraid the primitive Chriſtians for their meetings in *cemeteries*; as if they ſerved other purpoſes beſides thoſe of religion. The council of Elvira prohibits the keeping of tapers lighted in *cæmeteria*, during the day-time; and by another canon, the women from paſſing the night watching in *cæmeteria*.

The practice of conſecrating *cemeteries* is of ſome antiquity: the biſhop walked round it in proceſſion, with the crozier, or paſtoral ſtaff, in his hand, the holy water-pot being carried before, out of which aſperſions were made.

CENCHRAMIDEA, in *Botany*, a name given by Plukenet to a genus of plants afterwards called, by Plumier and Linnæus, Clusia.

CENCHRAMUS, in *Zoology*, a name by which ſome authors have called the Emberiza *alba*; called in Engliſh, the Bunting.

CENCHRIS, in *Zoology*, the name given by many authors to the keſtrel, or windhover, a ſpecies of hawk, of the long-winged kind, called the Tinnunculus, and by ſome in Engliſh, the *ſtannel*.

Cenchris is alſo the name of a ſpecies of ſerpent; ſo called becauſe of its ſmall ſpots, which reſembled the ſeeds of millet. It grows to five feet, or more, in length, and is conſiderably thick and large, and grows very taper at the tail. It is of a greeniſh yellow colour, and is yellowiſh toward the belly. It is found in the iſlands of the Archipelago, particularly in Lemnos and Samos. Ray.

CENCHRUS, in *Botany*, the name given by Linnæus to a genus of plants, of the *polygamia monoecia* claſs; called by Micheli, *panicaſtella*; the characters of which are theſe: the cup conſiſts of a number of involucra, collected into a ſort of head. Theſe are jagged and echinated, and each of them contains three calyces: the perianthia are bivalve glumes of a hollowed and pointed figure, each containing two flowers, and are ſhorter than thoſe flowers. The flowers are ſome male, and others of the hermaphrodite kind. Each flower is bivalve, the valves being pointed, hollow, and without awns, and the inner one ſmaller than the outer. The ſtamina are three in each flower, and are long pointed filaments, each ſuſtaining a ſagittated apex. The piſtil in the hermaphrodite flowers is formed of a roundiſh germen, a ſlender ſtyle of the ſame length with the ſtamina, and two oblong hairy ſtigmata: this is ſucceeded by a ſingle ſeed to every flower, which is of a roundiſh ſhape.

CENEGILD, in the *Saxon Antiquities*, an expiatory mulct, paid by one who had killed a man, to the kindred of the deceaſed. The word is compounded of the Saxon *cinne*, i. e. *cognatio*, *relation*, and *gild*, *ſolutio*, *payment*.

CENEONTLATOTI, in *Zoology*, the name of an American bird deſcribed by Nieremberg, and called by that author, *avis* POLYGLOTTA. It is famous for the different modulations of its voice, and excels even the nightingale in melody.

CENNING, *Cenninga*, or *Kenninga*, in our *Ancient Books*, denotes notice given by the buyer to him of whom he had bought, that the thing purchaſed was claimed by another, that he might appear and avow, or warrant his bargain.

The word is formed of the Saxon *cennan*, *auctorem advocare*, *to call an author*. Du-Cange.

CENOBITE, or COENOBITE. See COENOBITE.

CENOTAPH, an empty tomb, or a monument without a body under it; erected only by way of honour to the deceaſed.

The word is compounded of κενος, *empty*, and τοφος, *tomb*.

It ſtands diſtinguiſhed from *ſepulchre*, in which a corpſe is actually depoſited.

Cenotaphs are honorary tombs, erected either to perſons buried in another place, or to thoſe who have received no BURIAL, and whoſe relics cannot be found, as being killed in battle, loſt at ſea, or the like. Among the ancients, the ſame privileges and religious regard were allowed to theſe *tumuli inanes & honorarii*, as to real tombs. Card. Norris has a treatiſe expreſs on the *cenotaphs* of the Cæſars, Caius and Lucius, which are ſtill ſeen at Piſa. Lamprid. in Alex. cap. 63.

CENOTZQUI, in *Ornithology*, the name of an American bird deſcribed by Nieremberg, and called *avis evocatrix nivis*, becauſe it always is very clamorous before ſnow falls, and afterwards becomes ſilent. It is a very beautiful variegated bird, and lives as well in the colder as hotter climates, but is principally ſeen among the mountains. It has a very remarkable way of twiſting its head about; ſo that, without moving its body, it eaſily ſees every way round it. There is another ſpecies of it a little differing in the diſpoſition of the colours, which ſome call liceto.

CENSAL, in the Mediterranean parts, denotes a regular or eſtabliſhed broker, authoriſed to negotiate between merchant and merchant.

CENSER, in *Antiquity*, a kind of veſſel wherein incenſe was burnt to the gods.

Cenſer is chiefly uſed in ſpeaking of the Jewiſh worſhip. Among the Greeks and Romans, it is more frequently called *thuribulum*, λιβανωτις, and ACERRA.

The Jewiſh *cenſer* was a ſmall ſort of chaffing-diſh, covered with a dome, and ſuſpended by a chain. Joſephus tells us, that Solomon made twenty thouſand gold *cenſers* for the temple of Jeruſalem, to offer perfumes in, and fifty thouſand others to carry fire in.

CENSER, the ſame with ARA.

CENSIO, in *Antiquity*, the act or office of the CENSOR. See CENSUS.

Cenſio included both the rating, or valuing a man's eſtate, and the impoſing mulcts and penalties.

CENSIO *haſtaria*, a puniſhment inflicted on a Roman ſoldier for ſome offence, as lazineſs or luxury, whereby his *haſta* or ſpear was taken from him, and conſequently his wages, and hopes of preferment ſtopped.

CENSITUS, a perſon cenſed, or entered in the cenſual tables. See CENSUS.

In an ancient monument found at Ancyra, containing the actions of the emperor Octavius, we read,

Quo luſtro civium Romanorum
Cenſita ſunt capita quadragies
Centum millia & ſexaginta tria.

CENSITUS is alſo uſed in the *Civil Law* for a ſervile ſort of tenant, who pays capitation to his lord for the land he holds of him, and is entered as ſuch in the lords rent-roll. In which ſenſe, the word amounts to the ſame with *capite cenſus*, or *capite cenſitus*. See CAPITE *Cenſi*.

CENSOR, in *Antiquity*, one of the prime magiſtrates in ancient Rome; whoſe buſineſs was to ſurvey and rate the people, and to inſpect and correct their manners.

The word is derived from *cenſere*; becauſe he aſſeſſed and valued every man's eſtate; regiſtering their names, and placing them in a proper century, that the Romans might know their own ſtrength; though others ſay, the *cenſors* were ſo called on account of their other office; viz. as being comptrollers, or correctors of manners and policy.

There were two *cenſors* firſt created in the year of Rome 311, upon the ſenate's obſerving, that the conſuls were too much taken up with matters of war, to be left at leiſure for looking near enough into private affairs. The two firſt were Papirius and Sempronius: their authority extended over every perſon; and they had a right to reprehend the higheſt. At firſt they were taken out of the ſenate; but after the plebeians had got the conſulate open to them, they ſoon arrived at the *cenſorſhip*. M. Rutilius was the firſt; who, having been twice conſul and dictator, in the year 402 demanded the office of *cenſor*.—The cuſtom was to elect two; the one of a patrician family, the other a plebeian: and upon the death of either, the other was diſcharged from his office, and two new ones elected; but not till the next luſtrum.—In the year 414, a law was made, appointing one of the *cenſors* to be always elected out of the plebeians; which held in force till the year 622, when both *cenſors* were choſen from among the people; after which time, it was ſhared between the ſenate and people.

This office was ſo conſiderable, that none aſpired to it till they had paſſed all the reſt: ſo that it was looked on as ſurpriſing, that Craſſus ſhould be admitted *cenſor*, without having been either conſul, or prætor.—The term of this office was at firſt eſtabliſhed for five years; but that inſtitution only laſted nine: Mamertinus the dictator, in the year 420, made a law, reſtraining the *cenſure* to a year and a half; which was afterwards obſerved very ſtrictly.

The buſineſs of the *cenſors* was, to regiſter and value the effects, &c. of the Roman citizens; and to impoſe taxes, in proportion to what each perſon poſſeſſed. Cicero reduces their functions to the numbering of the people; the correction and reformation of manners; the eſtimating the effects of each citizen; the proportioning of taxes; the ſuperintendence of tribute; the excluſion from the temples, and the care of the public places. They had alſo a right, *ſenatu ejicere*, to expel from the ſenate ſuch of the members as they judged unworthy of the dignity; as well as to break and caſhier the knights who failed in their duty, by taking from them the public horſe, *equum adimere*.

There are many examples of ſenators expelled by the *cenſors*, generally for good reaſons, yet ſometimes through mere peeviſhneſs, envy, or revenge: but in ſuch caſes, there was always the liberty of an appeal to the final judgment of the people. So that the cenſorian power, properly ſpeaking, was not that of making or unmaking ſenators, but of enrolling only thoſe whom the people had made; and of inſpecting their manners, and animadverting upon their vices; over which they had a ſpecial juriſdiction delegated by the people. Their rule of cenſuring ſeems to have been grounded on an old maxim of the Roman policy, enjoining, *that the ſenate ſhould be pure from all blemiſh, and an example of manners to all the other orders of the city*: as we find it laid down by Cicero in his Book of Laws, which were drawn, as he tells us, from the plan of the Roman conſtitution.

Beſides the taſk of enrolling the ſenators, and inſpecting their manners, it was a part likewiſe of the cenſorian juriſdiction to let out to farm all the lands, revenues, and cuſtoms of the republic; and to contract with artificers for the charge of building and repairing all the public works and edifices, both in Rome, and the colonies of Italy. Now in this branch of their office it is certain that they acted merely under the authority of the people, and were prohibited by law to let out any of the revenues, except in the roſtra, under the immediate inſpection, and in the very preſence of the people.

In the general cenſus and review of the city, held by them every five years, though every ſingle citizen was particularly ſummoned and enrolled by name in his proper tribe, as a freeman of Rome, yet that ſolemn enrollment, as Cicero tells us, did not confirm any man's right to a citizenſhip, but ſignified only that he had paſſed for a citizen at that time; becauſe the proper power of determining that right reſided always in the people. Cicer. pro Arch. 5. Liv. x. 52. Middleton of Rom. Sen. p. 59, 68, 70, 83, &c.

The office continued to the time of the emperors, who aſſumed the authority of it to themſelves, but without the name, calling themſelves, inſtead of *cenſors*, *morum præfecti*; though Veſpaſian and his ſons took a pride to be called *cenſors*, and put this among their other titles on their coins. Decius attempted to reſtore the dignity to a particular magiſtrate. After this we hear no more of it till Conſtantine's time, who made his brother *cenſor*; the laſt who ſeems to have enjoyed the office.

The republic of Venice has at this day a *cenſor* of the manners of their people, whoſe office laſts ſix months.

Censors *of books* are a body of doctors, or other officers, eſtabliſhed, in divers countries, to examine and give their judgment of all books, before they go to the preſs; and to ſee they contain nothing contrary to the faith, and good manners.—In England we had formerly an officer of this kind, under the title of *licenſer of the preſs*; but ſince the Revolution the preſs has been open.

At Paris, the *faculty of theology* claim the privilege of *cenſors*, as granted to them by the pope; and it is certain they had been in poſſeſſion of it for many ages: but in the year 1624, a new commiſſion of four doctors were created, by letters patent, the ſole public, or royal *cenſors*, and examiners of all books; and anſwerable for every thing contained therein. The faculty, however, ſtill maintain their claim, by taking occaſion, now and then, to give their approbation to books.

CENSORIAL, *cenſorius*, ſomething that relates to the office of CENSOR.

In which ſenſe we meet with *cenſoria nota*, or *animadverſio*, *cenſoria virgula*, &c.

Censorial *law*, *cenſoria lex*, denotes a law paſſed or enacted by the CENSORS.

Censorial *man*, *homo cenſorius*, a perſon who has borne the dignity, and ſerved the office of CENSOR.

Censorial *note*, *virgula cenſoria*, among the ancient *Grammarians* and *Critics*, denoted a note or mark of reprobation, affixed to thoſe paſſages of a book or writing, which the critic diſapproved or condemned.

CENSUAL *books*, *libri cenſuales*, thoſe wherein the cenſus was taken down.

Censuales, in a ſubſtantive ſenſe, denoted the clerks or public ſcribes who wrote the *cenſual* books.

CENSURE, **Censura**, is popularly uſed for a judgment, whereby ſome book, perſon, or action, is blamed, or condemned; more particularly for a reprimand made by a ſuperior, or perſon in authority.

Censures, *eccleſiaſtical*, are the public menaces which the church makes, or pains and penalties incurred by diſobeying what ſhe enjoins; or rather the pains and puniſhments themſelves: as interdiction, excommunication, &c.

Till the time of the Reformation, the kings of England were ſubject to the *cenſures* of the church of Rome; but the kings of France have always maintained themſelves exempt from them.

The canoniſts diſtinguiſh two kinds of *cenſures*; the one *de jure*, and the other *de facto*, or by ſentence.

Censure is alſo a cuſtom, in ſeveral manors in Cornwall and Devon, whereby all the reſiants above the age of ſixteen are called to ſwear fealty to the lord, to pay two pence *per* poll, and a penny *per annum*, ever after, as CERT-*money*, or common fine.

CENSUS, among the Romans, was an authentic declaration made by the ſeveral ſubjects of the empire, of their reſpective names, and places of abode, before proper magiſtrates, in the city of Rome, called *cenſors*; and in the provinces *cenſitors*, by whom the ſame were regiſtered.

This declaration was accompanied with a catalogue, or enumeration, in writing, of all the eſtates, lands, and inheritances, they poſſeſſed; their quantity, quality, place, wives, children, tenants, domeſtics, ſlaves, &c.

The *cenſus* was inſtituted by king Servius Tullius; to be held every five years. It went through all the ranks of people, though under different names; that of the common people was called *cenſus*, or *luſtrum*; that of the knights, *cenſus*, *recenſio*, *recognitio*; that of the ſenators, *lectio*, *relectio*.

Hence, alſo, *cenſus* came to ſignify a perſon who had made ſuch a declaration: in which ſenſe it was oppoſed to *incenſus*, a perſon who had not given in his eſtate, or name, to be regiſtered.

The *cenſus* among the old Romans was held, as is commonly thought, every five years; but this muſt not be taken to be preciſely true: on the contrary, Dr. Middleton has ſhewn, that both the *cenſus* and luſtrum were for the moſt-part held irregularly and uncertainly, at very different and various intervals of time. See LUSTRUM.

The *cenſus* was an excellent expedient for diſcovering the ſtrength of the ſtate: by it they learnt the number of the citizens, how many were fit for war, and who for offices of other kinds; how much each was able to pay of taxes towards the charge of the war.

The *cenſus*, according to Salmaſius, was peculiar to the city of Rome. That in the provinces was properly called *profeſſio* and απογραφη. But this diſtinction is not every where obſerved by the ancients themſelves.

In the provinces, the *cenſus* not only ſerved to diſcover the ſubſtance of each perſon, but where, and in what manner and proportion, tributes might be beſt impoſed.

Census was alſo uſed for the book or regiſter wherein the profeſſions of the people were entered.

In which ſenſe, the *cenſus* was frequently cited and appealed to, as evidence in the courts of juſtice.

Census is alſo uſed to denote a man's whole ſubſtance or eſtate.

Census *ſenatorius*, the patrimony of a ſenator, which was limited to a certain value; being at firſt rated at eight hundred thouſand ſeſterces, but afterwards, under Auguſtus, enlarged to twelve hundred thouſand. Sueton. in Cæſ. cap. 41.

Census *equeſter*, the eſtate or patrimony of a knight, rated at four hundred thouſand ſeſterces, which was required to qualify a perſon for that order, and without which no virtue or merit was available. Suet. in Cæſ. cap. 33. Hor. lib. i. ep. i. ver. 57, 58, 59.

Census was alſo uſed for a perſon worth an hundred thouſand ſeſterces, or who was entered as ſuch in the cenſual tables, on his own declaration.

In which ſenſe, *cenſus* amounts to the ſame with *claſſicus*, or a man of the firſt claſs; though Gellius limits the eſtate of thoſe of this claſs to an hundred and twenty-five thouſand aſſes. By the Voconian law, no *cenſus* was allowed to give by his will above a fourth part of what he was worth to a woman. Aul. Gell. Noct. Att. lib. vii. cap. 13. Cic. in Verr. 3.

Census was alſo uſed to denote a tax or tribute impoſed on perſons, and called alſo capitation. See CAPITE *cenſi*.

Census *dominicatus*, in *Writers of the Lower Age*, denotes a rent due to the lord.

Census *duplicatus*, a double rent or tax, paid by vaſſals to their lord, on extraordinary or urgent occaſions; as expeditions to the Holy Land, &c.

Census *eccleſiæ Romanæ*, was an annual contribution, voluntarily paid to the ſee of Rome by the ſeveral princes of Europe.

Census *ſiccus*, that paid in money.

CENT, in *Commerce*, an abbreviation of the Latin *centum*, which properly ſignifies a hundred. It is applied when expreſſing the profit or loſs upon any commodity.

Cent is alſo uſed in the trade of money, and ſignifies the benefit, profit, or intereſt of any ſum of money which is laid out for improvement. Thus we ſay money is worth 4 or 5 *per cent.* upon exchange; that is, it brings four or five pounds profit for every 100*l.* laid or lent out.

Cent is alſo uſed with regard to the draughts or remittances of money, made from one place to another. Thus we ſay it will coſt 2½ *per cent.* to remit money to ſuch a city.

CENTAURIUM *minerale*, among *Chemiſts*, a name given by ſome to the PANACEA of antimony, called alſo by Glauber, *purgans univerſale*; the preparation of which is given by Juncken.

CENTAUROIDES, in *Medicine* and *Pharmacy*, the ſame with GRATIOLA.

Others give the denomination to the greater CENTAURY.

CENTAURS, in *Mythology*, a kind of fabulous monſters, half men, half horſes. The poets feign that the *centaurs* were the ſons of Ixion and a *cloud*. The reaſon of which fancy was, that the caſtle to which they retired was called Νεφελη, which ſignifies a *cloud*. Pind. Pyth. Od. 2. This fable is differently interpreted.

The *centaurs*, in reality, were a tribe of Lapithæ, who inhabited the city Pelethronum, adjoining to mount Pelion, and firſt invented the art of breaking horſes: as is intimated by Virgil. Georg. lib. iii. ver. 115.

CENTAURUS, **Centaur**, in *Aſtronomy*, a part or moiety of a ſouthern conſtellation, in form, half man, half horſe; uſually joined with the wolf. See LUPUS.

The word comes from κενταυρος, formed of κεντεω, *pungo*; and ταυρος, *bull*; q. d. *bull-pricker*.

The ſtars of this conſtellation, in Ptolemy's Catalogue, are 37; in Tycho's 4; and in the Britannic Catalogue, with Sharp's Appendix, 35: the order, names, longitudes, latitudes, magnitudes, &c. of which, are as follow.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude S.			Magnitude
			°	′	″	°	′	″	
Preced. in the head of the Centaur	i	♏	2	22	43	20	33	34	4.5
South. in the head	g		3	41	36	21	34	40	4.5
Middle	k		3	36	0	20	2	50	4.5
Subſeq. and North in the head	h		3	27	55	18	57	0	4.5
In the right ſhoulder	θ		8	0	18	21	59	6	2.3
5.									
Preced. ſhoulder	ι	♎	29	22	4	25	56	56	3
In the left arm	ψ	♏	2	42	6	27	34	53	4
North. of foremoſt in the ſhield	l		11	55	27	22	27	8	4
Southern	o		13	1	54	23	47	3	4
Northern of the ſubſeq. in ditto	π		15	34	17	18	19	58	4

Names and ſituations of the ſtars.	Bayer's Ch.	Signs.	Longitud.			Latitude S.			Magnitude
			°	′	″	°	′	″	
Southern	ϱ		16	8	40	20	55	9	4
Preced. of the three in right ſide	τ		7	18	4	28	12	59	4
Middle	υ		7	44	28	28	55	59	4
Laſt	φ		9	13	28	27	58	33	4
In the right arm	*m*		10	18	14	26	35	10	5
15.									
In the right elbow	κ		16	25	33	25	28	6	3
In the right hand	σ		20	58	54	24	0	4	4
In the extremity of the human body	λ		11	9	29	32	52	14	3
	χ		11	32	24	30	54	40	5
	n		10	34	55	30	23	14	5
20.									
In the horſe's back	ω		5	52	40	35	10	49	N
Second of the two in the loins	μ	♎	28	32	26	40	6	29	2.3
Firſt	ο		27	32	5	40	4	34	4.5
Northern in the right thigh	β		23	41	23	44	27	21	3
Southern	ε		25	35	53	45	31	6	5
25.									
	d		27	32	36	43	30	4	6
	η		26	56	57	42	21	58	5
In the belly	δ	♏	11	43	9	39	30	16	2
Northern of thoſe called *Croſiers*	ι		2	56	38	47	44	49	2
Southern foot of the croſs	ζ		8	5	23	42	48	24	2
30.									
Before the croſs	ν		1	54	16	50	21	13	3
After the croſs	ξ		7	51	31	48	34	1	2
In right foot	α		26	5	57	42	26	58	1
In left knee	γ		19	59	17	44	3	47	2
Between the laſt and the foremoſt of the triangle			28	33	12	46	7	4	3

CENTAURY, *the greater*, KNAPWEED, *blue* BOTTLE, &c. in *Botany*, a genus of the *ſyngeneſia polygamia fruſtanea* claſs. Its characters are theſe: it hath a compound flower, whoſe diſk is compoſed of many hermaphrodite florets, and the border, or rays, of female florets, which are larger and looſer: theſe are included in a common ſcaly empalement. The germen is ſituated under the petal, which afterward becomes a ſingle ſeed, ſhut up in the empalement; the female florets have a ſlender tube, which expands above, where it is enlarged, and cut into five unequal parts: theſe are barren. Miller ſpecifies twenty ſorts of it.

The root and leaves of the plant are eſteemed vulnerary and aſtringent: they are given in infuſion, in dyſenteries, profluvia of the menſes, and hæmorrhages of all kinds. The common people alſo are very fond of the root in France, as a remedy for bruiſes, and for diſſolving coagulated blood. Schroder alſo gives it great praiſes as a deobſtruent: he tells us it is of excellent uſe in diſtemperatures of the liver, and in obſtructions of the meſeraic glands. He preſcribes the root in powder.

CENTAURY *the leſſer*, CENTAURIUM *minus*, is a ſmall and low plant, with leaves growing by pairs, and a flower conſiſting of a purple petal, cut into five ſegments, and a tubulous calyx divided in like manner.—Its leaves are eſteemed a good bitter, and very ſerviceable to the ſtomach, either in the compoſitions of that kind, or *per ſe*, in decoction or infuſion, which is beſt made in wine. It diſcuſſes and abſterges viſcid humours; is good againſt worms, and by ſome alſo is extolled as an alexipharmic febrifuge, &c. The bitter ſubſtance of the leaves is ſoluble by water, or by ſpirit of wine. The green colour reſides in the reſinous part, being extracted by ſpirit of wine, but not by water. See GENTIAN, of which this plant is a ſpecies.

CENTELLA, in *Botany*, a genus of the *monoecia tetrandria* claſs, having male and female flowers. The *involucrum* of the male ſort conſiſts of four leaves, and five flowers; and that of the female ſort is compoſed of two leaves, and a ſingle flower; the latter hath two ſtyles, and a double-celled *pericarpium*; and both have four petals.

CENTENARIUS, or CENTENARIO, in the *Middle Age*, was an officer who had the government or command, with the adminiſtration of juſtice, in a village, or diviſion, containing an hundred freemen. The *centenarii* were under the juriſdiction and command of a ſuperior officer, called the count or *comes*. We find them both among the Franks, Germans, Goths, Lombards, &c.

CENTENARIUS is alſo uſed for an officer who had the command of an hundred men; more frequently called CENTURION.

CENTENARIUS, in *Monaſteries*, was an officer who had the ſuperintendance of an hundred monks.

CENTENARIUS was alſo uſed for a perſon worth an hundred thouſand ſeſterces; otherwiſe called CENSUS.

CENTENINUM *ovum*. See EGG.

CENTER, or CENTRE, in a general ſenſe, denotes a point equally remote from the extremes of a line, figure, or body; or the middle of a line, or plane, by which a figure or body is divided into two equal parts.

The word is κεντρον, which primarily ſignifies a *point*; being formed from the verb κεντειν; *pungere, to prick*.

CENTER *of a baſtion*, is a point in the middle of the gorge of the BASTION; whence the capital line commences; and which is ordinarily at the angle of the inner polygon of the figure. Or it is the point within which the two adjacent curtains produced interſect each other.

CENTER *of a battalion*, the middle of a battalion; where is uſually left a large ſquare ſpace, for lodging the cloaths and baggage.

CENTER *of a circle* is a point in the middle of a circle, or circular figure, from which all lines drawn to the circumference are equal.

Euclid demonſtrates, that the angle at the *center* is double to that at the circumference; i. e. the angle made by two lines drawn from the extremes of an arch to the *center*, is double that made by two lines drawn from thoſe extremes to a point in the circumference.

CENTER *of a conic ſection* is the point wherein all the diameters concur.

This point, in the ellipſis, is within the figure; and, in the hyperbola, without.

CENTER *of converſion*, in *Mechanics*, a term firſt uſed by M. Parent. Its ſignification is thus conceived: if a ſtick be laid on a ſtagnant water, and drawn by a thread faſtened to it, ſo that the thread always makes the ſame angle with the ſtick; always, v. g. a right angle; the ſtick will be found to turn on one of its points, which will be immoveable; which point is termed the *center of converſion*. For the greater eaſe, the thread may be conceived faſtened to one end of the ſtick.

This effect ariſes from the reſiſtance of the fluid, and the manner wherein it divides: for, imagine the firſt moment of traction, it is certain, here, the reſiſtance of the parts of the fluid to be diſplaced, tends to turn the ſtick around the point to which the thread is faſtened, as on a *center*: ſo that in the preſent inſtance, the ſtaff would deſcribe preciſely the quadrant of a circle: after which, the fluid would no longer bear the ſtick lengthwiſe; but in a particular motion, in ſuch manner, as that the free end of the ſtick, and the parts neareſt it, would deſcribe larger arches of circles than the reſt, and have a greater velocity. The reſiſtance therefore of the fluid, which tends to impreſs a circular motion on the ſtick, around the point to which the thread is faſtened, tends to impreſs a greater velocity on the parts next to the other extremity; or, which is the ſame thing, thoſe parts require a greater velocity to ſurmount the reſiſtance of the fluid: ſo that the ſtick will not have that circular motion around the point to which the thread is faſtened; or, the reſiſtance of the fluid is greater towards the free extreme of the ſtick, and ſtill leſſens towards the other extreme. Now, all the columns, or threads of water, which reſiſt the ſtick, muſt be ſuppoſed of the ſame length, or the ſame maſs. One may therefore find on the ſtick ſuch a point, as that taking a great number of thoſe threads on that ſide which reſiſts the leaſt, and a leſs number on that ſide where they reſiſt the moſt, there will be an exact compenſation, and the forces be equal on each ſide: this point is the *center of converſion*. And as the ſame reaſoning has place in all motions of traction made in the ſame manner, this *center* is always the ſame point.

The grand queſtion here ariſing is, to know preciſely in what point the *center* of converſion is found: this M. Parent has determined by much laborious calculation. If the ſtick drawn by one extremity be a ſtrait line divided into twenty parts, reckoning from the thread, the *center* of converſion, he finds, will be nearly on the 13th. If it be not a line, but a ſurface, or a ſolid, there will be ſome change in the ſituation of the *center* of converſion, according to the ſurface, or the ſolid. See Mem. of the Acad. of Sciences, abridged, vol. i. p. 191.

If in lieu of a body ſwimming in a fluid, we ſuppoſe it laid on a rough uneven plane; the reſiſtance of this plane to the motion of the body will always be divided in the ſame manner, and determine the ſame *center* of converſion. This reſiſtance is, preciſely, what we call *friction*, ſo prejudicial to the effects of machines.

CENTER *of a curve*, of the higher kind, is the point where two diameters concur.

When all the diameters concur in the ſame point, Sir Iſaac Newton calls it the *general center*.

CENTER *of a dial*, is that point where its gnomon or ſtile, which is placed parallel to the axis of the earth, interſects the plane of the dial; and from thence, in thoſe dials which have *centers*, all the hour-lines are drawn. If the plane of the dial be parallel to the axis of the earth, it can have no *center* at all; but all the hour-lines will be parallel to the ſtile, and to one another.

Center *of an ellipſis*, is that point where the two diameters, the tranſverſe and the conjugate, interſect each other.

Center *of the equant*, in the *Old Aſtronomy*, a point in the line of the aphelion; being ſo far diſtant from the *center* of the excentric, towards the aphelion, as the ſun is from the *center* of the excentric towards the perihelion.

Center *of gravitation*, or *attraction*, in *Phyſics*, is that point to which a revolving planet, or comet, is impelled, or attracted, by the force or impetus of gravity.

Center, in *Maſonry*, denotes a wooden mould by which to turn an arch.

Center *of gravity*, in *Mechanics*, is a point within a body, through which if a plane paſs, the ſegments on each ſide will equiponderate, i. e. neither of them can move the other.

Hence, if the deſcent of the *center* of gravity be prevented, or if the body be ſuſpended by its *center* of gravity, it will continue at reſt in *equilibrio*, in any poſition. The whole gravity of a body may be conceived united in its *center*; and therefore, in demonſtrations, it is uſual for the body to ſubſtitute the *center*.

Through the *center* of gravity paſſes a right line, called *the diameter of gravity*: the interſection, therefore, of two ſuch diameters determines the *center*.

The plane whereon the *center* of gravity is placed, is called *the plane of gravity*: ſo that the common interſection of two ſuch planes determines the diameter of gravity.

In homogeneal bodies, which may be divided lengthwiſe into ſimilar and equal parts, the *center* of gravity is the ſame with the *center* of magnitude. If, therefore, a line be biſected, the point of ſection will be the *center* of gravity.

Common **Center** *of gravity of two bodies*, is a point ſo ſituated, in the right line joining the *centers* of the two bodies, as that, if the point be ſuſpended, the two bodies will equiponderate, and reſt in any ſituation.—Thus, the point of ſuſpenſion in a common balance, or in a Roman ſteelyard, where the two weights equiponderate, is the common *center* of gravity of the two weights.

When any number of bodies move in right lines with uniform motions, their common *center* of gravity moves likewiſe in a right line with an uniform motion; and the ſum of their motions eſtimated in any given direction, is preciſely the ſame as if all the bodies, in one maſs, were carried on with the direction and motion of their common *center* of gravity. Nor is the *center* of gravity of any number of bodies affected by their colliſions or actions on each other.

Laws of the **Center** *of gravity.*—1. *If the* centers *of gravity of two bodies* A *and* B (Tab. Mechan. fig. 13. N° 2.) *be joined by the right line* AB, *the diſtances* BC *and* CA *of the common* center *of gravity* C, *from the particular* centers *of gravity* B *and* A, *are reciprocally as the weights* B *and* A. See this demonſtrated under Balance.

Hence, if the gravities of the bodies A and B be equal, the common *center* of gravity C will be in the middle of the right line AB Again, ſince A : B :: BC : AC; it follows that A × AC = B × BC; whence it appears, that the powers of equiponderating bodies are to be eſtimated by the product of the maſs, multiplied into the diſtance from the *center* of gravity; which product is uſually called the *momentum* of the weights.

Further, ſince A : B :: BC : AC, A + B : A :: BC + AC : BC. Therefore the common *center* of gravity C, of two bodies, will be found, if the product of one weight A, into the diſtance of the ſeparate *centers* of gravity AB, be divided by the ſum of the weights A and B. Suppoſe, e. g. A = 12, B = 4, AB = 24; therefore BC = 24 × 12 ÷ 16 = 18. If the weight A be given, and the diſtance of the particular *centers* of gravity AB, together with the common *center* of gravity C; the weight of B will be found = to A × AC ÷ BC; that is, dividing the moment of the given weight, by the diſtance of the weight required from the common *center* of gravity. Suppoſe, A = 12, BC = 18, AC = 6; then B = 6 × 12 ÷ 18 = 4.

2. *To determine the common* center *of gravity of ſeveral given points*, *a*, *b*, *c*, *d* (*fig.* 13.) in the right line AB. Find the common *center* of gravity of the two bodies *a* and *b*, which ſuppoſe in F; conceive a weight $a+b$, applied in F; and in the line FE, find the common *center* of the weights $a+b$ and *c*; which ſuppoſe in G. Laſtly, in BG, ſuppoſe a weight $a+b+c$ applied, equal to the two $a+b$ and *c*; and find the common *center* of gravity between this and the weight *d*, which ſuppoſe in H; this H will be the common *center* of gravity of the bodies *a*, *b*, *c*, *d*. And in the ſame manner might the common *center* of gravity of any greater number of bodies be found.

3. *Two weights* D *and* E (*fig.* 14.) *being ſuſpended without their common* center *of gravity in* C, *to determine which of them preponderates and how much.* Multiply each into its diſtance from the *center* of ſuſpenſion; that ſide on which the product is greateſt, will preponderate; and the difference between the two will be the quantity wherewith it preponderates.

Hence, the momenta of the weights D and E, ſuſpended without the *center* of gravity, are in a ratio compounded of the weights D and E, and the diſtances from the point of ſuſpenſion. Hence alſo the momentum of a weight ſuſpended in the very point C, will have no effect at all in reſpect of the reſt D, E.

4. *To determine the preponderation where ſeveral bodies a*, *b*, *c*, *d* (fig. 15.) *are ſuſpended without the common* center *of gravity in* C. Multiply the weights *c* and *d* into their diſtances from the point of ſuſpenſion CE and CB; the ſum will be the momentum of their weights, or the ponderation towards the right: then multiply the weights *a* and *b* into their diſtances AC and CD, the ſum will be the ponderation towards the left: ſubtracting, therefore, the one from the other, the remainder will be the preponderation required.

5. *Any number of weights*, *a*, *b*, *c*, *d*, *being ſuſpended without the common* center *of gravity in* C, *and preponderating towards the right*; *to determine the point* F, *from whence the ſum of all the weights being ſuſpended, the ponderation ſhall continue the ſame as in their former ſituation.*

Find the momentum wherewith the weights *c* and *d* preponderate towards the right; ſince the momentum of the ſum of the weights to be ſuſpended in F is to be equal to it, the momentum now found will be the product of CF into the ſum of the weights: this, therefore, being divided by the ſum of the weights, the quotient will be the diſtance CF, at which the ſum of the weights is to be ſuſpended, that the preponderation may continue the ſame as before.

6. *To find the* center *of gravity in a parallelogram and parallelepiped.* Draw the diagonals AD and EG (*fig.* 16.) likewiſe CB and HF; ſince each diagonal, AD and CB, divides the parallelogram ACDB into two equal parts, each paſſes through the *center* of gravity; conſequently, the point of interſection I muſt be the *center* of gravity of the parallelogram. In like manner, ſince both the plane CBFH, and ADGE, divide the parallelepiped into two equal parts, each paſſes through its *center* of gravity; ſo that the common interſection IK is the diameter of gravity, the middle whereof is the *center*.

After the ſame manner may the *center* of gravity be found in priſms and cylinders; it being the middle point of the right line that joins the *center* of gravity of their oppoſite baſes.

7. In regular polygons, the *center* of gravity is the ſame with the *center* of the circumſcribed parallelogram.

8. *To find the* center *of gravity of a cone, and a pyramid.* The *center* of gravity of a cone is in its axis AC (*fig.* 17.) If then AP = *x*, AC = *a*, CD = *r*, the periphery of the baſe = *p*, and PN = *y*, we ſhall have, by the well-known property of circles, $r : p :: y : \frac{py}{r}$ = the periphery of the circle, whoſe diameter is MN, which being multiplied by $\frac{y}{2}$ will give $\frac{py^2}{2r}$ = the area of the ſame circle. But, by ſimilar triangles, $y : x :: r : a$, therefore $y = \frac{rx}{a}$, and $y^2 = \frac{r^2x^2}{a^2}$; conſequently the area of the circle, whoſe radius is PN, becomes equal to $\frac{prx^2}{2a^2}$; and therefore $\frac{prx^2\dot{x}}{2a^2}$ will be the fluxion of the maſs, or of the content of the cone at the term MN, and $\frac{prx^3\dot{x}}{2a^2}$ will be the fluxion of the momentum, whoſe fluent is $\frac{prx^4}{8a^2}$, which being divided by $\frac{prx^3}{6a^2}$, the fluent of $\frac{prx^2\dot{x}}{2a^2}$, the fluxion of the maſs, will give $\frac{3}{4}x = \frac{3}{4}$ AP, for the diſtance of the *center* of gravity of the portion AMN from the vertex A; and when AP becomes equal to AC, *x* will be equal to *a*; and therefore the *center* of gravity of the whole cone is diſtant from the vertex $\frac{3}{4}$ of AC. And in the ſame manner is found the diſtance of the *center* of gravity from the vertex of the pyramid $\frac{3}{4}$ AC.

9. *To determine the* center *of gravity in an iſoſceles triangle* BAC (*fig.* 18.) Draw the right line AD, biſecting the baſe BC in D which will be alſo perpendicular to it; ſince △ BAD = △ DAC, each may be divided into the ſame number of little weights, applied in the ſame manner on each ſide to the common axis AD; ſo that the *center* of gravity of the △ BAC, will be in AD. To determine the preciſe point in that, let AD = *a*, BC = *b*, AP = *x*, MN = *y*; then will AP : MN :: AD : BC; or, $x : y :: a : b$.

Hence, $y=\frac{bx}{a}$. Conſequently $yx\dot{x}$, which repreſents the fluxion of the maſs at the term MN divided by $y\dot{x}$, expreſſing the fluxion of the area AMN, will be equal to $\frac{bx^2\dot{x}}{a} \div \frac{bx\dot{x}}{a} = \frac{x^2\dot{x}}{x\dot{x}}$; the fluent of which quantity will be $\frac{\frac{1}{3}x^3}{\frac{1}{2}x^2} = \frac{2x}{3} =$, at the term BC, when $x = AD$, $\frac{2}{3}$ AD; and therefore the diſtance of the *center* of gravity of the △ from the vertex, will be found $\frac{2}{3}a$.

In the very ſame manner the *center* of gravity of any other plain triangle will appear to be at $\frac{2}{3}$ of the altitude from the vertex.

10. *For the* center *of gravity in a parabola* (*fig.* 19). Let $AE=a$, $SH=b$, $AP=x$, $PN=y$. Then will $2y\dot{x}$ be the fluxion of the whole weight; but from the nature of the parabola, and the parameter being a conſtant quantity, $1x=y^2$; whence $x^{\frac{1}{2}}=y$, and $2x^{\frac{1}{2}}=2y$: ſubſtituting $2x^{\frac{1}{2}}$ inſtead of $2y$ in the above expreſſion, we ſhall have $2x^{\frac{1}{2}}\dot{x}$ for the fluxion of the maſs, whoſe fluent $\frac{4x^{\frac{3}{2}}}{3}$ will be the maſs itſelf. Then, multiplying $2x^{\frac{1}{2}}\dot{x}$ by x, we ſhall have $2x^{\frac{1}{2}}x\dot{x}$ or $2x^{\frac{3}{2}}\dot{x}$ for the fluxion of the momentum, whoſe fluent $\frac{4x^{\frac{5}{2}}}{5}$ will be the momentum itſelf. Divide this by the whole weight, and the quotient $\frac{12}{20}x^{\frac{5}{2}-\frac{3}{2}}=\frac{3}{5}x$, will be the diſtance of the *center* of gravity of the ſpace NAzP from the vertex A; and when AP becomes equal to AE, or $x=a$, $\frac{3}{5}a$, or $\frac{3}{5}$AE, will be the diſtance of the *center* of gravity of the whole parabolic ſpace from the vertex A. Now $y^m=1x$, being a general equation for all kinds of parabolas, we ſhall have $y=x^{\frac{1}{m}}$, and therefore $x^{\frac{1}{m}}\dot{x}$ will be the fluxion of the whole maſs, and $x^{\frac{1}{m}}+1\dot{x}$, the fluxion of the momentum: the fluent of this laſt expreſſion, viz. $\frac{m}{2m+1}x^{\frac{1}{m}+2}$, being divided by the fluent of $x^{\frac{1}{m}}$, $\dot{x}$ or $\frac{m}{m+1}x^{\frac{1}{m}+1}$, will give $\frac{m+1}{2m+1}x$, for the diſtance of the *center* of gravity of the ſpace ZAN from the vertex A, and $\frac{m+1}{2m+1}a$ will be the diſtance of the *center* of gravity of the whole parabolic ſpace from A. When $m=2$, as in the common parabola, this expreſſion will be $\frac{3}{5}a$. If $m=3$, as in the cubical parabola, then the expreſſion will be $\frac{4}{7}a$; when $m=4$, as in a biquadratic parabola, we ſhall have $\frac{5}{9}$ of the axis for the diſtance; and in a ſurſolid parabola, when $m=5$, the expreſſion will give $\frac{6}{11}a$ for the required diſtance. If $m=\frac{1}{2}$, which is the property of the concave or ſupplemental ſpace, then the axis becomes a tangent to the vertical point, and $\frac{3}{4}a$ will be the diſtance required. In the exterior parabola AST, as may be eaſily found, by reaſoning on ſimilar principles, the *center* of gravity is at the diſtance AL, equal to $\frac{3}{4}$ AQ. In the cubical parabola, $\frac{4}{5}$ AQ. In a biquadratic parabola, $\frac{5}{6}$ AQ. In a ſurſolidal parabola, $\frac{6}{7}$ AQ.

11. *The center of gravity of the arch of a circle*, as EHF (*fig.* 19. N° 2.) is ſomewhere in the radius AH that biſects it in H. Let DI, a diameter parallel to the chord of the arch EF, be conſidered as the axis of ſuſpenſion, and be equal to $2r$; let $EF=2a$, $EHF=2c$, the perpendicular $BC=y$, the arch $CH=z$, and $AB=x$. When the point C arrives at H, y becomes equal to r, and z and x in their evaneſcent ſtate are equal; therefore $y:r::\dot{x}:\dot{z}$; and conſequently $y\dot{z}$, which is the fluxion of the momentum, is equal to $r\dot{x}$; and rx will be the momentum itſelf. Divide this by z the whole maſs, and $\frac{rx}{z}$ will be the diſtance of the *center* of gravity of the arch from the point of ſuſpenſion A: but when the point C arrives at E, $\frac{rx}{z}$ will be equal to $\frac{ar}{c}$: and therefore the required diſtance will be to the radius as the chord of the arch to the arch itſelf; and if the arch be the ſemiperiphery, as the diameter to the ſemiperiphery. In the ſector of a circle, as CACH (*fig.* 19. N° 2.) the *center* of gravity is in the biſecting line AGH. On the center A, with a radius at pleaſure, deſcribe the arc NN, and draw the chords NN and CC. Let $AC=r$, the chord $CC=2a$, $CAC=2c$, and $AN=x$. The momentum of an arch, with reſpect to the axis of ſuſpenſion, being equal to the chord of that arch multiplied by the radius, the momenta of different arches are in the compound ratio of the chords and radii, or in the duplicate of the radii; therefore we ſhall have $rr:xx$, as the momentum of the arch $CHC=2ar$, to the momentum of the arch $NPN=\frac{2axx}{r}$, which, multiplied by $\dot{x}$, gives $\frac{2axx\dot{x}}{r}$ equal to the fluxion of the ſector NANP, whoſe fluent $\frac{2ax^3}{3r}$ will be the momentum of the ſame ſector. Divide this by cr, the value of the maſs, and $\frac{2ax^3}{3cr^2}$ will be the diſtance of the *center* of gravity of the ſector NAN; but when x becomes equal to r, $\frac{2ax^3}{3cr^2}$ will be $\frac{2ar}{3c}$ for the diſtance of the *center* of gravity of the ſector CACH, from the point of ſuſpenſion A: therefore this diſtance is to $\frac{2}{3}$ of the radius, as the chord of the arch to the arch itſelf. And if the ſector be a ſemicircle, it will be as the diameter to the ſemiperiphery. To find the value of any ſurface or ſolid by means of the *center* of gravity, ſee CENTROBARYC *method.*

For the center *of gravity of ſegments*, *lines*, *parabolic conoids*, *ſpheroids*, *truncated cones*, &c. as being caſes more operoſe, and at the ſame time more uncommon; we refer to Wolfius, Hodgſon, Simpſon, and others.

12. *To determine the* center *of gravity in any body mechanically.* Lay the given body HI (*fig.* 20.) on an extended rope, or on the edge of a triangular priſm FG, bringing it this and that way, till the parts on either ſide are in equilibrio; the plane, whoſe ſide is KL, paſſes through the *center* of gravity. Balance it again on the ſame, only changing its ſituation: then will the chord or the ſide MN, paſs through the *center* of gravity; ſo that the interſection of the two lines MN and KL determines the point O in the ſurface of the body required.

The ſame may be done by laying the body on an horizontal table (as near the edge as is poſſible, without its falling) in two poſitions, lengthwiſe and breadthwiſe: the common interſection of the two lines contiguous to the edge, will be its *center* of gravity. Or it may be done by placing the body on the point of a ſtyle, &c. till it reſt in equilibrio. It was by this method, Borelli found the *center* of gravity in a human body, to be between the nates and pubis; ſo that the whole gravity of the body is there collected, where nature has placed the genitals: an inſtance of the wiſdom of the Creator, in placing the membrum virile in that place, which of all others is the moſt convenient for copulation.

CENTER *of an hyperbola*, is a point in the middle of the determinate or tranſverſe *axis.*

CENTER *of magnitude*, is that point which is equally diſtant from all the external parts of a body.

CENTER *of motion*, is a point round which one or more heavy bodies, that have one common *center* of gravity, revolve; v. gr. If the weights P and Q (*Tab. Mechanics*, *fig.* 21.) revolve about the point N, ſo that when P deſcends, Q aſcends, N is ſaid to be the *center of motion.*

It is demonſtrated in mechanics, that the diſtance IN, of the *center* of gravity of any particular weight, from the common *center* of gravity, or the *center* of motion N, is perpendicular to the line of direction IP.

CENTER *of oſcillation*, is that point, in the axis or line of ſuſpenſion of a vibrating body, into which, if the whole was contracted, the angular velocity, and the time of vibration, would remain unaltered. Hence, in a compound pendulum, its diſtance from the point of ſuſpenſion is equal to the length of a ſimple *pendulum*, whoſe oſcillations are iſochronal with thoſe of the compound one.

Laws of the CENTER *of oſcillation.* 1. *If ſeveral weights* D, F, H, B (*Tab. Mechanics*, *fig.* 22.) *whoſe gravity is ſuppoſed collected in the points* D, F, H, B, *conſtantly retain the ſame diſtance between themſelves and the point of ſuſpenſion* A; *and the pendulum thus compounded, performs its oſcillations about* A; OA *the diſtance of the* center *of oſcillation* O *from the point of ſuſpenſion will be had by multiplying the ſeveral weights into the ſquares of the diſtances, and dividing the aggregate by the ſum of the momenta of their weight.* See Simpſon's Fluxions, vol. i. p. 212, &c.

2. *To determine the* center *of oſcillation in a right line* AB (*fig.* 23.) Let $AB=a$, $AD=x$, then will $x\dot{x}$ be the fluxion of the momentum, which being multiplied by x, becauſe the velocity of every point is proportional to its diſtance from the *center* of motion A, will give $x^2\dot{x}$ for the fluxion of the force, whoſe fluent $\frac{x^3}{3}$, being divided by $\frac{x^2}{2}$, the fluent of $x\dot{x}$, will give $\frac{2}{3}x$ for the diſtance of the *center* of oſcillation in the part AD from the point of ſuſpenſion A. If then for x be ſubſtituted a,

the diſtance of the *center* of oſcillation in the right line $AB = \frac{2}{3} a$. In this manner is found the *center* of oſcillation of a wire, oſcillating about one of its extremities.

3. *To determine the* center *of oſcillation of the rectangle* RIHS (*fig.* 19.) *ſuſpended in the middle point* A *of the ſide* RI, *and oſcillating about its axis* RI. Let $RI = SH = a$, $AP = x$; then will $a\dot{x}$ be the fluxion of the maſs, or whole weight. This, multiplied by x, the velocity will give $a x \dot{x}$ for the fluxion of the momentum; and multiplying this quantity again by x, the acquired velocity, we ſhall have $a x^2 \dot{x}$ for the fluxion of the force; whoſe fluent $\frac{a x^3}{3}$, being divided by $\frac{a x^2}{2}$, the fluent of $a x \dot{x}$, will give $\frac{2}{3} x$, which indefinitely expreſſes the diſtance of the *center* of oſcillation, from the axis of oſcillation in the ſegment RCDI. If then for x be ſubſtituted the altitude of the whole rectangle $RS = b$, we ſhall have the diſtance of the *center* of oſcillation from the axis $= \frac{2}{3} b$.

For the center *of oſcillation in an iſoſceles triangle*, ASH, oſcillating about its axis RI, parallel to its baſe SH; its diſtance from the vertex A is found $= \frac{3}{4}$ of AE the altitude of the triangle.

Of an iſoſceles triangle SAH oſcillating about its baſe SH, its diſtance from the vertex A is found $= \frac{1}{2}$ AE the altitude of the triangle.

For the center *of oſcillation in an iſoſceles triangle* SAH, *ſuſpended by an inflexible thread* void of gravity, A*h*, and oſcillating about its axis parallel to its baſe SH; its diſtance from the vertex is found $= \frac{1}{2}$ the altitude of the triangle.

For the centers *of oſcillation of parabolas, and curves of the like kind*, oſcillating about their axes, parallel to their baſes, they are found as follows.

Let $AE = a$, $AP = x$, and $PN = y$, (*fig.* 19.) then univerſally, $y = x^{\frac{1}{m}}$, and therefore $x^{\frac{1}{m}} \dot{x}$ will denote the fluxion of the whole maſs. This being multiplied by x^2 will give $x^{\frac{1}{m}+2} \dot{x}$ for the fluxion of the force, whoſe fluent $\frac{m}{3m+1} x^{\frac{1}{m}+3}$, being divided by $\frac{m}{2m+1} x^{\frac{1}{m}+2}$, the fluent of $x^{\frac{1}{m}+1} \dot{x}$, the fluxion of the momentum, will give $\frac{2m+1}{3m+1} x$ for the diſtance of the *center* of oſcillation of the ſpace ZANP from the vertex A; and when x becomes equal to a, $\frac{2m+1}{3m+1}$, a will denote the diſtance of the *center* of oſcillation of the whole parabolic ſpace SAH, from the point of ſuſpenſion A, in the axis of rotation RAI.

In the Apollonian parabola, $m = 2$, therefore the diſtance of the *center* from the axis, $= \frac{5}{7}$ AE.

In a cubical parabole, $m = 3$, and the diſtance of the *center* of oſcillation from the axis $= \frac{7}{10}$ AE.

In a biquadratic parabole, $m = 4$, and therefore the diſtance of the *center* from the axis, $= \frac{9}{13}$ AE.

For the method of determining the diſtance of the *center* of oſcillation from the baſe, ſuppoſed to be the axis about which the parabola revolves, ſee Hodgſon's Fluxions, p. 431, &c.

In ſolid and plane figures agitated laterally, i. e. about the axis of oſcillation, perpendicular to the plane of the figure, the inveſtigation of the *center* of oſcillation is ſomewhat difficult; becauſe all the parts of the weight, on account of their unequal diſtances from the point of ſuſpenſion, do not move with the ſame velocity; as is ſhewn by Huygens, in his Horol. Oſcill. He found, in this caſe, the diſtance of the *center* of oſcillation, from the axis in a circle, to be $\frac{3}{4}$ of the diameter: in a rectangle, ſuſpended by one of its angles, $\frac{2}{3}$ of the diagonal: in a parabola, ſuſpended by its vertex, $\frac{5}{7}$ of its axis, and $\frac{1}{3}$ of the parameter; ſuſpended from a point in the middle of the baſis, $\frac{4}{7}$ of the axis, and $\frac{1}{2}$ the parameter; in the ſector of a circle, $\frac{3}{4}$ of a right line which is to the radius as the arch to the ſubtenſe: in a cone, $\frac{4}{5}$ of the axis, and $\frac{1}{5}$ of the third proportional to the axis, and a ſemidiameter of the baſe: in a ſphere (as is uſually the caſe in pendulums) $\frac{2}{5}$ of a third proportional to two quantities compoſed of the ſemidiameter and length of the thread, and the ſemidiameter itſelf: in a cylinder, $\frac{2}{3}$ of the altitude, and $\frac{1}{2}$ a right line, which is to the ſemidiameter of the baſe, as that is to the altitude.

CENTER *of percuſſion*, in a moving body, is that point wherein the PERCUSSION is the greateſt, wherein the whole percutient force of the body is ſuppoſed to be collected: or about which the impetus of the parts is balanced on every ſide: ſo that it may be ſtopt, by an immoveable obſtacle, at this point, and reſt on it, without acting on the *center* of ſuſpenſion.

Laws of the CENTER *of percuſſion.*—1. *The* center *of percuſſion is the ſame with the* center *of oſcillation*, where the percutient body revolves round a fixed point; and is determined in the ſame manner, viz. by conſidering the impetus of the parts, as ſo many weights applied to an inflexible right line, void of gravity; i. e. by dividing the ſum of the products of the forces of the parts, multiplied by their diſtances from the point of ſuſpenſion, by the ſum of the forces. What, therefore, has been above ſhewn of the *center of oſcillation*, will hold of the *center of percuſſion*, where the percutient body moves round a fixed point.

2. *The* center *of percuſſion is the ſame with the* center *of gravity*, if all the parts of the percutient body be carried with a parallel motion, or with the ſame celerity: for the momenta are the products of the weights into the celerities. Wherefore, to multiply equiponderating bodies by the ſame velocity, is the ſame thing as to take equimultiples; but the equimultiples of equiponderating bodies, themſelves equiponderate; therefore, equivalent momenta are diſpoſed about the *center* of gravity: conſequently the *center* of percuſſion in this caſe coincides with that of gravity; and what is ſhewn of the one, will hold of the other.

CENTER *of a parallelogram*, or *polygon*, the point wherein its diagonals interſect.

CENTER *of a ſphere* is a point from which all the lines drawn to the ſurface, are equal.

The *center of the ſemicircle*, by whoſe revolution the ſphere is generated, is alſo that of the ſphere.

Hermes Triſmegiſtus defines God an intellectual ſphere, whoſe *center* is every-where, and circumference no-where.

CENTER-*wheel of a watch*. See WATCH-*work*.

CENTER *of a ſquadron*, or *of a fleet*, is the middle of a LINE, which is always the ſtation of the admiral, or commander in chief, and ought to be proportionably the ſtrongeſt, becauſe it reaches from the van and rear.

CENTERING *of an optic glaſs*, the grinding it ſo as that the thickeſt part is exactly in the middle.

One of the greateſt difficulties in grinding large optic glaſſes is, that in figures ſo little convex, the leaſt difference will put the center two or three inches out of the middle. Dr. Hook notes, that though it were better the thickeſt part of a long object glaſs were exactly in the middle, yet it may be a very good one when it is an inch or two out of it. Phil. Tranſ. N° 4. p. 57. Id. ibid. p. 64, ſeq.

M. Caſſini the younger has a diſcourſe expreſs on the neceſſity of *well centering the object glaſs* of a large teleſcope, that is, of grinding them ſo, that the center may fall exactly in the axis of the teleſcope. Mem. Acad. Sc. an. 1710, p. 299, ſeq.

CENTESIMA *uſura*, that wherein the intereſt in an hundred months became equal to the principal; i. e. where the money is laid out at one *per cent.* per month, anſwering to what in our ſtile would be called 12 *per cent.* for the Romans reckoned their intereſt not by the year, but by the month.

CENTESIMATION, *Centeſimatio*, the puniſhing every hundredth man.

Macrinus ſometimes decimated, and ſometimes *centeſimated* the ſoldiers. The latter term ſeems to have been introduced by himſelf, to the honour of his clemency, as being contented to *centeſimate* thoſe who deſerved decimation, or viceſimation.

CENTGRAVIUS, in *Middle Age Writers*, the ſame with CENTENARIUS.

CENTILOQUIUM, from *centum*, *a hundred*, and *loquor*, *I ſpeak*, denotes a collection of an hundred ſentences, opinions, or ſayings.

CENTINODIUM, an officinal plant, popularly called KNOT-*graſs*; by the botaniſts *polygonum*; reputed an aſtringent and vulnerary.

CENTIPES. See SCOLOPENDRA.

CENTNER, or *Docimaſtic* HUNDRED, in *Metallurgy* and *Aſſaying*, is a weight diviſible, firſt into an *hundred*, and thence into a greater number of other ſmaller parts; but though the word is the ſame, both with the aſſayers and metallurgiſts, yet it is to be underſtood as expreſſing a very different quantity in their different acceptation of it. The weights of the metallurgiſts are eaſily underſtood, as being of the common proportion, but thoſe of the aſſayers are a thouſand times ſmaller than theſe, as the portions of metals or ores examined by the aſſayers are uſually very ſmall.

The metallurgiſts, who extract metals out of their ores, uſe a weight divided into an *hundred* equal parts, each part a pound; the whole they call a *centner* or *hundred* weight; the pound is divided into thirty-two parts, or half ounces; and the half ounce into two quarters of ounces, and theſe each into two drams.

Theſe diviſions and denominations of the metallurgiſts are eaſily underſtood; but the ſame words, though they are equally uſed by aſſayers, with them expreſs very different quantities; for as the *centner* of the metallurgiſts contains an *hundred* pounds, the *centner* of the aſſayers is really no more than one dram, to which the other parts are proportioned.

As the aſſayers weights are divided into ſuch an extreme degree of minuteneſs, and are ſo very different from all the common weights, the aſſayers uſually make them themſelves in the following manner, out of ſmall ſilver, or fine ſolder plates, of ſuch a ſize, that the mark of their weight, according to the diviſion of the dram, which is the *docimaſtic*, or aſſaying *centner*, may be put upon them. They firſt take for a baſis one weight, being about two-thirds of a common dram: this they mark (64*lb.*) Then having at hand ſome granulated lead, waſhed clean, well dried, and ſifted very fine, they put as much of it in one of the ſmall diſhes of a fine balance, as will equipoiſe the (64*lb.*) as it is called, juſt mentioned: then dividing this granulated lead into very nice halves, in the two ſcales, after taking out the firſt ſilver weight, they obtain a perfect equilibrium between the two ſcales; they then pour the granulated lead out of one diſh of the ſcales, and inſtead of it put in another ſilver weight, which they make exactly equiponderant with the lead in the other ſcale, and mark it (32*lb.*) If this ſecond weight, when firſt put into the ſcale, exceed by much the weight of the lead, they take a little from it by a very fine file; but when it comes very near, they uſe only a whetſtone to wear off an extremely ſmall portion at a time. When it is brought to be perfectly even and equal to the lead, they change the ſcales to ſee that no error has been committed, and then go on in the ſame manner till they have made all the diviſions, and all the ſmall weights. Then to have an entire *centner* or *hundred* weight, they add to the (64*lb.*) as they call it, a 32*lb.* and a 4*lb.* and weighing againſt them one ſmall weight, they make it equal to them, and mark it (100*lb.*) This is the *docimaſtical*, or aſſaying *centner*, and is really one dram. Cramer, Art. Aſſ. p. 108.

CENTO, in *Poetry*, a work wholly compoſed of verſes, or paſſages promiſcuouſly taken from other authors; only diſpoſed in a new form, or order: ſo as to compoſe a new work, and make a new meaning.

The word is Latin, *cento*, which primarily ſignifies a cloak made of patches; and that from *κεντρον*.

Auſonius has laid down the rules to be obſerved in compoſing *centos*. The pieces, he ſays, may be taken either from the ſame poet, or from ſeveral; and the verſes may be either entire, or divided into two; one half to be connected with another half taken elſewhere; but two verſes are never to be taken running, nor is much leſs than half a verſe to be taken. Agreeably to theſe rules, he has made a pleaſant nuptial *cento* from Virgil.

Proba Falconia has written the life of Jeſus Chriſt, in *centos* taken from Virgil: the like is done by Alex. Roſs, in his Chriſtiados; and by Stephen de Pleurre, canon regular of St. Victor at Paris.

CENTONARII, in *Antiquity*, a ſort of officers or operators, whoſe buſineſs was to make *centones*, or coats patched of leather and cloth, wherewith to cover the *vineæ*, under which the beſiegers made their approaches, as well as the towers and machines uſed to batter the place, and prevent their being ſet on fire by the enemy. In the Theodoſian code we have a title, *De centonariis & dendrophoris*. And in ancient inſcriptions, the *centonarii* are joined with the *tignarii*, or carpenters, *ferrarii* or ſmiths, &c. who made but one company, under the denomination of *collegium fabrorum & centonariorum*.

CENTRAL, ſomething relating to a CENTER.

Thus we ſay *central eclipſe*, *central fire*, *central forces*, *central rule*, &c.

CENTRAL *forces*, are the *vires*, or powers, whereby a moving body either tends towards the center of motion, or recedes from it.

Central forces are divided into two kinds, with regard to their different relations to the center, viz. the *centripetal*, and the *centrifugal*.

The doctrine of *central*, or *centripetal*, and *centrifugal forces*, has been much cultivated by mathematicians, as being of extenſive uſe in the theory of gravity and other phyſico-mathematical ſciences.

In this doctrine it is ſuppoſed, that a body at reſt never moves itſelf; and that a body in motion never changes the velocity or direction of its motion of itſelf; but that every motion would continue uniform, and its direction rectilinear, unleſs ſome external *force* or reſiſtance affected it. Hence, when a body at reſt always tends to move, or when the velocity of any rectilinear motion is accelerated continually, or when the direction of a motion is continually varied, and a curve line deſcribed, theſe are ſuppoſed to proceed equally from the influence of ſome power that acts inceſſantly; which may be meaſured either by the preſſure of the quieſcent body againſt the obſtacle that hinders it to move, in the firſt caſe; or by the acceleration of the motion, in the ſecond; or by the flexure of the curve deſcribed, in the third caſe; due regard being had to the time in which theſe effects are produced, and other circumſtances, according to the principles of mechanics. Effects of the power of gravity of each kind fall under our conſtant obſervation near the ſurface of the earth; for the ſame power which renders bodies heavy while they are at reſt, accelerates them when they deſcend perpendicularly, and bends their motion into a curve line when they are projected in any other direction than that of their gravity. But we can judge of the powers that act on the celeſtial bodies by effects of the laſt kind only. And hence it is that the doctrine of *central forces* is of ſo much uſe in the theory of the planetary motions.

Sir Iſaac Newton has treated of *central forces* in book I. § 2. of his Principles. M. De Moivre has given elegant general theorems relating to the ſame ſubject, in the Phil. Tranſ. and in his Miſcel. Analyt. p. 231.

Let MPQ (*Tab.* II. *Analyſis*, *fig.* 57.) be any given curve in the perimeter of which a body moves: let P be the place of the body in the curve, S the center of *forces*, PG the radius of concavity or curvature, ST the perpendicular drawn from the center of *forces* to the tangent of the curve in P; then will the *centripetal force* be every where proportional to the quantity $\frac{SP}{PG \times ST \text{ cub.}}$ See Miſcel. Analyt. p. 231.

What is there called the *center of force*, is the point to which the *central force* is always directed.

Monſ. Varignon has alſo given two general theorems on this ſubject in the Memoirs of the Acad. Scienc. an. 1700, 1701, and has ſhewn their application to the motions of the planets. See alſo the ſame Memoirs, an. 1706, 1710.

Mr. Mac-Laurin has alſo treated the ſubject of *central forces* very fully in his Fluxions, from art. 416 to 493, where he gives a great variety of expreſſions for theſe *forces*, and ſeveral elegant methods of inveſtigating them.

Sir Iſaac Newton has demonſtrated this fundamental theorem of *central forces*, that the areas which revolving bodies deſcribe by radii drawn to an immoveable center, lie in the ſame immoveable planes, and are proportional to the times in which they are deſcribed. Princip. lib. i. prop. 1.

A late eminent mathematician obſerves, that this law, which is originally Kepler's, is the only general principle in the doctrine of *centripetal forces*; but ſince this law, as Sir Iſaac Newton himſelf has proved, cannot hold whenever a body has a gravity or *force* to any other than one and the ſame point, there ſeems to be wanting ſome law that may ſerve to explain the motions of the moon and ſatellites which have a gravity towards two different centers: the law he lays down for this purpoſe is,

That where a body is deflected by two *forces* tending conſtantly to two fixed points, it will deſcribe by lines drawn from the two fixed points, equal ſolids in equal times, about the line joining thoſe fixed points. See Machin, of the Laws of the Moon's Motion, in the poſtſcript. This ſhort treatiſe is publiſhed at the end of the Engliſh tranſlation of Sir Iſaac Newton's Principles. See a demonſtration of this law by Mr. W. Jones, in the Phil. Tranſ. vol. lix. art. 12. p. 74, &c.

CENTRAL *forces, laws of*. 1. The following rule, for which we are obliged to the marquis de l'Hôpital, opens at once all the myſteries of *central forces*. Suppoſe a body of any determinate weight to move uniformly round a center with any certain velocity; find from what height it muſt have fallen to acquire that velocity: then, as the radius of the circle it deſcribes is to double that height, ſo is its weight to its centrifugal force.

2. The *central force* of a body moving in the periphery of a circle, is as the ſquare of the indefinitely ſmall arch AE, divided by the diameter AB. *Tab. Mechanics*, *fig.* 25. N° I. Let this arch be the diſtance which the body deſcribes in a given particle of time; then, from the nature of the circle, $AE^2 = AB \times AM$, and therefore $AM = \frac{AE^2}{AB}$. Now AM is the ſpace through which the body is drawn from the tangent in the given time; and though 2 AM is the proper meaſure of the *ceutral* force, yet when the forces compared are all computed in the ſame manner, from the naſcent, or indefinitely ſmall ſubtenſes of contemporaneous arches, it is of no conſequence whether we conſider thoſe ſubtenſes, or their doubles, as the meaſures of the forces, ſince the ratio is in both caſes the ſame. Since then a body, by an equable motion, in equal times deſcribes

equal arches AE; the *central force* wherewith the body is impelled in the periphery of the circle, is conſtantly the ſame.

3. If two bodies deſcribe different peripheries by an equable motion, their *central forces* are in a ratio, compounded of the duplicate ratio of their celerities; and the reciprocal one of their diameters: becauſe the ratio of the celerities is in this caſe the ſame with that of the arches or ſpaces deſcribed in the ſame time; and the celerities are evidently in the ſubduplicate of the products of the diameters multiplied by the forces. Hence, if the celerities be equal, the *central forces* will be reciprocally as their diameters; and if the diameters AB and HL be equal, i. e. if each moveable proceed in the ſame periphery, but with unequal celerities, the *central forces* will be in a duplicate ratio of the velocities.

If the *central forces* of the two bodies moving in different peripheries be equal, the diameters of the circles AB and HL will be in a duplicate ratio of the celerities.

4. The *central forces* are in a ratio compounded of the direct ratio of the diameters, and the reciprocal one of the ſquares of the times. For the diameters are as the peripheries, which are the ſpaces run in the periodic times; and theſe are in the compound ratio of their times and celerities directly: therefore, repreſenting the times by T, t, the celerities by C, c, and the diameters by D, d; $D : d :: C \times T : c \times t$; conſequently, $\frac{C^2 \times T^2}{D^2} = \frac{c^2 \times t^2}{d^2}$, and $\frac{t^2}{d} : \frac{T^2}{D} :: \frac{C^2}{D} : \frac{c^2}{d}$; and therefore by art. 3. the *central forces* are in the proportion required. And when the circles are equal, the *central forces* are reciprocally as the ſquares of the times.

5. If two bodies, equal in weight, deſcribe peripheries of unequal circles in equal times, their *central forces* are as their diameters AB, and HL (*Tab. Mechanics*, *fig*. 25). And hence, if the *central forces* of two bodies, deſcribing peripheries of two unequal circles, be as their diameters, they paſs over the ſame in equal times.

6. If two bodies, moving in unequal peripheries, be acted on by the ſame *central force*, the time in the larger is to that in the ſmaller, in a ſubduplicate ratio of the greater diameter AB, to the leſs HL; wherefore, $T^2 : t^2 :: D : d$, that is, the diameters of the circles in whoſe peripheries thoſe bodies are acted on by the ſame *central force*, are in a duplicate ratio of the times. Hence alſo the times wherein ſimilar peripheries or arches are run over by bodies impelled by the ſame *central force*, are in proportion to their velocities.

7. If the times wherein the bodies are carried through the ſame entire peripheries, or ſimilar arches, be as the diameters of the circles, the *central forces* are reciprocally as the ſame diameters.

8. If a body move uniformly in the periphery of a circle, with the velocity it acquires by falling the height AF; the *central force* will be to the gravity, as double the altitude AF to the radius CA.—If therefore the gravity of the body be called G, the centrifugal force will be $2\,AF \times G \div CA$.

9. If a heavy body move equably in the periphery of a circle, and with the velocity which it acquires by falling through a height equal to half the radius; the *central force* will be equal to the gravity.—And again, if the *central force* be equal to the gravity, it moves in the periphery of the circle, with the ſame gravity which it acquires in falling a height equal to half the radius.

10. If the *central force* be equal to the gravity, the time it takes up in the entire periphery, is to the time of its fall through half the radius, as the periphery to the radius.

11. If two bodies move in unequal peripheries, and with an unequal velocity, which is reciprocally in a ſubduplicate ratio of the diameters; the *central forces* are in a duplicate ratio of the diſtances from the center of the forces, taken reciprocally.

12. If two bodies move in unequal peripheries, with celerities which are reciprocally as the diameters; their *central forces* will be reciprocally as the cubes of their diſtances from the center of their forces.

13. If the velocities of two bodies moving in unequal peripheries, be reciprocally in a ſubduplicate ratio of the diameters; the ſquares of the times wherein they paſs the whole periphery, or ſimilar arches, are in a triplicate ratio of the diſtances from the center of the forces; wherefore, if the *central forces* be reciprocally in a duplicate ratio of the diſtances from the center, the ſquares of the times wherein the entire peripheries, or ſimilar arches, are paſſed over, are alſo in a triplicate ratio of the diſtances.

From this, and ſome of the foregoing theorems, we may deduce the velocity and periodic time of a body revolving in a circle, by means of its own gravity, at any given diſtance from the earth's center. Let d be the ſpace through which a heavy body deſcends at the ſurface of the earth, in the firſt ſecond of time, then $2d$ will be the meaſure of the force of gravity at the ſurface: and r being aſſumed for the earth's radius, the velocity in a circle at its ſurface, in one ſecond, will be $\sqrt{2rd}$, by art. 2. And the time of revolution will be $= \frac{3,14159, \&c. \times 2r}{\sqrt{2rd}} = 3,14159, \&c. \times \sqrt{\frac{2r}{d}}$ (ſeconds); becauſe the ſpace, deſcribed in a given time, which is the true meaſure of the celerity, is to the whole periphery, viz. $3.14159 \times 2r$, as the ſaid time is to the true meaſure of the periodic time: the two foregoing expreſſions, ſubſtituting for r, 21000000 feet, and for d, $16\frac{1}{2}$, will be nearly equal to 26000 feet, and 5075 ſeconds, reſpectively. Let R repreſent the radius of another circle deſcribed by a projectile about the earth's center; ſince the force of gravitation varies inverſly as the ſquare of the diſtance, we ſhall have $r-\frac{1}{2} : R-\frac{1}{2} :: 26000$ feet, the velocity in a ſecond at the ſurface, to $26000 \times \sqrt{\frac{r}{R}}$, the velocity in the circle whoſe radius is R: and by art. 13. $r\frac{3}{2} : R\frac{3}{2} :: 5075$ ſeconds, the periodic time at the ſurface: $5075 \times \sqrt{\frac{R^3}{r^3}}$, the time of revolution in the circle R. Let $R = 60r$, or the diſtance of the moon from the earth, and the above expreſſion will give 2360000 ſeconds, or 27,3 days nearly for the periodic time at that diſtance. Thus alſo the ratio of the forces of gravitation of the moon towards the ſun and earth may be eſtimated. For, 1 year being the periodic time of the earth and moon about the ſun, and $\frac{1}{178}$ the ſquare of the proportional periodic time of the moon about the earth, we have, by art. 4. $\frac{94000000}{1} : 240000 \times 178 :: 2,2, \&c. : 1$; or this is the proportion of the gravitation of the moon towards the ſun to her gravitation towards the earth. Again, we may hence compute the centrifugal force of a body at the equator, ariſing from the earth's rotation. The time of revolution, when the centrifugal force would become equal to that of gravity, as has been ſhewn above, is 5075 ſeconds; and, by art. 4. $\overline{86160}|^2$, which is the ſquare of the number of ſeconds in 23 hours, 56 minutes, the time of the earth's entire rotation, is to $\overline{5075}|^2$, as the force of gravity, which may be denoted by unit, to $\frac{1}{289}$, the centrifugal force required. Simpſon's Fluxions, vol. i. p. 240, &c.

14. If a body move in a curve line, in ſuch manner as that the radius CB, *fig*. 25. Nº 2. drawn from it to the fixed point C, placed in the ſame plane, deſcribes areas BAC, BCE, &c. proportional to the times, or equal in any given time, it is ſolicited towards the point C, by a centripetal force.

15. If a body proceed according to the direction of the right line AD, and be ſolicited by a centripetal force towards a fixed point C, placed in the ſame plane; it deſcribes a curve, whoſe cavity is towards C, and whoſe ſeveral areæ, comprehended between two radii AC and CB, are proportional to the times.

16. However the *central forces* differ from one another, they may be compared together; for they are always in a ratio compounded of the ratio of the quantities of matter in the revolving bodies, and the ratio of the diſtances from the center; and alſo in an inverſe ratio of the ſquares of the periodical times. If then you multiply the quantity of matter in each body by its diſtance from the center, and divide the product by the ſquare of the periodical time, the quotients of the diviſion will be to one another in the ſaid compound ratio, that is, as the *central forces*.

17. When the quantities of matter are equal, the diſtances themſelves muſt be divided by the ſquare of the periodical times, to determine the proportion of the *central forces*: in that caſe, if the ſquares of the periodical times be to one another as the cubes of the diſtances, the quotients of the diviſions, as well as the *central forces*, will be in an inverſe ratio of the ſquares of the diſtances.

18. When the force by which a body ſolicited towards a point is not every where the ſame, but is either increaſed or diminiſhed, in proportion to the diſtance from the center; ſeveral curves will thence ariſe in a certain proportion. If the force decreaſes in an inverſe ratio of the ſquares of the diſtances from that point, the body will deſcribe an ellipſis, which is an oval curve, in which there are two points called *foci*, and the point towards which the force is directed falls upon one of them; ſo

that in every revolution the body once approaches to, and once recedes from it. The circle alſo belongs to that ſort of curves, and ſo in that caſe the body may alſo deſcribe a circle. The body may alſo (by ſuppoſing a greater celerity in it) deſcribe the two remaining conic ſections, viz. the parabola and hyperbola-curves, which do not rerurn into themſelves: on the contrary, if the force increaſes with the diſtance, and that in a ratio of the diſtance itſelf, the body will again deſcribe an ellipſis; but the point to which the force is directed is the center of the ellipſe; and the body, in each revolution, will twice approach to, and again twice recede from that point. In this caſe alſo a body may move in a circle, for the reaſon above mentioned.

CENTRAL *Rule*, is a rule or method diſcovered by our countryman Thomas Baker, rector of Nympton in Devon, whereby to find the center of a circle deſigned to cut the parabola in as many points, as an equation to be conſtructed hath real roots.

Its principal uſe is in the conſtruction of equations; and he has applied it with good ſucceſs as far as biquadratics.

The *central rule* is chiefly founded on this property of the parabola: that if a line be inſcribed in that curve perpendicular to any diameter, a rectangle formed of the ſegments of this inſcript is equal to a rectangle made of the intercepted diameter and parameter of the axis.

The *central rule* has the advantage over Cartes's and De Latteres's methods of conſtructing equations, in that both theſe are ſubject to the trouble of preparing the equation by taking away the ſecond term. This we are freed from in Baker's method, which ſhews us how to conſtruct all equations not exceeding the fourth power, by the interſection of a circle and parabola, without the omiſſion or change of any terms. See Phil. Tranſ. N° 157.

CENTRATION, *centratio*. See CONCENTRATION.

Paracelſus uſes the word *centratio*, for the change or converſion of a ſaline principle into a corroſive and ulcerating quality. According to him, a *centrum ſalis* is the beginning of ulcers.

CENTRIFUGAL *force* is that whereby a body revolving round a center, endeavours to recede from it.

It is one of the eſtabliſhed laws of nature, that all motion is of itſelf rectilinear; and that the moving body never recedes from its firſt right line, till ſome new impulſe be ſuperadded in a different direction: after that new impulſe, the motion becomes compounded, but it continues ſtill rectilinear, though the direction of the line be altered. To move in a curve, it muſt receive a new impulſe, and that in a different direction every moment; a curve not being reducible to right lines, unleſs infinitely ſmall ones. If then a body continually drawn towards a center, be projected in a line that does not go through that center, it will deſcribe a curve; in each point whereof, A (*Tab. Mechanics*, *fig.* 25. N° I.) it will endeavour to recede from the curve, and proceed in the tangent AD; and, if nothing hindered, it would actually proceed; ſo as in the ſame time wherein it deſcribes the arch AE, it would recede the length of the line DE, perpendicular to AD, by its *centrifugal force*. The *centrifugal force*, therefore, is as the right line DE, perpendicular to AD; ſuppoſing the arch AE infinitely ſmall.

The effect of the *centrifugal force* is ſuch, that a body, obliged to deſcribe a circle, always deſcribes the largeſt it poſſibly can; a greater circle being, as it were, leſs circular, and leſs diſtant from a right line, than a ſmall one. A body therefore ſuffers more violence, and exerts its *centrifugol force* more, when it deſcribes a little circle, than when a large one: that is, the *centrifugal force* is always proportional, other circumſtances being alike, to the circumference of the curve in which the revolving body is carried round.

It is the ſame in other curves as in circles; for a curve, whatever it be, may be eſteemed as compoſed of an infinity of arches of infinitely ſmall circles, all deſcribed on different radii; ſo that it is at thoſe places where the curve has the greateſt curvity, that the little arches are moſt circular: thus, in the ſame curve, the *centrifugal force* of the body that deſcribes it, varies according to the ſeveral points wherein it is found.

CENTRIFUGAL *wheel*. See WHEEL.

CENTRINE, in *Zoology*, the name by which moſt authors call the *porcus piſcis*. It is properly of the *galeus* kind, but much thicker and ſhorter than any other of that genus, and from head to tail is ſomewhat of a triangular figure; its broad and flat belly making one ſide of the triangle, and its two ſides, which meet at the back, the other two. Aldrov. de Piſc. lib. iii. cap. 141.

It has its name of *porcus piſcis* either from the ſhape of its back, which, riſing into a ridge, reſembles that of a hog, or from his loving like the hog to wallow in mud.

CENTRINES, in *Phyſiology*, a ſpecies of inſects hatched in the wild fig-tree, and uſed in CAPRIFICATION.

CENTRIPETAL *force* is that power whereby a moveable body, impelled in the right line AG (*Tab. Mechanics*, *fig.* 25. N° I.) is perpetually drawn out of its rectilinear motion, and ſolicited to proceed in a curve. The *centripetal force*, therefore, is as the right line DE; ſuppoſing the arch AE infinitely ſmall. Hence, in circles, the *centripetal* and *centrifugal forces* are equal.

CENTRISCUS, in *Zoology*, a genus of the order of *nantes*, in the claſs of *amphibia*: the characters of which are, that the head is lengthened out into a very narrow beak, the aperture is recurved, the abdomen carinated, and the belly-fins united.

CENTRO-BARYC *method*, from κεντρὸν and βαρυς, *heavy*, in *Mechanics*, is a method of meaſuring or determining the quantity of a ſurface, or a ſolid, by conſidering it as formed by motion, and multiplying it into the way of its center of gravity.

The doctrine is compriſed in the following theorem, with its corollaries.

Every figure, whether ſuperficial or ſolid, generated by the motion of a line or figure, is equal to the factum of the generating magnitude into the way of its center of gravity, or the line which its center of gravity deſcribes.

Demonſt. For ſuppoſe the weight of the whole generating magnitude collected in the center of gravity; the whole weight produced by its motion will be equal to the factum of the weight moved into the center of gravity. But when lines and figures are conſidered like homogeneous heavy bodies, their weights are as their bulks; and therefore the weight moved is the generating magnitude; and the weight produced, that generated. The figure generated, therefore, is equal to the factum of the magnitude into the way of its center of gravity. Q. E. D.

Corol. 1. Since a parallelogram ABCD (*Tab. Mechanics*, *fig.* 26.) is deſcribed, if the right line AB proceed according to the direction of another AC, with a motion ſtill parallel to itſelf; and the way of the center of gravity E is equal to the right line EF, perpendicular to CD, that is, to the altitude of the parallelogram: its area is equal to the factum of the baſe CD, or the deſcribent line into the altitude EF.

Corol. 2. In the ſame manner it appears, that the ſolidity of all bodies, deſcribed by a plane deſcending according to the direction of any right line AC, is had by multiplying the deſcribing plane by the altitude.

Corol. 3. Since a circle is deſcribed, if the radius CL (*fig.* 27.) revolve round a center C, and the center of gravity of the radius CL be in the middle F, the way of the center of gravity is a periphery of a circle X, deſcribed by a ſubduple radius: conſequently the area of the circle is equal to the factum of the radius CL, into the periphery deſcribed by the ſubduple radius CF.

Corol. 4. If a rectangle ABCD (*Tab. Mechanics*, *fig.* 28.) revolve about its axis AD; the rectangle will deſcribe a cylinder, and the ſide BC the ſuperficies of a cylinder. But the center of gravity of the right line BC is in the middle F; and the center of gravity of the generating plane in the middle G of the right line EF. The way of this latter, therefore, is the periphery of a circle deſcribed by the radius EF. Wherefore, the ſuperficies of the cylinder is the factum of the altitude BC into the periphery of a circle deſcribed by the radius EF, or the baſe. And the ſolidity of the cylinder is the factum of the generating rectangle ABCD into the periphery of a circle deſcribed by the radius EG, which is ſubduple of EF, or of the ſemidiameter of the cylinder.

Suppoſe, v. gr. the altitude of the deſcribing plane, and therefore of the cylinder $BC=a$; the ſemidiameter of the baſe $DC=r$; then will $EG=\frac{1}{2}r$: and ſuppoſing the ratio of the ſemidiameter to the periphery $=1:m$, the periphery deſcribed by the radius $\frac{1}{2}r=\frac{1}{2}mr$. Therefore, multiplying $\frac{1}{2}mr$ by the area of the rectangle $AC=ar$; the ſolidity of the cylinder will be $=\frac{1}{2}mar^2$. But $\frac{1}{2}mar^2 =\frac{1}{2}r\times mr\times a$; and $\frac{1}{2}mr^2$ is the area of the circle deſcribed by the radius EG. It is evident, therefore, the cylinder is equal to the factum of the baſe into the altitude.

Corol. 5. In like manner, ſince the center of gravity of the right line AB (*Tab. Mechanics*, *fig.* 17.) is in the middle M, and the ſurface of a cone is deſcribed, if the triangle ABC revolves about its axis; if $PM=\frac{1}{2}BC$; the ſuperficies of the cone will be equal to the factum of its ſide AB, into the periphery deſcribed by the radius PM, or the ſubduple diameter of the baſe BC.

Suppoſe, v. gr. $BC=r$, $AB=a$, the ratio of the radius to the periphery $1:m$; then will $PM=\frac{1}{2}r$, and the periphery deſcribed by this radius $=\frac{1}{2}mr$. Therefore, multiplying $\frac{1}{2}mr$ into the ſide of the cone AB, the product is the ſuperficies or $\frac{1}{2}amr$. But $\frac{1}{2}amr$ is alſo the factum of $\frac{1}{2}a$ and mr: therefore, the ſurface of the cone is the product of the periphery into half the ſide.

Corol. 6. If the triangle ACB (*Tab. Mechanics*, *fig.* 29.) revolve about its axis, it deſcribes a cone; but if CB be biſected in D, and the right line AD be drawn, and

$AO = \frac{2}{3} AD$; the center of gravity will be in O. The ſolidity of the cone, therefore, is equal to the factum of the triangle CAB into the periphery deſcribed by the radius PO; but $AD : AO :: BD : OP$; and $AO = \frac{2}{3} AD$, and $DB = \frac{1}{2} CB$. Therefore, $OP = \frac{2}{3} BD = \frac{1}{3} CB$.

Suppoſe, v. gr. $BC = r$, $AB = a$; the ratio of the radius to the periphery $= 1 : m$. Then will $OP = \frac{1}{3} r$, the periphery deſcribed by this radius $\frac{1}{3} mr$; the triangle $ACB = \frac{1}{2} ar$; and therefore, the ſolidity of the cone $\frac{1}{3} mr \; \frac{1}{2} ar = \frac{1}{6} amr^2$. But $\frac{1}{6} amr^2 = \frac{1}{2} r \times mr \times \frac{1}{3} a$: Or, the factum of the baſe of the cone into the third part of the altitude. See TRIANGLE.

This elegant theorem, which may be ranked among the chief inventions in geometry of the laſt age, was taken notice of long ago by Pappus; but the jeſuit Guldinus was the firſt who ſet it in its full light, and exhibited its uſe in a variety of examples. Several other geometers, after Guldinus and Pappus, have alſo uſed it in meaſuring ſolids, and ſurfaces generated by a rotation round a fixed axis; eſpecially before the late invention of the integral calculus: and it may ſtill take place in ſome caſes, where the integral calculus would be more difficult. M. Leibnitz has obſerved, that the method will hold, though the axis or center be continually changed during the generative motion.

CENTRONIA, in *Ichthyology*, the name by which the *echini marini* have been lately diſtinguiſhed. Dr. Hill makes them a diſtinct ſeries of animals, living under the defence of ſhelly coverings, formed of one piece, and furniſhed with a vaſt number of ſpines, moveable at the creature's pleaſure.

The ſpecies of *centronia* are very numerous, but may be all comprehended under the following diviſions. 1. The roundiſh, or ſubgloboſe kind; called by Klein, CIDARIS. See TURBAN-*ſhell*.

2. The cordated kinds; called by Klein, SPATANGI and SPATAGOIDES.

3. The flat kinds; called by Klein, PLACENTÆ.

Klein, who has been at much pains to arrange theſe bodies, has divided them into a number of other genera; but they may be all ranked under one or other of theſe diviſions. But beſide the known recent ſpecies, we meet with ſeveral others, foſſile, of a very ſingular figure; for which ſee ECHINITES, and ECHINI *foſſiles*.

CENTRUM, in *Geometry*, *Mechanics*, *&c.* See CENTER.

CENTRUM *phonicum*, in *Acouſtics*, is the place where the ſpeaker ſtands in poloſyllabical and articulate echoes.

CENTRUM *phonocampticum*, is the place, or object, that returns the voice in an echo.

CENTRUM *tendinoſum*, in *Anatomy*, a point, or center, wherein the tails of the muſcles of the diaphragm meet. This center is perforated towards the right ſide, for the *vena cava*; towards the left, backward: its fleſhy part gives way to the *gula*. The deſcending trunk of the great artery, thoracic duct, and *vena azygos*, paſs between its two inferior proceſſes. See DIAPHRAGM.

CENTRY *Box*, a wooden cell, or lodge, made to ſhelter the centinel, or centry, from the injuries of the weather. In a fortification, ſuch lodges are uſually placed on the flanked angles of the baſtions, on thoſe of the ſhoulder, and ſometimes in the middle of the curtain.

CENTUM-MORBIA, in *Botany*, a name uſed by ſome authors for the common moneywort or nummularia, from its ſuppoſed virtues.

CENTUMVIRATE, among the Romans, a court compoſed of one hundred magiſtrates, or judges, appointed to decide private differences between the people.

The *centumviri* were a body of men choſen, three out of each tribe; ſo that their number amounted to five more than their name imports: their buſineſs was to judge of matters relating to teſtaments, tutorage, inheritances, and ſuch other matters of leſſer weight and moment, as the prætors committed to them. Their body was afterwards increaſed to an hundred and eighty.

The *centumviri* were called together by ſetting up a ſpear; at firſt, by thoſe who had diſcharged the office of quæſtor; afterwards, by the decemviri.

CENTUNCULUS, in *Botany*, a name uſed by ſome authors for the gnaphalium, or cudweed.

CENTUNCULUS, in the Linnæan ſyſtem of *Botany*. This makes a diſtinct genus of plants, of the *tetrandria monogynia* claſs; the characters of which are theſe: the cup is a wide perianthium, divided into four oval and pointed ſegments, and remaining after the flower is fallen; theſe alſo are larger than the ſegments of the flower. The flower is compoſed of a ſingle petal, in form of a roundiſh tube, with a rim divided into four ſegments of an oval figure: the ſtamina are four filaments nearly of the length of the flower: the antheræ are ſimple: the germen of the piſtil is roundiſh, and ſituated in the tube of the flower: the ſtyle is ſlender, of the length of the flower, and remains when the petal is fallen: the ſtigma is ſimple: the fruit is a globoſe capſule, containing only one cell, which ſplits open horizontally: the ſeeds are ſmall, numerous, and roundiſh.

CENTURIAL *Inſcriptions*, a denomination given by ſome to thoſe inſcriptions inſerted in the face of Severus's wall, which make mention of the centuries and cohorts by whom ſuch parts of the wall are ſuppoſed to have been erected. In which ſenſe, *centurial inſcriptions* ſtand contradiſtinguiſhed from *legionary*.

CENTURIATA *Comitia*, in *Antiquity*, thoſe aſſemblies of the Romans, wherein the people gave their votes by centuries.

CENTURIATOR, an appellation given to certain learned Germans of the city of Magdeburg, who in the early days of the Reformation compoſed a body of church hiſtory, divided into CENTURIES of years.

Baronius is ſaid to have written his Annals by way of oppoſition to the *centuriators* of Magdeburg.

CENTURION, *Centurio*, among the Romans, an officer in the infantry, who commanded a century, or an hundred men.

The firſt *centurion* of the firſt cohort of each legion, was called *primipilus*, *primopilus*, or *primipili centurio*, ſometimes *primus centurio*: he was not under the command of any tribune, as all the reſt were; and had four centuries under his direction. He guarded the ſtandard, and the eagle of the legion.

CENTURY, a thing divided, or ranged into an hundred parts. At the time when the Roman people were aſſembled for creating of magiſtrates, eſtabliſhing of laws, or deliberating of public affairs, they were divided into *centuries*; and to the end their ſuffrages might be more eaſily collected, they voted by *centuries*: this was done in the Campus Martius; and theſe aſſemblies were hence called *comitia centuriata*.

The denomination CENTURY, *centuria*, was given to the horſemen or *equites* belonging to each tribe, which at firſt were only a hundred; but the ſame name, *centuria equitum*, was retained when the number was afterwards doubled, and even tripled: juſt as it was with the word tribe, which at firſt denoted a third part of the people; but was ſtill retained, after the people were divided into ſix parts. Mem. Acad. Inſcript. tom. ii. p. 101.

The Roman cohorts were diſtributed into decuries, commanded by decurions; and *centuries* by centurions. Each COHORT conſiſted of ſix *centuries*, and a LEGION of ſixty.

CENTURY, in *Chronology*, is the ſpace of one hundred years. Church-hiſtory is computed chiefly by *centuries*, commencing from our Saviour's incarnation.

In this ſenſe, we ſay, the firſt *century*; the fathers of the ſecond *century*; the councils of the third *century*, &c.

CENTUSSIS, a Roman coin, containing a hundred *aſſes*. See AS.

CEOAN, in *Zoology*, the name of a bird, common in the Spaniſh Weſt Indies, and deſcribed by Nieremberg, who alſo calls it *avis nivea*. It is a little larger than our largeſt thruſh, and very remarkable for the facility with which it learns to imitate the human ſpeech.

CEORLE. See CHURLE.

CEPA, the *onion*, in *Botany*, &c. See ONION.

CEPÆA, in *Botany*, a name given by ſome authors to the common *anagallis aquatica*, or water-brook lime.

CEPHALALGIA, from κεφαλη, *head*, and αλγος, *pain*, in *Medicine*, is underſtood, in the general, of any HEAD-*ach*; but properly ſignifies only a freſh one.—When it becomes inveterate, it is called *cephalæa*; and, when it only poſſeſſes half the head, *hemicrania*.

CEPHALALGIA *biaco-hæmatitica*, a name given by ſome medical writers to that ſpecies of HEAD-*ach*, called by others the *clavus hyſtericus*.

CEPHALANTHUS, in *Botany*. See BUTTON-*tree*.

CEPHALIC, in *Medicine*, is applied to any thing belonging to the HEAD, or its parts.

The word is formed of κεφαλη, *head*.

CEPHALICS, or CEPHALIC *Medicines*, are ſuch as are proper for diſorders of the head.

Theſe are generally of a volatile, ſpirituous, or aromatic nature, or at leaſt they are joined with ſuch; and are ſuppoſed to be of ſervice, by the volatility of their particles inſinuating into the nerves, and mixing with the animal ſpirits directly, as well as by the common circulation. Fixed bodies can only become *cephalic* by accident. Thus, ſpirit of lavender is ſuppoſed directly to act upon the nerves of the palate, &c. upon which account, it is frequently taken dropped on ſugar, or bread: and ſal volatile, by ſmelling to, is ſuppoſed to be aſſiſtant to the head, by its volatile particles entering the olfactory nerves. As to aromatic *cephalics*, as the ſpecies of diambra, powder de gutteta, nutmeg, &c. they act chiefly by their aromatic parts warming the nervous ſyſtem, and increaſing their vibrations, by which the nervous fluid circulates more freely.

Cephalics are different, according to the diverſity of cauſes, which may happen to obſtruct the circulation of the humours of the brain. If the cauſe is of a cold and mucous kind, the *cephalics* to be preſcribed, muſt be of a heating, ſtimulating, fragrant, and aromatic quality: if, on the contrary, the diſorder ariſes from an exceſs of heat in the body, the *cephalics* to be exhibited muſt be of a cooling and refrigerating nature.

Cephalics are either *internal*, when for inſtance they are exhibited by the mouth, in order to produce their effects by the general circulation of the fluids; or by way of clyſters, which often produce the moſt happy conſequences, by making a revulſion from the ſuperior and more noble parts: or they are ſuch as are *external*; to which claſs belong errhines, proper liquors for waſhing the head, medicated cups, and other remedies commonly called topics, the materials of which are alſo uſed againſt diſorders of other parts of the body.

With reſpect to *cephalic* topics in general, we muſt obſerve, that the head is leſs capable of bearing moiſt than dry applications; becauſe the former, by diſtending or relaxing the veſſels, produce congeſtions of humours, which prove hurtful to the brain. Nor do moiſt preparations applied to the head ever anſwer any valuable purpoſe, except in thoſe caſes alone where the diſorder ariſes from an exceſs of heat and dryneſs; or from an inflammatory diſpoſition in the head.

CEPHALIC *Vein*, in *Anatomy*, is a vein of the arm between the ſkin and the muſcles, divided into two branches, *external* and *internal*. The external goes down to the wriſt, where it joins the *baſilica*, and turns up to the back of the hand: the internal branch, together with a ſprig of the *baſilica*, makes the *mediana*.—See *Tab. Anat.* (*Angeiol.*) *fig.* 6. *lit. n.*

It is thus called, becauſe the ancients uſed to open it in diſorders of the head; from a miſtaken notion, that it had a nearer concern with the head than any other of the veins.

CEPHALOIDES, a denomination given by ſome writers, who diſcover virtues in plants from their ſignatures, to thoſe which bear any reſemblance to a human head; ſuch are the poppy, piony, and the like.

CEPHALOMANTIA, from κεφαλη and μαντεια, *divination*, an ancient ſpecies of divination, or method of foretelling futurity, by a dead man's ſkull.

CEPHALONOMANTIA, a method of divination, or revealing ſecrets, by means of an aſs's head broiled on the coals.

The word is compounded of κεφαλη, *head*, ονος, *aſs*, and μαντεια, *divination*.

After muttering a few prayers, the names of ſeveral perſons ſuſpected of a theft, or the like, were repeated over: he at whoſe name the aſs's jaws made any motion, or the teeth began to chatter, was held for convicted.

CEPHALOPHARYNGÆI, in *Anatomy*, two muſcles of the orifice of the *æſophagus*, called the *pharynx*.

They have their origin in the articulation of the head with the firſt *vertebra*, and are inſerted into the upper part of the *pharynx*: they ſerve to draw it upwards and backwards.

CEPHALOPONIA, from κεφαλη and πονος, *pain*, a denomination given by ſome to the *cephalalgia*, or HEAD-*ach*.

CEPHALUS, in *Ichthyology*, a name given by Ariſtotle, Ælian, Appian, and others, to the *mugil* or *mullet*, called alſo by ſome *capito*.

CEPHALUS is alſo a name given by ſome naturaliſts to the *ſargus*, called alſo *gardo*, and *gardon*; a fiſh very little, if at all, differing from our roach.

CEPHEUS, in *Aſtronomy*, a conſtellation of the northern hemiſphere; whoſe ſtars, in Ptolemy's Catalogue, are thirteen; in Tycho's, eleven; in Hevelius's, fifty-one; in the Britannic Catalogue, thirty-five. The order, names, longitudes, latitudes, magnitudes, &c. whereof are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
In the preced. foot	κ	♉	28	51	22	75	28	30	5
In the preced. arm	θ	♈	0	37	40	73	57	30	5
In the bend of the preced. arm	η		0	12	58	71	46	22	4
			14	55	55	74	7	30	6
In the preced. ſhoulder	α		8	30	33	68	56	20	3
5.									
			14	18	38	69	59	30	6
			20	30	18	70	2	55	6
In the girdle, againſt the preced. ſide	β	♉	1	17	53	71	9	0	3
		♈	10	42	10	66	47	28	6
			10	5	8	65	29	3	5
10.									
		♉	4	13	47	70	16	30	5
		♈	9	35	5	65	2	35	7
	μ		Unknown			Unknown			6
That preced. the tiara			7	41	48	61	52	50	6
In Cepheus's neck	ν		10	58	16	62	54	22	7.6
15.									
		♉	10	26	48	69	24	0	5.6
In the breaſt	ξ	♈	19	54	39	65	46	5	5
			Unknown			Unknown			
			15	33	17	64	18	26	6
			16	29	22	64	36	48	6
20.									
Middle of 3 in the tiara	ζ		9	39	45	61	9	41	4.5
North. and ſmall. of the ſame	λ		11	40	46	61	54	50	6
South in the tiara	ε		8	40	50	59	59	5	4
		♉	8	40	33	68	25	55	5.6
		♈	18	31	44	63	24	40	7
25.									
			24	5	35	63	57	10	7
That following the tiara	δ		13	19	5	59	33	25	4.5
			Unknown			Unknown			6
	ς	♉	26	37	34	68	23	4	6
		♈	22	53	40	62	2	10	6
30.									
		♉	13	24	20	67	0	10	6
Preced. in the following arm	ι	♈	28	58	30	62	36	50	4
In the following leg	π	♉	19	14	46	65	33	0	5
Latter in the hind arm	ο		5	41	55	61	23	46	5
In the hind foot	γ	♉	25	48	35	64	36	30	3
35.									

CEPI *Corpus*, in *Law*, a return made by the ſheriff, upon a capias, or other proceſs to the like purpoſe; ſignifying, that he hath taken the body of the party.

CEPION, in *Antiquity*, the name of a particular air, invented by a diſciple of Terpander, and deſigned to be played on the CITHARA.

CEPIONITES, in *Natural Hiſtory*, a name given by Pliny, and other ancient writers, to a ſpecies of ſtone, ſeeming to approach to the nature of the JASPER. Pliny tells us, that there were many kinds of it, ſome more pellucid than others, and ſome colourleſs; others variegated with green, and the other colours of the jaſpers and agates: they were all uſed in the ornamenting houſes; and the leaſt beautiful ſerved, when well poliſhed, to make ſpeculums of.

CEPITES, in *Natural Hiſtory*, a name uſed by the ancients to expreſs a gem which gave the repreſentation of the ſeveral cluſters of plants and flowers in the beds of a garden, with naked veins, expreſſing the walks between. The common text of Pliny is unintelligible, where he gives the deſcription of this ſtone; but Salmaſius has reſtored it from ſome old copies, ſo as to make it ſenſe, and expreſſive of this meaning. The ſtone was probably no other than a peculiar kind of that agate which the ancients called *dendrites*, and we the MOCOA *ſtones*.

CEPOLA, in *Ichthyology*, a genus of the *thoracici* in the claſs of fiſhes; the characters of which are, that the head is roundiſh and compreſſed, the mouth flat, the teeth crooked, the branchioſtege membrane conſiſts of ſix ſmall bones, the body uniform and naked, and the abdomen ſcarce as long as the head.

CEPOLAPITES, in *Natural Hiſtory*, a name given by ſome to the ſtone properly called CEPITES, a kind of MOCOA *agate*.

CEPPHUS, in *Zoology*, the name of a bird of the *larus* or gull kind; but, except in its feet and beak, very much reſembling the common duck. It is a moderately large bird, but is ſo thick feathered, that it appears much more ſo than it really is. It is of a variegated colour, of a mixture of white, brown, and yellow; but the long wing and tail feathers are black: its legs are greeniſh; but the membrane which connects the toes is brown. See Phil. Tranſ. vol. lii. part i. N° 24.

CEPULA, a name by which Geſner and ſome other authors have called the common *tænia*. It is derived from the Italian *cepole*; the common name of the ſame fiſh in the markets of Rome. It is a ſpecies of the CEPOLA.

CEPUS, in *Zoology*, a name given by ſome to thoſe monkeys of the ſmaller kind, which have more or leſs green among their other colours.

CERACHATES, in the *Natural Hiſtory of the Ancients*, the name of a ſpecies of agate of a plain yellow colour, and very much reſembling yellow wax. We have it from the Eaſt Indies, as alſo from New Spain, and ſome other parts of America; and our jewellers ſometimes work it into toys of ſmall value.

CERAMBYX, in *Zoology*. See *Capricorn* BEETLE.

CERAMIUM, an ancient MEASURE, anſwering to what was otherwiſe called AMPHORA and CADUS.

CERASTES, the *horned ſnake*, in *Zoology*, the name of a ſpecies of ſerpent, which has on its forehead two protuberances, that look like ſhells, but of a more ſolid texture, and from their reſemblance of horns have given it this name: theſe are often no larger than grains of barley: its teeth are like thoſe of the viper, and are placed in the ſame order: it is of the number of viviparous ſerpents, and is remarkable among the ſerpent claſs for its long enduring thirſt. It is found in Lybia and Arabia, particularly about the town of Suez.

Cerastes was alſo a name given by the ancient Greeks to a ſtag when at its full growth, or at the end of its fourth year.

CERASTIUM, in *Botany*. See Mouse-*ear*.

CERASUS, in *Botany*. See Cherry-*tree*.

CERATE. See Ceratum.

CERATIAS, among *Ancient Naturaliſts*, denotes a horned comet.

The word is formed from κερας, *a horn*. Such is that ſaid to have appeared when Xerxes paſſed his army into Greece.

CERATION, *Ceratio*, in *Chemiſtry*, the operation of waxing.

CERATITES, a name given by many authors to the ſubſtance more uſually called by authors unicornu *foſſile*, and found in great plenty in the caverns of Hart's foreſt in Germany.

CERATIUM, or Ceration, a name given by the *Ancient Phyſicians* to a ſmall weight. The *ceration* is properly the name of a tree called the carob, or *ſiliqua dulcis*, the ſweet pipe-tree: this tree bears a long pod, in which are contained ſeveral ſeeds among the pulp: theſe ſeeds are alſo called *ceration* and *jembut* by the Arabians; and being dried, they were uſed as a weight to proportion the doſes of medicines. Thus the ſmall weight, which took its origin from them, was called *ceration*; as that ſmall weight, which took its origin from a grain of barley, was called *granum*.

Ceratium was alſo a ſmall ſilver coin, the third part of an *obolus*, and the ſame with what the Romans called *folis*.

CERATOCARPUS, in *Botany*, a name given by Buxbaum to a new genus of plants, belonging to the claſs of *monoecia monandria* in the Linnæan ſyſtem; the characters of which are, that the leaves are ſlender and graſſy, the flowers apetalous, and having no cup, but ſtanding upon the embryo fruit: the fruit, when ripe, is of a triangular figure, reſembling that of the ſhepherd's purſe, but running out into horns, and compoſed of two valves. Each of theſe fruits contains only one ſeed, and that of a very ſingular figure: it is long and ſlender, and not flat, but rounded, and each of its extremities is bent round in the manner of an arch, which are held together in their approach to one another by a membrane; the root is fibroſe and annual, the ſtalk woody and branched, the leaves rigid and hollowed along the middle, and the flowers are yellow. It grows in marſhy places near the Caſpian ſea, and in the neighbourhood of Aſtracan; and toward autumn the ſtalks are uſually torn up by the winds, and blown about the marſhes in great abundance. Act. Petrop. vol. i. p. 244.

The author named it *ceratocarpus*, *horned fruit*, from the ſeed veſſels running out into two horns: he obſerves, that the deſcription of the ceratoides of Tournefort's corollary approaches to this plant in many points; but differs ſo much in others, that either Tournefort muſt mean another plant, or elſe he muſt have informed himſelf but very imperfectly as to this.

CERATOGLOSSUM, in *Anatomy*, a pair of muſcles of the tongue, thus deſcribed by Mr. Cowper: "The *ceratogloſſum* has a broad fleſhy origination, at the ſuperior "part of the *os hyoides*, laterally; whence it aſcends to "its inſertion, at the root of the tongue. This, with its "partner, acting, draws the tongue into the mouth directly: if only one of them act, it moves the tongue "on one ſide."

The word is derived from κερας, *horn*, and γλωσσα, *tongue*; its form bearing ſome reſemblance to a horn.

CERATOIDES, in *Anatomy*, the cornea *tunica*. See Cornea.

Ceratoides is alſo a denomination given to the *os hyoides*, or *bicorne*. See Hyoides.

CERATOMALAGMA, a cerate or cerecloth.

CERATONIA, in *Botany*. See Carob.

CERATOPHYLLUM, in *Botany*, the name by which Linnæus calls a genus of plants, of the *monoecia polyandria* claſs; called by others *dichotophyllum*, and *hydroceratophyllum*. The characters are theſe: the flowers are ſome male, others female, on the ſame plant: in the male flowers the cup is divided into many ſegments, which are pointed, and equal in ſize. There are no petals: the ſtamina are ſlender filaments, double in number to the ſegments of the cup, being uſually ſixteen or twenty, and are ſcarce conſpicuous: the antheræ are oblong, erect, and longer than the cup. In the female flowers the cup and corolla are the ſame as in the male: the germen of the piſtil is compreſſed, and of an oval figure: there is no ſtyle, but the ſtigma is obtuſe and oblique: the fruit is an oval nut, of a pointed figure, and having only one cell. Vaillant deſcribes one ſpecies of this genus, the ſeeds of which have three ſpines, one ſtanding forward, and the other two behind.

CERATUM, Cerate, in *Medicine*, a kind of ſtiff unguent, or liniment, made of oil and wax, with other ingredients; uſed externally in ſeveral diſeaſes, eſpecially thoſe of the ſkin.

It takes its name from its capital ingredient, wax, called in Latin *cera*.

Its conſiſtence is thicker than that of a liniment; the laſt having uſually two ounces of wax to two of oil; but the *cerate*, four of wax to two of oil: yet it is thinner than a plaſter.

There are *cerates* of various kinds, *refrigerative*, *ſtomachic*, &c. *cerate of ſulphur*, *of ſaunders*, *reſtringent cerate of bricks*, *divine cerate*, &c.

There is a particular one, called the *refrigerative cerate of Galen*, made of white wax and *oleum roſat. omphacin*.

Ceratum *epuloticum*, a name given in the late London Diſpenſatory to the compoſition commonly called Turner's *cerate*, and there ordered to be made in this manner: take oil olive, a pound; yellow wax and prepared calamy, of each half a pound; melt the wax in the oil, and when the mixture begins to congeal again, ſprinkle in the powder, and continue ſtirring it till the whole is cold.

Ceratum *mercuriale*, a form of medicine preſcribed in the late London Pharmacopœia, and ordered to be made in the following manner: take yellow wax and tried hog's lard, of each half a pound; quickſilver, three ounces; ſimple balſam of ſulphur, a dram: melt the wax and lard, and then add to them gradually the quickſilver, firſt well divided by the balſam of ſulphur.

CERAULA, in *Antiquity*, a kind of muſician, who blows or plays on the horn.

In which ſenſe, the word amounts to the ſame with the Latin *cornicem*.

CERAUNIA, Ceraunias, or Ceraunius *lapis*, in *Natural Hiſtory*, a ſort of flinty figured ſtone, of no certain colour, but of a pyramidal or wedge-like figure; popularly ſuppoſed to fall from the clouds in thunder-ſtorms, and to be poſſeſſed of divers notable virtues; as of promoting ſleep, preſerving from lightning, &c.

The word is formed from κεραυνος, *a thunder-bolt*.

The *ceraunia* is the ſame with what is otherwiſe called the thunder-ſtone or thunder-bolt; and ſometimes alſo *ſagitta*, or arrow's head, on account of its ſhape.

The *ceraunia* are frequently confounded with the ombria and brontia, as being all ſuppoſed to have the ſame origin.

The generality of naturaliſts take the *ceraunia* for a native ſtone, formed among pyrites, of a ſaline, concrete, mineral juice. Mercatus and Dr. Woodward aſſert it to be artificial, and to have been faſhioned thus by tools.

The *ceraunia*, according to theſe authors, are *ſilices*, or heads of the ancient weapons of war, in uſe before the invention of iron; which, upon the introduction of that metal, growing into diſuſe, were diſperſed in the fields through this and that neighbouring country.

Ceraunia, in *Botany*, is uſed by ſome authors for orpin.

Ceraunias *albus*, in *Natural Hiſtory*, a name given by Pliny to a gem or precious ſtone, of the nature of the aſteria, but ſomewhat inferior to it in beauty. Pliny tells us, that it was a very bright gem, of a cryſtalline appearance, but with a caſt of bluiſh; and that it was found in Caramania. Solinus gives us much the ſame account, but makes Germany the place of its origin. It is indeed written Germania in ſeveral of the old copies in Pliny, but the moſt correct have it as it is printed, Caramania; and Caramania was a country from which the Romans had many gems.

CERAUNITES, in *Natural Hiſtory*, a name given by ſeveral writers to the belemnites.

CERBERA, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower is of one leaf, funnel-ſhaped, ſpread open at the top, where it is divided into five large ſegments; with five large ſtamina in the middle of the tube. In the center is ſituated a roundiſh germen, which afterward becomes a large, fleſhy, roundiſh berry, divided into two cells, each containing a ſingle large compreſſed nut. There are two ſpecies, natives of the Weſt Indies, and the Braſils.

CERBERUS, in *Aſtronomy*, a ſmall northern conſtellation near Hercules, conſiſting, in Hevelius's Catalogue, of four ſtars, which are enumerated under Hercules in the Britannic Catalogue.

Cerberus, among *Chemiſts*, denotes MERCURY.

The name CERBERUS is alſo given by ſome to a famous purging powder, more uſually called *pulvis cornachinus*, and *pulvis comitis Warwicenſis*.

Cerberus *chemicus*, in *Chemiſtry*, a phraſe uſed by Hoffman and others to expreſs the common nitre or ſalt-petre, which they have called alſo *ſal infernalis*.

Cerberus, in *Mythology*, a name which the ancient poets have given to a dog with three heads and mouths, born of Tiphon and Echidna, and ſtationed at the gate of hell. Some have ſuppoſed that *Cerberus* is the ſymbol of the earth, or of all-devouring time; and that its three mouths repreſent the preſent, paſt, and future. The victory obtained by Hercules over this monſter, denotes the conqueſt which this hero acquired over his paſſions. Dr. Bryant ſuppoſes, that *Cerberus* was the name of a place, and that it ſignified the temple of the Sun; deriving it from *Kir-Abor, the place of light*. This temple was alſo called *Tor-Caph-El*, which was changed to τρικηφαλος; and hence *Cerberus* was ſuppoſed to have had three heads. It was likewiſe called *Tor-Keren, Turris Regia*; whence τρι καρηνος, from τρεις, *three*, and καρηνον, *head*. Anal. of Mythology, vol. i. p. 409, &c.

CERCASI, in the *Eaſtern Military Orders*, are a body of horſe in the ſervice of the grand ſignior.

CERCELE, in *Heraldry*. A *Croſs* Cercele, is a CROSS, which, opening at the ends, turns round both ways, like a ram's horn.

The croſs *cercele* differs from the croſs ANCHORED, as the latter turns but a little rounding, whereas the former turns quite round.

CERCIS, in *Botany*, the name given by Linnæus to the genus of plants called *ſiliquaſtrum* by Tournefort, Rivinus, and others. See Judas-*tree*.

CERCOPITHECUS, in *Natural Hiſtory*, the name of a ſpecies of long-tailed monkeys.

The word is derived from κέρκος, *a tail*, and πίθηκος, *a monkey*.

Aldrovandus, Marcgrave, and others, have given the figures and hiſtories of many of the *cercopitheci*. The former of theſe authors ſpeaks of ſome as large as maſtiff dogs, having tails five cubits long. In Braſil there is a yellowiſh kind, which ſmells of muſk. As theſe monkeys climb trees, if in danger of falling, they ſave themſelves not only by their feet, but by their tails, wrapping them round the boughs of trees. The Zygantes in Africa eſteem their fleſh good meat.

CERCOSIS, in *Medicine*, a preternatural extenſion and tumidity of the female CLITORIS, ſo as to project beyond the *labia pudendi*.

CERDONIANS, a ſect who maintained moſt of the errors of Simon Magus, Saturninus, and the Manichees.

They took their name from their leader *Cerdo*, a Syrian, who came to Rome in the time of pope Hyginus; and there abjured his errors: but he did this in appearance only; for he was afterwards convicted of perſiſting in them, and accordingly was caſt out of the church again. *Cerdo* aſſerted two principles, the one good, and the other evil: between theſe, he imagined an intermediate kind of deity, of a mixed nature: this laſt, according to him, was Creator of the world, and the God that appeared under the old law. To his juriſdiction the Jews were ſubject; and idolatrous nations were under the empire of the evil principle. The good Being, whom he called *unknown*, was the father of Jeſus Chriſt; who, he taught, was only incarnate in appearance, and was not born of a virgin; nor did he ſuffer death, but in appearance. Marcion, his diſciple, ſucceeded him in his errors: whence the Marcionites.

CEREALES *ædiles*, two officers of ancient Rome, erected under Julius Cæſar, appointed to have the ſuperintendency of the corn and grain for the proviſion of the city. They alſo preſided in the *cerealia*. See Ædile.

Cereales *ludi*, ſolemn ſports held in honour of Ceres, wherein the matrons repreſented the grief and lamentation of Ceres for the loſs of her daughter Proſerpine, and her travels to find her again.

CEREALIA, in *Antiquity*, feaſts of Ceres, inſtituted by Triptolemus, ſon of Celeus, king of Eleuſine in Attica, in gratitude for his having been inſtructed by Ceres, who was ſuppoſed to have been his nurſe, in the art of cultivating corn, and making bread.

There were two feaſts of this kind at Athens; the one called *Eleuſinia*, the other *Theſmophoria*.

What both agreed in, and was common to all the *cerealia* was, that they were celebrated with a great deal of religion and purity; ſo that it was eſteemed a great pollution to meddle, on thoſe days, in conjugal matters.

It was not Ceres alone that was honoured here, but alſo Bacchus. The victims offered were hogs, becauſe of the waſte they make in the products of the earth: whether there was any wine offered, or not, is matter of much debate among the critics. Plautus and Macrobius ſeem to countenance the negative ſide; Cato and Virgil, the poſitive.

The *Cerealia* paſſed from the Greeks to the Romans, who held them for eight days ſucceſſively; commencing, as generally held, on the fifth of the ides of April. It was the women alone who were concerned in the celebration, all dreſſed in white: the men, likewiſe in white, were only ſpectators. They eat nothing till after ſun-ſet; in memory of Ceres, who in ſearch after her daughter took no repaſt but in the evening.

After the battle of Cannæ, the deſolation was ſo great at Rome, that there were no women to celebrate this feaſt, becauſe they were all in mourning; ſo that it was omitted that year.

Cerealia *ſemina*, an appellation given by ſome to what we call *legumina* or pulſe.

CEREBELLUM, or Cerebe[illegible] in *Anatomy*, the hinder part of the brain.—See *Tab. Anat.* (*Oſteol.*) *fig.* 5. *lit. cc.*

The *cerebellum* is eſteemed a kind of little brain by itſelf, as the word imports, which is a diminutive of *cerebrum*. It is placed in the hinder and lower part of the ſkull, underneath the hind part of the brain, or *cerebrum*: it lies open to the *cerebrum* at bottom; but at top it is ſeparated from it by a duplicature of the *dura mater*. Its figure ſomewhat reſembles a flat bowl, broader than it is long. Its ſubſtance is harder, drier, and more ſolid, than that of the brain, but of the ſame nature and kind; being compoſed, like it, of a cortical, or glandulous, and a medullary part: the branches of which laſt, when opened, reſemble thoſe of a tree, meeting in the middle, and forming a kind of ſtem, which runs quite through it. Its colour is yellowiſh, that of the brain being whiter.

Its ſurface is unequal, and furrowed, but not ſo much as that of the *cerebrum*; appearing rather as if laminated, like ſome ſhell; the middle circles being the largeſt and deepeſt: between the *laminæ* are duplicatures of the *pia mater*. The fore and hind parts of the *cerebellum* are terminated by apophyſes, called *vermiformes*, from the reſemblance they bear to worms: it is joined to the *medulla oblongata* by two proceſſes, called by Willis, *pedunculi*.

Beſides theſe, there are two or three other medullary proceſſes, which paſſing along the *medulla oblongata*, form an arch; from the diſcoverer called *pons Varoli*.

The blood-veſſels of the *cerebellum* are the ſame with thoſe of the *cerebrum*; and the uſe the ſame; viz. to ſeparate the nervous juice from the blood, and convey it through the ſeveral parts of the body.

Dr. Willis, however, diſtinguiſhes between the functions of the *cerebrum*, and *cerebellum*; making the firſt the principle of voluntary motions, and actions; and the laſt the principle of involuntary ones, viz. that of reſpiration, the motion of the heart, &c.

It is commonly aſſerted, that a wound either in the cortex, or medulla of the *cerebellum*, is mortal; though it is not in the brain, from which there have been entire parts taken away without harm. The truth is, we have inſtances of people living ſome time, not only without any *cerebrum*, but alſo without any *cerebellum*.

Willis and Boerhaave ſuppoſe the *cerebellum* to be the ſeat of the vital principle: but this opinion is liable to difficulties. The obſervations of M. de la Peyronie ſhew, that wounds in the *cerebellum* of dogs are not immediately mortal; and we have more than one account of perſons living with a ſchirrhous *cerebellum*. See Phil. Tranſ. N° 474. ſect. 3. and Mem. de l' Acad. Royale des Scienc. 1705.

CEREBRUM, in *Anatomy*, the BRAIN, properly ſo called; in contradiſtinction from the *cerebellum*.

Cerebrum *jovis*, in *Ichthyology*, a name given by Ennius the poet to a peculiar fiſh of the *labrus* kind, called by the generality of authors *ſcarus*: it is diſtinguiſhed by Artedi from the other ſpecies of the ſame genus, by the name of the LABRUS, *qui ſcarus auctorum eſt*.

CEREFOLIUM. See Chervil.

CEREIS, in *Botany*, a name uſed by ſome authors, and ſuppoſed to have been uſed by the ancients for the *ſiliquaſtrum*, or Judas's *tree*.

CERELÆUM, a compoſition of WAX and OIL. See Wax.

Some alſo give the ſame denomination to the *oleum ceræ*, otherwiſe called *butter of* WAX.

CEREMONIAL is uſed for the ſet or ſyſtem of rules and ceremonies which cuſtom has introduced for regulating our behaviour; and which perſons practiſe towards each other, either out of duty, decency, or civility.

Ceremonial, in a more particular ſenſe, denotes the manner wherein princes and their embaſſadors uſe to receive, and treat one another. The *ceremonial* is a kind of law introduced by compact, cuſtom, preſcription, &c.

which ſovereigns and their embaſſadors are to obſerve at their interviews, that none of them may either receive more or leſs marks of reſpect than they are entitled to. Some diſtinguiſh three occaſions on which the *ceremonial* is to take place: viz. when princes meet in perſon; when they write to each other; and when they ſend embaſſadors.

There are endleſs diſputes among ſovereigns about the *ceremonial:* ſome endeavouring to be on a level, and ſome to be ſuperior, to others. Numerous ſchemes have been propoſed for fixing the place and rank of each prince; but they have not been accepted of by any, except ſome alternate princes, as they are called in Germany. See PRECEDENCY.

CEREMONIAL is more particularly uſed in ſpeaking of the laws and regulations given by Moſes, relating to the worſhip of God among the ancient Jews.

In which ſenſe, it amounts to much the ſame with what we otherwiſe call *levitical* law; and ſtands contradiſtinguiſhed from the *moral*, as well as the *judicial* law.

It is diſputed whether the obſervation of the SABBATH be a *ceremonial*, or a moral law.

The *ceremonial* law preſcribed the forms, uſages, rites, &c. relating to ſacred places, utenſils, prieſts, levites, prophets, congregations, garments, feaſts, ſacrifices, ſabbaths, &c.

Moſt of the *ceremonial* laws of the Jews had ſome relation to thoſe idolatrous cuſtoms which had been eſtabliſhed among them before the publication of the levitical law.

CEREMONIALE, a book in which is preſcribed the order of the ceremonies to be obſerved in certain actions and occaſions of ſolemnity and pomp.

The *ceremonial* of the Roman church is called *Ordo Romanus.*

The Roman *ceremonial* was firſt publiſhed by the biſhop of Corcyra, in 1516; at which the college of cardinals were ſo ſcandaliſed, that ſome of them voted to have the author as well as book burnt, for his temerity in expoſing the ſacred ceremonies to the eyes of the profane people.

CEREMONY, an aſſemblage of ſeveral actions, forms, and circumſtances, ſerving to render a thing more magnificent and ſolemn.

The word comes from the Latin *ceremonia*, quaſi *Cereris munia*, on account of the great number of ceremonies uſed in making the offerings to Ceres; or becauſe the firſt religious ceremonies were thoſe of Ceres. Hence Cicero calls *Cererem antiquiſſimam, religioſiſſimam principem omnium ſacrorum, quæ apud omnes gentes fiunt.*

We have an ample and magnificent account of the religious *ceremonies* and cuſtoms of all the nations in the world, repreſented in figures deſigned by Picart, with hiſtorical explications, and divers curious diſſertations, &c. Ceremonies & Coutumes Religeuſes de tous les Peuples du Monde, 6 tom. fol. Amſt. 1723.

M. Porree, in 1646, publiſhed a hiſtory of ancient *ceremonies*; tracing the riſe, growth, and introduction of each rite into the church, and its gradual advancement to ſuperſtition therein. Traité des Anciennes Ceremonies. Amſt. 1646. 12°.

Many of them were borrowed from Judaiſm; but more, as it ſhould ſeem, from Paganiſm.

Dr. Middleton has given a fine diſcourſe on the conformity between the popiſh and pagan *ceremonies*; which he exemplifies in the uſe of incenſe, holy water, lamps and candles before the ſhrines of the ſaints, votive gifts or offerings round the ſhrines of the deceaſed, &c. In effect, the altars, images, croſſes, proceſſions, miracles, and legends; nay, even the very hierarchy, pontificate, religious orders, &c. of the preſent Romans, he ſhews are all copied from their heathen anceſtors. Who then can doubt of the idolatry of popery, when we ſee the preſent people of Rome worſhipping at this day in the ſame temples, at the ſame altars, ſometimes the ſame images, and always with the ſame *ceremonies*, as the old Romans?

CEREMONY is alſo applied to thoſe reſpects and honours which people pay to each other, out of mere civility and good breeding. China is the land of *ceremonies.* The Chineſe have annexed ſuch an idea of reſpect and gravity to certain garments, that the miſſionaries dare not ſay maſs without their boots on.

CEREMONY, *habit of*, denotes the ornaments and external badges of a profeſſion, dignity, or office.

CEREMONY, *officers of*, thoſe whoſe buſineſs is to ſee the cuſtomary *ceremonies* duly obſerved in actions of pomp and ſolemnity. Such are marſhals, ſerjeants at arms, &c.

In our court is a maſter and aſſiſtant of the *ceremonies:* the French have a grand maſter of the *ceremonies*, as well as a maſter and aſſiſtant. In churches of the Romiſh communion there are alſo maſters of the *ceremonies*, to ſee that every thing be performed as preſcribed in the ritual.

CEREPOLIUM, in *Botany*, a name uſed by Pliny to expreſs the gingidium, an umbelliferous plant of the nature of the chervil or cereſolium; and it is very probable that this name is only a falſe ſpelling of that word. Columella makes the *cerepolium* and gingidium different; but it may only be that in different ages they applied theſe names to different ſpecies of the ſame genus of umbelliferous plants. Neophytus tells us, that the gingidium of the ancients was called by the later writers biſacutum; a name very well expreſſing its ſeeds, which are long and ſlender, and are pointed at both ends.

CERES, in *Mythology*, the daughter of Saturn and Ops, the goddeſs of corn and tillage. Sometimes *Ceres* is taken for the Moon; as Liber, Bacchus, is for the Sun. By metonymy, the word is uſed to ſignify *bread*, and all manner of food.

CEREUS, in *Botany*. See TORCH-*thiſtle.*

CERIGO, in *Natural Hiſtory*, a name by which many authors have called that remarkable American animal called the OPOSSUM.

The Americans in ſome places call this animal in their language *carigueya*; and it is probable that this name *cerigo* is only a corruption of that word, though it be received generally in the world as a proper name, and uſed as ſuch by Maffei, Barlæus, Nieremberg, and many others.

CERINTHE, among the *Ancients*, was uſed by ſome to expreſs that ſubſtance called by others *ambroſia* and *ſandarach*, and by ſome *erithace.* See WAX.

CERINTHE, in *Botany*. See HONEY-*wort.*

CERINTHIANS, a ſect that took their name from *Cerinthus*, cotemporary with St. John; who formed a ſingular ſyſtem of doctrine and diſcipline, by combining the doctrines of Chriſt with the opinions and errors of the Jews and Gnoſtics.

Cerinthus aſcribed the creation of the world, and the legiſlature of the Jews, to a created being, who derived from the Supreme God extraordinary virtues and powers, but afterwards became apoſtate and degraded. He ſuppoſed that *Jeſus* was a mere man, born of Joſeph and Mary; but that, in his baptiſm, *Chriſt*, who was one of the *Æons*, deſcended upon him in the form of a dove; and that he was commiſſioned to oppoſe the degenerate God of the Jews, and to deſtroy his empire. In conſequence of which, by his inſtigation, the man *Jeſus* was ſeized and crucified; but *Chriſt* aſcended up on high, without ſuffering at all. He recommended to his followers the worſhip of the Supreme God in conjunction with his Son; he required them to abandon the lawgiver of the Jews; and, though they were permitted to retain a part of the Moſaic law, yet they were to make the precepts of *Chriſt* the rule of their conduct. For their encouragement, he promiſed them the reſurrection of the body; after which the millennium was to commence, under the government of *Chriſt* united to the man *Jeſus:* and this he repreſented as conſiſting in eating and drinking, nuptial entertainments, and other feſtivities.

Some authors aſcribe the book of the Apocalypſe to *Cerinthus*; adding, that he put it off under the name of St. John, the better to authoriſe his reveries touching Chriſt's reign in the fleſh: but it is juſtly obſerved by the Biſhop of London, in his third Paſtoral Letter, p. 58, that his millenary ſtate was not the life of ſaints, as the Apocalypſe repreſents it, but the life of libertines: and it is even certain he publiſhed ſome works of this kind, under the title of Apocalypſes.

St. Epiphanius obſerves, that when a *Cerinthian* died without baptiſm, another perſon was baptiſed in his ſtead.

They received the Goſpel of St. Matthew, to countenance their doctrine of circumciſion, from Chriſt's being circumciſed; but they omitted the genealogy. And they diſcarded the Epiſtles of St. Paul, becauſe that apoſtle held circumciſion aboliſhed.

CERITES, the *wax-ſtone*, a name uſed by ſome old authors for that yellow agate uſually called CERACHATES.

CERNUA, in *Ichthyography*, the name of a ſmall freſh-water fiſh; called by others the *aurata*, *aſpredo*, and *perca minor*, or *ſmall pearch*; and in Engliſh, the RUFFE. It is very much of the ſhape and figure of the common pearch; ſeldom, at its utmoſt growth, being known to exceed ſix inches: and it differs in this alſo, that it has none of thoſe black tranſverſe lines with which the back and ſides of the common pearch are variegated It is caught in many of our rivers; as the Yare at Norwich, &c. See alſo ORPHEUS.

CEROCHYTOS, in *Antiquity*, a method of painting in wax, melted and coloured with pigments for the purpoſe, and applied with pencils.

The word is compounded of *κηρος*, *cero*, *wax*, and *χύω*, *fundo*, *I melt down.* Plin. Hiſt. Nat. lib. xxxv. cap. 11. and lib. xxi. cap. 14.

CEROMA, originally denoted a mixture of oil and wax, with which the ancient wreſtlers rubbed themſelves, not only to make their limbs more ſleek, and leſs capable of being laid hold of, but more pliable, and fit for exerciſe.

The name *ceroma* is ſometimes applied by ancient phyſicians to a cerate or cerecloth.

The champions ready to engage in the *palæſtra* having ſtripped themſelves naked, were firſt anointed with oil, then ſtrewed over with duſt, to which was laſtly added wax. From the laſt ingredient, this compoſition was denominated *ceroma*; from *cera*, *wax*.

CEROMANTIA, an ancient method of DIVINATION, by means of wax melted over a veſſel of water, and let drop in three diſtinct ſpaces; obſerving the figure, ſituation, diſtance, and concretion of the drops.

CEROPEGIA, in *Botany*, a genus of the *pentandria monogynia* claſs. The flower conſiſts of a ſingle petal; it has two ſmall erect leaves, plumoſe ſeeds, and the limb of the corolla is connivent.

CEROSTROTUM, in *Ancient Writers*, denotes a ſort of picture compoſed of pieces of horn; anſwering to what among us is called MOSAIC *work*.

Some write the word *ceroſtratum*, and ſuppoſe it primarily to denote a ſort of pavement compoſed of pieces of wood, inlaid and joined with ſlips of horns, variouſly coloured and figured.

Salmaſius will have *ceroſtrata* to denote a method of painting, or enamelling with wax, otherwiſe called CEROCHYTOS.

CERPASUS, in *Natural Hiſtory*, a name given by Uranius to a poiſonous drug of the Abyſſines; probably the ſame with the *carpaſus* of the Greeks.

CERRUS, in *Botany*, a name given by many authors to the *ægilops*, or bitter oak; or oak that has large acorns, and a prickly cup.

CERRUS, in *Ichthyology*, a name given by ſome of the old writers, Pliny, Martial, and others, to the fiſh called by the generality of writers *ſmaris*, by ſome *mæna candida*. It is of the SPARUS kind, according to the Artedian ſyſtem, and is diſtinguiſhed from the other fiſhes of that genus by its having a black ſpot in the middle of each ſide, and the pectoral and tail fins red.

CERTHIA, in *Zoology*. See CREEPER.

CERTIFICANDO *de recognitione ſtapulæ*, is a writ commanding the mayor of the ſtaple to certify to the lord chancellor a ſtatute ſtaple taken before him, where the party himſelf detains it, and refuſeth to bring in the ſame. Reg. Orig. 152. There is the like writ to certify a ſtatute merchant; and in divers other caſes. Ib. 148. 151, &c.

CERTIFICATE, a teſtimony given in writing, to aſſure and notify the truth of any thing to a court of juſtice, or the like. See TESTIMONIAL.

CERTIFICATE *of coſts*, in *Law*, relates to the caſe of a plaintiff, who, in an action of treſpaſs, is allowed no more coſts than damages, when the jury give leſs damages than 40*s.* unleſs the judge certify under his hand that the freehold or title of the land came chiefly in queſtion. To this rule there are two exceptions: the one is grounded on ſtat. 8 and 9 W. III. c. 11. whereby the plaintiff obtains full coſts, if the judge certify that the treſpaſs was wilful and malicious. The other exception is by ſtat. 4 and 5 W. and M. c. 23. which gives full coſts againſt any inferior tradeſman, apprentice, or other diſſolute perſon, who is convicted of a treſpaſs in hawking, hunting, fiſhing, or fowling upon another's land. Blackſt. Com. vol. iii. p. 214.

CERTIFICATE *into Chancery*. See CASE *ſtated*, &c.

CERTIFICATE *of Bankrupt*, is a declaration in his favour, written and ſigned by four parts in five of his creditors (thoſe under 20*l.* excepted), and authenticated under the hands and ſeals of the commiſſioners, and by them tranſmitted to the lord chancellor. The *certificate* is allowed of courſe, if no cauſe be ſhewn to the contrary; in conſequence of which, the bankrupt is entitled to a decent allowance out of his effects for his future maintenance. If they do not amount to 10*s.* in the pound, he is left to the diſcretion of the commiſſioners, who are to allow him any ſum not exceeding *three per cent*; if they pay 10*s.* in the pound, he is to be allowed *five per cent*; if 12*s.* 6*d.* *ſeven and a half per cent.* if 15*s.* *ten per cent.* provided the allowance does not in the firſt caſe exceed 200*l.* in the ſecond, 250*l.* and in the third, 300*l.*

He is likewiſe diſcharged hereby from all debts owing at the time of his bankruptcy. However, he has no title to theſe advantages, if he conceals a fictitious debt produced by any creditor; if he has given above 100*l.* for a marriage portion to any of his children, unleſs at that time he had ſufficient to pay his debts; if he has loſt at any one time 5*l.* or in the whole 100*l.* within a twelvemonth before by gaming, or loſt to the value of 100*l.* by ſtock-jobbing. Perſons who are thus cleared, and become bankrupts again, unleſs they pay 15*s.* in the pound, are indemnified hereby only from bodily confinement; any future eſtate remaining liable to their creditors.

CERTIFICATE *of the Poor*, is an acknowledgment from the pariſh to which they belong of their being pariſhioners; which prevents their removal till they become actually chargeable. Such *certificated* perſons can obtain a ſettlement, only by renting a tenement of 10*l.* per annum, or by ſerving an annual office in the pariſh in conſequence of a legal appointment; but no apprentice or ſervant of ſuch perſons can gain a ſettlement.

CERTIFICATE, *trial by*, is a mode of trial allowed in ſuch caſes, where the evidence of the perſon certifying is the only proper criterion of the point in diſpute. Blackſt. Com. vol. iii. p. 333, &c.

CERTIFICATION *of aſſiſe of novel diſſeiſin*, is a writ granted for re-examining a matter paſſed by aſſiſe before juſtices. It is uſed where a perſon appears by his bailiff to an aſſiſe, brought by another, and has loſt the cauſe.

CERTIORARI, or CERTIORARI FACIAS, in *Law*, a writ iſſuing out of the chancery to an inferior court, to call up the records of a cauſe there depending, that juſtice may be done therein, upon complaint that the party who ſeeks the ſaid writ, hath received hard uſage, or is not like to have an impartial trial in the ſaid court. Fitz. N. B. fol. 242. This writ is either returnable in the king's bench, and then hath theſe words, *nobis mittatis*; or in the common bench, and then hath *juſticiariis noſtris de banco*; or in the chancery, and then it has *in cancellaria noſtra*; or into the court of parliament, or into that of the lord high ſteward of Great Britain, in caſe of indictments againſt a peer.

Indictments from inferior courts, and proceedings of the quarter ſeſſions of the peace, &c. may be removed into B. R. by *certiorari*: and it is ſaid a *certiorari* to remove an indictment is good, although it bear date before the taking thereof.

CERTITUDE, is properly a quality of the judgment, importing an adheſion of the mind to the propoſition we affirm, or the ſtrength wherewith we adhere to it.

Certitude is of the ſame nature with the evidence that produces it: the evidence is in the things that the mind ſees and conſiders, i. e. in the ideas: *certitude* is in the judgment the mind makes of thoſe ideas.

The ſchoolmen diſtinguiſh two kinds of *certitude*: the one of *ſpeculation*, ariſing from the evidence of the thing; the other of *adheſion*, which ariſes from the importance thereof: this laſt they apply to matters of faith.

Further, the ſchools diſtinguiſh three other kinds of *certitude*, with regard to the three different kinds of evidence whence they ariſe.

CERTITUDE, *metaphyſical*, is that ariſing from a metaphyſical evidence: ſuch is that a geometrician has of the truth of this propoſition, "That the three angles of a triangle "are equal to two right ones."

CERTITUDE, *phyſical*, is that ariſing from phyſical evidence: ſuch is that a man has, that there is fire on his hand, when he ſees it blaze, and feels it burn.

CERTITUDE, *moral*, is that founded on moral evidence: ſuch is that a perſon has, that he has got, or loſt a cauſe, when his attorney and friends ſend him an expreſs notice of it, or a copy of the judgment, &c.

Moral certitude is frequently equivalent to metaphyſical *certitude*. Thus a criminal who hears the ſentence read, frequently makes no doubt either of his condemnation or execution; and yet has nothing, here, beyond a moral *certitude*; for metaphyſical *certitude* he has none: neither has he any phyſical *certitude*, except as to what relates to the reading of the ſentence, and the action of the executioner, when he takes him into his poſſeſſion.

In the Philoſophical Tranſactions, we have an algebraic calculation of the degrees of moral *certitude*, ariſing from human teſtimony in all its caſes; whether immediate, mediate, concurring, oral, or written.

The author thereof ſhews, that if the report paſs through ſeveral reporters hands before it arrive, each conveying $\frac{5}{6}$ of *certitude*; after twelve tranſmiſſions, it will only be an equal lay, whether it be true or not: if the proportion of *certitude* be fixed at $\frac{100}{101}$, it will come to half from the 70th hand; if at $\frac{1000}{1001}$, from the 695th hand.

For concurring evidences, if two reporters have each $\frac{5}{6}$ of certainty, they will both give an aſſurance of $\frac{35}{36}$, or of 35 to 1; if three, of $\frac{215}{216}$: and the co-atteſtation of ten would give $\frac{1023}{1024}$, of certainty. He ſhews, farther, that if there be ſix particulars in a narrative, all equally remarkable; and that he to whom the report is given has $\frac{5}{6}$ of *certitude* for the whole; there is 35 to 1 againſt the failure in any one certain particular.

He proceeds to compute the certainty of tradition, both oral and written, in whole and part; ſucceſſively tranſſmitted, and alſo co-atteſted by ſeveral ſucceſſors of tranſmittents.

See alſo an ingenious argument, deduced from the doctrine of chances, and applied to enforce the practice of virtue, in the Concluſion to Dr. Price's Review of the principal Queſtions in Morals.

CERT-MONEY, *Head-money*, a common fine, paid yearly by the reſiants of ſeveral manors to the lords thereof; and ſometimes to the hundred, *pro certo letæ*, for the certain keeping of the leet.—This, in ancient records, is called *certum letæ*.

CERVI *Cornu*. See *Hart's* Horn.

CERVICAL *Nerves*, are ſeven pair of nerves, ſo called, as having their origin in the *cervix*, or neck.—See *Tab. Anat.* (*Oſteol.*) *fig.* 6. *lit. dd*.

They are thus called from *cervix*, *neck*.

The firſt pair ariſes between the firſt and ſecond *vertebræ* of the neck; and, contrary to the reſt, comes out before and behind: whereas the other ſix pair come out laterally from the junctures of the *vertebræ*, through particular perforations: this firſt pair goes to the muſcles of the head and ear. The ſecond pair, according to Dr. Willis, contributes the main branch towards the formation of the diaphragmatic nerves; which, according to Vieuſſens, ſpring only from the fourth and ſixth pair. The three laſt pair, joining with the two firſt of the dorſum, or thorax, make the brachial nerves. All the *cervical nerves* ſend innumerable branches to the muſcles, and other parts of the head, neck, and ſhoulders.

Cervical *Veſſels*, among *Anatomiſts*, denote the arteries, veins, &c. which paſs through the *vertebræ* and muſcles of the neck, up to the ſkull.

CERVICALES *Deſcendentes*, a pair of muſcles, antagoniſts to the *ſacro lumbares*; coming from the third, fourth, fifth, and ſixth *vertebræ* of the neck.

Moſt authors reckon theſe, though improperly, a production and part of the *ſacro lumbus*.

CERVICARIA, in *Botany*, a term uſed by ſome authors to expreſs the *thapſia* of the ſhops, or leſſer *libanotis* of Theophraſtus.

Cervicaria is alſo a name given by ſome to the *trachelium*.

CERVICEM *flectentium primus*, in *Anatomy*, a name given by Spigelius, and ſome others, to a muſcle of the neck, called by Cowper, Winſlow. and Albinus, by a much ſhorter name, the *longus colli*.

CERVICIS *tertius*, in *Anatomy*, a name given by Fallopius and others, to a muſcle called by Albinus *tranſverſalis cervicis*; and by Winſlow, *tranſverſalis magnus*.

CERVIX, in *Anatomy*, properly denotes the hind part of the neck; as contradiſtinguiſhed from the fore part, which is called *jugulum*, or the throat.

Cervix *of the* SCAPULA, denotes the head of the ſhoulder-blade, or that upper proceſs whoſe *ſinus* receives the head of the *humerus*.

Cervix *of the Uterus*, the neck of the UTERUS, or that oblong canal, or paſſage between the internal and external orifices, which receives and incloſes the *penis* like a ſheath; whence it is alſo called VAGINA.

The *cervix uteri*, in maids, is very narrow, except in the time of the *menſes*; ſcarce wide enough to admit a gooſe's quill: its inner extremity is called *oſculum internum*, which is kept ſealed up with a kind of glutinous matter, iſſuing from the glands about it.

CERUMEN, a thick, viſcous, bitter, excrementitious humour, ſeparated from the blood by proper glands placed in the *meatus auditorius*, or outer paſſage of the EAR.

This is alſo called *cerumen aurium*; in Engliſh, EAR-*wax*. See an account of experiments on *cerumen*, to diſcover the beſt method of diſſolving it; with the cauſe of deafneſs. Lond. Medic. Obſerv. &c. vol. iv. p. 198.

It is by ſome ranked in the claſs of medicines; eſpecially that ſpecies of it obtained from the human ears, and which is uſed both internally and externally.

CERUSSE, **Ceruse**, a white calx of LEAD, uſed in painting, and coſmetics; made by calcining that metal, in the vapour of vinegar.

Ceruſſe is made of thin laminæ, or plates of lead, made up into rolls, and ſo placed as to receive and imbibe the fumes of vinegar, contained in a veſſel ſet over a moderate fire.

The laminæ are thus converted into a white ruſt; which is gathered together, and ground up with water, and formed into little cakes. Cardan ſhews how to make a ſort of *ceruſſe* of tin and urine.

Ceruſſe makes a beautiful white colour, and is much uſed by the painters, both in oil and water colours. It makes the principal ingredient in the fucus uſed by the ladies for the complexion. Taken inwardly, it is a dangerous poiſon; it ſoon ſhews its malignity, ſpoiling the breath and teeth, and haſtening wrinkles, and all the ſymptoms of old age. Even the external uſe of it as a paint or enamel, for it is ſaid that it has been ſo uſed, is attended with very diſagreeable, and, in the end, with fatal conſequences. Its effects in nervous diſorders are terrible; witneſs the caſe of Mr. Butler at Moſcow. See a curious account of it, in the Phil. Tranſ. vol. l. part i. N° 2. and vol. liv. N° 2. an. 1764.

Ceruſſe is the only white hitherto found fit for painting in oil; the diſcovery of ſome other white for this purpoſe is deſirable, not only from the faults of *ceruſſe* as a paint, but alſo from its injuring the health of its manufacturers, and producing a dreadful diſeaſe, which lead and all its preparations frequently occaſion, called the COLIC *of minerals*, or the COLIC *of painters*.

Ceruſſe, like the other preparations of lead, is drying, ſedative, and lenient; as ſuch it is employed, but only externally; it is an ingredient in many ointments, plaſters, and other pharmaceutical preparations deſigned for external maladies.

The beſt *ceruſſe* is that of Venice; but this is rare: that chiefly uſed, is either Engliſh or Dutch, both of which have more chalk in them than WHITE-*lead*; the latter, however, is the better of the two.

The manner of preparing *ceruſſe* in quantities at Venice, is deſcribed by Sir Phil. Vernatti. The plates for this purpoſe are large, and about the thickneſs of a knife's back; and rolled up, but ſo as that the ſurfaces no where touch. Each roll is put in a ſeparate pot, wherein it is upheld by a little bar from the bottom, that it may not touch the vinegar, which is alſo put into the pot, to effect the converſion. The pots are then covered with a plate of lead as cloſe as may be, and over this with a board; after which they are let down into a bed of horſe-dung, big enough to contain four hundred pots. After three weeks continuance the pots are taken up, the plates unrolled, laid on a board, and beaten with battledores till all the flakes come off; which, when they prove good, are hard, thick, and weighty; but when otherwiſe, porous and light, and ſometimes black or burned, if the dung proves not well ordered: ſometimes alſo there will be no flakes, or *ceruſſe* at all. From the beating-table it is carried to the mill, ground with water between two ſtones to an almoſt impalpable fineneſs: laſtly, it is moulded into ſmall parcels, and expoſed to the ſun to dry, and harden for uſe. Vernatti, in Phil. Tranſ. N° 138. p. 935, ſeq.

The Chineſe make an uſe of this preparation of lead, which it is eaſier to ſee the advantages of, than to comprehend the manner in which they are brought about. The China veſſels, when they have been baked and finiſhed as to the matter, and even covered with their varniſh, will yet receive into their very ſubſtance, the colours which thoſe people mix up with an addition of *ceruſſe*, and, as ſome of the old accounts ſay, of copperas and ſalt-petre; but though theſe latter ingredients had uſed to be added, the *ceruſſe* alone ſupplies their place at this time, at leaſt in very many things. It would be worth while to try an admixture of *ceruſſe* with the colours uſed in painting on glaſs; and this, after a ſecond baking, might perhaps be found to incorporate itſelf in the ſame manner that it does into China ware, and recover the long ſecret of letting in the ſtrongeſt colours, without hurting the tranſparence.

Cerusse *of antimony*. See Antimony.

CERVULA, or **Cervulus**, in *Middle Age Writers*, a kind of ſport, celebrated by pagans, and after their example by the Chriſtians, on New-Year's Day; when they run about in maſquerade, dreſſed in imitation of deer, and other beaſts. We find divers cenſures of the fathers, and decrees of councils againſt the obſervance of this ceremony. Even litanies were compoſed, and faſting preſcribed, for that day, *ad calcandum gentilium conſuetudinem*. Du-Cange.

CERVUS. See Stag.

Cervus *volans*, in *Natural Hiſtory*, a name given by authors to the ſtag-fly, or ſtag-horned beetle, a very large ſpecies of beetle with horns ſloped, and ſomewhat like thoſe of a ſtag. It is of a blackiſh colour, and its horns are uſually of the ſame colour; though in ſome of a purpliſh caſt, and in ſome few they have been found of the colour of red coral. They are an inch and half, or more, in length, when full grown.

This is the kind of ſtag-beetle uſually found in Eſſex, and ſome other counties; but beſide this we have another ſpecies, which is produced of a hexapode worm, frequently found in old wood. This ſpecies is of a deeper black than the former, and its horns ſend out only one branch.

CERYX, in *Natural Hiſtory*, a name by which Pliny, and other old authors, have called the three genera of ſhell-fiſh, ſince diſtinguiſhed under the names of BUCCINUM, PURPURA, and MUREX. Hiſt. Nat. Eclair. p. 281.

Ceryx, in *Antiquity*. The *ceryces* were a ſort of public miniſters, appointed to proclaim, or publiſh things aloud in aſſemblies.

The *ceryx* among the Greeks, anſwered to the PRÆCO among the Romans.

Our cryers have only a ſmall part of their office and authority.

There were two kinds of *ceryces*; *civil*, and *ſacred.*

CERYCES, *civil*, thoſe appointed to call aſſemblies, and make ſilence therein; alſo to go on meſſages, and do the office of our heralds, &c.

CERYCES, *ſacred*, were a ſort of prieſts, whoſe office was to proclaim ſilence in the public games, and ſacrifices, publiſh the names of the conquerors, proclaim feaſts, and the like.

The prieſthood of the *ceryces* was annexed to a particular family, the deſcendants of Ceryx, ſon of Eumolphus. To them it alſo belonged to lead ſolemn victims to ſlaughter.

Before the ceremonies began, they called ſilence in the aſſembly, by the formula, Ευφημειτε σιγη πας εςω λεως; anſwering to the *favete linguis* of the Romans. When the ſervice was over, they diſmiſſed the people with this formula, Λαων αφεσις, *Ite miſſa eſt.*

CESAR. See CÆSAR.

CESARE, in *Logic*, a mode of ſyllogiſms in the ſecond figure, wherein the major propoſition and concluſion are univerſal negatives, and the minor an univerſal affirmative. Such is,

CE *No man who betrays his country deſerves praiſe.*
SA *Every virtuous man merits praiſe.*
RE *Therefore no man who betrays his country is virtuous.*

CESARIAN *ſection.* See CÆSARIAN *ſection.*

CESIS, in *Botany*, a name by which ſome authors expreſs the common *daucus ſylveſtris*, wild carrot, or bird's neſt.

CESPITOSE *plants*, in *Botany*, thoſe which produce many ſtems from one root.

CESSAMPELUS, in *Botany*, a name given to a hoary ſpecies of *convolvulus*. See CONVOLVULUS.

CESSATION, the act of intermitting, diſcontinuing, or interrupting the courſe of any thing, work, action, or the like.

CESSATION *of arms*, an armiſtice, or occaſional TRUCE.

When the commander of a place finds things reduced to an extremity, ſo that he muſt either ſurrender, or ſacrifice the garriſon and inhabitants to the mercy of the enemy, he plants a white flag on the breach, or beats the chamade; on which a *ceſſation* of arms, and hoſtilities, takes place, to give opportunity for CAPITULATION.

CESSATION, *Ceſſatio à divinis*, in the *Romiſh Church*, is a penalty inflicted for any notorious injury to the church, by putting a ſtop to all divine offices, and the adminiſtration of the ſacraments, and by depriving Chriſtians of church-burial.

CESSAVIT, a writ which lies in divers caſes; upon this general ground, that he againſt whom it is brought, has for two years ceaſed or neglected to perform ſuch ſervice, or pay ſuch rent, as he is obliged to by his tenure; and has not upon his lands or tenements ſufficient goods or chattels to be diſtrained.

A *ceſſavit* only lies for annual ſervice, rent, and ſuch like; not for homage or fealty.—The forms and ſpecies of *ceſſavit* are various; as, *ceſſavit de cantaria*, *ceſſavit de feodifirma*, *ceſſavit per biennium.*

CESSION, in a *Legal Senſe*, an act whereby a perſon ſurrenders up, and tranſmits to another perſon, a right which belonged to himſelf.

Ceſſion is a general term; the ſpecies whereof are, a *ſurrender*, *relinquiſhment*, *transfer*, and *ſubrogation*; which ſee.

CESSION is particularly uſed in the *Civil Law*, for a voluntary and legal ſurrender of a perſon's effects to his creditors, to avoid impriſonment.

This practice ſtill obtains in France, and other countries; and is done by virtue of letters patent granted in favour of the poor and honeſt. The *ceſſion* originally carried with it a mark of infamy, and obliged the perſon to wear a green cap, or bonnet; at Lucca, an orange one: to neglect this, was to forfeit the privileges of the *ceſſion.* This was originally intended to ſignify, that the ceſſionary was become poor through his own folly.

The Italian lawyers deſcribe the ceremony of *ceſſion* to conſiſt in ſtriking the bare breech three times againſt a ſtone, called *lapis vituperii*, in the preſence of the judge. Formerly it conſiſted in giving up the girdles and keys in court; the ancients uſing to carry at their girdles the chief utenſils wherewith they got their living; as the ſcrivener his eſcritoire, the merchant his bag, &c.

The form of *ceſſion* among the ancient Romans and Gauls was as follows. The *ceſſionary* gathered up duſt in his left hand, from the four corners of the houſe; and, ſtanding on the threſhold, holding the door-poſt in his right hand, threw the duſt back over his ſhoulders; then ſtripping to his ſhirt, and quitting his girdle and bags, he jumped with a pole over a hedge; hereby letting the world know, that he had nothing left, and that when he jumped, all he was worth was in the air with him.

The judicial *ceſſion* is that which is made by a merchant or trader, who is actually kept in priſon by his creditors, and who being abſolutely incapable to ſatisfy them, petitions a court of juſtice for leave to make *ceſſion.* This judicial *ceſſion* is certainly compulſive on the part of the creditors; ſince the debtor is commonly allowed the benefit of a *ceſſion*, by an order from the judges, notwithſtanding the oppoſition made by the creditors to prevent it; which renders this *ceſſion* more infamous than that which is voluntary.

CESSION, in the *Eccleſiaſtical Law*, is one manner of vacating or voiding an eccleſiaſtical benefice.

Ceſſion is an implicit kind of reſignation, underſtood where a perſon does ſome act, or takes on himſelf ſome charge, which is inconſiſtent with his holding the benefice he was before poſſeſſed of.

By the ſtatute, if a clerk have one benefice of 8*l.* per annum value in the king's books, and takes another, of what value ſoever, with cure of ſouls, and without diſpenſation; the former living is, *ipſo facto*, void: and this kind of voidance of a living is called *ceſſion.*

What is called *ceſſion* in other benefices, is called *conſecration* in relation to a biſhoprick; for if an incumbent be made a biſhop, his benefice is ſaid to be *void by conſecration.*

CESSIONARY, a BANKRUPT. Sometimes it denotes an ASSIGNEE.

CESSOR, in *Law*, one dilatory, and delinquent in his duty, or ſervice; and who thereby incurs the danger of the law, and is liable to have the writ *ceſſavit* brought againſt him.

When it is ſaid, *the tenant ceſſeth*, it is meant, he ceaſeth to do his duty, or ſervice, to which he is bound.

CESTRATUM, a work enamelled, or painted with a ceſtron. The word is alſo written CEROSTROTUM and *ceroſtratum.*

CESTREUS, in *Zoology*, the name of a fiſh of the mullet kind, but having a much ſmaller and narrower head, and its ſides variegated with much ſhorter longitudinal lines. It is eaten in many places, but is accounted much inferior to the mullet. See MULLET.

CESTRON, in *Antiquity*, the inſtrument wherewith they painted, or enamelled, in horn, or ivory.

CESTROPHENDONA, in the *Ancient Military Art*, a compound kind of dart, or miſſive weapon, balanced with feathers like an arrow, and caſt by a large ſling; uſed chiefly by the Macedonians, in their wars under Perſeus, with the Romans.

The word is compoſed of κεςρος, a ſort of dart called by the Latins *tragula*, and σφενδονη, *funda, a ſling.* Liv. lib. xl. p. 65.

CESTRUM, in *Botany.* See *Baſtard* JASMINE.

CESTRUM, in the *Materia Medica of the Ancients*, a name given to a plant often mentioned, but very ill explained to us by the generality of writers.

CESTUI, a French term, literally ſignifying *he*, or *him*; frequently uſed in our law writings. Thus,

CESTUI *qui truſt*, is he who has lands in truſt, &c. committed to another for his benefit.

CESTUI *qui vie*, one for whoſe life any lands or tenements are granted.

CESTUI *qui uſe*, he to whoſe uſe another man is infeoffed in land or tenements.

CESTUS, among *Ancient Poets*, a fine embroidered girdle worn by Venus, endowed with a faculty of charming, and conciliating love.

The word is alſo written *ceſtum*, and *ceſton*: it comes from κεςος, *a girdle*, or other thing embroidered, or wrought with a needle; derived, according to Servius, from κεντειν, *pungere*: whence alſo *inceſtus*; a term uſed at firſt for any indecency by undoing the girdle, &c. but now reſtrained to that between perſons near akin. See INCEST.

CESTUS, in *Antiquity.* See CÆSTUS.

CESURE, or CÆSURA, in *Poetry.* See CÆSURA.

CETACEOUS, in *Natural Hiſtory*, a term applied to all large ſea-fiſhes, and beaſts, which bear a reſemblance to the WHALE.

The word is formed of *cetus*, *a whale.*

Cetaceous, in a proper ſenſe, denotes only thoſe large fiſh which are viviparous, or breed their young within their own bodies; and have no gills, but lungs, with which they breathe like quadrupeds; having but one pair of fins, and giving ſuck to their young. Hought. Collect. N° 531. tom. iii. p. 272, & ſeq.

Theſe ſcarce differ in any thing from quadrupeds, except the want of feet. They have no AIR-*bladder*; but are enabled by the air they receive into the lungs in reſpiration, to render their bodies equiponderant to water. *Cetaceous*, in the ordinary uſe, is extended to all larger fiſh, called by the Latins *belluæ marinæ*, or ſea-beaſts.

In which view, *cetaceous* fiſhes are divided into *greater*, including the whale kind, properly ſo called; and *leſſer*, to which belong the porpoiſe, ſhark, dog-fiſh, &c. Theſe latter are more properly called *cartilaginous* fiſhes.

The ſea-fox is ranked by authors in the claſs of *cetaceous cartilaginous* fiſhes, not flat, called alſo GALEOLÆ; whoſe ſpecific difference conſiſts in this, that they have two livers, five gills, or *branchiæ*, on each ſide, and tufts hanging from the fins, which in the males are under the belly on each ſide the navel.

Of the *cetaceous* kind, properly ſo called, there are divers ſpecies: ſome without teeth, or tube to caſt up water; others with teeth and a water-tube; and others with a large long horn.

The horn uſually called the *unicorn's horn*, is found to be the tooth of a *cetaceous* fiſh in the icy ſea, called *narval*.

CETERACH, in *Botany*, an officinal, agglutinant plant; the ſame with what is otherwiſe denominated *aſplenium* and *ſcolopendrium*.

This plant ſtands recommended as an excellent diuretic, and a promoter of the *menſes*. The whole plant is to be uſed, and ſhould be gathered in the month of September. It is given by ſome in jaundices, in quartan agues, and in obſtructions of the ſpleen; but it is much neglected in the preſent practice. In ſome parts of Eſſex, where it is common on the walls of their churches, and on the tombs in the church-yards, the common people tell us wonders of its effects in the ſtone.

CETERIS *paribus*. See CÆTERIS *paribus*.

CETRA, in *Antiquity*, a ſmall leathern ſhield, uſed by the ancient Spaniards, Moors, and even Britons.

The African *cetræ* are ſaid by Pliny to have been impenetrable, and made of elephants ſkins.

The *cetra* was much the ſame with the PELTA. Whence Livy calls the Macedonians *peltaſtæ*, *cetrati*.

CETUS, in *Aſtronomy*, the *Whale*; a large conſtellation of the ſouthern hemiſphere, under Piſces, and next the water of Aquarius.

The ſtars in the conſtellation *Cetus*, in Ptolemy's Catalogue, are twenty-two; in Tycho's, twenty-one; in Hevelius's, forty-five; in the Britannic Catalogue, ninety-ſeven. The order, names, longitudes, latitudes, magnitudes, &c. whereof, are as follow.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
		♓	18	37	9	14	14	25	6
Of thoſe in triangle preced. the tail, by Ptolemy ranked among the informes of Aquarius. Mid.	g		19	25	37	16	14	22	4.5
			22	28	40	10	5	0	6
			26	39	45	3	22	42	6
			26	48	35	3	9	54	6
5.									
No.	f		21	57	12	15	16	3	5
So.	h		21	12	12	18	45	54	5
North. in the extrem. of the tail	ι		26	35	0	10	1	30	3
			25	56	22	13	27	15	6
		♈	1	45	50	2	42	0	6.7
10.									
			2	5	16	3	59	56	6
			0	59	7	6	37	17	6
			2	18	26	6	47	28	6
			3	56	51	3	8	56	6
Bright. and ſouth. of the tail			4	13	26	4	15	16	6
15.									
	β	♓	28	13	2	20	46	52	3
N. of thoſe prec. in the □ in the root of the tail N.	φ	♈	1	33	31	14	7	45	5
			0	54	30	16	18	39	6
S. of the preceding ſide of the □	φ		2	57	0	14	44	14	5
			7	25	18	6	17	50	6
20.									
			4	40	46	13	24	8	6
S. of the following ſide	φ		4	2	32	15	53	50	5
	φ		4	37	39	16	15	51	5
			8	20	24	10	41	0	6
			11	56	19	0	48	29	6
25.									
			10	0	38	5	2	10	6
			6	49	9	15	38	59	6
			6	58	49	15	34	29	6
			12	7	10	4	49	16	6
			7	23	52	15	39	56	6
30.									
Prec. in the poſter. part of the body	η		7	25	18	16	7	16	3
			8	20	10	15	6	47	6
			12	53	10	4	40	57	6
			11	22	38	9	8	43	6
			13	21	58	4	50	31	6
35.									
			9	48	3	13	24	58	6
			9	42	4	14	37	59	5
			12	23	56	8	14	45	6
			12	23	25	9	49	33	6
			12	32	10	9	38	12	6
40.									
			10	35	55	14	41	39	6
			13	54	25	8	17	42	6
			14	34	28	8	30	6	6
			11	55	6	15	35	44	6
Subſ. in the poſter. part of the body	θ		11	53	52	15	46	30	3
45.									
			9	36	36	21	50	7	5
			10	34	17	20	32	40	6
			7	21	44	28	37	56	6
			11	17	50	23	41	24	6
			11	45	30	23	33	56	6
50.									
			21	10	42	4	43	10	6
Mid. of 3 in the middle of the body	τ		13	35	48	24	57	32	4.3
Contig. to the north. in the body	χ		17	0	46	20	30	12	5
			25	24	42	0	26	39	6
North. in the middle of the body	ζ		17	36	47	20	21	19	3
55.									
	υ		13	33	32	32	3	28	4
South. in the middle of the body			15	8	32	30	47	52	5
			23	3	55	13	32	34	6
Another, and more ſouth	υ		15	4	15	31	2	29	4.5
			24	22	44	11	39	53	6
60.									
			24	21	32	12	9	13	7
			24	56	2	14	29	13	6.7
			25	28	16	14	8	3	6
			29	15	5	4	24	38	6
Preced. in the creſt	ξ		29	42	36	4	17	5	4
65.									
			25	45	20	14	50	5	6
			25	20	13	18	58	51	6
New one in the neck of Cetus	ο		27	11	15	15	56	38	2.3
			28	59	42	13	0	56	6
			28	36	4	14	14	1	6
70.									
			28	37	36	16	15	12	6
Prec. ſouth. in the □ of the breaſt	ς		25	22	10	25	15	50	4
Subſeq. of two in the creſt	ξ	♉	3	7	35	5	53	7	4.5
		♈	21	37	0	34	14	5	6
		♉	0	59	19	15	12	15	5.6
75.									
South. prec. in the □ of the breaſt	σ	♈	25	46	2	28	32	48	4
			29	13	58	21	50	36	6
Againſt the eye-brow	ν	♉	4	3	9	9	12	26	4.5
			0	55	37	17	49	1	6
		♈	29	34	34	21	55	44	6
80.									
		♉	1	32	55	17	52	43	6
Prec. in the mouth againſt the cheek	δ		3	14	26	14	29	57	3
N. of thoſe following in the ſquare of the breaſt	ε	♈	29	0	15	26	0	25	3
		♉	3	18	39	15	35	39	6
			7	14	22	4	48	29	6
85.									
In the middle of the mouth	γ		5	7	3	12	1	26	3
That againſt the forehead	μ		7	34	50	5	35	33	4
			8	20	32	3	22	22	6
South. of thoſe that follow in the ſquare of the breaſt	π	♈	29	24	53	28	16	32	4.3
			27	44	30	32	46	20	8
90.									
That againſt the noſtrils	λ	♉	10	45	6	7	49	12	4
Bright ſtar of the jaw	α		9	59	15	12	36	59	2
			10	5	8	12	22	55	6
			11	2	13	18	25	42	6
			12	31	35	18	33	42	6
95.									
Inform. following the bright ſtar of the jaw	κ		13	57	58	14	29	21	5
	κ	♉	14	30	25	14	18	25	4

In the mandible of *Cetus* is a variable ſtar, which appears and diſappears periodically, paſſing through the ſeveral degrees of magnitude, both increaſing and diminiſhing, in about 333 days. Hevel. in Phil. Tranſ. N° 66. p. 2028. Marald. in Mem. Acad. Scienc. an. 1719. p. 122, ſeq.

CETUS, in *Zoology*. See WHALE.

CEVADILLA, in *Botany*, a name uſed by ſome authors for the *hordeum cauſticum Indicum*, or Indian cauſtic barley.

CEURAWATH, the name of a particular ſect of Banians in the Eaſt Indies, who hold the metempſychoſis with ſo much ſuperſtition, that they will not kill the leaſt inſect: their prieſts carry a piece of linen over their mouth, that no flies may enter. All the other ſects of Banians have an averſion for this; and continually exhort their auditors to ſhun all diſcourſe and converſation with them. See Banians.

CHA, in *Commerce*, a ſilk ſtuff very thin and light, made in China, which moſt commonly ſerves the inhabitants for a ſummer dreſs; it is ſomewhat like our taffeties or luſtrings.

CHAA, in *Botany*, a name given by ſome authors to the tea-tree.

CHABNAM, or Rosee, in *Commerce*, a kind of muſlin or cotton linen, very clear and fine: it comes from the Eaſt Indies, particularly from Bengal.

CHACE. See Chase.

CHACING. See Chasing.

CHACK, in the *Manege*, is taken in the ſame ſenſe, as *beat upon the hand*; it is applied to a horſe when his head is not ſteady, but he toſſes up his noſe, and ſhakes it all of a ſudden, to avoid the ſubjection of the bridle. Turkiſh horſes have this fault frequently. We ſay, they beat upon the hand; and neither the beſt bits, nor the beſt hand, can ever fix their heads. Croats, or Croatian horſes, are alſo ſubject to *chack* upon the hand; which proceeds from this, that their bars are too ſharp and ridged, or edged, ſo that they cannot bear the preſſure of a bit, though ever ſo gentle. If a horſe had not too ſenſible, or too tender a mouth, he would not beat upon the hand: but in order to fix and ſecure his head, you need only to put under his noſe-band a ſmall flat band of iron, bent archwiſe, which anſwers to a martingale. This will hinder him to beat upon the hand, but will not break him of the habit; for as ſoon as the martingale is taken off, he will fall into the ſame vice again.

CHACOON, or Chacone, a kind of dance, in manner of a ſaraband borrowed from the Spaniards, and by them from the Moors. The baſs always conſiſts of four notes, with three crotchets in a bar, which proceed in conjunct degrees: and whereon they make divers concords and couplets, with the ſame burden.

The word is formed of the Spaniſh *chacona*, which may probably be derived from the Perſian *ſhack*, *a king*, thus intimating that this might have been a royal dance; not, as others pretend, from the Italian *Gecone*, a blind man, the inventor.

CHADCHOD, in *Jewiſh Antiquity*. Ezekiel mentions *chadchod* among the ſeveral merchandizes which were brought to Tyre. The old interpreters not very well knowing the meaning of this term, continued it in their tranſlation. St. Jerom acknowleges that he could not diſcover the ſignification of it. The Chaldee interprets it pearls; others think that the onyx, ruby, carbuncle, cryſtal, or diamond is meant by it. Ezek. chap. xxvii. ver. 16. Calmet. Dict. Bibl. in voc.

CHÆLÆ *cancrorum*. See Crabs *claws*.

CHÆROPHYLLUM, in *Botany*. See Chervil.

CHÆRUS, in *Ichthyology*, a name given by Strabo, and ſome other of the old Greek writers, to the fiſh we now call the *capriſcus*. Rondeletius and Salvian were the firſt who properly deſcribed this fiſh. See Goat-*fiſh*.

CHÆTIA, in *Zoology*, the name of a ſpecies of inſects of the *apteria* kind, without any viſible limbs.

The *chætia* reſembles a hair, or a piece of fine thread; its ſurface is ſmooth, its body rounded, and very ſlender. It is called in Engliſh the hair-worm. Hill's Hiſt. Anim. p. 14.

CHÆTODON, in *Ichthyology*, the name of a genus of the *acanthopterygious* or *thoracic* fiſhes; the characters of which are theſe: the branchioſtege membrane on each ſide contains five or ſix ſmall bones: the body is compreſſed, broad, thin, and ſhort: the back has but one fin, which reaches all along it: the tail is large, and there are in all ſix fins beſide it: the mouth is ſmall, the lips may be opened and extended, but naturally they cover a part of the teeth: the teeth in the jaws are oblong, contiguous to each other, and flexile: the ſcales are rough; and the eyes are not covered with the ſkin of the head. There are ſeveral ſpecies.

The name is derived from χαιτα, *a thin filament*, and οδους, *a tooth*; and expreſſes that the teeth may be divided into thin and fine filaments, reſembling briſtles.

CHAFE, or Chafing *of a rope*, in *Sea-Language*, is ſaid of a rope that is galled or fretted, or when the rope runs againſt any thing.

The cable is chafed in the hawſe, ſignifies that it is fretted or begun to be worn out there.

Chafe-*Wax*, or Chaufee-*Wax*, an officer in chancery, whoſe buſineſs is to fit the wax for the ſealing of writs, patents, and other inſtruments iſſued thence.

CHAFF, in *Huſbandry*, the huſks of the corn, ſeparated by ſcreening or winnowing it. It ſignifies alſo the rind of corn; and ſtraw cut ſmall for the uſe of cattle.

CHAFFER, in *Zoology*, a ſpecies of beetle. See Scarabæus.

CHAFFERCONNERS, in *Commerce*, printed linens manufactured in the Great Mogul's dominions. They are imported by the way of Surat; and are of the number of thoſe linens prohibited in France.

CHAFFERS, in our *Statutes*, ſeem to ſignify wares or merchandize. 3 Edw. IV. c. 4.

The original French of the ſtatute is *chaffares*.

CHAFFERY, or Chafery, in the *Iron-Works*, the name of one of the two principal forges. The other is called the *finery*. When the iron has been wrought at the finery into what is called an *ancony* or ſquare maſs, hammered into a bar in its middle, but with its two ends rough, the buſineſs to be done at the *chaffery* is the reducing the whole to the ſame ſhape, by hammering down theſe rough ends to the ſhape of the middle part.

CHAFFINCH, in *Ornithology*, a ſpecies of the fringilla, with a ferruginous breaſt; the wings black, ſpotted with white.

CHAGREEN, or Chagrin, in *Commerce*. See Shagreen.

CHAIN, *Catena*, a ſeries of ſeveral rings, or links; fitted into one another.

There are *chains* of divers matters, ſizes, and forms, and for divers uſes.—Ports, rivers, ſtreets, &c. are cloſed with iron *chains*: rebellious cities are puniſhed by taking away their *chains*, and barriers.

The arms of the kingdom of Navarre are, *Chains or*, *in a field gules*. The occaſion hereof is referred to the kings of Spain leagued againſt the Moors; who having gained a celebrated victory againſt them in 1212, in the diſtribution of the ſpoils, the magnificent tent of Miralmumin fell to the king of Navarre; as being the firſt that broke and forced the *chains* thereof.

Chain, *a gold*, is one of the ornaments or badges of the dignity of a lord mayor of London; and remains to the perſon, after his being diveſted of that magiſtrature, as a mark that he has paſſed the chair.

Something like this, Chorier obſerves, obtained among the ancient Gauls: the principal ornament of their people in power and authority was a gold *chain*, which they wore on all occaſions; and even in battle, to diſtinguiſh them from the common ſoldiers. Hiſt. de Dauph. lib. iii. p. 130.

Chain alſo denotes a kind of ſtring, of twiſted wire; ſerving to hang watches, tweezer-caſes, and other valuable toys upon. The invention of this piece of curious work was owing to the Engliſh; whence, in foreign countries, it is denominated the *Engliſh chain*. It was ſome time before foreigners undertook to imitate them, and at laſt with no extraordinary ſucceſs: thoſe of Paris have come neareſt. Theſe *chains* were at firſt uſually either of ſilver or gold, ſome of gilt copper; the thread or wire of each kind muſt be very fine.

For the fabric, or making of theſe Chains; a part of the wire is folded into little links of an oval form; the longeſt diameter about three lines; the ſhorteſt, one. Theſe, after they have been exactly ſoldered, are again folded into two; and then bound together, or interwoven, by means of ſeveral other little threads of the ſame thickneſs; ſome whereof, which paſs from one end to the other, imitate the warp of a ſtuff; and the others, which paſs tranſverſe, the woof. There are at leaſt four thouſand little links in a chain of four pendants; which are, by this means, bound ſo equally, and withal ſo firmly together, that the eye is deceived, and takes the whole to conſiſt of one entire piece.

Chain is alſo a kind of meaſure in France, applied to fewel-wood, ſheaves of corn in eſtimating the tythes, hay, and horſes. Theſe meaſures are divided variouſly, according to the uſes for which they are intended.

Chain-*pump*. See Pump, and *Bur*-Pump.

Chain-*ſhot*, in *War*, two bullets, or rather half-bullets, linked together by a chain. Their uſe at ſea is to ſhoot down yards, or maſts; or to cut the rigging of a ſhip.

Chain, in *Surveying*, is a measure, conſiſting of a certain number of links of iron wire, uſually a hundred; ſerving to take the dimenſions of fields, &c.

This is what Merſenne takes to be the *arvipendium* of the ancients.

The *chain* is of various dimenſions, as the length or number of links varies: that commonly uſed in meaſuring land, called *Gunter's chain*, is in length four poles or perches; or ſixty-ſix feet, or a hundred links; each link being ſeven inches $\frac{92}{100}$. Whence it is eaſy to reduce any number of thoſe links to feet, or any number of feet to links.

This *chain* is entirely adapted to Engliſh meaſures; and its chief convenience is in finding readily the numbers contained in a given field. Where the proportions of ſquare feet and acres differ, the *chain* to have the ſame advantages as Gunter's *chain*, muſt alſo be varied. Thus in Scotland, the *chain* ought to be of 74 feet, or 24 Scotch ells, if no regard be had to the difference between the Scotch and Engliſh foot; but if regard be had to this difference, the Scotch *chain* ought to conſiſt of $74\frac{2}{3}$ Engliſh feet, or 74 feet 4 inches, and $\frac{4}{5}$ of an inch. This *chain* being divided into a hundred links, each of theſe will be $8\frac{928}{1000}$ inches. See Foot and Acre.

That ordinarily uſed for large diſtances, is in length a hundred feet; each link one foot.

For ſmall parcels, as gardens, &c. is ſometimes uſed a ſmall *chain* of one pole, or ſixteen feet and a half length; each link one inch $\frac{98}{100}$.

Some in lieu of *chains* uſe ropes; but theſe are liable to ſeveral irregularities; both from the different degrees of moiſture, and of the force which ſtretches them. Schwenterus, in his Practical Geometry, tells us, he has obſerved a rope ſixteen feet long, reduced to fifteen in an hour's time, by the mere falling of a hoar froſt. To obviate theſe inconveniences, Wolfius directs, that the little ſtrands whereof the rope conſiſts be twiſted contrary ways, and the rope dipped in boiling hot oil; and when dry, drawn through melted wax. A rope thus prepared, will not get or loſe any thing in length, even though kept under water all day.

Uſe of the Chain *in Surveying.*—The manner of applying the *chain* in meaſuring lengths, is too popular to need deſcription. In entering down the dimenſions taken by the *chain*, the *chains* and links are ſeparated by a dot; the former being integers, and the latter decimals: thus a line ſixty-three *chains* fifty-five links long, is written 63.55. If the links be ſhort of ten, a cypher is prefixed, thus 10 *chains*, 8 links, are written 10.08.

To find the area of a field, &c. the dimenſions whereof are given in Chains *and links.* 1ſt, Multiply the lines by one another, according to the rules referred to under Area; and from the product cut off five figures towards the right; which is nothing more than dividing by 100000, the number of ſquare links in an acre: thoſe remaining on the left will be acres. 2dly, Multiply the five figures cut off by four, the number of roods in an acre; and cutting off five again from the product on the right, thoſe remaining on the left will be roods. Laſtly, Multiply the five thus cut off by forty, the fourth part of the ſquare perches in an acre; and cutting off five, as before, on the right, thoſe remaining on the left are ſquare perches.

To take an angle DAE *(Tab. Surveying, fig. 1.) by the* Chain. Meaſure a ſmall diſtance from the vertex A along each leg, v. g. to *d* and *c*; then meaſure the diſtance *dc*: to lay this down, draw AE at pleaſure, and from your ſcale ſet off the diſtance meaſured on it. See Scale.

Then, taking in your compaſſes the length meaſured on the other ſide, on the vertex A, as a center, deſcribe an arch *dc*; and on the point *c*, as a center, with the meaſured diſtance of *cd*, deſcribe another arch *ab*. Through the point where this interſects the former arch, draw a line AD. So is the angle plotted; and its quantity, if required, may be meaſured on a line of chords. See Chord.

To take the plan or plot of any place, as ABCDE *(fig. 2.) by the* Chain. Draw a rough ſketch of the place by the eye; and meaſuring the ſeveral ſides AB, BC, CD, DE, enter down the lengths on the reſpective lines: then if the plan be to be taken within-ſide of the place, inſtead of meaſuring the angles, as before, meaſure the diagonals AD, BD. Thus will the figure be reduced into three triangles, whoſe ſides are all known, as in the former caſe; and may be laid down on paper, according to the method above.

If the plan be to be taken without-ſide the place, the angles muſt be taken thus; v. g. for the angle BCD, produce the lines BC and CD to any certain equal diſtance, v. g. to *a* and *b*, five *chains*: and meaſure the diſtance of *ab*. Thus have you an iſoſceles triangle C*ab*, wherein the angle $aCb = BCD$ its oppoſite one is had: thus is the quantity of BCD found, and the angle laid down as before.

By the Chain *to find the diſtance between two objects inacceſſible in reſpect of each other.* From ſome place, as C *(fig. 3.)*, whence the common diſtance to each object A and B, is acceſſible in a right line; meaſure the diſtance CA, which ſuppoſe fifty *chains*; and continue the line to D, viz. fifty more: meaſure alſo BC, which ſuppoſe thirty *chains*; and produce the line to E, viz. thirty more. Thus will be formed the triangle CDE, equal and ſimilar to the triangle ABC; conſequently the diſtance DE, being meaſured, will give the inacceſſible diſtance required.

By the Chain *to find the diſtance of an inacceſſible object, v. g. the breadth of a river.* On one ſide place a pole, four or five feet high, perpendicularly, having a ſlit a-top, with a ſtrait piece of wire, or the like, two or three inches long, put through the ſame. This is to be ſlipped up or down, till, looking along it, you find it point full on the other ſide of the river; then turning the pole with the wire in the ſame direction, obſerve the point on the dry land, to which it points when looked along as before: meaſure the diſtance from the pole to this laſt point; it is the ſame with that of the firſt required.

Chains, *Catenæ*, in *Eccleſiaſtical Hiſtory*, denote collections of ſuch theological opinions and ſcriptural interpretations, as had been received by the ancient doctors of the church. See Catena.

Chains, *hanging in*, a kind of puniſhment inflicted on murderers. By ſtat. 25 Geo. II. c. 37. the judge ſhall direct ſuch to be executed on the next day but one, unleſs Sunday intervene; and their bodies to be delivered to the ſurgeons to be diſſected and anatomized: and he may direct them afterwards to be hung in *chains*. During the interval between ſentence and execution, the priſoner ſhall be kept alone, and ſuſtained only with bread and water. The judge, however, hath power to reſpite the execution, and relax the other reſtraints of the act. Blackſt. Com. vol. iv. p. 20.

Chains, in *Ship-building*, are thoſe irons by which the ſhrouds of the maſts are made faſt to the *chain-wales*.

Chain-wales, in a ſhip, are the broad timbers which are made projecting horizontally from her ſides, to which, with *chains*, the ſhrouds are faſtened, and by them ſpread out, the better to ſecure the maſts.

CHAIR, *Cathedra*, was anciently uſed for the pulpit, or ſuggeſtum, whence the prieſt ſpoke to the people.

It is ſtill applied to the place whence profeſſors and regents in univerſities deliver their lectures, and teach the ſciences to their pupils: thus, we ſay, the profeſſor's *chair*, the doctor's *chair*, &c.

Chair, *curule*, was an ivory ſeat placed on a car, wherein were ſeated the prime magiſtrates of Rome, and thoſe to whom the honour of a triumph had been granted.

Chair, *ſedan*, a vehicle ſupported by poles, wherein perſons are carried; borne by two men. There are two hundred *chairs* allowed by act of parliament; and no perſon is obliged to pay for a hackney-*chair*, more than the rate allowed by the act for a hackney-coach driven two third parts of the ſaid diſtance. 9 Ann. c. 23. § 8. Their number is ſince increaſed, by 10 Ann. c. 19. and 12 Geo. I. c. 12. to four hundred. See *Hackney*-Coaches.

Chair is alſo applied by the Romaniſts to certain feaſts, held anciently in commemoration of the tranſlation of the ſee, or ſeat of the vicarage of Chriſt, by St. Peter.

The *perforated chair*, wherein the new-elected pope is placed, F. Mabillon obſerves, is to be ſeen at Rome: but the origin thereof he does not attribute, as is commonly done, to the adventure of pope Joan; but ſays there is a myſtery in it; and it is intended, forſooth, to explain to the pope thoſe words of Scripture, that *God draws the poor from out of the duſt and mire.*

CHAIRMAN, the President, or ſpeaker of an aſſembly, company, &c.

We ſay, the *chairman* of a committee, &c.

CHAISE, a ſort of light open chariot, or calaſh.

Aurelius Victor relates, that Trajan firſt introduced the uſe of poſt-*chaiſes*: but the invention is generally aſcribed to Auguſtus; and was probably only improved by Trajan, and ſucceeding emperors. Goth. in Cod. Theodoſ. tom. ii. p. 506, &c.

CHALAPA, in *Botany* and the *Materia Medica*, is a name given to Jalap.

CHALASTIC *Medicines*, are ſuch as have the faculty of relaxing the parts; when, on account of their extraordinary tenſion, or ſwelling, they occaſion pain.

The word comes from χαλαω, *I relax*.

Of this kind are butter, and many oils, &c.

CHALASTICUM *ſal*, in the *Materia Medica*, a name given by ſome writers to the ſal gem.

CHALAZA, among *Naturaliſts*, a white knotty kind of ſtring at each end of an Egg, formed of a plexus of the fibres of the membranes whereby the yolk and white are connected together.

Its uſe, according to Harvey, is to be as it were the poles of this microcoſm, and the connexion of all the membranes twiſted and knit together; whereby the liquors are not only conſerved, each in its place, but alſo in its due poſition to the reſt.

Mr. Derham adds, that they alſo ſerve to keep one and the ſame part of the yolk uppermoſt, let the egg be turned which way it will; which is done by the following mechaniſm: the *chalazæ* are ſpecifically heavier than the whites wherein they ſwim; and being braced to the membrane of the yolk, a little out of the axis, they cauſe one ſide of the yolk to be heavier than the other. The yolk being thus by the *chalazæ* made buoyant, and kept ſwimming in the midſt of two whites, is by its own heavy ſide kept with the ſame ſide always uppermoſt: which uppermoſt ſide he imagines to be that whereon the cicatricula lies.

CHALAZIAS, in *Natural Hiſtory*, the name of a ſmall ſtone, deſcribed by Pliny and other ancient writers, and ſaid to have been of the ſize and colour of a common hail-ſtone, and of the hardneſs of the diamond. It was probably no other than the ſmall pebble-cryſtals of the Indies, which are at this time frequent on the ſhores of rivers there, from the bigneſs of a large pin's head to that of a pea; and as they lie in great cluſters together, without any other ſtones among them, they make a ſort of coarſe ſand, which much reſembles a cluſter of hail-ſtones.

CHALAZITES, in *Natural Hiſtory*, a name given by ſome to the *chalazias*.

CHALCANTHUM, in *Natural Hiſtory*, a name uſed by many authors to ſignify the ſubſtance called by others CHALCITIS.

Chalcanthum has been uſed as the generical name of a ſet of foſſils; the characters of which are, that they are compound or metallic ſalts, of a coarſe and irregular ſtructure, conſiderably hard, and naturally impure and opake; in which they differ from the native vitriols, which are fine, of a regular ſtructure, and naturally pure and pellucid.

CHALCANTHUM, in *Medicine*, the ſame with VITRIOL.

Some have alſo uſed *chalcanthum* corruptly for COLCOTHAR, or VITRIOL *rubified*.

CHALCANTHUM *chlorum*, in the *Materia Medica*, a name given by ſome of the old Greek writers to the *melanteria*, a yellowiſh vitriolic mineral, which turned black on being wetted with common water.

CHALCAS, in *Botany*, a genus of the *decandria monogynia* claſs: the calyx of which is ſeparated into five ſegments, and the corolla bell-ſhaped, with unguiculated petals.

CHALCEDONIUS, the name of a medicine deſcribed by Galen; and directed by him to be infuſed into the ears, in inveterate diſorders of that part.

CHALCEDONY. See CALCEDONY.

CHALCEDONY, in the *Glaſs Trade*. See GLASS-*chalcedony*.

CHALCEMBOLON, in *Antiquity*, a ſhip, the roſtrum of which was of braſs.

The word is compounded of χαλκος, *braſs*, and εμβολον, *roſtrum*.

CHALCHUS, in *Ichthyology*, a name given by the ancient Greeks to the fiſh which we call the DOREE. It ſeems to have obtained both theſe names from its colour; the one from the word *chalcos*, *braſs*; and the other from *doree*, *gilded*.

CHALCIDIC, CHALCIDICUM, or CHALCEDONIUM, in the *Ancient Architecture*, a large magnificent hall belonging to a tribunal, or court of juſtice.

Feſtus ſays, it took its name from the city Chalcis; but he does not give the reaſon. Philander will have it to be the court, or tribunal, where affairs of money and coinage were regulated; ſo called from χαλκος, *braſs*, and δικη, *juſtice*. Others ſay, the money was ſtruck in it; and derive the word from χαλκος, and οικος, *houſe*.

In Vitruvius, it is uſed for the auditory of a BASILICA: in other of the ancient writers, for a hall, or apartment, where the heathens imagined their gods to eat.

CHALCIDICA *lacerta*, in *Zoology*, a ſort of ſerpent, ſo called from its reſemblance in colour to the calcedony. Its bite is ſucceeded by a pellucid tumour, which has a kind of ſhining blackneſs at the margin. Drank in wine, it cures its own bite, according to Paulus Ægineta. It is alſo called *ſeps*.

CHALCIDICUM, in *Antiquity*, ſometimes denoted a dining-room. See CHALCIDIC.

CHALCIS, in *Ichthyology*, a name by which ſome have called the pilchard; called by others *celerinus*, and *apua membras*. See PILCHARD.

CHALCIS was alſo the name given by Ariſtotle, Ælian, Appian, and the other Greek writers, to the common herring. See CLUPEA.

CHALCITARIUM, in the *Materia Medica of the Ancients*, a name given by the Greeks of the middle ages to the *colcothar*, or *calcanthum*. Some have applied it to the CHALCITIS alone, but others make it expreſs the vitriols in general. It is derived from the Arabian word *colcothar*.

CHALCITIS, a kind of vitriolic mineral, reddiſh like copper, friable, and having yellow ſhining veins within. It has the taſte of the blue vitriol of copper, and diſſolves very eaſily in aqueous liquors. There are two other minerals, called *miſy* and *ſory*, very much like the *chalcitis*. In effect, the ancients confounded them together; and not only the miſy and ſory, but alſo the MELANTERIA; or rather, they imagined a ſucceſſive tranſmutation of the four minerals, which began with *chalcitis*, then became miſy, then melanteria, and laſtly, ſory, where it fixed.

The generality have eſteemed it one of the loſt foſſils of the ancients, though its name ſtill ſtands in the preſcription for the Venice treacle. This is, however, as erroneous an opinion as the other; the true *chalcitis* of the ancients being yet exiſtent, and in the Turkiſh dominions commonly known, and in frequent uſe as a medicine. The Turks calcine it in a ſtrong fire, and afterwards give it internally as a powerful aſtringent; and, it is ſaid, with great ſucceſs.

There is no doubt but that this is the very ſubſtance deſcribed by the ancient Greeks, under the name *chalcitis*; the deſcription of Dioſcorides perfectly agreeing with, and very well expreſſing it. He accounts it one of the more ſlightly corroſive medicines, and recommends the external uſe of it in collyriums, and in hæmorrhages, in an eryſipelas, and in the herpes. But the ancients ſeem not to have known the uſe of it internally ſo early as in theſe times; though among the Romans it was well known alſo in internal preſcription, and made an ingredient in the famous *theriaca Andromachi*.

The moderns make theſe four diſtinct matters; though the chief difference between them is ſuppoſed to lie in the different tenuity or groſſneſs of their ſubſtance.

Some ſay, the MISY is formed on the *chalcitis*, as verdegris on copper, being properly its ruſt; and that *chalcitis* is formed in the ſame manner on the SORY.

This is certain, they are all found in copper mines: but the modern druggiſts know little of any of them.

The *chalcitis* is brought from Germany: it is very cauſtic and eſcharotic. Its chief uſe is in the compoſition of Venice treacle: in lieu of it is frequently ſubſtituted chalcanthum rubified, or copperas.

Chalcitis and *colcothar* were of the ſame ſignification; they expreſſed a vitriolic mineral, which Avicenna tells us was yellow. It was a kind of what he calls *alzagiat*, or *zagi*, a word expreſſing all the vitriolic minerals in general: the other ſorts of which were, the *calcadis*, which was white; the *calcanthum*, which was green; and the SORY, which was red.

CHALCOGRAPHY, the art of ENGRAVING on copper and braſs.

CHALCOLIBANON, a word mentioned in the Apocalypſe of St. John, and very much miſunderſtood by the interpreters, who generally render it *braſs*; but the word will bear no ſuch ſignification. When the name of a metal is prefixed to ſome other word, it only denotes the thing mentioned after the metal to be of the colour of that metal. This word is formed of χαλκος, *braſs*, and *olibanum*, *frankincenſe*. We have many parallel compounds, and all underſtood in the ſame way, the name of the metal only expreſſing the thing to be of its colour: thus *chryſomela* are apples of the colour of gold; &c. This, therefore, can only ſignify frankincenſe of the colour of braſs, that is, yellow.

CHALCOMUIA, the *braſs fly*, in *Natural Hiſtory*, the name of a fly, whoſe wings are of the colour of poliſhed braſs. It is of the carnivorous kind, feeding on other flies, beetles, and on the bodies of ſerpents, when dead; whence it has been alſo called by ſome *ophioborus*; others have called it *heſycius*.

CHALCOPHTHONGUS, in *Natural Hiſtory*, a word uſed by Pliny, and other writers, as the name of a peculiar ſpecies of marble, which was very hard, and of a deep black colour, and when ſtruck upon, ſounded like braſs.

CHALCOSMARAGDUS, in *Natural Hiſtory*, a name given by the ancients to what they called a ſpecies of the emerald, found about the copper mines of the iſland of Cyprus, and of a duſky appearance, and veined with yellow.

The ancients were very indeterminate in the characters of the gems, and one or other of them have called almoſt every green ſtone in the world an emerald. This was probably only a dirty green ſpar or cryſtal tinged with copper, and ſuch as we daily find about our own copper mines.

CHALCUS, among the *Ancient Greek Phyſicians*, a weight of about two grains, the ſame as *æreolus* or *æreolum*.

CHALDEE, or CHALDAIC *Language*, that ſpoken by the Chaldeans, or people of Chaldea.

The *Chaldee* is a dialect of the Hebrew.

CHALDEE *Paraphraſe*, in the Rabbinical ſtyle, is called TARGUM.

There are three *Chaldee* paraphraſes in Walton's Polyglot; viz. that of Onkelos, that of Jonathan ſon of Uziel, and that of Jeruſalem.

CHALDRON, CHALDER, or CHAUDRON *of coals*, a dry Engliſh meaſure, conſiſting of thirty-ſix buſhels heaped up, according to the ſealed buſhel kept at Guildhall, London.

The *chaldron* ſhould weigh two thouſand pounds.—On ſhip-board, twenty-one *chaldrons* of coals are allowed to the ſcore. See Coal.

CHALEF, in the botanical writings of the ancient Arabs, the name of a tree often occurring, and ſeldom explained. The beſt account we have of the *chalef* or *chalaf*, is in the writings of Proſper Alpinus on the Egyptian plants, who tells us, that it is a kind of willow, growing in Egypt and in Meſopotamia.

CHALICE, the cup, or veſſel, uſed to adminiſter the wine in, in the euchariſt; and, by the Romaniſts, in the maſs.

Chalice, or **Cup-*ſhell***. See Shell.

CHALINOS, in *Antiquity*, the bit, or that part of a bridle which is put into the mouth of a horſe. But it was, among the ancient phyſicians, alſo uſed to expreſs that part of the cheeks, which, on each ſide, is contiguous to the angles of the mouth.

CHALIZA, in the *Jewiſh Cuſtoms*, the ceremony whereby a woman who is left a widow, pulls off her brother-in-law's ſhoes, who ſhould eſpouſe her, and by this means is allowed to be at liberty to marry whom ſhe pleaſes. The word ſignifies *extractio* vel *exuviæ*.

CHALK, a white foſſil ſubſtance, uſually reckoned a ſtone, but of the friable kind, which cannot therefore be poliſhed as marble, &c. It is found alſo in powder, and has all the properties which characterize calcareous earths: but, Dr. Slare obſerves, that, when examined by the hydroſtatical balance, it is found to want much of the weight and conſiſtence of a real ſtone: ſo that he thinks it more juſtly ranked among the earths.

This he obſerves to be the caſe, not only in *chalk*, but in various other bodies, taken for granted to be ſtones; ſome whereof are nearer to earth than ſtone; others nothing but earth, ſulphur, metal, &c.

Chalk, *alcaline* or *vulgar*, called *Creta*, from the iſland of Crete, now Candia, where the beſt was formerly found, is of two ſorts; the firſt, a hard, dry, ſtrong *chalk*, uſed for making lime: the other, a ſoft, unctuous *chalk*, uſed to manure lands.

This ſort of *chalk* uſed inſtead of marle by way of a manure, is a very fine improvement for ſome ſorts of land, eſpecially the firſt time it is laid on. It changes the very nature of the ſoil, and makes it rich for a time; but it ſoon exhauſts itſelf, and requires dunging to keep it in heart afterwards. A ſecond *chalking* will prove of very little benefit to thoſe lands which ſucceeded ever ſo well with the firſt, unleſs they have lain a long time to recover themſelves after it. It is from hence that the farmers have their trite ſaying, that *chalk* makes a rich tenant, but a poor landlord.

The beſt method therefore of uſing *chalk*, is to mix one load of it with two loads of dung or mud; this will make it not only a temporary, but a laſting advantage to the ground. It is the beſt improvement for ſour and cold lands, and is obſerved always to do moſt good to thoſe lands that lie fartheſt off from any natural beds of it; the ground near *chalk*-beds partaking of their nature, though there is no *chalk* diſtinguiſhable in them by the eye. The common method of *chalking* lands, is to lay twelve or fourteen load of *chalk* upon every acre, and this will ſometimes make the land bring very rich crops for fourteen or fifteen years together.

It is beſt to *carry the chalk upon a lay* a year or two before it is plowed up; by this means it will ſweeten the ſurface of the earth, and will not work ſo much downwards, as it will if plowed up at firſt. It makes corn yield well; and when laid upon graſs ground, it makes the graſs ſweet and rich; and cattle that feed upon it grow fat ſoon. The cows alſo that feed in theſe paſtures, are obſerved to give better milk than ordinary.

Chalk is found in large ſtrata, chiefly in the ſouth-eaſt part of Britain: ſo that if a ſtrait line was drawn on a map from Dorcheſter to the coaſt of Norfolk, it would nearly include the *chalky* ſtrata of this iſland; for no conſiderable quantity is dug beyond that line.

They have a very eaſy way of digging *chalk* in Kent. It lies on the ſides of hills, and the workman undermines it as far as he thinks proper; then digging a trench at the top, as far diſtant from the edge as the undermining goes at bottom, they fill this with water, and that ſoaks through in the ſpace of one night, and the whole flake falls down at once.

In other parts of the kingdom, *chalk* generally lies deeper, and they are often forced to dig for it in conſiderable depths, and draw it up in buckets; yet in theſe places, it ſells cheap enough at the mouth of the pit to be worth buying, even to carry a great way, for manure. See Soil.

Chalk raiſes an efferveſcence with acid liquors, and is therefore deſervedly looked upon as an alcaline or abſorbent earth. It is uſed with ſucceſs to allay the too great acidity of the juices of the ſtomach, particularly in the diſeaſe commonly called the heart-burn; as alſo in coughs ariſing from a ſharp phlegm, hæmorrhages, and is ſaid to kill worms. In a word, the property of all alcaline earths is not only to abſorb acids, but to allay the acrimony of the fluids, and eſpecially to reſtrain the violent motion of the bile, by detaining the ſalts and ſulphur thereof, in their fixed parts. Powdered *chalk* is given with milk, to prevent its growing acid on the ſtomach; and externally it is commended for drying wounds, ulcers, and fiſſures in the nipples. It is likewiſe uſed by ſugar-bakers, and in the manufacture of laſs, and other mechanical operations.

There are various kinds of *chalk*, uſually diſtinguiſhed by their different colours.

Chalk, *aſh* and *grey*. See Melia.

Chalk, *black*, a light earthy ſubſtance, of a fine black colour, compact and laminated texture, and ſmooth ſurface. It is eaſily reduced into an impalpable ſoft powder, without hurting its colour: it becomes white with a reddiſh caſt in the fire, and very friable; and it is neither diſſolved, nor loſes its colour, in acids. It ſeems to be of the ſlaty bituminous kind. This ſubſtance is uſed for drawing black lines on paper; and is in various ways very convenient for painters, both in oil and water colours. This uſeful earth is ſaid to come from Italy and Germany; but many parts of England and Wales furniſh ſubſtances nearly, if not entirely of the ſame quality, and equally ſerviceable both for marking, and as black paints. Such is the chalky ſubſtance called killow. See Lewis's Commercium Phil. Techn. p. 324.

Wallerius ſays, that in Sweden, near Huneberg, a black earth is found as diffuſible in water as Indian ink.

Chalk, *brown*. See Tripoli.

Chalk, *fungous*. See Agaric *mineral*, and Lac *lunæ*.

Chalk, *red*, an earth much uſed by painters and artificers, and common in the colour-ſhops of London, and elſewhere. It is properly an indurated clayey ochre, and is dug in Germany, Italy, Spain, and France, but in the greateſt quantity in Flanders. Its characters, by which it is diſtinguiſhed from other red earths, are theſe: it is of a fine, even, and firm texture; very heavy, and very hard; of a pale red on the outſide; but when broken, of a deep duſky chocolate colour within. It adheres firmly to the tongue, is perfectly inſipid to the taſte, and makes no efferveſcence with acids. It makes excellent crayons, but does not mix with oil. It is uſed in Germany medicinally, in hæmorrhages, dyſenteries, and other fluxes.

Chalk, *ſilver*, the Engliſh name of a kind of earth not properly a *chalk*. See Argentaria *Creta*.

Chalk, *yellow*. See Tripoli.

Chalk-*ſtones*, in *Medicine*, a term uſed for the concretions of calcareous matter in the hands and feet of people violently afflicted with the gout. Lewenhoek has been at the pains of examining theſe by the microſcope. He divides them into three parts. The firſt part is compoſed of various ſmall parcels of matter, looking like grains of white ſand: this is harder and drier, and alſo whiter than the reſt. When examined with large magnifiers, theſe are found to be compoſed of oblong particles, laid cloſely and evenly together: though the whole ſmall ſtones are opake, theſe component parts of them are pellucid, and reſemble pieces of horſe-hair cut ſhort, only that they are ſomewhat pointed at both ends. Theſe are ſo extremely thin, that Mr. Lewenhoek computes that a thouſand of them placed together would not amount to the ſize of one hair of our heads. The whole ſtones in this harder part of the *chalk*, are not compoſed of theſe particles, but there are confuſedly thrown among them ſome broken parts of other ſubſtances, and in a few places ſome globules of blood, and ſmall remains of other juices.

The ſecond kind of *chalky* matter is leſs hard and leſs white than the former, and is compoſed of fragments or irregular parts of thoſe oblong bodies which compoſe the firſt or hardeſt kind; and theſe are mixed among tough and clear matter, interſperſed with the ſmall and broken globules of blood diſcoverable in the former, but in much greater quantity.

And the third kind appears red to the naked eye, and when examined with glaſſes, is found to be a mere tough and clammy white matter, in which a great number of globules of blood are interſperſed; theſe give it the red appearance it has. Phil. Tranſ. Nº 168. p. 906. See an account of a great quantity of *chalky* matter paſſed by a gouty perſon with his urine; and obſervations on the *chalk* of the joints of ſome gouty people; in the Mem. of the A. D. S. an. 1747. H. 56. and in the Coll. Acad. P. Etr. tom. vii. p. 84.

CHALKING, in our *Old Laws*, ſeems to be ſome duty laid on merchandize; what it was particularly we do not find: but in the rolls of parliament it is ſaid, the merchants of the ſtaple require to be eaſed of divers new impoſitions, as *chalking*, ironage, wharfage, &c.

CHALLENGE, a cartel, or invitation to a DUEL, or other combat.

The word *challenge* was anciently tranſlated *calumnia*.

Challenges to fight either by word or letter, or bearing ſuch *challenges*, are puniſhable by fine and impriſonment; and if they ariſe from gaming, the offender ſhall forfeit all his goods to the crown, and be impriſoned two years. 9 Ann. cap. 14.

CHALLENGE, in *Law*, is an exception made to jurors who are returned to paſs on a trial.

Challenge to the jurors, is either made to the array, or to the poll: to the array, as when the whole number is excepted againſt, as partially impanelled. If the ſheriff be of affinity to either of the parties; or if any one or more of the jurors are returned at the nomination of either party, or for any other partiality, the array ſhall be quaſhed. To the poll, as when particulars are excepted againſt, as not indifferent.

Theſe may be *challenged*, 1. *Propter honoris reſpectum*, as when a lord of parliament is impanelled. 2. *Propter defectum*, as in the caſe of an alien born, which is defect of birth; or of a ſlave or bondman, which is defect of liberty; or in caſe of inſufficient eſtate. This latter exception has undergone ſeveral alterations by different ſtatutes; but by 4 and 5 W. and M. cap. 24. the qualification is 10*l.* *per annum* in England, and 6*l.* in Wales, either of freehold or copyhold lands; and by 3 Geo. II. cap. 25. the holder of a leaſe on life or lives, or for the term of five hundred years abſolute, of the clear yearly value of 20*l.* *per annum*, is qualified to ſerve on juries. 3. *Propter affectum*, or on ſuſpicion of partiality; and this kind of *challenge* is *principal*, or *to the favour*; in the former caſe the cauſe of ſuſpicion is obvious; and in the latter, when only ſome probable circumſtances of ſuſpicion are pleaded, which are to be determined by TRIORS. 4. *Propter delictum*, or on account of ſome crime, which diſqualifies the juror by affecting his credit, as conviction of treaſon, felony, perjury, or conſpiracy; judgment of the pillory; branding or whipping; outlawry or excommunication; attaint of falſe verdict, or forgery, &c.

Challenge to the jurors, is alſo divided into *challenge principal*, and *challenge per cauſe*; i. e. upon cauſe or reaſon alleged.

Challenge principal, otherwiſe called *challenge peremptory*, is what the law allows without cauſe alleged, or further examination: thus, a priſoner at the bar, arraigned on felony, may peremptorily *challenge* twenty, one after another, alleging no cauſe but his own diſlike; and they will be ſet aſide, and new ones choſen in their room. 22 Hen. VIII. cap. 14. and 1 and 2 Ph. and Mar. cap. 10. In caſe of high-treaſon, no *challenge peremptory* was formerly allowed; but by ſtat. 7. W. III. liberty is given *peremptorily* to *challenge* thirty-five.

Yet there ſeems to be a difference between *challenge principal* and *challenge peremptory*; the latter being only in matters criminal, and without any cauſe alleged; the former moſtly in civil caſes, and with aſſigning ſome ſuch cauſe, as being found true, the law allows; v. g. if either party allege, that one of the jurors is the ſon, brother, couſin, or tenant, of the other, the exception is good. Alſo in the plea of the death of a man, or in any action real or perſonal, where the debt or damages amount to forty ſhillings, it is a good *challenge* to a juror, that he cannot diſpend forty ſhillings *per annum* of freehold.

Challenge upon reaſon or cauſe, is when the party does allege ſome ſuch exception as is ſufficient upon acknowlegement of the truth of it; v. g. if the ſon of the juror have married the daughter of the other party, or the like.

CHALLENGE, in *Hunting*. When hounds, at firſt finding the ſcent of their game, preſently open, and cry, the huntſmen ſay, *they challenge*.

CHALYBEAT, in *Medicine*, ſomething that partakes of the nature of ſteel, or iron; or that is impregnated with particles of thoſe metals. See MINERAL *waters*, and WINE.

Chalybeats act chiefly as abſorbents, and deobſtruents. Iron, M. Lemery obſerves, is a mixture of an oily ſubſtance with a metallic matter; but the oil is predominant in the mixture; and between the parts mixed are large pores. Hence, iron becomes eaſily diſſolvable; and its oil eaſily diſengages itſelf; but when once decompounded, i. e. when once the oil is ſeparated from the pure, ferruginous, or metallic part, no diſſolvent has any effect on the *caput mortuum*.

Hence appears the abſurdity of that common practice, of calcining iron to ſuch a degree, as to convert it into what the chemiſts call a *crocus*, or ſaffron. This operation muſt of neceſſity take away all, or moſt of the oily ſubſtance, and leave nothing but the indiſſoluble *caput mortuum*. The oil here ſeparated ſhould properly have been ſeparated by the heat of the ſtomach; whence, according to Mr. Lemery, it would have carried into the blood a new ſpirituous, ſalutary juice: he obſerves alſo, that iron acts as an abſorbent, from the largeneſs of its pores, and the eaſe wherewith all kinds of ſalts, even groſs ones, inſinuate themſelves into them: even ſcorbutic acids are abſorbed thereby. Further, it is not all, that peccant acids enter iron; but in entering they alſo expel and expreſs that ſalutary juice, which is alſo put in motion, and diſpoſed to be evacuated by the natural heat. Thus is iron doubly advantageous, both by the oil it furniſhes the blood withal, and by the ſalts it frees it from. The action of the particles of a *chalybeat*, by their elaſticity, together with the *momentum* they give the blood by their ponderoſity, make it not only preferable to moſt other deobſtruents, but alſo proper in other caſes; eſpecially where there is a viſcidity of the juices; the blood depauperated, and where the circulation is languid; as in moſt hectic and hypochondriac caſes.

CHAM, or KHAN, the title given to the ſovereign princes of Tartary.

The word, in the Perſian, ſignifies *mighty lord*; in the Sclavonic, *emperor*. Sperlingius, in his Diſſertation on the Daniſh term of majeſty, *koning*, *king*, thinks the Tartarian *cham* may be well derived from it; adding, that in the North they ſay *kan*, *konnen*, *konge*, *konning*, &c. The term *cham* is alſo applied, among the Perſians, to the great lords of the court, and the governors of provinces.

CHAMA, in *Natural Hiſtory*, the name of a large genus of bivalve ſhells, the characters of which are theſe: they are uſually ſmooth, though in ſome places a little rugoſe, and have in ſome few a number of ſpines. The valves of the ſhell are equal, elate, and convex, and the mouth gaping, not cloſing faſt, and even in all parts, as in the oyſter.

The fiſh contained in this genus of ſhells, have all a hot taſte like that of pepper, and inflame the mouth in a troubleſome manner. The French have hence called them flames and *flammets*, and in ſome parts of the ſame nation they are called *lavignons* and *pelourdes*.

The ancients uſed the ſeveral ſpecies of this ſhell to engrave figures on; and as they thought proper, could give the ſeveral parts of the engraved figure the colours of the ſeveral coats of the ſhell, by cutting deeper or leſs deep into it. Thus they could give the fleſh of a man its natural white, and his garments a blue or a yellow, according to the nature of the ſpecies of *chama* they worked on. We find ſeveral of theſe antique works; and it is thought by ſome, that this was the firſt invention of that ſort of engraved gem, which we call *camea*.

The ſpecies of the *chama* are very numerous. *Tab. of Shells*, N° 18.

CHAMADE, in *War*, a certain beat of a drum, or ſound of a trumpet, which is given the enemy as a ſignal, to inform them of ſome propoſition to be made to the commander, either to capitulate, to have leave to bury their dead, make a truce, or the like.

Menage derives the word from the Italian *chiamata*, of *clamare*, *to cry*.

CHAMÆBALANUS, in *Botany*, a name given by many of the Greek authors to the apios, from its having numerous tubera among its roots, buried under the ground. Some have explained the ſame word as a name of the bulbocaſtanum, or earth-nut, but it is wrong to confound two roots of ſuch very different characters together; and it does not appear that the Greek authors of note ever uſed it in any other ſenſe but as the name of the apios. The name pſeudo-apios has indeed been given by ſome to the bulbocaſtanum roots, but it was a name founded on ignorance, and likely to produce great errors.

CHAMÆBATOS, in the *Materia Medica*, the name given by ſome to the common dewberry-buſh, or RUBUS.

CHAMÆCERASUS, in *Botany*. See HONEYSUCKLE.

CHAMÆCERASUS is alſo uſed by Dioſcorides, and ſome of the old botaniſts, for the *alkekengi*, or, as we call it, the winter-cherry. It had this name from its fruit greatly reſembling a cherry, and the plant not growing up to a tree, but riſing only a little way from the ground. Care muſt be taken in the reading the botanical writers, to diſtinguiſh when this plant is meant by the name *chamæceraſus*, and when the ſhrub.

CHAMÆCLEMA, in *Botany*, a name by which ſome authors have called the GROUND-*ivy*.

CHAMÆCRISTA, in *Botany*. See CASSIA.

CHAMÆDAPHNE, in *Botany*, a name by which Pliny, and ſome other authors, call the *vinca pervinca*, or periwinkle, and others the ſpurge-laurel.

It is alſo uſed by Columna, and ſome other authors, for the broad-leaved *ruſcus*, commonly called the Alexandrian bay, LAURUS *Alexandrina*. See BUTCHER'S BROOM.

CHAMÆDAPHNE is alſo the name given by Buxbaum to a new genus of plants, not obſerved by former botaniſts, and found frequently in boggy places, in the northern parts of the world. The flowers conſiſt of one leaf each, and are of the globoſe campaniform kind; the fruit is divided into five cells, and contains very numerous, and very ſmall ſeeds, of a roundiſh ſhape; and the whole plant, in its manner of growth, much reſembles our Solomon's ſeal. One thing very ſingular is obſerved in this plant, which is, that it retains its leaves all the winter, but ſheds them in the middle of ſummer. In the latter end of May, and beginning of June, the flowers are ſeen to wither, and at this time there ariſe a number of new ſhoots from the alæ of the lower leaves; theſe all riſe up to bear leaves, and by the middle of July are well covered with them. In the mean time the old leaves fall off, and the ſtalks of the former year are left naked, except that they have the fruit on them. The new ſhoots have, beſides leaves, the buds of the next year's flowers, and thoſe ſo perfect, that on opening them the minute parts of the ſtamina may be perceived. In Auguſt and September, when the cold comes on, the leaves become blackiſh, and the whole plant ſeems to be decaying; but in the ſucceeding ſpring, as ſoon as the ſun has appeared bright for a few days, the leaves re-aſſume their former green, the whole plant ſeems to revive, and is ſoon ſeen covered with flowers, and exhibiting a beautiful appearance. The ſtalks of the former year die down to the origin of theſe new ones; ſo that though the plant annually grows ſeveral inches in height, yet it is never the taller for its great age, as much dying of the height of a former year as is added anew for the ſucceeding one. Act. Petrop. vol. i. p. 243.

Buxbaum, who firſt deſcribed this plant, called it *chamædaphne*, the dwarf-bay, from its low ſtature, and its reſemblance to the common bay-tree in the ſhape of its leaves, which are oval and pointed. See ANDROMEDA.

CHAMÆDROPE, in *Botany*, a name given by ſome of the ancient writers to the common GERMANDER.

CHAMÆDRYS. See GERMANDER.

CHAMÆLEA, in *Botany*. See WIDOW-*wail*.

CHAMÆLEON, in *Zoology*. See CAMELEON.

CHAMÆLEON, in *Aſtronomy*. See CAMELEON.

CHAMÆLEON-*thiſtle*, in *Botany*, the name of a kind of thiſtle, of which there are two kinds deſcribed by Dioſcorides, and others of the ancient Greeks, and called the white and the black *chamæleon*-thiſtles. The white *chamæleon* is an innocent plant, its root eſculent, and a gum which exſudates from it in the hot countries, not only innocent but agreeable, the women uſing it to perfume their breath, and chewing it in their mouths as we do maſtic.

It may ſeem ſtrange to ſome to find this plant thus mentioned as a ſafe, eſculent, and uſeful one; whereas Pliny and many other writers have declared it to be a poiſon. The later authors are to be excuſed in this, as having followed Pliny. The error of this author, who has miſled the others, may be eaſily diſcovered by tracing his accounts up to the Greeks, from whom he borrowed the greater part of what we find in him, and whom he often, as in this caſe, has copied careleſsly, and tranſlated badly.

CHAMÆMORUS, in *Botany*, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of five leaves; and the fruit is compoſed of many acini, in form of the mulberry.

There is only one ſpecies of this plant known, which grows on the tops of the higheſt hills in the north part of England, but cannot be cultivated in a garden by any art.

CHAMÆNERIUM, in *Botany*. See WILLOW *Herb*.

CHAMÆPITYS, in *Botany*, *Ground-pine*, a ſpecies of GERMANDER.

CHAMÆRIPHES, in *Botany*, a name given by Pontedera to a genus of plants called by Linnæus CHAMÆROPS.

CHAMÆRODODENDROS, *Dwarf Roſe-bay*, a ſpecies of the KALMIA, according to Miller, and of the RHODODENDRON, in the Linnæan ſyſtem.

CHAMÆROPS. See *Dwarf*-PALM.

CHAMANIM, in the *Jewiſh Antiquities*, is the Hebrew name for that which the Greeks call *pyræïa*, or *pyrateria*; and St. Jerom in Leviticus has tranſlated *ſimulachra*, in Iſaiah, *delubra*. Lev. ch. xxvii. ver. 30. Iſaiah, ch. xxvii. ver. 9.

Theſe *chamanim* were, according to rabbi Solomon, idols expoſed to the ſun upon the tops of houſes. Abenezra ſays, they were portable chapels or temples, made in the form of chariots, in honour of the ſun.

What the Greeks call *pyræïa*, were temples conſecrated to the ſun and fire, wherein a perpetual fire was kept up. They were built upon eminences, and were large encloſures, without covering, where the ſun was worſhipped. Herodotus and Strabo ſpeak of them; and the *guebres* or worſhippers of fire in Perſia and the Indies have ſtill theſe *pyræïa*. Strabo ſays, that in his time there were many of theſe temples to be ſeen in Cappadocia, conſecrated to the goddeſs Anaita, and the god Homanus. Anaita is in all probability the moon, and Homanus, the ſun. Herod. lib. i. p. 87. Strab. lib. 15.

The word *chamanim* is derived from *chaman*, which ſignifies *to warm*. Calmet.

CHAMARIM, a word mentioned in ſeveral places of the Hebrew Bible, and generally tranſlated *the prieſts of the idols*, or *prieſts cloathed in black*, becauſe *chamar* ſignifies *black* or *blackneſs*.

Camar, in Arabic, ſignifies the *moon*; Iſis is the ſame deity. Grotius thinks the Roman prieſts called *camilli*, came from the Hebrew *chamarim*. They, among the heathens, who ſacrificed to the infernal gods, were dreſſed in black.

CHAMÆXYLON, in *Botany*, a name by which ſome authors have called the *gnaphalium*, or CUDWEED.

CHAMBER, in *Building*, a member of a lodging, or piece of an apartment, ordinarily intended for ſleeping in; and called by the Latins *cubiculum*.

The word comes from the Latin *camera*; and that, according to Nicod, from the Greek *καμαρα*, *vault*, or *curve*; the term *chamber* being originally confined to places arched over.

A complete apartment is to conſiſt of a hall, antechamber, *chamber*, and cabinet.

As to the proportions of *chambers*, their length ſhould be to the breadth as 1 ½ to 1, or ſome ſmall matter leſs, but ought never to exceed that proportion; and as for the height, it ſhould be three fourths of the breadth. The height of the *chambers* of the ſecond ſtory, ſhould be a twelfth part leſs than the height of thoſe below: thus, if the height of the firſt ſtory be ſixteen feet, that of the ſecond will be fourteen feet eight inches. As to the height of the third ſtory, it ſhould be only three fourths of the ſecond.

In building bed-*chambers*, regard ſhould be had as well to the ſituation of the bed, as to that of the chimney. For which reaſon, the chimney ought not to be placed juſt in the middle, but diſtant from it about two feet, or two and an half, in order to make room for the bed, which prevents this inequality from being diſcerned. See BED-*Chamber*.

CHAMBER, *privy*.—*Gentlemen of the Privy*-CHAMBER are ſervants of the king, who are to wait and attend on him and the queen at court, and in their diverſions, progreſſes, &c.

Six of theſe are appointed by the lord-chamberlain, together with a peer, and the maſter of the ceremonies, to attend all embaſſadors from crowned heads in their public entries. Their number is fifty.

Their inſtitution is owing to king Henry VII. As a ſingular mark of favour, they are impowered to execute the king's verbal command, and without producing any written order; their perſon and character being deemed ſufficient authority.

CHAMBER *in policy*, is uſed for the place where certain aſſemblies are held; alſo, for the aſſemblies themſelves.

Of theſe there are various kinds; ſome eſtabliſhed for the adminiſtration of juſtice; others for matters of commerce, &c. Of the firſt kind among us was the

Star-CHAMBER. See COURT *of Star-Chamber*.

CHAMBER, *Imperial*, is a court or juriſdiction held anciently at Spires, but ſince transferred to Wertſlar; in which are determined the differences ariſing among the princes and cities of the empire.

It was at firſt ambulatory: in 1473, it was fixed to Augſburg, then removed to Frankfort, and thence to Worms, in 1497; afterwards it was removed to Nuremberg and Ratiſbon; again to Worms and Nuremberg; and from this laſt to Eſlingen; thence, in 1527, to Spires; where Charles V. rendered it ſedentary, in 1530.

At its firſt inſtitution it conſiſted of ſixten aſſeſſors; but the reformation enſuing, occaſioned the number to be increaſed: by the treaty of Oſnabrug, in 1648, there were appointed fifty aſſeſſors; whereof twenty-four were to be proteſtants, and twenty-ſix catholics; beſides five preſidents, two of them proteſtants, the reſt catholics.

As the princes or circles of the empire are not always exact in filling up the vacancies in this *chamber*, the number of aſſeſſors is now reduced to ſixteen.

This *chamber* has a right of judging by appeal, and is the laſt reſort of all civil affairs of the ſtates and ſubjects of the empire, in the ſame manner as the Aulic council reſiding at Vienna. Proceſſes are here almoſt endleſs, on account of the infinite number of ceremonies and formalities wherewith they are embarraſſed.

The *imperial chamber* is frequently afraid to pronounce ſentence, for fear of expoſing its awards to ſome diſgrace; the princes ſometimes not permitting ſuch to be executed as diſpleaſe them.

CHAMBER *of accounts*, is a ſovereign court in France, where accounts are rendered of all the king's revenues; inventories and avowals thereof regiſtered; oaths of fidelity taken, and other things relating to the finances tranſacted. The French have alſo

CHAMBERS, *eccleſiaſtical*, which judge, by appeal, of differences ariſing on the raiſing of tythes: of theſe *eccleſiaſtical chambers* there are nine; viz. at Paris, Bourdeaux, Rouen, Lyons, Tours, Tholouſe, Bourges, Pau, and Aix: they uſually conſiſt of the archbiſhop of the place, as preſident; other archbiſhops and biſhops, a deputy of each of the dioceſes, and three counſellors of parliament. The *chamber* chooſes as many counſellors out of the clergy as it thinks proper; as alſo a promoter.

CHAMBER, *apoſtolical*, at Rome, is that wherein affairs relating to the revenues and domains of the church and the pope are tranſacted.

CHAMBER of *audiences*, or *grand* **CHAMBER**, a juriſdiction in each parliament of France.

At the firſt inſtitution of their parliaments, there were two *chambers*, and two kinds of counſellors; the one the *grand chamber* for audiences, the counſellors whereof were called *jugeurs*, who only judged; the other the *chamber of inqueſts*; the counſellors whereof were called *rapporteurs*; who only reported proceſſes by writing.

CHAMBER, *direction*, is a court inſtituted in Old Spain, for the regulation of divers affairs relating to their commerce to the Spaniſh Weſt Indies.

CHAMBER *of the edict*, or *Mi-party*, was a court eſtabliſhed by virtue of the edicts of pacification, in favour of thoſe of the reformed religion: wherein the number of judges of either religion were the ſame; and to which recourſe was had in all affairs wherein any of the proteſtants were concerned. This *chamber* is now ſuppreſſed.

CHAMBER *of London*. See CHAMBERLAIN.

CHAMBER *of aſſurance*, in France, denotes a ſociety of merchants and others, eſtabliſhed by a decree of the council of ſtate in 1668, for conducting the buſineſs of inſuring: but in Holland, it ſignifies a court of juſtice, where cauſes relating to inſurances are tried.

CHAMBER *of bookſellers*, in Paris, denotes a ſociety conſiſting of a ſyndic and aſſiſtants, elected by four delegates from the printers, and twelve from the bookſellers, whoſe buſineſs is to ſuperintend and regulate the trade of printing, and ſelling books, prints, &c. In the viſitation of books, performed by at leaſt three perſons of the ſociety, all libels againſt the honour of God, and the welfare of the ſtate, and all books printed in violation of their regulations and privileges, are ſuppreſſed.

CHAMBERS *of commerce*, are aſſemblies of merchants and dealers, where they treat about matters relating to commerce. Of theſe there are ſeveral, eſtabliſhed in moſt of the chief cities of France, by virtue of an arret of the 30th of Auguſt, 1701. Indeed there were ſome before this general eſtabliſhment, particularly one at Marſeilles, and another at Dunkirk.

CHAMBERS *of the king*, *regiæ cameræ*, in our old records, are uſed for the havens or ports of the kingdom.

CHAMBER, in *War*, is uſed for the place where the powder of a mine is lodged.

The *chamber of a mine* is a cavity of five or ſix cubic feet, generally made of a cubical form.

CHAMBER *of a mortar*, or *cannon*, is a cell, or cavity, at the bottom of the barrel, or chace, where the charge of powder is lodged.

The different form of the *chamber*, is found by experiment to have an influence on the range of the piece. A cubical *chamber* carries the ball to a leſs diſtance than a circular one; and that leſs than a cylindrical one.

Mr. Robins, apprehending that the charge of powder is inſtantaneouſly fired, concluded, that no particular form of *chambers* can be of any advantage; and this ſeems to be a juſt concluſion from his theory. But profeſſor Euler has advanced many ſtrong objections to this theory; and he obſerves in the reſult, that the ſame quantity of powder will fire ſooner in a globular ſpace, than in a ſpace of any other form: and accordingly recommends to make the cavity behind the ball as nearly globular as poſſible. See the true Principles of Gunnery inveſtigated and explained, &c. 1777. p. 93.

Though *chambers* are now diſuſed, Mr. Muller obſerves, that in large cannons they are an improvement not to be neglected; becauſe pieces, having *chambers*, require a leſs charge than they would otherwiſe do: and he recommends a *chamber* in all pieces of twenty-four pound ball and upwards, whoſe diameter ſhould be two-thirds the diameter of the bore, and length equal to that diameter. See *Tab. Gunnery, fig.* 1. And he adds, that though this *chamber* contains but one ninth part of the ſhot's weight of powder, yet the effect it produces is nearly equal to that of a fourth part, which is ſufficient in large pieces. Muller's Treat. of Artillery, p. 96.

CHAMBERS, *iron*, in a FIRE-*ſhip*, are ten inches long, and 3.5 in diameter. They are breeched againſt a piece of wood fixed acroſs the ports, and let into another a little higher. When loaded, they are almoſt filled with corned powder, and have a wooden tompion well driven into their muzzles. They are primed with a quick-match thruſt through their vents into the powder, with a part of it hanging out. When the ſhip is fired, they blow open the ports; and the port-lids either fall downward, or are carried away, and thus give vent to the fire out of the ſides of the ſhip.

CHAMBERDEKINS, in our *Old Statutes*, a denomination for certain Iriſh beggars, which by ſtatute 1 Hen. V. cap. 7 and 8. were to leave England within a certain time. They were called in the ſtatute *chamberdeakynz*, and ſaid to be clerks mendicants. Blount ſays they are called *chamber deacons* in the parliament roll.

CHAMBERLAIN, an officer who has the management, or direction of a chamber.

The word *chamberlain*, according to Ragueau, originally ſignified a gentleman who was to ſleep in the king's bedchamber, at his bed's feet, in the abſence of the queen.

There are almoſt as many kinds of *chamberlains* as chambers: the principal are as follow.

Lord Great **CHAMBERLAIN** *of England*, an officer of great antiquity and honour; being ranked the ſixth great officer of the crown: a conſiderable part of his function is at the coronation of a king; when he dreſſes him, carries the coif, ſword, and gloves, to be uſed on that occaſion; the gold ſword and ſcabbard to be offered by the king; and the robe royal and crown: he alſo undreſſes him, and waits on him at dinner; having for his fee the king's bed, and all the furniture of his chamber, the night-apparel, and the ſilver baſon wherein the king waſhes, with the towels.

To him likewiſe belongs the proviſion of every thing in the houſe of lords, in the time of parliament; to which end he has an apartment near the lords houſe. He has the government of the palace of Weſtminſter; and iſſues out warrants for preparing, fitting out, and furniſhing Weſtminſter-hall, againſt coronations, trials of peers, &c.

He diſpoſes of the ſword of ſtate, to be carried by whom he pleaſes; and when he goes to parliament, is on the right hand of the ſword, the lord marſhal being on the left. On all ſolemn occaſions, the keys of Weſtminſter-hall, of the Court of Wards, and Court of Requeſts, are delivered to him.

To him belong livery and lodging in the king's court; and he has certain fees from every biſhop at his doing homage to the king, and from every peer at his creation. Under his command are, the gentleman-uſher of the black rod, the yeoman-uſher, and door-keepers.

This honour was long held by the earls of Oxford; viz. from the time of Henry I. by an eſtate-tail, or inheritance; but in later coronations by the marquis Lindſey, afterward duke of Ancaſter, by an eſtate or inheritance from a daughter and heir general, claimed, but controverted.

Lord **CHAMBERLAIN** *of the houſhold*, an officer who has the overſight and direction of all officers belonging to the king's chamber, except the precinct of the BED-*chamber*; which is abſolutely under the groom of the ſtole.

He has the overſight and direction of the officers of the wardrobe, of the removing wardrobes, beds, tents, revels, muſic, comedians, hunting, meſſengers, trumpeters, drummers, handicrafts, and other tradeſmen retained in the king's ſervice: as alſo of all ſerjeants at arms, phyſicians, apothecaries, ſurgeons, barbers, the king's chaplains, &c. and adminiſters the oath to all officers above ſtairs.

There are alſo **CHAMBERLAINS** *of the king's courts, of the Exchequer, of North Wales, of the city of London*, &c. In theſe caſes, this officer is commonly the receiver of all rents and revenues belonging to the place whereof he is *chamberlain*.

When there is no prince of Wales, and earl of Cheſter, the *chamberlain* of Cheſter hath the receipt and return of all writs coming thither out of any of the king's courts.

In the Exchequer, there are two *chamberlains*, who keep a controulment of the pells of receipts, and exitus, and have certain keys of the treaſury and records: they alſo keep the keys of that treaſury where the leagues of the king's predeceſſors, and divers ancient books, as Doomſday Book, and the Black-Book of the Exchequer, remain.

The CHAMBERLAIN *of London* keeps the city-money, which is laid up in the chamber of London, an apartment in Guildhall: he alſo preſides over the affairs of maſters and apprentices; and makes free of the city, &c.

His office laſts but for a year, being choſen annually on Midſummer-day: but the cuſtom uſually obtains to re-chooſe the ſame perſon; unleſs he has been chargeable with any miſdemeanor in his office.

CHAMBERLAIN, *vice.* See VICE-*Chamberlain.*

CHAMBRANLE, in *Architecture* and *Joinery*, the bordet, frame, or ornament of ſtone, or wood, ſurrounding the three ſides of doors, windows, and chimneys.

The *chambranle* is different in the different orders: when it is plain, and without mouldings, it is called ſimply and properly, *band*, *caſe*, or *frame*.

The *chambranle* conſiſts of three parts; the two ſides, called *aſcendants*; and the top, called the *traverſe*, or *ſupercilium*.

The *chambranle* of an ordinary door is frequently called *door-caſe*; of a window, *window-frame*.

CHAMELEIA, in *Natural Hiſtory*, a word uſed by ſome authors as a name for a peculiar ſpecies of CHAMA, but by others as a name for all thoſe *chamæ* that have ſmooth ſurfaces, which are a very great number.

CHAMELOT, in *Commerce*. See CAMBLET.

CHAMFER, or CHAMFERET, in *Architecture*, an ornament conſiſting of half a ſcotia; being a kind of ſmall furrow, or gutter, on a column; called alſo *ſtrix*, and *ſtria*.

CHAMFERING, or CHAMFRAINING, is uſed for cutting the edge, or end of any thing aſlope, or BEVEL.

CHAMOIS, in *Zoology*, is uſed by ſome, particularly the French, for the creature from whoſe ſkin the *chamois* leather is made. See *Tab. of Quadrupeds*, N° 8.

It is known among naturaliſts by the name of RUPICAPRA. It is very common in the mountains of Helvetia, and in many other places. In the figure of its body it ſeems to approach very much to the ſtag kind; its belly, forehead, inner part of its ears and throat, are white; it has a yellow ſtroke on each ſide near the eyes, and the reſt of the body is a deep brown; its tail alſo is of the ſame colour, and that equally on all ſides, not white on that part next the body as is the caſe in the deer.

The male and female both have horns, which are a hand's breadth and an half long, rough toward the bottom, and ſomewhat knotty; a new knot growing every year; they are nearly ſtraight, but at the top bent into the ſhape of a hook, black, and not ſmooth, but longitudinally ſtriated with ſlender ſtreaks, and their inner cavity is filled up with a ſolid bone proceeding from the ſkull.

This creature has two remarkable holes always open behind its ears; theſe, ſome have imagined, ſerved for reſpiration; and Appian, who had the *poetica licentia* for whatever he choſe to ſay, ſeems to have led them into this; but there is no ſort of probability of truth in it, ſince the ſkull is ſeen immediately under theſe holes, and there is no perforation through it, nor any duct diſcoverable from them. The vulgar have alſo ſome remarkable opinions founded on the ſtructure of the horns of the creature; the one, that in depreſſing them to rub his back, he often gets them ſo far within the ſkin that he cannot get them out again; and the other, that he hangs by the horns to the rocks.

CHAMOMILE, *Anthemis*, in *Botany*, a genus of the *ſyngeneſia polygamia ſuper*. claſs. Its characters are theſe: it is a plant with a compound flower, the border or rays of the flower being compoſed of many female flowers, whoſe petals are ſtretched out like tongues on one ſide. The middle or diſk of the flower is compoſed of many hermaphrodite florets, which are funnel-ſhaped, erect, and cut into five parts at the top. The germen is ſituated at the bottom, which afterward becomes an oblong naked ſeed. There are fifteen ſpecies.

The firſt ſort is the common *chamomile*, which grows in plenty upon commons, and other waſte lands: it is a trailing perennial plant, which puts out roots from the branches as they lie on the ground. The flowers of this ſort are ordered for medicinal uſe; but the market people generally ſell the double flowers, which are much larger, but not ſo ſtrong as the ſingle.

The ſecond ſort is a common annual weed, which grows among corn: it flowers in May, ſo is called May-weed; though ſome have applied that title improperly to the *cotula fœtida*, which rarely flowers till late in June; this is the third ſort.

Another ſort is the PELLITORY of Spain, the roots of which are uſed for the tooth-ach; being extremely warm, when they are applied to the part affected, they draw out the cold rheum, and are often ſerviceable.

The common *chamomile* is digeſtive, laxative, and emollient; it mitigates pain, and promotes the menſes and urine; the leaves dried are ſaid to anſwer theſe purpoſes better than any other part of the plant: for all others, the flowers are uſed. Theſe are given in infuſion, as a gentle emetic, very large quantities of the infuſion being drank warm. They are alſo uſed in emollient decoctions, and are a general ingredient in clyſters. It is very remarkable of the flowers of this plant, that like thoſe of the common yarrow, they yield by diſtillation a fine ſky-blue oil.

CHAMOS, or CHEMOSH, the idol or god of the Moabites.

The name of *Chamos* comes from a root, which, in Arabic, ſignifies *to make haſte*; for which reaſon many believe *Chamos* to be the ſun, whoſe precipitate courſe might well procure it the name of ſwift or ſpeedy.

Farther particulars may be ſeen in Calmet's Diſſertation on Baal Peor and *Chamos*, prefixed to his Comment on the book of Numbers.

CHAMPADA, in *Natural Hiſtory*, the name of a tree common in the woods of Malacca, and bearing a fruit much valued by the natives. It is a large tree, very full of branches, and theſe are very knotty, and, when cut, throw forth a thick and acrid juice like that of the tithymal. The fruit grows on the trunk and thick branches of the tree: the firſt appearance toward this is a large button or bud; this by degrees opens into a flower conſiſting of a great number of leaves, among which, when open, are ſeen the rudiments of the fruit; this appears very ſmall at firſt, but it ſoon grows to a very conſiderable bigneſs, being, when ripe, twelve or fourteen inches long, and as much in circumference; it is ſhaped much like a melon. The rind is green, and is all over divided into ſmall pentagons, in the center of each of which is a ſmall black ſpot. The pedicle is thick and woody, and entering into the ſubſtance of the fruit, it divides itſelf into ſeveral branched fibres, which run through the whole ſubſtance of it, and meet in a point at the end. Within this large fruit there are contained a large number of kernels of the ſize of our common cheſnuts, all hanging together in bunches, ſo as to reſemble a cluſter of grapes; theſe are confined in a narrow compaſs, being preſſed firmly upon one another while the fruit is whole, but as ſoon as this is cut or burſt open, they fly farther aſunder, and hang to the ſtalks like grapes that are placed at a diſtance on the bunch, as ſome of our oblong kinds are. The people of Malacca are very fond of this fruit; they ſuck the pulpy matter which ſurrounds the kernels, and which is of a ſweet and luſcious taſte, but of a diſagreeable raw ſmell. The Indians are very fond of this fruit, as well for its qualities as its taſte, for it is very heating, and, when taken in large quantities, will inebriate people in the ſame manner as ſtrong liquors. The kernels are much of the nature of our cheſnuts, but of a leſs agreeable taſte; they are eaten by way of food rather than as a delicacy, and the common way of eating them is boiled in water. Mem. Acad. Scienc. Par. 1699. p. 640.

CHAMPAGNE, in *Heraldry*, a name given by Ferne, and ſome other writers, to the line differing from the common lines, and called alſo URDEE, and by Upton *vert*, from its reſemblance to the ends of the figures of that ſort of fur which is called *vair* by heralds.

CHAMPAIN. See CAMPAIGN, and CHAMPION.

A Point CHAMPAIN, in *Heraldry*, is a mark of diſhonour in the coat of arms of him who kills a priſoner of war after he has cried quarter.

CHAMPART, in our *Old Cuſtoms*, a duty, or tenure, by which the tenant was to pay part of the fruits of the ground of the lord. It is alſo written *chaumpert*, and in the middle-age Latin is called *campipars*, *camparcium*.

CHAMPARTORS, or CHAMPERTORS, are thoſe who move pleas, or ſuits, or cauſe them to be moved, either by their own procurement or others; and ſue them at their proper coſts, to have part of the land, or other matter in variance: againſt whom lies a writ of *champarty*.

CHAMPARTY, or CHAMPERTY, in *Law*, a maintenance of any man in his ſuit, upon condition of having part of the thing in queſtion, be it lands or goods; in caſe it be recovered.

The word comes from the French *champ*, *field*, and *parti*, *divided*; the field, or thing conteſted for, being ſuppoſed to be divided between the *champartor*, or maintainer, and the perſon in whoſe right he ſues.

This ſeems to have been an ancient grievance; for notwithſtanding ſeveral ſtatutes againſt it, and a form of writ accommodated to them, in the time of Edward I. yet in that of Edward III. it was enacted, that whereas redreſs on the former ſtatute was only to be had in the king's bench, which then followed the court: for the future it ſhould likewiſe be cognizable by the juſtices of the common pleas, and judges of aſſize.

CHAMPION, properly ſignifies a perſon who undertakes a COMBAT, in the place or quarrel of another: though the word is alſo ſometimes uſed for him who fights in his own cauſe.

Hottoman defines *champion, certator pro alio datus in duello, à campo dictus, qui circus erat decertantibus definitus:* hence alſo the word *campfight.*

Du-Cange obſerves, that *champions,* in the juſt ſenſe of the word, were perſons who fought in lieu of thoſe who, being obliged by cuſtom to accept the duel, had yet a juſt excuſe for diſpenſing with it, as being too old, or infirm, being eccleſiaſtic, or the like. He adds, that the *champions* were uſually retained or hired for ſums of money, and were held infamous.

There were alſo ſome vaſſals, who, by the faith and homage ſworn to their lords, were obliged to fight for them in caſe of need.

Some authors hold, that any perſon was allowed the benefit of a *champion,* excepting parricides, and thoſe accuſed of very heinous offences.

This cuſtom of deciding differences by combat, was derived from the North; whence it paſſed into Germany, and, with the Saxons, into England, and inſenſibly through the reſt of Europe. See DUEL.

When two *champions* were choſen to maintain the pro and the con. it was always required there ſhould be a decree of the judge to authorize the combat. When the judge had pronounced ſentence, the accuſed threw a gage, or pledge, ordinarily a glove, or gauntlet; which being taken up by the accuſer, they were both taken into ſafe cuſtody till the day of battle appointed by the judge.

If either of them fled after this, he was declared infamous, and deemed to have committed the crime in queſtion. Nor were the accuſer and accuſed now allowed to make up the matter; at leaſt, not without the conſent of the judge; which was never granted, without making the lord ſatisfaction for the right of inheritance to the effects of the vanquiſhed

Before the *champions* took the field, their heads were ſhaved, and they made oath, that "they believed the perſon who retained them was in the right; and that they would defend his cauſe to the utmoſt of their power." The weapons they uſed in the combat were a ſword and buckler; ſome ſay, in England, only a club and buckler: when on horſeback, they were armed at all points. In a civil combat, on a writ of right, the only weapons allowed them were *batons,* or ſtaves, of an ell long, and a four-cornered leather target. Their weapons were bleſſed in the field by the prieſt, with great ceremony; and each took an oath he had no charm upon him.

In the civil combat, a piece of ground was marked out of ſixty feet ſquare, encloſed with liſts, and on one ſide a court erected for the judges of the court of common pleas, who attended in their ſcarlet robes. The court was to ſit by ſun-riſing; and proclamation being made, the *champions* were introduced by two knights, and were dreſſed in a ſuit of armour, with red ſandals, bare-legged from the knee downwards, bare-headed, and with bare arms to the elbows.

The action then began; at the ſound of a trumpet they were to go to blows; after the number of blows or rencounters expreſſed in the cartel, the judges of the combat threw a rod into the air, to advertiſe the *champions* that the combat was ended. If it laſted till night, or ended with equal advantage on either ſide, the accuſed was reputed victor.

The puniſhment of the vanquiſhed was that which the crime merited, whereof he was accuſed: if it were a capital crime, the vanquiſhed was diſarmed, led out of the field, and immediately executed, together with the party whoſe cauſe he maintained. If the conquered *champion* fought in the cauſe of a woman, ſhe was burnt.

In civil combat, the combatants were bound to fight till the ſtars appeared in the evening; and if the *champion* of the tenant was able to defend himſelf till the ſtars appeared, the tenant prevailed in his cauſe; or if victory declared itſelf for either party, by the death of the other, which ſeldom happened, or by his proving *recreant,* and pronouncing the word CRAVEN, judgment was finally given in his favour. Blackſt. Com. book iii. p. 339, &c.

CHAMPION *of the king,* is an officer, whoſe buſineſs is, at the coronation of a king of England, to ride into Weſtminſter-hall, armed cap-a-pe, when the king is at dinner, and throw down his gauntlet by way of challenge; pronouncing, by a herald, "That if any man ſhall deny, or gainſay the king's title to the crown, he is there ready to defend it in ſingle combat, &c." Which done, the king drinks to him, ſending him a gilt cup with a cover, full of wine; which the *champion* drinks, and has the cup for his fee.

This office, ever ſince the coronation of Richard II. has been continued in the family of Dymocke, who held the manor of Scrivelſby in Lincolnſhire, hereditary from the family of the Marmions, who had it before, by grand ſerjeantry; on condition that the lord thereof ſhould be the king's *champion.*

CHAMPION, or rather **CHAMPAIN**-*lands,* are lands not incloſed; or large fields, downs, or places without woods or hedges.

CHANCE, a term we apply to events, to denote that they happen without any neceſſary, or foreknown cauſe: or it is uſed to denote the bare poſſibility of an event, when nothing is known either to produce or hinder it.

Our aim is, to aſcribe thoſe things to *chance,* which are not neceſſarily produced as the natural effects of any proper cauſe, which we can diſcover; but our ignorance and precipitancy lead us to attribute effects to *chance,* which have neceſſary and determinate cauſes.

When we ſay a thing happens by *chance,* we really mean no more, than that its cauſe is unknown to us: not, as ſome vainly imagine, that *chance* itſelf can be the cauſe of any thing. From this conſideration, Dr. Bentley takes occaſion to expoſe the folly of that old tenet, *The world was made by chance.*

The caſe of the painter, who, unable to expreſs the foam at the mouth of a horſe he had painted, threw his ſponge in deſpair at the piece, and, by *chance,* did that which he could not before do by deſign, is an eminent inſtance of the force of *chance:* yet, it is obvious, all we here mean by *chance,* is, that the painter was not aware of the effect; or that he did not throw the ſponge with ſuch a view: not but that he actually did every thing neceſſary to produce the effect; inſomuch that, conſidering the direction wherein he threw the ſponge, together with its form, ſpecific gravity, the colours wherewith it was ſmeared, and the diſtance of the hand from the piece, it was impoſſible, on the preſent ſyſtem of things, that the effect ſhould not follow.

Chance is frequently perſonified, and erected into a chimerical being, whom we conceive as acting arbitrarily, and producing all the effects, whoſe real cauſes do not appear to us: in which ſenſe, the word coincides with the Τυχη, and *Fortuna,* of the ancients.

CHANCE is confounded with *Fate* and *Deſtiny;* and the word is alſo uſed for the manner of deciding things, the conduct or direction of which is left at large, and not reducible to any determinate rules or meaſures; or where there is no ground for preference: as at cards, dice, lotteries, &c.

CHANCE, *for the laws of, or the proportion of hazard in gaming,* ſee GAMING. See alſo EXPECTATION and PROBABILITY.

The ancient *ſors,* or *chance,* M. Placette obſerves, was inſtituted by God himſelf; and in the Old Teſtament we find ſeveral ſtanding laws, and expreſs commands, which preſcribed its uſe on certain occaſions: hence, the Scripture ſays, *the lot, or* chance, *fell on St. Matthias;* when it was in queſtion who ſhould fill Judas's place in the apoſtolate

Hence alſo aroſe the *ſortes ſanctorum,* or method of determining things among the ancient Chriſtians, by opening ſome of the ſacred books, and pitching on the firſt verſe they caſt their eye on, as a ſure prognoſtic of what was to befal them. The *ſortes Homericæ, Virgilianæ, Præneſtinæ,* &c. uſed by the heathens, were with the ſame view, and in the ſame manner. See SORTES.

St Auguſtine ſeems to approve of this method of determining things future, and owns that he had practiſed it himſelf; grounded on this ſuppoſition, that God preſides over *chance,* and on Proverbs xvi. ver. 33.

Many among the modern divines hold *chance* to be conducted in a particular manner by Providence, and eſteem it an extraordinary way which God uſes to declare his will, and a kind of immediate revelation.

CHANCE-*Medley,* in *Law,* the accidental killing of a man, not altogether without the killer's fault, though without any evil intent.

Stamford calls it, *Homicide by miſadventure:* Weſt calls it *homicide mixed;* and ſays, it is when the killer's ignorance or negligence is joined with the *chance:* as ſuppoſing a man lopping trees by the highway, and a bow falling *chance* to kill a paſſenger; the party here offends in not having given warning, whereby the ſlain might have been induced to take more heed: or when a workman in throwing down rubbiſh from a houſe, after warning to take care, kills a perſon; or a ſchool-maſter in correcting his ſcholar, a maſter his ſervant, or an officer in whipping a criminal, in a reaſonable manner, happens to occaſion his death, it is *chance-medley* and miſadventure. 3 Inſt. 56. Dalt. 351. But if a man throws ſtones in a highway where perſons uſually paſs, or ſhoot an arrow, &c. in a market-place, among a great number of people; or if a workman caſt down rubbiſh from a houſe in cities and towns, where people are continually paſſing; or a ſchool-maſter, maſter, &c. correct his ſcholar, ſervant, &c. in a degree exceeding the bounds of moderation, it is manſlaughter; and if with an improper inſtrument of correction, as with a ſword or iron bar, or by kicking, ſtamping, &c. in a cruel manner, it is murder.

CHANCEL, is properly that part of the choir of a church, between the altar, or communion-table, and the baluſtrade, or rail that incloſes it; where the miniſter is placed at the celebration of the communion.

The word comes from the Latin *cancellus*, which in the lower Latin is uſed in the ſame ſenſe, from *cancelli*, *lattices*, or *croſs bars*, wherewith the *chancels* were anciently encompaſſed, as they now are with rails.

The right of a ſeat and a ſepulchre in the *chancel*, is one of the privileges of the founders of a church. The repairs of the *chancel* belong by uſage, in moſt pariſhes, to the rector or vicar, or both.

CHANCELLOR, an officer, ſuppoſed originally to have been a notary, or ſcribe, under the emperors, and named *cancellarius*, becauſe he ſat behind a lattice, called in Latin *cancellus*, to avoid being crouded by the people.

Naude ſays, it was the emperor himſelf who ſat and rendered juſtice within the lattice; the *chancellor* attending at the door thereof, whence he took his title.

Others ſay, he had it from this, that all letters, addreſſes, petitions, &c. to the king, being firſt examined by him, were *cancelled*, where amiſs: others, becauſe all patents, commiſſions, and warrants, coming from the king, were examined and *cancelled* by him. Others, becauſe he *cancelled* and annulled the ſentences of other courts.

Du-Cange, from Joannes de Janua, fetches the original of the word *chancellor* from Paleſtine, where the houſes being flat, and made in form of a terrace, with parapets or paliſadoes, called *cancelli*; thoſe who mounted theſe houſes to rehearſe any harangue, were called *cancellarii*; whence the name paſſed to thoſe who pleaded at the bar, which he calls *cancelli forenſes*, and at length to the judge who preſided; and laſtly to the king's ſecretaries.

This officer is now in great authority in all countries: the perſon who bears it with us, or the

Lord High **CHANCELLOR** *of England*, is the firſt lay perſon of the realm, next after the king, and princes of the blood, in all civil affairs. He is the chief adminiſtrator of juſtice next the ſovereign, being the judge of the court of chancery; and to him belongs the appointments of all the juſtices of peace in the kingdom.

All other juſtices are tied to the ſtrict law; but the *chancellor* has the king's abſolute power to moderate the rigour of the written law, to govern his judgment by the law of nature and conſcience, and to order all things *ſecundum æquum & bonum*. Accordingly, Stamford ſays, the *chancellor* has two powers, the one abſolute, the other ordinary; meaning, that though by his ordinary power he muſt obſerve the ſame form of procedure as other judges, yet in his abſolute power he is not limited by any written law, but by conſcience and equity.

The offices of *lord-chancellor* and lord-keeper are by the ſtatute 5 Eliz. made the ſame thing; till that time they were different, and frequently ſubſiſted at the ſame time in different perſons: ſometimes the *lord-chancellor* had a *vice-chancellor*, who was keeper of the ſeal.

The keeper was created *per traditionem magni ſigilli*, but the *lord-chancellor* by patent, though now that he has the keeper's office, he is created in like manner by giving him the ſeal. The *chancellor* is a privy-counſellor by his office, and likewiſe ſpeaker of the houſe of lords. See PARLIAMENT.

Though he be ſole judge of the court of chancery, yet in matters of much difficulty he ſometimes conſults the other judges; ſo that this office may be diſcharged by one who is no profeſſed lawyer, as anciently it commonly was, by an eccleſiaſtic, who preſided over the king's chapel, and became keeper of the king's conſcience, viſitor in the king's right of all hoſpitals and colleges of royal foundation, patron of all the king's livings under the value of 20*l.* *per ann.* in the king's books, guardian of all infants, idiots, and lunatics; and ſuperintendent of all charitable inſtitutions. He has twelve aſſiſtants, or coadjutors, anciently called *clerici*, as then being in holy orders, now *Maſters in Chancery*, the firſt whereof is the *Maſter of the Rolls*. See MASTER *of the Rolls*, MASTERS *in Chancery*, &c.

CHANCELLOR *of a cathedral.* His office is thus deſcribed in the Monaſticon; viz. to hear the leſſons and lectures read in the church, either by himſelf, or his vicar; to correct and ſet right the reader when he read amiſs; to inſpect ſchools, to hear cauſes, apply the ſeal, write and diſpatch the letters of the chapter, keep the books, take care there be frequent preachings, both in the church, and out of it, and aſſign the office of preaching to whom he liſts.

CHANCELLOR *of a dioceſe*, is a judge of the biſhop's court, held in the cathedral of each dioceſe.

He was anciently called *eccleſiaſticus*, and *eccleſiæ cauſidicus*, the church-lawyer. See *Biſhop's* COURT.

CHANCELLOR *of the duchy of Lancaſter*, is an officer, the head of that court, whoſe buſineſs is to judge and determine all controverſies between the king and his tenants of the dutchy-land; and otherwiſe to direct all the king's affairs relating to that court. See *Dutchy* COURT.

CHANCELLOR *of the exchequer*, is an officer, ſuppoſed by ſome to have been created for moderating extremities in the exchequer.

He ſometimes ſits in that court and the exchequer-chamber, and, with the reſt of the court, orders things to the king's beſt benefit. He is always in commiſſion with the lord-treaſurer for letting lands accruing to the crown by diſſolution of abbeys, and otherwiſe: he has power, with others, to compound for forfeitures on penal ſtatutes, bonds, and recognizances entered into by the king. He has a great authority in managing the royal revenue, and in matters of firſt-fruits.

The court of equity, in the exchequer-chamber, is held before the lord-treaſurer, *chancellor*, and barons, as that of common law before the barons only.

CHANCELLOR *of the order of the* GARTER, and other military orders, is an officer who ſeals the commiſſions and mandates of the chapter, and aſſembly of the knights, keeps the regiſter of their deliberations, and delivers acts thereof under the ſeal of the order.

CHANCELLOR *of an univerſity*, is he who ſeals the diplomas or letters of degrees, proviſion, &c. given in the univerſity.

The *chancellor* of Oxford is their chief magiſtrate, elected by the ſtudents themſelves: his office is *durante vita*, to govern the univerſity, preſerve and defend its rights and privileges, convoke aſſemblies, and do juſtice among the members under his juriſdiction.

Under the *chancellor* is the *vice-chancellor*, who is choſen annually; being nominated by the *chancellor*, and elected by the univerſity in convocation. His buſineſs is to ſupply the *chancellor*'s abſence.

At his entrance upon his office, he chooſes four *pro-vice-chancellors*, out of the heads of colleges, to one of whom he deputes his power in his abſence.

The *chancellor of Cambridge*, is in moſt reſpects the ſame with that of Oxford; only he does not hold his office *durante vita*, but may be elected every three years.

He has under him a commiſſary, who holds a court of record of civil cauſes, for all perſons of the univerſity under the degree of maſter of arts.

The *vice-chancellor* of Cambridge is choſen annually by the ſenate, out of two perſons nominated by the heads of the ſeveral colleges and halls.

CHANCERON, in *Natural Hiſtory*, a name given by the French writers to the ſmall caterpillar that eats the corn, and does vaſt miſchief in their public granaries. The butterfly which produces this creature has white wings with black ſpots in them. The caterpillar, when firſt hatched, is one of the ſmalleſt that we are acquainted with. It ſpins a great number of fine threads, as ſoon as hatched from the egg, and in many of theſe it faſtens itſelf to every thing that lies near it.

Toward the latter end of ſummer theſe caterpillars leave the corn, and mount up the walls of the granary, where they ſearch for a proper place of reſt, and, when they have pitched upon ſuch a one, they eat their way into it, and burying themſelves in a hole, they cover their whole body with a web of ſilk of their own ſpinning, and there change into a ſort of browniſh red chryſaliſes. Theſe remain the whole winter without life or motion; but in the months of April and May the butterflies are hatched out of them, and the males and females couple together, immediately after which the female lays her eggs, and the foundation is laid for a new progeny, who, during the remainder of the ſummer, are to deſtroy and ſpoil the corn, under the form of caterpillars. The female thruſts out a ſort of tube from her tail, by means of which ſhe opens a way into the grain, and lodges her egg, which in fifteen or ſixteen days is hatched into the caterpillar; as ſoon as hatched, it begins to eat, and, devouring greedily, it ſoon marks the place where it lies, by a quantity of the huſks which it leaves there. Deſlandes, Trait. Phyſ.

CHANCERY. See COURT *of Chancery*.

CHANCRE, in *Medicine*, a malignant ulcer, which gnaws and eats the fleſh, uſually occaſioned by ſome venereal diſorder.

Chancres are reputed among the firſt ſymptoms that appear in the venereal diſeaſe; and Antonius Muſa Braſavolus obſerves, that the puſhes on the prepuce, glans, or both, are occaſioned by the ſharpneſs of humours which are ſtirred in the time of coition, and the malignant quality of the venereal taint contained in the vagina, or that flows from the adverſe party. This being premiſed, it is certain the *chancres* on the *frænum* and prepuce differ very much from thoſe on the glans, and other parts.

CHANDELIER, or Chandeleer, in *Fortification*, a wooden frame, made of two pieces, fixed croſs-ways on two other pieces, at about four feet aſunder, and on their interſections are erected two vertical pieces of five feet high, each ſupported by three buttreſſes; the interval of theſe two pieces is filled up with faſcines, or faggots, to cover the workmen inſtead of a parapet. See *Tab. Fortif. fig.* 25.

Chandeliers are ſometimes alſo made to prevent the enemy from ſeeing what paſſes within.

The difference between *chandeliers*, and blinds, conſiſts in this, that the former ſerve to cover the pioneers before, and the latter alſo cover them over head.

Chandelier ſignifies alſo a candleſtick, lamp, &c.

CHANE, in *Ichthyology*, a name given by Ariſtotle, Athenæus, and the other Greek writers, to the fiſh called by other authors *hiatula chauna*, and *chaunus*. It is truly a ſpecies of the *labrus*, and is diſtinguiſhed by Artedi by the name of the forked-tailed Labrus, with the lower-jaw longer than the upper, and with black tranſverſe lines on the ſides.

CHANFRIN, in the *Manege*, is the fore-part of a horſe's head, extending from under the ears, along the interval between the eye-brows, down to his noſe.

CHANGE, in *Commerce*. See Exchange.

Change, in the *Manege*. To *change* a horſe, or *change* hand, is to turn or beat the horſe's head from one hand to the other, from the right to the left, or from the left to the right. You ſhould never *change* your horſe without puſhing him forward upon the turn; and after the turn, puſh him on ſtraight, in order to a ſtop.

Change *of ſpecies*, in *Huſbandry*. See Species.

CHANGER, or Chaunger, an officer belonging to the king's mint, who changes money for gold, or ſilver bullion.

Changer, *money*, is a banker, who deals in the exchange, receipt, and payment of moneys.

CHANGES, in *Arithmetic*, &c. the permutations or variations of any number of quantities; with regard to their poſition, order, &c.

To find all the poſſible changes *of any number of quantities, or how oft their order may be varied.*

Suppoſe two quantities a and b. Since they may be either wrote ab or ba, it is evident their *changes* are $2=2\times1$.

c a b
a c b
a b c
——
c b a
b c a
b a c

Suppoſe three quantities abc: their *changes* will be as in the margin; as is evident by combining c firſt with ab, then with ba; and hence the number of *changes* ariſes $3\times2\times1=6$. If the quantities be 4, each may be combined four ways with each order of the other three; whence the number of *changes* ariſe $6\times4=4\times3\times2\times1=24$. Wherefore, if the number of quantities be ſuppoſed n, the number of *changes* will be $n\times n-1\times n-2\times n-3\times n-4$, &c. to $n-n$. If the ſame quantity occur twice, the *changes* of two will be found bb, of three bab, abb, bbc; of four $cbab$, $bcab$, $babc$. And thus the number of *changes* in the firſt caſe will be $1=(2\times1)\div2\times1$; in the ſecond, $3=(3\times2\times1)\div2\times1$; in the third, $12=(4\times3\times2\times1)\div2\times1$.

If a fifth letter be added, in each ſeries of four quantities, it will beget five *changes*, whence the number of all the *changes* will be $60=(5\times4\times3\times2\times1),\div2\times1$. Hence if the number of quantities be n, the number of *changes* will be $(n\times n-1\times n-2\times n-3\times n-4, \&c.)\div2\times1$. From theſe ſpecial formulæ may be collected a general one; viz. if n be the number of quantities, and m the number which ſhews how oft the ſame quantity occurs; we ſhall have $(n\times n-1\times n-2\times n-3\times n-4\times n-5\times n-6\times n-7, \&c.)\div(m-1\times m-2\times m-3, \&c.)$; the ſeries being to be continued, till the continual ſubtraction of unity from n and m leave 0. After the ſame manner we may proceed further, till putting n for the number of quantities, and l, m, r, &c. for the number that ſhews how oft any of them is repeated, we obtain an univerſal form $(n\times n-1\times n-2\times n-3\times n-4\times n-5, \&c.)\div(l\times l-1\times l-2\times l-3\times l-4, \&c.\ m\times m-1\times m-2\times m-3, \&c.)\ r\times r\times r-1\times r-2\times r-3$, &c.

Suppoſe, for inſtance, $n=6$, $l=3$, $r=3$. The number of *changes* will be $(6\times5\times4\times3\times2\times1)\div3\times2\times1\times3\times2\times1)=6\times5\times4)\div3\times2=2\times5\times2=20$.

Hence, ſuppoſe thirteen perſons at a table, if it be required how oft they may *change* places, we ſhall find the number $13\times12\times11\times10\times9\times8\times7\times6\times5\times4\times3\times2\times1=6227020800$. See Alternation.

In this manner may all the poſſible anagrams of any word be found in all languages, and that without any ſtudy. Suppoſe, v. g. it were required to find the anagrams of the word *Roma*, the number of *changes* will be $4\times3\times2\times1=24$. Thus,

Roma *orma mroa arom*
roam oram mrao armo
rmoa omra mora aorm
rmao omar maor aomr
raom oarm maro amro
ramo oamr maor amor.

The anagrams therefore of the word *Roma*, furniſhing any word of known ſignification in the Latin tongue, are ſeven; viz. *Roma*, *ramo*, *oram*, *mora*, *maro*, *armo*, *amor*. Wallis's Algebra, p. 117.

Whether this new method of anagrammatizing be like to prove of much ſervice to that art, is left to the poets.

Changes *of inſects*. See *Tranſformation of* Insects.

CHANNA, in *Zoology*, the name of a fiſh caught in great plenty in the Mediterranean, and brought to market in Italy, and elſewhere, among the ſea-pearch, which it nearly reſembles.

There is an obſervation, that in all the fiſh of this kind which have been examined by naturaliſts, there have been found none but females. This is as old as Ariſtotle. Whether it be fact, would require many obſervations to determine; if it ſhould be proved ſo, the whole ſeems to end in this; that the *channa* is no diſtinct ſpecies, but only the female of ſome other fiſh.

There is another fiſh, not unlike this, called *cannadella*, or rather *channadella*, which at Marſeilles is known by the name of *channa*.

CHANNADELLA, in *Ichthyology*, a name given by Bellonius, and others, to a ſpecies of the *labrus*, called alſo *ſachettus*, and *hepatus piſcis*. See Chane.

CHANNEL, in *Anatomy*, *Chirurgery*, &c. See Canal.

Channel, or *bed of a river*. See River.

Channel is alſo applied to divers arms of the ſea, where the water runs within the land; or to certain narrow ſeas, confined between two adjacent continents, or between an iſland and continent.

In this ſenſe we ſay, St. George's *Channel*, the Britiſh *Channel*, the *Channel* of the Black Sea, of Conſtantinople, &c.

Channel, in *Building*. See Gutter.

Channel *of the volute*, in the Ionic capital, is the face of its circumvolution, incloſed by a liſtel. See Volute.

Channel *of the larmier*, is the hollow ſoffit of a cornice, which makes the *pendant mouchette*. See Larmier.

Channel, in the *Manege*, is uſed for that concavity in the middle of the lower-jaw of a horſe, where the tongue lies. This hollow being bounded on each ſide by the bars, terminates in the grinders or maxillary teeth. The barbles grow in this *channel*.

CHANNELINGS. See Flutings.

CHANT, Cantus, is uſed for the vocal muſic of churches. In church-hiſtory we meet with divers kinds of *chant*, or *ſong*: the firſt is the Ambrosian *chant*, eſtabliſhed by St Ambroſe.

The ſecond, the *Gregorian chant*, introduced by pope Gregory the Great, who eſtabliſhed ſchools of *chantors*, and corrected the church ſong.

This is ſtill retained in the church under the name of *plain ſong*: at firſt it was called the *Roman ſong*.

The *plain*, or *Gregorian chant*, is where the choir and people ſing in uniſon, or all together in the ſame manner.

Chant *Royal*. See Comedy.

CHANTLATE, in *Building*, a piece of wood faſtened near the ends of the rafters, and projecting beyond the wall, to ſupport two or three rows of tiles, ſo placed to prevent the rain-water from trickling down the ſides of the wall.

CHANTOR, in the *Jewiſh Antiquities*. In the Temple of Jeruſalem there was a great number of Levites, who were employed in ſinging the praiſes of God, and in playing upon inſtruments before his altar. In the reign of David there were four thouſand ſinging men, with their heads and preſident.

The *chantors* and Levites who were employed in ſinging, playing upon inſtruments, and other functions of the Temple, had no habits diſtinct from the reſt of the people. Nevertheleſs, in the ceremony of removing the ark to the Temple of Jeruſalem built by Solomon, the *chantors* appeared dreſſed in tunics of byssus, or fine linen. Joſephus remarks, that in king Agrippa's time they obtained the favour from that prince of wearing a linen robe in the Temple, like the prieſts. Agrippa believed it would be for the honour of his reign, to ſignalize it by ſo conſiderable a change as this. The other Levites, employed in different exerciſes under the command of the prieſts in the Temple, procured likewiſe commiſſion to learn to ſing, to the end that they might enjoy the ſame privileges with their brethren.

Chantor, or Chauntor, a perſon who ſings in the choir of a cathedral.

All great chapters have *chantors* and chaplains to eaſe and aſſiſt the canons, and officiate in their abſence.

St. Gregory firſt inſtituted the office of *chantors*, erecting them into a body, called *ſchola cantorum:* though Anaſtaſius ſeems to attribute their riſe to pope Hilary, who lived an hundred years before Gregory.

But the word grows obſolete in this ſenſe, and inſtead thereof we uſe the word *choriſter*, or ſinging-man.

Chantor is uſed, by way of excellence, for the præcentor, or maſter of the choir; which is one of the dignities of the chapter.

The *chantor* bears the cope and the ſtaff at ſolemn feſtivals; and gives tune to the reſt at the beginning of pſalms and anthems. At St. David's in Wales, where they have no dean, he is next in dignity to the biſhop.

The ancients called the *chantor*, *primicerius cantorum.*

To him formerly belonged the direction of the deacons, and other inferior miniſters.

CHANTRY, or **Chauntry.** See **Chauntry.**

CHAOLOGY, the hiſtory or deſcription of the chaos.

Orpheus, in his *Chaology*, ſets forth the different alterations, ſecretions, and divers forms, which matter went through till it became inhabitable: this amounts to the ſame with what we otherwiſe call *coſmogony*, or the creation of the world.

Dr Burnet likewiſe gives us a *Chaology*, in his Theory of the Earth. He repreſents the *chaos*, as it was at firſt, entire, undivided, and univerſally rude and deformed; or the *tohu bohu:* then ſhews how it came divided into its reſpective regions; how the homogeneous matter gathered itſelf apart from all of a contrary principle; and laſtly, how it hardened, and became a ſolid habitable globe.

CHAOMANTIA, among the *Enthuſiaſtical Chemiſts*, is the art of making preſages from obſervations on the air.

CHAOS, among the *Ancient Philoſophers*, was deſcribed a dark, turbulent kind of atmoſphere; or a diſorderly ſyſtem, or mixture, of all ſorts of particles together, without any form or regularity; out of which the world was formed.

Chaos is every-where repreſented as the firſt principle, ovum, or ſeed of nature, and the world. All the ancient ſophiſts, ſages, naturaliſts, philoſophers, theologues, and poets, hold that *chaos* was the eldeſt and firſt principle, το αρχαιον χαος.

The Barbarians, Phœnicians, Egyptians, Perſians, &c. all refer the origin of the world to a rude, mixed, confuſed maſs of matter. The Greeks, Orpheus, Heſiod, Menander, Ariſtophanes, Euripides, and the writers of the Cyclic Poems, all ſpeak of the firſt *chaos:* the Ionic and Platonic philoſophers build the world out of it. The Stoics hold, that as the world was firſt made of a *chaos*, it ſhall at laſt be reduced to a *chaos*; and that its periods and revolutions in the mean time are only tranſitions from one *chaos* to another. Laſtly, the Latins, as Ennius, Varro, Ovid, Lucretius, Statius, &c. are all of the ſame opinion. Nor is there any ſect or nation whatever, that does not derive their διακοσμησις, *the ſtructure of the world*, from a *chaos*.

The opinion firſt aroſe among the Barbarians, whence it ſpread to the Greeks, and from the Greeks to the Romans, and other nations.

Dr. Burnet obſerves, that beſides Ariſtotle, and a few other pſeudo-Pythagoreans, nobody ever aſſerted, that our world was always, from eternity, of the ſame nature, form, and ſtructure, as at preſent: but that it had been the ſtanding opinion of the wiſe men of all ages, that what we now call the terreſtrial globe, was originally an unformed, indigeſted maſs of heterogeneous matter, called *chaos*; and no more than the rudiments and materials of the preſent world.

It does not appear who firſt broached the notion of a *chaos*. Moſes, the eldeſt of all writers, derives the origin of this world from a confuſion of matter, dark, void, deep, without form, which he calls *tohu bohu*; which is preciſely the *chaos* of the Greek and Barbarian philoſophers. Moſes goes no further than the *chaos*; nor tells us whence it took its origin, or whence its confuſed ſtate; and where Moſes ſtops, there, preciſely, do all the reſt.

Dr. Burnet endeavours to ſhew, that as the ancient philoſophers, &c. who wrote of the coſmogony, acknowleged a *chaos* for the principle of their world; ſo the divines, or writers of the theogony, derive the origin or generation of their fabled gods from the ſame principle.

Mr. Whiſton ſuppoſes the ancient *chaos*, the origin of our earth, to have been the atmoſphere of a comet; which, though new, yet, all things conſidered, is not the moſt improbable aſſertion. He endeavours to make it out by many arguments, drawn from the agreement which appears to be between them.

So that, according to him, every planet is a comet, formed into a regular and laſting conſtitution, and placed at a proper diſtance from the ſun, revolving in a nearly circular orbit; and a comet is a planet either beginning to be deſtroyed, or re-made: that is, a *chaos*, or planet, unformed, or in its primæval ſtate, and placed, as yet, in an orbit very eccentrical.

Chaos, in the phraſe of Paracelſus, imports the air. It has alſo ſome other ſignifications amongſt the alchemiſts.

CHAOASES, an order of horſe in the ſervice of the grand ſignior. Theſe and the *mutéferriker* were originally the guards of the ſultans in Egypt, and their leaders were his two vizirs, that always accompanied him. They now always go out with the baſhaw.

The body of the *chaoaſes* ſeem originally to have been the guard out of which the ſultan uſed to ſend perſons to execute his orders.

CHAP, in *Ornithology*, denotes either of the mandibles of a bird's beak, which are diſtinguiſhed by the epithets *upper* and *lower*.

Chap. See **Chilblain.**

CHAPEAU, in a general ſenſe. See **Hat.**

Chapeau is ſometimes alſo uſed to denote the cap, or coronet, armed with ermin, borne by dukes; and of late frequently met with above an helmet inſtead of a wreath, under gentlemen's or noblemen's creſts. *Tab. Heraldry, fig.* 91.

The creſt is borne on the *chapeau*; and by the *chapeau* the creſt and coat are ſeparated; it being a rule, that no creſt muſt touch the ſhield immediately.

CHAPEL, or **Chappel**, a kind of little church, ſerved by an incumbent, properly under the denomination of a *chaplain*.

The word *chapel*, according to ſome, comes from καπηλεια, *little tents*, or *booths*, ſet up by traders in fairs to ſhelter them from the weather. Papias fetches it both from the Greek and Latin, *quaſi capiens* λαον, or *populum*, vel *laudem:* others derive it from the *chape*, or cope, which ſerved to cover the body: others, *à pellibus caprarum*; becauſe theſe places were anciently covered with goatſkins. Rebuff derives it from *cappa*, St. Martin's cope, which the kings of France carried to war with them as their ſtandard, and preſerved very carefully in particular tents, thence called *chapels*.

There are two kinds of *chapels*, the one conſecrated, and held as benefices: the other ſecular, being of the nature of oratories.

The firſt are built apart, and at a diſtance from the pariſh-church; being neither pariſhes, cathedrals, nor priories, but ſubſiſting of themſelves.

Theſe are called by the canoniſts *ſub dio*, and by us *chapels of eaſe*; as being erected at a diſtance from the mother-church, where the pariſh is large and wide, for the eaſe and conveniency of ſome of the pariſhioners who reſide far off.

Theſe are ſerved by ſome inferior paſtor, provided either by the rector of the pariſh, or by thoſe for whoſe eaſe and benefit they are intended, by prayers or preaching merely. Some of theſe are alſo parochial, having the parochial rights of chriſtening and burying, and differing from a church only in the want of a rectory and endowment.

The ſecond kind are frequently built in, or adjoining to a church, as a part thereof; having only a deſk, &c. to read prayers in; and, in the Romiſh churches, an altar, &c. to celebrate maſs on; but without any baptiſtery, or font. Theſe the canoniſts call *ſub tecto.* They are generally erected by ſome conſiderable perſon, for the uſe of their own families; *ut ibidem familiaria ſepulcra ſibi conſtituant.* The twenty-firſt canon of the council of Agda, held in 506, allows private perſons the uſe of *chapels*; but with prohibition to all clerks to officiate in them without leave from the biſhop.

Chapels, *free*, are thoſe *chapels of eaſe* which have a ſettled revenue for perpetual maintenance of a paſtor, &c. by charitable donatives of lands, or rents beſtowed on them; ſo as not to be any charge either to the rector, or the pariſhioners; and they are thus called, becauſe they are *free* from all ordinary juriſdiction.

There are ſeveral collegiate churches in France, which they call *ſaintes chapelles*, *holy chapels*; as thoſe of Paris, Dijon, Bourges, Bourbon, &c. Theſe are ſo denominated, from being repoſitories of certain relics.

Hence, all thoſe places where relics were preſerved came to be called *chapels*; and the perſons who had the care of them, *chaplains*.

Chapel is alſo a name given to a printer's workhouſe; becauſe, ſay ſome authors, printing was firſt actually performed in *chapels*, or churches; or, according to others, becauſe Caxton, an early printer, exerciſed the art in one of the *chapels* in Weſtminſter Abbey.

In this ſenſe they ſay, the orders, or laws of the *chapel*, the ſecrets of the *chapel*, &c.

CHAPEL, *knights of the,* was an order of knights inſtituted by king Henry VIII. in his teſtament, to the number of thirteen; though theſe have been increaſed to the number of twenty-ſix: they are called alſo *poor knights.*

Theſe are not knights of the order of the garter; but are, as it were, their aſſiſtants or deputies, ſerving to diſcharge all their offices in the funeral ſervices of the kings of England.

They are ſubject to the office of the canons of Windſor, and live on penſions which the order aſſigns them.

They bear the blue or red cloke, with the arms of St. George on the left ſhoulder; but the cloke is only cloth, and they wear no ſort of garter: which diſtinguiſhes them ſufficiently from the knights of the garter.

CHAPELET, in the *Manege,* a couple of ſtirrup-leathers, mounted each of them with a ſtirrup, and joining at top in a ſort of leather buckle, called the head of the *chapelet,* by which they are made faſt to the pummel of the ſaddle, after being adjuſted to the rider's length and bore. They are uſed both to avoid the trouble of taking up or letting down the ſtirrups every time that a gentleman mounts on a different horſe and ſaddle, and to ſupply what is wanting in the academy ſaddles, which have no ſtirrups to them.

CHAPELING *a ſhip,* is the art of turning her round in a light breeze of wind when ſhe is cloſe-hauled, ſo that ſhe will lie the ſame way ſhe did before. This is commonly occaſioned by the negligence of the ſteerſman, or by a ſudden change of the wind.

CHAPELRY, *Capellania,* is uſed for a certain precinct belonging to a chapel, having the ſame relation to it that a pariſh has to a church.

CHAPERON, CHAPERONNE, or CHAPEROON, properly ſignifies a ſort of hood, or covering of the head anciently worn both by men and women, the nobles, and the populace, and afterwards appropriated to the doctors, and licentiates in colleges, &c.

Hence, the name paſſed to certain little ſhields, and other funeral devices, placed on the foreheads of the horſes that drew the hearſes in pompous funerals, and which are ſtill called *chaperoons,* or *ſhafferoons*; becauſe ſuch devices were originally faſtened on the *chaperonnes,* or hoods, worn by thoſe horſes with their other coverings of ſtate.

CHAPERON *of a bit-mouth,* in the *Manege,* is only uſed for ſcatch-mouths, and all others that are not cannon-mouths, ſignifying the end of the bit that joins to the branch juſt by the banquet. In ſcatch-mouths the *chaperon* is round, but in others it is oval: and the ſame part that in ſcatch and other mouths is called *chaperon,* is in cannon-mouths called *fronceau.*

CHAPITERS, in *Architecture,* the crowns or upper parts of a pillar. See CAPITAL.

CHAPITERS *with mouldings,* are thoſe which have no ornaments, as the Tuſcan and Doric.

CHAPITERS *with ſculptures,* are thoſe which are adorned with leaves and carved works, the fineſt of which is of the Corinthian order.

CHAPITERS, in *Law,* were anciently a ſummary of ſuch matters as were to be inquired of, or preſented before juſtices in eyre, juſtices of aſſiſe, or of the peace, in their ſeſſions.

Chapiters are now taken for articles delivered by the mouth of the juſtice, in his charge to the inqueſt: though it appears from Bracton and Briton, they were formerly written exhortations given by the juſtices for the good obſervation of the laws, and the king's peace; firſt read in open court, then delivered in writing to the grand inqueſt: which the grand jury, or inqueſt, were likewiſe to anſwer to upon their oaths, either affirmatively, or negatively.

CHAPLAIN properly ſignifies a perſon provided with a CHAPEL; or who diſcharges the duty thereof.

CHAPLAIN is alſo uſed for an eccleſiaſtical perſon, in the houſe of a prince, or a perſon of quality, who officiates in their chapels, &c.

With us there are forty-eight *chaplains* to the king, who wait four each month, preach in the chapel, read the ſervice to the family, and to the king in his private oratory, and ſay grace in the abſence of the clerk of the cloſet. While in waiting they have a table, and attendance, but no ſalary.

An archbiſhop may retain eight *chaplains*; a duke or a biſhop, ſix; a marquis or earl, five; a viſcount, four; a baron, knight of the garter, or lord chancellor, three; a ducheſs, marchioneſs, counteſs, baroneſs, the treaſurer and comptroller of the king's houſe, the king's ſecretary, dean of the chapel, almoner and maſter of the rolls, two each; the chief juſtice of the king's bench, one: all of whom may purchaſe a licence or diſpenſation, and take two benefices with cure of ſouls. Stat. 22 Hen. VIII. c. 13.

Every judge of the king's bench and common pleas, the chancellor and chief baron of the exchequer, the king's attorney and ſolicitor-general, may each of them have one, entitled to one benefice with cure, and non-reſident. Stat. 25 Hen. VIII. c. 16.

And alſo the groom of the ſtole, treaſurer of the king's chamber, and chancellor of the duchy of Lancaſter, may retain each one *chaplain.* Stat. 33 Hen. VIII. c. 28.

A *chaplain* muſt be retained by letters teſtimonial under hand and ſeal, or he is not a *chaplain* within the ſtatute: and a *chaplain* thus qualified may hold his livings, though diſmiſſed from attendance, during life; nor can a nobleman, though he may retain other *chaplains* in his family, qualify any of them to hold pluralities whilſt the firſt are living. 4 Rep. 90.

The firſt *chaplains* are ſaid to have been thoſe inſtituted by the ancient kings of France, for preſerving the *chape,* or *cape,* with the other relics of St. Martin, which the kings kept in their palace, and carried out with them to the war. The firſt *chaplain* is ſaid to have been Gul. de Meſmes, *chaplain* to St. Louis.

CHAPLAIN *in the order of* MALTA, is uſed for the ſecond rank, or claſs, in that order; otherwiſe called *diaco.*

The knights make the firſt claſs, and the *chaplains* the ſecond.

CHAPLAINS *of the pope,* are the auditors, or judges of cauſes in the ſacred palace; ſo called, becauſe the pope anciently gave audience in his chapel, for the deciſion of caſes ſent from the ſeveral parts of Chriſtendom.

He hither ſummoned as aſſeſſors the moſt learned lawyers of his time; and they hence acquired the appellation of *capellani, chaplains.*

It is from the decrees formerly given by theſe, that the body of decretals is compoſed: their number pope Sixtus IV. reduced to twelve.

Some ſay, the ſhrines of relics were covered with a kind of *tent, cape,* or *capella,* i. e. *little cape*; and that hence the prieſts, who had the care of them, were called *chaplains.* In time theſe relics were repoſited in a little church, either contiguous to a larger, or ſeparate from it; and the ſame name, *capella,* which was given to the cover, was alſo given to the place where it was lodged: and hence the prieſt who ſuperintended it came to be called *chaplain.*

CHAPLET, or CHAPELET, a ſtring of beads, uſed in the Romiſh church, to keep account of the number of Paternoſters, and Ave-Mary's, to be rehearſed in honour of God, and the Holy Virgin.

Chaplets are otherwiſe called *Pater-noſters.* A ROSARY is a *chaplet* of fifteen decads of Ave-Marys.

Menage derives the word from *chapeau, hat*; becauſe of the reſemblance the thing bears to a hatband, or *chaplet* of roſes, *chapeau de roſes.* The modern Latins call it *capellina*; the Italians more frequently *corona.*

Larrey and P. Viret aſcribe the firſt invention of the *chaplet* to Peter the Hermit, well known in the hiſtory of the croiſades.

There is a *chaplet* of our Saviour, conſiſting of thirty-three beads, in honour of his thirty-three years living on earth, inſtituted by father Michael, the Camaldulian.

The Orientals have a kind of *chaplets,* which they call *chains,* and which they uſe in their prayers, rehearſing one of the perfections of God on each link, or head.

The great Mogul is ſaid to have eighteen of theſe chains, all of precious ſtones, ſome diamonds, others rubies, pearls, &c.

The Turks have likewiſe *chaplets,* which they bear in the hand, or hang at the girdle: but father Dandini obſerves, that they differ from thoſe uſed by the Romaniſts, in that they are all of the ſame bigneſs, and have not that diſtinction into decads; though they conſiſt of ſix decads, or ſixty beads. He adds, that the muſſulmen have preſently run over the *chaplet,* the prayers being extremely ſhort, as containing only theſe words, *Praiſe to God*; or theſe, *Glory to God,* for each bead.

Beſides the common *chaplet,* they have likewiſe a larger one, conſiſting of one hundred beads, where there is ſome diſtinction, as being divided by little threads into three parts, on one of which they repeat thirty times *Soubhan Allah,* i. e. *God is worthy to be praiſed*; on another, *Ellamb Allah, Glory be to God*; and on the third, *Alla echer, God is great.* Theſe thrice thirty times making only ninety; to complete the number one hundred, they add other prayers for the beginning of the *chaplet.*

He adds, that the Mahometan *chaplet* appears to have had its riſe from the *mea beracoth,* or *hundred benedictions*; which the Jews are obliged to repeat daily, and which we find in their prayer-books, the Jews and Mahometans having this in common, that they ſeldom do any thing without pronouncing ſome laud, or benediction.

CHAPLET, or CHAPELET, in *Architecture,* a little moulding, cut, or carved into round beads, pearls, olives, or the like.—See *Tab. Archit. fig.* 12.

A *chaplet*, in effect, is little elſe but a BAGUETTE enriched with ſculpture.

CHAPOTENSIS, in *Writers of the Middle Age*, a kind of coin. We do not find any certain account of its value. Du-Cange inclines to think it the ſame as the CHATUS.

CHAPPAR, a COURIER of the king of Perſia, who carries diſpatches from court to the provinces, and from the provinces to the court.

The word, in the original Perſian, ſignifies *courier*.

The poſts, M. Tavernier tells us, are not eſtabliſhed and regulated in Perſia as among us: when the court ſends out a *chappar*, the ſophi's maſter of the horſe furniſhes him with a ſingle horſe, how long ſoever his journey be, and a man to run after him: when his horſe is weary, he takes that of the firſt horſeman he meets with, who dares not make the leaſt refuſal, and ſends his own home by the man who follows him.

As for the maſter of the new horſe he has taken, he muſt run, or at leaſt, ſend after the *chappar*, to retake him, when the *chappar* diſmounts ſome other horſeman to change him.

CHAPPE, in *Heraldry*, the partition of an eſcutcheon, by lines drawn from the center of the upper edge to the three angles below: as repreſented in *Tab. Herald. fig.* 14. which they blazon *chappé* or, and vert.

The ſections of the ſides are to be of a different colour from the reſt. Mackenzie calls it, *A chief party per bend dexter*, or *ſiniſter*, or both.

CHAPPEL, or CHAPEL. See CHAPEL.

CHAPTER, *Capitulum*, a community of eccleſiaſtics belonging to a cathedral, or collegiate church.

The chief, or head of the *chapter*, is the dean; the body conſiſts of canons, or prebendaries, &c.

The *chapter* has now no longer any ſhare in the adminiſtration of the dioceſe, during the life of the biſhop; but ſucceeds to the whole epiſcopal juriſdiction during the vacancy of the ſee.

The origin of *chapters* is derived from hence, that anciently the biſhops had their clergy reſiding with them in their cathedrals, to aſſiſt them in the performance of ſacred offices, and in the government of the church; and even after parochial ſettlements were made, there was ſtill a body of clerks who continued with the biſhop, and were indeed his family, maintained out of his income.

After the monaſtic life grew into requeſt, many biſhops choſe monks rather than ſeculars for their attendants.

Theſe bodies, either of monaſtics or ſeculars, then had the ſame privilege of chuſing the biſhop, and being his council, which the whole clergy of the dioceſe had before; but, by degrees, their dependence on the biſhop grew leſs and leſs; and then they had diſtinct parcels of the biſhop's eſtate aſſigned them for their maintenance; till at laſt, the biſhop had little more left than the power of viſiting them.

On the other hand, theſe capitular bodies by degrees alſo loſt their privileges; particularly that of chuſing the biſhop, for which the kings of England had a long ſtruggle with the pope: but at laſt Henry VIII. got this power veſted in the crown; and now the deans and *chapters* have only the ſhadow of it.

The ſame prince likewiſe expelled the monks from the cathedrals, and placed ſecular canons in their room; thoſe he thus regulated, are called *deans and chapters of the new foundation*; ſuch are Canterbury, Wincheſter, Worceſter, Ely, Carliſle, Durham, Rocheſter, and Norwich: ſuch alſo are the *chapters* of the four new ſees, of Peterborough, Oxford, Glouceſter, and Briſtol.

CHAPTER is alſo applied to the aſſemblies held by religious and military orders, for deliberating on their affairs, and regulating their diſcipline.

Papias ſays they are ſo called, *quòd capitula ibi legantur.*

The eſtabliſhment of general *chapters* of religious orders is owing to the Ciſtercians, who held the firſt in 1116, and were ſoon followed by the other orders.

CHAPTER is alſo uſed for a diviſion of a book; contrived for keeping the matters treated thereon more ſeparate, clear, and diſtinct.

The ancients were unacquainted with the diviſion of books into *chapters* and ſections. Papias ſays, the name *chapter, caput*, aroſe hence, *quòd ſit alterius ſententiæ caput*, or *quòd capiat totam ſummam*. St. Auguſtine compares *chapters* to inns, inaſmuch as theſe refreſh the reader, as thoſe the traveller.

The diviſion of the BIBLE into *chapters* is attributed by ſome to Stephen Langton, archbiſhop of Canterbury, in the reigns of king John and Henry III. But it was really done by Cardinal Hugo, who flouriſhed about the year 1240, the author of the firſt Scripture CONCORDANCE, with a view of rendering this work an uſeful index to the Scripture. The *chapters* were again ſubdivided, not into verſes, but by the letters A, B, C, D, E, F, G, placed in the margin at an equal diſtance from each other, according to the length of the *chapters*. In ſome, all the ſeven letters were uſed; in others fewer, as the length of the *chapters* required. In 1445, Rabbi Nathan, a famous rabbi among the Weſtern Jews, finiſhed a Concordance to the Hebrew Bible, in the manner of Hugo's above mentioned; and introduced the diviſion of the Hebrew Bible into *chapters*: he alſo improved on his plan, by uſing the ancient diviſion into verſes, and by numbering them, fixing the numerical letters in the margin at every fifth verſe. Athias, in his edition of the Bible, 1661 and 1667, introduced the Indian figures, and placed them at every verſe. Vatablus publiſhed a Latin Bible, in which the ſame kind of diviſion was adopted; though ſome ſay this diviſion and diſtinction by numbers was firſt uſed in R. Stephens's Latin Bible, publiſhed at Paris, 1557. R. Stephens made the ſame diviſion of the *chapters* of the New Teſtament into verſes, for the ſake of a Concordance to the Greek Teſtament, which was printed by his ſon H. Stephens.

CHAPTERS, *the three*, is a phraſe famous in *Eccleſiaſtical Hiſtory*, ſignifying a volume publiſhed by Theodoret, an adherent of Neſtorius, againſt St. Cyril; conſiſting of a letter of Ibas prieſt of Nedeſſa, to Maris a biſhop of Perſia; of extracts from the works of Diodorus of Tarſus, and Theodore of Mopſueſtia, wherein the ſame doctrines were taught, that were contended for by Neſtorius; and of two pieces of Theodoret, the one againſt the council of Epheſus, the other againſt the anathemas of St. Cyril.

Theſe make the famous three *chapters*; which were firſt condemned by an edict of Juſtinian, A. D. 544, and ſince by various councils, and many popes.

CHAPTREL. See IMPOST.

CHAR, in *Ichthyology*. See CHARRE.

CHAR *of lead*, denotes the quantity of thirty pigs.

CHARA, in *Botany*, the name given by Linnæus to a genus of plants, of the *monoecia monandria* claſs; reſembling the horſe-tails in general appearance, and called by ſome HIPPURIS. The characters of the genus are theſe: the cup is very ſmall, and conſiſts of two leaves. Vaillant deſcribes a monopetalous flower in this cup; but others ſay there is no flower or corolla at all. There is no appearance of ſtamina, but the ſingle anthera or apex is of a globoſe figure, and is affixed to the cup: the germen of the piſtil is of an oval figure: there is no ſtyle, but the ſtigmas are three in number, and are very broad: the ſeed is ſingle, and of an oval oblong figure.

CHARA, in *Aſtronomy*, the name of one of the CANES *venatici*.

CHARABE, or CARABE, is ſometimes uſed for AMBER; as alſo for the juice of the poplar-tree.

CHARACTER, in a general ſenſe, ſignifies a mark, or figure drawn on paper, metal, ſtone, or other matter, with a pen, graver, chiſſel, or other inſtrument, to ſignify, or denote any thing.

The word is χαρακτηρ; formed from the verb χαρασσειν, *inſculpere, to engrave, impreſs, &c.*

The various kinds of *characters* may be reduced to three heads, viz. *literal characters, numeral characters*, and *abbreviations.*

CHARACTER, *literal*, is a letter of the alphabet, ſerving to indicate ſome articulate ſound, expreſſive of ſome idea, or conception of the mind.

Theſe may be divided, with regard to their nature and uſe, into *nominal, real, and emblematical.*

CHARACTERS, *nominal*, are thoſe we properly call *letters*; which ſerve to expreſs the names of things.

CHARACTERS, *real*, are thoſe that, inſtead of names, expreſs things and ideas.

CHARACTERS, *emblematical*, or *ſymbolical*, have this in common with real ones, that they expreſs the things themſelves; but they alſo have this further, that they in ſome meaſure perſonate them, and exhibit their form: ſuch are the hieroglyphics of the ancient Egyptians.

CHARACTERS, *literal*, may be again divided, with regard to their invention and uſe, into *particular* and *general.*

CHARACTERS, *particular*, are thoſe peculiar to this or that nation; or that have been ſo: ſuch are the Roman, Italic, Greek, Hebrew, Arabic, Gothic, Chineſe, &c. *characters.*

CHARACTERS, *univerſal*, are alſo *real characters*, and make what ſome authors call a *philoſophical language.*

The diverſity of *characters* uſed by the ſeveral nations to expreſs the ſame idea, is found the chief obſtacle to the advancement of learning: to remove this, ſeveral authors have taken occaſion to propoſe plans of *characters* that ſhould be univerſal, and which each people ſhould read in their own language. The *character* here is to be real, not nominal; to expreſs things, and notions; not, as the common ones do, letters, or ſounds: yet, to be mute, like letters, and arbitrary; not emblematical, like hieroglyphics.

Thus, every one ſhould retain their own language, yet every one underſtand that of each other, without learning it; only by ſeeing a real or univerſal *character*, which ſhould ſignify the ſame thing to all people; by what ſounds ſoever each expreſſed it in his particular idiom. For inſtance, by ſeeing the *character* deſtined to ſignify *to drink*, an Engliſhman ſhould read *to drink*; a Frenchman, *boire*; Latin, *bibere*; a Greek, πινειν; a Jew, שתה; a German, *trincken*; and ſo of the reſt: in the ſame manner as ſeeing a horſe, each people expreſſes it after their own manner; but all mean the ſame animal.

This real *character* is no chimera; the Chineſe and Japaneſe have already ſomething like it. They have a common *character* which each of thoſe nations underſtand alike in their ſeveral languages; though they pronounce it with ſuch different ſounds, that they do not underſtand a tittle of one another in ſpeaking.

The firſt, and moſt conſiderable attempts for a real *character*, or philoſophical language, in Europe, are thoſe of biſhop Wilkins, and Dalgarme: but theſe, with how much art ſoever they were contrived, have yet proved ineffectual.

M. Leibnitz had ſome thoughts the ſame way: he thinks thoſe great men did not hit the right method; and adds, it was probable, indeed, that, by this means, people, who do not underſtand one another, might eaſily have a commerce together; but that they have not hit on true, *real characters*.

According to him, the *characters* ſhould reſemble thoſe uſed in algebra: which, in effect, are very ſimple, yet very expreſſive; without any thing ſuperfluous or equivocal; and contain all the varieties required.

The real *character* of biſhop Wilkins has its juſt applauſe: Dr. Hook recommends it on his own knowlege and experience, as a moſt excellent ſcheme; and to engage the world to the ſtudy thereof, publiſhed ſome fine inventions of his own therein.

M. Leibnitz tells us, he had under conſideration *an alphabet of human thoughts*; in order to a new philoſophical language, on his own ſcheme; but his death prevented this from being brought to maturity.

M. Lodwic, in the Philoſophical Tranſactions, gives us a plan of *an univerſal alphabet*, or *character* of another kind: this was to contain an enumeration of all ſuch ſingle ſounds, or letters, as are uſed in any language; by means whereof people ſhould be enabled to pronounce truly and readily any language; to deſcribe the pronunciation of any language that ſhould be pronounced in their hearing; ſo, as others accuſtomed to this language, though they had never heard the language pronounced, ſhould at firſt be able truly to pronounce it: and, laſtly, this *character* to ſerve as a ſtandard to perpetuate the ſounds of any language. Abridgm. vol. iii. p. 373.

In the Journal Litteraire, an. 1720, we have a very ingenious project for an univerſal *character*: the author, after obviating the objections that might be made againſt the feaſibleneſs of ſuch ſchemes in the general, propoſes his own: his *characters* are to be the common Arabic, or numeral figures. The combinations of theſe nine are ſufficient to expreſs diſtinctly an incredible quantity of numbers, much more than we ſhall need terms to ſignify our actions, goods, evils, duties, paſſions, &c. Thus is all the trouble of framing and learning any new *characters* at once ſaved; the Arabic figures having already all the univerſality required.

The advantages are immenſe: for, 1. We have here a ſtable, faithful interpreter; never to be corrupted or changed, as the popular languages continually are. 2. Whereas the difficulty of pronouncing a foreign language, is ſuch as uſually gives the learner the greateſt trouble, and there are even ſome ſounds which foreigners never attain to; in the *character* here propoſed, this difficulty has no place: every nation is to pronounce them according to the particular pronunciation that already obtains among them. All the difficulty is, the accuſtoming the pen and the eye to affix certain notions to *characters* that do not, at firſt ſight, exhibit them. But this trouble is no more than we find in the ſtudy of any language whatever.

The inflexions of words are here to be expreſſed by the common letters: for inſtance, the ſame *character* ſhall expreſs a *filly*, or a *colt*, a *horſe*, or a *mare*, an *old horſe*, or an *old mare*, as accompanied with this or that diſtinctive letter, which ſhall ſhew the ſex, youth, maturity, or old age: a letter is alſo to expreſs the bigneſs or ſize of things; thus, v. g. a man with this or that letter, to ſignify a *great man*, or a *little man*, &c. The uſe of theſe letters belongs to the grammar, which once well underſtood, would abridge the vocabulary exceedingly. An advantage of this grammar is, that it would only have one declenſion, and one conjugation: thoſe numerous anomalies of grammarians are exceeding troubleſome, and ariſe hence, that the common languages are governed by the populace, who never reaſon on what is beſt: but in the *character* here propoſed, men of ſenſe introducing it, would have a new ground, whereon to build regularly.

The difficulty is not in inventing the moſt ſimple, eaſy, and commodious *character*, but in engaging the ſeveral nations to uſe it; there being nothing they agree leſs in, than the underſtanding and purſuing their common intereſt.

Characters, *literal*, again, may be divided, with reſpect to the nations among whom they have been invented, and uſed, into *Greek characters*, *Roman characters*, *Hebrew characters*, &c.

The *character* now ordinarily uſed throughout Europe, is the *Latin character* of the ancients.

The Latin *character* was formed from the Greek, and that from the Phœnician, which Cadmus brought into Greece.

The Phœnician *character* was the ſame with that of the ancient Hebrew, which ſubſiſted to the time of the Babyloniſh captivity; after which they uſed that of the Aſſyrians, which is the ſquare Hebrew, now in uſe; the ancient being only found on ſome Hebrew medals, commonly called *Samaritan medals*.

Poſtellus, and others ſhew, that beſide the Phœnician, the Chaldee, Syriac, and Arabic *characters*, were likewiſe formed from the ancient Hebrew.

The French were the firſt who, with the Latin of St. Gregory, admitted the Latin *characters*. And in a provincial ſynod, held in 1091, at Leon in Spain, the uſe of the Gothic *characters* invented by Ulfilas, was aboliſhed, and the Latin ones eſtabliſhed.

Medalliſts obſerve, that the Greek *character*, conſiſting only of majuſcule letters, has preſerved its uniformity on all medals, as low as the times of Gallienus; there being no alteration found in the turn of the *character*, notwithſtanding the many conſiderable ones both in the uſe and pronunciation. From the time of Gallienus, it appears ſomewhat weaker and rounder: from the time of Conſtantine to Michael, the ſpace of five hundred years, we find only Latin *characters*; and after Michael, the Greek *characters* re-commence; but from that time they began to alter with the language, which was then a mixture of GREEK and LATIN.

The LATIN medals preſerve both their *character* and language, as low as the tranſlation of the ſeat of the empire to Conſtantinople. Towards the time of Decius, the *character* began to alter, and to loſe of its roundneſs and beauty: ſome time after it retrieved itſelf, and ſubſiſted tolerably till the time of Juſtin; when it fell into the laſt barbarity mentioned, under Michael; though it afterwards grew worſe, and degenerated into the Gothic: ſo that the rounder and better formed the *character* is on a medal, the greater pretence it has to antiquity.

Characters, *numeral*, are thoſe uſed to expreſs numbers.

Numeral characters are either *letters*; or *figures*, otherwiſe called digits.—The kinds now chiefly in uſe, are the Common, and the Roman: to which may be added the GREEK, and another called the FRENCH *character*; as alſo the letters of other alphabets which have been made uſe of to expreſs numbers.

COMMON *character* is that ordinarily called the *Arabic*, as ſuppoſed to have been invented by the Arab aſtronomers; though the Arabs themſelves call it the *Indian character*; as if they had borrowed it from the people of India.

The *Arabic characters* are ten, viz. 1, 2, 3, 4, 5, 6, 7, 8, 9, 0; the laſt is called *cipher*.

The *Arabic character* is uſed almoſt throughout Europe, and that on almoſt all occaſions; in commerce, in meaſuring, in aſtronomical calculations, &c.

Roman character conſiſts of the majuſcule letters of the Roman alphabet; whence probably its name: or perhaps, from its being uſed by the ancient Romans on their coins, and in the inſcriptions of their public monuments, erected in honour of their gods, and great men; on their ſepulchres, &c.

The numeral letters that compoſe the Roman *character* are in number ſeven, viz. I, V, X, L, C, D, M.

The I denotes one, V five, X ten, L fifty, C a hundred, D five hundred, and M a thouſand.

The I, repeated twice, makes two, II; thrice, three, III; four is expreſſed thus, IV, I before V or X taking an unit from the number expreſſed by each of thoſe letters.

To expreſs ſix, an I is added to a V, VI; for ſeven, two, VII; and for eight, three, VIII: nine is expreſſed by an I before X, IX; agreeably to the preceding remark.

The like remark may be made of the X before L or C, except that the diminution is by tens, not units: thus, XL ſignifies forty, and XC ninety; an L followed with an X, ſixty, LX, &c. The C before D or M, diminiſhes each by a hundred.

Beſides the letter D, which expreſſes five hundred, that number may alſo be expreſſed by an I before a C inverted, thus, IↃ; and thus, in lieu of the M, which ſignifies a thouſand, is ſometimes uſed an I between two C's, the one direct, the other inverted: agreeable to this, ſix hundred may be expreſſed IↃC; and ſeven hundred, IↃCC, &c.

The addition of C and Ↄ before, or after, raiſes CIↃ by tens thus, CCIↃↃ, 10000; CCCIↃↃↃ, 100,000, &c.

This is the common way of notation, formerly uſed by the Romans; who alſo expreſſed any number of thouſands by a line drawn over any numeral leſs than a thouſand; e. g. $\overline{\mathrm{V}}$, 5000; $\overline{\mathrm{LX}}$, 60,000: ſo likewiſe $\overline{\mathrm{M}}$ is 1,000,000; $\overline{\mathrm{MM}}$ is 2,000,000, &c.

Beſides which, (I.) certain liberties or variations have been admitted, at leaſt by ſome modern writers; e. g. IIX, 8; IICIX, 89. (II.) And certain *characters* have been uſed, which ſeem to have been derived from the letters; e. g. M, by which they expreſs (Mille) 1000, was formed from CXↃ, or CIↃ; half of which, viz. IↃ, ſtood for 500. (III.) And for the eaſier writing of theſe *characters*, 1. IↃ ſeems to have been altered into D; 2. IↃↃ into Ѧ, or V̄; 3. CIↃ into ∞ or ψ: whence ΨΥ, 1000; ΨΨ, 200, V. X.

In Roman inſcriptions, we meet with the *characters* ↀ and ∞, uſed to expreſs a thouſand. The uſual note of a thouſand, is either I between two CC's (direct and reverſed) thus, CIↃ; or elſe X, thus, CXↃ. The former figure, when cloſed at top, exactly reſembles an ancient M, thus, ↀ; and the latter, when ſhut up, the figure of 8, inclined thus ∞.

We alſo find, in ſome inſcriptions, the *character* ⊗, which is X between two CↃ's, but cloſed on all ſides. But the learned Dr. Taylor ſeems to ſuſpect the accuracy of the copy of the inſcription from whence this *character* is taken. See Phil. Tranſ. Nº 482. § 2. D

As to the origin and uſe of the *character* X, ſo often met with on the coins, utenſils, and manuſcripts of the ancients; ſee X.

Characters, *Hebrew*. See **Hebrew**.

Greek numerals. The Greeks had three ways of expreſſing numbers. (I.) The moſt ſimple was, for every ſingle letter, according to its place in the alphabet, to denote a number from α 1 to ω 24; in which manner the books of Homer's Ilias are diſtinguiſhed. (II.) Another way was by dividing the alphabet into, (1.) 8 Units: α 1, β 2, &c. (2.) 8 Tens: ι 10, κ 20, &c. (3.) 8 Hundreds: ρ 100, σ 200, &c. N. B. Thouſands they expreſſed by a point, or accent under a letter, e. g. ͵α 1000, ͵β 2000, &c. (III.) A third way was by ſix capital letters, thus, I [ια for μια] 1, Π [ϖεντε] 5, Δ [δεκα] 10, H [Ηεκατον] 100, X [χιλια] 1000, M [μυρια] 10000: and when the letter Π incloſed any of theſe, except I, it ſhewed the incloſed letter to be five times its own value, as, $|\overline{\Delta}|$ 50, $|\overline{\mathrm{H}}|$ 500, $|\overline{\mathrm{X}}|$ 5000, $|\overline{\mathrm{M}}|$ 50000.

N. B. 6,90,900 are expreſſed by *character* ϛ.

Hebrew numerals. The Hebrew alphabet was divided into 9 Units: א 1, ב 2, &c.—9 Tens: י 10, כ 20, &c.—9 Hundreds: ק 100, ר 200, &c. ך 500, ם 600, ן 700, ף 800, ץ 900.—Thouſands, (1.) were ſometimes expreſſed by the units prefixed, to hundreds, as, אדלר, 1534, &c. and even to tens, as, אע, 1070, &c. (2.) But generally by the word אֶלֶף, 1000; אַלְפַּיִם, 2000; אֲלָפִים, with the other numerals prefixed, to ſignify the number of thouſands: e. g. גאֲלָפִים, 3000, &c.

Character, *French*, ſo called, becauſe invented, and chiefly uſed by the French, is more uſually denoted, *character of account*, or *finance*.

It conſiſts of ſix figures; partly taken from the letters of the uſual current hand, and partly invented by the contriver; the ſix *characters* are *j*, *b*, *x*, L, C, γ. The *j* conſonant ſtanding for one, the *b* for five, the *x* for ten, the L for fifty, the C for an hundred, and the laſt *character* γ for a thouſand.

This *character* is only an imitation of the Roman *character*; and its uſe in moſt reſpects the ſame, particularly in what relates to the combination of certain letters, which placed before or after others, diminiſh or increaſe their value. Indeed it has theſe things peculiar in it, that when ſeveral things occur ſucceſſively, only the laſt is expreſſed. 2dly, That ninety, and the following numbers to one hundred, are expreſſed, thus, $jjjj^{xxx}$, ninety; $jjjj^{xxxj}$, ninety-one; $jjjj^{xxjj}$, &c.

It is principally uſed in the chambers of accounts, in the accounts given in by treaſurers, receivers, farmers, and other perſons concerned in management of the revenue.

Characters, in *Printing*, denote the letters or types, by the various arrangement whereof, are compoſed forms; whence impreſſions are taken, by means of a preſs, on paper.

For the method of caſting theſe Characters, ſee *Letter* **Foundery**.

Character, is alſo uſed in ſeveral of the arts, for a ſymbol, contrived for a more conciſe, immediate, and artful conveyance of the knowledge of things.

In this ſenſe of the word, Paulus Diaconus refers the invention of *characters* to Ennius; who, he ſays, contrived the firſt eleven hundred. To theſe were many more added by Tyro, Cicero's freedman, and by Philagyrus, Fannius, and Aquila, freedmen of Mæcenas.

Laſtly, L. Annæus Seneca made a collection of them, reduced them into order, and increaſed their number to five thouſand. Tyro's notes may be ſeen at the end of Gruter's inſcriptions.

Valerius Probus, a grammarian, in the time of Nero, laboured to good purpoſe in explaining the notes of the ancients. P. Diaconus wrote an ample treatiſe of the explication of the *characters* in law, under the reign of the emperor Conrad I. and Goltzius another for thoſe of medals.

Characters, or ſymbols, are now chiefly affected in the ſeveral parts of mathematics; particularly in algebra, geometry, trigonometry, and aſtronomy: as alſo in medicine, chemiſtry, muſic, &c. The principal of each kind we ſhall here ſubjoin.

Characters *uſed in Arithmetic and Algebra.*

a, *b*, *c*, and *d*, the firſt letters of the alphabet, are the ſigns or *characters* that denote given quantities; and *z*, *y*, *x*, &c. the laſt letters, are the *characters* of quantities ſought. Some for the former, uſe conſonants, or large letters, and vowels, or ſmall ones, for the latter.

Note, Equal quantities are denoted by the ſame *character*.

m, *n*, *r*, *s*, *t*, &c. are *characters* of indeterminate exponents, both of ratios and powers; thus x^m, y^n, z^r, &c. denote indeterminate powers of different kinds; mx, ny, rz, different multiples, or ſubmultiples of the quantities x, y, z, according as m, n, r, are either whole numbers or fractions.

+ Is the ſign of real exiſtence, and is called the *affirmative*, or *poſitive* ſign; importing the quantities to which it is prefixed, to have a real and poſitive nature.

It is alſo the ſign of addition, and is read *plus*, or *more*; thus $9+3$, is read 9 *plus* 3; or 9 more 3: that is, the ſum of 9 and 3, equal to 12.

— Before a ſingle quantity, is the ſign of *negation*, or *negative* exiſtence; ſhewing the quantity to which it is prefixed to be leſs than nothing.

Between quantities, it is alſo the ſign of ſubtraction, and is read *minus*, or *leſs*; thus $14-2$, is read 14 *minus*, or abating 2; that is, the remainder of 14, after 2 has been ſubtracted, viz. 12.

= Is the ſign of *equality*: thus, $9+3=14-2$; ſignifies 9 *plus* 3, to be *equal* to 14, *minus* 2.

This *character* was firſt introduced by Harriot: Des Cartes in lieu of it uſes ∞. Before Harriot there was no ſign of equality at all.

Wolfius, and ſome other authors, uſe the ſame *character*, = for the identity of ratios; or to denote the terms to be in a geometrical proportion; which moſt authors expreſs thus ::

× Is the ſign of *multiplication*, denoting the quantities on either ſide to be multiplied into one another: thus, 4×6, is read 4 multiplied by 6; or the factum, or product of 4 and $6=24$; or the rectangle between 4 and 6.

Ordinarily, however, in algebra, the ſign is omitted, and the two quantities put together: thus bd expreſſes the product of the two numbers denoted by b and d, which ſuppoſe 2 and 4, the product whereof is 8, ſignified by bd.

Wolfius, and others, make the ſign of multiplication a dot (.) between the two factors: thus 6.2 ſignifies the product of 6 and $2=12$.

Where one or both the factors are compounded of ſeveral letters, they are diſtinguiſhed by a line drawn over them: thus, the factum of $a+b-c$ into d, is wrote $d\times\overline{a+b-c}$.

Guido Grandio, and after him Leibnitz, Wolfius, and others, to avoid the perplexity of lines, in lieu thereof diſtinguiſh the compound factors, by including them in a parentheſis, thus $(a+b-c)\,d$.

÷ Is the *character* of *diviſion*: thus, $a \div b$ denotes the quantity a to be divided by b.

Indeed, ordinarily, in algebra, the quotient is expreſſed fraction-wiſe; thus, $\frac{a}{b}$ denotes the quotient of a divided by b.

Wolfius, &c. make the ſign of diviſion (:) thus, $8:4$ denotes the quotient of 8 divided by $4=2$.

If either the diviſor or dividend, or both, be compoſed of ſeveral letters, v. g. $a+b$, divided by c; inſtead of writing the quotient fraction-wiſe, thus, $\frac{a+b}{c}$, Wolfius, &c. include the compound quantities in a parentheſis; thus, $(a+b:c)$, or $(a+b):c$.

@ Is the *character* of *involution*, or of producing the ſquare of any quantity, by multiplying it by itſelf.

ω The *character* of *evolution*, or of extracting the roots out of the ſeveral powers; the reverſe of @.

⌉ Is the ſign of *majority*, or of the exceſs of one quantity beyond another: ſome uſe this ⊏, or this ⊐.

∠ Is the ſign of *minority*. Theſe two *characters* were firſt introduced by Harriot, and have been ſince uſed by Wallis and Lamy. Other authors uſe others; ſome this ⊐.

∽ The ſign of SIMILITUDE commended in the Miſcellanea Berolinenſia, and uſed by Leibnitz, Wolfius, and others; though the generality of authors uſe none. The ſame *character* is uſed by other authors for the difference between two quantities, while it is yet unknown which is the greater.

√ Is the *character* of *radicality*, and ſhews that the root of the quantity, to which it is prefixed, is extracted, or to be extracted: thus, $\sqrt{25}$, or $\sqrt[2]{25}$, denotes the ſquare root of 25, viz. 5; and $\sqrt[3]{25}$, the cube root of 25. See ROOT.

This *character* ſometimes affects ſeveral quantities diſtinguiſhed by a line drawn over them, thus, $\sqrt{b+d}$, denotes the ſquare root of the ſum of b and d.

Wolfius, &c. in lieu hereof, includes the roots compoſed of ſeveral quantities in a parentheſis, adding its index: thus, $(a+b-c)^2$ denotes the ſquare of $a+b-c$, ordinarily written $\overline{a+b-c}^2$.

: Is the *character* of arithmetical proportion disjunct; thus, $7.3:13.9$, intimates 3 to be exceeded by 7, as much as 9 by 13; viz. by 4.

:: This is the *character* of identity of ratio, and geometrical proportion disjunct; thus, $8:4::30:15$, expreſſes the ratio of 30 to 15, to be the ſame with that of 8 to 4; or that the four terms are in geometrical proportion, viz. 8 to 4, as 30 to 15.

Wolfius, in lieu hereof, uſes the *character* of equality =; which he prefers to the former, as being more ſcientifical and expreſſive.

∺ The *character* of geometrical proportion continued, implying the ratio to be carried on without interruption: thus, 2, 4, 8, 16, 32, ∺ are in the ſame uninterrupted proportion.

When one or more terms in an equation are wanting, their places are uſually marked with one or more aſteriſms; as,

$$\left.\begin{array}{r} y^2+py+\frac{1}{4}p^2 \\ -py-\frac{1}{2}p^2 \\ +q \end{array}\right\} = 0.\quad y^2 * -\frac{1}{4}p^2+q=0.$$

Character of *decimals*. See SEPARATRIX.

CHARACTERS *uſed in Aſtronomy*.

♄ *Character* of Saturn.
♃ Jupiter.
♂ Mars.
♀ Venus.
☿ Mercury.
☉ The Sun.
☾ The Moon.
⊕ The Earth, or ♁.
♈ Aries.
♉ Taurus.
♊ *Character* of Gemini.
♋ Cancer.
♌ Leo.
♍ Virgo.
♎ Libra.
♏ Scorpio.
♐ Sagittarius.
♑ Capricornus.
♒ Aquarius.
♓ Piſces.

CHARACTERS *of the Aſpects, Nodes, &c.*

S Conjunction.
SS Semiſextile.
* Sextile.
Q Quintile.
□ Quartile.
Td Tridecile.
△ Trine.
Bq Biquentile.
Vc Quincunx.
☍ Oppoſition.
☊ Scorpion's head.
☋ Scorpion's tail.

CHARACTERS *of Time*.

A. M. *(ante meridiem)* or M. morning.
O. or M. noon.
P. M. *(poſt meridiem)* or A. afternoon.

CHARACTERS *uſed in Chemiſtry, Medicine, and Pharmacy.*

Authors are very redundant, and even fanciful, in pharmaceutical *characters*: but the moſt uſual are exhibited in the *Table of* CHEMICAL, *&c. Characters.*

CHARACTERS *in Commerce.*

D° *Ditto*, the ſame.
N° *Numero*, or number.
F° *Folio*, or page.
R° *Recto*, } folio.
V° *Verſo*, } folio.
l. or £. *ſterling*, Pound ſterling.
s. Shillings.
d. Pence, or Deniers.
℔ Pound weight.
C. or ⊕ Hundred weight, or 112 pound.
qr Quarters.
⅌ *Per*, or by. As ⅌ *ann.* by the year. ⅌ *cent.* in the hundred, &c.
*R*ˣ Rixdollar.
*D*ᵈ Ducat.
P. S. Poſtſcript.

CHARACTERS *in Geometry, and Trigonometry.*

‖ Is the *character* of paralleliſm; implying two lines or planes to be equidiſtant from one another. See PARALLEL.

△ *Character* of a triangle. See TRIANGLE.
□ A ſquare.
▯ ▭ A rectangle.
⊙ A circle.
$\overset{\vee}{=}$ Equality of angles.
$\overset{1}{=}$ Equality of ſides.
< An angle.
∟ A right angle.
⊥ A perpendicular.

° A degree; thus, 75° implies 75 degrees.

′ A minute, or prime; thus, 50′ implies 50 minutes.

″, ‴, ⁗, &c. the characters of ſeconds, thirds, fourths, &c. of a degree: thus, 5″, 6‴, 18⁗, 20′′′′′, denote 5 ſeconds, 6 thirds, 18 fourths, and 20 fifths.

Note. The ſame *characters* are ſometimes uſed, where the progreſſion is by tens, as it is here by ſixties.

CHARACTERS *in Grammar, Rhetoric, Poetry, &c.*

, *Character* of a *Comma*.
; *Semicolon*.
: *Colon*.
. *Period*.
! *Exclamation*.
? *Interrogation*.
() *Parentheſis*.
- *Hyphen*.
’ *Apoſtrophe*.
´ *Emphaſis*, or accent.
˘ *Breve*.
¨ *Dialyſis*.
^ *Caret*, and *Circumflex*.
“ *Quotation*.
† and * *References*.
§ *Section*, or *Diviſion*.
¶ *Paragraph*.

L L. D. *Doctor of Laws*, or, *of the Civil and Canon Law*.
S S. T. D. *Sacro-Sanctæ Theologiæ Doctor*, or D. D. i. e. *Doctor in Divinity*.
M. D. *Doctor in Phyſic*.
V. D. M. *Verbi Dei Miniſter*, *Miniſter of the Word of God*.
A. M. *Artium Magiſter*, *Maſter of Arts*.
A. B. *Artium Baccalaureus*, *Bachelor of Arts*.
F. R. S. *Fellow of the Royal Society*.
F. A. S. *Fellow of the Antiquarian Society*.

CHARACTERS *uſed in the arithmetic of Infinites.*

. The *character* of an infiniteſimal, or fluxion: thus, $\dot{x}$, $\dot{y}$, &c. expreſs the fluxions, or differentials of the variable quantities x and y; two, three, or more dots, denote ſecond, third, or higher fluxions.

This method of denoting the fluxions, we owe to Sir Iſaac Newton, the inventor of fluxions: it is adhered to by the Engliſh; but foreigners generally follow M. Leibnitz, and in lieu of a dot prefix the letter d to the variable quantity; on pretence of avoiding the confuſion ariſing from the multiplication of dots, in the differencing of differentials.

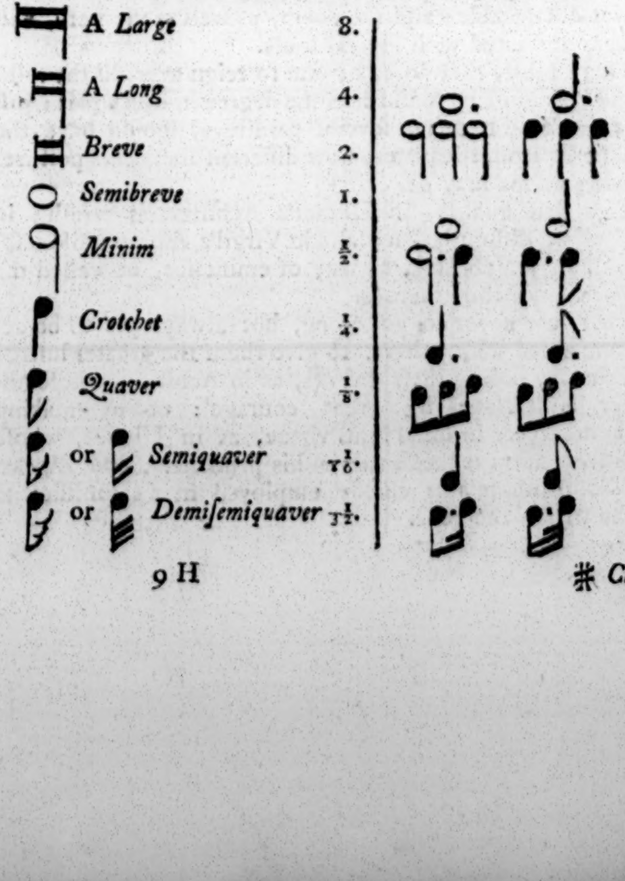
d The *character* of a differential of a variable quantity; thus, dx is the differential of x; dy the differential of y. The *character* was firſt introduced by M. Leibnitz; and is followed by all but the Engliſh. See CALCULUS *Differentialis*.

CHARACTERS *among the Ancient Lawyers, and in Ancient Inſcriptions.*

§ *Paragrapho.*
ff. *Digeſtis.*
E. *Extra.*
S.P.Q.R. *Senatus Populuſque Romanus.*
B. AV. *Bonis avibus*, or *Bonis auſpiciis.*
Scto. *Senatuſconſulto.*
P. P. *Pater Patriæ.*
C. *Code.*
CC. *Conſules.*
T. *Titulus*, &c.

CHARACTERS *uſed in Muſic.*

Characters of the muſical notes, with their proportions.



♯ *Character* of a *ſharp note.* This *character* at the beginning of a line, or ſpace, denotes all the notes in that line, or ſpace, to be taken a ſemitone higher than in the natural ſeries. And the ſame affects all their octaves, above and below, though not marked.

When the *character* is prefixed to any particular note, it ſhews that note alone to be a ſemitone higher than it would be without ſuch *character*.

♭ *Character* of a *flat note.* This *character*, at the beginning of a line, or ſpace, ſhews, that all the notes in that line, or ſpace, are to be taken a ſemitone lower than in the natural ſeries; affecting, in like manner, all the octaves, both above and below. When prefixed to any note, it ſhews that note alone to be a ſemitone lower than it would otherwiſe be.

♮ *Character* of a *natural note.* Where, in a line or ſeries of artificial notes, marked at the beginning for either ſharps or flats, the natural note happens to be required, it is denoted by this *character*.

𝄞 *Character* of *treble clef.*

𝄡 *Mean clef.*

𝄢 *Baſs clef.*

For *characters* in *Printing*, ſee **Correction.**

Characters *of Time.*

2, or $\frac{2}{4}$, or $\frac{4}{8}$; *characters* of *common*, or *duple time*; ſignifying the meaſure of two crotchets to be equal to two notes; whereof four make a ſemibreve.

C ₵ Ͽ *Characters* that diſtinguiſh the movements in *common time*: the firſt implying ſlow; the ſecond, briſk; third, very quick.

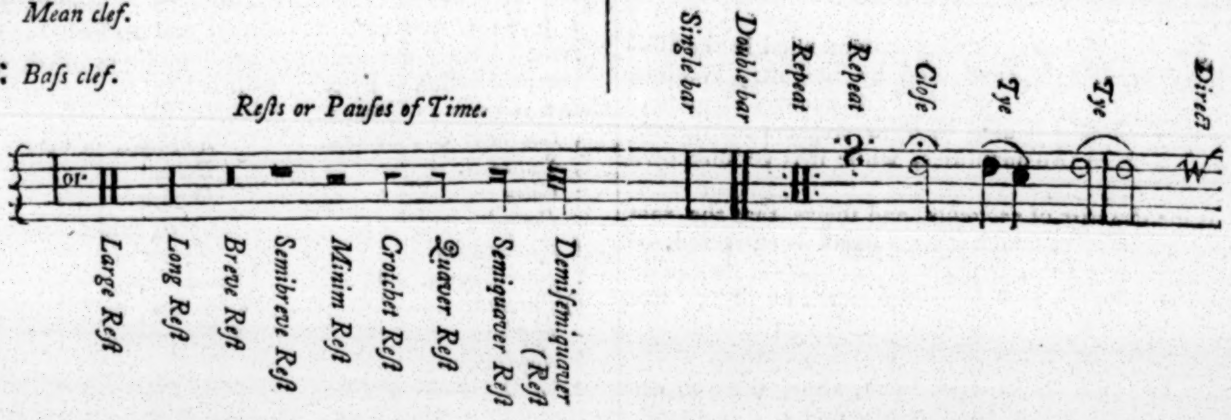
$\frac{3}{10}$, $\frac{3}{1}$, $\frac{3}{2}$, $\frac{3}{8}$, $\frac{3}{16}$; *characters* of the *ſimple triple time*; whoſe meaſure is equal either to three ſemibreves, or to three minims, &c.

$\frac{6}{4}$, or $\frac{6}{8}$, or $\frac{6}{16}$; *characters* of *mixed triple time*; where the meaſure is equal to ſix crotchets, or ſix quavers, &c.

$\frac{9}{4}$, or $\frac{9}{8}$, or $\frac{9}{16}$; $\frac{9}{1}$, or $\frac{9}{2}$; *characters* of *compound triple time.*

$\frac{12}{4}$, or $\frac{12}{8}$, or $\frac{12}{16}$; or $\frac{12}{1}$, or $\frac{12}{2}$; *characters* of the fourth ſpecies of *triple time*; called, *the meaſure of twelve times.*

Reſts or Pauſes of Time.



Characters *on Tomb-ſtones.*

S. V. *Siſte, Viator*; *Stay, Traveller.*

M. S. *Memoriæ Sacrum*; *Sacred to memory.*

D. M. *Diis Manibus.*

IHS. *Jeſus.*

XP. A *character* found on ancient monuments; about the meaning whereof authors are not agreed. See **Catacomb.**

Character is alſo uſed for a certain manner, air, or aſſemblage of qualities, reſulting from ſeveral particular marks, which diſtinguiſh a thing from any other, ſo as it may be known thereby.

Thus, we ſay, the *character* of Achilles; generoſity and greatneſs of mind was the *character* of the Romans; Cicero had a *character* of politeneſs, which is wanting in Demoſthenes; every paſſion has its peculiar *character*.

The writers of *characters* are, Theophraſtus, whoſe fragments are ſtill extant; Du Moulin, in his Exemplar Morum; Paſchal, in his Characteres Virtutum & Vitiorum; M. de la Chambre, in his Characters of the Paſſions; and De la Bruyere, in his Characters and Manners of the Age.

Character, in *Poetry*, eſpecially the epopea and drama, is the reſult of the manners, or that which each perſon has peculiar and ſingular in his manners, whereby he is diſtinguiſhed from others.

The poetical *character*, Boſſu obſerves, is not properly any virtue or quality in particular; but it is a compoſition of ſeveral, mixed and combined in various degrees, according to the occaſions of the fable, and the unity of the action. All the ſimple qualities that enter this compound, muſt not have the ſame rank, nor be equal to each other: ſince, in that caſe, one prevailing on one occaſion, and another on another, the *character* will appear changeable; and the poem, as well as the hero, will ſeem animated with ſeveral ſouls.

There muſt, therefore, be one to reign over all the reſt; and this muſt be found in ſome degree in every part: juſt as the ſame hero, in ſeveral paintings, ſhould have the ſame lines and features, how different ſoever his poſtures and paſſions may be.

This firſt quality, in Homer's Achilles, is wrath; in Ulyſſes, diſſimulation; and in Virgil's Æneas, mildneſs: each of which may, by way of eminence, be called the *character* of thoſe heroes.

Theſe are never to go alone, but always are to be accompanied with others, to give them the greater luſtre; either by hiding their defects, as in Achilles, whoſe anger is palliated by great courage: or by making them center in ſome ſolid virtue, as in Ulyſſes, whoſe diſſimulation makes a part of his prudence; and Æneas, whoſe mildneſs is chiefly employed in a ſubmiſſion to the will of the gods.

Theſe ſecondary qualities of courage, prudence, and ſubmiſſion, make the goodneſs of the *characters* of thoſe heroes, and even of the poems.

Boſſu adds, that the quality of courage muſt always have a ſhare in the *character* of a hero, to ſerve as a ſupport to the reſt: the heroic *character*, therefore, he makes a compound of three kinds of qualities. Thoſe of the firſt kind are neceſſary and eſſential to the fable; thoſe of the ſecond are the ſupplements, or embelliſhments of the firſt; and courage, which ſuſtains the other two, makes the third.

The firſt, which is the chief, is to be ſome univerſal quality, to have place on all occaſions, and to diſtinguiſh the hero wherever he is found.

For the unity of *character*, we have Horace's expreſs command, *Sit quodvis ſimplex duntaxat & unum.* Boſſu adds, that the *character* is not leſs the ſoul of the hero, and the whole action, than the fable is of the poem; and of conſequence the unity muſt be as exact in the one as the other: which accordingly we find obſerved both by Homer and Virgil.

The unity of *character* is ſomewhat different from that of the manners: in the latter, the unity or equality conſiſts in not giving contrary ſentiments to the ſame perſon; which is not ſufficient to the unity of *character*; but to this muſt be added, that the ſame ſpirit muſt always appear on all occaſions, whether contrary, or otherwiſe: thus, Æneas ſhewing great goodneſs in the firſt part of the poem, and much valour in the ſecond, but without diſcovering any of his former piety, and gentleneſs; there had been no offence againſt the evenneſs of the manners, but much againſt the unity of the *character*.

So that beſides the qualities which have their particular place on different occaſions, there muſt be one to have place throughout, and to reign over all the others. Without this there is no *character*: as would be the caſe, ſhould a poet give his hero the piety of Æneas, and the courage of Achilles, without conſidering the ſeverity of the one, and the mildneſs of the other.

A hero, it is true, may be made as brave as Achilles, as mild, or pious, as Æneas, and, if the writer thinks proper, as prudent as Ulyſſes; but it would be a mere chimera to imagine a hero with the particular courage of Achilles, the piety of Æneas, and the prudence of Ulyſſes, at the ſame time.

The unity of *character* is not only to be kept in the hero, and the ſeveral other perſons of the piece; but alſo in that of the poem itſelf: that is, all the *characters*, how oppoſite ſoever, muſt center and re-unite in that of the hero; and be ſo ſwayed by it, as that this alone may ſeem to govern throughout the whole. Thus Homer makes wrath prevail throughout the whole Iliad; and artifice and diſſimulation throughout the Odyſſee: the hero's *character* is perceived every where, has its full ſway, and is favoured by the ſimilitude of the *characters* of ſome of the other perſons. Virgil had a great difficulty to grapple with, to preſerve his unity; becauſe of the direct oppoſition between the humours of his hero, and thoſe of ſome other of his perſons, as Turnus, Mezentius, Dido, &c. He therefore takes care not to carry thoſe oppoſite *characters* to their full length, but moderates and reſtrains them: and as that moderation could not flow naturally from the perſons themſelves, it is produced either by ſome paſſion, as in Dido; or ſome dependence, as in Turnus and Mezentius. To this artifice he adds epiſodes, accommodated to the general *character*, by which he interrupts the particular actions, which require an oppoſite *character*.

Claudian's conduct, in this reſpect, is unpardonable; from the horrible *characters* of Pluto, and the Furies, with all the terrors of hell, he paſſes to the gaiety and pleaſures of the Graces, gilded palaces, flowery fields, &c. He has as many different prevailing *characters* in his three books, as Homer and Virgil in their ſixty.

CHARACTER is alſo uſed for certain viſible qualities, which claim reſpect or reverence, to thoſe veſted therewith.

The majeſty of kings gives them a *character*, which procures reſpect from the people. A biſhop ſhould ſuſtain his *character* by learning and ſolid piety, rather than by worldly luſtre, &c.

CHARACTER is alſo uſed among *Divines*, eſpecially thoſe of the Romiſh church, for an indelible mark, or impreſſion, which certain ſacraments are ſuppoſed to leave behind them in thoſe who receive them.

The ſacraments that leave this *character*, are incapable of being repeated. The *character* is generally ſuppoſed to be ſomething phyſical.

The ſacraments of baptiſm, confirmation, and ordination, in particular, leave ſuch indelible *character*.

CHARACTERS *of fiſhes*, *characteres piſcium*, are thoſe marks by which each particular fiſh is diſtinguiſhed from thoſe other ſpecies of the ſame genus to which it belongs, and by which it is to be referred to its genus. Theſe *characters* are the eſſential foundation of all the natural diviſions in this part of hiſtory, and by means of theſe alone the young ſtudent is led to the real knowlege of the bodies under conſideration, whether according to the works of other authors, or ſome new ſyſtem of his own. The naturaliſts of former ages did not pay a ſufficient regard to theſe marks, and conſequently could not hit upon the natural diviſions of bodies, but had recourſe to the artificial diſtinctions taken from accidents or variable properties in them, and the general external appearance uſually gave rules to them; hence the uncertainty and confuſion of the diviſions of the old authors, and method and regularity of thoſe of the moderns. See GENERICAL *name*.

CHARACTERS *of plants*. See GENUS, &c.

CHARACTERISTIC, in the general, is that which *characterizes* a thing, or perſon, i. e. conſtitutes its *character*, whereby it is diſtinguiſhed from all others.

CHARACTERISTIC is peculiarly uſed in *Grammar*, for the principal letter of a word; which is preſerved in moſt of its tenſes and moods, its derivatives, and compounds.

The *characteriſtic* frequently ſhews its etymology; and ought conſtantly to be retained in its orthography; ſuch is the letter *r* in *courſe*, *fort*, &c.

The *characteriſtics* are of great uſe in the Greek grammar, eſpecially in the formation of the tenſes; as being the ſame in the ſame tenſes of all verbs of the ſame conjugation, excepting in the preſent tenſe, which has ſeveral *characteriſtics*; and the future, the aoriſtus primus, the preterperfect, and the pluſquam perfect tenſe of the fourth conjugation, which have two *characteriſtics*.

CHARACTERISTIC *of a* LOGARITHM, is its INDEX or exponent.

CHARACTERISTIC *triangle of a curve*. See CURVE.

CHARADRIUS, in *Zoology*, a name by which Geſner and Aldrovandus have called the OEDICNEMUS, a bird very improperly called in Engliſh the *ſtone*-CURLEW. Aldrov. lib. xiii. cap. 15.

CHARADRIUS, in the Linnæan ſyſtem of *Zoology*, is a diſtinct genus of birds, of the order of the SCOLOPACES; the diſtinguiſhing character of which is, that the feet have each three toes, and the point of the bill is cylindrical. See *Tab. of Birds*, N° 45.

CHARAG, the tribute which Chriſtians and Jews pay to the grand ſignior.

It conſiſts of ten, twelve, or fifteen francs *per ann.* according to the eſtate of the party. Men begin to pay it at nine, or at ſixteen years old; women are diſpenſed with, as alſo prieſts, rabbins, and religious.

CHARAIMS, a ſect of the Jews in Egypt. They live by themſelves, and have a ſeparate ſynagogue; and as the other Jews are remarkable for their eyes, ſo theſe are for their large noſes, which run through all the families of this ſect. Theſe are the ancient Eſſenes. They ſtrictly obſerve the five books of Moſes, according to the letter, and receive no written traditions. It is ſaid that the other Jews would join the *Charaims*; but thoſe not having obſerved the exact rules of the law with regard to divorces, theſe think they live in adultery.

CHARANTIA, in *Botany*, a name by which ſome authors have called the male balſam. Ger. Emac. Ind. 2.

CHARAX, in *Ichthyology*, a name given by Ælian, Appian, and many other of the Greek writers, to the fiſh called by later writers the CARASSIUS.

It is properly a ſpecies of the CYPRINUS, diſtinguiſhed by the name of the cyprinus with twenty rays in the back fin, and with the *linea lateralis* ſtraight.

CHARBON, in the *Manege*, ſignifies that little black ſpot or mark that remains after a large ſpot, in the cavity of the corner teeth of a horſe. About the ſeventh or eighth year, when the cavity fills, the tooth being ſmooth and equal, it is ſaid to be raiſed.

CHARCOAL, a ſort of artificial coal, or fuel, conſiſting of wood half burnt; chiefly uſed where a clear ſtrong fire, without ſmoke, is required; the humidity of the wood being here moſtly diſſipated, and exhaled in the fire wherein it was prepared.

The microſcope diſcovers a ſurpriſing number of pores in *charcoal*: they are diſpoſed in order, and traverſe it lengthwiſe; ſo that there is no piece of *charcoal*, how long ſoever, but may be eaſily blown through. If a piece be broken pretty ſhort, it may be ſeen through with a microſcope. In a range the eighteenth part of an inch long, Dr. Hook reckoned one hundred and fifty pores; whence he concludes, that in a *charcoal* of an inch diameter, there are not leſs than five millions ſeven hundred twenty-four thouſand pores.

It is to this prodigious number of pores, that the blackneſs of *charcoal* is owing: for the rays of light, ſtriking on the *charcoal*, are received and abſorbed in its pores, inſtead of being reflected; whence the body muſt of neceſſity appear black, blackneſs in a body being no more than a want of reflexion.

Dr. Prieſtley conjectures, that this is owing to the oil of the wood, made empyreumatic, and burnt to a certain degree; and that it is connected with the phlogiſton, united to the earth of the plant, when the union is ſtrengthened by an intenſe heat. The ſame ingenious philoſopher has diſcovered that *charcoal* is an excellent conductor of electricity; and that the degree of its conducting power depends on the degree of heat with which it is prepared; and he aſcribes this power to the phlogiſton united with it in the proceſs, intimating that the ſtrength of the conducting power may depend more on the perfect union between the inflammable principle and its baſe, which reſults from the degree of heat only, than on the quantity of phlogiſton thus united to the earth. He adds, that as *charcoal*, when ſeparated from the external air, will bear a greater degree of heat, without being diſſipated into vapour, than ſilver or gold, it may be poſſible to make this ſubſtance a better conductor of electricity than the moſt perfect metals. Wood in the proceſs of being reduced to *charcoal* is diminiſhed both in weight and bulk: nevertheleſs wood and *charcoal* expand by a certain degree of heat, but the latter in the greateſt proportion; and a greater degree of heat makes them contract.

The noxiouſneſs of air infected with the fumes of burning *charcoal* is well known: the cauſe of this has been ſufficiently explained by Dr. Prieſtley, &c. who accounts for it by the diminution of the air, in conſequence of being overcharged with phlogiſton, and the depoſition of fixed air. See AIR, *fixed*. Prieſtley's Electricity, vol. ii. p. 193. Exper. and Obſ. on Air, vol. i. p. 129. and vol. ii. p. 241. or Phil. Tranſ. vol. lx. art. 19. p. 211.

Mathematical inſtrument-makers, engravers, &c. find *charcoal* of great uſe to poliſh their braſs and copper-plates, after they have been rubbed clean with powdered pumice-ſtone. Mr. Boyle ſays, that the more curious burn it a ſecond time, and quench it in a convenient fluid. Plates of horn are poliſhable the ſame way, and a gloſs may be afterward given with tripoly.

Charcoal and SOOT-*black* are the two moſt durable and uſeful blacks of the painter, and the varniſh-maker. Thoſe of the former kind are uſed both as pigments and pencils; and *charcoal* crayons prepared from the willow are preferred on account of their ſoftneſs. See concerning them Lewis's Commercium Phil. Techn. p. 336.

Charcoal tinges glaſs in fuſion yellow, reddiſh, &c. and by baking ſtains it yellow. See ibid. p. 628. See alſo his obſervations on the differences of different *charcoals*, &c. and on the manner of diſtinguiſhing between the vegetable and animal, ibid. p. 336, & ſeq.

Charcoal was anciently uſed to diſtinguiſh the bounds of eſtates and inheritances; as being ſuppoſed incorruptible, when let very deep within the ground. In effect, it preſerves itſelf ſo long, that there are many pieces found entire in the ancient tombs of the northern nations.

M. Dodart ſays, there is ſometimes found *charcoal* made of corn, probably as old as the days of Cæſar: he adds, that it has kept ſo well, that the wheat may be ſtill diſtinguiſhed from the rye; which he looks on as a proof of its incorruptibility.

Charcoal, *method of making*.—The beſt is that made of oak, cut into lengths of about three feet. The ground whereon the operation is to be performed, is bared of all the turf, and other combuſtible matter; and is in form circular, a ſtake being driven in the center. This area is filled up with wood, eight feet high, placed alternatively lengthwiſe, and perpendicularly; then coped a-top in the form of a ſugar-loaf, and all inequalities filled up with ſmall wood, till it lie very cloſe: the whole is then to be covered over moderately thick with turf, and other rubbiſh.

A moveable ſcreen being then ſet up againſt the wind, the ſtake is pulled up, and fire ſet to the pile, by pouring into the cavity ſome *charcoal*, and other coal fully kindled; the vent, or tunnel a-top, is then covered with turf, and vent-holes are made through the ſtuff that covers the pile, two or three feet apart, quite round, a foot from the top. The next day a new range of holes is made, a foot and a half below the firſt, and thus on to the bottom: obſerving, that as the pile cools, and ſinks to the center, it muſt be continually fed with ſhort wood, that no part remain unfired; and that if any part chars faſter than other, the vent-holes there are to be ſtopped up. A parcel is thus burnt in five or ſix days: as it cools, the ſmoke grows thinner and bluer. The heap requires two or three days to cool; which is promoted by ſtopping the vents, and ſtripping off the covering by degrees, about a yard at a time; at firſt only taking off the coarſeſt part, and leaving the reſt, that the pile may neither cool too faſt, nor endanger the reduction of the whole into aſhes. Laſtly, the coals are taken out from round the bottom, by which means the whole maſs, coals and rubbiſh, ſinks down, and extinguiſhes the fire at once.

Charcoal for powder-mills, is uſually made of elder-wood; the proceſs is the ſame; but is finiſhed in two days.

CHARDS, in *Gardening*.—The *chards* of artichokes are the leaves of good artichoke-plants, tied and wrapped up, all over but the top, in ſtraw, during the autumn and winter; this makes them grow white, and loſe ſome of their bitterneſs.

Chards *of beets* are white beets, covered with dry dung, during the winter-ſeaſon, when they produce large tops, with a downy cotton ſhoot; which is the true *chard*, to be uſed in pottages, intermeſſes, &c.

CHARGE, in *Electricity*, in a ſtrict ſenſe, denotes the accumulation of the electric matter on one ſurface of an electric, as a pane of glaſs, Leyden phial, &c. whilſt an equal quantity paſſes off from the oppoſite ſurface: or, more generally, electrics are ſaid to be *charged*, when the equilibrium of the electric matter on the oppoſite ſurfaces is deſtroyed, by communicating one kind of electricity to one ſide, and the contrary kind to the oppoſite ſide: nor can the equilibrium be reſtored till a communication be made by means of conducting ſubſtances between the two oppoſite ſurfaces. And when this is done, the electric is ſaid to be diſcharged. The *charge* properly refers to one ſide, in contradiſtinction from the other; ſince the whole quantity in the electric is the ſame *before* and *after* the operation of *charging*; and the operation cannot ſucceed, unleſs what is gained on one ſide be loſt by the other, by means of conductors applied to it, and communicating either with the earth, or with a ſufficient number of non-electrics. In order to facilitate the communication of electricity to an electric plate, &c. the oppoſite ſurfaces are coated with ſome conducting ſubſtance, uſually with tin-foil, within ſome diſtance from the edge; in conſequence of which the electricity communicated to one part of the coating is readily diffuſed through all parts of the ſurface of the electric in contact with it; and a *diſcharge* is eaſily made by forming a communication with any conductor from one coating to the other. If the oppoſite coatings approach too near each other, the electric matter forces a paſſage from one ſurface to the other before the *charge* is complete. And ſome kinds of glaſs have the property of conducting the electricity over the ſurface, ſo that they are altogether unfit for the operation of *charging* and *diſcharging*. If indeed the *charge* is too high, and the glaſs plate or phial too thin, the attraction between the two oppoſite electricities forces a paſſage through the glaſs, and makes a ſpontaneous *diſcharge*, and the glaſs becomes unfit for farther uſe. See Conductors, Electrics, Leyden *Phial*, &c.

Charge, in *Gunnery*, the load of a piece; or the quantity of powder and ball, or ſhot, wherewith it is to be prepared for execution.

The rules for *charging* large pieces in war, are, that the piece be firſt cleaned, or ſcoured, within ſide; that the proper quantity of gunpowder be next driven in, and rammed down; care, however, being taken, that the powder be not bruiſed in ramming, for that weakens its effect; that a little quantity of paper, hay, or the like, be rammed over it, and that then the ball, or ſhot, be intruded.

If the ball be red-hot, a tampion, or trencher of green wood, is to be driven in before it.

The weight of gunpowder neceſſary for a *charge*, is commonly in a ſubduple proportion to that of the ball. See Cannon.

In the Britiſh navy, the allowance for thirty-two pounders is but ſeven-ſixteenths of the weight of the bullet. But a late author is of opinion, that if the powder in all ſhip-cannon whatever was reduced to one-third weight of the ball, or even leſs, it would be a conſiderable advantage, not only by ſaving ammunition, but by keeping the guns cooler and quieter, and at the ſame time more effectually injuring the veſſels of the enemy. With the preſent allowance of powder, the guns are heated, and their tackle and furniture ſtrained, and this only to render the bullet leſs efficacious. For a bullet which can but juſt paſs through a piece of timber, and loſes almoſt all its motion thereby, has a much better chance of rending and fracturing it, than if it paſſed through with a much greater velocity. See Robins's Tracts, vol. i. p. 290, 291.

Profeſſor Euler obſerves, in his inveſtigation of this ſubject, that in every caſe there is a certain *charge* which will communicate the greateſt velocity to the ball; ſo that by increaſing or diminiſhing it, the motion of the ball will be diminiſhed; and he concludes by a fluxionary calculus, that an iron ball will go out of a twenty-four pounder with the greateſt velocity when the piece is charged, ſo that the powder extends in length $7\frac{1}{2}$ calibers. Since this is about $\frac{2}{3}$ of the weight of the ball, and the common *charge* half its weight, the maximum, or greateſt *charge*, will be thrice the common *charge*. He has alſo computed the following table, repreſenting the *charges* for the greateſt velocity.

Length of the cylinder in calibers.	Length of the powder in calibers.	Weight of the powder in 100 parts of the wt. of the ball.
2	0.82	16
4	1.54	31
6	2.18	43
8	2.78	56
10	3.35	67
12	3.86	77
14	4.30	86
16	4.77	95
18	5.20	104
20	5.59	112
22	5.96	119
24	6.32	126
26	6.66	133
28	6.99	140
30	7.31	146
32	7.61	152
34	7.90	158
36	8.18	163
38	8.44	169
40	8.69	174
42	8.93	179
44	9.18	184
46	9.42	188
48	9.66	193
50	9.89	198
52	10.11	202
54	10.31	206
56	10.51	210
58	10.71	214
60	10.90	218

From the calculations by which this table is formed, Euler concludes, that the *charges* aſſigned by Mr. Robins for the greateſt velocity are much too great. See True Principles of Gunnery inveſtigated and explained, &c. 1777. p. 129. 266.

Mr. Robins obſerves, that the *charge* is not to be determined by the greateſt velocity that may be produced; but that it ſhould be ſuch a quantity of powder as will produce the leaſt velocity neceſſary for the purpoſe in view; and if the windage be moderate, no field-piece ſhould ever be loaded with more than $\frac{1}{6}$, or at the utmoſt $\frac{1}{5}$ of the weight of its bullet in powder; nor ſhould the *charge* of any battering piece exceed $\frac{1}{3}$ of the weight of its bullet. Tracts, &c. vol. i. p. 266, &c.

CHARGE, in *Heraldry*, is applied to any figure, or thing, borne or repreſented in an eſcutcheon, or coat of arms; whether it be animal, vegetable, or other matter.

Too many *charges* are not deemed ſo honourable as fewer. *Charges* peculiar to the art and uſage of armory, as the croſs, chief, pale, feſſe, &c. are called *proper charges*; and frequently ordinaries.

Bloom reſtrains the term *charges* to thoſe additions, or rewards of honours, frequently placed on eſcutcheons; as cantons, quarters, girons, flaſques, &c.

CHARGE, in *Law*, denotes the inſtructions given to the grand jury with reſpect to the articles of their inquiry, by the judge who preſides on the bench.

CHARGE, in *Law*, alſo ſignifies a thing done that bindeth him who doth it; or that which is his to the performance of it; and DISCHARGE is the removal of that *charge*. Lands may be *charged* in various ways; as, by grant of rent out of it, by ſtatutes, judgments, conditions, warranties, &c.

CHARGE, in the *Manege*, a ſort of unguent, made of oil, honey, greaſe, turpentine, and ſometimes of lees of wine, and other matters, applied externally to a horſe, &c. for the cure of ſtrains, bruiſes, and ſwellings.

CHARGE, or rather OVERCHARGE, in *Painting*, is an exaggerated repreſentation of any perſon; wherein the likeneſs is preſerved, but at the ſame time ridiculed.

Few painters have the genius neceſſary to ſucceed in theſe *charges*: the method is, to ſelect and heighten ſomething already amiſs in the face, whether by way of defect, or redundancy: thus, v. g. if nature have given a man a noſe a little larger than ordinary, the painter falls in with her, and makes the noſe extravagantly long: or if the noſe be naturally too ſhort, in the painting it will be a mere ſtump; and thus of the other parts.

CHARGE *of lead*, is thirty-ſix pigs. See LEAD, PIG, &c.

CHARGE, in *Sea Language*, is ſometimes uſed for burden; thus *a ſhip of charge* is ſuch as draws much water, or ſwims deep in the ſea; though ſometimes an unweildy ſhip, that will not ware nor ſteer, is called a ſhip of *charge*.

CHARGED, in *Heraldry*. A ſhield, carrying on it ſome figure or impreſs, is ſaid to be *charged* therewith.

So, alſo, when one bearing, or *charge*, has another figure added upon it, it is properly ſaid to be *charged*.

CHARGED *cylinder*, is that part of the chaſe of a gun where the powder and ball are contained.

CHARIENTISMUS, in *Rhetoric*, a figure wherein a taunting expreſſion is ſoftened by a jeſt.

CHAR. See CHARR.

CHARIOT. See COACH.

The curious may ſee various repreſentations of *chariots*, and accounts of improvements on *chariots*, and of different conſtructions, Mac. tom. ii. p. 39. tom. iii. p. 33. p. 41. p. 197. and p. 31. And in the Mem. of the A. D. S. an. 1761. Hiſt. 161. and an. 1719. Hiſt. 81.

The ancients made uſe of *chariots* in war. Theſe were of different kinds; but the moſt terrible were thoſe armed with pikes and ſcythes, thus; the beam to which the horſes were faſtened were armed with pikes, having iron points to them which projected forward; the yokes of the horſes had likewiſe two long points of three cubits; to the axle-tree alſo were fixed iron ſpits, armed at their extremities with ſcythes; between the ſpokes of the wheels were placed javelins, and the very fellies of the wheels were furniſhed with ſcythes, which tore every thing they met with to pieces.

The axle-tree was longer than uſual, and the wheels ſtronger, that they might be able to reſiſt the ſhock of the motion, ahd the *chariot* be leſs ſubject to overturn. The driver's ſeat was a kind of little tower, made of very ſolid wood, and raiſed breaſt-high. The charioteer was armed all over, and covered with iron. Sometimes ſeveral men well armed were put in thoſe *chariots*, who fought with darts and arrows. Diodor. Sicul. lib. xvii. Q. Curt. lib. iv. Xenoph. Cyropæd. lib. vi. See a Diſſertation on the Ancient *Chariot* by Mr. Pownall, in Berenger's Art of Horſemanſhip, vol. i. p. 271, &c.

CHARIOTS, in *Mythology*, were ſometimes conſecrated to the ſun: and the Scripture obſerves, that Joſiah burnt thoſe which had been offered to the ſun by the kings his predeceſſors. This ſuperſtitious cuſtom was an imitation of the heathens, and principally of the Perſians, who had horſes and *chariots* conſecrated in honour of the ſun. Herodotus, Xenophon, and Quintus Curtius, ſpeak of white *chariots*, crowned, which were conſecrated to the ſun, among the Perſians, and in their ceremonies were drawn with white horſes, conſecrated to the ſame luminary.

CHARISIA, in *Pagan Theology*, a wake or night-feſtival inſtituted in honour of the graces. It continued the whole night, moſt of which time was ſpent in dancing; after which, cakes made of yellow flour, mixed with honey, and other ſweet-meats, were diſtributed among the aſſiſtants. The word is alſo uſed to ſignify the ſweetmeats diſtributed on ſuch occaſions.

CHARISIUS, in *Pagan Theology*, a ſurname given to Jupiter.

The word is derived from χαρις, *favour*; he being the god by whoſe influence men obtain the favour and affection of one another. On which account the Greeks uſed at their meals to make a libation of a cup to JUPITER *Chariſius*.

CHARISTIA, a family-feaſt celebrated among the Romans, on the eleventh of the calends of March; i. e. on the nineteenth of February, in honour of the goddeſs *Concord*.

The word comes from χαρις, *grace, favour*; q. d. a day of reconciliation, or of reſtoring into favour. It was alſo called *dies charæ cognationis*. Vigenere, on Livy, calls it *the day of good cheer*.

The *chariſta* were inſtituted to re-eſtabliſh peace and amity, in families embroiled, or at variance among themſelves. It conſiſted in a great entertainment made in each family, to which no ſtrangers were admitted, but only relations and kindred. The joy and freedom inſpired by the repaſt, was looked upon as a proper means to reunite divided minds; to which the good offices of ſo many friends would greatly contribute.

CHARISTICARY, *Commendatary*, or *Donatary*, a perſon to whom is given the enjoyment of the revenues of a monaſtery, hoſpital, or benefice.

The *chariſticaries* among the Greeks, were a kind of donataries, or commendataries, who enjoyed all the revenues of hoſpitals and monaſteries, without giving an account thereof to any perſon.—The original of this abuſe is referred to the Iconoclaſtæ, particularly Conſtantine Copronymus, the avowed enemy of the monks, whoſe monaſteries he gave away to ſtrangers.

In after-times, the emperors and patriarchs gave many to people of quality, not by way of gift, to reap any temporal advantage from them; but to repair, beautify, and patronize them. At length avarice crept in, and thoſe in good condition were given, eſpecially ſuch as were rich; and at laſt they were all given away, rich and poor, thoſe of men and of women; and that to laymen, and married men.

M. Coutelier, in his Eccleſiæ Græcæ Monumenta, gives us the form of theſe donations: they were granted for life, and ſometimes for two lives. See ABBOT.

CHARITABLE *Uſes*, in *Law*. See COMMISSION and MORTMAIN.

CHARITATIVE, in the *Canon Law*. A *charitative aid*, or *ſubſidy*, is a moderate allowance, which a council grants a biſhop upon any urgent occaſion; e. g. when his revenues will not bear his expences to a council, &c.

CHARITY, one of the three grand theological virtues; conſiſting in the love of God, and our neighbour.

Charity is the habit or diſpoſition of loving God with all our heart, and our neighbour as ourſelves. It has two material objects, therefore, as the ſchool expreſſes it; viz. God, and our neighbour.

CHARITY is alſo uſed for the effect of a moral virtue, which conſiſts in ſupplying the neceſſities of others, whether with money, counſel, aſſiſtance, or the like.

CHARITY, *briefs*. See BRIEF.

CHARITY, *feaſts of*. See AGAPÆ.

CHARITY-*ſchools*, are ſchools erected and maintained in various pariſhes, by the voluntary contributions of the inhabitants, for teaching poor children to read, write, and other neceſſary parts of education.

In moſt *charity-ſchools* the children are likewiſe clothed, and put out to trades, ſervices, &c. on the ſame charitable foundation.

Charity-ſchools have ſpread throughout moſt of the conſiderable towns of England and Wales.

In London we had likewiſe a CHARITABLE *Corporation* for the relief of the induſtrious poor, erected under queen Anne; for enabling indigent manufacturers and traders to take up money at common and legal intereſt; there being a ſum of 30,000*l.* raiſed for that end.

CHARITY, *order of*. There are ſeveral religious orders which bear this title: one inſtituted by St. John de Dieu, for the aſſiſtance of the ſick: this inſtitute was approved of in 1520, by Leo X. and confirmed by Paul V. in 1617. The religious of this order apply themſelves wholly to the ſervice of the diſeaſed.

CHARITY *of the Holy Virgin*, is a religious order eſtabliſhed in the dioceſe of Chalons, by Guy lord Joinville, &c. towards the cloſe of the thirteenth century, approved under the rule of St. Auguſtine, by the popes Boniface VIII. and Clement VI.

In each pariſh of Paris, there is a ſociety of women, who apply themſelves to find out and relieve the wants of the poor of the pariſh; and on this account called, *Dames de la Charité*, and *Seurs de la Charité*.

CHARKING, or **CHARRING**, the burning of wood to make CHARCOAL.

CHARKS, pit-coal charked, or charred. See COAL.

CHARLATAN, or **CHARLETAN**, an EMPIRIC, or quack, who retails his medicines on a public ſtage, and draws the people about him with his buffoonries, feats of activity, &c.

The word, according to Calepine, comes from the Italian *ceretano*, of *Cæretum*, a town near Spoletto in Italy, where theſe impoſtors are ſaid to have firſt riſen. Menage derives it from *ciarlatano*, and that from *circulatorius*, of *circulator*, *a quack*.

CHARLES's WAIN, in *Aſtronomy*, ſeven ſtars in the conſtellation Urſa Minor.

CHARLOCK, in *Huſbandry*; for the botanical characters, ſee MUSTARD; a very troubleſome weed among corn, being more frequent than almoſt any other. There are two principal kinds of it; the one with a yellow flower, the other with a white. Some fields are particularly ſubject to be over-run with it, eſpecially thoſe which have been manured with cow-dung alone, that being a manure very favourable to the growth of it. The farmers in ſome places are ſo ſenſible of this, that they always mix horſe-dung with their cow-dung, when they uſe it for arable land.

When barley, as is often the caſe, is infeſted with this weed to ſuch a degree as to endanger the crop, it is a very good method to mow down the *charlock* in May, when it is in flower, cutting it ſo low as juſt to take off the tops of the leaves of the barley with it: by this means the barley will get up above the weed; and people have got four quarters of grain from an acre of ſuch land, as would have yielded them ſcarce any thing without this expedient. Where any land is particularly ſubject to this weed, the beſt method is to ſow it with graſs-ſeed, and make a paſture of it; for then this plant will not be troubleſome, as it does not grow where there is a coat of graſs upon the ground.

CHARM, a magic power, or ſpell, by which, with the aſſiſtance of the devil, ſorcerers and witches are ſuppoſed to do wondrous things, far ſurpaſſing the powers of nature. See MAGIC.

The word comes from the Latin *carmen*, *verſe*.

Phylacteries, ligatures, &c. are, all, kinds of *charms*.

CHARNEL, a portico, or gallery, anciently near the church-yard; over which were diſpoſed the bones of the dead, when the fleſh was conſumed.

The *charnels*, or *charnel-houſes*, are now uſually contiguous to the church.

CHARNUB, in the *Materia Medica*, a name given by ſome of the ancient writers to the *ſiliqua dulcis*, or carob-tree. The Arabian phyſicians mention two kinds of this; the Syrian, and Nabathæan: the firſt they call *aijembut*, and the other *alnabat*. Avicenna tells us, that the firſt of theſe was a purge, and was given with ſucceſs in pains of the bowels; and the other an aſtringent, given in profluvia of the menſes.

CHARONIUS, *Charonean*, is uſed as an epithet for caves, ſome of which are found in Italy, and in other parts of the world, where the air is ſo loaded with a poiſonous vapour, that animals cannot live in them even a few moments.

CHARR, in *Ichthyology*, a name given to a fiſh of the truttaceous kind, of which there are two ſpecies, diſtinguiſhed by the *red charr*, and the *gilt charr*; the former of which is called by ſome of the ichthyographiſts UMBLA *minor*, and by Linnæus *ſalmo alpinus*; and the latter, the CARPIO *lacus benaci*.

CHARR, *red*, is a large fiſh, longer and ſlenderer in its general ſhape than the trout, caught in the lakes of Wales, Weſtmorland, and of the mountainous parts of Europe; and is eſteemed a very fine fiſh; but its fleſh does not boil ſo red as that of the trout.

The *red charr* is called by the Welch *torgoch*; a compound of *tor*, *the lower part of the belly*, and *goch*, *red*; *Anglicè*, *red-belly*. In one reſpect the *charr* ſeems nearly allied to the eel and tench, being very ſlimy; and the curing and potting them well, depend on draining them properly of this mucilaginous quality. See an account of the Welch *charrs*, in Phil. Tranſ. vol. xlix. part i. N° 34. p. 212.

The Weſtmorland *charrs* called *caſe charrs*, ſpawn about Michaelmas; and at this time will take a bait, and at no other. They are ſuppoſed to be in the higheſt perfection about May, and in the ſummer, though rarely caught after April. The *charrs* of Wales are rather ſmaller, and of a paler colour than thoſe of Weſtmorland.

CHARR, *gelt*, or *barren*, is one which had not ſpawned the preceding ſeaſon, and on that account reckoned to be in greateſt perfection.

CHARR, *gilt*, is ſomething like the trout in figure; but it is broader, and its belly is prominent, eſpecially when the fiſh is large: the uſual ſize is about a foot in length, which it rarely exceeds. This is very common in ſome of the lakes of Italy, but is not peculiar to that kingdom, as has by ſome been imagined, being frequent in ſome foreign, and in ſome of the northern lakes; and there is no doubt, but that the fiſh there caught, and called the *gilt charr*, and the CARPIO *lacus benaci*, are entirely the ſame fiſh. It is a very finely flavoured fiſh, and much valued at the tables of the great.

This ſpecies ſpawns from the beginning of January to the end of March: and they are taken in greateſt plenty from the end of September to the end of November.

CHART, or *Sea*-**CHART**, a hydrographical map; or a projection of ſome part of the ſea, *in plano*; for the uſe of navigation.

The invention of *ſea-charts*, Fournier refers to Henry ſon of John king of Portugal. They differ very conſiderably from geographical, or land-maps, which are of no uſe in navigation. Nor are *ſea-charts* all of the ſame kind; ſome being what we call *plain charts*, others *reduced*, or *Mercator's charts*, and others *globular charts*.

CHARTS, *plain*, are thoſe wherein the meridians and parallels are exhibited by right lines, parallel to each other.

Theſe, Ptolemy, in his Geography, rejects for the following faults, though their inventor judged them of good uſe; and experience has confirmed his judgment, eſpecially in ſhort voyages. Their defects are, 1. That ſince in reality all the meridians meet in the poles, it is abſurd to repreſent them, eſpecially in large *charts*, by parallel right lines. 2. That *plain charts* exhibit the degrees of the ſeveral parallels, equal to thoſe of the equator; and of conſequence the diſtances of places lying eaſt and weſt, much larger than they ſhould be. And, 3. In a *plain chart*, while the ſame rhumb is kept, the veſſel appears to ſail in a great circle, which is yet falſe.

But notwithſtanding theſe defects in the *plain chart*, yet the eaſineſs of its application has ſo reconciled it to the mariners, that it is uſed almoſt alone; in excluſion of the more accurate ones.

Conſtruction of a plain CHART.—1. Draw a right line, as AB (*Tab. Navigation*, *fig*. 9.), and divide it into as many equal parts, as there are degrees of latitude in the portion of the ſea to be repreſented. 2. Add another to it at right angles BC, divided into as many parts, and thoſe equal to one another, and to the former, as there are degrees of longitude in the portion of the ſea to be repreſented. 3. Complete the parallelogram ABCD, and reſolve its area into little ſquares; then right lines, parallel to AB and CD, will be meridians; and thoſe parallel to AD and BC parallels. 4. The coaſts, iſlands, bays, ſands, rocks, &c. inſert from a table of longitudes and latitudes, in the ſame manner as is laid down under MAP.

Hence, 1. The latitude and longitude of a ſhip being given, her place is eaſily exhibited in the *chart*. 2. The places F and G, to and from which the ſhip ſails, being given in a map, the right line FG, drawn from the one to the other, makes, with the meridian AB, an angle AFG, equal to the inclination of the rhumb: and ſince the parts F 1, 12, 2 G, intercepted between equidiſtant parallels, are equal; and the inclination of the right line FG, to all the meridians or right lines parallel to AB, is the ſame; the right line FG truly repreſents the rhumb. After the ſame manner it may be ſhewn, that this *chart* exhibits *latus mecodynamicum*, or miles of longitude, truly. It follows, that *plain charts* may be uſed to very good purpoſe in directing a ſhip; provided care be taken there eſcape no error in the diſtance of the places F and G.

Conſtruction of a Scale to correct the errors of the diſtances in plain CHARTS.—1. Upon the right line AB (*fig*. 10.), from the map transfer five degrees, and divide them into 300 equal parts, or geographical miles. 2. On this deſcribe a ſmall circle ACB, to be divided into 90 equal parts: if then it be deſired to know how many miles make five degrees in the parallel fifty; in the compaſſes take the interval fifty, and transfer it on to the diameter AB; the number of miles required will here be ſhewn. It follows, that if a ſhip ſail on an eaſtern or weſtern rhumb, out of the equator; the miles anſwering to the degrees of longitude will be found as in the preceding article. If it ſail on any collateral rhumb, ſtill the ſailing is ſuppoſed to be an eaſtern or weſtern rhumb, in an intermediate parallel, between the parallel of the place whence the ſhip proceeds, and parallel of the place at which ſhe arrives.

It is true, this reduction, by an arithmetically mean parallel, is not accurate; yet it is frequently uſed in practice, as being accommodated to the apprehenſions of the generality of mariners. In effect, it does not err conſiderably, if the whole courſe be divided into parts, whereof each does not exceed one degree; whence it appears adviſeable, not to take the diameter of the ſemicircle AB above one degree, and to divide it at moſt into geographical miles.

For the application of the plain Chart *in ſailing*, ſee *Plain* Sailing.

Chart, *reduced*, or **Chart** *of reduction*, is that wherein the meridians are repreſented by right lines converging towards the poles; and the parallels by right lines parallel to one another, but unequal. Theſe, therefore, it appears by their conſtruction, muſt correct the errors of the *plain charts*.

But ſince the parallels ſhould cut the meridians at right angles; theſe *charts* are defective, inaſmuch as they exhibit the parallels inclined to the meridians.

Hence, another kind of *reduced charts* has been invented, wherein the meridians are parallel, but the degrees thereof unequal; theſe are called *Mercator's charts*.

Chart, *Mercator's*, is that wherein the meridians and parallels are repreſented by parallel right lines; but the degrees of the meridians are unequal; ſtill increaſing, as they approach the pole, in the ſame proportion as thoſe of the parallels decreaſe: by means whereof, the ſame proportion is preſerved between them, as on the globe.

This *chart* has its name from that of the author who firſt propoſed it for uſe in the year 1556, and made the firſt *chart* of this projection, Gerardus Mercator: but neither was the thought originally his own, as having been hinted by Ptolemy near two thouſand years ago; nor is the perfection of it owing to him; our countryman Mr. Wright being the firſt who demonſtrated it, about the year 1590, and ſhewed a ready way of conſtructing it, by enlarging the meridian line by the continual addition of ſecants. See his Correction of Errors in Navigation, publiſhed in 1599.

For a farther account of Mr. Wright's method, and the conſtruction of a table of meridional parts; ſee Meridional *parts*.

Conſtruction of Mercator's Chart.—1. Draw a right line, and divide it into equal parts, repreſenting degrees of longitude either in the equator, or in the parallel wherein the *chart* is to terminate. From the ſeveral points of diviſion erect perpendiculars to repreſent meridians; ſo as right lines may cut them all under the ſame angle, and therefore repreſent rhumbs; thus far as in the *plain chart*.

That the degrees of the meridians may have their juſt proportion to thoſe of the parallels, the former are to be increaſed; in regard the latter continue the ſame, becauſe of the paralleliſm of the meridians.

With the interval therefore of one degree in the equator CD (*Tab. Navig. fig.* 11.), deſcribe the quadrant CDE, and in D erect a perpendicular DG; make the arch DL equal to the parallel of latitude, and through L draw CG: this CG will be the enlarged degree of the meridian, to be transferred to the meridian of the *chart*: the reſt as in *plain charts*.

In practice, ſuppoſe it required to draw a *Mercator's chart* from the fortieth degree of north latitude to the fiftieth, and from the ſixth degree of longitude to the eighteenth. Firſt draw a right line repreſenting the fortieth parallel of the equator; which divide into twelve parts, for the twelve degrees of longitude the *chart* is to contain. Then take a line of equal parts, on a ſcale whereof a hundred parts are equal to each of theſe degrees of longitude; and at each extreme of the line raiſe two perpendiculars, to repreſent two parallel meridians to be divided by the continual addition of ſecants, which are proved to increaſe in the ſame proportion, as the degrees of longitude ſhould decreaſe.

Thus, for the diſtance from forty degrees of latitude, take 131 ½ equal parts, from the ſcale which is the ſecant of forty degrees thirty minutes. For the diſtance from forty-one degrees to forty-two degrees, take 133 ½ equal parts, from the ſcale which is the ſecant of forty-one degrees thirty minutes; and ſo on to the laſt degree of your *chart*, which will be 154 equal parts, viz. the ſecant of forty-nine degrees thirty minutes, and will give the diſtance from forty-nine degrees of latitude to fifty degrees. By this means, the degrees of latitude will be augmented, in the ſame proportion as the degrees of longitude on the globe decreaſe.

The meridians being divided, add the card, or compaſs; chooſing ſome convenient place near the middle thereof: from this draw a line parallel to the divided meridians, which will be the north rhumb; and from this the other thirty-one points of the compaſs are to be ſet off.

Laſtly, Lay down the towns, ports, iſlands, coaſts, &c. from a table of longitudes and latitudes; and the *chart* is complete. In *Mercator's chart*, the ſcale changes as the latitude is changed: if then, v. g. a ſhip ſails between the fortieth and fiftieth parallels of latitude, the degrees of the meridians between thoſe two parallels, are to be the ſcale for meaſuring the ſhip's way: whence it follows, that though the degrees of longitude be equal in extent on the *chart*, yet they muſt contain unequal numbers of miles, or leagues; and that they will decreaſe as they approach nearer the pole, becauſe meaſured by a magnitude continually increaſing. This *chart* is demonſtratively true; though to appearance falſe: it is found by experience very accurate, and withal very eaſy of application. In effect, it has all the qualifications required to render it of ſervice in navigation; yet do the generality of mariners decline the uſe of it, and rather chooſe to keep the old erroneous *plain chart*.

For the uſe of Mercator's Chart *in ſailing*, ſee *Mercator's* Sailing.

Chart, *globular*, is a projection ſo called, from the conformity it bears to the globe itſelf: this has been ſince the others propoſed to the world by Meſſrs. Senex, Wilſon, and Harris; wherein the meridians are inclined: the parallels equidiſtant, and curvilinear; and the rhumbs real ſpirals, as on the ſurface of the globe.

We might be allowed to expect ſomething from this, as it came out under the protection of his majeſty's patent, and with the recommendation of ſeveral able navigators, and among others, that of Dr. Halley; and as it has now ſtood the teſt of a pretty ſevere inquiſition. We ſhall only add, that the projection is perfectly agreeable to nature, and therefore eaſily conceivable; and that it has been found to anſwer very exactly, even in very large diſtances; where its failure, if it hath any, muſt needs be moſt conſpicuous.

Charts *compoſed by rhumbs and diſtances*, are thoſe wherein there are no meridians or parallels; but all is effected by the rhumbs, and the ſcale of miles.

Theſe are chiefly uſed by the French, and eſpecially in the Mediterranean.

They are patched up, without any great art, from the obſervations of the mariners; any regular account, therefore, how to make them, would be needleſs. They are only uſed in ſhort voyages.

See a diſſertation on *charts*, by Dr. Murdoch, in the Phil. Tranſ. vol. l. art. 73. with remarks upon it by Mr. Mountaine, art. 74.

CHARTA primarily ſignifies a ſort of paper made of the plant *papyrus*, or *biblus*.

Charta *emporetica*, in *Pharmacy*, &c. a kind of paper made very ſoft and porous, and uſed to filtre withal.

Charta is alſo uſed in *Ancient Cuſtoms* for a charter, or deed in writing.

Charta *de foreſta*. See Charter *of the foreſt*.

Charta *magna*, the great *charter*, is an ancient inſtrument, containing ſeveral privileges, and liberties, granted to the church and ſtate, by Edward the Confeſſor, together with others relating to the feudal laws of William the Conqueror, granted by Henry I. all confirmed by the ſucceeding princes about thirty times. See Magna *charta*.

Charta *pardonationis ſe defendendo*, is the form of a pardon for a perſon's killing another man in his own defence.

Charta *pardonationis utlagariæ*, is the form of a pardon of a man who is outlawed.

Charta *ſimplex*, is a ſingle deed, or deed-poll.

CHARTARIUS, the ſame with chartophylax.

CHARTEL. See Cartel, Champion, Combat, Duel, &c.

CHARTER, *Charta*, an inſtrument, or written evidence of a thing under the ſeal of a prince, lord, church, chapter, or community.

The word *charter* comes from the Latin *charta*, anciently uſed for a public or authentic act; from χαρτης, *thick paper*, or *paſtboard*, whereon public acts were uſed to be written.

Bracton ſays, donations are ſometimes made in *charters*, *in perpetuam rei memoriam*. He adds, that of *charters*, ſome are *royal*, others of *private perſons*.

Of *royal*, ſome are private, ſome common, ſome univerſal.

Of *private charters*, ſome are *de puro feoffamento*, others *de conditionali feoffamento*, others of recognition, pure or conditional, others of confirmation, &c.

Charters *of community*, were certain privileges firſt obtained by violence, or purchaſe, and afterwards freely beſtowed by emperors, kings, and barons; whereby the inhabitants of towns and cities were enfranchiſed, all marks of ſervitude aboliſhed, and theſe cities, &c. were formed into corporations and bodies politick, to be governed by a council and magiſtrates of their own nomination. The firſt perſon who conferred theſe privileges, was Lewis the Groſs in France, about the beginning of the twelfth century: and his example was ſoon very generally followed. See Cities.

Charter *of the foreſt*, is that wherein the laws of the FOREST are compriſed and eſtabliſhed.

Charter, *Great*, *Magna charta*. See MAGNA *charta*.

Charters *of the king*, are thoſe whereby a king makes a grant to a perſon, or community; v. gr. a *charter of exemption*, that a perſon ſhould not be impanelled on a jury, &c. See LETTERS *patent*.

Charter *of pardon*, is that whereby a perſon is forgiven a felony, or other offence againſt the king's crown and dignity. See PARDON.

Charter *governments in America*, are in the nature of civil corporations, with the power of making bye-laws for their own interior regulation, not contrary to the laws of England; and with ſuch rights and authorities as are ſpecially given them in their ſeveral *charters* of incorporation. The form of government is borrowed from that of England. They have a governor named by the king (or in ſome proprietary colonies by the proprietor), who is his repreſentative or deputy. They have courts of juſtice of their own, from whoſe deciſion an appeal (as ſome ſay, in the nature of a reference by way of arbitration) lies to the king in council here in England. Their general aſſemblies, which are their houſe of commons, together with their council of ſtate, being their upper houſe, with the concurrence of the king, or his repreſentative the governor, make laws ſuited to their own emergencies. But it is particularly declared, by ſtat. 7 and 8 W. III. c. 22. that all laws, bye-laws, uſages, and cuſtoms, which ſhall be in practice in any of the plantations, repugnant to any law, made or to be made in this kingdom, relative to the ſaid plantations, ſhall be utterly void and of none effect. Theſe are called *charter governments*, by way of diſtinction from the *provincial eſtabliſhments*, the conſtitutions of which depend on the reſpective commiſſions iſſued by the crown to the governors, and the inſtructions attending them; under the authority of which, provincial aſſemblies are conſtituted, with the power of making local ordinances, not repugnant to the laws of England; and alſo from *proprietary governments*, granted out by the crown to individuals, in the nature of feudatory principalities, with all the inferior regalities, and ſubordinate powers of legiſlation, which formerly belonged to the owners of counties palatine. See farther Blackſtone's Comm. vol. i. p. 108.

Charter-house. See CHARTREUSE.

Charter-land, in *Law*, is ſuch as a man holds by *charter*, that is, by evidence in writing; otherwiſe called FREEHOLD.

This the Saxons called BOCK-LAND; which Lambard renders, *terra ex ſcripto*.

It was held on more eaſy conditions than the folk-land, or *terra ſine ſcripto*, held without writing: the former being *hæreditaria libera & immunis*; whereas the latter *cenſum penſitabat annuum, atque officiorum quadam ſervitute erat obligatus*.

CHARTERER is in ſome places, as Cheſhire, uſed for a FREEHOLDER.

CHARTERPARTY, in *Commerce*, denotes the inſtrument of freightage, or articles of agreement for the hire of a veſſel.

The *charterparty* is to be in writing; and is to be ſigned both by the proprietor, or the maſter of the ſhip, and the merchant who freights it.

The *charterparty* is to contain the name and the burden of the veſſel; thoſe of the maſter and the freighter; the price, or rate of freight; the time of loading, and unloading; and the other conditions agreed on.

It is properly a deed, or policy, whereby the maſter, or proprietor of the veſſel, engages to furniſh immediately a tight ſound veſſel, well equipped, caulked and ſtopped, provided with anchors, ſails, cordage, and all other furniture to make the voyage required, as equipage, hands, victuals, and other munitions; in conſideration of a certain ſum to be paid by the merchant for the freight. Laſtly, the ſhip, with all its furniture, and the cargo, are reſpectively ſubjected to the conditions of the *charterparty*.

The *charterparty* differs from a *bill of lading*, in that the firſt is for the entire freight, or lading, and that both for going and returning; whereas the latter is only for a part of the freight, or at moſt only for the voyage one way.

The common law conſtrues *charterparties*, as near as may be, according to the intention of them, and not according to the literal ſenſe of traders, or thoſe that merchandiſe by ſea; but they muſt be regularly pleaded.

The preſident Boyer ſays, the word comes from hence, that *per medium charta incidebatur*, *& ſic fiebat charta partita*; becauſe in the time when notaries were leſs common, there was only one inſtrument made for both parties: this they cut in two, and gave each his portion, and joined them together at their return, to know if each had done his part. This he obſerves to have ſeen practiſed in his time; agreeable to the method of the Romans, who, in their ſtipulations, uſed to break a ſtaff, each party retaining a moiety thereof as a mark.

CHARTIS *reddendis*, a writ which lies againſt him that has charters of feoffment intruſted to his keeping, and refuſeth to deliver them to the owner.

CHARTOPHYLACIUM, a place where records were kept.

CHARTOPHYLAX, an officer in the church of Conſtantinople, intruſted with the cuſtody of the archives.

The word is formed from χαρτα, and φυλαττω, *cuſtodio*; and ſignifies *charter-keeper*.

Codin calls the *grand chartophylax* the judge of all cauſes, and the right arm of the patriarch. He adds, that he was the depoſitary or keeper of all the *charters* relating to the eccleſiaſtical rights; and that he preſided over matrimonial cauſes, and was judge of all the clergy. He drew up all ſentences and deciſions of the patriarch, who ſigned and ſealed them: he preſided in the grand council of the patriarch: he took cognizance of all matters and cauſes eccleſiaſtical and civil, whether among the clergy, the monks, or the people.

He took place of all the biſhops, though himſelf only a deacon; and, on occaſion, diſcharged the functions of the prieſts: he had twelve notaries under him.

The *chartophylax* was much the ſame at Conſtantinople with the *chartulary* at Rome.

There were, in reality, two officers who bore this title; the one for the court, the other for the patriarch; the firſt was called alſo *regiſtrator*, and the latter *ſcriniarius*: though the two are uſually confounded together. Leunclavius, and others, confound *chartophylax* with *chartulary*.

CHARTREUSE, a celebrated monaſtery of Carthuſians; ſo called from the name of a ſteep rocky place, in a frightful deſart, five leagues from Grenoble in France; where S. Bruno retired from the world, and firſt inſtituted the order of Carthuſians.

The name has ſince paſſed to all houſes of Carthuſians; and that near Grenoble, is now diſtinguiſhed by the name of the *great Chartreuſe*.

That of London, corruptly called *Charter-houſe*, is now converted into a college, called alſo from its founder *Sutton's hoſpital*; firſt endowed with 4000*l. per ann.* ſince improved to 6000*l.*

It is to conſiſt of decayed gentlemen, ſoldiers, and merchants; eighty of whom have a plentiful maintenance of diet, lodging, cloaths, phyſic, &c. living together in a collegiate manner: and of ſcholars, or youths, forty-four of whom are taught, and ſupplied with neceſſaries; and ſuch of them as are fit for the univerſity ſent thither, with an exhibition of 20*l. per ann.* for eight years; the reſt are put to trades.

For the ſuperintendency of this hoſpital there are ſixteen governors, generally of the prime quality; vacancies being ſupplied by the election of the remaining governors. The ordinary officers are, a maſter, preacher, regiſter, treaſurer, ſchoolmaſter, &c.

CHARTREUX, religious of the order of St. Bruno, called alſo CARTHUSIANS.

CHARTULARY, *Chartularius*, a title given to an ancient officer in the Latin church, who had the care of charters and papers relating to public affairs.

The *chartulary* preſided in eccleſiaſtical judgments, in lieu of the pope.

In the Greek church, the *chartulary* was called *chartophylax*; but his office was there much more conſiderable; and ſome even diſtinguiſh the *chartulary* from the CHARTOPHYLAX in the Greek church.

CHARVIL, in *Botany*. See CHERVIL.

CHARYBDIS, in *Geography*, originally the name of a rock in the ſtreights of Meſſina, between Italy and Sicily; much celebrated in the writings of the ancient poets.

Charybdis is alſo a word uſed by Dr. Plott to expreſs certain openings which he ſuppoſes in the bottom of the ſea, by which its waters are received and conveyed by a ſubterranean circulation to the origin of fountains and ſprings. The *fluxus moſchonicus*, or *maalſtrome* on the coaſt of Norway, is ſuppoſed to be owing to ſome ſuch ſubterranean indraught; and it is advanced alſo, that the Mediterranean ſea could not be emptied of the vaſt quantities of waters which it receives, but muſt overflow the land of Egypt, unleſs ſwallowed by ſome ſuch *charybdis*, which is either in ſome part of the baſon of that ſea, or near the mouth of it; in which caſe, it may be the occaſion of that ſtrong under-current, deſcribed by all thoſe who have treated of this ſea. An immenſe *charybdis*, placed near the ſtreight's mouth, may be hid under the immenſity of waters there; but as it would abſorb the deep waters continually, and that in large quantities, it would neceſſarily cauſe ſuch an under-current there. See Vapour.

CHASCUSA, or Cascusa, in the *Botanical Writings of the Ancients*, a name given by the Greeks to the *antirrhinum* of the Latin writers. It has been ſuppoſed by ſome, that the *chaſcuſa*, or *caſcuſa*, was the ſame with the *phyteuma* of Dioſcorides; but that author tells us the *phyteuma* was prickly, and had leaves like the *ſtruthium*, which was a kind of thiſtle uſed in the dying of wool: whereas Pliny tells us, that the *chaſcuſa*, or *antirrhinum*, has leaves like thoſe of flax, that is, ſmooth, narrow, and oblong.

CHASE, or Chace, in *Law*, is uſed for a driving of cattle to or from any place; as to a diſtreſs, a fortlet, &c.

Chase, or Chace, is alſo a place of retreat for deer and wild beaſts; of a middle kind, between a foreſt and a park; being uſually leſs than a foreſt, and not poſſeſſed of ſo many privileges; but wanting, v. g. courts of attachment, ſwainmote, and juſtice-ſeat.

Yet it is of a larger extent, and ſtocked both with a greater diverſity of wild beaſts, or game, and more keepers, than a park. Crompton obſerves, that a foreſt cannot be in the hands of a ſubject, but it forthwith loſes its name, and becomes a *chaſe*: in regard, all thoſe courts loſe their nature when they come into the hands of a ſubject; and that none but the king can make a lord chief juſtice in eyre of the foreſt.

By the common law, no perſon is at liberty to take or kill any beaſts of *chaſe*, but ſuch as hath an ancient *chaſe* or park; unleſs they be alſo beaſts of prey.

Yet the ſame author adds, that a foreſt may be granted by the king to a ſubject, in ſo ample a manner, as that there may be courts equivalent to a court of attachment, ſwainmote, and juſtice-ſeat.

Chace, *wild gooſe*, a term uſed to expreſs a ſort of racing on horſeback, uſed formerly, which reſembled the flying of wild geeſe, thoſe birds generally going a train one after another, not in confuſed flocks as other fowls do. In this ſort of race the two horſes after running twelve ſcore yards had liberty, which horſe ſoever could get the leading, to ride what ground the jockey pleaſed, the hindmoſt horſe being bound to follow him within a certain diſtance agreed on by articles, or elſe to be whipped in by the tryers and judges who rode by; and which ever horſe could diſtance the other, won the race. This ſort of racing was not long in common uſe, for it was found inhuman and deſtructive to good horſes, when two ſuch horſes were matched together. For in this caſe neither was able to diſtance the other, until they were both ready to ſink under their riders, and often two very good horſes were both ſpoiled, and the wagers forced to be drawn at laſt. The miſchief of this ſort of racing ſoon introduced the method now in uſe, of running only a certain quantity of ground, and determining the plate or wager, by the coming in firſt at the poſt.

Chase, in *Sea-Language*, ſignifies a veſſel purſued by another, apprehended or known to be an enemy. Hence, to *chaſe* is to purſue a ſhip; which is called alſo *giving chaſe*.

In *chaſing* at ſea, theſe rules are generally obſerved: if the *chaſed* be found any thing to the windward, the *chaſer* is to bring all his tacks aboard, and to ſhape his courſe to meet her at the neareſt angle. If the *chaſed* be to the leeward, then the *chaſer* may come in with her, except ſhe bear upright before the wind, and ſo outſail her; or that ſhe bring herſelf cloſe by the wind, and the *chaſer* prove the more leeward ſhip, and ſo loſe her that way. If the *chaſe* be found right a-head, and ſo the *chaſer* be put to a ſtern-*chaſe*, then the beſt ſailer ſhall carry it, if there be ſea-room and day-light. Being come up cloſe with the *chaſe*, endeavour to croſs her fore-foot; and by that means you will both hinder her way, and avoid the fury of her ordnance (except thoſe in her *chaſe*), and uſe your own, if required, to more advantage; and that as well your *chaſe*-pieces, at your firſt getting up within reach, as your broadſide and quarter-pieces, as you paſs thwart her hawſe, and ſcour her decks from ſtem to ſtern. If ſhe makes away from you, ply your guns, as many as poſſible, at her ſails, yards, maſts, and general tackling; and, being near, ſpare not your caſe-ſhot, or croſs-bar-ſhot, to make the greater damage.

Chase, *ſtern*, is when the chaſer follows the chaſed aſtern, directly upon the ſame point of the compaſs.

To lie with a ſhip's fore-foot in a chaſe, is to ſail, and meet with her by the neareſt diſtance, and ſo to croſs her in her way, or to come acroſs her fore-foot.

A ſhip is ſaid to have a *good chaſe*, when ſhe is ſo built forward on, or a-ſtern, that ſhe can carry many guns to ſhoot forwards, or backwards; according to which, ſhe is ſaid to have a *good forward*, or *good ſtern-chaſe*.

Chase-*guns*, are ſuch whoſe ports are either in the head, called *bow-chaſes* (and then they are uſed in chaſing of others); or in the ſtern, called *ſtern-chaſes*, which are only uſeful when they are purſued or chaſed by any other ſhip.

Chase *of a gun*, is that part of the bore, which begins at the ſame circle where the ſecond reinforce ends, and terminates at the extremity of the muzzle: or it is the part denoted by FB, *fig.* 1. *Tab. Gunnery.* If the length of a gun be divided into ſeven equal parts, the *chaſe* is four of theſe parts, wanting the diameter of the bore. Some have called the whole length of the bore the *chaſe*. See Cannon.

Chase-*girdle*, is the part under FI in the ſame figure; and the CHASE-*aſtragal* and *fillet* is repreſented at *x*.

CHASING, a method of working, or enriching gold, ſilver, &c. properly called ENCHASING.

CHASLEU. See Cisleu.

CHASM, Χασμη. See Grotto and Hiatus.

CHASME, or Chasmos, among *Ancient Phyſicians*, denotes oſcitation, or gaping. Hippocrates informs us, that long reſpiration is a cure for continual OSCITATION.

CHASTE-*tree*. See Agnus *caſtus*, and Vitex.

CHASTISEMENTS, or Corrections, in the *Manege*, are the ſevere and rigorous effects of the aids; for when the aids are given with ſeverity, they become puniſhments.

CHASTITY. The Roman law juſtifies homicide in defence of the *chaſtity* either of one's ſelf or relations; and according to Selden (De Leg. Heb. lib. iv. cap. 3.) the law in the Jewiſh republic had the ſame latitude. The Engliſh law alſo juſtifies a woman in killing one who attempts to raviſh her. Bac. Elem. 34. 1 Hawk. P. c. 71. And the father or huſband may juſtify killing a man, who attempts a rape upon his wife or daughter: and the forcible attempt of a more deteſtable crime may be equally reſiſted by the death of the unnatural aggreſſor. Blackſt. Com. vol. iv. p. 181.

CHATE, in *Botany*, a name given by ſome authors to a ſpecies of wild CUCUMBER; called by others *cucumis Ægyptius rotundi-folius*, the round-leaved cucumber of Egypt.

CHATELET, anciently ſignified a little CASTLE, or fortreſs, wherein the *chatelain*, or governor, lodged.

The word is a diminutive of *chateau*, formed from *caſtellum*, a diminutive of *caſtrum*; or from *caſtelletum*, a diminutive of *caſtellum*, *caſtle*.

At preſent, the term is uſed for certain courts of juſtice eſtabliſhed in ſeveral cities in France: the *grand chatelet* in Paris, v. g. is the place where the preſidial, or ordinary court of juſtice of the prevot of Paris is kept; conſiſting of a preſidial, a civil chamber, criminal chamber, and a chamber of policy. The term ſignifies the ſame at Montpelier, Orleans, &c.

The *little chatelet* at Paris is an ancient fort, now ſerving as a priſon.

CHAT-PARD, in *Natural Hiſtory*, a creature of the LEOPARD kind. See Pardus.

The French academicians, who diſſected this creature with great care, found a defect of ſpermatic veſſels, and other parts abſolutely neceſſary to generation; and this not proceeding from caſtration, but from ſome other cauſe.

CHATTELS, *Catalis*, *Catalla*, a Norman term, under which were anciently comprehended all moveable goods; thoſe immoveable being termed *fief*, or, as we now ſay, *fee*.

Spelman defines *chattels* to be *bona quæcunque mobilia & immobilia*; *propriè tamen ea bonorum pars*, *quæ in animalibus conſiſtat*, *à quorum* capitibus *res ipſe*, *alias* capita, *alias* capitalia *dictæ ſunt*.

Chattels, in the modern ſenſe of the word, are all ſorts of goods, moveable or immoveable, except ſuch as are in the nature of freehold, or parcel thereof.

Chattels are either *perſonal*, or *real*.

Chattels *perſonal*, are ſuch as do either belong immediately to the perſon of a man, as his horſe, ſword, &c. or ſuch things as being injuriouſly with-held from him, a man has no way to recover but by PERSONAL action: or, ſtrictly ſpeaking, they are things *moveable*, which the owner may carry with him from one place to another; ſuch are animals, houſhold furniture, money, jewels, corn, garments, and every thing that is capable of being removed.

Chattels perſonal are, immediately upon the death of the teſtator, in the actual poſſeſſion of the executors; whereas *chattels real* are not in his poſſeſſion till he hath made an entry, or recovered them. An owner of *chattels* is ſaid to be *poſſeſſed* of them; but a perſon is ſaid to be *ſeiſed* of a freehold.

Chattels *real*, are either ſuch as do not appertain immediately to the perſon, but to ſome other thing, by way of dependence; as charters of land, apples upon a tree, &c. or ſuch as neceſſarily iſſue out of ſome immoveable thing to a perſon, as a leaſe, or rent for years. They are called *chattels*, becauſe their duration is limited to a certain time; and *real*, becauſe they are intereſts annexed to, and iſſuing out of *real* eſtates.

CHATTERER, in *Ornithology*. See AMPELIS and GARRULUS.

CHATUS, in *Middle Age Writers*, a kind of gold coin.

CHATUS was alſo called, by ſome French writers, *mailles auchat*.

Du-Cange makes it a queſtion, whether the *chatus* was the ſame coin as the *chapotenſis*, and ſuppoſes that the latter might be formed from *chati Pictavenſes*; in French, *chats de Poitou*.

CHAVARIGHTS, a ſect of Mahometans, who deny that God ever ſent a prophet that was infallible; and who had a commiſſion to give a law to mankind: they pretend likewiſe that if ſuch an office ſhould ever become neceſſary, it would not be confined to a ſingle family, but that every man of probity and virtue would be capable of that honour.

CHAUD-*Medley*, in *Law*, and according to its proper etymology, denotes an affray that happens in the *heat* of blood, or paſſion. See CHANCE-*Medley*.

CHAULIODONTA, from χαλαω, *I put forth*, and οδους, *tooth*; among *Ancient Naturaliſts*, is applied to thoſe animals, the teeth of which grow to a great length out of their mouths; as the boar, and the elephant.

CHAUMPERT. See CHAMPART.

CHAUNTOR, CHAUNTER. See CHANTOR.

CHAUNTRY, or CHANTRY, was anciently a church, or chapel, endowed with lands, or other yearly revenue, for the maintenance of one or more prieſts, daily ſaying or ſinging maſs for the ſouls of the donors, and ſuch others as they appointed. Theſe *chauntries* were diſſolved by 1 Ed. VI. cap. 14.

Hence, *chauntry-rents*, are rents paid to the crown by the tenants, or purchaſers of *chauntry-lands*.

CHAUFFE-WAX. See CHAFFE-WAX.

CHAURUS, or CHORUS, among the Romans, the north-weſt wind, or that which blew between the wind called *favonius* and the north.

CHAUSE *Trappes*. See CALTROP, and CROWSFEET.

CHAUSSE' *trop-haut*, in the *Manege*. A white-footed horſe is ſaid to be ſuch, when the white marks run too high upon the legs.

CHAYQUARONA, in *Zoology*, a name given by the Portugueſe to a fiſh of the TURDUS kind, caught on the Braſilian ſhores, and more frequently called by authors by its Braſilian name, PIRAUMBU.

CHAZINZARIANS, or CHATZINZARIANS, a ſect in Armenia in the ſeventh century.

The word is formed of the Armenian *chazus*, *croſs*. In the Greek text of Nicephorus, they are called *Chatzintzarians*, χατζιντζαριοι.

They are alſo called *Staurolatræ*, which, in Greek, ſignifies the ſame as *Chazinzarians* in Armenian, viz. *adorers of the croſs*; they being charged with paying adoration to the croſs alone.

In other reſpects they were Neſtorians; and admitted two perſons in Jeſus Chriſt. Nicephorus, lib. xviii. cap. 54. aſcribes other ſingularities to them, particularly their holding an annual feaſt, in memory of the dog of their falſe prophet Sergius; which they called *Artzibartzes*.

CHEATS, in *Law*, are deceitful practices in defrauding, or endeavouring to defraud another of his known right by ſome artful and diſhoneſt device; as by playing with falſe dice, by fraudulently obtaining the execution of deeds and truſts, by ſuppreſſing wills, by raiſing money under falſe pretences, &c. Any deceitful practice, whether in trade or otherwiſe, is puniſhable with fine, impriſonment, and pillory. And by the ſtatutes 33 Hen. VIII. cap. 1. and 30 Geo. II. cap. 24. if any man defraud another of any valuable chattels by any falſe token, counterfeit letter, or falſe pretences, or pawns or diſpoſes of another's goods without the conſent of the owner, he ſhall ſuffer ſuch puniſhment by impriſonment, fine, pillory, tranſportation, whipping, or other corporal pains, as the court ſhall direct. And by 9 Anne, cap. 14. if any perſon *cheats* at play, and at one time wins more than 10*l.* or any valuable thing, he may be indicted thereupon, and ſhall forfeit five times the value, ſhall be deemed infamous, and ſuffer ſuch corporal puniſhment, as in caſe of wilful perjury. Blackſt. Com. vol. iv. p. 158, and 173.

CHECAYA, in *Turkiſh Affairs*, is the ſecond officer of the janizaries, and ſynonymous with lieutenant, or the ſecond in any office.

CHECK-*roll*, a roll, or book, containing the names of ſuch as are attendants, and in pay to the king, or other great perſons; as their houſhold ſervants.

It is otherwiſe called the *chequer-roll*. See ROLL.

CHECK, *clerk of the*, in the king's houſhold, has the *check* and controulment of the yeomen of the guard, and all the uſhers belonging to the royal family; allowing their abſence or defects in attendance, or diminiſhing their wages for ſame, &c.—He alſo, by himſelf, or deputy, takes the view of thoſe that are to watch in the court, and has the ſetting of the watch. 33 Hen. VIII. c. 12.

CHECK, *clerk of the*, in the king's dock-yards, is alſo the name of an officer, who keeps a muſter or regiſter of all the men employed aboard his majeſty's ſhips and veſſels, and of the artificers and others in the ſervice of the navy, in the port to which he belongs.

CHECK, in *Falconry*, is where a hawk forſakes her proper game, to follow rooks, pies, or other birds that croſs her in her flight.

CHECKER. See EXCHEQUER.

CHECKER-*courſe*, in *Brick-Making*. See BRICK.

CHECKY, in *Heraldry*, is where the ſhield, or a part thereof, as a bordure, &c. is chequered, or divided into chequers, or ſquares. See *Tab. Heraldry, fig.* 15.

Where there is but one row of ſquares, it is not properly called *checky*, but *countercomponed*.

Checky, according to Colombiere, is one of the moſt noble and ancient figures in all armory; and ought never to be given, but to perſons who have diſtinguiſhed themſelves in war: for it repreſents a cheſs-board, which itſelf is a repreſentation of a field of battle. The pawns and men, placed on both ſides, repreſent the ſoldiers of the two armies; which move, attack, advance, or retire, according to the will of the two gameſters, who are the generals.

Checky is always compoſed of metal, and colour. Some authors, however, would have it ranked among the ſorts of furs.

When the whole eſcutcheon is chequered, it ſhould ordinarily contain ſix ranges: there is no need of blazoning to expreſs them; only it muſt be obſerved, to begin to blazon by the firſt ſquare in chief on the dexter ſide. So that if that be *or*, and the next *gules*, the houſe, or family, is ſaid to bear *checky*, *or*, and *gules*.

When the whole ſhield is not chequered, but only the chief, a bend, croſs, or the like, the number of ranges ſhould be expreſſed.

CHEEK, in *Anatomy*, that part of the face ſituated below the eyes on either ſide.

Wounds of the *cheeks*, if ſmall, may be cured by means of the dry ſuture; but, if very large, will require the bloody one, to bring their lips together: they are then eaſily healed with vulnerary balſams. But if it happen that one of Steno's ſalivary ducts is wounded in its paſſage acroſs the *cheek* from the parotid gland, the conſtant diſcharge of ſaliva into the wound will prevent the cure, till the duct is perforated in the internal part of the *cheek*, to make a paſſage for the ſaliva into the mouth. This method is propoſed by Cheſelden in his anatomy.

CHEEKS, a general name among *Mechanics*, for almoſt all thoſe pieces of their machines and inſtruments, that are double, and perfectly alike.

The *cheeks of a printing-preſs*, are its two principal pieces: they are placed perpendicular, and parallel to each other; ſerving to ſuſtain the three ſommers, viz. the head, ſhelves, and winter, and to bear the ſpindle, and other parts of the machine.

The *cheeks of a turner's lathe*, are two long pieces of wood, between which are placed the *puppets*, which are either pointed, or otherwiſe, ſerving to ſupport the work, and the mandrils of the workman. Theſe two pieces are placed parallel to the horizon, ſeparated from one another by the thickneſs of the tail of the puppets, and joined with tenons to two other pieces of wood, placed perpendicularly, called the *legs of the lathe*.

Cheeks of the glazier's vice, are two pieces of iron joined parallel at top and bottom; in which are the axis, or ſpindles, little wheel, cuſhions, &c. whereof the machine is compoſed.

CHEEKS *of a mortar*, or BRACKETS, in *Artillery*, are made of ſtrong planks of wood, bound with thick plates of iron, and are fixed to the bed by four bolts; they riſe on each ſide of the mortar, and ſerve to keep her at what elevation is given her, by the help of ſtrong bolts of iron which go through both *cheeks*, both under and behind the mortar, betwixt which are driven coins of wood; theſe bolts are called the bracket-bolts, and the bolts which are put one in each end of the bed, are the traverſe-bolts, becauſe with hand-ſpikes the mortar is by theſe traverſed to the right or left.

CHEEKS, in *Ship-Building*, are two pieces of timber, fitted on each ſide of the maſt, at the top, ſerving to ſtrengthen the maſts there. The uppermoſt bail or piece of timber in the beak of a ſhip, is called the *cheek*. The knees which faſten the beak-head to the bow of the ſhip, are called *cheeks*; and the ſides of any block, or the ſides of a ſhip's carriage of a gun, are called *cheeks.*

CHEEKS, *upper and lower*, are thoſe pieces of timber on each ſide of the TRAIL-*board.*

CHEESE, a kind of food; being a preparation of milk curdled by means of rennet, and afterwards dried, and hardened.

Cheeſe is nothing but milk purged of its ſerum, or whey; and ſometimes too of the cream, or butyrous part of the milk.

Cheeſe, when new, is found to load the ſtomach, by reaſon of its moiſture and viſcidity; and when too old, it heats and inflames it by its ſalts. The phyſicians adviſe it to be eat in ſmall quantities: hence that Latin verſe,

Caſeus ille bonus, quem dat avara manus.

Dr. Quincy ſays, it cannot be too old: it is certain, the more it abounds with ſalts, the more will it contribute to digeſtion, and the clearing of the ſtomach of other food. Indeed ſome condemn all uſe of *cheeſe*; ſheltering themſelves under that ancient maxim, *Caſeus eſt nequam, quia concoquit omnia ſe quam.*

The Laplanders make a ſort of *cheeſe* of the milk of their rein-deer, which is not only of great ſervice to them as food, but on many other occaſions. Scheffer's Hiſt. of Lapl.

CHEESE *Runnet*, in *Botany.* See LADY's *Bedſtraw.*

CHEEVANCE. See CHEVISANCE.

CHEF. See CHIEF.

CHEF *d'oeuvre.* See MASTERPIECE.

CHEGGIO, in *Botany*, a name given to a ſort of lacteſcent plant, common in Cambaya. It is reported by authors, and by the people of the country, that thoſe knobs and beards of this plant which grow facing the north, are a very noble medicine in the cure of apoplexies and other nervous diſorders, but that thoſe knots and beards of the ſame plant which look ſouthward are poiſonous. Redi proved ſome of this famous plant, and gave it ſeveral fair trials, but found the hiſtory of its nature and effects wholly falſe.

CHEILOCACE, among *Phyſicians*, literally ſignifies the *lip-evil.* It is a ſwelling of the lips, to which the inhabitants of northern countries, eſpecially children, are ſaid to be very ſubject; particularly thoſe in England and Ireland, if we may credit Caſtellus.

CHEIRANTHUS, in *Botany.* See STOCK *Gilly-flower.*

CHEKAO, in *Natural Hiſtory*, the name of an earth found in many parts of the Eaſt Indies, and ſometimes uſed by the Chineſe in their porcelain manufactures. It is a hard and ſtony earth, and the manner of uſing it is this: they firſt calcine it in an open furnace, and then beat it to a fine powder. This powder they mix with large quantities of water, and ſtirring the whole together, they let the coarſer part ſubſide, and pouring off the reſt, yet thick as cream, they leave it to ſettle, and uſe the matter at the bottom, which is found in form of ſoft paſte, and will retain that humidity a long time. This ſupplies the place of the earth called *hoache*, in the making that elegant ſort of china-ware which is all white, and has flowers which ſeem formed by a mere vapour within its ſurface. The manner of their uſing it is this: they firſt make the veſſel of the common matter of the manufacture; when this is almoſt dry, they paint upon it the flowers, or whatever other figures they pleaſe, with a pencil dipt in this preparation of the *chekao*; when this is thoroughly dry, they cover the whole veſſel with the varniſh, in the common way, and bake it as uſual. The conſequence is, that the whole is white; but the body of the veſſel, the figures, and the varniſh, being three different ſubſtances, each has its own particular white; and the flowers, being painted in the fineſt white of all, are diſtinctly ſeen through the varniſh upon the veſſel, and ſeem as if traced by a fine vapour only. The *hoache* does this as well as the *chekao*, and has beſide this the quality of ſerving for the making the porcelain ware, either alone, or in the place of the *kaolin:* the *chekao* has not this property, nor any other ſubſtance beſide this *hoache*, which appears to be the ſame with our ſteatites or ſoap-rock.

CHELA, in *Medicine*, has ſeveral ſignifications. It imports a forked probe, mentioned by Hippocrates, lib. ii. De Morbis, uſed in extracting a polypus of the noſe. But in Ruffus Epheſius, cap. 4. *chelæ* implies the extremities of the *cilia*, which touch each other when the eyes are ſhut. But the moſt frequent ſignification of *chelæ* is claws, particularly thoſe of the crab.

Chelæ further ſignifies fiſſures in the heels, feet, or pudenda.

CHELANDIUM, in *Middle Age Writers*, is uſed for a kind of veſſel or ſhip. It is alſo called *chelandrium*, *chelindrus*, *chelindra*, *ſalandra*, and *ſalandria*, and, by the Byzantine writers, χελανδριον. It is mentioned by Ditmar as a veſſel of great length, carrying oars, and a hundred and fifty ſeamen. It ſeems to have reſembled an Italian galley.

CHELANDURUS, in *Middle Age Writers*, a ſmall kind of CHELANDIUM.

CHELAZIUM, a name uſed by ſome authors for a moveable tubercle in the eye-lid, commonly called in Engliſh a *ſlithe* or *ſtye.*

CHELIDON, in *Ichthyology*, the name given by many of the old Greek writers to a kind of flying-fiſh, called by ſome authors *milvus* and *hirundo*, and by ſome *accipiter*, or the HAWK-*fiſh.* It is properly a ſpecies of *trigla*, and is diſtinguiſhed by Artedi by the name of the *trigla* with the head a little aculeated, and with a ſingular fin near the pectoral fins. This method of reducing the fiſh to their true *genera*, and diſtinguiſhing them by their proper ſpecific names, is the only method of truly knowing them. The arbitrary names of *milvus* and *hirundo* carry ſo little idea of the peculiar fiſh with them, that they may be as well applied to one ſpecies as another; and accordingly we find two or three different ſpecies of the *trigla* called *milvus*, &c. by different authors.

CHELIDONIA, among the Romans, a name given to the wind more commonly called FAVONIUS.

It was only called *chelidonia* for a fortnight in the middle of February, becauſe at that time the ſwallow makes its firſt appearance.

CHELIDONIUM, in *Botany.* See CELANDINE.

CHELIDONIUS, in *Botany*, a name given by ſome writers to the ANEMONE. The reaſon ſeems to have been its flowering about the time of the ſwallows coming from their winter retreats.

CHELIDONIUS, in *Inſectolcgy*, the name of a fly called the ſwallow fly, by reaſon of its ſwift flight. It is in moſt parts of a brown colour, and has black prominent ſhoulders, a black head, and ſhort black *antennæ.* The wings are ſilvery, and edged with black. It often ſits a long time together on the leaves of plants; but is very quick-ſighted, and when any perſon comes near it, it is gone in a moment, and uſually takes ſuch long flights, that it is not eaſily caught afterwards.

CHELIDONIUS, in *Natural Hiſtory*, a ſtone pretended to be found in the ſtomachs of young ſwallows; much eſteemed by ſome for the falling ſickneſs.

The word is formed from χελιδων, a *ſwallow.* See SWALLOW-*ſtone.*

CHELON, in *Zoology*, the name of a fiſh of the mullet kind, and much reſembling the common mullet in its general ſhape, but its eyes are more prominent, and its head ſmaller. It has alſo its ſide-lines, which run from the head to the tail, very evenly ranged, and placed at equal diſtances, and its lips are remarkably thick and prominent. It is of the ſize of the common MULLET.

CHELONE, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Its characters are theſe: the flower is of the ringent kind, having a ſhort cylindrical tube, which is ſwollen at the chaps, where it is oblong, convex above, and plain below; the mouth almoſt cloſed. It hath four ſtamina, the two ſide ones being a little longer than the other. It hath an oval germen, which afterward becomes an oval capſule, having two cells, which are filled with flat, roundiſh ſeeds, having a border. There are three ſpecies, which grow naturally in North America.

CHELONITES, a ſtone ſaid to be found in the Indian tortoiſes, and to have the faculty of reſiſting poiſon.

The word is formed from χελωνη, a *tortoiſe.*

Some confound the *chelonites* with the bufonites, or toad-ſtones.

CHELSEA *College.* See HOSPITAL.

CHELYDRUS, in *Natural Hiſtory*, a ſpecies of ſerpents, the ſame with the CHERSYDRUS.

CHELYS, among the *Ancients*, a muſical inſtrument of the pulſative kind, ſaid to be invented by Mercury, and formed of a ſhell found in the river Nile, at the time of low water.

CHELYSMA, in *Antiquity*, a thick piece of wood which the Greeks fixed to the keels of their ſhips, to ſave them from being worn or broken. It was alſo called *cuneus.*

CHEMA, according to Blancard, is the name of a certain meaſure ſometimes mentioned by the Greek phyſicians, and which he thinks contained two ſmall ſpoonfuls.

The determined weight of this quantity cannot be accurately aſcertained, in conſequence of the different ſpecific gravities of different ſubſtances: juſt as, at preſent, the word *ſpoonful* is uſed in a vague and undetermined ſenſe, eſpecially with reſpect to ſubſtances, of which it is a matter of indifference whether a little more or a little leſs be uſed.

CHEME, among the Romans, was a liquid meaſure, containing the fifth part of a CYATHUS.

CHEMICAL *glaſſes*, how to cement when cracked, ſee CEMENT.

CHEMIN *des rondes*, in *Fortification*. See WAY *of the rounds*.

CHEMISE, in *Fortification*, a wall wherewith a baſtion, or ditch, is lined, for its greater ſupport and ſtrength.

CHEMISE, *fire*, is a piece of linen cloth, ſteeped in a compoſition of oil of petrol, camphor, and other combuſtible matters; uſed at ſea, to ſet fire to an enemy's veſſel.

CHEMISTRY. See CHYMISTRY.

CHEMOSIS, in *Medicine*, a diſeaſe of the eye, proceeding from an inflammation, when the white of the eye ſwells above the black, and overtops it to ſuch a degree, that there appears a ſort of χημη, *hiatus*, or gap between them, whence it takes its name. Galen calls it a red and carnous inflammation of the *cornea tunica*.

Dr. Burghart, in a *chemoſis* where the *cornea* was already burſt, dilated the opening, and extracted the cryſtalline *lens*, which had come forward before the *iris*. The *lens* was ſo changed and ſuppurated, that it reſembled a piece of white amber: after extracting it, the pain of the eye became milder.

CHENCE, in *Old Cuſtoms*, ſeems to be much the ſame as AMABYR.

CHENILLES, *fauſſe*, *baſtard caterpillars*. See FAUSSE.

CHENISCUS, from χην, *a gooſe*; among the *Ancients*, an ornament in the form of little geeſe, uſed on the prows and ſterns of their ſhips.

CHENOCORPUS, *Gooſe-dung*, in *Medicine*, is accounted very acrimonious and reſolvent, and therefore preſcribed with ſucceſs in the jaundice. The greeniſh dung is eſteemed the beſt. It is gathered in the meadows in ſpring time, and being dried with a moderate heat, and pulveriſed, is given from half a dram to a full dram at a doſe. It is recommended alſo in the ſcurvy, and other diſeaſes.

CHENOPODIUM, in *Botany*. See GOOSE-*foot*.

CHENSERS, in our *Statutes*, is uſed for ſuch as paid tribute or *cenſe*, quit-rent, or chief-rent.

CHEQ, or CHERIF, the prince, or high-prieſt of Mecca; ſovereign pontiff of the Muſſulmans; and owned as ſuch by all the ſects into which they are divided.

The grand ſignior, ſophies, mogols, khans of Tartary, &c. ſend him yearly preſents; eſpecially tapeſtry, to cover Mahomet's tomb, and tents for himſelf: for the *cheq* has a tent near the moſque of Mecca, wherein he lives during the ſeventeen days of devotion in pilgrimage to Mecca. The tapeſtry and tent are changed each year, and pieces thereof are ſent to the princes who furniſh new ones.

His revenue is very conſiderable, conſiſting of preſents made by the Mahometan princes, and pilgrims, to the moſque of Mecca and Medina.

The *cheq* ſubſiſts all the pilgrims during the ſeventeen days of devotion; on which account he is every year furniſhed with a very conſiderable ſum of money from the grand ſignior: the better to obtain this, he makes him believe, that there are conſtantly, during this time, ſeventy thouſand pilgrims; and that, ſhould the number fall ſhort, the angels, in form of men, would make it up.

CHERAMIS, in *Antiquity*, a medical meaſure. According to Erotian on Hippocrates, it was the hollow of a ſhell-fiſh called *myax*, and took that name from χηραμος, which ſignifies a *hollow place*. It frequently occurs in Hippocrates, and ſeems not much different from the *chema*, which in Galen's Exegeſis is expounded by it. Cornavius alſo explains *cheramis* by the meaſure of a CHEMA; and Calvus on another paſſage expounds it by a *pugil*.

CHEREF, a title aſſumed by the emperors of Morocco. See CALIPHATE.

CHEREM, among the Jews, is uſed to ſignify a ſpecies of ANNIHILATION.

The Hebrew word *cherem* ſignifies properly *to deſtroy*, *exterminate*, *devote*, *anathematize*.

CHEREM is ſometimes likewiſe taken for that which is conſecrated, vowed, or offered to the Lord, ſo that it may no longer be employed in common or profane uſes. There are ſome who aſſert, that perſons thus devoted were put to death; whereof, they ſay, Jephtha's daughter is a memorable example. Judg. xi. 29, &c.

CHEREM is alſo uſed for a kind of excommunication in uſe among the Jews. See NIDDUI.

CHERLERIA, in *Botany*, a name given by Haller and Linnæus to a genus of plants of the *decandria trigynia* claſs, the characters of which are theſe: the perianthium is compoſed of five equal lanceolated leaves. There are no petals; but there ſtand within the cup five very ſmall, roundiſh, and emarginated *nectaria*, diſpoſed in a circular order. The ſtamina are ten ſubulated filaments, five of which are affixed to the *nectaria*. The *antheræ* are ſimple; the germen of the piſtil is of an oval figure; the ſtyles are three, and ſtand open; the ſtigmata are ſimple. The fruit is an oval capſule, compoſed of three valves, and divided into three cells. The ſeeds are numerous, convex on one ſide, and angular on the other. The *nectaria* of this genus ſhew, that they are of kin to the *ſedums* or houſeleeks; but in the fruit it differs altogether from the *ſedums*, and rather approaches to the nature of the *lychnis*; it would therefore be very improper to confound it with either of thoſe *genera*.

CHERMES, in *Zoology*, a genus of four-winged inſects, the characters of which are theſe: its *roſtrum*, or trunk, is ſituated under its breaſt; the abdomen is mucronated, or pointed, at the hinder extremity; and the legs are formed for leaping.

Theſe inſects, which in Engliſh are called bugs, take particular denominations from the trees or plants on which they feed: as the *elm*-BUG, the *fir*-BUG, the *birch*-BUG, the *maple*-BUG, the *willow*-BUG, the *nettle*-BUG, &c.

CHERMITES, or CHERNITES, in the *Natural Hiſtory of the Ancients*, a name given by many to a ſpecies of very bright and white marble or alabaſter, which ſeems to have been the ſame with that called afterwards LYGDINUM *marmor*.

CHERNIBS, in *Antiquity*, a veſſel wherein people uſed to waſh their hands before they went to attend religious ſervice.

The word is derived from χειρ, the *hand*, and νιπτω, *to waſh*.

CHERRY-*Tree*, *Ceraſus*, in *Botany*, the name of a genus of trees, according to ſome writers, but a ſpecies of the PRUNUS in the Linnæan ſyſtem. For the botanical characters, ſee PLUM-*Tree*.

This tree is called *ceraſus*, according to Servius, from the name of a city in Pontus, which Lucullus deſtroyed; and the fruit of it was brought by him to Rome, in the year of the city 680, and into Britain about a hundred and twenty years afterwards, or A. D. 55. Soon after it was ſpread through moſt parts of Europe. The ſpecies of the *cherry-tree* enumerated by Miller are five, viz. 1. the common or Kentiſh *cherry*, from which many modern botaniſts ſuppoſe that moſt of the varieties cultivated in the Engliſh gardens are derived; ſuch as the early May *cherry*, the May-duke *cherry*, the arch-duke *cherry*, the Flemiſh *cherry*, the red-heart, the white-heart, the black-heart, the amber-heart, the ox-heart, the lukeward, the carnation, the Hertfordſhire-heart, the morello, the bleeding-heart, and the yellow Spaniſh *cherry*, beſides two ſorts with double flowers, which are propagated for ornament. 2. The *cherry-tree* with ſpear-ſhaped ſawed leaves, or the greater wild *cherry-tree* with a ſweetiſh fruit, whoſe juice yields a black colour. This is a black *cherry*, ſuppoſed to be a native of England. This tree grows to a large ſize, produces beautiful flowers, affords good food for birds, and the wood of it is uſeful for turners. The French plant them for avenues to their houſes, where other trees will not thrive, and cultivate them for the manufacture of hoops. The varieties raiſed by ſeeds from this tree are the black coroun, which is a good bearer, and yields excellent fruit, and the ſmall wild *cherry*. 3. The *cherry-tree* with oval ſpear-ſhaped leaves, and flowers growing in cluſters, commonly called the cluſter *cherry*. 4. The *cherry-tree* with flowers growing in round bunches, and oval-leaves, called the *Mahaleb*, or perfumed *cherry*. The wood of this ſort is eſteemed by the French for cabinet-making, on account of its agreeable odour. 5. The *cherry-tree* with ſmooth, ſpear-ſhaped, entire leaves, of a bluiſh green on their under-ſide, and ſpreading branches, called the dwarf *Canada cherry*.

The ſeveral ſorts of *cherry-trees* are propagated by binding or grafting the ſeveral kinds into ſtocks of the black or wild red *cherries*, which are ſtrong ſhooters, and of a longer duration than any of the garden kinds. The ſtones of theſe two kinds are ſown in a bed of light ſandy earth in autumn, and the young ſtocks produced from them are to remain where they riſe till the ſecond autumn after their ſowing, when in October they ſhould be planted out into a rich earth, at three feet diſtance from row to row, and at about ten inches diſtance in the rows. The ſecond year after the planting out, they will be fit to bud, if they are intended for dwarfs; but if they are intended for ſtandards, they will not be tall enough till the fourth year; for they ſhould be budded or grafted near ſix feet from the ground. The grafting is uſually performed in ſummer, and the head of the ſtock is to be cut off in the beginning of the March following, about ſix inches above the bud; and if the bud has ſhot well, and there is any fear of its being diſplaced by winds, it muſt be gently tied up to the part of the ſtock left above it. The autumn afterwards, theſe trees will be fit to remove, and be ſet where they are to remain; or they may be left two years. Many, when they plant theſe trees in their places, lop off a great part of their heads, but this is an injury that often kills them; and when they eſcape, they ſeldom get well over it for four or five years. If the trees are intended for walls, it is adviſeable to plant dwarfs between the ſtandards, that theſe may cover the lower part of the wall, while the others ſpread over the upper part; and when the dwarfs riſe to fill the whole walls, the ſtandards ſhould be taken entirely away. When theſe trees are taken up from the nurſery, the dead fibres of the roots muſt be carefully taken off, and the upper part of the ſtock which is above the bud, muſt be cut off cloſe down to the back part of it: the bud muſt be placed directly from the wall.

Cherry-trees thrive beſt on a dry hazley loam, and in a gravelly ſoil are very ſubject to blights, and ſeldom ſtand long good. They ſhould be placed at fourteen feet aſunder, with a ſtandard-tree between each two. In pruning theſe trees, their ſhoots ſhould never be ſhortened, for they moſtly produce their fruit from their extreme part. All the fore-right ſhoots are to be diſplaced, and the others trained horizontally; and where there is a vacancy in the wall, the branches being ſhortened, will throw up a ſhoot or two to fill it.

Cherry, *Barbadoes*, *Malpighia*, in *Botany*, a genus of the *decandria trigynia* claſs. Its characters are theſe: the flower hath five kidney-ſhaped petals, which are concave, and ſpread open; and ten awl-ſhaped ſtamina, with two mellous glands adhering to the empalement. It has a ſmall roundiſh germen, ſupporting three ſlender ſtyles. The germen turns to a large, furrowed, globular berry, with one cell, incloſing three rough, angular, ſtony ſeeds. There are eight ſpecies, natives of the Weſt Indies, where the fruit is eaten by the natives.

Cherry, *Cornelian*, *Cornus*, in *Botany*, a genus of the *tetrandria monogynia* claſs. Its characters are theſe: it hath many flowers, which are included in one common four-leaved coloured involucrum; the flowers have four plain petals, and four erect ſtamina, which are longer than the petals. The round germen ſituated below the empalement becomes an oval or roundiſh berry, incloſing a nut with two cells, having an oblong kernel. There are ſix ſpecies. Miller's Gard. Dict.

The fruit of this tree is cooling, drying, and aſtringent, ſtrengthens the ſtomach, ſtops all kinds of fluxes, and is good in fevers, eſpecially if accompanied with a diarrhœa. The only officinal preparation of this fruit is the *rob de cornis*.

Cherry, *Dwarf*, and **Cherry** *of the Alps*, *Lonicera*. See *Upright* Honey-suckle.

Cherry, *Hottentot*, *Maurocenia*, in *Botany*, Lin. Gen. Plant. Edit. 2. 289. Its characters are theſe: the flower has five oval petals, which ſpread open. It hath five ſtamina, which are ſituated between the petals; and in the center is ſituated a roundiſh germen, crowned by a trifid ſtigma. The germen turns to an oval berry with one or two cells, each containing a ſingle oval ſeed. There are three ſpecies, natives of the Cape of Good Hope, and one diſcovered at Jamaica. This plant is annexed to the genus of cassine, in the laſt edition of Linnæus's Genera.

Cherry, *Winter*, *Phyſalis*, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower has a ſwelling permanent empalement, which is five-cornered, and cut at the top into five acute points. The flower has one wheel-ſhaped petal, with a ſhort tube, and a large brim, which is five-cornered, and plaited. It has five ſmall awl-ſhaped ſtamina, which join together, and a roundiſh germen ſupporting a ſlender ſtyle, crowned by an obtuſe ſtigma. The germen afterwards turns to an almoſt globular berry, with two cells incloſed in the large inflated empalement, filled with compreſſed kidney-ſhaped ſeeds. There are ſixteen ſpecies.

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The figure of the *cherubim* was not always uniform, ſince they are differently deſcribed in the ſhapes of men, eagles, oxen, lions, and in a compoſition of all theſe figures put together. Moſes likewiſe calls theſe ſymbolical or hieroglyphical repreſentations, which were repreſented in embroideries upon the veils of the tabernacle, *cherubim* of coſtly work. Such were the ſymbolical figures which the Egyptians placed at the gates of their temples, and the images of the generality of their gods, which were commonly nothing but ſtatues compoſed of men and animals.

Cherubim was alſo the name of an ancient military order in Sweden, otherwiſe called the *order of Seraphim*. It was inſtituted by Magnus IV. in 1334, and aboliſhed by Charles IX. It took its denomination from the golden figures of *cherubim*, whereof the collar of the order was compoſed.

CHERVIL, *Chaerophyllum*, in *Botany*, a genus of the *pentandria digynia* claſs. Its characters are theſe; it is a plant with umbellated flowers; the principal umbel is ſpreading, and compoſed of ſeveral ſmall ones called rays: the flowers have five heart-ſhaped inflexed petals, and five ſtamina. The germen is ſituated below the flower, ſupporting two reflexed ſtyles, which afterward becomes an oblong pointed fruit, dividing in two parts, each having one ſeed, which is convex on one ſide, and plain on the other. There are five ſpecies.

The firſt ſort grows naturally on the ſides of highways, and the borders of the fields in moſt parts of England, ſo is never cultivated in gardens. It is frequently called cow-parſley, but from what reaſon does not appear, becauſe few animals care to eat it, except the aſs; it having in a leſs degree ſomething of the quality of hemlock. It is a weed which ſhould be rooted out of all paſtures early in the ſpring, for it is one of the moſt early plants in

CHEMIN *des rondes*, in *Fortification*. See WAY *of the rounds*.

CHEMISE, in *Fortification*, a wall wherewith a baſtion, or ditch, is lined, for its greater ſupport and ſtrength.

CHEMISE, *fire*, is a piece of linen cloth, ſteeped in a compoſition of oil of petrol, camphor, and other combuſtible matters; uſed at ſea, to ſet fire to an enemy's veſſel.

CHEMISTRY. See CHYMISTRY.

CHEMOSIS, in *Medicine*, a diſeaſe of the eye, proceeding from an inflammation, when the white of the eye ſwells above the black, and overtops it to ſuch a degree, that there appears a ſort of χημη, *hiatus*, or gap between them, whence it takes its name. Galen calls it a red and carnous inflammation of the *cornea tunica*.

Dr. Burghart, in a *chemoſis* where the *cornea* was already burſt, dilated the opening, and extracted the cryſtalline *lens*, which had come forward before the *iris*. The *lens* was ſo changed and ſuppurated, that it reſembled a piece of white amber: after extracting it, the pain of the eye became milder.

CHENCE, in *Old Cuſtoms*, ſeems to be much the ſame as AMABYR.

CHENILLES, *fauſſe*, *baſtard caterpillars*. See FAUSSE.

CHENISCUS, from χην, *a gooſe*; among the *Ancients*, an ornament in the form of little geeſe, uſed on the prows and ſterns of their ſhips.

CHENOCORPUS, *Gooſe-dung*, in *Medicine*, is accounted very acrimonious and reſolvent, and therefore preſcribed with ſucceſs in the jaundice. The greeniſh dung is eſteemed the beſt. It is gathered in the meadows in ſpring time, and being dried with a moderate heat, and pulveriſed, is given from half a dram to a full dram at a doſe. It is recommended alſo in the ſcurvy, and other diſeaſes.

CHENOPODIUM, in *Botany*. See GOOSE-*foot*.

CHENSERS, in our *Statutes*, is uſed for ſuch as paid tribute or *cenſe*, quit-rent, or chief-rent.

CHEQ, or CHERIF, the prince, or high-prieſt of Mecca; ſovereign pontiff of the Muſſulmans; and owned as ſuch by all the ſects into which they are divided.

The grand ſignior, ſophies, mogols, khans of Tartary, &c. ſend him yearly preſents; eſpecially tapeſtry, to cover Mahomet's tomb, and tents for himſelf: for the *cheq* has a tent near the moſque of Mecca, wherein he lives during the ſeventeen days of devotion in pilgrimage to Mecca. The tapeſtry and tent are changed each year, and pieces thereof are ſent to the princes who furniſh new ones.

His revenue is very conſiderable, conſiſting of preſents made by the Mahometan princes, and pilgrims, to the moſque of Mecca and Medina.

The *cheq* ſubſiſts all the pilgrims during the ſeventeen days of devotion; on which account he is every year furniſhed with a very conſiderable ſum of money from the grand ſignior: the better to obtain this, he makes him believe, that there are conſtantly, during this time, ſeventy thouſand pilgrims; and that, ſhould the number fall ſhort, the angels, in form of men, would make it up.

CHERAMIS, in *Antiquity*, a medical meaſure. According to Erotian on Hippocrates, it was the hollow of a ſhell-fiſh called *myax*, and took that name from χηραμος, which ſignifies a *hollow place*. It frequently occurs in Hippocrates, and ſeems not much different from the *chema*, which in Galen's Exegeſis is expounded by it. Cornavius alſo explains *cheramis* by the meaſure of a CHEMA; and Calvus on another paſſage expounds it by a *pugil*.

CHEREF, a title aſſumed by the emperors of Morocco. See CALIPHATE.

CHEREM, among the Jews, is uſed to ſignify a ſpecies of ANNIHILATION.

The Hebrew word *cherem* ſignifies properly *to deſtroy*, *exterminate*, *devote*, *anathematize*.

CHEREM is ſometimes likewiſe taken for that which is conſecrated, vowed, or offered to the Lord, ſo that it may no longer be employed in common or profane uſes. There are ſome who aſſert, that perſons thus devoted were put to death; whereof, they ſay, Jephtha's daughter is a memorable example. Judg. xi. 29, &c.

CHEREM is alſo uſed for a kind of excommunication in uſe among the Jews. See NIDDUI.

CHERLERIA, in *Botany*, a name given by Haller and Linnæus to a genus of plants of the *decandria trigynia* claſs, the characters of which are theſe: the perianthium is compoſed of five equal lanceolated leaves. There are no petals; but there ſtand within the cup five very ſmall, roundiſh, and emarginated *nectaria*, diſpoſed in a circular order. The ſtamina are ten ſubulated filaments, five of which are affixed to the *nectaria*. The *antheræ* are ſimple; the germen of the piſtil is of an oval figure; the ſtyles are three, and ſtand open; the ſtigmata are ſimple. The fruit is an oval capſule, compoſed of three valves, and divided into three cells. The ſeeds are numerous, convex on one ſide, and angular on the other. The *nectaria* of this genus ſhew, that they are of kin to the *ſedums* or houſeleeks; but in the fruit it differs altogether from the *ſedums*, and rather approaches to the nature of the *lychnis*; it would therefore be very improper to confound it with either of thoſe *genera*.

CHERMES, in *Zoology*, a genus of four-winged inſects, the characters of which are theſe: its *roſtrum*, or trunk, is ſituated under its breaſt; the abdomen is mucronated, or pointed, at the hinder extremity; and the legs are formed for leaping.

Theſe inſects, which in Engliſh are called bugs, take particular denominations from the trees or plants on which they feed: as the *elm*-BUG, the *fir*-BUG, the *birch*-BUG, the *maple*-BUG, the *willow*-BUG, the *nettle*-BUG, &c.

CHERMITES, or CHERNITES, in the *Natural Hiſtory of the Ancients*, a name given by many to a ſpecies of very bright and white marble or alabaſter, which ſeems to have been the ſame with that called afterwards LYGDINUM *marmor*.

CHERNIBS, in *Antiquity*, a veſſel wherein people uſed to waſh their hands before they went to attend religious ſervice.

The word is derived from χειρ, the *hand*, and νιπτω, *to waſh*.

CHERRY-*Tree*, *Cerasus*, in *Botany*, the name of a genus of trees, according to ſome writers, but a ſpecies of the PRUNUS in the Linnæan ſyſtem. For the botanical characters, ſee PLUM-*Tree*.

This tree is called *cerasus*, according to Servius, from the name of a city in Pontus, which Lucullus deſtroyed; and the fruit of it was brought by him to Rome, in the year of the city 680, and into Britain about a hundred and twenty years afterwards, or A. D. 55. Soon after it was ſpread through moſt parts of Europe. The ſpecies of the *cherry-tree* enumerated by Miller are five, viz. 1. the common or Kentiſh *cherry*, from which many modern botaniſts ſuppoſe that moſt of the varieties cultivated in the Engliſh gardens are derived; ſuch as the early May *cherry*, the May-duke *cherry*, the arch-duke *cherry*, the Flemiſh *cherry*, the red-heart, the white-heart, the black-heart, the amber-heart, the ox-heart, the lukeward, the carnation, the Hertfordſhire-heart, the morello, the bleeding-heart, and the yellow Spaniſh *cherry*, beſides two ſorts with double flowers, which are propagated for ornament. 2. The *cherry-tree* with ſpear-ſhaped ſawed leaves, or the greater wild *cherry-tree* with a ſweetiſh fruit, whoſe juice yields a black colour. This is a black *cherry*, ſuppoſed to be a native of England. This tree grows to a large ſize, produces beautiful flowers. affords good food for birds, and the wood of it is uſeful for turners. The French plant them for avenues to their houſes, where other trees will not thrive, and cultivate them for the manufacture of hoops. The varieties raiſed by ſeeds from this tree are the black coroun, which is a good bearer, and yields excellent fruit, and the ſmall wild *cherry*. 3. The *cherry-tree* with oval ſpear-ſhaped leaves, and flowers growing in cluſters, commonly called the cluſter *cherry*. 4. The *cherry-tree* with flowers growing in round bunches, and oval-leaves, called the *Mahaleb*, or perfumed *cherry*. The wood of this ſort is eſteemed by the French for cabinet-making, on account of its agreeable odour. 5. The *cherry-tree* with ſmooth, ſpear-ſhaped, entire leaves, of a bluiſh green on their under-ſide, and ſpreading branches, called the dwarf *Canada cherry*.

The ſeveral ſorts of *cherry-trees* are propagated by binding or grafting the ſeveral kinds into ſtocks of the black or wild red *cherries*, which are ſtrong ſhooters, and of a longer duration than any of the garden kinds. The ſtones of theſe two kinds are ſown in a bed of light ſandy earth in autumn, and the young ſtocks produced from them are to remain where they riſe till the ſecond autumn after their ſowing, when in October they ſhould be planted out into a rich earth, at three feet diſtance from row to row, and at about ten inches diſtance in the rows. The ſecond year after the planting out, they will be fit to bud, if they are intended for dwarfs; but if they are intended for ſtandards, they will not be tall enough till the fourth year; for they ſhould be budded or grafted near ſix feet from the ground. The grafting is uſually performed in ſummer, and the head of the ſtock is to be cut off in the beginning of the March following, about ſix inches above the bud; and if the bud has ſhot well, and there is any fear of its being diſplaced by winds, it muſt be gently tied up to the part of the ſtock left above it. The autumn afterwards, theſe trees will be fit to remove, and be ſet where they are to remain; or they may be left two years. Many, when they plant theſe trees in their places, lop off a great part of their heads, but this is an injury that often kills them; and when they eſcape, they ſeldom get well over it for four or five years. If the trees are intended for walls, it is adviſeable to plant dwarfs between the ſtandards, that theſe may cover the lower part of the wall, while the others ſpread over the upper part; and when the dwarfs riſe to fill the whole walls, the ſtandards ſhould be taken entirely away. When theſe trees are taken up from the nurſery, the dead fibres of the roots muſt be carefully taken off, and the upper part of the ſtock which is above the bud, muſt be cut off cloſe down to the back part of it: the bud muſt be placed directly from the wall.

Cherry-trees thrive beſt on a dry hazley loam, and in a gravelly ſoil are very ſubject to blights, and ſeldom ſtand long good. They ſhould be placed at fourteen feet aſunder, with a ſtandard-tree between each two. In pruning theſe trees, their ſhoots ſhould never be ſhortened, for they moſtly produce their fruit from their extreme part. All the fore-right ſhoots are to be diſplaced, and the others trained horizontally; and where there is a vacancy in the wall, the branches being ſhortened, will throw up a ſhoot or two to fill it.

Cherry, *Barbadoes*, *Malpighia*, in *Botany*, a genus of the *decandria trigynia* claſs. Its characters are theſe: the flower hath five kidney-ſhaped petals, which are concave, and ſpread open; and ten awl-ſhaped ſtamina, with two mellous glands adhering to the empalement. It has a ſmall roundiſh germen, ſupporting three ſlender ſtyles. The germen turns to a large, furrowed, globular berry, with one cell, incloſing three rough, angular, ſtony ſeeds. There are eight ſpecies, natives of the Weſt Indies, where the fruit is eaten by the natives.

Cherry, *Cornelian*, *Cornus*, in *Botany*, a genus of the *tetrandria monogynia* claſs. Its characters are theſe: it hath many flowers, which are included in one common four-leaved coloured involucrum; the flowers have four plain petals, and four erect ſtamina, which are longer than the petals. The round germen ſituated below the empalement becomes an oval or roundiſh berry, incloſing a nut with two cells, having an oblong kernel. There are ſix ſpecies. Miller's Gard. Dict.

The fruit of this tree is cooling, drying, and aſtringent, ſtrengthens the ſtomach, ſtops all kinds of fluxes, and is good in fevers, eſpecially if accompanied with a diarrhœa. The only officinal preparation of this fruit is the *rob de cornis*.

Cherry, *Dwarf*, and Cherry *of the Alps*, *Lonicera*. See *Upright* Honey-suckle.

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Cherts are uſed as grinding-ſtones for calcined flints, and other hard ſubſtances; but are of too ſmooth and cloſe a texture for grinding corn.

CHERUB, or Cherubin, a celeſtial ſpirit, which, in the hierarchy, is placed next in order to the ſeraphim. The word is formed of the Hebrew כרוב, *cherub*; the plural whereof is *cherubim*.

The figure of the *cherubim* was not always uniform, ſince they are differently deſcribed in the ſhapes of men, eagles, oxen, lions, and in a compoſition of all theſe figures put together. Moſes likewiſe calls theſe ſymbolical or hieroglyphical repreſentations, which were repreſented in embroideries upon the veils of the tabernacle, *cherubim* of coſtly work. Such were the ſymbolical figures which the Egyptians placed at the gates of their temples, and the images of the generality of their gods, which were commonly nothing but ſtatues compoſed of men and animals.

Cherubim was alſo the name of an ancient military order in Sweden, otherwiſe called the *order of Seraphim*. It was inſtituted by Magnus IV. in 1334, and aboliſhed by Charles IX. It took its denomination from the golden figures of *cherubim*, whereof the collar of the order was compoſed.

CHERVIL, *Chaerophyllum*, in *Botany*, a genus of the *pentandria digynia* claſs. Its characters are theſe; it is a plant with umbellated flowers; the principal umbel is ſpreading, and compoſed of ſeveral ſmall ones called rays: the flowers have five heart-ſhaped inflexed petals, and five ſtamina. The germen is ſituated below the flower, ſupporting two reflexed ſtyles, which afterward becomes an oblong pointed fruit, dividing in two parts, each having one ſeed, which is convex on one ſide, and plain on the other. There are five ſpecies.

The firſt ſort grows naturally on the ſides of highways, and the borders of the fields in moſt parts of England, ſo is never cultivated in gardens. It is frequently called cow-parſley, but from what reaſon does not appear, becauſe few animals care to eat it, except the aſs; it having in a leſs degree ſomething of the quality of hemlock. It is a weed which ſhould be rooted out of all paſtures early in the ſpring, for it is one of the moſt early plants in ſhooting; and by the beginning of April, the leaves are near two feet high.

The fourth ſort is the common garden *chervil*, and flowers in May and June. Its leaves and ſeeds are uſed in medicine; the ſeed contains the principal virtue of the plant, and is eſteemed a great medicine in jaundices and dropſies. It is very certain that it is a powerful diuretic, and therefore recommended in the gravel and ſtone; and likewiſe a promoter of the menſes. It reſolves coagulated blood, and generally diſpoſes the perſon to ſleep. It is uſed alſo externally in fomentation in colicky pains and retenſion of urine.

The leaves of this plant are what the good women call *ſweet fern*, from which they diſtil a water, and eſteem it a very great remedy for colics.

This will thrive on any ſoil, and in any ſituation.

CHESS, an ingenious game, performed with little round pieces of wood, on a board divided into ſixty-four ſquares; where ſkill and addreſs are ſo indiſpenſably requiſite, that chance has no place; and a perſon never loſes but by his own fault.

Saraſin has a preciſe treatiſe on the different opinions of the origin of the Latin *ſchacchi*; whence the French *echecs*, and our *cheſs*, is formed. Manege is alſo very full on the ſame head. Leunclavius takes it to come from the *uſcoches*, famous Turkiſh robbers. P. Sirmond from the German *ſcackhe*, *theſt*; and that from *calculus*. He takes *cheſs* to be the ſame with *ludus latrunculorum* of the Romans, but miſtakenly. This opinion is countenanced by Voſſius and Salmaſius, who derive the word from *calculus*, as uſed for *latrunculus*. Some derive it from the Hebrew סיג, *ſjag*, *ſepes*, whence *vallare*, *vallavit*; & מות, *mut*, *mori*, *mortuus*; others again from שחוק, *ſchok*, *luſus*, and מות, *mori*; whence *cheſs* and *cheſs-mate*. Fabricius ſays, a celebrated Perſian aſtronomer, one Schatrenſcha, invented the game of *cheſs*; and gave it his own name, which it ſtill bears in that country. Nicod derives it from *ſcheque*, or *xeque*, a Mooriſh word for *lord*, *king*, and *prince*: Bochart adds, that *ſchach* is originally Perſian, and that *ſchachmat*, in that language, ſigniſies the *king is dead*.

But the learned Hyde has ſhewn from undoubted authorities, that this game was firſt invented in India, and paſſed from thence to Perſia before the year of Chriſt 576, and from Perſia to Arabia. He adds, that the antiquity of this game is traced much higher, or to the middle of the ſecond century, in an Iriſh chronicle, the authenticity of which is doubtful. And he ſhews, that *ſhah*, i. e. *rex*, was a term much in uſe among the orientals, whilſt engaged in this play, and that they uſed it to caution the king againſt any danger; and hence the Europeans and others have denominated the game *ſhachiludium* and *ſhahiludium*, and in Engliſh *cheſs*, from this circumſtance. He alſo derives the word *mat* from the Perſic *manit*, *laſſatus eſt*; and ſays that it was uſed in play, when any of the men was fixed in its place, or taken captive. See Hiſtoria Shahiludii apud Syntagma Diſſertationum, &c. Hyde, editum a Doctore Sharpe, vol. ii. p. 1, &c.

Donatus, on Terence's Eunuch, obſerves, that Pyrrhus, the moſt knowing and expert prince of his age, ranging a battle, made uſe of the men at *cheſs* to form his deſigns; and to ſhew the ſecrets thereof to others. Vopiſcus, in his life of Proculus, informs us, that one of the Roman emperors had the title Auguſtus given him, becauſe of his gaining ten games at *cheſs* ſucceſſively.

Tamerlane is alſo recorded as a very expert gameſter at *cheſs*.

Cheſs is doubtleſs a moſt ancient and univerſal game; the common opinion is, that it was invented by Palamedes at the ſiege of Troy. Others attribute the invention to Diomedes, who lived in the time of Alexander; the romance of the Roſe aſcribes it to one Attalus; but the truth is, the game is ſo very ancient, there is no tracing its author.

In China, it makes a conſiderable part of the education of their females, and ſeems to take the place of dancing among us. In Spain, whole cities challenge each other at *cheſs*; and it has been much in uſe in moſt parts of Europe.

John of Saliſbury relates, that in a battle between the French and Engliſh in 1117, an Engliſh knight ſeizing the bridle of Louis le Gros, and crying to his comrades, *the king is taken*, that prince ſtruck him to the ground with his ſword, ſaying, *Ne ſcais tu pas qu' aux echecs on ne prend pas le roy? Doſt thou not know, that at* cheſs *the king is never taken?* The reaſon is, that when the king is reduced to ſuch a paſs, that there is no way for him to eſcape, the game ends, without expoſing the royal piece to further affront.

Lydgate, a monk of St. Edmund's Bury, calls it the *game-royal*. It was anciently of ſuch repute in Ireland, that ſome of their beſt eſtates depended upon it; and it is a condition whereby two noble families enjoy their lands, that the one engages the other every year at this game: and the Italians have been ſo much addicted to it, that a father, who has died before the concluſion of a game at *cheſs* has bound his ſon to finiſh it; and the ſame cuſtom is ſaid to obtain among the Germans. See Hyde, ubi ſupra, &c. p. 7 and 8.

Cardinal Cajetan, and other caſuiſts, rank *cheſs* in the number of prohibited games, as requiring too much application; and Montaigne blames it as too ſerious for a game.

In this game each player has eight dignified pieces, viz. a king, a queen, two biſhops, two knights, and two rooks, and alſo eight pawns, which were anciently called *ſcachi*, q. d. *milites*, and made in different figures, and of various materials, moſtly of wood or ivory. Theſe pieces are diſtinguiſhed by being painted in white and black colours.

As to their diſpoſition on the board, the white king is to be placed on the fourth black houſe from the corner of the board, in the firſt and lower rank; and the black king is to be placed on the fourth white houſe on the oppoſite, or adverſary's ſide of the board. The queens are placed next to the kings, on houſes of their own colour. Next to the king and queen, on each hand, place the two biſhops; next to them, the two knights; and laſt of all, on the corners of the board, the two rooks. As to the pawns, they are placed, without diſtinction, on the ſecond rank of the houſe, one before each of the dignified pieces.

Having thus diſpoſed the men, the onſet is commonly begun by the pawns, which march ſtrait forward in their own file, one houſe at a time, except the firſt move, when they may advance two houſes, but they never move backwards: the manner of their taking the adverſary's men is ſideways, in the next houſe forwards; where, having captivated the enemy, they move forward as before. The rook goes forward or croſs-ways through the whole file, and back again. The knight ſkips backward and forward to the next houſe, ſave one, of a different colour, with a ſidling march, or aſlope, and thus kills his enemies that fall in his way, or guards his friends that may be expoſed on that ſide. The biſhop walks always in the ſame colour of the field which he is placed in at firſt, forward or backward, aſlope or diagonally, as far as he pleaſes. The queen's walk is more univerſal, as ſhe takes all the ſteps of the fore mentioned pieces, excepting that of the knight; and as to the king's motion, it is one houſe at a time, and that in any direction. As to the value of the different pieces, next to the king is the queen, after her the rooks, then the biſhops, and laſt of all the knights. The difference of the worth of pawns is not ſo great as that of noblemen; however, the king's biſhop's pawn is the beſt, and therefore particular care is taken of him. It ought alſo to be obſerved, that, whereas any man may be taken, when he falls within the reach of any of the adverſary's pieces, it is otherwiſe with the king, who, in ſuch a caſe, is only to be ſaluted with the word *check* (*ſhack*), warning him of his danger, out of which he muſt move; and if he cannot move without expoſing himſelf to a ſimilar inconvenience, it is *check-mate*, and the game is loſt

CHESS-*trees*, in *Ship-Building*, are two ſmall pieces of timber with a hole in them, bolted on each ſide of the ſhip, and placed as far before the main-maſt as the length of the main-beam; their uſe is to confine the clue of the main-ſail, and for this purpoſe a rope paſſes through, that uſually extends the clue of the ſail to windward.

CHEST, in *Anatomy*, that part of the body which contains the heart and lungs. See BREAST and THORAX.

CHEST, in *Commerce*, a kind of meaſure, containing an uncertain quantity of ſeveral commodities.

A *cheſt of ſugar*, v. g. contains from ten to fifteen hundred weight; a *cheſt of glaſs*, from 200 to 300 feet; of *Caſtile ſoap*, from two and a half to three hundred weight; *of indigo*, from one and a half to two hundred weight; five ſcore to the hundred.

CHEST *at Chatham* was eſtabliſhed in 1588, for the benefit of maimed and ſuperannuated Engliſh mariners, out of which penſions are paid to ſuch for their lives. This fund was at firſt raiſed by a voluntary monthly contribution of the mariners out of their pay, and afterwards made perpetual by queen Elizabeth.

CHESTNUT, *Caſtanea*, from *Caſtana*, a city in Theſſaly, where this tree anciently grew in great plenty; in *Botany*, is ranged by Linnæus in the claſs of *monoecia polyandria*, and joined to the genus of *fagus* or BEECH. Its characters are theſe: it hath male and female flowers on the ſame tree, ſometimes at ſeparate diſtances, at other times near each other. The male flowers form a ſort of catkin, have no petals, but include about ten or twelve briſtly ſtamina. The female flowers are of one leaf, divided into four parts; having no petals, but a germen fixed to the empalement, which becomes a roundiſh fruit armed with ſoft ſpines, including one or more nuts. There are three ſpecies.

The *cheſtnut* tree is a tree which deſerves our care as much as any of the trees which are propagated in this country, either for its uſe or beauty; being one of the beſt ſorts of timber, and affording a good ſhade. It will grow to a great ſize, and ſpread its branches finely on every ſide where it has room. The leaves are large, of a lucid green, nor are they ſo liable to be eaten by inſects as thoſe of the oak. There is no better food for deer, and many other animals, than their nuts; which moſt of them prefer to acorns: yet they ſhould not be planted near habitations; becauſe when they are in flower they emit a diſagreeable odour, very offenſive to moſt people.

Some remains of old decayed *cheſtnuts* in Enfield chaſe, plainly prove that this tree is not ſo great a ſtranger to this climate as many people believe. Dr. Ducarel maintains, in his Anglo-Norman Antiquities, that they are indigenous or native trees of this iſland: for this purpoſe he alleges, that many of our old buildings in London, and other places, contain a great quantity of this timber; that *cheſtnut* trees were familiarly known to the Saxons, and that they are very common ſtill in ſeveral parts of England, particularly in the north-eaſt part of Kent; and that remains of them are ſeen in the foreſt of Dean and elſewhere. The Hon. Mr. Daines Barrington has controverted this opinion. See on the ſubject, Phil. Tranſ. vol. lix. N° 5. and vol. lxi. N° 17, 18, 19, and 20.

Cheſtnut trees may be cultivated in England, to afford equal profit with any of the large timber trees; the wood being of equal value with the beſt oak, and for many purpoſes far exceeding it. It is particularly good for veſſels for all kinds of liquor; having a property, when once thoroughly ſeaſoned, of maintaining its bulk conſtantly, without ſhrinking or ſwelling, as other timber is too apt to do; and it is ſaid that all the large caſks for their wines in Italy, are made of this timber: it is for this and many more purpoſes, in greater eſteem among the Italians, than any other timber whatever. It is alſo very valuable for pipes to convey water under ground, as enduring longer than elm, or any other wood.

Theſe trees are propagated by planting the nuts in February, in beds of freſh undunged earth. The beſt nuts for ſowing, are ſuch as are brought from Portugal or Spain, which are commonly ſold in winter for eating; provided they are not kiln dried, which is frequently done to foreign nuts, to prevent their ſprouting in the paſſage. The time generally allowed them in the nurſery, is three or four years; but the younger they are tranſplanted, the better they will ſucceed.

See an ingenious and an effectual method of preſerving *cheſtnuts*, diſcovered by Mr. Ellis. Phil. Tranſ. vol. li. part i. p. 213. an. 1759.

CHESTNUT, *horſe*, *Hippocaſtanum*, ÆSCULUS, in *Botany*. Its characters are theſe: the empalement of the flower is ſlightly cut into five ſegments; the flower is compoſed of five unequal petals, folded at their border, and waved; and it has ſeven ſtamina. The empalement becomes a thick, rounded, echinated capſule, opening into three cells, in one or two of which are lodged globular ſeeds. We have but one ſpecies.

The *horſe cheſtnut* was brought from the northern parts of Aſia about the year 1550, and ſent to Vienna about the year 1588.

As this tree is quick in its growth, ſo in a few years it will arrive to a ſize large enough to afford a good ſhade in ſummer; as alſo to produce plenty of flowers. Trees raiſed from nuts, have in twelve or fourteen years become large enough to ſhade two or three chairs under the ſpread of their branches; and have been covered with flowers in the ſeaſon. But the wood is of little value.

In Turky the nuts of this tree are ground, and mixed with the provender for their horſes, eſpecially thoſe which are troubled with coughs, or are broken-winded: in both which diſorders they are accounted very good.

M. Raimont, a gentleman of Anjou, gave them, mixed with other food, to his cows; and they increaſed the quantity of milk, without injuring its quality: and he apprehends, that if they were blanched and raſped, or otherwiſe prepared, they might be given to hogs and poultry. Memoirs of the Royal Society of Agriculture at Tours, vol. i. p. 121.

Jo. Jac. Zannichelli affirms, that after a great many trials, he has found the bark of the *hippocaſtanum* to have the ſame effect as the PERUVIAN *bark*.

The *horſe cheſtnut* is employed for the purpoſe of bleaching yarn in France and Switzerland; and it is recommended in the Memoirs of the Society of Berne, vol. ii. part 2. as capable of extenſive uſe in whitening not only flax and hemp, but alſo ſilk and wool. It contains an aſtringent ſaponaceous juice, which is obtained by peeling the nuts, and grinding or raſping them. They are then mixed with hot rain or running water, in the proportion of twenty nuts to ten or twelve quarts of water. Wove caps and ſtockings were milled in this water, and took the dye extremely well; and ſucceſsful trials were made of it in fulling ſtuffs and cloths. Linen waſhed in this water takes a pleaſing light ſky-blue colour: and the filaments of hemp ſteeped in it for ſome days, were eaſily ſeparated. The author of the memoir above referred to, imagines, that if the meal of the *cheſtnuts* could be made into cakes or balls, it would anſwer the purpoſes of ſoap in waſhing and fulling. The ſediment, after infuſion, loſes its bitter taſte, and becomes good food for fowls when mixed with bran.

CHESTNUT, *ſcarlet flowering horſe*, *Pavia*, in *Botany*. This genus is joined to *æſculus* in the Linnæan diſtribution. Its characters are theſe: the flower has a ſmall empalement of one leaf, indented in five parts at the top: it has five roundiſh petals, waved and plaited on their borders, and narrow at their baſe, which are inſerted in the empalements. It hath eight ſtamina, which are declined, as long as the petals; terminated by riſing ſummits, and a roundiſh germen ſitting upon an awl-ſhaped ſtyle, crowned by an acuminated ſtigma. The germen afterward becomes an oval, pear-ſhaped, leathery capſule, with three cells, in which is ſometimes one, and at others two, almoſt globular ſeeds.

This plant grows naturally in Carolina and the Braſils; from the firſt, the ſeeds were brought to England, where the plants have been of late years much cultivated in the gardens. This tree may be propagated by buddings, or grafting it upon the common *horſe cheſtnut*, which is the uſual method practiſed by the nurſerymen: but the trees thus raiſed, ſeldom make a good appearance long; for the ſtock of the common *horſe cheſtnut* will be more than twice the ſize of the other, and frequently put out ſhoots below the graft; and ſometimes the grafts are blown out of the ſtocks, after ten years growth. But theſe ſtocks render the trees hardy, and of a large growth.

CHESTNUT, *Indian roſe*. See MESUA.

CHEST-ROPE, in a ſhip, is the ſame with the gueſt or gift-rope, and is added to the boat-rope, when the boat is towed at the ſtern of the ſhip, to keep her from ſhearing, i. e. from ſwinging to and fro.

CHEVAGE, or CHIEFAGE, according to Bracton, ſignifies a tribute by the head; or a kind of poll-money, anciently paid by ſuch as held lands in villainage, or otherwiſe, to their lords, in acknowledgment.

The word is formed of the French, *chef*, *head*.

The word ſeems alſo to have been uſed for a ſum of money yearly given to a man of power, for his patronage and protection, as to a chief, head, or leader.

In the firſt ſenſe, Coke obſerves, there is ſtill a kind of *chevage* ſubſiſting in Wales, called *amabyr*; paid to the prince of Wales for the marriage of his daughters; anciently by all, now only by ſome. Lambard writes it *chivage*.

The Jews allowed to live in England, long paid *chevage*, or poll-money, viz. three pence per head: it was paid at Eaſter.

CHEVAL *de friſe*, in *Fortification*, a large piece of timber, either round or cut into ſeveral faces, pierced, and traverſed with wooden ſpikes, armed or pointed with iron, five or ſix feet long. See *Tab. Fortif. fig.* 15.

The term is French, and properly ſignifies a *Frieſland horſe*; as having been firſt invented in that country. It is alſo called a *turnpike*, or *tourniquet*.

Its uſe is, to defend a paſſage, ſtop a breach, or make a retrenchment to ſtop the cavalry.

It is ſometimes alſo mounted on wheels, with artificial fires, to roll down in an aſſault.

Errard obſerves, that the prince of Orange uſed to incloſe his camp with *chevaux de friſe*; placing them over one another.

On a medal of Licinius, is found a kind of *cheval de friſe*, made with ſpikes interpoſed; ſerving to expreſs a fortified camp.

CHEVALER, in the *Manege*. A horſe is ſaid to *chevaler*, when, in paſſaging upon a walk, or a trot, his far foreleg croſſes or over-laps the other fore-leg every ſecond time or motion.

CHEVALIER, a French term, ordinarily ſignifying a *knight*.

The word is formed of the French, *cheval*, *horſe*; and that of the Latin *cavallus*.

It is uſed, in *Heraldry*, to ſignify any *cavalier*, or horſeman armed at all points; by the Romans called *cataphractus* Eques, now out of uſe, and only to be ſeen in coat armour.

CHEVAN. See Chiun.

CHEVANTIA, in our *Old Law Writers*, is uſed for a loan or advance of money upon credit.

CHEVAUX *de friſe*. See Cheval *de friſe*.

CHEVELLE, a term uſed by the *French Heralds* to expreſs a head where the hair is of a different colour from the reſt of the head.

CHEVILS, or Kevels, in *Ship-building*. See Kevels.

CHEVIN, a name uſed in ſome parts of England for the chubb. See Capito, and Fishing.

CHEVISANCE, in the *Law of England*, is ſaid to be an agreement, or compoſition, or bargain between a creditor and debtor; but it ſeems chiefly to denote an indirect gain, in point of uſury, &c. In our ſtatutes it is often mentioned, and moſt commonly uſed for an unlawful bargain or contract. See the ſtatutes againſt uſury, anno 12 Annæ.

The word is ſaid to be derived from the law French *chevir*, *to come to the end*, or *finiſh any thing*; in the ſame ſenſe as the modern French uſe *achever*.

CHEVRETTE, in *Artillery*, an engine to raiſe guns or mortars into their carriages; it is made of two pieces of wood of about four feet long, ſtanding upright upon a third, which is ſquare: they are about a foot aſunder, and parallel, and are pierced with holes exactly oppoſite to one another, having a bolt of iron, which being put through theſe holes, higher or lower at pleaſure, ſerves with a hand-ſpike, which takes its poiſe over this bolt, to raiſe any thing by force.

CHEVRON, or Cheveron, in *Heraldry*, one of the honourable ordinaries of a ſhield; repreſenting two rafters of a houſe joined together, without any diviſion.

It deſcends from the chief towards the extremities of the coat, in form of a pair of compaſſes half open. Thus, he bears gules, a *chevron* argent. See *Tab. Heraldry*, *fig.* 16.

The *chevron* is the ſymbol of protection, ſay ſome; or of conſtancy, according to others: ſome ſay, it repreſents the knights ſpurs; others, the head-attire of prieſteſſes; others, a piece of the liſt, or the barrier or fence of a park.

When it is alone, it ſhould take up the fifth part of the field, according to Leigh; and according to others, a third part: when it is accompanied with any other bearings, its breadth muſt be adjuſted thereby.

It is borne divers ways: ſometimes in chief, ſometimes in baſe, ſometimes enarched, ſometimes reverſed, &c.

The *chevron* is ſometimes charged with another *chevron*, one third of its own height.

Two *chevrons* are allowed in the ſame field, but no more: when they exceed that number, they are called *chevronwiſe*, or *chevronels*. There are *chevrons* of ſeveral pieces.

A *chevron* is ſaid to be *abaſed*, when its point does not approach the head of the chief, nor reach farther than the middle of the coat; *mutilated*, when it does not touch the extremes of the coat; *cloven*, when the upper point is taken off, ſo that the pieces only touch at one of the angles; *broken*, when one branch is ſeparated into two pieces; *couched*, when the point is turned towards one ſide of the eſcutcheon; *divided*, when the branches are of ſeveral metals, or when metal is oppoſed to colour; and *inverted*, when the point is towards the point of the coat, and its branches towards the chief.

A coat is ſaid to be *chevroned*, when it is filled with an equal number of *chevrons*, of colour and metal.

Counterchevroned, is when it is ſo divided, as that colour is oppoſed to metal, and *vice verſa*.

Per Chevron, or *Party per* Chevron, is when the field is divided by only two ſingle lines, riſing from the two baſe points, and meeting in a point above, as the *chevron* does.

CHEVRONEL, a diminutive of *chevron*; and, as ſuch, only containing half a *chevron*.

CHEVRONNE, or Chevronny, ſignifies the parting of the ſhield, ſeveral times *chevronwiſe*: Gibbon ſays, *chevronne of ſix*.

CHEWING-*balls*, a ſort of balls contrived for horſes to chew, not ſwallow at once; not intended as food, but as incentives to appetite; and on other medicinal occaſions very uſeful to the creature. The receipt now moſt eſteemed for theſe balls is this: take liver of antimony, and of aſſa fœtida, of each one pound; wood of the bay-tree, and juniper wood, of each half a pound; pellitory of Spain, two ounces: let all theſe be powdered together; then add as much fine grape-verjuice as is neceſſary to make the whole into a paſte. This is to be formed into balls of about an ounce and half weight, which are to be dried in the ſun. Theſe are the *chewing*-balls, and are to be uſed one at a time in the following manner. The ball is to be wrapped up in a linen rag, and a thread is to be faſtened to this, in ſuch a manner that it may be tied to the bit of the bridle, and kept in the mouth: when the bridle is taken off, the horſe will immediately eat; and when one ball is conſumed, another is to be tied up, and put in its place, till the intent is anſwered.

CHIA *terra*. See Terra *chia*.

CHIAN *marble*. See Marble.

CHIAOUS, an officer in the grand ſignior's court, doing the buſineſs of an uſher.

The word, in the original Turkiſh, ſignifies *envoy*.

He bears arms offenſive and defenſive, and has the care of priſoners of diſtinction. His badge is a ſtaff covered with ſilver; and he is armed with a ſcimiter, bow, and arrows.

The emperor uſually chooſes one of this rank to ſend as embaſſador to other princes.

The *chiaous* are under the direction of the *chiaous-baſchi*, an officer who aſſiſts at the divan, and introduces thoſe who have buſineſs there.

CHIARO *ſcuro*, & *obſcuro*, among *Painters*. See Clair *obſcure*.

CHIASMOS, in *Ancient Greek Medical Writers*, is the concourſe or meeting of any two things under the form and figure of a croſs, or the letter X *chi*, whence it is named. The adverbs χιαςι, and χιαςικως, ſignify the ſame thing: thus the optic nerves are ſaid to meet χιαςικῶς, ſo as to croſs each other.

CHIASTOS, the name of a bandage in Oribaſius, ſo called from its reſembling a croſs, or the letter X.

Chiastos, in *Rhetoric*, the ſame with what is otherwiſe called diallelos.

CHIAUSI, among the Turks, officers employed in executing the vizirs, baſhaws, and other great men; the orders for doing which the grand ſignior ſends them wrapped up in a black cloth; on the reception of which they immediately perform their office.

CHICANE, or Chicanery, in *Law*, an abuſe of judiciary proceeding, tending to delay the cauſe, and deceive or impoſe on the judge, or the parties.

Some derive the word from *ciccum*, *the ſkin of a pomegranate*; whence the Spaniards formed their *chico*, *little*, *ſlender*; *chicane* being converſant about trifles.

The French call ſolicitors, attorneys, &c. *gens de chicane*.

Chicane is alſo applied, in the ſchools, to vain ſophiſms, diſtinctions, and ſubtilties, which immortaliſe diſputes, and obſcure the truth: as, the *chicane* of courts does juſtice.

CHICH *pea*. See *Chich* Pea.

CHICHLING *vetch*. See Vetch.

CHICKEN, in *Ornithology*, the young of the gallinaceous order of birds, and eſpecially of the common hen. *Chickens* require no meat for two days after they are hatched: and they are firſt fed with ſmall oat-meal, dry or ſteeped in milk, and the crumbs of white bread: and as they acquire ſtrength, with curds, cheeſe-parings, &c. Green chives chopped with their food will preſerve them from the rye, and other diſeaſes of the head: and care ſhould be taken to furniſh them with a proper ſupply of clean water. In order to have fat crammed *chickens*, they ſhould be cooped up when the hen forſakes them, and fed with wheat-meal mixed with milk, and made into a paſte: this diet will fatten them in about a fortnight. See Cock, Fowl, and Hatching.

Chicken-*pox*. See Pox.

CHICKWEED, *Alſine*, in *Botany*, the name of a very large genus of plants; for the characters of which, ſee Alsine.

The *alſine* is a medicinal plant, called alſo *morſus gallinæ*, popularly *chickweed*, on account of its being much coveted by poultry.

The word is αλσινη, formed of αλσος, *a wood* or *grove*, on account of this plant's delighting chiefly to grow in ſhady places.

Alſine is alſo called *myoſoton*, q. d. *mouſe-ear*, on account of the reſemblance its leaves bear to the ears of that animal.

It is held a cooler, calmer, thickner, &c. in moſt reſpects reſembling pellitory of the wall; though now little uſed in medicine.

Some commend its diſtilled water againſt fervors of the blood, and conſumptions of the body, ariſing from hectics, &c. The herb fried in linſeed oil, and externally applied to the belly, is ſaid to relieve the iliac pain.

Chickweed, *African*. See Mollugo.

Chickweed, *berry-bearing*, *Cucubalus*, in *Botany*, a genus of the *decandria trigynia* claſs. Its characters are theſe: the flower has five petals, with tails as long as the empalement, but ſpread open at the top; and ten ſtamina, five of which are alternately inſerted in the tail of the petals. In the center is ſituated an oblong germen, ſupporting three ſtyles. The empalement becomes a pointed cloſe capſule with three cells, opening at top into five parts, and filled with many roundiſh ſeeds. According to Miller, there are thirteen ſpecies; but according to Tournefort, only one. See *Tab. of Botany, Claſs* 8.

CHICKWEED, *great*, *Stellaria*, in *Botany*, a genus of the *decandria trigynia* claſs; having a five-leaved patent calyx, five bipartite petals, and a ſingle-celled polyſpermous capſule.

CHICKWEED, *mountain*, *Moehringia*, in *Botany*. See MOEHRINGIA.

CHICKWEED, *mouſe-ear*, *Ceraſtium*. See MOUSE-*ear*.

CHICKWEED, *ſea*, *Arenaria*, in *Botany*, a genus of the *decandria trigynia* claſs: the characters of which are, that the calyx conſiſts of five patent leaves; the corolla, of five entire petals; and the fruit is a capſule containing one cell, with ſeveral ſeeds.

CHICKWEED, *ſmall water*. See MONTIA.

CHICORACEOUS, in *Botany*. M. Vaillant divides plants with compoſite flowers into three claſſes or families; the *cynarocephalous*, the *corymbiferous*, and the *chicoraceous*.

CHICUATLI, in *Zoology*, the Indian name of a bird deſcribed by Nieremberg, and by him called *noctua canora*. Its beak is long, black, and ſlender; its head is marked with undulated ſtreaks of yellow near the eyes. Its breaſt and belly are of a whitiſh colour, and it has ſome black feathers intermixed with white ones on the throat; its back is variegated with black, yellow, and grey. It is found principally among the mountains; where it generally runs about the ground; is eaſily bred in cages, and feeds on any thing that is offered it. It is moſt frequent in the hotter climates, and is uſually fat and nouriſhing.

CHIEF, a term denoting head, or a principal thing, or perſon. The word is formed of the French *chef*, *head*.

We ſay, the *chief* of a party; the *chief* of a family, &c. Agamemnon was the *chief* of the Greeks who beſieged Troy. The Romans ſometimes refuſed triumphs to their victorious generals, becauſe the conduct of the *chief* was not anſwerable to his ſucceſs. The abbeys that are *chiefs* of their order are all regular; and it is there the general chapters are held.

CHIEF *baron*. See BARONS and COURT *of exchequer*.

CHIEF, in *Heraldry*, is the upper part of the eſcutcheon, reaching quite acroſs, from ſide to ſide.

The arms of France are, three golden flowers de lys, in a field azure; two in *chief*, and one in point.

CHIEF is more particularly uſed for one of the honourable ordinaries, placed athwart the top of the coat, and containing one third part of its height. *Tab.* I. *Heraldry*, *fig.* 41.

When the eſcutcheon is cut in ſtone, or in relievo, the *chief* ſtands out prominent beyond the reſt; and is ſuppoſed to repreſent the diadem of the ancient kings and prelates; or the caſque of the knights.

It is frequently without any ornament; ſometimes it is charged with other bearings; ſometimes it is of a colour or metal different from that of the coat.

The line that bounds it at the bottom is ſometimes ſtrait, ſometimes indented, engrailed, embattled, lozenged, &c. Thus, ſay they, the field is gules, a *chief* argent, &c. Again, he bears gules, a *chief*, crenelle, or embatteled, argent.

Sometimes one *chief* is borne on another; expreſſed by a line drawn along the upper part of the *chief*: when the line is along the under part, it is called a *fillet*. The firſt is an addition of honour, the ſecond a diminution.

The *chief* is ſaid to be *abaſed*, when it is detached from the upper edge of the coat, by the colour of the field which is over it; and which retrenches from it one third of its height. We alſo ſay, a *chief* is *cheveroned*, *paled*, or *bended*, when it has a chevron, pale, or bend, contiguous to it, and of the ſame colour with itſelf. A *chief* is ſaid to be *ſupported*, when the two thirds at top are of the colour of the field, and that at bottom of a different colour.

In CHIEF. By this is underſtood any thing borne in the *chief* part, or top of the eſcutcheon.

CHIEF *juſtice*, in *Law*. See JUSTICE.

CHIEF *juſticiary of England*. See JUSTICIARY.

CHIEF *lord*, denotes the feudal lord, or LORD of an HONOUR, on whom others depend.

CHIEF, *holding in*. See CAPITE, and TENURE.

CHIEF *pledge*, is the ſame as HEADBOROUGH.

CHIEF *point*. See POINT.

CHIEF *rents*, *Reditus capitales*, in *Law*, denote the rents of freeholders of manors. See QUIT *rents*.

CHIEFTAIN, the chief, leader, or general of an army; or the like.

CHIEPA, in *Zoology*, a name uſed by ſome authors for the fiſh more uſually known by the name of the *alauſa*, and called in Engliſh the SHAD, or the mother of herrings. See AGONUS.

CHIFFIR, or CHIFIR, according to Libavius, in the preparation of the philoſophers ſtone, is called *lapis animalis*, as the mineral is called *chaos minerale*. Johnſon ſays, that the *chifir minerale* is by ſome interpreted *gold*, but that he rather takes it to be any ſulphur of the metalline kind.

CHIFUNG, among the Chineſe, the name of an herb found about Canton, by which the ſailors pretend to know how many ſtorms will happen every year. This they compute from the number of knots or joints; and from the diſtances of the knots from the root, they determine what months the ſtorms will fall in.

CHILBLAIN, *Pernio*, in *Medicine*, a tumour afflicting the feet and hands; accompanied with an inflammation, pain, and ſometimes an ulcer, or ſolution of continuity: in which caſe it takes the denomination of *chaps*, on the hands; and *kibes*, on the heels.

Chilblain is compounded of *chill*, and *blain*; q. d. a blain, or ſore, contracted by cold.

Chilblains are occaſioned by exceſſive cold ſtopping the motion of the blood in the capillary arteries and ſuperficial veins.

The tumour, from white, generally inclines to blueneſs. For the prevention of *chilblains*, the ſkin ſhould be rendered firmer by frequent waſhing and bathing in cold water; the vicious quality of the temperaments or humours, which contributes to this diſorder, ſhould be corrected by the milder preparations of antimony, and moderate purges. For the cure of *chilblains*, it is uſual to waſh them with warm brine, urine, &c. but *petroleum*, or warm Hungary water, with ſpirit of wine camphorated, uſed with a ſponge, are much better. For chaps and kibes, nothing exceeds the *unguentum deſiccativum rubrum*, or *diapompholyx* mixed with a little camphor; and uſed, for the dreſſings, with *emplaſtrum de minio*, or *diachylon ſimplex*, let down with oil of roſes.

When theſe tumours tend to ſuppuration, it is proper to treat them like other recent abſceſſes; the beſt method is firſt to cleanſe the wound with ſome digeſtive ointment, then to dreſs it with balſam of Peru, or other ſimilar application; and, laſtly, to apply ſome of the lead or litharge plaſters. Oil of myrrh *per deliquium* is alſo found of great ſervice in theſe caſes; as is alſo the applying a compreſs, dipped in a mixture of equal parts of lime-water and camphorated ſpirit of wine, over the other remedies.

In people who have been uſed to be afflicted with *chilblains* at the return of a certain ſeaſon, it will be found a great preſervative againſt thoſe troubleſome tumours, to anoint the parts where they are expected to appear, both before and during the acceſs of the ſevere cold, with oil of turpentine or petroleum; and, when the diſorder firſt begins to ſhew itſelf, it is a very good method to wrap round the affected part a piece of a hog's bladder, well wetted with one or other of thoſe oils; and care muſt be taken to keep off the cold.

CHILD, a term of relation to parent.

We ſay, NATURAL *child*, LEGITIMATE *child*, PUTATIVE *child*, BASTARD *child*, ADOPTIVE *child*, POSTHUMOUS *child*, &c.

Mr. Derham computes, that marriages, one with another, produced four *children*; not only in England, but in other parts alſo.

It is well known that *children*, for ſome time after they are born, ſee but very imperfectly; and M. Petit, after taking a great deal of pains to inveſtigate the cauſe of it, found it to be owing in part to the thickneſs of their CORNEA, and the ſmall quantity of their aqueous humour. Not that the mere thickneſs of the *cornea* could have this effect; but becauſe the thickneſs is owing to its not being well ſtretched, and conſequently having wrinkles and inequalities on its ſurface, which occaſion an irregular refraction of the light. On the ſame account alſo the *cornea* has not a ſufficient degree of convexity, to bring the PENCILS of rays to a focus ſoon enough. All theſe defects, he ſhews, are remedied by the increaſe of the aqueous humour. See Dr. Prieſtley's Hiſtory of Viſion, &c. 4to. p. 187.

Dr. Harris has an expreſs treatiſe Of the Acute Diſeaſes of Children, De Morbis Acutis Infantum. He takes them all to ariſe from the humours in the *primæ viæ* growing ſour, and degenerating into acidities: which is confirmed from their ſour belches and dejections. Hence, all that is required to cure them, is to combat this acidity; which is to be effected two ways: by diſpoſing it to be evacuated, and by actual evacuation by rhubarb, and other gentle purgatives.

To diſpoſe the peccant acid for evacuation, no ſudorifics or cordials are to be uſed, thoſe remedies being too violent; but magneſia, crabs eyes and claws, oyſter-ſhells, cuttle-fiſh bones, egg-ſhells, chalk, coral, pearls, bezoar, burnt ivory, ſcrapings of the unicorn's horn, Armenian bole, *terra ſigillata*, and *lapis hæmatites*; the Goa ſtone, and the confection of hyacinth: but of all theſe, he prefers old ſhells that have lain long on the edge of the ſea, expoſed to the ſun, which is better than any chemical furnace.

Bartholine, Paré, Licetus, and many other writers, give an account of a *petrified child*, which has ſeemed wholly incredible to ſome people. The *child*, however, which they deſcribe, is ſtill in being, and is kept as a great rarity in the king of Denmark's muſeum at Copenhagen. The woman who went big with this, lived at Sens in Champaign in the year 1582; it was cut out of her belly, and was univerſally ſuppoſed to have lain there about twenty years. That it is a real human *fœtus*, and not artificial, is evident to the eye of any obſerver; and the upper part of it, when examined, is found to be of a ſubſtance reſembling the gypſum or ſtone of which they make the plaſter of Paris; the lower part is much harder; the thighs and buttocks being perfect ſtone, of a reddiſh colour, and as hard as common quarry-ſtone: the grain and ſurface of this part appears exactly like that of the calculi, or ſtones taken out of human bladders; and the whole ſubſtance examined ever ſo nearly, and felt ever ſo carefully, appears to be abſolute ſtone. It was carried from Sens to Paris, and there purchaſed by a goldſmith of Venice; and Frederick the Third, king of Denmark, purchaſed it at Venice of this man for a very large ſum, and added it to his collection of rarities. Phil. Tranſ. Nº 285. p 1400. See INFANTS.

Children, beſides the honour and reverence which they owe to their parents, ought likewiſe to contribute to their ſupport, when they need aſſiſtance. The Athenian laws obliged all *children* to provide for their father, when reduced to poverty; with an exception to ſpurious *children*, to thoſe whoſe chaſtity had been defiled by conſent of the father, and to thoſe who had not been put into any way of gaining a livelihood. Our laws agree with thoſe of Athens in the firſt particular; but in the other caſes, a *child* is compellable by ſtat. 43 Eliz. c. 2. if able, to provide for a wicked and unnatural progenitor. Blackſt. Com. vol. i. p. 453. See PARENT, &c.

CHILD-*bed*.
CHILD-*birth*. } See DELIVERY.

CHILDREN, *expoſing of*. See EXPOSING.

CHILDREN, *naming of*. See NAME.

CHILDREN, *overlaying of*. This is a misfortune which frequently happens; to prevent which, the Florentines have contrived an inſtrument called ARCUTIO.

CHILD-*wit*, a power to take a fine of a bond-woman unlawfully gotten with *child*; that is, without conſent of her lord.

Every reputed father of a *baſe* child, got within the manor of Writtel in Eſſex, pays to the lord, for a fine, 3*s*. 4*d*. where, it ſeems, *child-wit* extends to free, as well as bond-women.—*Quicunque fecerit* child-wit, *archiepiſcopus aut totam, aut dimidiam emendationis partem habebit, quietum eſſe de* child-wit. Du-Cange.

CHILDREN, *charity*. See CHARITY-*ſchool*, and HOSPITAL.

CHILDERMASS *Day*, called alſo *Innocents Day*, an anniverſary feaſt of the church, held on the 28th of December, in memory of the *children* of Bethlehem, maſſacred by order of Herod.

CHILIAD, an aſſemblage of ſeveral things ranged by thouſands.

The word is formed of χιλιας, *mille, a thouſand.*

CHILIAGON, in *Geometry*, a regular plane figure of 1000 ſides and angles. We can eaſily demonſtrate, that the ſum of all its angles are equal to 1996 right ones; for the internal angles of every plane figure are equal to twice as many right angles as the figure hath ſides, except thoſe four which are about the center of the figure, from whence it may be reſolved into as many triangles as it has ſides. The author of L' Art de Penſer, p. 44, 45, brings this inſtance to ſhew the diſtinction between imagining and conceiving. See NOTION.

CHILIARCHA, or CHILIARCHUS, an officer in the armies of the ancients, who had the command of a thouſand men. The word comes from χιλιας, *a thouſand*, and αρχη, *command*.

CHILIARTÆ, in *Church-Hiſtory*, the ſame with MILLENARII.

CHILIASTS. See MILLENARII.

CHILMINAR, CHELMINAR, or TCHELMINAR, the nobleſt and moſt beautiful piece of architecture remaining of all antiquity; being the ruins of the famous palace of Perſepolis, to which Alexander the Great, being drunk, ſet fire, at the perſuaſion of the courteſan Thais.

Authors and travellers are exceedingly minute in their deſcriptions of the *Chilminar*; particularly Gracias de Silva Figueroa, Pietro de la Valle, Chardin, and Le Brun. A general idea thereof may be conceived as follows:

There appear the remains of near fourſcore columns; the fragments whereof are at leaſt ſix feet high: but there are only nineteen that can be called entire; with a twentieth all alone, 150 paces from the reſt.

A rock of black hard marble ſerves for the foundation of the edifice. The aſcent to the firſt plan of the building is by fourſcore and fifteen ſteps, cut in the rock. The gate of the palace is twenty feet wide; on one ſide is the figure of an elephant, and on the other of a rhinoceros, each thirty feet high, and of a ſhining marble; near theſe animals are two columns; and not far off the figure of a Pegaſus.

After this gate is paſſed, there are found a great number of columns of white marble; the remains whereof ſhew the magnificence of the work: the ſmalleſt of theſe columns is fifteen cubits high, the largeſt eighteen; each has forty flutings, three inches broad; whence the height of the whole may be gueſſed at, with the other proportions. Near the gate is an inſcription on a ſquare piece of marble, ſmooth as glaſs, containing about twelve lines: the characters are of a very extraordinary figure, reſembling triangles and pyramids.

Theſe noble ruins are now the ſhelter of beaſts, and birds of prey. Beſides the inſcription above mentioned, there are others in Arabic, Perſian, and Greek. Dr. Hyde obſerves, that the inſcriptions are very rude and unartful; and that ſome, if not all of them, are in praiſe of Alexander the Great; and therefore are later than that conqueror.

M. Le Brun took his voyage to the Eaſt Indies, merely for the ſake of viewing the *Chilminar*.

CHILON, among the *Greek Phyſiologers*, one who has great lips, called by the Latins *labeo*. Thus alſo among the ſpecies of fiſhes, under the claſs of *capitones*, ſome are called *chilones*, that is, *labeones*.

CHILTENHAM *water* contains a neutral purgative ſalt, ſomewhat reſembling Glauber's *ſal mirabile*. It contains no alcaline or acid ſalt, no iron, copperas, or ſulphur. Theſe waters are thought uſeful in lax conſtitutions, where the humours are alcaleſcent, but hurtful when aceſcent. See Phil. Tranſ. Nº 461 ſect. 21. and the remarks. See WATER.

CHIMALATH, in *Botany*, a name given by ſome authors to the great *corona ſolis*, or ſun-flower.

CHIMERA, or CHIMÆRA, a fabulous monſter, which the poets feign to have the head and breaſt of a lion, the belly of a goat, and the tail of a dragon; and to have been killed by Bellerophon, mounted on the horſe Pegaſus

The foundation of the fable is this: that anciently, in Lycia, there was a volcano, or burning mountain, of this name; the top whereof, which was deſert only inhabited by lions; the middle, having good paſtures, was frequented by goats; and the foot, being marſhy, by ſerpents. Thus Ovid:

> —— *mediis in partibus hircum,*
> *Pectus & ora leæ, caudam ſerpentis habebit.*

Bellerophon being the firſt who cauſed this mountain to be inhabited, it was feigned, he ſlew *Chimera*. Pliny ſays, the fire thereof would burn in water, and could be extinguiſhed with nothing but earth, or dung.

CHIMERA is uſed in *Writers of the Middle Age*, for a kind of veſſel or ſhip. It ſeems to have been leſs than the chelandium.

CHIMES *of a clock*, a kind of periodical muſic, produced at certain hours of the day, by a particular apparatus added to a clock; ſuch as a *chime*-barrel, bells and hammers, &c.

To calculate numbers for the *chimes*, and to fit and divide the *chime*-barrel, it muſt be obſerved, that the barrel muſt be as long in turning round, as you are in ſinging the tune it is to play.

As for the *chime*-barrel, it may be made up of certain bars which run athwart it, with a convenient number of holes punched in them, to put in the pins that are to draw each hammer: by this means, the tune may be changed, without changing the barrel. In this caſe, the pins, or nuts, which draw the hammers, muſt hang down from the bar, ſome more, ſome leſs; and ſome muſt ſtand upright in the bar: the reaſon whereof is, to play the time of the tune rightly. For the diſtance of each of theſe bars may be a ſemibreve; but the uſual way is, to have the pins, which draw the hammers, fixed on the barrel.

For the placing of theſe pins, you may proceed by the way of changes on bells; viz. 1, 2, 3, 4, &c. or rather, make uſe of the muſical notes: where it muſt be obſerved, what is the compaſs of the tune, or how many notes, or bells, there are from the higheſt to the loweſt; and, accordingly, the barrel muſt be divided from end to end.

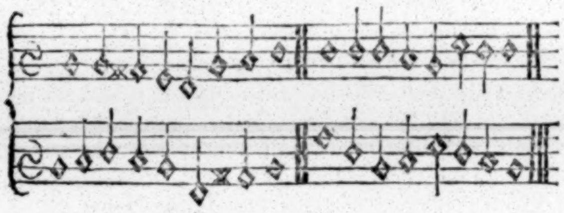
Thus, in the following example, each of the tunes are eight notes in compaſs; and, accordingly, the barrel is divided into eight parts: theſe diviſions are ſtruck round the barrel; oppoſite to which are the hammer-tails.

We ſpeak here as if there were only one hammer to each bell, that it may be more clearly apprehended; but when two notes of the ſame ſound come together in a tune, there muſt be two hammers to the bell to ſtrike it; ſo that if, in all the tunes you intend to *chime* of eight notes compaſs, there ſhould happen to be ſuch double notes on every bell; inſtead of eight, you muſt have ſixteen hammers; and, accordingly, you muſt divide the barrel, and ſtrike ſixteen ſtrokes round it, oppoſite to each hammer-tail: then you are to divide it round about, into as many diviſions as there are muſical bars, ſemibreves, minims, &c. in the tune.

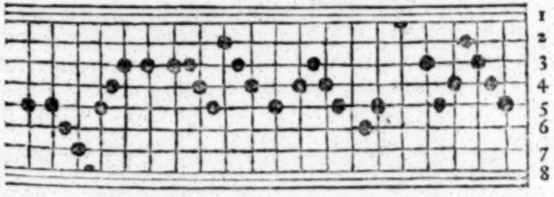
Thus, the hundredth pſalm tune has twenty ſemibreves, and each diviſion of it is a ſemibreve: the firſt note of it, alſo, is a ſemibreve; and therefore on the *chime*-barrel there muſt be a whole diviſion, from five to five; as you may underſtand plainly, if you conceive the ſurface of a *chime*-barrel to be repreſented by the following tables; as if the cylindrical ſuperficies of the barrel were ſtretched out at length, or extended on a plane: and then ſuch a table, ſo divided, if it were to be wrapped round the barrel, would ſhew the places where all the pins are to ſtand in the barrel: for the dots running about the table, are the places of the pins that play the tune.

Indeed, if the *chimes* are to be complete, you ought to have a ſet of bells to the gamut notes; ſo as that each bell, having the true ſound of *ſol*, *la*, *mi*, *fa*, you may play any tune with its flats and ſharps; nay, you may, by this means, play both the baſs and treble with one barrel: and by ſetting the names of your bells at the head of any tune, that tune may eaſily be transferred to the *chime*-barrel, without any ſkill in muſic. But it muſt be obſerved, that each line in the muſic is three notes diſtant: that is, there is a note between each line, as well as upon it.

The notes of the hundredth Pſalm.



A Table for dividing the Chime-barrel *of the hundredth Pſalm.*



CHIMIN, or CHEMIN, in *Law*, a road, or way. See HIGHWAY and ROAD.

CHIMINAGE, a toll for wayfarage, or paſſage through a foreſt. The feudiſts call it *pedagium*.

CHIMNEY, in *Architecture*, a part of a houſe, or lodging, wherein the fire is made.

The word *chimney* comes from the French *cheminée*; and that from the Latin *caminata*, *a chamber wherein is a chimney: caminata*, again, comes from *caminus*; and that from the Greek καμινος, *a chimney*; of καω, *uro*, *I burn*.

The parts of a *chimney* are, the jambs, or ſides; the back, or hood; the mantle-tree, reſting on the jambs: the tube, or funnel, which conveys away the ſmoke; the *chimney*-piece, or moulding, on the fore-ſide of the jambs over the mantle-tree; and the hearth, or fire-place.

Palladio ſettles the proportions of a chamber-*chimney* thus: breadth on the inſide, five and a half, ſix, or ſeven feet; height to the mantle-tree, four, or four and a half; depth, two, or two and a half feet.

According to Wolfius, the breadth of the aperture, at bottom, ſhould be to the height, as three to two; to the depth, as four to two. In ſmall apartments, the breadth is three feet; in larger, five; in bed-chambers, four; in ſmall banquetting-rooms, five and a half; in large, ſix: but the height is never to exceed two and a half; leſt, there being too much room for the air and wind, the ſmoke be driven down into the room. Nor muſt the height be too little; leſt the ſmoke miſs its way, and be checked at firſt ſetting out. The ſame author adviſes, to have an aperture, through which the external air may, on occaſion, be let into the flame, to drive up the ſmoke; which the internal air would otherwiſe be unable to do.

The mouth of the tube, or that part joined to the *chimney*-back, Felibien orders to be a little narrower than the reſt; that the ſmoke coming to be repelled downwards, meeting with this obſtacle, may be prevented from getting into the room.

Some make the funnel twiſted, to prevent the ſmoke's deſcending too eaſily; but the better expedient is, to make the funnel narrower at bottom than at top; the fire impelling it upward more eaſily when contracted at bottom; and in mounting, it finds more ſpace to diſengage itſelf, and therefore has leſs occaſion to return into the chamber.

To prevent ſmoking CHIMNEYS, M. Lucar adviſes two holes, or two pipes, one over the other, to be left in each ſide of the *chimney*; one ſloping upwards, the other downwards: through one of theſe, he ſays, the ſmoke will paſs in any poſition.

De l'Orme orders a braſs ball full of water, with one ſmall aperture, to be hung up in the *chimney*, at a height a little above the greateſt flame: here, as the water grows hot, it will rarefy, and drive through the aperture in a vapoury ſteam, which will drive up the ſmoke that would otherwiſe linger in the funnel.

Others place a kind of moveable vane, or weathercock, on the top of the *chimney*: ſo that what way ſoever the wind comes, the aperture of the *chimney* will be ſcreened, and the ſmoke have free egreſs: but, in truth, the beſt prevention of a ſmoking *chimney* ſeems to lie in the proper ſituation of the doors of the room, and the apt falling back of the back, and convenient gathering of the wings and breaſt of the *chimney*.

It is a rule, in building, that no timber be laid within twelve inches of the fore-ſide of the *chimney*-jambs; that all joiſts on the back of the *chimney* be laid with a trimmer, at ſix inches diſtance from the back; and that no timber be laid within the funnel.

Chimneys are uſually ſuppoſed a modern invention; the ancients only making uſe of ſtoves: but Octavio Ferrari endeavours to prove *chimneys* in uſe among the ancients. To this end, he cites the authority of Virgil:

> *Et jam ſumma procul villarum culmina fumant.*

And that of Appian, who ſays, "That of thoſe perſons "proſcribed by the triumvirate, ſome hid themſelves in "wells, *cloacæ*, and common-ſewers; ſome in the tops of "houſes, and *chimneys*:" for ſo he underſtands καπνωδεις ὑπωροφιας, *fumaria ſub tecto poſita*. Add, that Ariſtophanes, in one of his comedies, introduces his old man, Polycleon, ſhut up in a chamber; whence he endeavours to make his eſcape by the *chimney*. However, the few inſtances remaining among the ancients, together with the obſcurity of the rules of Vitruvius on this head, make us rather conclude the uſe of ſtoves, whereof the ancients had entire apartments, induced them to neglect this part of building, which the coldneſs of our climates obliges us to have a principal regard to.

In the year 1709, there appeared a French book, entitled La Mechanique du Feu, or the art of augmenting the effects, and diminiſhing the expence, of fire, by M. Gauger; ſince publiſhed in Engliſh, by Dr. Deſaguliers: wherein the author examines what diſpoſition of *chimneys* is moſt proper to augment the heat; and proves geometrically, that the diſpoſition of parallel jambs, with the back inclined as in the common *chimney*, is leſs fitted for reflecting heat into the room, than parabolical jambs, with the bottom of the tablette horizontal.

He gives ſeven ſeveral conſtructions of his new *chimneys*, in which there are hollow cavities made by iron plates in the back, jambs, and hearth, through which plates the heat paſſing, warms the air in thoſe cavities, which is continually coming into the room freſh and warm; and the manner of executing them.

M. Gauger, however, does not appear to be the firſt inventor of the *chimney* he deſcribes; the deſcription of a like *chimney* being found in a German book, printed at Leipſick in 1699. See FIRE-PLACES and STOVES.

CHIMNEY-*jambs*, are the ſides of a *chimney*, uſually ſtanding out perpendicularly, ſometimes circularly, from the back; on the extremities whereof the mantle-tree reſts.

CHIMNEY-*money*, or *hearth-money*, a tax impoſed by ſtatute 13 and 14 Car. II. c. 10. expreſſing, that every fire-hearth, and ſtove of every dwelling, or other houſe, within England and Wales, except ſuch as pay not to church and poor, ſhall be chargeable with two ſhillings *per ann.* payable at Michaelmas and Lady-day, to the king and his heirs. But this tax was declared to be an oppreſſion and badge of ſlavery, and accordingly aboliſhed by ſtat. 1 W. and M. c. 10. and the window-tax eſtabliſhed in its room. See FUAGE and WINDOW-*tax*.

CHIMNEY-*piece*, in *Building*, a compoſition of certain mouldings, of wood or ſtone, ſtanding on the fore-ſide of the jambs, and coming over the mantle-tree.

CHIMPANZEE, in *Natural Hiſtory*, the name of an Angolan animal, very much approaching to the human figure; but of a fierce diſpoſition, and remarkably miſchievous. In the year 1738, we had one of theſe creatures

tures brought over into England, by the captain of a ſhip in the Guinea trade; it was of the female ſex, and was two feet four inches high: it naturally walked erect, and was hairy on ſome part of the body and limbs, and of a ſtrong muſcular make. It would eat very coarſe food, and was very fond of tea, which it drank out of a cup with milk and ſugar, as we do; it ſlept in the manner of the human ſpecies, and in its voice made ſome imitation of the human ſpeech, when people ſpeak very haſtily, but without any articulate ſounds. The males of this ſpecies are very bold, and will fight a man, though they ſee him armed. It is ſaid that they often ſet upon, and raviſh the negro women, when they meet them in the woods. The creature we ſaw here was but about twenty months old, and very tame; the parent had it in her arms in the country, and did not part with it till ſhe was killed with a ſpear by one of the Moors: ſhe was five feet high. Act. Eruditor. Germ. ann. 1739.

CHINA, or CHINA-*ware*, a fine ſort of earthen ware, properly called PORCELAIN.

CHINA, *gilding on.* See GILDING *on China*.

CHINA, *party*. See PARTY.

CHINA, *broken, a cæment for*. See CÆMENT.

CHINA-CHINA, a name ſometimes given to the quinquina, or Peruvian bark. See CORTEX *Peruvianus*, and QUINQUINA.

CHINA-*root*, a medicinal root, brought from the Eaſt Indies; and lately alſo from Peru, and New Spain.

It is of a ruddy brown colour, bordering on black, without-ſide; and white, or reddiſh, within. It grows chiefly in fenny places, uſually covered with the ſea; which, upon its withdrawing, leaves great quantities thereof on the ſhore. The beſt is that which is firm, ruddy, and freſh.

It is ſuppoſed to be the root of a rough ſort of *ſmilax*, called *lampatam* in China, where it grows plentifully; and being exported thence, is called *China*.

It is eſteemed a ſweetener of the blood; and uſed as ſuch in decoction, in venereal and ſcorbutic caſes.

It has indeed been a generally received opinion for a conſiderable time paſt, that *China-root* is of ſervice in the gout, ſciatica, œdematous tumours, ſtrumæ, imbecillity of the ſtomach, hemicranias, and in ulcers of the reins and bladder; but to be of little effect in the *lues*: or if it be perhaps of any uſe, yet to be far inferior in virtue to guaiacum.

CHIN-COUGH, a diſeaſe which children are chiefly ſubject to. It conſiſts in a violent and immoderate coughing, to a danger of ſuffocation.

In the *chin-cough*, Dr. Huxham uſes the common evacuations, and propoſes to correct the lentor of the blood, and to ſtrengthen the nerves and ſtomach by mercurials, the cortex, and proper ſtomachics.

Dr. Burton declares againſt bleeding, vomiting, and purging in the *chin-cough*, except in very urgent caſes; the medicine which he ſays has had great ſucceſs, is a ſcruple of fine powder of cantharides, and as much camphor, mixed with three drams of the extract of Jeſuits bark. Of this mixture he gives eight or nine grains to children every third or fourth hour, in a ſpoonful of ſome ſimple water, or ſome julep, in which a little balſam of capivi had been diſſolved. He ſays this method is not proper in ſuch *chin-coughs* as proceed from thin ſharp rheum; but, he believes, that in the *chin-cough* from a tough viſcid phlegm, it will ſcarce ever fail, at leaſt it has not failed yet. Med. Eſſ. Edinb.

As this diſeaſe ariſes from obſtructed perſpiration, and a relaxation of the ſolids, its cure muſt depend on cleanſing and ſtrengthening the ſtomach, bracing the ſolids, and, at the ſame time, promoting perſpiration and the different ſecretions. The diet, therefore, ſhould be light, and eaſy of digeſtion: the drink ſhould be hyſſop or penny-royal tea, ſweetened with honey or ſugar-candy; or ſmall wine whey. One of the moſt effectual remedies is change of air. When the diſeaſe is violent, and there is any danger of an inflammation of the lungs, or ſuffocation, repeated bleeding may be proper. Small doſes of ipecacuanha ſhould be adminiſtered in this diſorder. The preparations of rhubarb ſhould alſo be uſed, in order to keep the body open. Oily and balſamic medicines, though often exhibited, ſhould be avoided. Millepedes, bruiſed and infuſed in ſmall white wine, have been much recommended. Two ounces of theſe ſhould be allowed to a pint of wine, and a table-ſpoonful taken three or four times a day. Opiates, as a little of the ſyrup of poppies, or five, ſix, or ſeven drops of laudanum, may be occaſionally repeated, to allay the violence of the *cough*. The feet ſhould be occaſionally bathed in luke-warm water, and a Burgundy pitch plaſter kept between the ſhoulders. If the diſeaſe continues, unattended with a fever, the bark and other bitters are proper medicines. Buchan's Domeſtic Medicine, ed. 5. p. 309, &c.

CHINE, in the *Manege*, is uſed for the back-bone, or the ridge of the back of a horſe. The French call it *échine*, and the ancient Italian maſters *eſquine*.

CHINESE *Chronology*. See CHRONOLOGY.

CHINESE *Stoves*. See KANG.

CHINESE, or CHINESE *Tongue*, the LANGUAGE of the people of China. F. le Comte obſerves, that the *Chineſe* has no analogy to any other language in the world. It only conſiſts of 330 words, which are all monoſyllables; at leaſt, they are pronounced ſo ſhort, that there is no diſtinguiſhing above one ſyllable, or ſound, in them. Yet they have four accents, which, by an inflexion of voice, multiply almoſt every word into four, and give alſo a harmony and pointed cadence to the moſt ordinary phraſes. Their characters are divided into ſix ſorts: the firſt exhibiting the ſhape or image of ſenſible things; the ſecond indicating the object by ſome viſible addition to the ſhape or ſymbol; the third aſſociating two characters to expreſs an object, which neither would denote ſeparately; the fourth expreſſing the ſound, in order to ſupply the defect of the figure, as *ya* adjoined to the figure of a bird, to repreſent a duck, &c.; the fifth being a metaphorical application of their characters, whereby their language acquires a force and vivacity of colouring peculiar to itſelf, but at the ſame time rendering it extremely obſcure; the ſixth extending the primitive ſenſe of a character, ſo that the ſame character may denote a verb or adverb, an adjective or ſubſtantive From theſe ſources their various characters are derived, and increaſed from 300 to 80,000.

Some learned men have imagined, particularly Mr. Turbeville Needham, F. R. S. that the *Chineſe* characters are the ſame in many reſpects as the Egyptian hieroglyphics; and that the ſenſe of the latter may be diſcovered by the comparative and appropriated ſignification of the former. But it has been urged, that there is not the leaſt trace now remaining of any communication, ſince the confuſion of tongues, between the *Chineſe* and Egyptians: nor can there be diſcerned any connection between the two modes of writing at this day. Nevertheleſs, it has been maintained, that the *Chineſe* language is one of the moſt ancient; and perhaps the only one that has been ſpoken without interruption; and yet remains as a living language, to which it is apprehended the ſmall number and ſhortneſs of its words have greatly contributed. The *Chineſe* characters have been repreſented as images for ſenſible things, and ſymbols for mental objects, which are tied to no ſound, and may be read in every tongue; and this ſeems to have been the caſe in the moſt remote antiquity, when their characters, which are now abbreviated and disfigured, might have been more ſimple and natural. See farther on this ſubject, Phil. Tranſ. vol. lix. N° 66. p. 489, &c.

CHINNOR, an inſtrument of muſic among the Hebrews, conſiſting of thirty-two chords. Kircher has given a figure of it; for which, ſee *Tab. Muſic*.

CHINSE, in *Sea-Language*, is uſed for thruſting oakum into a ſeam or chink, with the point of a knife or chiſſel.

CHIO *pear*, a name given to a ſmall ſpecies of pear, called alſo by ſome the baſtard muſk pear, from its reſembling the little muſk pear in its ſweet flavour. Its ſkin is yellow ſtreaked with red; it is of a roundiſh ſhape, and does not hang in cluſters, but ſingly on the tree.

CHIOCOCCA, in *Botany*, a genus of the *pentandria monogynia* claſs, having a funnel-ſhaped flower, and a ſingle-celled berry containing two ſeeds.

CHIONANTHUS, in *Botany*. See SNOW-*drop tree*.

CHIPPING, a phraſe uſed by the potters and china-men to expreſs that common accident both of our own ſtone and earthen ware, and the porcelain of China, the flying off of ſmall pieces, or breaking at the edges. Our earthen wares are particularly ſubject to this, and are always ſpoiled by it before any other flaw appears in them. Our ſtone wares eſcape it better than theſe, but leſs than the porcelain of China, which is leſs ſubject to it than any other manufacture in the world. The method by which the Chineſe defend their ware from this accident, is this: they carefully burn ſome ſmall bambou canes to a ſort of charcoal, which is very light, and very black; this they reduce to a fine powder, and then mix it into a thin paſte, with ſome of the varniſh which they uſe for their ware: they next take the veſſels when dried, and not yet baked, to the wheel, and turning them ſoftly round, they, with a pencil dipt in this paſte, cover the whole circumference with a thin coat of it: after this, the veſſel is again dried; and the border made with this paſte appears of a pale greyiſh colour when it is thoroughly dry. They work on it afterwards in the common way, covering both this edge and the reſt of the veſſel with the common varniſh. When the whole is baked on, the colour given by the aſhes diſappears, and the edges are as white as any other part; only when the baking has not been ſufficient, or the edges have not been covered with the ſecond varniſhing, we ſometimes find a duſky edge, as in ſome of the ordinary thick tea-cups.

It may be a great advantage to our Engliſh manufactures to attempt ſomething of this kind. The willow is known to make a very light and black charcoal; but the elder, though a thing ſeldom uſed, greatly exceeds it. The young green ſhoots of this ſhrub, which are almoſt all pith, make the lighteſt and the blackeſt of all charcoal; this readily mixes with any liquid, and might be eaſily uſed in the ſame way that the Chineſe uſe the charcoal of the bambou cane, which is a light hollow vegetable, more reſembling the elder ſhoots than any other Engliſh plant. It is no wonder that the fixed ſalt and oil contained in this charcoal ſhould be able to penetrate the yet raw edges of the ware, and to give them in the ſubſequent baking a ſomewhat different degree of vitrification from the other parts of the veſſel, which, though if given to the whole, it might take off from the true ſemivitrified ſtate of that ware; yet at the edges is not to be regarded, and only ſerves to defend them from common accidents, and keep them entire.

The Chineſe uſe two cautions in this application: the firſt in the preparation; the ſecond in the laying it on. They prepare the bambou canes for burning into charcoal, by peeling off the rind. This might eaſily be done with our elder ſhoots, which are ſo ſucculent, that the bark ſtrips off with a touch. The Chineſe ſay, that if this is not done with their bambou, the edges touched with the paſte will burſt in the baking: this does not ſeem indeed very probable; but the charcoal will certainly be lighter made from the peeled ſticks, and this is a known advantage. The other caution is, never to touch the veſſel with hands that have any greaſy or fatty ſubſtance about them; for if this is done, they always find the veſſel crack in that place. Obſ. ſur les Cout. de l'Aſie.

CHIPPINGAVEL, or CHEAPINGAVEL, in our *Old Writers*, toll paid for buying and ſelling.

CHIRAGRA, in *Medicine*, the gout in the hands.

The word comes from χειρ, *manus*, *hand*, and αγρα, *captura*, *ſeizing*.

The *chiragra* has its ſeat in the *carpus*, or extreme part of the hand, or the ligaments and junctures of the fingers.

CHIRAMAXIUM, in *Antiquity*, a kind of chariot or conveyance, which was drawn by men inſtead of horſes.

The word is derived from χειρ, *the hand*, and αμαξα, *a chariot*.

CHIRCHSED. See CHURCH-SCOT.

CHIRITES, in *Natural Hiſtory*, a name given by authors to a ſtone reſembling the human hand. The accounts we have of it ſay, that it is of a white colour, and of the nature of gypſum or plaſter-ſtone; and that it repreſents the palm of the hand, with the fingers, and their nails on the other ſide. This ſeems to have been a name given to ſome ſingle ſpecimen in a cabinet of ſome collector; for it is certainly no diſtinct ſpecies of foſſil, but a mere *luſus naturæ*, in the configuration of ſome accidental piece of gypſum.

CHIROGRAPH, *Chirographum*, was anciently a deed which, requiring a counterpart, was engroſſed twice on the ſame piece of parchment, counterwiſe; leaving a ſpace between, wherein was wrote CHIROGRAPH; through the middle whereof the parchment was cut, ſometimes ſtrait, ſometimes indentedly; and a moiety given to each of the parties.

The word is compounded of χειρ, *hand*, and γραφω, *ſcribo*, *I write*; q. d. *hand-writing*.

This was afterwards called *dividenda*, and *chartæ diviſæ*; and was the ſame with what we now call CHARTER-PARTY.

The firſt uſe of theſe *chirographs* with us, was in the time of king Henry III.

According to ſome, a deed was properly a *chirograph*, when it was ſubſcribed by the hand-writing of the vendor, or creditor, and delivered to the buyer, or debtor. Theſe authors make the *chirograph* differ from a *ſyngraph*, in this; that in the latter, the word *ſyngraph* was wrote in the middle, and cut through, in the manner juſt obſerved of *chirograph*. Thoſe authors, therefore, make the *ſyngraph* and the *chirograph* a different thing.

CHIROGRAPH was alſo anciently uſed for a fine: the manner of ingroſſing the fines, and cutting the parchment in two pieces, is ſtill retained in the office called the *Chirographer's Office*.

CHIROGRAPHER *of fines*, an officer in the common pleas, who ingroſſes fines, acknowleged in that court, into a perpetual record (after they have been examined and paſſed by other officers); and writes and delivers the identures thereof to the party.

He makes two indentures; one for the buyer, the other for the ſeller: and a third indented piece, containing the effect of the fine, and called the *foot of the fine*; and delivers it to the *cuſtos brevium*.

The ſame officer alſo, or his deputy, proclaims all fines in court every term, and indorſes the proclamations on the back-ſide of the foot; keeping, withal, the writ of covenant, and the note of the fine.

CHIROMANCY, the art of divining the fate, temperament, and diſpoſition of a perſon, by the lines and lineaments of the hand: this is otherwiſe called *palmiſtry*.

The word comes from χειρ, *hand*, and μαντεια, *divination*.

We have a great number of authors on this vain and trifling art: as Artemidorus, Fludd, and Johannes de Indagine. Taiſnerus, and M. de le Chambre, are eſteemed the beſt.

CHIRONIA, in *Botany*, a name by which ſome have called the black bryony. In the Linnæan ſyſtem it is a genus of the *pentandria monogynia* claſs: the characters are; the flower hath a permanent empalement of one leaf, cut into five oblong ſegments: it hath one petal, with a roundiſh tube divided above into five equal parts, which ſpread open: it hath five ſhort broad ſtamina, terminated by large oblong ſummits, which, when the flowers drop, are ſpirally twiſted: it hath an oval germen, ſupporting a declining ſtyle, which becomes an oval capſule with two cells, filled with ſmall ſeeds.

CHIRONIUM, in *Medicine*, is ſometimes uſed to ſignify a great ulcer, and of difficult cure.

CHIRONOMI, on the *Grecian Stage*, were thoſe actors who performed without uſing words, by the motions of the hand.

CHIRONOMIA, in *Antiquity*, the art of repreſenting, by the motions of the hand, and other geſtures of the body, any paſt tranſaction, whether of true or fabulous hiſtory. This made a part of a liberal education among the ancients: it had the approbation of Socrates, and was ranked by Plato among the political virtues.

CHIROTHECA. See GLOVE.

CHIROTHESIA, the impoſition of hands in conferring any prieſtly orders.

The word comes from χειρ, *manus*, and τιθημι, *pono*, which ſignifies the laying hands upon another.

CHIROTONIA, the ſtretching forth, or holding up of hands, in electing any magiſtrate, &c.

The word comes from χειρ, *manus*, and τεινω, *tendo*, *the action of ſtretching out the hands*; and becauſe the ancients gave their ſuffrages by ſtretching out the hands, they gave the name *chirotonia* to the election of magiſtrates.

This cuſtom was firſt eſtabliſhed in Greece; as appears from an oration of Demoſthenes againſt Neæra, and that of Æſchines againſt Cteſiphon: thence it paſſed to the Romans. From prophane authors it paſſed to eccleſiaſtical ones; and was uſed by them, not only in ſpeaking of elections, but alſo of ordinations. See IMPOSITION and ORDINATION.

For the difference between *chirotheſia*, and *chirotonia*, ſee Harrington's Prer. of popular Government.

CHIRURGERY, popularly called *Surgery*, the third branch of medicine; conſiſting in operations performed by the hand, for the cure of wounds, and other diſorders.

The word *chirurgery* is formed from χειρ, *manus*, *hand*; and εργον, *opus*, *operation*.

Chirurgery is divided into *ſpeculative* and *practical*; one whereof does that in effect, which the other teaches to do.

All the operations of *chirurgery* are reduced under four kinds: the firſt whereof rejoins what has been ſeparated, and is called *ſyntheſis*.

The ſecond divides, with diſcernment, thoſe parts whoſe union is prejudicial to health; and is called *diæreſis*.

The third extracts, with art, foreign bodies; called *exæreſis*.

And the fourth, called *proſtheſis*, adds and applies what is wanting.

The principal things that come under the conſideration of *chirurgery* are, tumors, ulcers, wounds, diſlocations, and fractures.

Chirurgery has the advantage of medicine, in the ſolidity of its foundation, the certainty of its operations, and the ſenſibility of its effects; inſomuch that thoſe who deny medicine to be of any ſignificancy, yet allow the uſefulneſs of *chirurgery*.

Chirurgery is very ancient; and even much more ſo than medicine, whereof it now makes a branch. It was, in effect, the ſole medicine of the firſt ages; they betaking themſelves to the cure of external diſorders, before they came to examine or diſcover what related to the cure of internal ones.

Apis, king of Egypt, is ſaid to be the firſt inventor of *chirurgery*; after him, Æſculapius compoſed a treatiſe of wounds and ulcers: he was ſucceeded by the philoſophers of the following ages, in whoſe hands *chirurgery* wholly lay: ſuch were Pythagoras, Empedocles, Parmenides, Democritus, Chiron, Pæon, Cleombrotus, who cured king Antiochus, &c.

Pliny tells us, upon the authority of Caſſius Hemina, that Archagathus was the firſt of the profeſſion that ſettled at Rome; that the Romans were wonderfully pleaſed with this *Vulnerarius*, as they called him, at his firſt coming, and ſhewed him ſome extraordinary marks of their eſteem, but that they were diſguſted at him afterwards, and nicknamed him *Carnifex*, for his cruelty in cutting off limbs. Some pretend, that he was even ſtoned by them to death in the Campus Martius; but if he really came to ſuch an unlucky end, it is ſtrange Pliny ſhould take no notice of it. Plin. Hiſt. Nat. lib. xxix. cap. 1.

Chirurgery was cultivated with much more earneſtneſs by Hippocrates, than by any of the preceding phyſicians: it is ſaid to have been perfected in Egypt by Philoxenus, who wrote ſeveral volumes on that ſubject. Among the Greeks, Gorgias, Soſtrates, Heron, the two Apollonii, Ammonius of Alexandria; and at Rome, Trypho the father, Euelpiſtus, and Meges, made it flouriſh, each in their time.

The more modern authors, who have contributed moſt to the perfection of *chirurgery*, are, Paræus, Fab. ab Aquapendente, Harvey, Wharton, Gliſſon, Du Laurence, Diemerbroeck, Vieuſſens, Barbette, Dionis, Charriere, Heiſter, &c.

Scultetus has publiſhed a deſcription of all the inſtruments uſed in *chirurgery*, under the title of Armamentarium Chirurgicum; and our countryman, Mr. Wiſeman, ſerjeant-*chirurgeon* to king Charles II. a folio volume of *chirurgical* treatiſes, containing practical obſervations, both in reſpect to the internals and externals, of a number of caſes in each branch of the art, from his own experience, under the title of Several chirurgical Treatiſes. This work has been made uſe of ever ſince, by the moſt knowing of our Engliſh *chirurgeons*; and has been the foundation of moſt *chirurgical* treatiſes ſince its publication, anno 1676.

In England there are two diſtinct companies now occupying the ſcience or faculty of ſurgery; the one company called *barbers*, the other *ſurgeons*; which latter were not till very lately incorporated. The two were united to ſue and be ſued, by the name of maſters or governors and commonalty of the myſtery of Barbers and Surgeons of London, 32 Hen. VIII. cap. 42.

No perſon uſing any barbery, or ſhaving, in London, was to occupy any ſurgery, letting of blood, or other matter; drawing of teeth only excepted. And no perſon uſing the myſtery or craft of ſurgery was to occupy or exerciſe the ſeal or craft of barbery, or ſhaving; neither by himſelf, nor any other for his uſe. 32 Hen VIII. cap. 42. By the ſame ſtatute, ſurgeons were obliged to have ſigns at their doors.

The French *chirurgeons*, being refuſed to be admitted into the univerſities, notwithſtanding that their art makes a branch of medicine, one of the four faculties, on pretence of its bordering a little on butchery, or cruelty, aſſociated themſelves into a brotherhood, under the protection of St. Coſmus, and St. Damian: on which account, according to the laws of their inſtitution, they are obliged to dreſs and look to wounds *gratis*, the firſt Monday of each month.

They diſtinguiſh between a *chirurgeon of the long robe*, and a *barber chirurgeon*: the firſt has ſtudied phyſic, and is allowed to wear a gown.

The ſkill of the other, beſide what relates to the management of the beard, is ſuppoſed to be confined to the more ſimple and eaſy operations in *chirurgery*; as bleeding, tooth-drawing, &c. They were formerly diſtinguiſhed by badges: thoſe of the long gown bore a caſe of inſtruments; and the barber a baſon.

CHISSEL, an inſtrument much uſed in ſculpture, maſonry, joinery, carpentry, &c.

There are *chiſſels* of different kinds; though their chief difference lies in their different ſize and ſtrength, as being all made of ſteel well ſharpened and tempered: but they have different names, according to the different uſes to which they are applied.

The *chiſſels* uſed in carpentry and joinery are, 1. The *former*, which is uſed firſt of all before the *paring-chiſſel*, and juſt after the work is ſcribed. 2. The *paring-chiſſel*, which has a fine ſmooth edge, and is uſed to pare off, or ſmooth the irregularities which the *former* makes. This is not ſtruck with a mallet, as the *former* is, but is preſſed with the ſhoulder of the workman. 3. *Skew-former*: this is uſed for cleanſing acute angles with the point, or corner of its narrow edge. 4. The *mortiſe-chiſſel*, which is narrow, but very thick and ſtrong, to endure hard blows; and it is cut to a very broad baſil: its uſe is, to cut deep ſquare holes in the wood, for mortiſes. 5. The *gouge*, which is a *chiſſel* with a round edge; one ſide whereof ſerves to prepare the way for an augre, and the other to cut ſuch wood as is to be rounded, hollowed, &c. 6. *Socket-chiſſels*, which are chiefly uſed by carpenters, &c. to have their ſhank made with a hollow ſocket at top, to receive a ſtrong wooden ſprig, fitted into it with a ſhoulder. Theſe *chiſſels* are diſtinguiſhed, according to the breadth of the blade, into half-inch *chiſſels*, three quarters of an inch *chiſſels*, &c. 7. *Ripping-chiſſels*, which is a ſocket *chiſſel* of an inch broad; having a blunt edge, with no baſil to it; its uſe is to rip, or tear two pieces of wood aſunder, by forcing in the blunt edge between them.

CHISELY *land*, in *Agriculture*, a term appropriated to that ſort of land which breaks, when it is turned up by the plough, into pieces like the chips made by the ſtonecutter's chiſſel in the hewing of ſtones. It is of a middle nature, between the ſandy land that falls off from the plough-ſhare, like bran or ſaw-duſt, and the clayey, that is raiſed in large glebes.

It is of ſeveral colours, grey, brown, reddiſh, and blackiſh, and uſually contains a large quantity of ſand, and no ſmall number of pebbles.

CHIT is the name of an inſtrument uſed in cleaving laths.

CHITSEE, in *Botany*, the name of a Chineſe tree, called alſo SETSE.

CHITTING, in *Gardening*. A ſeed is ſaid to *chit*, when it firſts ſhoots its ſmall roots into the earth.

CHI-TUA, in the *Materia Medica*, a name uſed by ſome authors for a kind of *lignum aloes*, which is reddiſh, and of a very fine ſcent.

CHIVAGE. See CHEVAGE.

CHIVALRY, in *Antiquity*, an inſtitution which ſucceeded the CRUSADES, and which, though founded in caprice, and productive of extravagance, had a very conſiderable influence in refining the manners of the European nations, during the twelfth, thirteenth, fourteenth, and fifteenth centuries. The objects of this inſtitution were, to check the inſolence of overgrown oppreſſors, to ſuccour the diſtreſſed, to reſcue the helpleſs from captivity, to protect or to avenge women, orphans, and eccleſiaſtics, who could not bear arms in their own defence, to redreſs wrongs, and to remove grievances. Valour, gallantry, and religion, were blended in this inſtitution; men were trained to knighthood by long previous diſcipline; they were admitted into the order by ſolemnities no leſs devout than pompous; every perſon of noble birth courted the honour; it was deemed a diſtinction ſuperior to royalty, and monarchs were found to receive it from the hands of private gentlemen. Theſe various circumſtances contributed to render a whimſical inſtitution of ſubſtantial benefit to mankind. See Robertſon's Hiſt. of Charles V. vol. i. p. 82, &c. ed. 2. 8vo.

Dr. Hurd, in his Letters on *Chivalry* and Romance, traces the origin of this inſtitution immediately to the feudal conſtitution; and he ſuppoſes that the ſpirit of *chivalry* had conſiderably prevailed before the riſe of the CRUSADES.

CHIVALRY, or CHEVALRY, in *Law*, a tenure of land by knight-ſervice; whereby the tenant was anciently bound to perform ſervice in war, to the king, or to the meſne lord of whom he held by that tenure.

By a ſtatute of 12 Car. II. cap. 24. all tenures by *chivalry*, *in capite*, &c. are aboliſhed. See COURT and GUARDIAN.

CHIUDENDO, in *Italian Muſic*, *to conclude*; as *chiudendo col ritornello*, *col l'aria*, ſignifies to end with a RITORNELLO, or ſome paſſage which has been before ſung in ſome parts of the piece.

CHIVEN, in *Zoology*, a name given by many to the MUSCICAPA, or *fly-catcher*, a ſmall bird little bigger than the wren.

CHIVES, or CHIEVES, in *Botany*, the ſmall knobs growing on the ends of the fine threads, or ſtamina of flowers: by Ray, and others, called alſo *apices*. See ANTHERÆ. Dr. Grew calls the *ſtamina*, or threads themſelves, on which the *apices* are fixed, the *chives*.

CHIVES, in *Botany*, a very ſmall ſpecies of the ONION kind, is alſo called by this name.

CHIUM *Marmor*. See MARBLE.

CHIUM *vinum*, *Chian wine*, or wine of the growth of the iſland of Chios, now Scio, is commended by Dioſcorides, as affording a good nouriſhment, fit to drink, leſs diſpoſed to intoxicate, endued with the virtue of reſtraining defluxions, and a proper ingredient in opthalmic medicines. Hence Scribonius Largus directs the dry ingredients in *collyria* for the eyes, to be made up with *Chian* wine.

CHIUN, or CHEVAN, in *Hebrew Antiquity*. We meet with this word in the prophet Amos, cited in the Acts of the Apoſtles. St. Luke reads the paſſage thus: It *took up the tabernacle of Moloch, and the ſtar of your god Remphan, figures which ye made to worſhip them.* The import of the Hebrew is as follows: *Ye have borne the tabernacle of your kings, and the pedeſtal* (the chiun) *of your images, the ſtar of your gods, which ye made to yourſelves.* The Septuagint in all probability read *Repham* or *Revan*, inſtead of *Chiun* or *Chevan*, and took the pedeſtal for a god.

Some ſay that the Septuagint, who made their tranſlation in Egypt, changed the word *Chiun* into that of *Remphan*, becauſe they had the ſame ſignification. M. Baſnage, in his book entitled Jewiſh Antiquities, after having diſcourſed a good deal upon *Chion* or *Remphan*, concludes that Moloch was the ſun, and *Chion*, *Chiun*, or *Remphan*, the moon.

CHIUREA, in *Natural Hiſtory*, a name given by Cardan, Oviedo, and ſome others, to the OPOSSUM.

CHLÆNA, in *Antiquity*, a kind of thick, ſhaggy, upper garment; its uſe was very ancient; for we find Homer makes his heroes firſt put off their *chlænæ*, and afterwards their tunics, or coats.

CHLAMYDULA, in *Antiquity*, a ſmall upper garment worn by children. See CHLAMYS.

CHLAMYS, in *Antiquity*, a military habit, worn by the ancients over the *tunica*.

Chlamys was the ſame, in time of war, that the *toga* was in time of peace; each belonged to the patricians. It did not cover the whole body, but chiefly the hind-part; though it alſo came over the ſhoulders, and was faſtened with a buckle on the breaſt. There were four or five kinds of *chlamys*; that of children, that of women, and that of men; which laſt was divided into that of the people, and that of the emperor.

CHLIASMA, in *Medicine*, a warm fomentation of the moiſt kind; as pyria is of the dry kind.

CHLOEIA, in *Antiquity*, a feſtival celebrated at Athens, in honour of Ceres, to whom, under the name Χλοη, i. e. *Graſs*, they ſacrificed a ram.

CHLORA, in *Botany*, a genus of the *octandria monogynia* claſs: the calyx is compoſed of eight leaves; the corolla has a ſingle petal, and is divided into eight ſections; and the capſule conſiſts of a ſingle cell, with two valves, containing many ſeeds.

CHLOREUS, in *Zoology*, a name by which Turner, and ſome others, have called the common YELLOW-*hammer*, or *emberiza lutea*.

CHLOREUS, in *Zoology*, is alſo a name by which ſeveral authors, and particularly many of the earlieſt writers, have called the GALBULA, a very elegant and beautiful bird of the thruſh kind, almoſt all over yellow.

CHLORIS, in *Ornithology*, the name of the bird commonly called in Engliſh the greenfinch, a well-known bird of the ſize of a common ſparrow, and remarkable for its green colour, whence it has its name, and for the largeneſs of its beak, in which it approaches to the *coccothrauſtes*; it builds in our hedges, and feeds on the ſeeds of vegetables.

CHLORITES, in *Natural Hiſtory*, a name given by the ancients to a green ſtone ſeeming to have been a jaſper, but ſo pellucid as to approach to the nature of the coarſer emeralds.

CHLOROSIS, in *Medicine*, a feminine diſeaſe, vulgarly called the *green-ſickneſs*, *white jaundice*, &c.

The word *chloroſis* ſignifies *greenneſs*, *verdure*; formed from χλοη, *graſs*.

Its uſual ſubjects are, girls, maids, and widows; or even wives, whoſe huſbands are deficient, &c. It gives a pale, yellow, or greeniſh tincture to the complexion, with a circle of violet under the eyes. The patient is melancholy and uneaſy; has frequently a low wandering fever, with an unequal pulſe, vomiting, heavineſs, liſtleſſneſs, drowſineſs, difficulty of breathing, longing for abſurd foods, &c.

It comes on, commonly, antecedent to, or about the time of the eruption of the menſes. Though the ſtoppage of the menſes is not always the cauſe of this diſtemper; for they ſometimes, though but ſeldom, flow regularly, in the progreſs thereof. According to Etmuller, the ſuppreſſion of the *menſes* is rather the effect than the cauſe of this diſeaſe.

The cure is chiefly to be attempted by chalybeats and bitters. In the colder conſtitutions, decoctions of guaiacum are found of uſe.

CHNUS, in Hippocrates, is fine ſoft wool, to which he compares an aqueous ſpleen, on account of its ſoftneſs.

CHOANA, in *Ancient Anatomiſts*, a cavity in the brain like a funnel, called alſo *pelvis*.

CHOASPITES, a name given by the ancients to a ſpecies of the *chryſopraſius*, a gem of a mixed colour between yellow and green. It was called *choaſpites* from the name of a river in which it was frequently found.

CHOCK, in *Sea Language*, a wedge uſed to confine a caſk, or other heavy body, to prevent it from fetching away when the ſhip is in motion.

CHOCOLATE, a kind of cake, or confection, prepared of certain drugs; the *baſis*, or principal whereof, is the *cacao-nut*.

The name *chocolate* is alſo given to a drink, prepared from this cake, of a duſky colour, ſoft, and oily; uſually drank hot, and eſteemed not only an excellent food, as being very nouriſhing, but alſo a good medicine; at leaſt a diet, for keeping up the warmth of the ſtomach, and aſſiſting digeſtion.

The Spaniards were the firſt who brought *chocolate* into uſe in Europe; and that, perhaps, as much out of intereſt, to have the better market for their cacao-nuts, vanilla, and other drugs which their Weſt Indies furniſh, and which enter the compoſition of *chocolate*, as out of regard to thoſe extraordinary virtues which their authors ſo amply enumerate in it. The qualities above mentioned are all that the generality of phyſicians, and others, allow it.

For the ſtatutes relating to the manufacture and trade of *chocolate* in Great Britain, ſee 10 Geo. I. cap. 10. § 1. 2. 18. 19. 22. 24. 11 Geo. I. cap. 10. § 13. 23. 25. 11 Geo. I. cap. 30. § 14. 15.

CHOCOLATE, *original manner of making*. The method firſt uſed by the Spaniards was very ſimple, and the ſame with that in uſe among the Indians: they only uſed cacao-nut, maiſe, and raw ſugar, as expreſſed from the canes, with a little achiotl, or rocou, to give it a colour: of theſe four drugs, ground between two ſtones, and mixed together in a certain proportion, they made a kind of bread, which ſerved them equally for ſolid food, and for drink; eating it dry when hungry, and ſteeping it in hot water when thirſty.

This drink the Mexicans called *chocolate*, from *chocao*, *ſound*; and *alte*, or *atte*, *water*; q. d. *water that makes a noiſe*: from the noiſe which the inſtrument, uſed to mill and prepare the liquor, made in the water.

But the Spaniards, and other nations, afterwards added a great number of other ingredients to the compoſition of *chocolate*; all of which, however, vanilla alone excepted, ſpoil, rather than mend it.

CHOCOLATE, *method of making, now in uſe among the Spaniards of Mexico*. The fruit, being gathered from the cacao-tree, is dried in the ſun, and the kernel taken out, and roaſted at the fire, in an iron pan pierced full of holes; then pounded in a mortar; then ground on a marble ſtone, with a grinder of the ſame matter, till it be brought into the conſiſtence of a paſte; mixing with it more or leſs ſugar, as it is to be more or leſs ſweet. In proportion as the paſte advances, they add ſome long pepper, a little achiotl, and, laſtly, vanilla: ſome add cinnamon, cloves, and aniſe; and thoſe who love perfumes, muſk and ambergris.

There is alſo a kind of Mexican *chocolate*, in the compoſition whereof there enter almonds and filberts; but it is rather to ſpare the cacao, than to render the *chocolate* better: and, accordingly, this is looked on as ſophiſticated *chocolate*.

CHOCOLATE, *the, made in Spain*, differs ſomewhat from that made in Mexico: for, beſides the drugs uſed in this laſt, they had two or three kinds of flowers, pods of campeche, and generally almonds and hazel nuts. The uſual proportion, at Madrid, is, to an hundred kernels of cacao, to add two grains of *chilé*, or Mexican pepper; or, in lieu thereof, Indian pepper; a handful of aniſe; as many flowers, called by the natives *vinacaxtlides*, or little ears; ſix white roſes in powder; a little machuſia; a pod of campeche; two drachms of cinnamon; a dozen almonds, and as many hazel nuts; with achiotl enough to give it a reddiſh tincture; the ſugar and vanilla are mixed at diſcretion; as alſo the muſk and ambergris. They frequently work their paſte with orange-water, which they think gives it a greater conſiſtence and firmneſs.

The paſte is uſually made up into cakes, ſometimes into large rolls; and ſometimes the cakes are made up of pure *chocolate*, without any admixture; thoſe who uſe it being to add what quantity they pleaſe of ſugar, cinnamon, and vanilla, when in the water.

Among us, in England, the *chocolate* is chiefly made thus ſimple and unmixed, though (perhaps not unadulterated) of the kernel of the cacao; excepting that ſometimes ſugar, and ſometimes vanilla, is added: any other ingredients being ſcarce known among us.

The neweſt *chocolate* is eſteemed the beſt; the drug never keeping well above two years, but uſually degenerating much before that time.

It is to be kept in brown paper, put up in a box; and that in another, in a dry place.

Mr. Henly, an ingenious electrician, has lately diſcovered that *chocolate*, freſh from the mill, as it cools in the tin-pans into which it is received, becomes ſtrongly electrical; and that it retains this property for ſome time after it has been turned out of the pans, but ſoon loſes it by handling. The power may be once or twice renewed by melting it again in an iron ladle, and pouring it into the tin pans as at firſt; but when it becomes dry and powdery, the power is not capable of being revived by ſimple melting: but if a ſmall quantity of olive-oil be added, and well mixed with the *chocolate* in the ladle, its electricity will be completely reſtored by cooling it in the tin pan as before. From this experiment he conjectures, that there is a great affinity between phlogiſton and the electric fluid, if indeed they be not the ſame thing. Phil. Tranſ. vol. lxvii. part i. p. 94, &c.

The manners of preparing the maſs into a liquor, with the proportions, are various: ordinarily, the *chocolate* is boiled in water, ſometimes in milk; and ſometimes, by good œconomiſts, in water-gruel: when boiled, it is milled, or agitated with a wooden machine for the purpoſe, and boiled again, till it be of the proper conſiſtence for drinking; then ſugared, if the maſs were pure; then milled afreſh, and poured off.

Note, the beſt *chocolate* is that which diſſolves entirely in the water; leaving no grounds, or ſediment, at the bottom of the pot.

The Spaniards eſteem it the laſt misfortune that can befal a man, to be reduced to want *chocolate*: they are never known to leave it, excepting for ſome other liquor that will intoxicate.

CHOCOLATE-*tree*. See CACAO.

CHOENICIS, in the *Ancient Surgery*, the trepan, ſo called by Galen and Ægineta, and mentioned by Celſus, where he calls it *modiolus*.

CHOENIX, an Attic dry meaſure, containing three *cotylæ*, or one *ſextarius* and an half, which is two pounds and a quarter. Its mark was a χ with a ν over it.

The *choenix* likewiſe contained the forty-eighth part of a medimnus, and was otherwiſe called HEMEROTROPHIS.

CHOERINÆ, in *Antiquity*, a kind of ſea-ſhells, with which the ancient Greeks uſed to give their ſuffrage, or vote.

CHOEROGRYLLUS. See *Hedge*-HOG.

CHOES, in *Antiquity*, an Athenian feſtival in honour of Bacchus, celebrated in the month Antheſterion.

CHOIR, that part of a church, cathedral, &c. where the clergy and choriſters, or ſingers, are placed.

The word, according to Iſidore, is derived *à coronis circumſtantiam*; becauſe, anciently, the choriſters were diſpoſed round the altar to ſing; which is ſtill the manner of building altars among the Greeks.

The *choir* with us is diſtinguiſhed from the chancel, or ſanctuary, where the communion is celebrated: as alſo from the nave, or body of the church, where the people are placed.

The patron is ſaid to be obliged to repair the *choir* of a church; and the pariſhioners the nave.

The *choir* was not ſeparated from the nave, till the time of Conſtantine: from that time the *choir* was railed in with a balluſtrade, with curtains drawn over, not to be opened till after the conſecration.

In the twelfth century they began to incloſe the *choir* with walls; but the ancient balluſtrades have been ſince reſtored; out of a view to the beauty of the architecture.

The chantor is maſter of the *choir*.

In nunneries, the *choir* is a large hall, adjoining to the body of the church, ſeparated by a grate, where the religious ſing the office.

CHOIR *muſic*, muſic ſung in a chorus, as in churches. It is ſometimes uſed for *muſica piena*, *canto fermo*, or what we call *plain chant*, or *ſong*.

CHOIROS, in *Ichthyology*, a name given by Ariſtotle and others of the old Greek writers to the *cernua* or *acerina* of the Latins, called by us the RUFFE. This fiſh has been called by a great variety of names, but it is properly a ſpecies of pearch, or PERCA, and is diſtinguiſhed from the others of that genus by Artedi under the name of the pearch with only one fin on the back, and with a cavernous head.

CHOLAGOGUE, a medicine which purges the bile downward.

The word comes from χολη, *bile*; and αγειν, *to lead*, or *draw*.

Of theſe ſome are ſimple, others compound; and both the one and the other are diſtinguiſhed into three kinds, with regard to their activity; the *benign*, the *moderate*, and the *violent*.

Of the firſt kind are, MANNA, CASSIA, roſes, tamarinds, *oleum ricini*, &c.

Of the ſecond are SENA, RHUBARB, ALOES, &c.

Of the third JALAP, SCAMMONY, &c.

CHOLEDOCHUS, in *Anatomy*, a term applied to a canal, or duct, called alſo *ductus communis*; formed of the union of the *porus bilarius*, and *ductus cyſticus*.

The word comes from χολη, *choler*; and δεχομαι, *I receive*, or *contain*.

The *choledochus ductus*, paſſing obliquely to the lower-end of the *duodenum*, ſerves to convey the BILE from the LIVER to the inteſtines. Some have imagined, that it conveyed the bile from the liver to the GALL-*bladder*: but it being obſerved, that it is the *duodenum*, not the gall-bladder, that ſwells, upon blowing through this duct, it is evident, the bile contained therein is conveyed nowhere elſe but to the *duodenum*.

CHOLER. See BILE.

CHOLERA MORBUS, a ſudden overflowing, or eruption, of the BILE, or bilious matters, both upwards and downwards.

It is ſuppoſed to have its riſe from the great abundance of bilious humours; which, being very acrimonious, vellicate the membranes of the ſtomach and inteſtines; and, by that means, occaſion unuſual and violent contractions.

It is very dangerous: whence the French anciently called it *trouſſe-galand*.

It has its name, either from the great quantity of *choler* it evacuates; or becauſe the matter is inceſſantly expelled at the inteſtines, which they anciently called *cholades*.

Dr. Sydenham obſerves, it generally attacks people about the latter end of ſummer; and proceeds, not unfrequently, from ſurfeits: that the cure depends upon large quantities of chicken-broth, drank ſo as to excite vomiting plentifully; and that the broth is alſo to be injected clyſterwiſe: after which, he ſays, the cure is to be completed by laudanum, given at proper intervals, and in proper doſes.

The remedy in the Indies for the *cholera morbus*, or *mandechin*, is, to keep the patient from drinking; and to burn the ſoals of his feet.

The free uſe of the columbo root has been found an excellent remedy in this diſeaſe.

CHOLOBAPHIS, in *Natural Hiſtory*, a name given by ſome of the ancient Greeks to a peculiar kind of emerald which was inferior to many others, and was of a colour tending to yellow.

It is plain that the Romans called all the green cryſtals found in copper-mines by the name of emeralds; for they expreſs in their deſcriptions all the defects we find in theſe cryſtals, ſuch as their having hairs, or ſubſtances like hairs, within, as alſo ſalts, and the like.

CHOLOMA, or CHOLOSIS, ſignifies, according to Galen, any diſtortion of a member, or depravation of it with reſpect to motion. It is taken alſo, in a particular ſenſe, for halting or lameneſs of a leg, ariſing from luxation.

CHOMER. See CORUS.

CHONDRILLA, in *Botany*. See GUM-*ſuccory*.

CHONDROGLOSSUM, in *Anatomy*, a very ſmall muſcle of the tongue, mentioned by Verheyen, and ſeveral other authors, exceedingly ſhort and narrow; ariſing from the cartilaginous proceſſes of the *os hyoides*, and meeting in the middle of the baſis of the tongue, where it is inſerted, forming an arch under it.

This pair of muſcles is not found in all ſubjects; whence ſome have queſtioned its exiſtence.

CHONDROPTERYGII, in *Natural Hiſtory*, a name given by Artedi and Linnæus to one of the great claſſes or families of the fiſhes: the characters of which are, that the rays of the fins are not bony, but cartilaginous.

The bones of the body of theſe fiſhes are alſo cartilaginous, and the mouth in moſt of the ſpecies is placed in the lower part of the body.

The word is derived from χονδρος, a *cartilage*, and πτερυγιον, a *wing* or *fin*. Of this order are the *ſcate*, *ſturgeon*, *lamprey*, &c.

CHONDROS, in *Ancient Medical Writers*, the ſame as ALICA.

It ſignifies alſo ſome grumous concretion, as of maſtich, or frankincenſe.

It is, beſides, the Greek word for a cartilage.

CHONDROSYNDESMUS, in *Ancient Medical Writers*, ſignifies a cartilaginous ligament.

The word is derived from χονδρος, a *cartilage*, and συνδεσμος, a *ligament*.

CHOP-CHURCH, or CHURCH-CHOPPER, a name, or rather nick-name, given to parſons, who make a practice of exchanging benefices.

Chop-church occurs in an ancient ſtatute as a lawful trade, or occupation; and ſome of the judges ſay, it was a good addition. Brook holds, that it was no occupation, but only a thing permiſſible by law.

CHOPIN, or CHOPINE, a French and Scotch liquid meaſure, containing half their PINT.

CHORAGIUM, in *Antiquity*, was uſed to denote the funeral of a young unmarried woman.

Some think it ſhould be writ *coragium*, from κορὰ, *puella*, and αγω, *duco*. But Pitiſcus chooſes rather to derive it from *chorus*; becauſe a chorus or company of virgins always attended ſuch funerals.

Choragium ſignified alſo the tiring or dreſſing-room belonging to the ſtage; and ſometimes was taken for the dreſs itſelf.

CHORAGUS, in *Antiquity*, he who had the ſuperintendence of the chorus, whoſe buſineſs it was to take care they obſerved the rules of the muſic, and performed their parts with decorum.

Choragi were likewiſe certain Athenian citizens choſen annually, who were obliged to be at the expence of players, ſingers, dancers, and muſicians, as often as there was occaſion, at the celebration of their public feſtivals.

CHORAIC *muſic*, a ſort of muſic, proper for dancing, by the variety of its different motions.

CHORAL, ſignifies any perſon that, by virtue of any of the orders of the clergy, was in ancient times admitted to ſit and ſerve God in the choir.

Dugdale, in his Hiſtory of St. Paul's Church, ſays, that there were with the chorus formerly ſix vicars *choral* belonging to that church.

CHORD, or **Cord**, primarily denotes a ſlender rope, or cordage.

The word is formed of *chorda*, and that from χορδὴ, a *gut*; whereof ſtrings may be made.

Chord, Chorda, in *Anatomy*, a little nerve extended over the *membrana tympani*, or drum of the ear. See Tympanum.

Anatomiſts are not agreed about the uſe of the *chorda tympani*: ſome ſay, it ſerves to vary and modify the ſound of the tympanum, in the ſame manner as the ſtrings, or braces, ſtretched over the war-drum: others will have it to be no more than a branch of the fifth pair.

Chord, Chorda, in *Geometry*, a right line connecting the two extremes of an arch.

Or, it is a right line, terminated at each extreme in the circumference of a circle, without paſſing through the center; and dividing the circle into two unequal parts, called *ſegments*. Such is the line AB, *Tab. Geometry, fig*. 6.

Chord *of the complement of an arch* is the *chord* that ſubtends the reſt of the arch; or ſo much as makes up the arch a ſemicircle.

The *chord* is perpendicular to a line drawn from the center of the circle to the middle of the arch, as CE; and has the ſame diſpoſition thereto, as the *cord*, or ſtring of a bow, has to the arrow; which occaſioned the ancient geometricians to call this line the *chord* of the arch, and the other the *ſagitta*, or *arrow*; the former of which names is ſtill continued, though the latter is diſuſed. What the ancients called *ſagitta*, is now termed the *verſed ſine*.

Half the *chord* of the double arch BD, is what we now call the *right ſine*; and the exceſs of the radii beyond the *chord*, DE, *the verſed ſine*.

The *chord* of an angle, and the *chord* of its complement to a whole circle, are the ſame thing: the *chord* of fifty degrees is alſo the *chord* of 310.

It is demonſtrated, in geometry, that the radius CE, biſecting the *chord* BA in D, does alſo biſect the arch in E, and is perpendicular to the *chord* AB, and *vice verſa*: and again, if the right line NE biſect the *chord* AB, and be perpendicular thereto; that it paſſes through the center, and does biſect both the arch AEB, and the circle ANB.

Hence we derive ſeveral uſeful corollaries: as, 1. To divide a given arch AB into two equal parts; draw a perpendicular to the middle point D of the *chord* AB; this biſects the given arch AB.

2. To deſcribe a circle, that ſhall paſs through any three points, A, B, C, *fig*. 7. From A and C deſcribe arches interſecting in D and E; and alſo others, G and H, from C and B: draw the right lines DE and GH; the point of interſection I, is the center of the circle to be deſcribed through A, B, and C.

Demonſtration. For the points A, B, and C, are in the periphery of ſome circle; and therefore the lines AC and CB are *chords*: but ED is perpendicular to AC, and GH to BC; ED biſects AC, and GH biſects BC; wherefore each paſſes through the center. Now as DE and GH only interſect in I; I will be the center of a circle, paſſing through the given points, A, C, and B. Hence, aſſuming three points in the periphery, or arch, of any circle, the center may be found, and the given arch completed: hence, alſo, if three points of one periphery do agree or coincide with three points of another; the whole peripheries agree, and therefore the circles are equal.

And hence, laſtly, every triangle may be inſcribed in a circle.

The chord *of an arch* AB (*fig. 6.*) *and the radius* CE, *being given*; *to find the* chord *of the half-arch* AE. From the ſquare of the radius CE, ſubtract the ſquare of half the given *chord* AD, the remainder is the ſquare of DC; from which, extract the ſquare root; and then DC ſubtracted from the radius EC, leaves DE. Add the ſquares of AD, and EO; the ſum is the ſquare of AE: whence, the root being extracted, we have the *chord* of the half-arch AE.

Chords, *line of*, is one of the lines of the ſector and plain ſcale. See its deſcription and uſe under Sector and Plain Scale. See alſo Sine.

Chords, or **Cords**, in *Muſic*, denote the ſtrings, or lines, by whoſe vibrations the ſenſation of ſound is excited; and by whoſe diviſions the ſeveral degrees of tune are determined.

They are called *cords*, or *chords*, from the Greek χορδὴ, a name which the phyſicians give to the inteſtines; in regard the ſtrings of muſical inſtruments are ordinarily made of guts: though others are made of braſs or iron wire; as thoſe of ſpinets, harpſichords, &c.

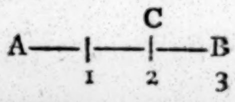
Chords of gold wire, in harpſicords, yield a ſound almoſt twice as ſtrong as thoſe of braſs: *chords*, or ſtrings, of ſteel, yield a feebler ſound than thoſe of braſs; as being both leſs heavy, and leſs ductile.

Mr. Perrault obſerves, that of late they have invented a way of changing the *chords*, to render the ſound ſtronger, without altering the tone.

The ſixth *chord* of baſs-viols, and the tenth of large theorbos, conſiſt of fifty threads, or guts: there are ſome of them a hundred feet long, twiſted and poliſhed with equiſetum, or horſe-tail.

Chords, *for the diviſion of, ſo as to conſtitute any given interval*, the rules are as follow: 1. *To aſſign ſuch part of a* chord AB, *as ſhall conſtitute any concord*, v. g. a fifth, or any other interval, with the whole.

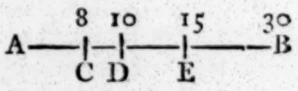
Divide AB into as many parts, as the greateſt number of the interval has units; v. g. the fifth being 2 : 3, the line is divided into 3. Of theſe take as many of the leſſer number, v. g. 2=AC; then is AC the part ſought: that is, two lines, whoſe lengths are to each other as AB to AC, make a fifth.



Hence, if it be required to find ſeveral different ſections of the line AB, v. g. ſuch as ſhall be 8ve, 5th, and 3d *g*: reduce the given ratios 1 : 2, 2 : 3, and 4 : 5, to one fundamental; the ſeries becomes 30 : 24, 20, 15. The fundamental is 30; and the ſections ſought are 24, the third *g*; 20 the fifth; and 15, the octave.

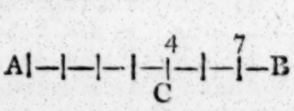
2. *To find ſeveral ſections of a line* AB, *that from the leaſt, gradually to the whole, ſhall contain a given ſeries of intervals in any given order*; viz. ſo that the leaſt to the next greater contains a third *g*; that to the next greater, a fifth; and that to the whole, an octave.

Reduce the three ratios 4 : 5, 2 : 3, 1 : 2, to one ſeries; hence we have 8 : 10 : 15 : 30: divide the line into the number of parts of the greateſt extreme of the ſeries; viz. 30. we have the ſections ſought at the points of diviſion, anſwering the ſeveral numbers of the ſeries, viz. at the points C, D, and E; ſo that AC to AD is a third, AD to AE a fifth, and AE to AB octave.



3. *To divide a line* AB *into two parts, to contain betwixt them any interval*, v. g. a fourth.

Add together the numbers containing the ratio of the interval, v. g. 3 : 4; and the line divided into as many parts as the ſum contains, v. g. 7; taken to any of the given numbers, v. g. 4, or C, gives the thing ſought.



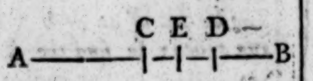
4. *For the harmonical diviſion of* Chords. *To find two ſections of a line, which with the whole ſhall be in harmonical proportion, with regard to their quantity.*

Take any three numbers in harmonical proportion, as 3, 4, 6; and divide the whole line into as many parts as the greateſt of theſe three numbers, v. g. 6; and at the points of diviſion anſwering the other two numbers, v. g. 3 and 4, you have the ſections ſought.

5. *To find two ſections of a line, which together with the whole ſhall be harmonical, with reſpect to quality, or tune.*

Take any three numbers concords with each other, v. g. 2, 3, and 8, and divide the line by the greateſt; the points of diviſion anſwering the other two, give the ſections ſought.

6. *To divide a* Chord AB, *in the moſt ſimple manner, ſo as to exhibit all the original concords.*



Divide the line into two equal parts at C, and ſubdivide the part CB into equal parts at D; and again, the part CD into two equal parts at E. Here AC to AB is an octave; AC to AD a fifth; AD to AB a fourth; AC to AE a third *g*; AE to AD a third *l*; AE to EB a ſixth *g*, and AE to AB a ſixth *l*. Malcolm's Treat. of Muſic, ch. 6. ſect. 1, 2, 3.

To find the number of vibrations made by a muſical *chord* or ſtring, in a given time, its weight, length, and tenſion being given. Let N repreſent the weight of the *chord*; L its length; P the tenſion, or weight equivalent to it, by which the *chord* is extended; and D the length of a given pendulum; *p* the circumference of a circle, the diameter of which is 1: then will the number of vibrations made by the given *chord*, while the pendulum vibrates once, be expreſſed by $p\sqrt{\frac{DP}{LN}}$. If we take L for the number of inches and decimals contained in the length of the *chord*, and the proportion of the tenſion to the weight of the *chord* as n to 1, then will the number of vibrations of the *chord* in one ſecond be $\frac{355}{113}\sqrt{\frac{39\cdot 2n}{L}}$. Where $\frac{355}{113}$ denotes the proportion of the circumference to the diameter of the circle; and 39.2 the length of a pendulum vibrating ſeconds, in inches and decimals of an inch, Engliſh meaſure. This laſt expreſſion coincides with Mr. Euler's rule, only we here expreſs in Engliſh what he gives in Rhinland meaſure. To illuſtrate this rule by an example: ſuppoſe the length of the *chord* to be 18.7 inches, its weight $6\frac{1}{5}$ grains, and the tenſion or weight extending this *chord* to be 8*lb.* troy, or 46080 grains. Then $L = 18.7$, and $n = \frac{46080}{6.2} = 7432$. The number of vibrations therefore by the rule will be $\frac{355}{113}\sqrt{\frac{39.2 \times 7432}{18.7}} = 392$. Taylor's Method. Increm. Prop. 23. Tentam. Nov. Theor. Muſ. p. 6, 7. See alſo Mac Laurin's Fluxions, ſect. 929.

By logarithms the rule may be thus expreſſed, $\frac{L+W}{2} + C = V$. Where L is the logarithm of the ratio of a pendulum, vibrating ſeconds, to the length of the given ſtring; W the logarithm of the ratio of the tenſion to the weight of the ſtring; C the logarithm of the ratio of the circumference of a circle to its diameter, or 0.4971500; and laſtly, V = logarithm of the required number of vibrations in one ſecond. In every *chord*, the number of vibrations in a given time will be as $\sqrt{\frac{n}{a}}$, that is, the ſquare root of the extending weight divided by the weight of the *chord*, and its length. If therefore *chords* be of the ſame length, their vibrations in a given time will be as the ſquare roots of the extending weights, divided by the weights of the *chords*. If *chords* be equal in length and weight, their vibrations will be as the ſquare roots of their lengths, multiplied by their weight: that is, reciprocally as the lengths of the *chords*, becauſe the weights of the *chords* will in this caſe be proportional to their lengths. Euler, ibid. p. 7. See alſo Smith's Harmonics, prop. 23 and 24.

Mr. Euler informs us, that he found the *chord*, making 392 vibrations in a ſecond, to be at uniſon with the key called *a* in inſtruments, that is, an octave and ſixth major above the loweſt C in our harpſichords or violoncellos. Conſequently the note C, being to *a* as 3 to 10, will make 118 vibrations in one ſecond. And the higheſt C, or c''', as Mr. Euler calls it, being four octaves above the loweſt c, will vibrate 1888 times in one ſecond of time. Mr. Euler ſuppoſes the limits of the human ear to be, with reſpect to gravity, two octaves lower than C; and with reſpect to acuteneſs, two octaves higher than c'''. See INTERVAL and VIBRATION.

CHORD is ſometimes alſo uſed for accord. Thus we ſay the common *chords* to ſuch a baſs note, meaning its third, fifth, and octave.

CHORD is alſo uſed in *Muſic*, for the note or ſtring to be touched, or ſounded; in which ſenſe it is applicable to all the intervals of muſic.

CHORDAPSUS, in *Medicine*, a diſeaſe of the inteſtines, otherwiſe called *volvulus*, the *iliac paſſion*, and *miſerere mei*: though others make it a diſtinct ſpecies of the *miſerere*.

The word comes from *χορδη*, *gut*; and *απτω*, *necto*, *I knot*, or *tye*.

Galen defines it, a tumidity, or inflation of the ſmall inteſtines, which makes them appear filled, and ſtretched like a *cord*. Archigenes makes it a kind of *miſerere*; conſiſting in a tumor in a certain place of the ſmall inteſtines, which ſinks in, and gives way to the hand, when preſſed: he adds, that it is exceeding dangerous, and ordinarily kills in three or four hours, unleſs it comes to ſuppuration; which, however, does not remove all the danger.

It is probable, however, that the *chordapſus* is, in reality, nothing elſe but the *miſerere* not well underſtood. Celſus informs us, that in his time they were eſteemed the ſame thing.

CHORDEE, in *Medicine*, an inflammation and contraction of the *frænum*, and under-part of the *penis*; ſo as to render erection painful.

It happens in *gonorrhœas*, and is generally proportional to the degree of the *virus* received; ſo that in virulent *gonorrhœas*, it is uſually a very troubleſome ſymptom.

It proceeds from the acrimony of the matter which runs from the *urethra*, irritating the under-part of the *penis*; by which it is, as it were, tied or held forcibly downwards in erection, eſpecially its *frænum*. Dr. Rutherford of Edinburgh, in his Clinical Lectures, attributes it to the inflammation and ſwelling of the *corpus cavernoſum urethræ*. When the acrimony is conſiderable, it ſometimes gives riſe to unnatural erections, or the ſymptom called a *priapiſm*.

If the *chordee* be violent, or does not decreaſe proportionally to the other ſymptoms in *gonorrhœas*, an emetic of turbith mineral is uſually given with ſucceſs; it cauſing a revulſion from the part.

Though women have no glans or *frænum* to be affected with the ſharp running, yet the ſphincter of the *vagina*, *clitoris*, and lips themſelves, are inflamed after the ſame manner; and therefore the method of their cure muſt be the ſame; which is by ſuch medicines as allay the preſſing inflammation, and ſecure the parts againſt their being corroded by the ſharpneſs of the corruption.

CHOREA *ſancti Viti*, in *Medicine*. See VITUS's *Dance*.

CHOREPISCOPUS, an officer in the ancient church, about whoſe function the learned are extremely divided.

The word comes from *χωρος*, a *region*, or *little country*, and *επισκοπος*, a *biſhop*, or *overſeer*.

The *chorepiſcopi* were ſuffragan or local biſhops, holding a middle rank between biſhops and preſbyters, and delegated to exerciſe epiſcopal juriſdiction within certain diſtricts, when the boundaries of particular churches, over which ſeparate biſhops preſided, were conſiderably enlarged.

It is not certain when this office was firſt introduced: ſome trace it to the cloſe of the firſt century; others tell us, that *chorepiſcopi* were not known in the Eaſt till the beginning of the fourth century; and in the Weſt, about the year 439. They ceaſed, both in the Eaſt and Weſt, in the tenth century.

CHOREPISCOPUS is alſo the name of a dignity ſtill ſubſiſting in ſome cathedrals, particularly in Germany; ſignifying the ſame with *chori epiſcopus*, or biſhop of the choir.

The word, in this ſenſe, does not come from *χωρος*, *place*, but *χορος*, *choir*, &c.

In the church of Cologne, &c. the firſt chantor is called *chorepiſcopus*.

CHOREUS, a foot in the ancient poetry, more commonly called *trochæus*, or TROCHEE.

CHORIAMBUS, in the *Latin Poetry*, a foot compounded of a *choreus*, or *trochæus*, and an *iambus*.

It conſiſts of four ſyllables; of which the firſt and laſt are long, and the two middle ones ſhort: as *fīlĭŏlūm*.

CHORION, the exterior membrane which inveſts the *fœtus* in the womb.

The word comes from the Greek *χωρειν*, *capere*, *to contain*.

It is very thick and ſtrong; on the inſide, where it joins another membrane, called *amnios*, very ſmooth; but rough and uneven withoutſide; interſperſed with a great number of veſſels, and faſtened to the *matrix*, or womb, by means of the *placenta*, which adheres very cloſely to it.

This membrane is found in all animals.

The *chorion*, with the *amnios* and *placenta*, make what we call the SECUNDINE, or after-birth.

CHORIST, or CHORISTER, a chantor or ſinger in the choir.

CHORIZANTES, the name of a ſect in Germany, ann. 1374, ſaid to be demoniacs that aſſembled in ſtreets and churches.

We may [illegible] their enemies called them demoniacs. Du-Can[illegible] not mention any of their tenets.

CHORO *[illegible]vorito*, in the *Italian Muſic*, a *chorus*, in which are employed the beſt voices and inſtruments to ſing the recitatives, play the ritornellos, &c. It is otherwiſe called the little *chorus*, or *choro recitante*.

CHORO *ſpezzato*, in the *Italian Muſic*, a compoſition of two, three, or more choruſſes. It is often met with inſtead of *tutti* or *da capella*, which mean the grand chorus. *A doi, a tre, a quatro chori*, is for two, three, or four choruſſes. When after the name of a part we find *primo*,

primo, 1^{o} *choro*, we muſt underſtand that it is to be played in the firſt chorus; if 2°, II^{do}, or *ſecondo choro*, the part muſt be ſung or played in the ſecond chorus. And conſequently it ſhews, that the compoſition is for eight voices or different parts.

CHOROBATES, a kind of water-level, uſed among the ancients; compoſed of a double ſquare, in form of a T, deſcribed by Vitruvius.

The word comes from χωροϐατειν, *to over-run a country.*

CHOROGRAPHY, the art of making a MAP, or deſcription of ſome country or province.

The word comes from χωρος, *region*, and γραφω, *I deſcribe.* *Chorography* is diſtinguiſhed from GEOGRAPHY, as the deſcription of a particular country is from that of the whole earth. And from *topography*, as the deſcription of the ſame country is from that of a ſingle place, town, or diſtrict in it.

CHOROIDES, or **Choroeides**, in *Anatomy*, a term applied to ſeveral parts of the body; bearing ſome reſemblance to the chorion.

The word is formed from χοριον, *chorion*, and ειδος, *likeneſs.*

Choroides is particularly uſed for the inner membrane which immediately inveſts the brain; ſo called as being intermingled with a great number of blood-veſſels, like the *chorion*; but more uſually denominated the *pia mater*, or MENINX *tenuis.*

Plexus, or *Lacis* **Choroides**, is a knot of veins and arteries in the anterior ventricle of the brain, woven out of the branches of the carotid.

Choroides is alſo applied to the inner, and poſterior tunic of the eye, immediately under the ſclerotica.

It is ſoft, thin, and black; and its inner, or concave ſurface, is very ſmooth and poliſhed. It has its name from its being interſperſed with veſſels. Its anterior part is called the *uvea*; or rather the *iris*, as the internal ſurface is called the *Ruyſchia* coat.

Next under the *choroides* is the *retina.* Ruyſch, indeed, ſays, he has found another tunic between the *choroides* and *retina*; and denominates it from himſelf, *tunica Ruyſchiana.* He adds, that it grows ſo firmly to the *choroides*, that it is overlooked in the common diſſections.

But Verheyen, though he found the *choroides* of a bird diviſible into two membranes, could never ſeparate thoſe of the human eyes; and thereſore he thinks there needed not any new name. The *choroides* is, for the moſt part, black in men; though it appears often, as M. Pecquet has obſerved, in very different ſhades; in lions, camels, bears, ſheep, cattle, dogs, cats, and moſt fiſhes, it is of a ſhining colour, like the brilliance of ſilver, or the luſtre of oriental pearl; and makes what naturaliſts call the *tapis*, or colour of the eye.

M. Mariotte maintains, that viſion is performed rather in the *choroides* than the *retina*; in which he agrees with Bar. Torinus, and is ſeconded by M. Mery; but moſt other authors are of a different ſentiment.

He was led to this hypotheſis by obſerving, that part of the *retina*, at the inſertion of the optic nerve, is inſenſible to the impreſſion of light, and that in this part the *choroides* is wanting.

He was confirmed in opinion, that the *retina* could not be the ſeat of viſion, becauſe of its tranſparency; though M. Pecquet obſerves in reply, that it is very imperfectly tranſparent, only reſembling oiled paper. He urges likewiſe the greater ſenſibility of the *choroides* than that of the *retina*, as is evident by the alternate contraction and dilatation of the *iris*, which is a continuation of the *choroides*, in light and ſhade.

It has been replied, that ſome creatures, ſuch as the porcupine and ſea-calf, have the optic nerves inſerted into the axis of their eyes. This fact, according to Dr. Porterfield, overturns Mariotte's hypotheſis of the *choroides* being the principal and immediate organ of ſight.

Mr. Le Cat ſtrenuouſly defends Mariotte's opinion, that the *choroid* coat, which is the production of the *pia mater*, and not the *retina*, is the immediate organ of viſion. The *retina*, according to him, is to the *choroid* what the *epidermis* is to the ſkin; receiving the impreſſion of light, and preparing it for its proper organ. Mr. Michell has likewiſe urged ſome further conſiderations in favour of the *choroides*, as the proper ſeat of viſion, deduced from its greater ſenſibility, and from the variety of its colours in different animals, according to their ſituation and neceſſity. He adds, that the *choroides* is in no caſe tranſparent, and has no reflecting ſurface beyond it, and that it is better formed as an organ of diſtinct viſion than the *retina.* M. de la Hire has advanced another hypotheſis; alleging, that the *choroides* receives the impreſſions of images, in order to tranſmit them to the *retina.* Againſt which hypotheſis, Mr. Michell objects, that the impulſions which are thus *ſecondarily* communicated to the nerves muſt be fainter, and that it is more natural to ſuppoſe, that the impreſſion firſt made upon the *choroides* ſhould be conveyed to the brain by its own proper nerves. Prieſtley's Hiſtory of Viſion, chap. ii. p. 189, &c. See VISION.

It had been long obſerved that the *choroides* in men is black; but no obſervation had been made on the change it ſuffers by age, before M. Petit, who perceived that it appears quite brown under the *retina* in children, and grows conſiderably brighter as they advance in age.

CHORUS, in *Dramatic Poetry*, one, or more perſons, preſent on the ſtage during the repreſentation, and ſuppoſed to be by-ſtanders thereto, without any particular ſhare or intereſt in the action.

Tragedy, in its origin, M. Dacier obſerves, was no more than a ſingle *chorus*, who trod the ſtage alone, and without any other actors; ſinging dithyrambics, or hymns, in honour of Bacchus. Theſpis, to relieve the *chorus*, added an actor, who rehearſed the adventures of ſome of their heroes. Æſchylus, finding a ſingle perſon too dry an entertainment, added a ſecond; and at the ſame time greatly reduced the ſinging of the *chorus*, to make more room for the recitation.

Every thing introduced between the four ſongs of the *chorus*, they called by the term *epiſode*; and thoſe four ſongs made the four intervals, or acts of the piece.

But when once tragedy began to be formed, thoſe recitatives, or epiſodes, which at firſt were only intended as acceſſory parts, to give the *chorus* a breathing time, became now the principal parts of the performance: and whereas, before, they were taken from various ſubjects, they were now all drawn from one and the ſame.

The *chorus*, by degrees, became inſerted and incorporated into the action, to which at firſt it was only intended as an addition or ornament. Sometimes the *chorus* was to ſpeak, and then their chief, whom they called *Coryphæus*, ſpoke in behalf of all the reſt: the ſinging was performed by the whole company; ſo that when the *Coryphæus* ſtruck into a ſong, the *chorus* immediately joined him.

Beſides the four ſongs, which made the diviſion of the piece, and which were managed by the *chorus*, the *chorus* ſometimes alſo joined the actors in the courſe of the repreſentation, with their plaints and lamentations; on occaſion of any unhappy accidents that befel them.

But the proper function of the *chorus*, when tragedy was formed, and that for which it ſeemed chiefly retained, was to ſhew the intervals of the acts: while the actors were behind the ſcenes, the *chorus* engaged the ſpectators; their ſongs uſually turned on what was juſt exhibited; and were not to contain any thing but what was ſuited to the ſubject, and had a natural counexion with it: ſo that the *chorus* concurred with the actors for advancing the action.

It is a fault obſerved in Euripides's tragedies, that his *choruſes* are detached from the action, and not taken from the ſame ſubject. There were ſome other poets, who, to ſave the *pains* of compoſing *choruſes*, and adapting them to the piece, contented themſelves with invented ſongs, which had no relation at all to the action. Theſe foreign *choruſes* were the leſs pardonable, as the *chorus* was eſteemed to act a part in the piece; and to repreſent the ſpectators, who were looked on as intereſted therein; inſomuch that the *chorus* was not always to be mute, even in the courſe of the acts. In the modern tragedies, the *chorus* is laid aſide, and the muſic ſupplies its place.

That which occaſioned the ſuppreſſion of the *chorus*, was its being incompatible with certain complots, and ſecret deliberations of the actors. For it is in no-wiſe probable, that ſuch machinations ſhould be carried on in the eyes of perſons intereſted in the action. As the *chorus*, therefore, never went off the ſtage, there ſeemed a neceſſity of laying it aſide, to give the greater probability to thoſe kinds of intrigues, which require ſecrecy.

M. Dacier obſerves, there was a *chorus*, or grex, alſo in the ancient comedy; but this too is ſuppreſſed in the new: chiefly becauſe it was made uſe of to reprove vices, by attacking particular perſons.

The *chorus* in comedy was at firſt no more than a ſingle perſon, who ſpoke in the ancient compoſures for the ſtage; the poets, by degrees, added to him another; then two, afterwards three, and at laſt more: ſo that the moſt ancient comedies had nothing but the *chorus*, and were only ſo many lectures of virtue.

Chorus, *to give the*, among the Greeks, was to purchaſe a dramatic piece of the poet, and defray the expences of its repreſentation.

The perſon who did this was called *choragus.* At Athens, the office of *choragus* was impoſed on the *archon*; and at Rome on the *ædiles.*

Chorus is likewiſe uſed in muſic, where, at certain periods of a ſong, the whole company are to join the ſinger in repeating certain couplets, verſes, or clauſes.

CHOSE, *thing.* This word, in *Law*, is uſed in various circumſtances, and with various epithets; as,

Choſe *in action*, is not any thing corporeal, but only a right, v. g. an annuity, obligation, covenant, &c.

Choſe in action, may alſo be called *choſe in ſuſpenſe*, as having no real exiſtence, and not being properly in poſſeſſion: being a thing, as it is expreſſed, rather *in potentia* than *in eſſe*.

No *choſe in action* could, by the ancient common law, be transferred or aſſigned; but this is now allowed; and the form of doing it is in the nature of a declaration of truſt, and an agreement to permit the aſſignee to make uſe of the name of the aſſignor, in order to recover the poſſeſſion: and when a debt or bond is aſſigned over, it muſt ſtill be ſued in the original creditor's name.

Choſe *local*, is ſomething annexed to a place, v. g. a mill.

Choſe *tranſitory*, ſomething moveable, and which may be tranſported from place to place.

CHOUAN, in the *Materia Medica*, the name of a ſmall ſeed, called by ſome alſo carmine ſeed. It is a very light and chaffy ſeed, in a great meaſure reſembling worm ſeed, of an acid taſte, and a yellowiſh green colour, but is larger than worm-ſeed. It is brought into Europe from Turky, and many parts of the Eaſt, and the choice ſhould be made of ſuch as is largeſt, cleaneſt, of the greeneſt colour, and leaſt marked with ſpecks or holes. It is not uſed in medicine, but is of ſome value among the people who make CARMINE for the painters. It is called *ſantonium viride*, or the green worm-ſeed, in our catalogues of the *Materia Medica*, but is unknown in the ſhops. Lemery.

CHOUGH, *Coracias*, in *Zoology*. See HEART-*ſhells*.

CHOUS, in the *Eaſtern Military Orders*, the title of the meſſengers of the divan of janiſaries. There are ſeveral degrees of honour in this poſt. When a perſon is firſt advanced to it, he is called a *cuchuck*, or little *chous*; after this he is advanced to be the *alloy chous*, that is, the meſſenger of the ceremonies; and from this, having paſſed through the office of *petelma*, or procurator of the effects of the body, he is advanced to be the *bas chous*.

CHOUX, in *Natural Hiſtory*, a name given by the French to a ſpecies of ſhell-fiſh of the *cordiform* or *bucardium* kind, Fabius Columna has elegantly deſcribed it, and Liſter has given a figure of it twice over, in two different parts of his book. There is another ſpecies leſs elegant, and wanting the hollowed ribs. See CORDIFORMIS.

CHOWDER-*Beer*, a provincial phraſe of Devonſhire, denoting a cheap and eaſily prepared drink, highly commended for preventing the ſcurvy in long voyages, or for the cure of it where it may have been contracted. It is prepared in the following manner: take twelve gallons of water, in which put three pounds and a half of black ſpruce; boil it for three hours, and having taken out the fir or ſpruce, mix with the liquor ſeven pounds of melaſſes, and juſt boil it up; ſtrain it through a ſieve, and, when milk warm, put to it about four ſpoonfuls of yeaſt to work it. In two or three days ſtop the bung of the caſk, and in five or ſix days, when fine, bottle it for drinking. Two gallons of melaſſes are ſufficient for an hogſhead of liquor; but if melaſſes cannot be procured, treacle or coarſe ſugar will anſwer the purpoſe.

CHRABRATE, in *Natural Hiſtory*, a name given by the writers of the middle ages to a pellucid ſtone, ſaid to have great virtues againſt diſorders of the liver and ſpleen, and many other imaginary qualities. It appears by their deſcriptions to have been no other than the common pebble cryſtal.

CHREMPS, in *Ichthyology*, a name given by the eldeſt Greek writers to the fiſh ſince called *chromis*. It is a ſpecies of the *ſpari*, and is diſtinguiſhed by Artedi by the name of the *ſparus*, with the ſecond ray of the belly-fins very long.

CHRENECRUDA, a term occurring in *Writers of the Middle Age*, and expreſſing a cuſtom of thoſe times, but its ſignification is doubtful. It is mentioned in Lege Salica, Tit. 61. which ſays, he who kills a man, and hath not wherewithal to ſatisfy the law, or pay the fine, makes oath that he has delivered up every thing he was poſſeſſed of; the truth of which muſt be confirmed by the oaths of twelve other perſons. Then he invites his next relations by the father's ſide to pay off the remainder of the fine, having firſt made over to them all his effects by the following ceremony. He goes into his houſe, and taking in his hand a ſmall quantity of duſt from each of the four corners, he returns to the door, and with his face inwards throws the duſt with his left hand over his ſhoulders upon his neareſt of kin. Which done, he ſtrips to his ſhirt; and coming out with a pole in his hand, jumps over the hedge. His relations, whether one or ſeveral, are upon this obliged to pay off the compoſition for the murder. And if theſe (or any one of them) are not able to pay, *iterum ſuper illum chrenecruda qui pauperior eſt, jactat, & ille totam legem componat.* Whence it appears, that *chrenecruda jactare*, is the ſame with throwing the duſt, gathered from the four corners of the houſe. Goldaſtus and Spelman tranſlate it *viridem herbam, green graſs*, from the German *gruen kraut*, or from the Dutch *groen, green*, and *gruid, graſs*. Wendelinus is of a contrary opinion, who thinks that by this word *denotari purificationis approbationem*, from *chrein, pure, chaſte, clean*; and *keuren, to prove*; ſo that it muſt refer to the oaths of the twelve jurors. Be this as it will, king Childebert reformed this law by a decree, chap. 15. both becauſe it favoured of pagan ceremonies, and becauſe ſeveral perſons were thereby obliged to make over all their effects: *De chrenecruda lex quam paganorum tempore obſervabant, deinceps nunquam valeat, quia per ipſam cecidit multorum poteſtas.*

CHRISM, from χριω, *I anoint*, oil conſecrated by the biſhop, and uſed in the Romiſh and Greek churches, in the adminiſtration of baptiſm, confirmation, ordination, and extreme unction, which is prepared on Holy Thurſday with much ceremony. In Spain, it was anciently the cuſtom for the biſhop to take one third of a ſol for the *chriſm* diſtributed to each church, on account of the balſam that entered its compoſition.

Du-Cange obſerves, there are two kinds of *chriſm*; the one prepared of oil and balſam, uſed in baptiſm, confirmation, and ordination; the other of oil alone, conſecrated by the biſhop, uſed anciently for the catechumens, and ſtill in extreme unction.

The Maronites, before their reconciliation with Rome, beſides oil and balſam, uſed muſk, ſaffron, cinnamon, roſes, white frankincenſe, and ſeveral other drugs mentioned by Rynaldus, in 1541, with the doſes of each. The jeſuit Dandini, who went to mount Libanus in quality of the pope's nuncio, ordained, in a ſynod held there in 1596, that *chriſm*, for the future, ſhould be made only of two ingredients, oil and balſam; the one repreſenting the human nature of Jeſus Chriſt, the other his divine nature.

The action of impoſing the *chriſm*, is called *chriſmation*: this the generality of the Romiſh divines hold to be the next matter of the ſacrament of confirmation.

The *chriſmation* in baptiſm is performed by the prieſt; that in confirmation by the biſhop; that in ordination, &c. is more uſually ſtiled *unction*.

Chriſm *pence*, **Chriſmatis** *denarii*, or **Chriſmales** *denarii*, a tribute anciently paid to the biſhop by the pariſh-clergy, for their *chriſm*, conſecrated at Eaſter for the enſuing year: this was afterwards condemned as ſimoniacal.

CHRISOM, **Chriſmale**, was anciently the face-cloth, or piece of linen laid over the child's head when it was baptized.

Whence, in our bills of mortality, children who die in the month, are called *chriſoms*.—The time between the child's birth and baptiſm, was alſo called *chriſomus*.

CHRIST, an appellation ſynonymous with MESSIAH, uſually added to Jeſus: and, together therewith, denominating the Saviour of the world.

The word χριστὸς ſignifies *anointed*, from χριω, *inungo, I anoint*.

Sometimes the word *Chriſt* is uſed ſingly, by way of *antonomaſis*, to denote a perſon ſent from God, as an anointed prophet, king, or prieſt.

Chriſt, *Order of*, a military order, founded in 1318, by Dionyſius I. king of Portugal, to animate his nobles againſt the Moors.

Pope John XXII. confirmed it in 1320, and appointed the knights the rule of St. Bennet. Alexander VI. permitted them to marry. The order became afterwards inſenſibly reunited to the crown of Portugal; and the king took upon him the adminiſtration of it.

The arms of the order are, gules, a patriarchal croſs, charged with another croſs argent. They had their reſidence, at firſt, at Caſtromarin; afterwards they removed to the city of Thomar, as being nearer to the Moors of Andaluſia and Eſtramadura.

Chriſt is alſo the name of a military order in Livonia, inſtituted in 1205, by Albert biſhop of Riga. The end of their inſtitution was to defend the new Chriſtians who were ſucceſſively converted in Livonia, but were perſecuted by the heathens.

They wore on their cloaks a ſword with a croſs over it; whence they were alſo denominated *brothers of the Sword*.

Chriſt-*thorn*, in *Botany*, *Paliurus*. See *Chriſt*-THORN.

CHRISTENING. See BAPTISM.

CHRISTIAN, ſomething that relates to CHRIST.

The king of France bears the title, or ſurname, of the *moſt Chriſtian king*. The French antiquaries trace the origin of the appellation up to Gregory the Great; who, writing a letter to Charles Martel, occaſionally gave him that title, which his ſucceſſors have ſince retained.

Lambecius, in the third tome of his Catalogue of the emperor's library, holds, that the quality of *moſt Chriſtian* was not aſcribed to the ancient French kings, Louis le Debonair, &c. as kings of France, but as emperors of Germany: but the French hiſtorians endeavour to refute this plea.

Christian *Church.* See **Church.**

Christian *Court.* See **Court** *Chriſtian.*

Christian *Name*, that given at baptiſm. See **Name.**

Christian *Religion*, or **Christianity**, that inſtituted by Jeſus Chriſt, comprehending doctrines of faith, and rules of practice; all of which are contained in the New Teſtament, and are deſigned to recover mankind from ignorance and vice, from guilt and death, to true knowlege and virtue, to the divine favour and everlaſting life. Its aptitude to this end, its conformity to reaſon, and to the ſtate of man, the ſublimity and excellence of its doctrines, the equally venerable and lovely character of its author, the purity of its precepts, its benign tendency and ſalutary effects, concur, with the external evidence of **prophecy** and **miracles**, to eſtabliſh its divine origin and truth.

Christian is peculiarly and abſolutely uſed for a perſon who believes in Chriſt, and is baptized in his name.

The name *Chriſtian* was firſt given at Antioch, in the year 42, to ſuch as believed in Chriſt, as we read in the Acts: till that time they were called *diſciples.*

Christians *of St. John*, a corrupt ſect of *Chriſtians*, very numerous in Baſſora, and the neighbouring towns.

They formerly inhabited along the river Jordan, where St. John baptized; and it was thence they had their name. But after the Mahometans became maſters of Paleſtine, they retired into Meſopotamia and Chaldea.

They hold an anniverſary feaſt of five days; during which, they all go to their biſhops, who baptize them with the baptiſm of St. John: their baptiſm is always performed in rivers, and that only on Sundays.

They have no notion of the third Perſon in the Trinity; nor have they any canonical books, but ſeveral which are full of charms, &c. Their biſhopricks deſcend by inheritance, as our eſtates do; though they have the ceremony of an election. There is no ſatisfactory account of the origin or principles of this ſect. See **Sabæans.**

Christians *of St. Thomas*, or *San Thoma*, a ſect of ancient *Chriſtians* found in the Eaſt Indies, when the Europeans touched at the port of Calicut; who pretend to be deſcended from thoſe St. Thomas converted in the Eaſt Indies; whence the name.

The natives call them, by way of contempt, *Nazarenes*; their more honourable appellation is *Mappuleymar.* See **Thomæans.**

Some learned men in Europe ſay, it was not St. Thomas the apoſtle that converted that country, but another St. Thomas: others ſay, it was a Neſtorian merchant, called Thomas. It is certain they are Neſtorians, and have been ſo a long time; inſomuch that *Chriſtians of St. Thomas* now paſſes for the name of a ſect.

They have a patriarch, who reſides at Moſul. The pope has made ſeveral attempts to reduce them under his obedience, but to no purpoſe.

CHRISTMAS, the feaſt of the nativity of Jeſus Chriſt.

It appears from St. Chryſoſtom, that in the primitive times, *Chriſtmas* and Epiphany were celebrated at one and the ſame feaſt: that father obſerves, it was but of a little while that *Chriſtmas* had been celebrated at Antioch on the twenty-fifth of December, as a diſtinct feaſt; and that the uſe thereof came from the Weſt. The Armenians made but one feaſt of them, as low as the twelfth century.

It is commonly maintained, that pope Teleſphorus was the firſt who ordered the feaſt of the Nativity to be held on the twenty-fifth of December. John, archbiſhop of Nice, in an epiſtle upon this ſubject, relates, that at the inſtance of St. Cyril of Jeruſalem, pope Julius procured a ſtrict enquiry to be made into the day of our Saviour's nativity, which being found to be on the twenty-fifth of December, they began thenceforth to celebrate the feaſt on that day. However, the preciſe day, or even the month, in which our Saviour was born, is extremely uncertain. Some, as Clemens Alexandrinus, informs us, affixed it to the twenty-fifth of the month Pachon, correſponding to the ſixteenth of May. But there are ſome circumſtances which ſhould rather lead us to conclude, that he was born in autumn; as this was, in every reſpect, the moſt proper ſeaſon of the year for a general aſſeſſment, which took place at the birth of Chriſt, and which required perſonal attendance; and as there were ſhepherds watching their flocks by night at the time when Chriſt was born; and therefore it is probable, that the æra of the Nativity was either in September or October, A. U. 748 or 749. See **Epocha.**

Christmas *Roſe.* See **Hellebore.**

CHRISTOGENON, from χριϛος, *Chriſt*, and γινομαι, *I am born*; in the *Greek Church*, a faſt of forty days, immediately preceding the ſuppoſed time of Chriſt's nativity.

CHRISTOLYTI, a ſect mentioned by Damaſcenus; ſo called, becauſe they maintained that Chriſt deſcended into hell, body and ſoul; and that he left both there; aſcending to heaven with his divinity alone.

The word comes from χριϛος, *Chriſt*, and λυω, *I diſſolve.*

CHRISTOMACHI, χριϛομαχοι, in *Church Hiſtory*, a deſignation given to all ſorts of heretics who deny the divinity of our Saviour, or hold heterodox opinions concerning his incarnation.

The word comes from the Greek χριϛος, *Chriſt*, and μαχομαι, *I fight*, or *oppoſe.*

CHRISTOPHORIANA, called by ſome *actæa.* See **Herb** *Chriſtopher.*

CHRISTOPHORUS *piſcis*, a name by which ſome have called the *faber*, or as we call it the *doree*, or *jaune* **doree**, the gilded fiſh.

CHROÆ, in the *Muſic of the Ancients.* See **Colours, Genus**, and **Species.**

CHROASTACES, in *Natural Hiſtory*, a genus of pellucid gems, comprehending all thoſe of variable colours, as viewed in different lights: of which kind are the opal and the **asteria**, or the *cati oculus.*

CHROMA, in the *Botanical Writings of the Ancients*, a word uſed to expreſs a famous root brought from Syria into Greece, and uſed by the women of that country to paint their cheeks red. It was alſo called *rhizium* and *fucus*, and by the Latins *radicula.*

Chroma, in *Rhetoric*, a colour, or fair pretence.

The word is Greek, and literally denotes *colour.*

Chroma, in the *Italian Muſic.* The Italians take this term from the Greeks, but uſe it to ſignify a note or character of time, by us called a quaver, and when the word ſemi is added thereto, it means our ſemiquaver. Eight of the former are contained in a bar, and ſixteen of the latter in common time.

Chroma is alſo a graceful way of ſinging, or playing, with quavers and trilloes.

Chroma alſo ſometimes ſignifies the ſame as the chromatic **diesis** or ſemitone minor.

Chroma is alſo uſed to ſignify the *genus chromaticum.* In this ſenſe we find it uſed by Ariſtoxenus, and in Ptolemy's Harmonics.

CHROMATIC, in the *Ancient Muſic*, the ſecond of the three *genera*, or kinds, in which the conſonant intervals were ſubdivided into their concinnous parts.

The other two kinds were, the *enharmonic*, and the *diatonic.* The *chromatic* conſiſted of ſemitones, and minor thirds: it had its name, either becauſe the Greeks marked it with the character of colour, which they call χρωμα; or, as P. Parran ſuggeſts, becauſe the *chromatic* kind is a medium between the other two, as colour is between black and white: or elſe becauſe the *chromatic* kind varies and embelliſhes the diatonic kind, by its ſemitones; which have the ſame effect in **music**, with variety of colours in painting. M. Rouſſeau ſays, that this ſpecies of muſic was written in coloured notes. Ariſtoxenus divides the *chromatic genus* into three ſpecies; the *molle*, *hemiolion*, and *tonicum*: Ptolemy, into *molle* or *antiquum*, and *intenſum.*

Theſe ſpecies were alſo called *chroai*, or colours of the *genera*: the *molle* expreſſes a progreſſion by ſmall intervals, the *intenſum* by greater.

The *chromatic* and enharmonic kinds only contain the ſmalleſt of the diatonic degrees; ſo that they have the ſame proportion to the diatonic, as fractions have to integers.

Boethius, and after him Zarlin, attribute the invention of the *chromatic* genus to Timotheus a Mileſian, in the time of Alexander the Great. The Spartans baniſhed it their city, on account of its ſoftneſs. The character of this genus, according to Ariſtides Quintilianus, were ſweetneſs and pathos.

Mr. Malcolm obſerves, that we are at a loſs what uſe the ancients could make of theſe diviſions and ſubdiviſions into *genera* and *ſpecies.* All acknowleged the diatonic to be the true melody; the others ſeem only humorous irregularities, calculated to pleaſe the fancy by their novelty and oddneſs; and were beſides ſo very difficult, that few, if any, are ſaid to have ever practiſed them accurately.

The moderns have been much perplexed to underſtand the different ſpecies of *chromatic* muſic in uſe among the ancient Greeks. Moſt of our muſicians have no other notion of the *chromatic*, than of a melody proceeding by ſemitones major, and minor. This is what Broſſard ſays of it. But this is not ſufficient to convey a true notion of the *chromatic.* Dr. Pepuſch has given us a clearer light in this affair: his doctrine is as follows.

The ancients diſtinguiſhed three ſorts of *chromatic*, which were denoted by the names, *molle*, *ſeſquialterum*, and *toniæum*.

The *chromaticum molle* was a diviſion of the diateſſaron, or fourth, into three intervals, which were two ſubſequent ſemitones minor, and the interval, which is the complement of theſe two to the fourth; and this interval will be found equal to a third minor added to an enharmonic dieſis. This ſpecies is not to be met with among the moderns.

The *chromaticum ſeſquialterum*, or *hemiolium*, was a diviſion of the fourth into a ſemitone major, a ſemitone minor, and a third minor. This is mentioned by Ptolemy as the *chromatic* of Didymus. It occurs in modern compoſitions.

The *chromaticum toniæum*, or *tonicum*, was a diviſion of the fourth into a ſemitone major ſucceeded by another ſemitone major, and the complement of theſe two to the fourth, which is the interval, commonly called a ſuperfluous tone. This often occurs in modern muſic. Dict. de Muſique, p. 19. Phil. Tranſ. Nº 481. p. 272. Wallis, Append. Ptolem. Harm. p. 164.

Chromatic is alſo applied by ſome to the ſcience of colours; and in painting, it is uſed to ſignify the colouring.

CHROMIS, in *Zoology*, the name of a little fiſh caught frequently in the Mediterranean, which ſeldom exceeds three inches in length, is moderately thick, and of a duſky brown colour.

Artedi, who very accurately examined this fiſh, does not allow it a diſtinct generical name, but makes it only a ſpecies of his *genus* of the *ſpari*, calling it the SPARUS with the ſecond ray of each belly-fin carried to a great length.

Chromis is alſo the name by which Bellonius, and ſome others, have called a large fiſh caught in the Mediterranean, more uſually known by the name of UMBRA, and brought to market in Italy while young and ſmall.

CHRONIC, **Chronical**, in *Medicine*, is applied to a ſlow DISEASE, which laſts a long time; at leaſt upwards of forty days: ſuch as are the gout, dropſy, aſthma, &c. The word comes from χρονος, *time*.

Chronic diſeaſes ſtand in oppoſition to acute diſeaſes, which are ſpeedy, and haſten to a criſis; as fevers, ſmall-pox, &c.

Chronic diſeaſes are uſually owing either to ſome natural defect in the conſtitution, or to an irregular manner of living; and moſt of the *chronical* diſeaſes, ſays Dr. Cheyne, the infirmities of old age, and the ſhort periods of the lives of Engliſhmen, are owing to repletion: this is evident hence, that evacuation, of one kind or another, is nine parts in ten of their remedy.

The ſources of *chronical* diſtempers, ſays the ſame author, are, 1 Viſcidity in the juices, or the over-largeneſs of their conſtituent particles; which, not being ſufficiently broken by the concoctive powers, ſtop or retard the circulation. Or, 2. Too great abundance of ſharp acrimonious ſalts; whereby the juices themſelves are rendered ſo corroſive, as to burſt or wear out the ſolids. Or, 3 A relaxation, or want of due force or ſpringineſs of the ſolids themſelves.

An exceſs in the quantity of our meats and drinks begets the firſt; the bad condition of the ſame foods the ſecond; and both together, with want of due exerciſe, the third.

The cauſes of all *chronical* diſorders, according to Dr. Cadogan, in his Eſſay on the Gout, &c. are indolence, intemperance, or vexation. And Dr. Fothergill obſerves, that in the cure of all *chronic* complaints, however diſtant their ſeat may be from the ſtomach, thoſe will have the greateſt ſucceſs, who attentively conſider the preſent ſtate of this organ; who remove every obſtruction to its performing the office of digeſtion with eaſe, conſtancy, and expedition. Lond. Med. Obſ. vol. i. p. 314.

CHRONICLE, **Chronicon**, denotes a hiſtory digeſted in order of time; though the term is ſeldom uſed but in ſpeaking of our old Engliſh hiſtories, as Holinſhed's *Chronicle*, Stow's *Chronicle*, &c. See ANNALS.

CHRONICLES, in the *Canon of Scripture*, are two ſacred books called by the Greeks *Paralipomena*, Παραλειπομενα, becauſe they contain many ſupplemental relations omitted in the other hiſtorical books. They are an abridgment of ſacred hiſtory, to the return of the Jews from the Babyloniſh captivity. The firſt book traces the genealogies of the Iſraelites from Adam, relates the death of Saul, and gives a brief account of David's reign. The ſecond traces the progreſs of the kingdom of Judah, its various revolutions, its period under Zedekiah, and the reſtoration of the Jews by Cyrus.

CHRONOGRAM, a kind of compoſition, whoſe numeral letters, joined together, make up ſome date, or epocha. See ANAGRAM.

The word is compounded of χρονος, *time*, and γραμμα, *letter*.

CHRONOLOGICAL, belonging to CHRONOLOGY. *Chronological characters*, are characters by which *times* are diſtinguiſhed. Of theſe ſome are *natural* or *aſtronomical*; others are *artificial*, or *hiſtorical*. *Natural chronological characters* are ſuch as depend on the motions of the ſtars, as eclipſes, ſolſtices, equinoxes, the different aſpects of planets, &c. *Artificial chronological characters*, are thoſe which men have eſtabliſhed, as the ſolar CYCLE, the lunar CYCLE, &c. *Hiſtorical chronological characters* are thoſe which are ſupported by the teſtimonies of hiſtorians, when they fix the dates of certain events to certain periods. We ſay alſo *chronological* tables, abridgments, machines, &c. M. Barbeu du Bourg invented a curious *chronological* machine, of which there is a particular account communicated by himſelf, in the Encyclopedie, tom. iii. p. 400. 1°.

CHRONOLOGY, the art of meaſuring and diſtinguiſhing time; or the doctrine of epochas, &c.

The word is compounded of χρονος, *time*, and λογος, *diſcourſe*.

Sturmius divides *chronology* into five diſtinct branches; viz. *metaphyſical*, *phyſical*, *political*, *hiſtorical*, and *eccleſiaſtical*; according to the various relations, or habitudes, wherein TIME is conſidered; viz. as in itſelf; as connected and ſubjected to the affections, ſtates, and alterations of natural things; as accommodated to civil uſes; as matched with events that paſs in the world; and particularly as it relates to the celebration of Eaſter.

There is more difficulty in *chronology* than every one is aware of; it requires not only the knowlege of aſtronomy and geography, and conſequently that of arithmetic, geometry, and trigonometry, both plain and ſpherical; but alſo a laboured application to the ancient monuments. Its uſe is very great: it is called one of the eyes of hiſtory; and ſerves many good purpoſes in theology.

Chronology, *Chineſe*. No nation has boaſted more of its antiquity than the Chineſe: but though we allow them to trace their origin as far back as the deluge, they have few, if any, authentic records of their hiſtory for ſo long a period as five hundred years before the Chriſtian æra. This, however, may probably be owing to the general deſtruction of ancient remains by the tyrant Tſin-chi-hoang, in the year 213, or, as ſome ſay, 246, before the Chriſtian æra. We learn from a *chronological* table of the Chineſe hiſtory, for which we are obliged to an illuſtrious Tartar, who was viceroy of Canton in the year 1724, and a Latin tranſlation of which was publiſhed at Rome in 1730, that the moſt remote epocha of the Chineſe *chronology* does not ſurpaſs the firſt year of a prince called Guei-lie-wang, who began his reign four hundred and twenty-four years before the vulgar æra. This opinion is confirmed by the teſtimony of two of the moſt approved hiſtorians of China, who admit nothing into their hiſtories previous to this period. The Chineſe in their computation make uſe of a cycle of ſixty years, called *kiatſe*, from the denomination given to the firſt year of it, which ſerves as the baſis of their whole *chronology*. Every year of this cycle is marked with two letters, which diſtinguiſh it from the others; and all the years of the emperors, for above two thouſand years, have names in hiſtory common to them with the correſponding years of the cycle. Phil Tranſ. abr. vol. viii. part iv. p. 13, &c. According to M. Freret, in his Eſſays, the Chineſe date the epocha of Yao, one of their firſt emperors, about the year 2145, or as others ſtate it, 2057 years before Chriſt; and reckon their firſt aſtronomical obſervations, and the compoſition of their famous calendar, to have preceded Yao a hundred and fifty years: and thence it is inferred, that the aſtronomical obſervations of the Chineſe and Chaldæans coincide. Later authors date the riſe and progreſs of the ſciences in China from the grand dynaſty of Tcheou, about twelve hundred years before the Chriſtian æra, and ſhew; that all hiſtorical relations of events prior to the reign of Yao are fabulous. Mem. de l'Hiſtoire des Sciences, &c. Chinois; a work compiled by the miſſionaries of Pekin, vol. i. Paris, 1776. But it may be expected that ſome new light will be thrown on this obſcure and uncertain ſubject of inveſtigation by the General Hiſtory of China, in 12 vols. 4to. announced to the public by the abbé Groſſier.

Chronology, *Newtonian principles of*. Sir Iſaac Newton has ſhewn, that the *chronology* of ancient kingdoms is involved in the greateſt uncertainty; that the Europeans in particular had no *chronology* before the Perſian empire, which began five hundred and thirty-ſix years before Chriſt, when Cyrus conquered Darius the Mede; that the antiquities of the Greeks are full of fables, becauſe their writings were in verſe only, till the conqueſt of Aſia by Cyrus the Perſian, about which time Pherecydes

Syrius, and Cadmus Mileſius introduced proſe. After this time ſeveral of the Greek hiſtorians introduced the computation by generations. The *chronology* of the Latins was ſtill more uncertain: their old records were burnt by the Gauls a hundred and twenty years after the expulſion of their kings, ſixty-four years before the death of Alexander the Great, and before Chriſt 388. The *chronologers* of Gaul, Spain, Germany, Scythia, Sweden, Britain, and Ireland, are of a ſtill later date. For Scythia, beyond the Danube, had no letters, till Ulphilas, their biſhop, formed them, about ſix hundred years after the death of Alexander the Great, or about A. D. 276. Germany had none, till it received them from the weſtern empire of the Latins, about A. D. 400. The Huns had none in the days of Procopius, about A. D. 526. Sweden and Norway received them ſtill later.

After a general account of the defects and obſcurity of the ancient *chronology*, Sir Iſaac obſerves, that, though many of the ancients computed by generations and ſucceſſions, yet the Egyptians, Greeks, and Latins, reckoned the reigns of kings equal to generations of men, and three of them to a hundred, and ſometimes to a hundred and twenty years; and this was the foundation of their technical *chronology*. He then proceeds to evince, from the ordinary courſe of nature, and a detail of hiſtorical facts, the difference between *reigns* and *generations*; and that, though the latter from father to ſon may at an average be reckoned about thirty-three years, or three of them equal to a hundred years, yet when they are taken by the eldeſt ſons, three of them cannot be computed at more than about ſeventy-five or eighty years; and the *reigns* of kings are ſtill ſhorter, ſo that eighteen or twenty years may be allowed a juſt medium. He then fixes on four remarkable periods, viz. the return of the Heraclides into the Peloponneſus, the taking of Troy, the Argonautic expedition, and the return of Seſoſtris into Egypt, after his wars in Thrace; and ſettles the epocha of each by the true value of a generation. We ſhall confine ourſelves to his eſtimate of that of the Argonautic expedition. Having fixed the return of the Heraclides to about the hundred and fifty-ninth year after the death of Solomon, and the deſtruction of Troy to about the ſeventy-ſixth year after the ſame period, he obſerves, that Hercules the Argonaut was the father of Hyllus, the father of Cleodius, the father of Ariſtomachus, the father of Ariſtodemus, who conducted the Heraclides into Peloponneſus; ſo that their return was four generations, reckoning by the chief of the family, later than the Argonautic expedition, which therefore happened about forty-three years after the death of Solomon. This is farther confirmed by another argument. Æſculapius and Hercules were Argonauts. Hippocrates was the eighteenth incluſively from the former by the father's ſide, and the nineteenth from the latter by the mother's ſide; allowing twenty-eight or thirty years to each of them, the ſeventeen intervals by the father, and the eighteen intervals by the mother, will, at a medium, give five hundred and ſeven years; and theſe, reckoning back from the commencement of the Peloponneſian war, or four hundred and thirty-firſt year before Chriſt, when Hippocrates began to flouriſh, will place the Argonautic expedition in the forty-third year after Solomon's death, or nine hundred and thirty-ſeven years before Chriſt.

The other kind of reaſoning, by which Sir Iſaac endeavours to eſtabliſh this epocha, is purely aſtronomical. The ſphere was formed by Chiron and Muſæus at the time, and for the uſe of the Argonautic expedition, as ſeveral of the aſteriſms referring to this event plainly ſhew: and at this time the cardinal points of the equinoxes and ſolſtices were placed in the middle of the conſtellations Aries, Cancer, Chelæ, and Capricorn. Our author eſtabliſhes this point by a conſideration of the ancient Greek calendar, which conſiſted of twelve lunar months, and each month of thirty days, and which required an intercalary month. Of courſe this luniſolar year, with the intercalary month, began ſometimes a week or a fortnight before or after the equinox or ſolſtice; and hence the firſt aſtronomers were led to the above mentioned diſpoſition of the equinoxes and ſolſtices; and that this was really the caſe is confirmed by the teſtimonies of Eudoxus, Aratus, and Hipparchus. On theſe principles, Sir Iſaac proceeds to argue in this manner. The equinoctial colure in the end of the year 1689 cut the ecliptic in ♉ 6° 44′, and by this reckoning the equinox was then gone back 36° 44′ ſince the Argonautic expedition. But it recedes 50″ in a year, or 1° in ſeventy-two years, and conſequently 36° 44′ in 2645 years; which counted backward from the beginning of 1690, will place this expedition about twenty-five years after the death of Solomon. But, as there is no neceſſity for allowing that the *middle* of the conſtellations, according to the general account of the ancients, ſhould be preciſely the middle between the *prima Arietis*, and *ultima Caudæ*, this great author proceeds to examine what were thoſe ſtars, through which Eudoxus made the colures to paſs in the primitive ſphere, and in this way to fix the poſition of the cardinal points. From the mean of five places he finds, that the great circle, which in the primitive ſphere, deſcribed by Eudoxus, or at the time of the Argonautic expedition, was the equinoctial colure, did, in the end of 1689, cut the ecliptic in ♉ 6° 29′ 15″. He likewiſe, in the ſame manner, determines the mean place of the ſolſtitial colure to be ♋ 6° 28′ 46″, and as it is at right angles with the other, concludes that it is rightly drawn. Hence he infers, that the cardinal points, in the interval between that expedition, and the year 1689, have receded from thoſe colures 1 ſign 6° and 29′; which, allowing ſeventy-two years to a degree, amounts to 2627 years; and theſe counted backwards, as above, will place the Argonautic expedition forty-three years after the death of Solomon. Our author hath, by other methods of a ſimilar nature, eſtabliſhed this epocha, and reduced the age of the world about five hundred years. This elaborate ſyſtem hath not eſcaped cenſure. M. Freret and M. Souciet have attacked it on much the ſame ground: the former hath confounded *reigns* and *generations*, which are carefully diſtinguiſhed in this ſyſtem. The aſtronomical objections of both have been anſwered by Sir Iſaac Newton himſelf, and by Dr. Halley. Phil. Tranſ. abr. vol. viii. part iv, p. 4, &c. Newton's Chronology, ch. i.

M. Gibert, in a Letter publiſhed at Amſterdam in 1743, has attempted to reduce the Babylonian, Egyptian, and Chaldæan annals, to our *chronology*. He begins with ſhewing, by the authorities of Macrobius, Eudoxus, Varro, Diodorus Siculus, Pliny, Plutarch, St. Auguſtin, &c. that by a year, the ancients meant the revolution of any planet in the heavens; ſo that it conſiſted ſometimes only of one day. Thus, according to him, the ſolar day was the aſtronomical year of the Chaldæans; and the boaſted period of 473,000 years aſſigned to their obſervations is reduced to 1297 years, nine months; the number of years which elapſed, according to Euſebius, from the firſt diſcoveries of Atlas in aſtronomy, in the 384th year of Abraham, to the march of Alexander into Aſia in the year 1682 of the ſame æra; and the ſeventeen thouſand years added by Beroſus, to the obſervations of the Chaldæans, reduced in the ſame manner, will give forty-ſix years, and ſix or ſeven months, being the exact interval between Alexander's march, and the firſt year of the hundred and twenty-third Olympiad, or the time to which Beroſus carried his hiſtory. Epigenius attributes 720,000 years to the obſervations preſerved at Babylon; but theſe, according to M. Gibert's ſyſtem, amount only to 1971 years, three months, which differ from Calliſthenes's period of 1903 years, allotted to the ſame obſervations, only by ſixty-eight years, the period elapſed from the taking of Babylon by Alexander, which terminated the latter account, and to the time of Ptolemy Philadelphus, to which Epigenius extended his account.

Chronology, *ſacred*. The ſyſtems of ſacred *chronology* have been very various. Nor is this to be wondered at, ſince our three biblical copies of principal note give a very different account of the firſt ages of the world. The Hebrew text reckons about 4000 years from Adam to Chriſt, and to the flood 1656 years; the Samaritan makes this interval longer, and reckons from Adam to the flood only 1307 years; and the verſion of the Septuagint removes the creation of the world to 6000 years before Chriſt. The interval between the creation and flood, according to Euſebius and the Septuagint, is 2242 years; according to Joſephus and the Septuagint 2256 years; and according to Julius Africanus, Epiphanius, Petavius, and the Septuagint, it is reckoned at 2262 years. Many attempts have been made to reconcile theſe differences; but none are quite ſatisfactory. See Epocha, Samaritan, &c.

Silly fellow
When I turn to
Samaritan Chron
For say see
Sacred Chronology –

Walton, and I. Voſſius, give the preference to the account of the Septuagint. Walton's Prolegomena. Voſſii. Chronologia ſacra. Others have defended the Hebrew text. The reader may find an abſtract of the different opinions of learned men on this ſubject, in Strauchius's Brev. Chron. tranſlated by Sault, p. 166, &c. and p. 176.

The more eminent writers on *chronology*, among the ancients, are Julius Africanus in the third century; Dionyſius Exiguus, Euſebius, and Cyril.

Among the moderns, Bede, Funccius, Mercator, Lilius, Clavius, Scaliger, Vieta, Petavius, Caſſini, Munſter, Calviſius, Hardouin, Capellus, Uſher, Newton, Marſham, Helvicus, I. Voſſius, Pagi, &c. Strauchius, Perron, Freret, &c.

CHRONOMETER, or CHROMETER, as it is ſometimes written, a general name for any inſtrument uſed in the meaſuring of TIME.

The word is compoſed of *χρονος*, *time*, and *μετρον*, *meaſure*.

In this ſenſe, clocks, watches, dials, &c. are *chronometers*: though there are ſome other inſtruments peculiarly called by the name *chronometer*; particularly one deſcribed by M. Sauveur, in his Principles of Acouſtics: ſo contrived as to meaſure a ſmall part of time very exactly, even to the ſixteenth part of a ſecond.

We have a deſcription of one of theſe, made by the ingenious Mr. George Graham, in Deſaguliers's Experim. Philoſoph. vol. i. p. 373, 374.

A *chronometer* is of great uſe for meaſuring ſmall parts of time in aſtronomical obſervations, the time of the fall of bodies, the velocity of running waters, &c. But long ſpaces of time cannot be meaſured by it with ſufficient exactneſs, unleſs its pendulum be made to vibrate in a cycloid; becauſe, otherwiſe, it is liable to err conſiderably, as all clocks are which have ſhort pendulums that ſwing large arcs of a circle.

CHRONOSCOPE, a word ſometimes uſed for a PENDULUM, or machine, to meaſure time.

The word is formed of *χρονος*, *time*, and *σκεπτομαι*, *I conſider*.

CHROSTASIMA, in *Natural Hiſtory*, a name uſed by Dr. Hill for all pellucid gems, which have one ſimple and permanent appearance in all lights.

Of this kind are the DIAMOND, the CARBUNCLE, the AMETHYST, the SAPPHIRE, the BERYL, the EMERALD, and the TOPAZ.

CHRYSALIS, a term uſed by modern writers of natural hiſtory of inſects, in the ſame ſenſe with NYMPHA and AURELIA.

The word ſeems to imply a peculiar yellow, or golden colour, uſually in the *nymphæ* of ſome ſpecies of inſects: from *χρυσος*, *gold*: but this is purely accidental, and is not found in all *nymphæ*.

Some confine the word *chryſalis* to the *nymphæ* of butterflies and moths. See PUPPET.

CHRYSANTHEMUM, in *Botany*. See *Corn*-MARYGOLD.

CHRYSANTHEMUM, *Baſtard*, in *Botany*, *Silphium*, a genus of the *ſyngeneſia polygamia neceſſaria* claſs. Its characters are theſe: the common empalement of the flower is oval, imbricated, and permanent; the ſcales are oval, prominent, and reflexed in the middle; the diſk of the flower is compoſed of hermaphrodite florets, which are tubulous, indented in five parts at the top. Theſe have five ſhort hair-like ſtamina, terminated by cylindrical ſummits, and a ſlender taper germen, ſupporting a long hairy ſtyle, crowned by a ſingle ſtigma; theſe are barren. The rays of the flower are compoſed of a few female half florets, which are long, ſpear-ſhaped, and for the moſt part have three indentures at their points; theſe have a heart-ſhaped germen, with a ſhort ſingle ſtyle, having two briſtly ſtigmas of the ſame length, and are ſucceeded by ſingle heart-ſhaped ſeeds with a membranaceous border, indented at the top, each point ending with a horn or tooth, and are ſeparated by linear chaff, ripening in the empalement. There are four ſpecies, natives of America.

CHRYSANTHEMUM, *Hard-ſeeded*, *Chryſanthemoides*, or *Oſteoſpermum*, in *Botany*, a genus of the *ſyngeneſia polygamia neceſſaria* claſs. The characters are theſe: the flower hath an hemiſpherical empalement, which is ſingle, and cut into many ſegments. The flower is compoſed of ſeveral hermaphrodite flowers in the diſk, which are tubulous, and cut at the brim into five parts: theſe are ſurrounded by ſeveral female flowers, which are radiated, each having a narrow tongue, which is cut into three parts at the top. The hermaphrodite flowers have each five ſlender, ſhort ſtamina, terminated by cylindrical ſummits, with a ſmall germen ſupporting a ſlender ſtyle, crowned by an obſolete ſtigma; theſe are barren. The female flowers have each a globular germen ſupporting a ſlender ſtyle, crowned by an indented ſtigma; the germen afterwards becomes one ſingle hard ſeed. Miller enumerates five ſpecies, ſome of which are brought from America, and others from the Cape of Good Hope.

CHRYSANTHERINUS *lapis*, in *Natural Hiſtory*, a name given by old writers to a ſtone famous for its imaginary virtues of preventing children from ſickneſſes during the time of dentition, by being worn round the neck by way of necklace; we have no farther account given us of it by authors, than that it was a very brittle ſtone, and not eaſily worked into form.

CHRYSARGYRUM, a tribute formerly levied on courteſans, and perſons of ill fame. Hoffman ſays, it was paid in gold and ſilver; whence its name, *χρυσος*, *gold*, and *αργυρος*, *ſilver*.

Zoſimus ſays, that Conſtantine firſt ſet it on foot; though there appear ſome traces of it in the life of Caligula by Suetonius; and that of Alexander by Lampridius. Evagrius ſays, Conſtantine found it eſtabliſhed, and had ſome thoughts of aboliſhing it. It was paid every four years: ſome ſay, all petty traders were liable to it. It was aboliſhed by Anaſtaſius.

M. Godeau thinks the *chryſargyrum* was a general tribute, levied every four years, on perſons of all conditions, rich and poor, ſlaves and freemen; nay, even on all animals, as low as dogs; for each whereof they paid ſix oboli.

CHRYSITES, a name given by the ancients to *yellow* LITHARGE, ſuch as we call litharge of gold. We diſtinguiſh this only in regard to the colour, and ſo did the ancient Greeks; but Avicenna and the reſt of the Arabians have uſed this word only for the name of ſuch litharge as was made from gold, or whatever colour it happened to be; the reſt they called by the name of *argyrites*, as they tell us, whether it was made of ſilver, copper, or even of the marcaſite melted, and refined by lead. See KLIMIA.

CHRYSOBALANUS, in *Botany*. See *American*, or *Cocoa* PLUM.

CHRYSOBERYL, a precious ſtone; being a kind of pale beryl, with a tincture of yellow.

CHRYSOCERAUNUS *pulvis*, is ſometimes uſed for AURUM *fulminans*.

CHRYSOCERI, in *Antiquity*, a deſignation given to oxen deſigned for ſacrifices. They were ſo called from their horns being gilded.

CHRYSOCOLLA, in the *Materia Medica of the Ancients*, the name of a fine green arenaceous powder, properly one of the *ſaburræ*, and found on the ſhores of the Red Sea, on thoſe of ſome parts of America, and in Ruſſia; and that found at this time has all the properties of that mentioned by the ancients. It ſerves to the ſoldering of gold and other metals, and given internally is a violent and dangerous emetic.

It is of a very elegant colour, ferments violently with aqua fortis, and is wholly diſſolved by it, and tinges it with a blueiſh green; and being calcined it loſes all its green colour.

Chryſocolla is repreſented by Pliny as found in mines of gold, ſilver, copper, and lead: its colour, he ſays, was various, according to that of the matter in which it is found; yellow, if among gold, white in ſilver, green in copper, and black in lead. The Arabs, and inhabitants of Guzuratte, call the modern *chryſocolla*, which is *borax*, *tincar*, or *tincal*. The beſt is that found in copper-mines; and the worſt, in thoſe of lead.

CHRYSOCOLLA is alſo the name of a ſort of precious ſtones, mentioned by Pliny, lib. xxxvii. cap. 10. who calls it alſo *amphitane*. He deſcribes it as of a gold colour, and of a ſquare figure; adding, that it has the virtue of attracting iron, and even gold. But this, in all probability, is fabulous; and the ſtone he ſpeaks of is apparently no other than the cubic pyrites.

CHRYSOCOME, in *Botany*, a name by which ſome authors call the *ſtæchas citrina*, or GOLDYLOCKS.

CHRYSOGONON, or CHRYSOGONUM, in *Botany*, a name by which ſome authors have expreſſed the moth MULLEIN, or *blattaria*. In the Linnæan ſyſtem, it is a diſtinct genus of the *ſyngeneſia polygamia neceſſaria* claſs.

CHRYSOGONUM, in the *Materia Medica*, is alſo the name of a Syrian plant, called the red turnep, the LEONTOPETALON *coſta ſimplici* of Tournefort.

CHRYSOLACHANON, in *Botany*, a name by which Pliny, and ſome other authors, have expreſſed the white garden beet.

CHRYSOLITE, with us, a precious ſtone of a duſky green colour, with a caſt of yellow.

The *chryſolite* of the ancients was no other than the topaz of the moderns; even in its moſt pure and perfect ſtate is a gem of but ſmall beauty, and of no great value. It is found of various ſizes, and ſome of the coarſer pieces of it are vaſtly larger than any of the other gems are ever found to be; its moſt frequent ſize, however, when perfect, is about the bigneſs of a nutmeg. It is found of very various figures, but never columnar, or in the form of cryſtal; it is in ſome places found ſmall, and in roundiſh, or irregular, pebble-like maſſes, and in others generally oblong and flatted, and is always of a rude ſurface, and leſs bright than any other of the native gems. It is caniculated, or ſtriated, lengthwiſe. Its colour is a dead green, with a faint admixture of a pale yellow; it has theſe different tinges in the ſeveral ſpecimens in different degrees of mixture, but its moſt uſual colour is that of an unripe olive, with ſomewhat of a braſſy colour mixt with it, and ſometimes a pale and duſky green obſcured by a mixture of brown, and with a ſlight caſt of the ſame braſſy yellow. It is much ſofter than any of the pellucid gems; its fineſt pieces do not excel cryſtal in hardneſs, and its coarſer are much ſofter; it takes a good poliſh, however, and in ſome of its finer ſpecimens makes a tolerable figure, though greatly inferior to the other gems.

Our jewellers take very little notice of it; and, inſtead of having two or three names for it, as they have for moſt other of the gems, they call it very often a praſius, and the leſs accurate among them often call the chryſopraſius a *chryſolite*.

The *chryſolite* is found in New Spain, and in ſeveral parts of Europe, as Sileſia, Bohemia, &c. The American, however, are greatly ſuperior to the European, but are uſually ſmall; the Bohemian are large, but very few of them are of a good colour, or free from flaws.

The *chryſolite* has been found to exhibit electrical appearances ſimilar to thoſe of the TOURMALIN. The fluid moves always along the ſlender threads or columns, which form the grain of it, without ſuffering any change from their direction; one end being electrified *plus*, and the other *minus*. Phil. Tranſ. vol. lii. p. 445.

CHRYSOLITE is alſo a general name, which the ancients gave to all precious ſtones, wherein the yellow, or golden, was the prevailing colour.

When the ſtone was green, they called it *chryſopraſus*: the red and blue too had their particular denominations, which expreſſed their colour: the gold being ſignified by *chryſo*; which ſtill began the name.

We know but few of theſe *chryſolites* now; or rather, they are referred to the ſpecies of ſtones which they approach the neareſt to: the green to the emerald, the red to the ruby; and ſo of the reſt.

CHRYSOLITE-*paſte*. The way of making an artificial *chryſolite* paſte is this: take of prepared *cryſtal* two ounces, ordinary red lead eight ounces; mix theſe well together, and add *crocus martis* made with vinegar, twelve grains: mix all together; put them into a crucible, lute it over, and bake the whole for twenty-four hours, or longer, in a potter's kiln, and it will produce a very elegant reſemblance of the true *chryſolite*.

CHRYSOMELA, in *Zoology*, a genus of inſects frequently confounded with the beetles, the *antennæ* of which are made in form of bracelets, or necklaces of beads, and are thickeſt toward their extremity: the body, in figure, approaches to oval, and the *thorax* is oblong and rounded. Of this genus Dr. Hill enumerates a great many ſpecies. See SCARABÆUS.

CHRYSOMITHRES, in *Ornithology*, the name by which ſome call the GOLD-FINCH. See CARDUELIS.

CHRYSOPAGION, in *Natural Hiſtory*, a name by which ſome of the middle age writers have called the gem deſcribed by Pliny, under the name of the *chryſolampis*. Salmaſius is of opinion that it was only a foul kind of the *chryſopraſius*, of which Pliny ſays, that ſome of them were full of ſpecks, and of a variable colour.

CHRYSOPETRON, in *Natural Hiſtory*, a name given by Pliny and others, to the yellower kind of the ancient topaz, that is, our chryſolite.

CHRYSOPHYLLUM, in *Botany*. See *Star*-APPLE.

CHRYSOPHRYS, in *Ichthyology*, a name given by the ancient Greek and Latin authors to a fiſh called at this time the AURATA: it is a ſpecies of SPARUS. See GILT-*head*.

CHRYSOPILON, in *Natural Hiſtory*, a name given by ſome ancients to a ſpecies of the beryl, which had a yellowiſh tinge.

CHRYSOPIS, *the golden-eye*, in *Natural Hiſtory*, the name of a ſpecies of fly, ſo called from the beautiful gold colour of its eyes. It is a long-bodied fly, with extremely thin and tranſparent wings of a ſilvery colour, with green ribs or nerves; the body is green, and the *antennæ* very ſlender and blackiſh. This is a very ſlow flyer, and is common in gardens; it is frequently found on the common elder; it is of a very ſtrong ſmell.

CHRYSOPRASUS, in *Chriſtian Antiquity*, the tenth of thoſe precious ſtones which adorned the foundation of the heavenly Jeruſalem; the colour of it was green, much like that of a leek, but ſomething inclining to that of gold, as its name imports.

CHRYSOSPLENIUM. See *Golden* SAXIFRAGE.

CHRYSOXYLON, in *Botany*, a name given by ſome to the Scytharian, or Scythicum lignum, a wood famous for its beautiful yellow colour, and for tinging the hair yellow. This was one of the many ſubſtances called by the name of THAPSUM by the ancient Greeks, from its colour, the word *thapſus* ſignifying a pale yellow, and being applied by theſe authors to every thing that had that colour in itſelf, or could give it to other things.

CHRYSTAL. See CRYSTAL.

CHRYSTAL *mineral*, the ſame as *ſal prunella*.

CHRYSTALLINE. See CRYSTALLINE.

CHRYSTALLIZATION. See CRYSTALLIZATION.

CHTHONIA, in *Antiquity*, a feſtival kept in honour of Ceres, called *Chthonia*. For the ceremonies obſerved in it, ſee Pott. Archæol. lib. ii. cap. 20.

CHUB, the Engliſh name for the fiſh called the CAPITO and CEPHALUS by authors, and by ſome of the ancient Romans *ſqualus*. It is, according to the Artedian and Linnæan ſyſtem, a ſpecies of the CYPRINUS, and the fiſh called by the French the vilain and teſtard.

The reſorts of this fiſh are eaſily found; for they are generally holes overſhaded by trees, and this fiſh will be ſeen floating in ſuch almoſt on the ſurface of the water in a hot day in great numbers. They are but a poor fiſh for the table, and are very full of bones; but they entertain the angler very much, and are of the number of thoſe that are eaſily taken. The beſt manner of fiſhing for him is thus: prepare a very ſtrong rod of a ſufficient length; fix to the hook a graſshopper; place yourſelf ſo as to be perfectly out of ſight of the fiſh, and drop in the bait about two feet from the place where a large *chub* lies; if he does not ſee the angler he very ſeldom fails biting, and is immediately taken; but he is ſo ſtrong a fiſh that he ſhould be taken out carefully, after a great deal of playing, otherwiſe the tackle will be in danger; a beetle, or any large fly, will anſwer the purpoſe in the place of a graſshopper; and if none of them are to be had, the method of fiſhing muſt be altered, and the line be long enough for fiſhing at the bottom. In March and April this fiſh is to be caught with large red worms; in June and July with flies, ſnails, and cherries; but in Auguſt and September the proper bait is good cheeſe pounded in a mortar, with ſome ſaffron, and a little butter; ſome make a paſte of cheeſe and Venice turpentine for the *chub* in winter, at which ſeaſon this fiſh is better than at any other; the bones are leſs troubleſome in this ſeaſon, and the fleſh is more firm and better taſted; the row is alſo well flavoured in general. The angler muſt keep his bait for this fiſh at the bottom in cold weather, and near the top in hot, and the fiſh will bite eagerly.

CHUCHIA, in *Zoology*, a name given by Cardan, Oviedo, and ſome others, to the OPOSSUM.

CHUNNA, in the *Salic Law*, is uſed for an hundred; or rather an hundred pence or *denarii*: the pecuniary penalties of that law are eſtimated by *chunnæ*, and reduced to *ſolidi*, by reckoning forty *denarii* to the *ſolidum*.

CHUPMESSAHITES, a ſect among the Mahometans, who believe that Jeſus Chriſt is God, and the true Meſſiah, the redeemer of the world; but without rendering him any public, or declared worſhip.

The word, in the Turkiſh language, ſignifies *protector of the Chriſtians*.

Ricaut ſays, there are abundance of theſe *Chupmeſſahites* among the people of faſhion in Turky, and ſome even in the ſeraglio.

CHURCH, an aſſembly of perſons united by the profeſſion of the ſame Chriſtian faith, and the participation of the ſame ſacraments.

Bellarmin, and the Romiſh divines, to this definition add, *Under the ſame pope, ſovereign pontiff, and vicar of Jeſus Chriſt on earth*: in which circumſtance it is that the Romiſh and reformed notion of *church* differ.

Amelotte, and others, make a viſible head, or chief, eſſential to a *church*: accordingly, among the Catholics, the pope; in England, the king; are reſpectively allowed heads of the *church*. Biſhop Hoadley ſets aſide the notion of a viſible head: Chriſt alone, according to him, is head of the *church*; which poſition he has maintained with great addreſs, in a celebrated ſermon before king George I. on theſe words, *My kingdom is not of this world*; and in the ſeveral vindications thereof.

Sometimes, we conſider *church* in a more extenſive ſenſe, and divide it into ſeveral branches. The *church militant*, is the aſſembly of the faithful on earth. *Church triumphant*, that of the faithful already in glory. To which the Catholics add the *church patient*, which, according to their doctrines, is that of the faithful in purgatory.

The term *eccleſia*, εκκλησια, ſynonymous with our *church*, is uſed in the Greek and Latin profane authors for any kind of public aſſembly; and even for the place where the aſſembly is held. The ſacred and eccleſiaſtical writers ſometimes alſo uſe it in the ſame ſenſe; but ordinarily they reſtrain the term to the Chriſtians; as the term *ſynagogue*, which originally ſignifies near the ſame thing, is in like manner reſtrained to the Jews.

Thus, in the New Teſtament, the Greek εκκλησια, ſignifies almoſt always, either the place deſtined for prayer, as 1 Cor. xiv. 34. or the aſſembly of the faithful diffuſed over the whole earth, as Epheſ. v. 24. or the faithful of a particular city, or province, as 2 Cor. viii. 1. or even of a ſingle family, as Rom. xvi. 5. or the paſtors or miniſters of a *church*, as Matt. xviii. 17.

The Chriſtian *church* is frequently divided into Greek and Latin.

CHURCH, *Greek*, or *Eaſtern*, comprehends the *churches* of all the countries anciently ſubject to the Greek, or Eaſtern empire; and through which their language was carried; i. e. all the ſpace extended from Greece to Meſopotamia and Perſia, and thence into Egypt; which has been divided ever ſince the emperor Phocas, from the Roman *church*.

The Greek *church*, properly ſpeaking, is that ſociety of Chriſtians, who live in religious communion with the patriarch of Conſtantinople: and it is divided into two parties; one of which acknowleges his ſupreme authority and juriſdiction; whilſt the other, though joined with him in communion of doctrine and worſhip, is governed by its own laws, under the juriſdiction of ſpiritual rulers, independent of all foreign authority. The former branch of the Greek *church* is divided into four provinces; Conſtantinople, Alexandria, Antioch, and Jeruſalem; over each of which a biſhop preſides, under the title of patriarch, the chief of whom is the patriarch of Conſtantinople. The power of electing this patriarch is veſted in the twelve biſhops who reſide neareſt this capital; but the right of confirming his election, and of empowering him to exerciſe his ſpiritual functions, belongs to the Turkiſh emperor. The Greeks receive the Holy Scriptures, and the decrees of the ſeven general councils, as the rule of their faith: but no private perſon has a right to explain, for himſelf or others, the declarations of Scripture, or the deciſions of theſe councils; the patriarch and his brethren being the only perſons authoriſed to conſult theſe oracles, and declare their meaning. Many attempts have been made to unite them to the reformed *church*, but they have hitherto been unſucceſsful.

CHURCH, *Latin*, or *Weſtern*, comprehends all the *churches* of Italy, France, Spain, Africa, the North, and all other countries whither the Romans carried their language.

Great Britain, part of the Netherlands, of Germany, and of the North, have been ſeparated hence ever ſince the time of Henry VIII. and conſtitute what we call the *reformed church*, and what the Romaniſts call the *weſtern ſchiſm*; as the Greek *church* does the eaſtern one.

The *Reformed* CHURCH is again divided into the Lutheran *church*, the Calviniſt *church*, the *church* of England, &c.

CHURCH, *Gallican*, denotes the *church* of France, under the direction and government of its biſhops and paſtors. This *church* has always enjoyed certain immunities and franchiſes, not as grants from the popes, but derived to her from her firſt original, which ſhe has carefully maintained. Theſe privileges depend on two maxims; viz. 1. That the pope has no authority or right to command or order any thing, general or particular, in which the temporalities and civil rights of this kingdom are concerned. 2. That notwithſtanding the pope's ſupremacy is owned in caſes purely ſpiritual, yet in France, his power is limited and regulated by the decrees and canons of ancient councils received in that realm.

CHURCH, *High*, was a denomination originally given to thoſe, otherwiſe called NONJURORS, who refuſed to acknowledge the title of William III. to the crown of Great Britain, under a notion that James II. though excluded, was ſtill their rightful ſovereign. This appellation was given them, becauſe they entertained high notions of the dignity and power of the *church*, and the extent of its prerogatives and juriſdiction. And thoſe, on the contrary, were called *low-church* men, who diſapproved of the ſeceſſion and obſtinacy of the nonjurors, diſtinguiſhed themſelves by their moderation toward diſſenters, and were leſs ardent in extending the limits of *church* authority. The denomination of *high-church* men is now more generally applied to all who form pompous and ambitious conceptions of the authority and juriſdiction of the *church*, and who would raiſe it to an abſolute independence on all human power.

CHURCH is alſo uſed for a Chriſtian temple, built and conſecrated to the honour of God; and, anciently, under the invocation of ſome particular ſaint, whoſe name it aſſumed.

In this ſenſe, *churches* are variouſly denominated, according to the rank, degree, diſcipline, &c. as metropolitan *church*, patriarchal *church*, cathedral *church*, parochial *church*, cardinal *church*, &c. See each under its proper article, METROPOLIS, PATRIARCH, CATHEDRAL, PAROCHIAL, CARDINAL, &c. In eccleſiaſtical writers, we meet with grand *church*, for the chief *church* of a place, particularly in the Greek liturgy, for the *church* of St. Sophia at Conſtantinople, the ſee of the patriarch, founded by Conſtantine, and conſecrated under Juſtinian. It was at that time ſo magnificent, that Juſtinian is ſaid to have cried out in the conſecration thereof, Ενικησα σε, Σολομων; *I have out-done thee, Solomon*. The dome, which is ſaid to have been the firſt that was built, is 330 feet diameter.

The firſt *church* publicly built by the Chriſtians, ſome authors maintain to be that of St. Saviour at Rome, founded by Conſtantine: others contend, that ſeveral *churches* abroad, called by the name of St. *Peter Vivus*, were built in honour of that apoſtle during his life-time.

CHURCH, *Mother*, *Matrix eccleſia*.

CHURCH, with regard to architecture, Daviler defines a large oblong edifice, in form of a ſhip, with nave, choir, iſles, chapel, belfry, &c. See each part under its proper head.

CHURCH, *ſimple*, is that which has only a nave and a choir.

CHURCH *with iſles*, that which has a row of porticos, in form of vaulted galleries, with chapels in its circumference.

CHURCH *in a Greek croſs*, that where the length of the traverſe part is equal to that of the nave; ſo called, becauſe moſt of the Greek *churches* are built in this form.

CHURCH *in a Latin croſs*, that whoſe nave is longer than the croſs part, as in moſt of the Gothic *churches*.

CHURCH *in rotundo*, that whoſe plan is a perfect circle, in imitation of the Pantheon.

For the form of the ancient Greek *churches*, when they had all their parts, it was as follows: firſt was a porch, or portico, called the *vaunt-nave*, προναος this was adorned with columns on the outſide, and on the inſide ſurrounded with a wall; in the middle whereof was a door, through which they paſſed into a ſecond portico. The firſt of theſe porticos was deſtined for the *energumeni*, and penitents in the firſt ſtage of their repentance; the ſecond was much longer, deſtined for penitents of the ſecond claſs, and the catechumens, and hence called ναρθης, *ferula*, becauſe thoſe placed in it began to be ſubject to the diſcipline of the *church*. Theſe two porticos took up about one third of the ſpace of the *church*. From the ſecond portico, they paſſed into the nave, ναος, which took up near another third of the *church*. In the middle, or at one ſide of the nave, was the ambo, where the deacons and prieſts read the goſpel, and preached. The nave was deſtined for the reception of the people, who here aſſiſted at prayers.

Near the entrance of this was the BAPTISTERY, or FONT. Beyond the nave was the choir, χορος, ſet with ſeats, and round: the firſt ſeat on the right, next the ſanctuary, being for the chantor, or *choragus*.

From the choir, they aſcended by ſteps to the ſanctuary, which was entered at three doors. The SANCTUARY had three apſides in its length; a great one in the middle; under which was the altar, crowned with a BALDACHIN, ſupported by four columns. Under each of the ſmall apſides, was a kind of table, or cupboard, in manner of a beaufet.

Though, of the Greek *churches* now remaining, few have all the parts above deſcribed; moſt of them having been reduced to ruins, or converted into moſques.

M. Frezier, engineer to the French king, and F. Cordemoy, a regular canon, have diſputed the form of the ancient and modern *churches*, and the beſt manner of building them, with a good deal of learning, in the Journals de Trevoux.

For the form of the Latin *churches*, though it be various, yet may all the variety be reduced to two heads; viz. thoſe in form of a ſhip, and thoſe of a croſs.

CHURCH-*yard*, a place adjoining to a *church*, employed commonly for the interment of the deceaſed. See COEMETERIUM.

CHURCH-*government*, *diſcipline*, &c. See ECCLESIASTICAL GOVERNMENT, DISCIPLINE, POLICY, &c.

CHURCH-*reves*. See CHURCH-*wardens*.

CHURCH-*ſcot*, or CHURCH-*eſſet*, a payment, or contribution, by the Latin writers frequently called *primitiæ ſeminum*; being, at firſt, a certain meaſure of wheat, paid to the prieſt on St. Martin's day, as the firſt fruits of harveſt.

This was enjoined by the laws of king Malcolm IV. and Canut. c. 10. But after this, *church-ſcot* came to ſignify a reſerve of corn-rent paid to the ſecular prieſts, or to the religious; and ſometimes it was taken in ſo general a ſenſe as to include poultry, or any other proviſion that was paid in kind to the religious.

CHURCH-*wardens*, anciently called CHURCH-*reves*, are officers choſen yearly in Eaſter week, by the parſon, and his pariſhioners, according to the cuſtom of the place; to look to the church, church-yard, church-revenues, &c. obſerve the behaviour of the pariſhioners with regard to faults that come under the juriſdiction of the eccleſiaſtical court; preſent ſcandalous livers to the biſhop; take care none preach without licence, &c.

Counſellors and attornies, ſurgeons and apothecaries, and diſſenting miniſters, are exempt from this office; and perſons who have ſued a felon to conviction, and the firſt aſſignee of the certificate thereof, are exempted from the office of *church-warden*, in the pariſh where the offence was committed. The ſame exemption extends to perſons ſerving in the militia, during ſuch ſervice. Diſſenters are allowed to execute the office by a ſufficient deputy. A perſon, refuſing the office, is liable to excommunication. They are ſworn into their office by the archdeacon, who is compellable by a mandamus to admit thoſe whom the pariſh appoint.

The *church-wardens* are a kind of corporation; and are enabled by law to ſue, and be ſued, for any thing belonging to the church, or the poor of the pariſh.

CHURCHING *of women after child-birth*, took its riſe from the Jewiſh rite of purification. In the Greek church it was limited to the fortieth day after delivery; but in the weſtern parts of Europe no certain time is obſerved. There is an office in the liturgy for this purpoſe.

CHURLE, CEORLE, or CARL, in *Saxon Times*, ſignified a tenant at will, who held of the thanes on condition of rent and ſervice. They were of two ſorts: one rented the eſtate like our farmers; the other tilled and manured the demeſnes, and were called ploughmen.

CHURN-*Owl*. See OWL.

CHURR-*Worm*, a name given by ſome to the GRYLLOTALPA.

CHYLE, in the *Animal Oeconomy*, a whitiſh juice, into which the food is immediately converted by digeſtion, or more properly, by that firſt branch thereof called CHYLIFICATION.

The word comes from χυλος, *juice*.

Some think that all the groſs ſecretions are from the *chyle*; and particularly that *pus* is the product of the *chyle*, and not of the blood or ſerum. Phil. Tranſ. N° 427. § 2.

CHYLIFICATION, the formation of the *chyle*; or the act whereby the FOOD is changed into CHYLE.

Chylification is begun by comminuting, or breaking the aliment in the mouth, mixing it with ſaliva, and chewing it with the teeth.

By ſuch means, the food is reduced into a kind of pulp, which falling through the *œſophagus* into the warm ſtomach, there mixes with the juices thereof; and being thus diluted, begins to ferment, or putrefy, and aſſumes a very different form from what it had before; growing either acid or rancid.

Here it mixes with a juice ſeparated from the blood by the glands of that part, whoſe excretory ducts open into the ſtomach; as alſo with the remains of the former aliment: and thus it becomes better macerated, diluted, diſſolved, and acquires ſtill a greater likeneſs to the animal fluids, and is called *chyme*.

Add to this, that the fleſhy membrane of the ſtomach continually contracting and preſſing its contents by its periſtaltic motion, occaſions a more intimate mixture, and by degrees works the more fluid parts through the *pylorus* into the *duodenum*; along the ſides whereof, and the reſt of the *inteſtina tenuia*, the lacteals are planted; into the minute orifices whereof, the finer part of the maſs is received.

The fabric of the ſtomach being conſidered, the heat of the circumambient parts, the pulſations of innumerable arteries, the great ſtrokes of the *aorta* underneath, the conſtant compreſſion of the *diaphragma*, and abdominal muſcles; it muſt neceſſarily follow, that the finer part of the aliment will be firſt expelled the ſtomach; and that the groſſer will remain; till, by the repeated action of the fluids, and the contraction and pulſation of the ſolids, they alſo become fine enough to go off: thus is the ſtomach left empty; and by means of its muſcular coat, reduced to a ſtate of contraction, and appetite is renewed.

Thus will even the fleſhy membranes, cartilages, &c. of animals fed on, be ſqueezed, and be obliged to give out their juices; and thus is a fluid obtained, that ſhall have in ſome meaſure the ſame properties with thoſe of our bodies.

This juice being got through the *pylorus* into the *duodenum* and ſmaller inteſtines, its liquefaction is ſtill promoted by its mixture with two other diſſolvents, the pancreatic juice, and the bile; and by continued fermentation; which divide and ſubtilize thoſe parts that were left too groſs: and by the periſtaltic motion of the guts it is protruded forwards. In the paſſage through the ſmall inteſtines, the finer part of the maſs, which we call the *chyle*, enters the orifices of the lacteal veins of the firſt kind, wherewith the whole meſentery is intermixed; which either alone, or together with the meſeraic veins, diſcharge themſelves into the glands at the baſis of the meſentery.

Then the *chyle* is taken up by the lacteals of the ſecond kind, and is conveyed into glands between the two tendons of the *diaphragma*, known heretofore under the name of the *lumbary* glands, now called Pecquet's reſervatory, and *receptaculum chyli*; whence, being mixed with great quantities of lymph, it is carried to the heart, by the thoracic duct, and the ſubclavian vein: wherein it begins to be mixed with the blood, and to circulate, and in time becomes aſſimilated thereto. A ſpirit or vapour, which is nothing elſe than the *fixed* AIR of the alimentary ſubſtances, is ſet free from the various mixtures during their fermentation in the firſt paſſages, enters the compoſition of the *chyle*, and is tranſmitted with it to the blood, communicating to it its inteſtine motion, and thus preventing the natural tendency of the fluids to putrefaction. See DIGESTION.

CHYLOSIS, in *Medicine*, the action whereby the aliment is converted into *chyle*, or *chyme*, in the ſtomach, &c. whether it be by a ferment in the ſtomach, or the contractile force of the ſtomach, or both.

CHYME, an animal juice, which is, according to ſome, the ſame with that commonly called CHYLE.

Some, however, diſtinguiſh between *chyme* and *chyle*; reſtraining the word *chyme* to the maſs of food, &c. while in the ſtomach, before it be ſufficiently comminuted and liquefied to paſs the *pylorus* into the *duodenum*, and thence into the lacteals, to be further diluted and impregnated with the pancreatic juice; where it commences *chyle*. And others diſtinguiſh and denominate them the contrary way.

In the common ſignification of the word, it denotes every kind of humour which is incraſſated by concoction. Galen uſes it to ſignify the guſtatory faculty or quality in animals and plants.

CHYMICAL *oils*. See *Chemical* OIL.

CHYMISTRY, or CHEMISTRY, is a ſcience, the object of which is to diſcover the properties of bodies by analyſis and by combination.

Critics are divided as to the etymology of the name *chymiſtry*: it is uſually derived from χυμος, *juice*; or from χεειν, *to melt*. Boerhaave, and others, more juſtly derive it from the Egyptian *chema*, or *kema*, *black*; and write it *chemia*, not *chymia*. Others, making Cham the inventor of *chymiſtry*, derive the term from his name; ſupporting their etymology on the ſignification of the word חם, *cham*, which in the Hebrew ſignifies *heat*, *hot*, *black*; all of them bearing ſome relation to the operations of *chymiſtry*.

Chymiſtry is alſo known under various other names: it is ſometimes called the *Hermetical art*, from a ſuppoſition of its being invented by Hermes Triſmegiſtus. Others call it the *Egyptian art*, from the people among whom it was firſt practiſed: others, the *ſacred*, or *divine art*; and *poieſis*, or the art of *making gold*, &c. Others call it the *ſpagiric art*; Paracelſus, the *hyſſopic art*: and others, *pyrotechnia*.

The chief object of *chymiſtry* is, to analyſe, or decompound, natural bodies; reduce them to their firſt principles; diſcover their hidden virtues; and demonſtrate their inner contexture, or the center, as they call it, wherein natural ſubſtances concur. In a word, *chymiſtry* is the anatomy of natural bodies, by means of fire; which is the definition Hanneman gives us of the art.

Boerhaave defines *chymiſtry* more ſcientifically: "An "art whereby ſenſible bodies contained in veſſels, or "capable of being contained therein, are ſo changed, "by means of certain inſtruments, and principally of "fire, that their ſeveral powers and virtues are thereby "diſcovered, with a view to philoſophy, medicine, &c."

This definition appears very prolix and circumſtantial, and more like a deſcription than a definition; but with all his endeavours, that author aſſures us, he could not frame a ſhorter, that would expreſs the full ſcope, object, and inſtruments of *chymiſtry*, ſo as to diſtinguiſh it from every other art: which is a point all the writers of *chymiſtry* have ſtumbled at.

For *chymiſtry* cannot juſtly be called the art of *reſolving bodies*, as Regius, Paracelſus, &c. define it; ſince mechanics will alſo do that: nor is the matter mended, by ſaying, it is the art of *analyſing bodies by fire*; as Helmont has done: nor by *ſalt*, as others would have it. Theſe definitions include only a part, inſtead of the whole. And with as little propriety is it termed, the art of *ſeparating the pure from the impure*; inaſmuch as it compounds as well as ſeparates, and frequently mixes the pure with the impure. *Chymiſtry*, on this footing, appears a very extenſive art: its object, or the *materia chymica*, is all ſenſible bodies, capable of being contained in veſſels; and is accordingly divided into three kingdoms, *foſſil*, *vegetable*, and *animal*. The operations of *chymiſtry* include all the changes produced in bodies by natural agents or inſtruments; viz. *decoction*, *infuſion*, *exhalation*, *calcination*, *extraction*, *diſtillation*, *cryſtallization*, &c.

The effects, or productions of *chymiſtry*, may be reduced to *magiſteries*, *extracts*, *tinctures*, *elixirs*, and *clyſſuſes*.

The *inſtruments*, or *agents of chymiſtry*, whereby its operations are performed, are *fire*, *water*, *air*, *earth*, *menſtruums*; and *inſtruments* properly ſo called, as *alembics*, *cucurbits*, *retorts*, *pelicans*, *furnaces*, and *lutes*. See *Table of Chemical Veſſels*.

Chymiſtry, as now conceived, is an aſſemblage of very different parts, which anciently ſubſiſted ſeparate, or at leaſt had a ſubſiſtence prior to each other; as the preparing of metals for human uſes, the attempts of tranſmuting the baſer metals into gold, the preparing of medicines, &c. If we are to trace the antiquity of *chymiſtry*, as an art that teaches to convert other metals into gold, or to procure an univerſal remedy for all diſeaſes, the reſearch will not carry us far back; but as it relates to the diſcovery of metals in the mine, and the digging, ſeparating, and purifying them, it challenges even the higheſt antiquity; and is held by ſome very learned perſons to have been practiſed in the antediluvian world.

Be this as it will, *chymiſtry*, no doubt, was firſt practiſed in Egypt. According to Moſes, Tubal Cain ſhould be the firſt inventor. Profane authors refer it to Vulcan; and ſome of the lateſt and beſt critics endeavour to ſhew, that Tubal Cain and Vulcan were the ſame; as indeed there is a great reſemblance between their names.

After Tubal Cain, the firſt *chymiſt* we read of is Moſes; whoſe ſkill in *chymiſtry* is inconteſtable, from his burning and pulverizing the golden calf the Iſraelites had ſet up, and giving it the people to drink; there being ſcarce a more difficult operation in all *chymiſtry*, than to make gold potable.

Democritus likewiſe is ſaid to have been inſtructed by the Egyptian prieſts in many *chymical* operations; e. g. in the arts of ſoftening ivory, vitrifying flints, and imitating precious ſtones. In this abſtract of the hiſtory of *chymiſtry*, it is needleſs to mention the claims of Hermes Triſmegiſtus, or to give any account of books on this ſubject, under his name, as they are generally reckoned to be ſpurious. Some authors obſerve, that Diocleſian, after the taking of Alexandria, ordered all the books of *chymiſtry*, anciently written by the Egyptians, for making gold and ſilver, to be ſought out and burnt; that they might not have the power of enriching themſelves by this art, or of putting themſelves, by this means, into a condition of revolting again.

Chymiſtry had the common fate of the other arts, at the declenſion of the Eaſtern empire; and lay buried and forgot till the time of Roger Bacon, who retrieved it. He was followed by Lully, Ripley, Baſil Valentine, Paracelſus, Agricola, Van Helmont, Glauber, Boyle, Lemery, Homberg, &c. by whom the art has been carried to its preſent degree of perfection.

The firſt *chymiſts* confined themſelves to metals: and they made many abſurd and unſucceſsful attempts for tranſmuting metals into gold; whilſt ſome of them, as Raymond Lully and Paracelſus in particular, were poſſeſſed with the no leſs extravagant notion of an univerſal medicine, to which, however, we may attribute the eſtabliſhment of rational *chymiſtry* on the ruins of alchemy. In theſe latter ages, the bounds of *chymiſtry* have been greatly enlarged; and plants, animals, minerals, &c. have been taken into it.

It is but of late that *chymiſtry* has been applied to the preparation of medicines: Baſil Valentine, and Arnoldus de Villa Nova, ſeem to have been the firſt that attempted it. Paracelſus and Van Helmont carried it to ſuch a length, as to render medicine almoſt wholly *chymical*.

Authors on the ſubject of *chymiſtry* are very numerous: Borel has publiſhed a catalogue of moſt of them, under the title of Bibliotheca Chymica; containing the names of above four thouſand. Barner, phyſician to the king of Poland, was one of the firſt who arranged the principal *chymical* experiments, and added rational explications, in a work entitled Chymia philoſophica perfecte delineata, &c. Norimb. 1689. Becher, Stahl, and Boerhaave deſerve to be particularly recorded: the former have eſtabliſhed an admirable theory, which is the ſureſt guide in *chymical* reſearches, and the conformity of which with the phænomena of *chymiſtry* ſucceſſive experiments have evinced; and the latter has given both the hiſtory, theory, and practice, in an orderly and ſcientifical method. Dr. Freind has attempted to reduce *chymiſtry* to Newtonianiſm, and to account for the reaſons of the operations on *chymical* principles. There are many later writers, who have either directly or indirectly, in various ways, contributed to the extenſion of this ſcience. See Dr. Lewis's valuable edition of Neumann's Works; and the Engliſh tranſlation of Macquer's Chemical Dictionary, with many additions and improvements annexed to it by the tranſlator.

Chymiſtry is divided into *metallurgia*, *alchymia*, *chymical pharmacy*, and *chymical philoſophy*. See METALLURGIA, ALCHYMY, &c.

Chymiſtry again is divided into,

CHYMISTRY, *commercial*, uſed to denote the application both of technical and philoſophical *chymiſtry*, to the eſtabliſhing, ſupporting, or improving any branch of trade or commerce.

CHYMISTRY, *œconomical*, the application of philoſophical, technical, or commercial *chymiſtry*, to the ſervice and accommodation of the affairs of a family.

CHYMISTRY, *philoſophical*. Philoſophic *chymiſtry* conſiſts of three parts, viz. *invention*, *rationale*, and *experiment*; whence we may define it to be a particular exerciſe of the rational and inventive faculties of the mind, leading to experiments, and thence to the diſcovery of cauſes, ſo as to form axioms that ſhall rationally account for phænomena, and diſcover rules of practice for producing uſeful effects. And thus philoſophical *chymiſtry* is not only the key to all the other parts, but it diſcovers of itſelf the cauſes of many natural phænomena, as particularly, earthquakes, volcanoes, vegetation, the growth of minerals, and the like.

This branch of *chymiſtry* alſo explains the general forms and qualities of bodies, whereon their properties and effects depend; as volatility and fixedneſs, fluidity and firmneſs, colours, taſtes, odours, efferveſcences, fermentation, ſolution, precipitation, congelation, extraction, and the like.

To this part of *chymiſtry* it alſo belongs to bring new inventions to the teſt, to diſcover their validity or inſufficiency. Thus when any hint is ſtarted for a new trade, or method invented for the improvement of an old one, before any attempt is made to apply it in the larger way, it ſhould be experimented in miniature; as the aſſay-maſter tells the owner of an ore whether it will be worth the erecting large works for it, or not.

CHYMISTRY, *technical*. By technical *chymiſtry* is meant the application of philoſophical *chymiſtry* to the immediate ſervice of arts, ſo as by its means to invent, form, aſſiſt, promote, or perfect them in the large way of buſineſs.

CHYMISTRY, *theory of*. Under the theory of this art are to be laid down all the general truths which the particular experiments of chemiſts have hitherto demonſtrated. Theſe are, on this occaſion, to be taken for granted, and the whole body of ſuch truths makes the univerſal theory of *chymiſtry*, for *chymiſtry* is no ſcience formed *a priori*; it is no production of the human mind, or raiſed by reaſoning, but collected *a poſteriori* from experiments; it took its riſe from various operations caſually made, and obſerving thoſe that had one and the ſame uniform tendency, without any expectation of what followed; and was only reduced into an art, by collecting and comparing the effects of ſuch uncertain experiments, and noting the tendency thereof: ſo far then as a number of experiments agree to eſtabliſh any unqueſtionable truth, ſo far they may be conſidered as conſtituting the theory of *chymiſtry*. Such a theory is neceſſary to be premiſed to every art; and ſomething equivalent to this is practiſed by every artiſan, in teaching his diſciple how to proceed orderly in the exerciſe of his art; and accordingly it would be impoſſible to teach the practice of *chymiſtry* to advantage, without having firſt given ſome ſuch theory. In the forming ſuch a theory of *chymiſtry*, a direct uſe may indeed be made of the demonſtrations in phyſics, as particularly in mechanics, hydroſtatics, and hydraulics; ſince the properties common to all bodies, and what farther affections certainly flow therefrom, have their place in *chymiſtry*. One cannot, however, be too reſerved in this uſe, ſince thoſe ſingular properties found in ſome bodies, will, if applied to others, falſify the mechanical demonſtrations, which might hold true every where elſe.

Due regard being had to this rule, the diſcoveries of naturaliſts and mathematicians will always be advantageous, never injurious to the art of *chymiſtry*.

CHYMOLOGI, among the *Botanical Students*, ſuch as have employed their time in inveſtigating the qualities and properties of plants from their taſte and ſmell.

CHYMOSIS, in *Medicine*, the act of making, or preparing CHYME.

The word comes from χυμος, *ſuccus*, of χεω, *fundo*, *I melt*.

Chymoſis, according to ſome, is the ſecond of the concoctions made in the body; being a repeated preparation of the moſt impure and groſs parts of the chyle, which being rejected by the lacteals, is imbibed by the meſeraics, and thence carried to the liver, to be there elaborated, purified, and ſubtilized afreſh. It is of this, according to Rogers, that the animal ſpirits are formed.

CHYMOSIS, or rather CHEMOSIS, is alſo uſed for an inflammation of the eye-lids, which turns out their inſide to ſight.

In which ſenſe, the word comes from χαινω, *hiſco*, *I gape*.

CHYTLA, in *Antiquity*, a liquor made of wine and oil, and ſometimes uſed in divination.

CHYTRI, among the Athenians, a feſtival in honour of Bacchus and Mercury, kept on the thirteenth of the month Antheſterion.

CIBDELOPLACIA, in *Natural Hiſtory*, the name of a genus of ſpars. The word is derived from κιϐδηλος, *impure*, and πλαξ, *a cruſt*. The bodies of this genus are terrene ſpars, that is, are compoſed of ſpar, debaſed by a very large admixture of earth, and are not therefore of the leaſt brightneſs or tranſparence; and are found formed into thin cruſts, coating over vegetable and other extraneous bodies in form of incruſtations. Of this genus there are five known ſpecies, ſome of them uſed in medicine, and diſtinguiſhed by particular names.

CIBDELOSTRACIA, in *Natural Hiſtory*, the name of a genus of ſpars. The word is derived from κιϐδηλος, *fouled* or *adulterated with extraneous matter*, and οστρακον, *a cruſt*, or *ſhell.*

The bodies of this genus are cruſtaceous ſpars, ſo highly debaſed with earth, that they appear to the naked eye mere earths; they are deſtitute of all brightneſs or tranſparence, and are formed into thin plates, and uſually found incruſting over the ſides of fiſſures of ſtone.

Of this genus there are ſeven known ſpecies.

CIBORIA, in *Antiquity*, the large huſk of Egyptian beans, which are ſaid to have been ſo large as to ſerve for drinking cups; whence they had their name *ciborium*, ſignifying a *cup*, in the Egyptian language.

CIBORIUM, in *Eccleſiaſtical Writers*, the covering for the altar. This covering is ſupported by four high columns, and forms a kind of tent for the euchariſt, in the Romiſh churches. Some authors call it *turris geſtatoria*, and others *pyxis*. But the *pyxis* is properly the box in which the euchariſt is preſerved.

CIBOULS. See ONIONS.

CIBUS *ferialis*, in *Antiquity*, an entertainment peculiar to a funeral; for which purpoſe, beans, parſley, lettuce, bread, eggs, lentils, and ſalt were in uſe.

CICADA, the *balm cricket*, in *Zoology*, the name of a genus of inſects of the order of *hemiptera*, common in Italy, and ſome other parts of the world, but not found in England. It has large wings, and makes a loud noiſe, ſomething like that of the cricket. See *Tab. of Inſects*, N° 5. and HARVEST-*fly*.

They are recommended by ſome in medicine as remedies for colics, powdered and mixed with pepper; or burnt to aſhes alone, are given in nephritic caſes.

CICADA *aquatica*, the *water-graſshopper*, a name very injudiciouſly given by Rondeletius to an animal found frequently in ſtanding waters, of a greyiſh colour, with ſix legs, and the appearance of the rudiments of wings; it is remarkable for having alſo a ſort of maſk before the face, which it removes or lifts up at pleaſure. It is a poor defenceleſs animal, and is a prey to almoſt all the other water animals, even to many that are ſmaller than itſelf: it has no ſort of relation to the GRASSHOPPER; but is the hexapode, or worm ſtate of one of the *libellæ*, or DRAGON-*flies*.

The hinder pair of legs are much longer than the others, and are uſed in ſwimming, as oars, in the manner of thoſe of the NOTONECTA.

CICADA *of North America*. This inſect is ſeen annually, but in no great numbers, in Penſylvania; but at certain periods of fourteen or fifteen years, they come forth in ſuch ſwarms, that they are called *locuſts*. They are the prey of ſo many animals, that their numbers ſoon decreaſe; and their duration by order of nature being ſhort, they quickly diſappear.

There are two diſtinct ſpecies of *cicadæ* in North America. See a curious account of the largeſt ſort, by Mr. Collinſon, Phil. Tranſ. vol. liv. N° 10. an. 1764.

CICADULA, in *Natural Hiſtory*, the name given by Mr. Ray to a ſmall ſpecies of inſect, called by Swammerdam *locuſta pulex*, and found in May and June on the ſtalks and leaves of plants, involved in a ſpumous white matter, commonly called cuckow-ſpit. This ſpume is not exſudated, as ſome ſuppoſe, from the plant, but from the mouth of the animal; and if it be well wiped away, without injuring the creature, more will be immediately ſeen iſſuing out of its mouth, till there is as large a quantity of it as before.

There are ſeveral ſpecies of this animal, and while they lie in froth they are of the ſhape of a louſe, ſome being of a whitiſh, ſome of a yellowiſh, and ſome of a green colour. Their hinder legs are ſomewhat larger than the others, and there is an appearance of the rudiments of wings at the ſhoulders. They often change their ſkins while they live in this froth, and only creep at this time; but when they leave the plant, they hop and fly, having large wings which cover the whole body.

CICATRICULA, in *Natural Hiſtory*, a little whitiſh ſpeck, or veſicle, in the coat of the yolk of an egg; wherein the firſt changes appear towards the formation of the chick. The *cicatricula* is what is otherwiſe called the eye of the EGG.

CICATRISIVE, CICATRIZANS, in *Medicine*, is applied to ſuch remedies as are very deſiccative; and on that account aid nature to repair the ſkin, and to form a cicatrix, or eſchar.

Such are Armenian bole, powder of tutty, and the unguents *diapompholygis*, *deſiccativum rubrum*, &c.

Cicatriſive medicines are otherwiſe called *eſcharotics*, *epulotics*, *incarnatives*, *agglutinants*, &c.

CICATRIX, in *Medicine*, &c. a little ſeam, or elevation of callous fleſh, riſing on the ſkin, and remaining there after the healing of a wound, &c. ordinarily called a *ſcar*, or *eſchar*.

Some derive the word from *circa cutem:* others form *cicatrix* from *occæcatrix*; the *cicatrix* being only *obductio vulneris*, *the covering up*, or *hiding of the wound:* but it is better derived from *cæcatrix*, which has the ſame force; of the verb *cæcare*, *to blind.*

The *cicatrix* is the ſame with regard to the joining of the fleſhy parts, as a *callus* is to the bones.

In young infants, theſe calloſities, or ſcars, ſometimes much diminiſh, and oftentimes quite vaniſh when come to age, as is particularly obſerved in the pits of the ſmall-pox: and, in growing, they are ſometimes obſerved to change their ſituation.

In large wounds, where there has been a loſs of ſubſtance, an even *cicatrix* is not to be expected, without great care in the ſurgeon. When an even, thick, and white matter appears in the wound, it is to be dreſſed either every day, or every other day, as occaſion ſhall require: the ſuperfluous matter muſt at every dreſſing be wiped away with a very light hand; and it is indeed much better to leave ſome of it in the wound, than to treat that roughly in taking it away; for wiping the wound too roughly, hinders the growth of new fleſh; but a little matter being left, only performs the office of oil or balſam, in keeping the parts moiſt. Theſe rules being obſerved, new fleſh will preſently ſpring up, and the WOUND unite: but that an even *cicatrix* may be procured, the ſurgeon muſt endeavour by degrees to harden the new fleſh, by the application of dry lint, covered with a tight bandage. When this does not prove ſufficient, it may be proper to uſe ſome of the drying balſams, or drying powders, ſuch as tutty, *lapis calaminaris*, maſtich, colophony, &c. Rectified ſpirit of wine is frequently uſed for this purpoſe alſo, with great ſucceſs, for it carries a very great aſtringent and drying virtue with it.

See obſervations on a deep wound of the brain that cicatrized, by Tudecius, in the Col. Acad. tom. iii. P. E. p. 407.

CICATRIZING, in *Medicine*. See CICATRISIVE.

CICCA, in *Botany*, a genus of the *monoecia tetrandria* claſs; the male flowers of which have a four-leaved calyx, and no corolla; the female have a three-leaved calyx, no corolla, four ſtyles, and a capſule including four berries.

CICELY, in *Botany*. See CHERVIL.

CICER, the *chich-pea*, in *Botany*. See *Chich*-PEA.

CICERBITA, in *Botany*, a name given by ſome authors to the common ſonchus, or ſow-thiſtle.

CICERONIASTRI, or CICERONIANI, an appellation given by way of contempt to thoſe moderns, who diſpute the propriety of all expreſſions and words not found in Cicero.

CICERUM *lapis*, the *chich-ſtone*, in *Natural Hiſtory*, a name given by ſome authors to a ſort of ſmall round ſtones, of the nature of the piſolithe or pea-ſtones, but ſmaller than thoſe uſually are, and of a duſky grey colour. They very exactly reſemble the fruit of the cicer or chich-pea, and are found in great abundance near the Old Jeruſalem.

CICERELLUS, in *Ichthyology*, a name given by Boccone, and ſome other authors, to the AMMODYTES or ſand-eel, the *tobianus* of Schoneveldt.

CICHORIUM, *ſuccory*, in *Botany*. See ENDIVE.

CICINDELA, in *Natural Hiſtory*, the name of the GLOW-*worm*.

CICINDELA *volans*. See GLOW-*worm*.

CICISBEO, an Italian term, which in its etymology ſignifies a *whiſperer*; which has been beſtowed in Italy both on lovers, and on thoſe who to outward appearance act as ſuch, attending on married ladies with as much attention and reſpect as if they were their lovers. This Italian cuſtom has been ſpoken of very reproachfully by ſome writers: Mr. Baretti has taken great pains to vindicate it. He aſcribes it to a ſpirit of gallantry, derived from the ages of chivalry, and much heightened and refined by the revival of the Platonic philoſophy in Italy, about the thirteenth century; and by the verſes of Petrarch in complement to the beautiful Laura, and his numerous imitators. Account of the Manners, &c. of Italy, vol. i. chap. 8.

CICLA, in *Botany*, a name given by ſome to the white beet.

CICLA, in *Ichthyology*, a name given by Artedi, and other late writers, to a ſpecies of fiſh called *chichle* by Ariſtotle and Ælian, and TURDUS *minor* by the generality of late writers. See VERDONE.

CIÇONIA, in *Zoology*, the name by which authors call the ſtork. See STORK.

CICUTA. See HEMLOCK.

There are not wanting authors among the Germans, who recommend the ſeed of the common *hemlock* againſt obſtructions in the ſpleen; but as we have already remedies enough in the ſame intention, which are not ſuſpected as poiſonous, it is beſt to be contented with them, till a great many more trials have been made of this new medicine than we have accounts of at preſent.

CICUTA is alſo uſed, chiefly among the ancients, for a poiſonous juice, or liquor, expreſſed from a plant called *cicuta aquatica*; being the common poiſon wherewith the ſtate criminals at Athens were put to death.

The *cicuta* of the ancients is a ſecret now ſcarce poſſible to be diſcovered. Wepfer, in an expreſs treatiſe on the ſubject, will have it the OENANTHE *cicutæ facie, ſucco viroſo*; which he deſcribes by the name of *cicuta aquatica*; and of the diſmal effects of which he gives a very ample relation. At leaſt the violence of this plant makes it a much fitter inſtrument of haſty death than the common *cicuta* or hemlock, which is much leſs malignant. Though ſome have ſuggeſted, that the poiſonous draught to which the Athenians doomed their criminals, was an inſpiſſated juice compounded of the juice of *cicuta*, and ſome other corroſive herbs. Vid. Mead's Eſſay on Poiſons, ap. Bibl. Anal. Med. tom. iii. p. 281.

Socrates drank the *cicuta*. Plato, in his Dialogue on the Immortality of the Soul, obſerves, that "The executioner adviſed Socrates not to talk, for fear of cauſing "the *cicuta* to operate too ſlowly." M. Petit, in his Obſervationes Miſcellaneæ, remarks, that this advertiſement was not given by the executioner out of humanity, but to ſave the *cicuta*: for he was only allowed ſo much poiſon *per ann.* which if he exceeded, he was to furniſh the reſt at his own expence. This conſtruction is confirmed by a paſſage in Plutarch: the executioner who adminiſtered the *cicuta* to Phocion, not having enough, Phocion gave him money to buy more; obſerving, by the way, that it was odd enough, that at Athens a man muſt pay for every thing, even his own death.

CICUTARIA. See HEMLOCK, and CHERVIL.

CIDARIS, the mitre uſed by the Jewiſh high prieſts. Whenever there is mention of the high prieſt's mitre, the Hebrew word made uſe of to expreſs it is always *miznepheth*; and *mygbaoth* is uſed to ſignify the bonnet belonging to common prieſts. The rabbins ſay the ſame thing is meant by both theſe terms, and that the bonnet uſed by prieſts in general was made of a piece of linen cloth ſixteen yards long, which covered their heads like an helmet or a turban: and they allow no other difference to be between the high prieſt's bonnet, and that of other prieſts, than this, that one is flatter, and more in the form of a turban, whereas the other worn by ordinary prieſts roſe ſomething more in a point. Exod. xxviii. 4.

It is to be obſerved, that the Hebrew prieſts never appeared in the temple without covering their heads. And ſtill at this day it is reckoned an incivility in the Eaſt, and a mark of contempt, for any man to pull off his hat or turban to another, or to ſhew his naked head before any one.

CIDARIS, in *Conchyliology*. See TURBAN-*ſhell*.

CIDER, a briſk, tart, cool liquor, prepared from apples. See CYDER.

CIERGE, in *Conchyliology*, a name given by the French to a ſea-ſhell, a ſpecies of VOLUTA. This is of the colour of common yellow wax, without any variegations on the ſurface; but when its rough coat is taken off, it makes a very different appearance, having the zones and colours of the onyx. It is preſerved in many cabinets in this ſtate, under the name of the onyx-ſhell.

CIGALE, in *Natural Hiſtory*, the French name for the *cicada*, particularly for the large kind, called *acheta* by the ancients. See HARVEST-*fly*.

CIGNE, in *Conchyliology*, the SWAN-*ſhell*, a name given by the French virtuoſi to a ſpecies of *voluta*, which, beſide this name, is known by two other very different ones, *cierge* and *onyx*, and is taken by the generality of collectors for three different ſhells. When it has its natural coat on, it is of a rough ſurface, and yellow colour, much like that of common wax, whence it is called cierge, or the wax-ſhell. When this coat is juſt taken off, it appears of a very beautiful white, and is then called the *cigne*, or ſwan-ſhell; and when it is poliſhed farther down, ſo as to ſhew its inner ſtructure, it appears zoned in the manner of the onyx, and is then called the *onyx*.

CIGALON, in *Natural Hiſtory*, the name by which the French writers call the ſmaller ſpecies of cicada, as they do the larger the cigale. The ancients were unacquainted with two ſpecies of cicada; a great one, and a ſmaller one: the laſt of theſe they called *tettigonia*, and the firſt *acheta*. It has been uſually ſuppoſed, that the *cigalon* of the moderns was their *tettigonia*: but Mr. Reaumur obſerves, that we have in reality three kinds of them, a large, a middling, and a ſmall one; and that the large was their *acheta*, the middle one their *tettigonia*; and that the *cigalon*, or ſmall one, which is about the ſize of a hornet, was wholly unknown to them. See HARVEST-*fly*.

CILERY, in *Architecture*, a term uſed to denote the drapery or leavage on the heads of columns.

CILIA, in *Anatomy*, the hairs wherewith the *palpebræ*, or eye-lids, are fringed; eſpecially the upper, which are larger and ſtiffer than thoſe of the under.

Their uſe ſeems to be, to break the too fierce impreſſion of the rays of light; as alſo to keep out flies and moths, and other things floating in the air, which might annoy the eye.

Theſe *cilia* ſpring from a ſmall row of glands, which cover a thin tender cartilage, edging each eye-lid, and ſerving as a kind of rod, or ring, to ſtretch them upon.

CILIARE, in *Anatomy*, an epithet given to a part of the eye, called *ligamentum ciliare*; becauſe of its relation to the *cilia*, or hair of the eye-lids.

The *ligamentum ciliare*, called alſo *proceſſus ciliaris*, conſiſts of a range of black fibres diſpoſed circularly; having their riſe in the inner part of the *uvea*, and terminating in the prominent part of the cryſtalline, which they encompaſs round.

Anatomiſts generally imagine their uſe to be to ſuſpend the cryſtalline in the globe of the eye, to lengthen or ſhorten its figure, and bring it nearer to, or farther from the *uvea*; and even to open or contract the pupil as occaſion requires, i. e. as near or remote objects, obſcure or bright objects, are to be viewed.

The motion of the pupil, ſome ſay, is effected by the circular and ſtrait fibres of the *uvea*; others attribute it to the *ciliary* ligament: yet, there is no great doubt, but they both concur in the ſame action; and that the *ligamentum ciliare* doth, at the ſame time the pupil opens or ſhuts, dilate or compreſs the cryſtalline, and bring it nearer, or carry it farther off the *retina*. Derham, Phyſ. Theol.

M. Mariotte denies the *ligamentum ciliare* to have any connexion with the cryſtalline, or to ſerve for any purpoſes thereof.

CILIARIS, in *Anatomy*, a muſcle, otherwiſe called ORBICULARIS *palpebrarum*.

CILIATED *leaf*, among *Botaniſts*. See LEAF.

CILICIA *terra*, in the *Natural Hiſtory of the Ancients*, a bituminous ſubſtance, though called an earth, which, by boiling, became tough like bird-lime, and was uſed inſtead of that ſubſtance to cover the ſtocks of the vines, for preſerving them from the worms. It probably ſerved in this office in a ſort of double capacity, driving thoſe animals away by its nauſeous ſmell, and entangling them if they chanced to get among it.

CILICIUM, a ſort of habit made of coarſe ſtuff, of a black or dark colour, formerly in uſe among the Hebrews, in times of mourning or diſtreſs. It was called *Cilicium*, becauſe it came from Cilicia, or rather becauſe the Cilicians invented this kind of habit, made of goat's hair, and uſed principally in camps and ſhips, by ſoldiers and mariners.

CIMA, or SIMA, in *Architecture*, a member or moulding, called alſo *ogee*, and *cymatium*. See *Tab. Archit. fig.* 8.

CIMELIANTHUS, in *Natural Hiſtory*, a name given by authors to a ſpecies of the *oculus beli*. It is deſcribed to be of a white colour, reſembling that of marble, with a yellow pupil in the middle. It was found on the ſhores of the Euphrates.

CIMELIARC, in *Church Architecture*, the room where the plate, veſtments, &c. belonging to the church are kept. In Engliſh, a veſtry.

CIMEX, BUG, in *Natural Hiſtory*, the name of a genus of inſects, the characters of which are theſe: the head is ſmall; the back, toward the ſhoulders, is broad, and is covered with a cruſtaceous ſubſtance; its ſhoulders are of an angular make; and its wings partly cruſtaceous, partly membranaceous, and are ſo formed, that they exhibit the figure of a croſs, where they meet at the middle of the back; and they have a long proboſcis, which is bent under the belly, and always lies ſtrait, not in a ſpiral form.

Mr. Ray divides the *cimices* into two kinds, thoſe of a ſhorter, and thoſe of a longer and narrower make. Of the firſt kind he deſcribes eight ſpecies.

Of the other kind of *cimices*, which have longer and narrower bodies, Mr. Ray mentions five kinds.

The houſe-bug, or *cimex lectuarius*, ſo extremely troubleſome about beds, is of a roundiſh figure, of a dark cinnamon colour; and when cruſhed, emits a moſt offenſive ſmell.

Many are the compoſitions and ointments preſcribed for deſtroying them; but it is hardly poſſible to eradicate them when once they get into furniture. Some recommend to waſh the bedſteads with oil of turpentine, or to paint them with verdigreaſe ground in linſeed and oil of turpentine: others, to make an ointment of wormwood, rue, common oil, and water boiled together, and mixed with ſulphur; a mixture of hemp, oil, and ox-gall, has been ſometimes uſed; and an ointment made of equal quantities of black and common ſoap, and quickſilver, has been applied to the places infeſted with *bugs*. After all, cleanlineſs is the greateſt ſecurity againſt theſe vermin.

There are alſo two ſpecies of water-*cimices*.

Beſide all theſe, which are properly of the *cimex* kind, there is another ſet of inſects mentioned by Mr. Ray, as nearly approaching to them, and deſcribed under the name of CIMICIFORMES *muſcæ*.

CIMICIFORMIS *muſca*, in *Natural Hiſtory*, a name given by Mr. Ray to a kind of inſects, partly of the fly, and partly of the CIMEX kind. Of theſe there are eleven ſpecies deſcribed in his hiſtory. Theſe are all found about our hedges in dry places, and are a beautiful ſet of inſects.

CIMICIFUGA, in *Botany*, a genus of the *diœcia polyandria* claſs, bearing male and female flowers; with a five-leaved calyx, twenty ſtamina, and no corolla; the capſule is polyſpermous.

CIMIER, in the *French Heraldry*. See CREST.

CIMOLIA *terra*, in *Natural Hiſtory*, a name by which the ancients expreſſed a very valuable medicinal earth; but which later ages have ſuppoſed to be no other than our common tobacco PIPE *clay* and FULLER'*s earth*.

The *Cimolia terra* of the ancients was found in ſeveral of the iſlands of the Archipelago, particularly the iſland Cimolus, from which it had its name, and which is now called Argentiere; and was uſed with great ſucceſs in the St. Anthony's fire, inflammations, and other external affections of a like kind, being applied by way of a cataplaſm to the part. They alſo uſed, as we do, what we call *Cimolia*, or fuller's earth, for bleaching linen, and cleaning of cloaths. This earth of the ancients, though ſo long diſregarded, and by many ſuppoſed loſt, is however yet very plentiful in Argentiere, Sphanto, and many other of thoſe iſlands; and is a marle of a lax and crumbly texture, and a pure bright white colour, and very ſoft to the touch. It was evidently the ſubſtance we now call *ſteatites*, or the ſoap-rock, common in Cornwall, and alſo in the iſland of Argentiere or Cimolus.

CIMOLIA *alba*, the officinal name of the earth or clay of which we now make tobacco-pipes. Its diſtinguiſhing characters are, that it is a denſe, compact, heavy clay, of a dull white colour, and very cloſe texture; it will not eaſily break between the fingers, and ſlightly ſtains the ſkin in handling. It adheres firmly to the tongue; melts very ſlowly in the mouth, and is not readily diffuſible in water; and is not acted upon by acids. It is found in many places. That of the iſle of Wight is much eſteemed for its colour. When applied to uſe, it is mixed with another ſort of white clay, there called Hayter's clay. We have vaſt plenty of it alſo near Pool in Dorſetſhire, and near Weddenſbury in Staffordſhire.

A third ſort of white *Cimolia*, differing from the former in not being unctuous, and ſuffering no change in the fire, is dug near Lymington in Hampſhire, and hitherto applied to no uſe. A fourth ſort, tinged and veined with yellow, which turns to a pale red, acquires in the fire a whiter colour, but no hardneſs, is dug on the banks of the Medway, near Maidſtone, and uſed for the manufacture of gallypots at Vauxhall. A fifth ſort diſſolves readily in water, and burns to a greater hardneſs and a clearer white: it is dug near Barnſtaple in Devonſhire, and uſed in making the Broſely tobacco-pipes. A ſixth ſort is alcaline; ſuffers little change in the fire; is dug near Wareham in Dorſetſhire, and called Pool clay; and uſed for tobacco-pipes.

CIMOLIA *nigra*, is of a dark lead colour, hard, dry, and heavy; of a ſmooth compact texture, and not viſcid: it does not colour the hands; crumbles when dry; adheres to the tongue; diffuſes ſlowly in water; and is not acted upon by acids. It burns perfectly white, and acquires a conſiderable hardneſs. The chief pits for this clay are near Northampton, where it is uſed in the manufacture of tobacco-pipes. It is alſo mixed with the *critche* clay of Derbyſhire, in the proportion of one part to three, in the manufacture of the hard reddiſh brown ware.

CINÆDA, in *Natural Hiſtory*, the name of a ſtone found in the head of a fiſh, of a whitiſh colour, and oblong figure. The ancients ſuppoſed it preſaged tempeſts when its ſurface looked duſky and obſcure; and, on the contrary, fair weather, when it looked bright and clear.

CINÆDOLOGIA, among the *Ancients*, a kind of ſatyrical poetry, the chief ſubject of which were the *cinædi*.

CINÆDUS, in *Antiquity*, is uſed to ſignify a dancer or pantomime.

At firſt they performed only on the ſtage, but afterwards were admitted to the entertainments of princes.

CINÆDUS, in *Zoology*, the name of a fiſh common in the Archipelago, about the ſhores and rocks, ſuppoſed by many to be the ſame ſpecies with the alpheſtes, and of the turdus kind, only with its back-fin prickly all its length. It is of a yellowiſh hue all over, blended and variegated with an admixture of purple; its ſcales are rounded and indented; and its teeth very ſtrong and firm, and diſpoſed in two rows in each jaw, and are long and ſharp.

CINARA, *artichoak*, in *Botany*. See ARTICHOAK.

CINCHONA, in *Botany*, the name by which Linnæus calls the tree which produces the Jeſuits bark. This is a peculiar genus of plants, of the *pentandria monogynia* claſs; the characters of which are theſe: the cup is a ſmall perianthium, compoſed of one leaf, divided into five ſegments, and remaining after the flower is fallen. The flower conſiſts of one petal, and is of a funnel ſhape; it is a long and cylindric tube, terminating in a wide expanded edge, which is divided into five ſerrated and pointed ſegments: the ſtamina are five ſmall filaments, and the apices oblong, and placed within the tube of the flower; the piſtil conſiſts of a roundiſh germen placed below the cup, a ſtyle which is of the length of the flower, and a thick oblong ſimple ſtigma; the fruit is a roundiſh capſule, at the top of which ſtands the cup by way of a crown; this capſule contains two cells, and when ripe opens longitudinally into two parts. The ſeeds are very numerous, and are oblong, compreſſed, and ſurrounded with a foliaceous edge. See CORTEX *Peruvianus*.

CINCLUS, in *Zoology*, a ſpecies of the TRINGA. It is given by ſome to the bird called in Engliſh the greater reed-ſparrow, and by the generality of authors JUNCO.

CINCLUS is alſo the name of a ſpecies of STURNUS or STARLING.

CINCLUS *prior*, is alſo a name given by Aldrovandus to a bird, the ſame with what we call the STINT.

CINCLUS *tertius*. See GIAROLO.

CINCTURE, or CEINTURE, in *Architecture*, a ring, or liſt, at the top and bottom of the ſhaft of a column; ſeparating the ſhaft, at one end, from the baſe; and at the other from the capital. See *Tab. Archit. fig.* 24. and 25.

The word, in its original French, ſignifies *girdle*; of the Latin, *cingo, I gird*.

That at the bottom is peculiarly called *apophyge*; as if the pillar took its flight hence: and that at top, *colarin*, or collar.

The *cincture* is ſuppoſed to be an imitation of the girths, or ferrils, anciently uſed to ſtrengthen and preſerve the primitive wooden columns. See ORDER.

CINEFACTION. See CINERATION.

CINERARIA, *ſky-flower*, in *Botany*, a genus of the *ſyngeneſia polygamia ſuperflua* claſs: with a naked receptacle; and ſingle, polyphyllous, equal calyx.

CINERARIA, in *Botany*, a name by which ſome authors have called the *jacoba maritima*, or ſea ragwort, becauſe of the grey colour of its leaves.

CINERARIUS, in *Antiquity*, an officer retained by the women, whoſe buſineſs it was to provide aſhes proper for tinging the hair with a deep yellow colour. He was otherwiſe called *ciniflo*.

CINERARIUS is alſo uſed to ſignify one who paid a veneration to the aſhes and relics of martyrs and ſaints.

CINERATION, in *Chemiſtry*, the reduction of wood, or any other combuſtible matter, into aſhes, by means of fire.—This, others call *cinefaction*.

CINERES. See ASHES.

CINERES *Ætnæ*, a name given by authors to a duſty and ſaline ſubſtance thrown out of mount Ætna, in form of powder, and reſembling aſhes. After an eruption of this mountain, theſe ſaline aſhes are found ſcattered about the opening itſelf, down the ſides of the mountain, and over the country for ten miles, or more, round. Thoſe aſhes, which are found thrown to the diſtance of eight or ten miles, are generally taken up in form of a very dry duſt, almoſt inſipid to the taſte: but what lie upon, and round about the ſkirts of the mountain, are very different; they are never dry, though they lie many months expoſed to the ſun's heat, which is very great there, but always feel damp and wet, and are compoſed of larger or ſmaller lumps, and not of a fine powder, as the more diſtant are. They are of a very ſtrongly vitriolic taſte, reſembling that of our common green copperas. From this taſte, and from the great quantities of matter reſembling a ſort of crocus Martis, and with theſe a great abundance of ſulphur, which is burnt away, and the vaſt quantities alſo which are ſublimed about the mouths, and left unburnt, it appears, that the common pyrites is contained in vaſt abundance in the bowels of the mountain, ſince green vitriol and ſulphur are its produce, and nothing is ſo eaſy as to calcine it with the purple powder reſembling crocus Martis, which is the third ſubſtance ſo frequent there. This gives great weight to the opinion of thoſe who believe all the eruptions of the burning mountains in the ſeveral parts of the world to be owing to this mineral. See PYRITES and VOLCANO.

CINERES *clavellati*, among *Chemiſts*, are the aſhes of tartar, or lees of wine, burnt.

CINERITIOUS, a term applied to things reſembling aſhes; particularly in point of colour and conſiſtence.

Thus, the cortical part of the brain is alſo called the *cineritious* part.

CINGULUM *ſapientiæ*. See GIRDLE.

CINIFLO, in *Antiquity*, the ſame with CINERARIUS.

CINNA, in *Botany*, a genus of the *monandria digynia* claſs. The calyx is a bivalve ſingle-flowered glume; and the corolla is a bivalve glume. The ſeed is ſingle.

CINNABAR, in *Natural Hiſtory*, a mineral ſubſtance, red, heavy, and brilliant; found chiefly in the quickſilver mines, and being one of the ores of that mineral.

The word comes from *κιναϐρα, the ſmell of goats*; becauſe, ſays Matthiolus, in digging one kind of mineral *cinnabar*, it yields ſo ſtrong a ſcent, that the diggers are obliged to ſtop their noſtrils.

Some have wildly imagined *cinnabar* to be DRAGON'*s-blood*, gathered, as Pliny and Solinus have it, when the dragon and elephant fight together. This fable is refuted by Dioſcorides, and Scaliger.

Cinnabar is either *native*, or *factitious*.

CINNABAR, *native*, or *mineral*, which is that above mentioned, is found in moſt places where there are quickſilver mines.

It may be eſteemed as an ore of quickſilver, or rather, as quickſilver petrified and fixed, by means of ſulphur, and a ſubterraneous heat; chemiſtry being found to reduce it, without much trouble or loſs, to the nature of MERCURY. Each pound of good *cinnabar* yields fourteen ounces of mercury. Accordingly, the principal property and uſe of this mineral is to yield a moſt excellent mercury; and that which the alchemiſts maintain to be the beſt diſpoſed for attaining to the tranſmutation of gold.

The principal mines of *cinnabar* are thoſe of Kremnitz in Hungary; of Hydica in Sclavonia; of Horowitz in Bohemia; of Carinthia, of Frioul, and of Guangavelica in Peru. The *cinnabar* of the Philippines in Aſia is of the higheſt colour; but the richeſt is that of Almaden in Spain, on the frontiers of Eſtramadura.

Juſſieu has given a circumſtantial memoir on the ſubject of *cinnabar*, in the A. D. S. an. 1719.

To diſcover whether a mineral contains mercury, or is true *cinnabar*, Juſſieu recommends reddening a bit of it in the fire; and when it appears covered with a little bluiſh luſtre, to put it under a glaſs cover, through which we are to obſerve whether the vapours condenſe under the form of ſmall drops of mercury adhering to the glaſs, or running down the ſides of it. The falſification of *cinnabar*, the ſame author obſerves, may be diſcovered by the colour of its flame when put upon burning coals. If it be blue approaching to violet, and without ſmell, it is a mark of its purity; if the flame be of a reddiſh caſt, there is ground to ſuſpect that it has been adulterated with MINIUM; and if it boils as it were on the coals, it is a preſumption, if not a proof, that it contains a mixture of DRAGON'*s-blood*. Fixed alcalies, quick-lime, calcareous earths, iron, copper, tin, lead, ſilver, biſmuth, and regulus of antimony, have a greater AFFINITY than mercury has to ſulphur, and conſequently are capable of decompoſing *cinnabar*.

The beſt mineral *cinnabar* is of a high colour, brilliant, and free from ſtony matter. It is uſed by phyſicians in venereal caſes, and others occaſioned by ſharp ſeroſities. It is eſteemed a good cephalic, and accounted of ſervice in epilepſies, and other nervous diſtempers: and is reckoned of efficacy in cutaneous caſes, as the ſcurvy; and uſed in fumigations, when its vapours penetrate the pores of the ſkin, and produce ſimilar effects to thoſe which are produced by mercury adminiſtered by friction. Care muſt be taken, however, that the patient be not expoſed to breathe the vapours of the mercury and burning ſulphur, by which he might be injured.

CINNABAR, *factitious*, or *artificial*, is formed of a mixture of mercury and ſulphur, ſublimed, and thus reduced into a kind of fine red glebe. The beſt is of a high colour, and full of fibres, like needles.

The method of preparing factitious CINNABAR is thus: they take ſulphur, one part, melt it in a pipkin; then put to it, by a little at a time, from ſix to eight parts of quickſilver, ſtirring them together till no mercury appears: then letting them cool, they grind the mixture, put it in a bolt-head, bake it, and place it over a naked fire, which they augment by degrees; a coloured fume ariſes firſt to the top of the ſubliming veſſel, which, in the further progreſs of the heat, becomes, at length, of a red, crimſon hue. Taking it off the fire, the *cinnabar* is found at top.

Hoffman ſays, that *cinnabar* may be produced without ſublimation, by ſhaking or digeſting a little mercury with volatile tincture of ſulphur, by which means the mercury imbibes the ſulphur from the volatile ſpirit, and forms with it a deep red powder, not inferior in colour to ordinary *cinnabar*.

This ſerves for the ſame medicinal purpoſes with the *native cinnabar:* beſides which, it is likewiſe uſed by the farriers, to make pills for their horſes; and by painters, as a colour: it being a very vivid red; but drying with ſome difficulty.

This *cinnabar*, called alſo by the painters VERMILION, is rendered more beautiful by grinding it with gum-water, and a little ſaffron to prevent its growing black.

There is likewiſe a *blue cinnabar*, made by mixing two parts of ſulphur with three of quickſilver, and one of *ſal ammoniac:* theſe being ſublimed, produce a beautiful blue ſubſtance; whereas quickſilver and ſulphur alone produce a red.

The chemiſts prepare other kinds of artificial *cinnabar*; as,

CINNABAR *of antimony*, ſo called, becauſe its ſulphur has been furniſhed by antimony, is obtained from the decompoſition of corroſive ſublimate by antimony. Theſe compound ſubſtances are mixed together, and diſtilled: and during the operation, the marine acid of the corroſive ſublimate quits the mercury, and combines with the regulus of antimony, forming *butter of* ANTIMONY; and the mercury of the ſublimate, diſengaged from its marine acid, unites with the ſulphur of the antimony diſengaged from its regulus: theſe two ſubſtances, thus united, are ſublimed in form of *cinnabar*, after the butter of antimony has been diſtilled. This kind of *cinnabar* contains more ſulphur than the *factitious*, and conſequently appears of a darker colour.

Mercury revived from *cinnabar* of antimony is greatly to be preferred to that obtained by any other means, both for amalgamating with metals, and for all uſes in medicine; for this mercury is perfectly freed and depurated from its metallic, terrene, and heterogeneous particles, by the ſulphur of antimony.

The manner of reviving mercury from *cinnabar* of antimony, is variouſly delivered by different authors; but moſt of them prefer the uſe of pot-aſhes to any thing elſe on the occaſion. Hoffman, however, who has written expreſsly on the ſubject, ſays, that filings of ſteel or copper are greatly to be preferred to theſe ſalts. In the making *cinnabar* of antimony, it ſhould be ſublimed often, in order to render it quite pure, and perfect; and afterwards, when it is to be given internally, it ſhould be powdered extremely fine, ſince in the common way of giving theſe medicines groſsly ground, they can only exert their operations in the *primæ viæ*, it being impoſſible for them ever to reach the lacteals, and thence to be received into the maſs of blood. Many ways have been thought of for exalting the virtues of this excellent medicine, ſuch as ſolution, fixation, and the drawing a tincture from it. Solution in acid menſtrua is wholly to be condemned, for it renders it corroſive and dangerous to be taken internally; and the other inſipid and ætherial diſſolvents which many chemiſts boaſt of, are not yet known. The only medicinal preparation that has been contrived of *cinnabar* on this plan, is that by pouring ſweet ſpirit of vitriol on it. This makes only a ſlight and ſuperficial ſolution; but the liquor becomes very rich, in virtues far exceeding the *cinnabar* itſelf, when taken in powder.

Many ways have been attempted to fix *cinnabar*, by means of common ſalt, oil of ſulphur, and oil of vitriol; and Hoffman gives a method of doing this in ſo perfect a manner, by means of ſpirit of nitre and oil of vitriol, that the mercury of it will not tinge gold white, and a piece of the *cinnabar* thus fixed being thrown upon burning charcoal, will burn all away, leaving no remainder. Cneſelius boaſts of a preparation of *cinnabar* of this kind, with which he cured the gout; and by his own accounts this ſeems to be the very preparation; and the ſame preparation has been found an excellent cure for ſtubborn quartans, mixed with extract of bark, gentian, and ſalt of wormwood.

The drawing a tincture from *cinnabar* of antimony ſeems impracticable for many reaſons; all that is pretended to be done of this kind being in reality only drawing a tincture from one part, not from the whole of the medicine; and therefore ſuch a tincture cannot be expected to contain all its virtues.

Cinnabar is the beſt of all correctors of opium; and an excellent preparation of this kind is publiſhed by the ſame author.

Cinnabar is by ſome much dreaded as a medicine, in all caſes of inflammation, hæmorrhages, and the like diſtemperatures of the body; but Stahl reports, from repeated experience, that it is one of the greateſt of all medicines in theſe very caſes, nothing more efficaciouſly quieting the violent emotions of the blood, or ſupplying ſo happily the place of opiates; his general preſcription in hæmorrhages, head-achs, and other the like affections, being nitre, crabs eyes, and *cinnabar*. Frid. Hoffman, Diſſert. de Cin. Ant.

It is held a diaphoretic, and alterative; and is uſed in ſcrophulous and other chronic caſes.

Hoffman recommends it as a ſedative and antiſpaſmodic; Stahl makes it an ingredient in his *temperate powder*. Others deny its internal efficacy, and urge that it is unſoluble by any menſtruum.

CINNAMOLOGUS, in *Natural Hiſtory*, among the ancients, the name given to a bird which built its neſt either in the cinnamon-tree, or upon rocks and precipices, with the broken branches of that tree. The ancients have a great many idle traditions concerning this bird: ſome ſay it is the phœnix; and others, that it is a peculiar ſpecies of fowl. The common opinion of the phœnix building its neſt of ſpices, ſeems to have given birth to all the idle ſtories that we hear of this bird in Pliny and other credulous authors.

CINNAMON, an agreeable aromatic ſpice, brought from the Eaſt Indies; the whole taſte and flavour of which may be extracted by digeſtion with ſpirit of wine.

Cinnamon is allowed to be the bark of a tree growing in the iſland of Ceylon; and, as ſome ſay, alſo in Java, and in Malabar. It is a ſpecies of the bay; for the characters of which, ſee BAY-*tree*.

By *cinnamon* is now underſtood that only produced in Ceylon; that of Java, Sumatra, and Malabar, is called CASSIA *lignea*.

The *cinnamon*-tree grows in woods, like other trees. It never riſes high: its leaves reſemble thoſe of the laurel, both as to ſubſtance, and colour. The flowers, when they firſt begin to open, are red as ſcarlet; and if rubbed between the hands, they yield an odour more like that of cloves than of *cinnamon*. Seba ſays he found them blue, and of the bigneſs of the Italian bean-flower. The fruit reſembles an acorn, or olive; and has neither the ſmell nor taſte of the bark. Theſe berries are an excellent carminative, and are much uſed in medicine. When boiled in water, it yields an oil, which, as it cools and hardens, becomes as firm and white as tallow; and is called by the Dutch, *cinnamon wax*. Its ſmell is agreeable; and they make candles of it, which are only allowed to be burnt in the king's palace. It is alſo uſed in phyſic, as a balſamic and healer.

The leaves of the *cinnamon*-tree are called *folia malabathri*, and yield a bitteriſh aromatic oil, called *oleum malabathri*, reputed excellent againſt cephalalgias, &c.—See an account of the *cinnamon*-tree, by Mr. Watſon, F. R. S. Phil. Tranſ. vol. xlvii. an. 1751. Nº 46. p. 301.

The chief virtue of the *cinnamon*-tree is in its bark; which, when green, appears to be double: its exterior ſurface being browniſh, and the inner of the common *cinnamon* colour.

It is then diviſible into two barks of different colours; but theſe drying together become inſeparable, and paſs for the ſame bark; the browniſh colour changing in proportion as it dries.

When the *cinnamon* is freſh taken from the tree, it is flat, and has little taſte, ſmell, or colour; but it twiſts, or convolves, as it dries, in form of a ſtick, or cane: whence the French call it *canelle*.

By thus exhaling its ſuperfluous humidity, it acquires a ſweet briſk ſmell, and a ſharp pungent taſte. It is ſaid, that after the tree has been ſtripped of its bark, in three years it forms a new one, which is as good as the firſt: but this is not very probable. The Ceyloneſe cut down their *cinnamon*-trees, as ſoon as they are ſtripped, cloſe to the root: and from the ſtump there ſpring up new ones, which in five or ſix years time become trees fit for barking. A ſort of pigeons which feed on the fruit of the *cinnamon*-tree, are the chief agents in propagating it. In carrying the fruit to a diſtance to their young, they drop it in various places, where it takes root. Vid. Phil. Tranſ. Nº 409. p. 104, ſeq.

Some hold, that the ſmall branches of the ſame tree make the CASSIA; but that is a great miſtake.

The natives draw from the roots of the tree a liquor, which, as it hardens, in all reſpects reſembles camphor; and which in reality is a true camphor.

Cinnamon, to be good, muſt have a briſk, agreeable taſte, and a bright brown colour. Its qualities are, to heat and dry; to promote the menſes, to fortify the ſpirits, and to help digeſtion: but its chief uſe, in medicine, is as an aſtringent; with which intention it is preſcribed in diarrhœas, and weakneſſes of the ſtomach.

The *cinnamon* of the ancients was different from that of the moderns; they diſtinguiſhed five kinds of *cinnamon*: the *moſylitic*; *cinnamon of the mountain*; *black* and *branched cinnamon*; another white and ſpongious; and a fifth of leſs value, reddiſh, and of a ſtrong ſmell: as alſo a *baſtard cinnamon*, called *zinziber*. This laſt ſpecies was anciently in very high eſteem, but is now no longer known.

They extract an oil from *cinnamon*, called its *eſſence*, or *quinteſſence*, which is an excellent cardiac: it is drawn by diſtillation, like the oils of other vegetables. Indeed, being heavier than moſt other eſſential oils, it requires a greater heat to raiſe it. And for the ſame reaſon it ſinks to the bottom of the water that comes over with it into the receiver; whereas others ſwim on the ſurface; the eſſential oil of cloves, ſaſſafras, guaiacum, and box, excepted. The Dutch are ſaid to have a method of preparing, or rather, adulterating oil of *cinnamon*, which is kept a ſecret among themſelves. And the common *cinnamon* is often adulterated with that out of which this eſſence has been extracted.

Cinnamon, by means of fire, furniſhes, beſides its oil, waters, extracts, and ſalts; out of which are compounded ſyrups, and paſtils, called *oleo ſacchara*; together with an eſſence, that ſerves to turn all manner of wines, white and red, into hypocras.

CINNAMON-*water* is made by diſtilling the bark (firſt infuſed for ſome days) in ſpirit of wine, brandy, or white wine.

All the *cinnamon* conſumed in Europe comes from the Dutch; who have got the whole commerce thereof in their own hands, by becoming maſters of the iſle of Ceylon, and deſtroying all the other *cinnamon*-trees about the kingdom of Cochin.

The Dutch, who are the proprietors of Ceylon, are ſo jealous of this tree, which affords ſo valuable an article of their commerce, that the fruit or young plants are forbidden, by an order of the ſtates, to be ſent from thence, leſt other powers might avail themſelves of it. But it appears, from Mr. Watſon's account above referred to, that this prohibition has not been of very long ſtanding. The Dutch, however, have been fortunate enough hitherto to keep it to themſelves.

CINNAMON, *clove*, is alſo the bark of a tree growing in Braſil and Madagaſcar; where it is known under the name of *ravendſara*. The Portugueſe call it *cravo de marenham*.

This bark, pulveriſed, is ſometimes ſubſtituted for real cloves, though far ſhort of them in reſpect of flavour.

Saſſafras is ſometimes alſo called *cinnamon-wood*. See SASSAFRAS.

CINNAMON, *white*, which ſome call *coſtus corticus*, or *corticoſus*, or *cortex Winteri*, *Winter's bark*, from the perſon's name who firſt brought it into England, is the bark of a tree reſembling the olive-tree, frequent in the iſlands of St. Domingo, Guadaloupe, and Madagaſcar; called by the natives *ſimpli*.

This bark, which dries like that of *cinnamon*, is at firſt browniſh, of a ſharp biting taſte, like pepper, and a ſmell like muſk: as it dries, it whitens. Some uſe it in lieu of nutmeg: and in medicine it is uſed as a ſtomachic, and ſometimes as an antiſcorbutic.

The ſame tree alſo yields a gum called *alouch*, ſometimes *bdellium*, which is no diſagreeable perfume. See *Winteranus* CORTEX.

CINNAMUM, the name given by many of the old writers on the materia medica to *cinnamon*.

The Arabian writers, when they treat of *cinnamon*, have three words by which they expreſs it; theſe are *ſelicha*, *daſini*, and *kanſe*.

CINNUS, in *Ancient Medicine*, a drink made of the decoction of wheat, to which was added ſome flour of barley, honey, and wine.

CINQUEFOIL, *Quinquefolium*, or *Potentilla*, in *Botany*, a genus of the *icoſandria polygynia* claſs. Its characters are theſe: the empalement of the flower is of one leaf, which is ſlightly cut into ten parts; the ſegments are alternately leſs and reflexed. The flower is compoſed of five petals, which are inſerted into the empalement, and ſpread open. It hath twenty awl-ſhaped ſtamina inſerted in the empalement, terminated by moon-ſhaped ſummits. In the center of the flower are ſeveral germina collected into one head, with very ſlender ſtyles inſerted in the ſides, crowned by obtuſe ſtigmas. After the flower is paſt, the germina become a head of roundiſh ſeeds, included in the empalement.

There are many ſpecies of this genus preſerved in botanic gardens for variety, but they are not cultivated in other places either for uſe or beauty.

The firſt ſort grows naturally upon cold ſtiff land in moſt parts of England, and is a ſure mark of the ſterility of the ſoil. It ſpreads its ſtalks upon the ground, which ſend out roots from their joints, and thereby propagate ſo faſt as to ſpread over ground to a great diſtance: it flowers great part of the ſummer. It is never cultivated. The leaves of this plant are uſed in medicine, and are accounted reſtringent and vulnerary.

The other ſorts are natives of different parts of Europe.

Cinquefoil, *marſh*. See Comarum.

Cinquefoil *root*, in the *Materia Medica*, the name of a root which is an ingredient in ſeveral of the officinal compoſitions. The plant which produces it is the common *cinquefoil*, which grows every where by way-ſides. The root conſiſts of a cortical, and ligneous or ſticky part, but the cortical only is uſed. It is eſteemed drying and aſtringent, and antifebrific. Some have given it in agues in as large doſes as the cortex, and have cured with it. It ſtops fluxes of the bowels, and is good in diſorders of the lungs, and in the *fluor albus*, and gonorrhœas, either in men or women. It is, however, very little regarded in the preſent practice. See Phil. Tranſ. vol. xlix. part ii. p. 835.

CINQUE-PORTS, *Quinque portus*, five havens that lie on the eaſt part of England, towards France; thus called by way of eminence, on account of their ſuperior importance; as having been thought by our kings to merit a particular regard, for their preſervation againſt invaſions.

Hence, they have a particular policy, and are governed by a keeper, with the title of *lord warden of the cinque-ports*; which office belongs to the conſtable of Dover: and their repreſentatives are called barons of the *cinque-ports*.

They have various privileges granted them, as a particular juriſdiction; their warden having the authority of an admiral among them, and ſending out writs in his own name: and the king's writs do not run there.

Camden tells us, that William the Conqueror firſt appointed a warden of the *cinque-ports*; but king John firſt granted them their privileges; and that upon condition they ſhould provide eighty ſhips at their own charge for forty days, as often as the king ſhould have occaſion in the wars: he being then ſtreightened for a navy to recover Normandy.

There are alſo ſeveral towns adjoining, to which the privileges of the *cinque-ports* extend.

There are ſeveral courts belonging to theſe ports; one before the lord warden; others within the ports themſelves, before the mayor and jurats; another, which is called *curia quinque portuum apud Shepway*: a writ of error lies from the mayor and jurats of each port to the lord warden, in his court of Shepway; and from this court to the king's bench: and a writ of error lies from all the other juriſdictions to the ſame ſupreme court of judicature, in token of the ſuperiority of the crown when theſe franchiſes were created. All prerogative writs, as thoſe of *habeas corpus*, prohibition, *certiorari*, and *mandamus*, may likewiſe iſſue to all theſe juriſdictions. They have likewiſe a court of chancery, to decide matters of equity; but no original writ iſſues thence.

Theſe five ports are, Haſtings, Romney, Hythe, Dover, and Sandwich; to which Winchelſea and Rye have been ſince added.—Thorn tells us, that Haſtings provided twenty-one veſſels; and in each veſſel twenty-one men. To this port belong Seaford, Pevenſey, Hedney, Winchelſea, Rye, Hamine, Wakeſbourn, Creneth, and Forthclipe.—Romney provided five ſhips, and in each twenty-four men. To this belong Bromhal, Lyde, Oſwarſtone, Dangemares, and Romenhal.—Hythe furniſhed five ſhips, and in each twenty-one ſeamen. To this belongs Weſtmeath.—Dover, the ſame number as Haſtings. To this belong Folkſton, Feverſham, and Marge.—Laſtly, Sandwich furniſhed the ſame with Hythe. To this belong Fordiwic, Reculver, Serre, and Deal.

Cinque-Port *net*. See Net.

CINTRE, in *Building*, the mould on which an arch is turned; popularly called *centre*, ſometimes alſo *cradle*.

CINYRA, in the *Jewiſh Antiquities*, a muſical inſtrument. This and the Hebrew *cinnor*, which is generally tranſlated *cithara*, *lyra*, or *pſalterium*, are the ſame. It was made of wood, and was played on in the temple of Jeruſalem. Joſephus ſays, that the *cinyra* of the temple had ten ſtrings, and that it was touched with a bow. In another place he ſays that Solomon made a great number of them with a precious kind of metal called *electrum*, wherein he contradicts the Scripture, which informs us that Solomon's *cinnors* were of wood.

CION, or **Cyon**, in *Gardening*, a young ſhoot, ſprout, or ſprig, put forth by a tree.

Grafting is performed by the application of the *cion* of one plant upon the ſtock of another.

To produce a ſtock of *cions* for grafting, planting, &c. the gardeners ſometimes cut off the bodies of trees, a little above the ground, and only leave a ſtump or root ſtanding: in this caſe the redundant ſap will not fail next ſpring to put forth a great number of ſhoots.

In dreſſing DWARF-*trees*, a great many *cions* are to be cut off. See Pruning.

Cion, in *Anatomy*, is ſometimes uſed for the UVULA.

CIONES, in *Antiquity*, a kind of idols very common, being only oblong ſtones erected pillar-wiſe; whence alſo they had their name.

CIPHER, or **Cypher**, one of the numeral characters, or figures; formed thus, o.

The word *cipher* comes from the Hebrew סָפַר *ſaphar*, *to number*.

The *cipher* of itſelf implies a privation of value; but when diſpoſed with other characters on the left thereof, in the common arithmetic, it ſerves to augment each of their values by ten; and in decimal arithmetic, to leſſen the value of each figure to the right thereof, in the ſame proportion.

Cipher denotes alſo a kind of enigmatic character, compoſed of ſeveral letters interwoven; which are ordinarily the initial letters of the perſons names, for whom the *cipher* is intended.

Theſe are frequently uſed on ſeals, coaches, and other moveables. Anciently, merchants and tradeſmen were not allowed to bear arms: in lieu thereof they bore their *ciphers*, or the initial letters of their names, artfully interwoven about a croſs; of which we have divers inſtances on tombs, &c.

Cipher is alſo applied to certain ſecret characters, diſguiſed and varied; uſed for the writing of letters that contain ſecrets not to be underſtood by any but thoſe between whom the *cipher* is agreed on. This is now reduced into a ſeparate art, called *cryptographia*, *polygraphia*, and *ſteganographia*; but it appears to have been little known to the ancients.

De la Guilletiere, in his Lacedæmon Ancient and Modern, endeavours to make the ancient Spartans the inventors of the art of writing in *cipher*.

Their ſcytala, according to him, was the firſt ſketch of this myſterious art: theſe ſcytalæ were two rollers of wood, of equal length and thickneſs; one of them kept by the ephori; the other by the general of the army ſent on any expedition againſt the enemy.

Whenſoever thoſe magiſtrates would ſend any ſecret orders to the general, they took a ſlip of parchment, and rolled it very juſtly about the ſcytala which they had reſerved; and in this ſtate wrote their intentions, which appeared perfect and conſiſtent while the parchment continued on the roller: when taken off, the writing was maimed, and without connexion; but it was eaſily retrieved by the general, upon his applying it to his ſcytala. Polybius ſays, that Æneas Tacticus, two thouſand years ago, collected together twenty different manners of writing, ſo as not to be underſtood by any but thoſe in the ſecret; part whereof were invented by himſelf, and part uſed before his time. Trithemius, Bap. Porta, Vigenere, and P. Niceron, have written expreſly on the ſubject of *ciphers*.

As the writing in *cipher* is become an art; ſo is the reading, or unravelling thereof, which is called *deciphering*. See Deciphering.

Cipher *with a ſingle key*, is that wherein the ſame character is conſtantly uſed to expreſs the ſame word, or letter: this is eaſily deciphered with a little application.

Cipher *with a double key*, is that wherein the alphabet, or key, is changed in each line, or in each word; and wherein are inſerted many characters of no ſignificancy, to amuſe and perplex the meaning.

CIPHERING, or **Cyphering**, is popularly uſed for the art of accompting; properly called *arithmetic*.

CIPPUS, among *Antiquaries*, a little, low column, erected in roads, or other places, with an inſcription thereon; either to ſhew the way to travellers, to ſerve as a boundary, or preſerve the memory of ſomething remarkable, and particularly the grave of a defunct.

The *cippi* placed in the highway, for the convenience of travellers, were more properly called MILLIARY *columns.* Hottinger has an expreſs treatiſe of the *cippi* of the Jews, *de cippis Hebræorum*; wherein he takes *cippus* for the tomb-ſtone of a defunct.

CIPPUS was alſo uſed in antiquity for a wooden inſtrument wherewith criminals and ſlaves were puniſhed; being a kind of clog, or ſtocks for the feet.

CIRCADA, a tribute anciently paid to the biſhop or archdeacon, for viſiting the churches.

CIRCÆA, in *Botany.* See *Enchanter's* NIGHT-*ſhade.*

CIRCEA. See CIRCÆA.

The name *circea* is given by ſome to the mandrake, or common mandragora.

CIRCELLIONES. See AGONISTICI.

CIRCENSES *ludi*, CIRCENSIAN *games, or games of the* CIRCUS, a general term, under which were comprehended all combats exhibited in the Roman *circus*, of what kind ſoever; whether on foot, or horſeback, or in a car; wreſtling, or boxing; with ſwords, pikes, darts, or arrows; againſt men, or againſt beaſts; on the ground, or aboard veſſels.

There were few except ſlaves that gave the people this cruel pleaſure: it was an exerciſe that would have diſgraced people of any account. See the article GLADIATORS.

Some ſay, the *circenſian games* were ſo called from the Latin *circumenſes*; becauſe they were held in a place incompaſſed round with naked ſwords, that the combatants might not have an opportunity of eſcaping.

At firſt they are ſaid to have been exhibited on the brink of the river Tyber, and the ground encompaſſed toward the land with naked ſwords.

Moſt of the feaſts of the Romans were accompanied with *circenſian games*; and the magiſtrates, or other officers of the republic, frequently preſented the people with them on other occaſions.—The grand ones were held for five days, commencing on the 15th of September.

CIRCERELLUS, in *Zoology*, a name uſed by ſome authors for the fiſh uſually called AMMODYTES, or the *ſand-eel.*

CIRCITOR, in *Ancient Military Diſcipline*, one whoſe buſineſs it was to go the ROUNDS.

CIRCITOR is alſo uſed to ſignify a hawker, or pedlar, who goes about from place to place to vend his goods.

CIRCINALEA *Folia.* See LEAF.

CIRCINNALIS, in *Botany*, a name given by ſome authors to the ADIANTUM, or *maiden-hair.*

CIRCIUM, a genus of plants according to Tournefort; but comprehended by Linnæus under the carduus. See THISTLE.

CIRCLE, CIRCULUS, in *Geometry*, a plane figure, comprehended under one ſingle line, which returns into itſelf; having a point in the middle, from which all the lines drawn to its circumference are equal.

Properly ſpeaking, it is the ſpace included within the circumference, or periphery, that is the *circle:* though in the popular uſe of the word, *circle* is frequently uſed for the periphery alone. See the article CIRCUMFERENCE.

The area of a *circle* is found by multiplying the periphery by the fourth part of the diameter; or half the periphery by half the diameter.—The area is alſo had by finding a fourth proportional to 1,000,785, and the ſquare of the diameter: or, to 452,355, or to 14, 11, and the ſquare of the diameter. See DIAMETER.

Circles, and ſimilar figures inſcribed in them, are always as the ſquares of the diameters: ſo that they are in a duplicate ratio of their diameters; and therefore of their radii.

A *circle* is equal to a triangle whoſe baſe is equal to the periphery, and its altitude to the radius. *Circles*, therefore, are in a ratio compounded of the peripheries and the radii: but they are alſo in the duplicate ratio of their radii; therefore the peripheries are to each other as the radii.

To find the proportion of the diameter of a CIRCLE *to its periphery.* See DIAMETER.

To circumſcribe a CIRCLE *about a given regular polygon:* biſect two of the angles of the polygon E and D (*Tab. Geometry, fig.* 28.) by the lines EF and DF; and on the point of concourſe F, as on a centre, with the radius EF, deſcribe a *circle.* See CIRCUMSCRIBING.

To deſcribe any given regular polygon in a CIRCLE: divide 360 by the number of ſides, to find the quantity of the angle EFD; which being made in the centre, apply the chord ED to the periphery, as often as it will go: thus is the figure inſcribed in the *circle.*

Through three given points, not in a right line, A, B, C, *fig.* 7. *to deſcribe a* CIRCLE. On A and C ſtrike arches interſecting in D and E; and others, G and H, from C and B; draw the right lines DE and HG: the point of interſection, I, is the center of the *circle.* Hence, 1ſt. by aſſuming three points in the periphery, or the arch of any *circle*, the center may be found, and the given arch be perfected.

2dly, If three points of any periphery agree, or coincide with three points of another; the whole peripheries agree, and the *circles* are equal.

3dly, Every triangle may be inſcribed in a *circle.*

In *Optics*, it is ſhewn, that a *circle* never appears truly ſuch, unleſs either the eye be directed perpendicularly to its center; or the diſtance of the eye from the center, when directed obliquely, be equal to the ſemidiameter of the *circle:* in every other caſe, the *circle* appears oblong; and to make a *circle* that ſhall appear ſuch, it muſt be oblong.

CIRCLES, *parallel*, or *concentric*, are ſuch as are equally diſtant from each other in every point of their peripheries; or are deſcribed from the ſame center: as, on the contrary, thoſe ſtruck from different centers are ſaid to be *eccentric.*

CIRCLE, *the quadrature of the*, or the manner of making a ſquare, whoſe ſurface is perfectly and geometrically equal to that of a *circle*, is a problem that has employed the geometricians of all ages. See the article QUADRATURE.

Many maintain it to be impoſſible: Des Cartes, in particular, inſiſts on it, that a right line, and a *circle*, being of different natures, there can be no ſtrict proportion between them: and, indeed, we are likewiſe at a loſs for the juſt proportion between the diameter and circumference of a *circle.*

Archimedes is the perſon who has come the neareſt to the quadrature of the *circle:* all the reſt have made paralogiſms. Charles V. offered a reward of 100,000 crowns to the perſon who ſhould ſolve this celebrated problem; and the ſtates of Holland have alſo propoſed a reward for the ſame.

CIRCLES *of the higher kinds*, are curves wherein $AP^m : PM^m :: PM : PB$, or, $AP^m : PM^m :: PM^n : PB^n$. *Tab. Analyſis, fig.* 26. *Cor.* I. Suppoſe $AP = x$, $PM = y$, $AB = a$: then will $PB = a - x$. And conſequently $x^m : y^m :: y : a - x$. Hence we have an equation that defines infinite *circles*, viz. $y^{m+1} = ax^m - x^{m+1}$; and another defining infinite other *circles*, viz. $y^{m+n} = \overline{a-x}^{\,n} x^m$.

Cor. II. If $m = 1$, then will $y^2 = ax - x^2$; and therefore a *circle* of the firſt order is contained under this equation alone. If $m = 2$, $y^3 = ax^2 - x^3$, which equation defines a *circle* of the ſecond order.

CIRCLE *of curvature*, in *Geometry*, that *circle* the CURVATURE of which is equal to that of any curve at a certain point.

It is alſo called the *circle* of equi-curvature.

CIRCLES *of the ſphere*, are ſuch as cut the mundane ſphere, and have their periphery either on its moveable ſurface, or in another immoveable, conterminous, and equidiſtant ſurface.

Hence ariſe two kinds of *circles*, *moveable*, and *immoveable.* The firſt are thoſe whoſe peripheries are in the moveable ſurface, and which therefore revolve with its diurnal motion; as the *meridians*, &c.

The latter, having their periphery in the immoveable ſurface, do not revolve; as the *ecliptic*, *equator*, and its *parallels*, &c.

If a ſphere be cut in any manner, the plane of the ſection will be a *circle*, whoſe center is in the diameter of the ſphere.

Hence the diameter of a *circle* paſſing through the center, being equal to that of the *circle* which generated the ſphere; and that of a *circle* which does not paſs through the center, being only equal to ſome chord of the generating *circle*; the diameter being the greateſt of all chords, there hence ariſes another diviſion of the *circles* of the ſphere, viz. into *great* and *leſſer.*

CIRCLE, *great, of the ſphere*, is that which divides it into two equal parts, or hemiſpheres; having its center in the center thereof.

Hence, all *great circles* are equal, and cut each other into equal portions, or ſemicircles.

The *great circles* are the *horizon*, *meridian*, *equator*, *ecliptic*, the *colures*, and the *azimuths*; which ſee in their places.

CIRCLE, *leſſer, of a ſphere*, is that which divides the ſphere into two unequal parts, and has its center in the axis of the ſphere, but not in the center thereof.

Theſe are uſually denominated from the great *circles* they are parallel to; as, *parallels of the equator*, &c.

CIRCLES *of altitude*, otherwiſe called *almucantars*, are *circles* parallel to the horizon, having their common pole in the zenith, and ſtill diminiſhing as they approach the zenith. They have their names from their uſe; which is to ſhew the altitude of a ſtar above the horizon.

Some have ſuſpected a variation in the apparent ſolſtitial *altitudes* of the ſun. Something of this kind was perceived by M. Caſſini in 1655, by means of the great gnomon in the church of St. Petronius at Bologna; which was further confirmed by other obſervations at the royal obſervatory at Paris. The variation obſerved by M. Caſſini during the courſe of twenty-two years, only amounted to a few ſeconds. And by comparing the obſervation made by Pytheas at Marſeilles three hundred years before Chriſt, with another made by Caſſini in 1672 at the ſame place, it appears, that in two thouſand years time, this difference of *altitude* has only amounted to a few minutes. V. Mem. Acad. Scienc. 1693. p. 180. ſeq. See Ecliptic.

The *altitude* of the ſun, it is ſaid, may be found to a few ſeconds, with an inſtrument of three foot radius. But this is rarely found in fact. A French engineer, M. Hauteſeuille, has propoſed a new inſtrument, whereby he pretends to take *altitudes* even to thirds.

To find the ſun's *altitude* by the globe, ſee the article Globe.

Circles *of declination*, are great *circles* interſecting each other in the poles of the world.

Circle *of diſſipation*, in *Optics*. See the article Dissipation.

Circles, *diurnal*, are immoveable *circles*, ſuppoſed to be deſcribed by the ſeveral ſtars, and other points of the heavens, in their diurnal rotation round the earth; or rather, in the rotation of the earth round its axis.

Thus if a right line be conceived to be continued from the center of a ſtar, perpendicular to the axis of the world, as far as the ſurface of the ſphere of the world, it will deſcribe a diurnal *circle* for it, in making one revolution about its axis.

The *diurnal circles* are all unequal: the equator is the greateſt.

Circle *equant*, in the *Ptolemaic Aſtronomy*, is a *circle* deſcribed on the center of the equant.

Its chief uſe is, to find the variation of the firſt inequality.

Circles *of excurſion*, are *circles* parallel to the ecliptic, and at ſuch a diſtance from it, as that the excurſions of the planets towards the poles of the ecliptic, may be included within them; uſually fixed at 10 degrees.

It may here be added, that all the *circles* of the ſphere above deſcribed, are transferred from the heavens to the earth; and thence come to have a place in geography, as well as in aſtronomy: all the points of each *circle* being conceived to be let fall perpendicularly on the ſurface of the terreſtrial globe, and ſo trace out *circles* perfectly ſimilar to them.

Thus, the terreſtrial equator is a line, conceived preciſely under the equinoctial line, which is in the heavens; and ſo of the reſt.

Circles, *horary*, in *Dialling*, are the lines which ſhew the hours on dials; though theſe be not drawn circular, but nearly ſtrait.

Circle, *horary, on the globe*, a brazen circle fixed to the north pole, and furniſhed with an index, ſhewing the difference of meridians, and ſerving for the ſolution of many problems. The uſual poſition of this *circle* prevents the braſs meridian from moving quite round in the horizon; ſo that globes of the common ſort cannot be applied to the ſolution of many problems. Mr. Harris contrived to remedy this inconvenience, by placing two *horary circles* under the meridian, one at each pole: theſe are fixed tight between two braſs collars placed about the axis, but ſo that they may be eaſily turned by the hand when the globe is at reſt; and when the globe is turned, they are carried round with it, the meridian ſerving as an index to mark out the horary diviſion. The globe, thus prepared, will ſerve for ſolving problems in all latitudes, as well as in places near the equator. Philoſophical Tranſanctions abridged, vol. viii. p. 352. See Globe.

Circle *of illumination*, is that imaginary *circle* on the ſurface of the earth, which is formed by a plane paſſing through the center of the earth, ſo that the line which joins the centers of the ſun and earth may be perpendicular to it, and which ſeparates the illuminated hemiſphere of the earth from the dark. This Mr. Keil calls the illuminated diſc of the earth: and all lines paſſing from the ſun to the earth, which are phyſically parallel, are perpendicular to the plane of this *circle*.

Circles *of latitude*, or *ſecondaries of the ecliptic*, are great *circles* perpendicular to the plane of the ecliptic, paſſing through the poles thereof, and through every ſtar and planet.

They are ſo called, becauſe they ſerve to meaſure the latitude of the ſtars, which is nothing but an arch of one of theſe *circles*, intercepted between the ſtar and the ecliptic.

Circles *of longitude*, are ſeveral leſſer *circles*, parallel to the ecliptic; ſtill diminiſhing, in proportion as they recede from it.

On the arches of theſe *circles*, the longitude of the ſtars is reckoned.

Circle *of perpetual apparition*, one of the leſſer *circles*, parallel to the equator; deſcribed by any point of the ſphere touching the northern points of the horizon, and carried about with the diurnal motion.

All the ſtars included within this *circle* never ſet, but are ever viſible above the horizon.

Circle *of perpetual occultation*, is another *circle* at a like diſtance from the equator, deſcribed by the ſouthern point of the horizon; and contains all thoſe ſtars which never appear in our hemiſphere.

The ſtars ſituate between theſe *circles* alternately riſe and ſet at certain times.

Circles, *polar*, are immoveable *circles*, parallel to the equator, and at a diſtance from the poles equal to the greateſt declination of the ecliptic.

That next the northern pole is called the *arctic*; and that next the ſouthern one the *antarctic*.

Circles *of poſition*, are *circles* paſſing through the common interſections of the horizon and meridian, and through any degree of the ecliptic, or the center of any ſtar, or other point in the heavens; uſed for finding out the ſituation or poſition of any ſtar.

They are uſually made ſix in number; and cut the equator into twelve equal parts, which the aſtrologers call the *celeſtial houſes*. Hence ſome call them *circles of the celeſtial houſes*.

Circle, *antarctic*. See Antarctic.
Circle, *arch of a*. See Arch.
Circle, *arctic*. See Arctic.
Circle, *axis of a*. See Axis.
Circle, *center of a*. See Center.
Circle, *eccentric*. See Eccentric.
Circle, *equal*. See Equal.
Circle, *fairy*. See Fairy.
Circle, *right*. See Right.
Circles, *ſecondary*. See Secondary.
Circle, *ſegment of a*. See Segment.
Circles, *vertical*, or *azimuths*. See Vertical, and Azimuth.

Circle, in *Logic*, that fault of an argument that ſuppoſes the principle it ſhould prove, and afterwards proves the principle by the thing it ſeemed to have proved.

Or, a *circle* in logic, called alſo *ſyllogiſtic circle*, is when the ſame terms are proved, *in orbem*, by the ſame terms; and the parts of the ſyllogiſm, alternately, by each other, both directly and indirectly.

Thus the papiſts argue, when they prove the Scriptures to be the word of God by the infallible teſtimony of their church, and the authority of the church by the Scripture.

There are two kinds of *circles*; the one *material*, the other *formal*.

The *formal* is that which in two reciprocal ſyllogiſms begs the medium, which is the next cauſe of the greater extreme. This kind is by no means to be admitted: otherwiſe, the ſame thing becomes both prior and poſterior; the cauſe and effect of itſelf; which is abſurd.

The *material circle*, called alſo *regreſſus*, conſiſts of two ſyllogiſms, the former whereof proves the cauſe by the effect; and the latter the effect by the cauſe: this may be admitted.

Circle, Circulus, is underſtood among the ſchoolmen, of a viciſſitude of generations, ariſing one out of another.

Thus, good concoction cauſes a good habit of body; a good habit of body produces ſtrength and vigour; theſe occaſion frequent exerciſes; and theſe a good concoction.

It is a celebrated dogma of the Scotiſts, "There is no "*circle* in cauſes of the ſame order, or kind."

Circles *of the empire*, are ſuch provinces, and principalities of the empire, as have a right to be preſent at Diets.

The diviſion of the empire into ſix *circles* was eſtabliſhed by Maximilian I. in 1500, at Augſburg: twelve years afterwards he divided it afreſh, into ten *circles*; which partition was confirmed by Charles V. at the diet of Nuremberg, in 1522.

Though the order of theſe *circles* has never been well regulated; yet, in the imperial matricula, it is as follows: the *circle* of Auſtria, that of Burgundy, of the Lower Rhine, of Bavaria, Upper Saxony, Franconia, Suabia, Upper Rhine, Weſtphalia, and the Lower Saxony.

CIRCOLO *mezzo*, in the *Italian Muſic*, is a diminution of four quavers or ſemiquavers, or notes of equal value, which repreſent a ſemicircle proceeding by conjoint degrees.

CIRCUIT, or **Circuity**, in *Law*, a longer courſe of proceeding, to recover the thing ſued for, than is needful.

Thus, if a man grant a rent-charge of 10*l*. out of his manor, and after, the grantee diſſeiſeth the grantor of the ſame manor, who brings an ASSISE, and recovers the land, and 20*l*. damages; which being paid, the grantee brings his action for 10*l*. of his rent, due during the time of the diſſeiſin, and which he muſt have had, if no diſſeiſin had been: this is called *circuit of action*; becauſe, whereas the grantor was to receive 20*l*. damages, and to pay 10*l*. rent, he might have received but 10*l*. for damages, and the grantee have kept the other.

Circuit is alſo the journey, or progreſs the JUDGES take, twice every year, through the ſeveral counties of England and Wales, to hold courts, and adminiſter juſtice, where recourſe cannot ſo well be had to the king's courts at Weſtminſter.

Theſe were firſt eſtabliſhed, with ſome little difference, by Henry II. and afterwards expreſly ordained by *Magna Charta*.

England is divided into ſix *circuits*; viz. the Home *circuit*, Norfolk *circuit*, Midland *circuit*, Oxford *circuit*, Weſtern *circuit*, and Northern *circuit*. Two judges are appointed to each *circuit*. In Wales there are two *circuits*, North and South Wales.

There are three *circuits* in Scotland, viz. South, Weſt, and North, which the *lords of juſticiary* go twice a year, viz. in May and October. See JUSTICIARY.

Circuit, *electrical*, denotes the courſe of the electric fluid from the *charged* ſurface of an electric body, to the oppoſite ſurface into which the diſcharge is made. Some of the firſt electricians apprehended, that the ſame particles of the electric fluid, which were thrown on one ſide of the charged glaſs, actually made the whole *circuit* of the intervening conductors, and arrived at the oppoſite ſide: whereas Dr. Franklin's theory only requires, that the redundancy of electric matter on the charged ſurface ſhould paſs into the bodies, which form that part of the *circuit* which is contiguous to it, driving forward that part of the fluid which they naturally poſſeſs, and that the deficiency of the exhauſted ſurface ſhould be ſupplied by the neighbouring conductors, which form the laſt part of the *circuit*. On this ſuppoſition, a vibrating motion is ſucceſſively communicated through the whole length of the *circuit*. This *circuit* is always formed of the beſt conductors, let the length of it be ever ſo great. Many attempts were made, both in France and England, at an early period in the hiſtory of electricity, to aſcertain the diſtance to which the electric ſhock might be carried, and the velocity of its motion. The French philoſophers, at different times, made it to paſs through a *circuit* of 900 toiſes, and of 2000 toiſes, or about two Engliſh miles and a half; and they diſcharged the Leyden phial through a baſon of water, the ſurface of which was about an acre. And M. Monnier found, that, in paſſing through an iron wire of 950 toiſes in length, it did not ſpend a quarter of a ſecond; and that its motion was inſtantaneous through a wire of 1319 feet. In 1747, Dr. Watſon, and other Engliſh philoſophers, after many experiments of a ſimilar kind, conveyed the electric matter through a *circuit* of four miles; and they concluded from this and another trial, that its velocity is inſtantaneous. Prieſtley's Hiſt. of Electricity, vol. i. ſect. 2. p. 128. 8vo. ed. 1775. See ELECTRICAL *ſhock*.

CIRCUITORES. See AGONISTICI.

CIRCULAR, any thing that is deſcribed, or moved in a round; as the circumference of a CIRCLE, or the ſurface of a globe.

The *circular* form is of all others the beſt diſpoſed for motion; and the moſt capacious.

The modern aſtronomers ſhew, that the heavenly bodies do not move in *circular*, but in elliptic ORBITS. See PLANET, &c.

Circular *arches*. See ARCH.

Circular *letter*, a letter directed to ſeveral perſons, who have the ſame intereſt in ſome common affair; as in the convocation of aſſemblies, &c.

Circular *lines*, an appellation given by ſome to ſuch ſtrait lines as are divided from the diviſions made in the arch of a circle. Such are SINES, TANGENTS, SECANTS, &c.

Circular *numbers*, are ſuch whoſe powers end in the roots themſelves; whoſe ſquare is 25, and cube 125. See NUMBER.

Circular *parts*, *Neper's*, are the complements of the two oblique angles of a right angled ſpherical triangle, the complement of the hypothenuſe, and the two legs, by having any two of which the third is known. See TRIANGLE and TRIGONOMETRY.

Circular *ſailing*, is that performed in the arch of a great circle.

Circular ſailing, of all others, goes the neareſt or ſhorteſt way; and yet there are ſuch advantages in SAILING by rhumbs, that this latter is generally preferred.

Circular *ſpots* are made on pieces of metal by large electrical exploſions. See experiments and obſervations upon them, in Dr. Prieſtley's Hiſt. of Electricity, vol. ii. ſect. 9. ed. 8vo. and Phil. Tranſ. vol. lviii. p. 68.

Theſe beautiful ſpots produced by the moderate charge of a large BATTERY, diſcharged between two ſmooth ſurfaces of metals, or ſemi-metals, lying at a ſmall diſtance from each other, conſiſt of one central ſpot, and ſeveral concentric circles, which are more or leſs diſtinct, and more or fewer in number, as the metal upon which they are marked is more eaſy or difficult of fuſion, and as a greater or leſs force is employed. They are compoſed of dots or cavities, which indicate a real fuſion. If the exploſion of a battery, iſſuing from a pointed body, be repeatedly taken on the plain ſurface of a piece of metal near the point, or be received from the ſurface on a point, the metal will be marked with a ſpot, conſiſting of all the priſmatic colours diſpoſed in circles, and formed by ſcales of the metal ſeparated by the force of the exploſion. See COLOURS.

Circular *winding ſtairs*. See STAIRS.

Circular *ſegment*, *reſiſtance of a*. See RESISTANCE.

Circular *velocity*, a term in *Aſtronomy*, ſignifying that velocity of a planet, or revolving body, which is meaſured by the arch of a circle: as ſuppoſe by AB (*Tab. Aſtronomy*, *fig*. 10.) deſcribed on the center of attraction S.

The *circular velocity* of a body moving from B to C, is meaſured by the arch BC.

CIRCULATING *Decimals*. See REPETEND.

CIRCULATION, the act of moving round, or in a *circle*. We ſay, the *circulation* of the blood; the *circulation* of the ſap; of the ſpirits, &c.

As in the great world we find a perpetual and orderly *circulation* of waters, conveyed from the ſea by ſubterraneous paſſages, ſprings, &c. and returned thither again by rivers, &c. ſo in the little world, man, a like circuit is obſerved; the blood being continually driven from the heart, by the arteries, to all parts of the body; and brought back again to the heart by the veins.

Circulation *of the blood*. See BLOOD.

Circulation *of the ſap* is a natural motion of the nutritious juice of plants, ſuppoſed to be conveyed from the root to the extreme parts, and thence back again to the root.

The experiments of ſeveral naturaliſts and gardeners, ſeem to prove a *circulation* in the body of plants, by veins and arteries, analogous to that in animals.

M. Perrault ſtarted the *circulation* of the ſap in France, and propoſed it, in 1667, to the Royal Academy; though M. Major, a phyſician of Hamburgh, had publiſhed it, unknown to M. Perrault, two years before. A year and a half afterwards, M. Mariotte propoſed the ſame to the academy as a new thing; not knowing that M. Perrault had been before-hand with him: and the great Malpighi appears to have entertained the ſame thought about the ſame time.

The opinion, however, was not univerſally received: ſome of the ableſt botaniſts, and particularly M. Dodart, proteſted openly againſt it.

That author allows of a juice mounting from the root to the extremities of the branches; and of another deſcending from thoſe extremities to the root: the firſt imbibed from the ſoil, and digeſted in the root, for the nouriſhment of the plant; the ſecond received, from the moiſt parts of the air, at the extremities of the branches. The riſing and deſcending juices, therefore, according to him, are not the ſame; or that which riſes, never deſcends, and reciprocally; i. e. there is no *circulation*.

Dr. Tong, in the Philoſophical Tranſactions, maintains, that the ſap always riſes, and never properly deſcends; having only a ſubſiding, or recidivation, which he can by no means call a *circulation*.

Mr. Switzer owns himſelf at a loſs for the method wherein a *circulation* ſhould be effected; as well as for the parity of reaſon commonly urged for a *circulation* of the ſap, and of the blood. In animals, he obſerves, the degree of growth, or extenſion, is but very ſmall: ſo that the blood, not being employed in any other ſervice, may be eaſily ſuppoſed to circulate: but trees growing to an unlimited tallneſs, it is probable, the great effort of nature is employed in extending them that way; and that the nutritious juice only aſcends. He adds, that, as to the ſwelling or extenſion of trees in bulk, it evidently ariſes from the effuſion of the ſap from the heart of the tree through the pores; which dilates the whole inſenſibly, by accumulating circle on circle; which are annual gradations eaſily obſerved upon cutting a branch, or trunk, acroſs.

On the other hand, it is urged in favour of a *circulation*, that the ſame experiments of ligature, and inciſion, which evince a *circulation* in animals, have been made in plants; particularly in ſuch as abound in ſap; as the ſpurges, &c. and with the ſame ſucceſs: the part between the ligature and the root ſwelling very conſiderably, and the other much leſs.

The ligatures are to be made with metalline rings. Dr. Liſter gives us an inſtance, in the cataputia minor, where the ligature being only a ſilken thread, tied as hard as poſſible without breaking the ſkin; no greater ſwelling aroſe on one ſide the ligature than on the other.

Mr. Lawrence gives us a demonſtration of the *circulation* of the ſap, from an experiment on the yellow-ſtriped jeſſamine.—Upon a branch of a plain jeſſamine, whoſe ſtem ſpreads itſelf in two or three branches, inoculate a bud of the yellow-ſtriped jeſſamine, as in autumn: as the tree comes to ſhoot, the following ſummer, ſome of the leaves will be found tinged here and there with yellow, and this even on the branches not inoculated; till, by degrees, the whole tree, even the very wood of the young branches, will be all variegated, or ſtriped with green and yellow.

Mr. Fairchild confirms this experiment, by a ſimilar one of his own: having inoculated a yellow-ſpotted jeſſamine-tree, into another jeſſamine-tree, he found, that though the bough did not take, yet, in a fortnight's time, yellow ſpots began to appear on a ſhoot which came out of the ground from another part of the plant. But this only proves the receſs of the ſap, as Dr. Hales obſerved.

Blair is of opinion, that there are certain parts of plants which have their peculiar juices, and maintain a *circulation* in themſelves, independent of the reſt of the plant. The fleſhy and thick roots of ſome plants, and the fruits of others, are of this number of peculiar parts. This is analogous to what we ſee in ſome parts of animal bodies alſo. On this ſcheme, the bark, the wood, and the pith of a tree, may be compared to the bones, the ſkin, and the marrow of animals: while the nouriſhment is ſent in abundance to one part of theſe, it is allowed more ſparingly to the reſt. Thus while a young tree ſhoots out its tender boughs in ſpring, the juice aſcends upward to them from the root; but when theſe have acquired their due length, the motion of the ſap is determined upward with leſs violence, and the bark and wood are nouriſhed and increaſed by it. This is the reaſon why in ſpring trees grow in height, and in autumn increaſe in thickneſs.

As to the manner of the *circulation*, Malpighi, Grew, &c. by means of microſcopes, have diſcovered, that the wood of plants conſiſts of fine capillary tubes, which run parallel from the root, through the trunk, and may be looked on as arteries; and on the outſide of theſe, betwixt the wood and the inner bark, are other large tubes, to do the office of veins.

Now, the root having imbibed a ſtock of juice from the earth, that juice will be put in motion by the heat; that is, it will be rarefied, and made to aſcend in form of a ſteam, or vapour: meeting, therefore, with the open mouths of the arterial veſſels, it will paſs through the ſame to the top and extreme parts of the tree, with a force anſwerable to the heat by which it is put in motion: when it is there arrived, meeting with the cold of the external air, it is condenſed into a liquor; and in that form returns, by its own weight, towards the root of the venal veſſels above mentioned.

The ingenious Dr. Hales has clearly ſhewn, by a variety of experiments and obſervations, that there is no *circulation* in vegetables analogous to that of the blood in animals. The motion of the ſap is ſolely occaſioned by the ſtrong attraction of the capillary ſap-veſſels, aſſiſted by the vibrations reſulting from the warmth of the ſun; in conſequence of which the ſap is carried up to the top of the talleſt trees, and perſpired off through the leaves. The aſcent of the ſap is principally promoted by the plentiful perſpiration of the leaves; and this power, he obſerves, does not ſeem well adapted to make the ſap deſcend from the tops of vegetables, by different veſſels, to the root. He allows, indeed, that the ſap has an alternate, progreſſive, and receding motion, occaſioned by the interchanges of day and night, warmth and cold, moiſture and dryneſs. That the ſap does not deſcend between the bark and wood, he concludes from the experiment of taking off the bark of a tree, about three or four inches in breadth quite round; the conſequence of which will be that the bleeding of the tree above this part will much abate; whereas it ought to have the contrary effect, by intercepting the courſe of the refluent ſap, if it deſcended by the bark. But this experiment confirms the opinion which he has adopted, that the ſap aſcends between the bark and the wood, by the vigorous operation of the perſpiring leaves, and attracting capillaries. It is likewiſe alleged, that ſea-plants have no longitudinal capillary ſap-veſſels, but that their whole ſubſtance is compoſed of veſicles, receiving their nouriſhment immediately from the ſurrounding water: ſo that *circulation* is not neceſſary in order to vegetation. M. Muſtel has farther confirmed this opinion. Having placed ſeveral ſhrubs in pots near the windows of his hot-houſe, ſome within, and ſome on the outſide, he contrived to convey a ſingle branch of each through holes in the glaſs; thoſe whoſe trunks were in the open air had a branch in the hot-houſe, and thoſe within the houſe had a branch expoſed to the open air. The conſequence of this diſpoſition was, that the branches within the hot-houſe very ſoon began to diſcloſe their buds, and to put forth leaves, ſhoots, and flowers. Some of the external branches were killed by the intenſe cold; nor was there viſible the leaſt ſign of vegetation: and yet the branches within the houſe were not in the leaſt affected by the chilled ſtate of their trunks. Thoſe trees, on the contrary, that were within the houſe vegetated, and their branches were covered with leaves and flowers, whilſt the ſingle branch that was conveyed to the outſide was in the ſame ſtate with thoſe that grew abroad, and derived no advantage from the heat to which the trunks and other branches were expoſed. From theſe curious and deciſive experiments, M. Muſtel infers, that there is no regular or general *circulation* of the ſap in trees between the trunk and the branches; and that each part of a tree is furniſhed with a quantity of ſap, independent of any ſupply from the trunk or other branches, ſufficient to effect the firſt production of buds, flowers, and fruits, provided that the juices are put into motion by heat. See on this ſubject Hales's Statical Eſſays, vol. i. chap. 4. and vol. ii. Appendix, Obſervation 7. and Phil. Tranſ. vol. lxiii. part 1. art. 15. p. 126. et ſeq. See PERSPIRATION, PLANTS, and VEGETATION.

CIRCULATION *of the ſpirits*, or *nervous juice*. That the ſpirits circulate, is evinced, in the ſame manner as ſome authors chooſe to prove the *circulation* of the blood, viz. that as the heart drives out, every hour, three or four thouſand ounces of blood; whereas, ordinarily, there is not above two thouſand in the whole body; there is a neceſſity for the blood, driven out, to return to the heart, in order to ſupply a fund to be expelled.

In like manner it is ſhewn, that there is formed, each hour, a large quantity of ſpirits, which are nothing but the more ſubtil parts of this blood driven out from the heart; whence it is inferred, that theſe too muſt circulate.

The courſe they are ſuppoſed to take, is this. The moſt ſubtil parts of the arterial blood, being carried from the heart to the brain by the carotid arteries, are thrown violently into the fine net-work wherewith the bottom of the ventricles of the brain is lined; whence the more delicate parts are driven into the mouths of the choroid arteries, where they continue their rapid motion, and diſcharge themſelves at the pores where thoſe veſſels terminate around the pineal gland.

Hence they enter that gland, and there form a conſtant ſpring of ſpirits; which, being here purified, enter the cavities of the brain; and inſinuating into the pores of its ſubſtance, flow into the lymphatics; whence they are carried to the heart by two ways: thoſe from the upper parts by the ſubclavian veins, and the adjacent veſſels; thoſe from the lower, being diſcharged into Pecquet's reſervoir, proceed by the thoracic duct; and at laſt, by the deſcending veins, to the heart; whence they begin their courſe afreſh. See ANIMAL *ſpirits*.

CIRCULATION, *ſubterranean*. Dr. Plott is one of the many authors who have argued for a ſubterranean *circulation* of water, by means of which many ſprings and rivers are ſupplied with that water which they give again to the ſea. It is probable, indeed, that many of the ſmaller ſprings are ſupplied by rains, only where the country and ſituation are favourable: but the larger rivers, and the ſprings which ſupply them, muſt have their origin from ſuch a ſubterranean *circulation*, ſince all the water that falls in a year in the whole earth, is not one five hundredth part the quantity of that diſcharged into the ſea at the mouths of rivers, as appears by careful and moderate calculations. There are ſome ſprings which ebb and flow with the ſea: theſe cannot be doubted as to their origin, which is evidently from that body of water whoſe motions they are influenced by. Nor is the caſe much leſs clear in regard to thoſe lakes which have ſalt water and ſea-fiſh in them, and yet have no communication with any ſea by any known cut or paſſage.

The number of ſhell-fiſh and parts of ſea-animals dug up in ſeveral places, at great depths within land, are alſo urged by ſome as proofs of ſuch ſubterranean paſſages of the ſea-water; but theſe are too univerſally diſtributed through the ſtrata of the earth, to have been brought in this manner, and are therefore rather ſuppoſed to be owing to the great change made in the earth by the flood *in the days of* Noah. See VAPOUR, &c.

CIRCULATION, in *Chemiſtry*, is an operation whereby the ſame vapour, raiſed by fire, falls back, to be returned and diſtilled ſeveral times, and thus reduced into its moſt ſubtil parts.

Circulation is performed by diſpoſing the liquor in a ſingle veſſel, ſtopped at top, called a *pelican*; or in a double veſſel, conſiſting of two pieces, luted on each other; the lower to contain the liquor, and its vapours.

It is performed either by the heat of a lamp, or that of aſhes, or of ſand moderately hot, or in dung, or by the ſun. It uſually demands a continued heat of ſeveral days, ſometimes of ſeveral weeks, or even ſeveral months. By *circulation*, the fineſt part of the fluid mounts to the top of the veſſel; and, finding no iſſue there, falls back again, and rejoins the matter left behind at the bottom, whence it aroſe: and thus, by continuing to riſe and fall, alternately, in the veſſel, there is effected a kind of *circulation*, or remixtion, of the ſpirituous parts with the groſs ones; whereby the former are rendered finer, and more ſubtil, and are better diſpoſed to exert their activity, when ſeparated from the latter.

CIRCULATORY, CIRCULATORIUM, in *Chemiſtry*, the veſſel wherein a fluid is put, to undergo the proceſs of CIRCULATION.

There are two kinds of *circulatories*; the *diota*, or DOUBLE *veſſel*; and the PELICAN.

CIRCULUS, in *Geometry*, *Logic*, &c. See CIRCLE.

CIRCULUS, among *Chemiſts*, is a round iron inſtrument, uſed in cutting off the necks of glaſs veſſels; which they effect thus. The inſtrument, being heated, is applied to the glaſs veſſel, and there kept till the latter grow hot: then, by a few drops of cold water, or a cold blaſt thereon, it flies evenly and regularly off. Thus they cut off the necks of retorts, or cucurbits.

There is another method of doing the ſame; viz. by tying a thread, firſt dipped in oil of turpentine, round the place where the ſection is to be; and then ſetting fire to the thread.

This done, ſome cold water being ſprinkled on the place, the glaſs will be cracked through preciſely where the thread was tied.

CIRCUMAGENTES *muſculi*, in *Anatomy*. See OBLIQUI.

CIRCUMAGENTIUM *femoris primus*, in *Anatomy*, a name given by Spigelius, and ſome others, to a muſcle of the thigh, called by Riolan, and ſome others, the *iliacus externus*, but more generally, from its ſhape, the *pyriformis*, and *pyramidalis*.

CIRCUMAMBIENT, an epithet denoting a thing to inveſt, or encompaſs, another round.

We ſay, the ambient, or *circumambient* air, &c.

CIRCUMCELLIONES, in *Church Hiſtory*, a ſet of illiterate ſavage peaſants, and deſperate ruffians, who adhered to the party of the DONATISTS towards the end of the fourth century. They aſſumed the title of vindicators of juſtice, and protectors of the oppreſſed, and maintained their cauſe by force of arms, and filled the whole province of Africa with ſlaughter and rapine. Conſtantine the Great, in order to quiet the tumults which they occaſioned, aboliſhed the laws that had been enacted againſt the Donatiſts; however, after his death, their aſſaſſinations and maſſacres were renewed, till they were defeated by Macarius at the battle of Bagnia. Many of this frantic mob were afterwards treated with great ſeverity, and the Donatiſts ſhared their ſufferings.

CIRCUMCISION, the act of cutting off the prepuce; or a ceremony, in the Jewiſh and Mahometan religions, wherein they cut away the fore-ſkin of the males who are to profeſs the one, or the other law.

Circumciſion commenced in the time of Abraham; and was, as it were, the ſeal of a covenant ſtipulated between God and him: it was in the year of the world 2178, that Abraham, by divine appointment, *circumciſed* himſelf, and all the males of his family: from which time it became an hereditary practice among his deſcendants.

The ceremony, however, was not confined to the Jews: Herodotus and Philo Judæus obſerve, that it obtained alſo among the Egyptians and Ethiopians. Herodotus ſays, that the cuſtom was very ancient among each people; ſo that there was no determining which of them borrowed it from the other. The ſame hiſtorian relates, that the inhabitants of Colchis alſo uſed *circumciſion*; whence he concludes, that they were originally Egyptians. He adds, that the Phœnicians and Syrians were likewiſe *circumciſed*; but that they borrowed the practice from the Egyptians. And, laſtly, that a little before the time when he wrote, *circumciſion* had paſſed from Colchis, to the people inhabiting near Thermodoon and Parthenius.

Marſham is of opinion, that the Hebrews borrowed *circumciſion* from the Egyptians; and that God was not the firſt author thereof: citing Diodorus Siculus, and Herodotus, as evidences on his ſide. This latter propoſition ſeems directly contrary to the teſtimony of Moſes; who aſſures, Gen. xvii. that Abraham, though ninety-nine years of age, was not *circumciſed* till he had the expreſs command of God for it: but as to the former poſition of Marſham, it will admit of more debate. The arguments, on both ſides, may be ſeen, in one view, in Spencer de Legibus Hebræor. lib. ii. cap. 4.

Be this as it will, it is certain, the practice of *circumciſion*, among the Hebrews, differed very conſiderably from that of the Egyptians. Among the firſt, it was a ceremony of religion, and was performed on the eighth day after the birth of the child; among the latter, it was a point of mere decency and cleanlineſs; and, as ſome will have it, of phyſical neceſſity; and was not performed till the thirteenth year; and then on girls, as well as boys.

Among the Jews, *circumciſion* was performed with a knife of ſtone. They ſet aſide the practice of *circumciſion*, during the forty years of their paſſage through the wilderneſs; becauſe *circumciſion* being intended as a mark of diſtinction between the Jews and the Gentiles, it was unneceſſary to make any mark at all, in a place wherein there was nobody to mix with them. M. Fleury obſerves, that the Jews were not unanimous as to the neceſſity of *circumciſion*; ſome holding it an eſſential, others only as a circumſtance.

The Turks, before the operation of *circumciſion*, ſqueeze the ſkin with little pincers, to deaden the ſenſation; they then cut it off with a razor, and apply a certain powder, which heals the wound, and takes off the pain. They never *circumciſe* till the ſeventh or eighth year; as having no notion of its being neceſſary to ſalvation.

The Perſians *circumciſe* their boys at thirteen years, and their girls from nine to fifteen. Thoſe of Madagaſcar cut off the fleſh at three ſeveral times; and the moſt zealous of the relations preſent catches hold of the preputium, and ſwallows it.

Herrera tells us, there is a kind of *circumciſion* among the Mexicans, though they are very far both from Judaiſm and Mahometaniſm: they cut off the foreſkin of the virile member, and the ears, as ſoon as the child is born, with great ceremony.

There is a kind of *circumciſion* practiſed at Otaheite, one of the newly diſcovered iſlands in the South Seas. The operation is performed by a prieſt, and conſiſts in ſlitting the prepuce through the upper part, to prevent its contracting over the glans. The practice ſeems to have taken its riſe from motives of cleanlineſs. Hawkeſworth's Voyages, vol. ii. p. 241.

Circumciſion is alſo practiſed on women, by cutting off the fore-ſkin of the clytoris, which bears a near reſemblance and analogy to the preputium of the male penis. Strabo ſays, the Egyptian women were circumciſed; Belon ſays the ſame of the Cophtæ; and P. Jovius and Munſter of the ſubjects of Preſter John.

Among the Jews, the father is obliged to have his ſon circumciſed on the eighth day; it may not be ſooner: but the child's weakneſs may allow of its being deferred longer. There is a godfather to hold the child, and a godmother to carry it from the houſe to the ſynagogue, and to preſent it there. He who circumciſes is called, in Hebrew, ***Mohel:*** any perſon is choſen for the purpoſe indifferently; provided he be but capable of the function; which, among the Jews, is a title of great merit. The manner of the ceremony, as related by Leo De Modena, is as follows.—Two ſeats are prepared, in the morning, with ſilken cuſhions; one for the godfather who holds the child; the other, as they ſay, for the prophet Elias, whom they ſuppoſe to aſſiſt inviſibly. The perſon who is to circumciſe, brings the neceſſary utenſils; the razor, ſtyptic, linen, fillet, and oil of roſes; to which ſome add a ſhell full of ſand, to put the preputium in. A pſalm is ſung till the godmother brings the child, attended with a crowd of women, and delivers it to the godfather; none of them entering the door: the godfather, being ſeated, ſets the child on his lap; then the *circumciſer*, taking the razor, and preparing the child for the operation, ſays, *Bleſſed be thou, O Lord, who has injoined us circumciſion*; and in ſo ſaying, cuts off the thick ſkin of the preputium, and with his finger-nails tears off another finer ſkin remaining; ſucking the blood two or three times, as it breaks out, and ſpitting it out into a glaſs full of wine: then he lays dragons-blood on the wound, with powder of coral, and other things, to ſtanch the blood; and, laſtly, a compreſs of oil of roſes; and thus binds up the whole: this done, he takes a glaſs of wine, and, bleſſing it, adds another benediction for the child, and impoſes the name.

The manner of circumciſing among the Turks, differs from that of the Jews: for the former, after they have cut off the ſkin, meddle no further; but the laſt tear off the edge of the remaining ſkin in ſeveral places with their thumb-nails; which is the reaſon why the circumciſed Jews are cured much ſooner than the Turks.

Thoſe among the Jews who perform the operation of *circumciſion*, are diſtinguiſhed by the length of their thumb-nails.

Circumciſion is alſo uſed medicinally, when the prepuce is affected with a gangrene, and becomes black.

CIRCUMCISION is alſo the name of a feaſt celebrated on the firſt of January, in commemoration of the *circumciſion* of our Saviour.

This day was anciently kept a faſt, in oppoſition to the pagan ſuperſtitions, who feaſted on it in honour of the god Janus.

CIRCUMFERENCE, in *Geometry*, the curve line that incloſes a CIRCLE, or circular ſpace; called alſo the PERIPHERY.

The word is formed from *circum*, *about*; and *fero*, *I carry*.

All lines drawn from the center of a circle to the *circumference*, called *radii*, are equal.

Any part of the *circumference* is called an *arch*; and a right line drawn from one extreme of the arch to the other, a *chord*.

The *circumference* of every circle is ſuppoſed to be divided into 360 equal parts, which are called *degrees*.

The angle at the *circumference* is double that at the center.

The *circumferences* of circles are to each other as their radii.

And, ſince the *circumference* of one circle is to its radius, as that of any other circle to its radius; the ratio of the *circumference* to the radius is the ſame in all circles. See DIAMETER.

CIRCUMFERENTOR, an inſtrument uſed in *ſurveying*, to take angles by.

The *circumferentor* is very ſimple, yet expeditious in the practice. It conſiſts of a braſs circle and an index, all of a piece.—See its figure in *Tab. Surveying*, *fig.* 7.

On the circle is a card, or compaſs, divided into 360 degrees; the meridian line whereof anſwers to the middle of the breadth of the index: on the limb, or circumference, of the circle, is ſoldered a braſs ring; which, with another fitted with a glaſs, make a kind of box for the needle; which is ſuſpended on a pivot in the center of the circle: to each extreme of the index is fitted a ſight. The whole is mounted on a ſtaff, with a ball and ſocket, for the conveniency of its motion.

To take an angle by the CIRCUMFERENTOR. Suppoſe the angle required EKG *(Tab. Surveying, fig. 6.)*: place the inſtrument, v. g. at K, with the flower-de-luce in the card towards you; then direct the ſights, till through them you ſpy E; and obſerve what degree is pointed at by the ſouth end of the needle, which ſuppoſe 296: then turn the inſtrument about, the flower-de-luce ſtill towards you, and direct the ſights to G; noting the degree at which the ſouth end of the needle points, which ſuppoſe 182.

This done, ſubtracting the leſſer number 182, from the greater 296, the remainder, 114, is the number of degrees of the angle EKG.

If the remainder happens to be more than 180 degrees, it muſt be again ſubtracted from 360 degrees; the laſt remainder is the quantity of the angle ſought.

To take the plot of a field, wood, park, &c. by the CIRCUMFERENTOR.—Suppoſe ABCDEFGK (*fig.* 8.) an incloſure to be ſurveyed with the *circumferentor*.

1. Placing the inſtrument at A, the flower-de-luce towards you, direct the ſights to B; where ſuppoſe the ſouth end of the needle to cut 191°; and the ditch, wall, or hedge, meaſured with the chain, to contain 10 chains, 75 links; which enter down. See CHAIN.

2. Placing the inſtrument at B, direct the ſights, as before, to C; the ſouth end of the needle, v. g. will cut 279°; and the line BC will contain 6 chains, 83 links, to be noted as before: then move the inſtrument to C; turn the ſights to D, and meaſure CD, as before.

In the ſame manner proceed to D, E, F, G, H, and, laſtly, to K; ſtill noting down the degrees of every bearing, or angle, and the diſtances of every ſide.

Having thus gone round the field, you will have a table in the following form:

Stations.	Degrees.	Min.	Chains.	Links.
A	191	00	10	75
B	279	00	6	83
C	216	30	7	82
&c.				

From this table, the field is to be plotted, or protracted; for the manner whereof, ſee PLOTTING, and PROTRACTOR.

Note, Where ſecurity is to be conſulted, rather than diſpatch, it may be convenient to take back-ſights; i. e. to place the inſtrument ſo, at each ſtation, as that, looking backwards through the ſights to the laſt ſtation, the north end of the needle may point to the ſame degree as the ſouth end did, in looking forwards from the laſt ſtation to this: both which inſtruments are uſed, on occaſion, as *circumferentors*.

CIRCUMFLEX, in *Grammar*, an accent, ſerving to note, or diſtinguiſh, a ſyllable of an intermediate ſound between acute and grave; and generally ſomewhat long.

The Greeks had three accents; the *acute*, the *grave*, and the *circumflex*; formed thus, ´, `, ˜. In Latin, Engliſh, French, &c. the *circumflex* is made thus ^.

The acute raiſes the voice, and the grave falls, or lowers it: the *circumflex* is a kind of undulation, or wavering of the voice, between the two.

It is ſeldom uſed among the moderns, unleſs to ſhew the omiſſion of a letter which made the ſyllable long and open; a thing much more frequent in the French, than among us: thus they write *pâte*, for *paſte*; *tête*, for *teſte*; *fûmes*, for *fuſmes*, &c. They alſo uſe the *circumflex* in the participles; ſome of their authors writing *conneu*, *peu*, others, *connû*, *pû*, &c. Father Buffier is at a loſs for the reaſon of the *circumflex* on this occaſion.

The form of the Greek *circumflex* was anciently the ſame with that of ours, viz. ^; being a compoſition of the other two accents ^ in one.—But the copiſts, changing the form of the characters, and introducing the running-hand, changed alſo the form of the *circumflex* accent; and inſtead of making a juſt angle, rounded it off, adding a daſh, through too much haſte; and thus formed an *s*, laid horizontally, which produced this figure ˜, inſtead of this ^.

CIRCUMGYRATION, the wheeling motion of any body round a center.

CIRCUMINCESSION, in *Theology*, a term whereby the ſchoolmen uſe to expreſs the exiſtence of three divine perſons in one another, in the myſtery of the Trinity. See PERSON.

The ſchool divines are not the firſt authors of this term; Damaſcenus, in the eighth century, having uſed the word περιχωρησις, which ſignifies the ſame thing, in his explication of that text, *I am in my father, and my father is in me.*

CIRCUMLOCUTION, an ambages, or tour of words, uſed either when a proper term is not at hand, to expreſs a thing naturally and immediately by; or when one chooſes not to do it, out of reſpect, or for ſome other reaſon.

The word comes from *circumloquor*, *I ſpeak about.*

CIRCUMLOCUTION, in *Oratory*, is the avoiding of ſomething diſagreeable, or inconvenient, to be expreſſed in direct terms; by intimating the ſenſe thereof in a kind of paraphraſe, ſo conceived as to ſoften, or break, the force thereof.

Thus Cicero, unable to deny that Clodius was ſlain by Milo, owns it, with this *circumlocution*, "Milo's ſervants "being prevented from aſſiſting their maſter, who was "reported to be killed by Clodius; they, in his abſence, "and without his privity, or conſent, did what every "body would expect from their own ſervants on ſuch "an occaſion."

CIRCUM-POLAR *Stars*, are ſuch ſtars as, being pretty near our north-pole, move round it; and in our latitude, never ſet, or go below the horizon.

CIRCUMPOTATIO, in *Antiquity*, a funeral feaſt, provided in honour of the dead.

This was very frequent among the ancient Romans, as well as among the Athenians. Solon, at Athens, and the decemviri at Rome, endeavoured to reform this cuſtom, thinking it abſurd that mirth and drunkenneſs ſhould mingle with ſorrow and grief.

CIRCUMSCRIBED *figure*, in *Geometry*. See CIRCUMSCRIBING.

CIRCUMSCRIBED *hyperbola*, one of the ſecond order, according to Sir Iſaac Newton, which cuts its aſymptotes, and contains the parts cut off within its own ſpace. See HYPERBOLA.

CIRCUMSCRIBING, in *Geometry*, denotes the deſcribing a polygonous figure about a circle, in ſuch manner, as that all its ſides are tangents to the circumference.

The term is ſometimes alſo uſed for the deſcribing of a circle about a polygon; ſo, as that each ſide is a chord. But in this caſe, we more uſually ſay, the polygon is inſcribed, than the circle circumſcribed.

Any regular figure ABCDE, *(Tab. Geometry, fig. 9.)* inſcribed in a circle, is reſolved into equal and ſimilar triangles, by radii drawn from the center of the *circumſcribing* circle F, to the ſeveral angles of the figure; and its area is equal to a rectangled triangle, whoſe baſe is equal to the perimeter of the whole polygon; and its height a perpendicular let fall from the centre F to one ſide AB.

The ſame may be ſaid of the area of the *circumſcribing* polygon *a b c d e* (*fig.* 8.); excepting that the height is to be the radius.

The area of every polygon that can be inſcribed in a circle is leſs, and that of every polygon that can be circumſcribed, greater, than that of the circle: in like manner, the perimeter of the firſt is leſs, and that of the ſecond is greater, than the circumference of the circle.

On this principle Archimedes attempted the quadrature of the circle; which is nothing elſe, in effect, but the meaſuring of the area, or capacity of a circle.

The ſide of a hexagon is equal to the radius of a circumſcribed circle.

To circumſcribe a circle about any given regular polygon, ABCDE (*fig.* 9.); and *vice verſa*. Biſect two of the angles, v. g. A and B; and on the point F, where the two lines of biſection interſect, as on a centre, deſcribe a circle with the radius FA.

To circumſcribe a ſquare about a circle. Draw two diameters, AB and DE (*fig.* 5.), interſecting each other in the centre C, at right angles. From AEBD, with the interval of the radius, make interſections in F, G, H, I. Draw the right lines FG, GH, IH, and IF. Then is FGHI a ſquare circumſcribed about the circle.

To circumſcribe any regular polygon, v. g. a pentagon, about a circle. Biſect the chord AE (*fig.* 8.) by the perpendicular FO, which continue till it cut the arch in *g*. Through A and E, draw the radii AF and EF: and through *g*, draw a line parallel to AE, meeting the radii continued on each ſide in *a* and *e*: and then is *ae* one ſide of the circumſcribed polygon. Produce the radius FB to *b*, till $Fb = a$; and draw *ab*: this is another ſide of the polygon; and in the ſame manner may the reſt of the ſides be drawn.

CIRCUMSPECTE *agatis*, the title of a ſtatute made ann. 13 Edw. I. relating to prohibitions, preſcribing certain caſes to the judges, wherein the king's prohibition lies not.

CIRCUMSTANCES, the incidents of an event, or the particularities that accompany an action.

Divines ſay, the converſion of a ſinner depends on a certain aſſemblage, and a certain management, of external *Circumſtances*, in the midſt whereof he is placed; which arrangement of *Circumſtances* depends on the providence of God: whence converſion alſo depends on him.

The *Circumſtances* of the actions of men, are expreſſed in this Latin verſe:

Quis, quid, ubi, quibus auxiliis, cur, quomodo, quando.

Quis, who, denotes the quality, ſtate, age, &c. of the perſon. *Quid*, what, the greatneſs, ſmallneſs, multitude, fewneſs, &c. of the thing. *Ubi*, where, the place. *Quibus auxiliis*, with what aſſiſtances, the inſtruments, means, &c. *Cur*, why, on what account, with what view. *Quomodo*, how, the quality of the action, as to intention or remiſſneſs, deſignedneſs, or caſualty, ſecrecy, or openneſs. *Quando*, when, the time; as on a holiday, at the hour of prayer, &c.

CIRCUMSTANTIAL *Evidence*, in *Law*, or the *doctrine of preſumption*, takes place next to poſitive proof: circumſtances which either neceſſarily or uſually attend facts of a particular nature, that cannot be demonſtratively evinced are called preſumptions, and are only to be relied on till the contrary be actually proved. See EVIDENCE and PRESUMPTION.

CIRCUMSTANTIBUS, in *Law*, is uſed for the ſupplying, and making up the number of jurors (in caſe any impanelled appear not; or appearing, be challenged by either party), by adding to them ſo many of the perſons preſent, or ſtanding by, as will ſerve the turn. This act of ſupplying is uſually called TALES *de circumſtantibus*.

CIRCUMVALLATION, in *Fortification*, a line or trench, with a parapet, thrown up by the beſiegers, encompaſſing all their camp, to defend it againſt any army that may attempt to relieve the place.

The word is formed from *circum*, *about*; and *vallum*, *wall*. The Romans are thought to have firſt invented lines of *circumvallation* and CONTRAVALLATION at the ſiege of *Veii*.

This line is to be cannon-ſhot diſtant from the place, ordinarily, about twelve feet broad, and ſeven deep. It is bordered with a breaſt-work, and flanked with redoubts, or little forts, erected from ſpace to ſpace. It ſerves both to prevent any ſuccour from being ſent into the place, to keep in deſerters, and to prevent incurſions of the enemy's garriſon.

Care muſt be taken, that the line of *Circumvallation* never paſs by the foot of an eminence; leſt the enemy, ſeizing on the eminence, lodge his cannon, and command the line.

CIRCUMVOLUTIONS, in *Architecture*, the turns of the ſpiral line of the Ionic volute.

The word comes from *circumvolvere*, *to turn around*; and is alſo applied to the turns of a wreathed, or twiſted COLUMN.

CIRCUS, in *Antiquity*, a large building, either round, or oval; uſed for the exhibiting of ſhews to the people.

Some derive the word from *Circe*, to whom Tertullian attributes the invention. Caſſiodorus ſays, *Circus* comes *à circuitu*.—The Romans, Servius obſerves, at firſt, had no other *Circus*, but that made by the Tiber, on one ſide, and a paliſade of naked ſwords on the other. Hence, according to Iſidore, came the term *ludi circenſes*, *quaſi circum enſes*. But Scaliger ridicules that etymology.

The Roman *Circus* was a large oblong edifice, arched at one end; encompaſſed with porticoes, and furniſhed with rows of ſeats, placed aſcending over each other.

In the middle was a kind of foot-bank, or eminence, with obeliſks, ſtatues, and poſts at each end. This ſerved them for the courſes of their *bigæ* and *quadrigæ*.

There were no leſs than ten *Circuſes* at Rome: the largeſt was built by the elder Tarquin, called *Circus Maximus*, between the Aventine and Palatine mounts. It was ſo called, either becauſe of its vaſt circumference, or becauſe the *great* games were celebrated in it, or again, becauſe it was conſecrated to the *great* gods, viz. to Vertumnus, Neptune, Jupiter, Juno, Minerva, and the Dii Penates of Rome. Dionyſius Halicarnaſſenſis ſays that it was three ſtadia and a half in length, and four jugera broad; and theſe meaſures, according to Pliny, allowing to the Roman ſtadia 625 Roman feet, each of which is 12 inches, will give for the length 2187 Roman feet, or ſomewhat more than three Engliſh furlongs; and as to the breadth, allowing for each of the jugera 240 Roman feet, it will be 960 Roman feet. It was beautified and enlarged by the Roman emperors, ſo as to ſeat 250000 ſpectators.

The moſt magnificent *Circuſes* were thoſe of Auguſtus and Nero. There are ſtill ſome remains of the *Circuſes*, at Rome, at Niſmes, and other places.

The Romans were exceſſively fond of the games exhibited in the *Circus*: witneſs that verſe in Juvenal,

——— *Atque duas tantum res anxius optat,*
Panem & Circenſes ———

The Games of the CIRCUS, which ſome call CIRCENSIAN *Games*, were combats celebrated in the *Circus*, in honour of Conſus the god of councils; and thence alſo called *Conſualia*.

They were alſo called *Roman Games*, *Ludi Romani*, either on account of their antiquity, as being coeval with the Roman people, or becauſe eſtabliſhed by the Romans: and the games held there, the great games, *ludi magni*, becauſe celebrated with more expence and magnificence than others; and becauſe held in honour of the great god Neptune, who was their Conſus.

Thoſe who ſay they were inſtituted in honour of the ſun, confound the *pompa circenſis*, or proceſſion of the *Circus*, with the games.

The games of the *Circus* were inſtituted by Evander, and re-eſtabliſhed by Romulus: the pomp, or proceſſion, was only a part of the games, making the prelude thereof; and conſiſting of a ſimple cavalcade of chariots.

Till the time of the elder Tarquin, they were held in an iſland of the Tiber; and were called *Roman Games*: after that prince had built the *Circus*, they took their name therefrom; as being conſtantly held there.

There were ſix kinds of exerciſes in the *Circus*: the firſt was wreſtling, and fighting with ſwords, with ſtaves, and with pikes; the ſecond was racing; the third, ſaltatio, dancing; the fourth, diſci, quoits, arrows, and ceſtus: all which were on foot: the fifth, was horſe-courſing; the ſixth, courſes of chariots, whether with two horſes, or with four.

In this laſt exerciſe, the combatants were at firſt divided into two ſquadrons or quadrils; then into four; each bearing the names of the colours they wore; *factio alba*, *ruſſea*, &c.

At firſt there was only white and red; then green was added, and blue. Domitian added two more colours, but they did not continue.

It was Oenomaus who firſt invented this method of diſtinguiſhing the quadrils by colours. The green was for thoſe who repreſented the earth; the blue for the ſea, &c.

CIRCUS, in *Zoology*, a name by which Bellonius and ſome others have called the MILVUS *æruginoſus*, or moor-BUZZARD.

CIRLUS *ſtultus*, in *Zoology*, the name of a bird of the hortulanus kind, and of the ſize and ſhape of our common *yellow hammer*.

CIRRHOSE *Leaf*, in *Botany*. See LEAF.

CIRRIS, in *Zoology*, the name of a ſmall ſpecies of heron, called by ſome the *ardea hæmatopus*, or the *red-legged* HERON. Its legs and feet are very beautifully red.

CIRRUS, in *Ichthyology*, a name given by authors to certain oblong and ſoft *appendiculæ* hanging from the under jaw of fiſhes, or from other parts about the mouth, in the manner of little worms, and uſually of a cylindric figure, or nearly ſo. Theſe *cirri* are in ſome fiſh hollow at the root; in others they are not ſo: in thoſe which are hollow at the root, the cavity never runs quite thro'. The way of finding it is by introducing a hog's briſtle or a hair into it; but this cannot be forced through to the point, nor can any fluid matter be expreſſed out of them. Theſe *cirri* often afford characters of diſtinction to ſeveral kinds of fiſhes, and differ in the ſeveral ſpecies in regard to number, ſize, and proportion.

The uſe that theſe *cirri* are of to the fiſh, is little more known than that of the antennæ of inſects. If nature had given them only to thoſe fiſhes which had the eyes placed on the upper part of the head, then they might be ſuppoſed to ſerve to diſtinguiſh prey at the bottom, while the eyes were directed to ſuch as offered itſelf nearer the ſurface: but as the ſeveral kinds of fiſhes which have them are of different kinds, and have their eyes in various directions, this uſe cannot be allotted them. It is poſſible they may be of uſe to the fiſh, in giving it the firſt notice of any diſtant motion of the water, which they may perceive by their hanging poſture ſooner than any other part, and thus give notice of the neighbourhood of prey, or of the approach of an enemy.

CIRRUS, in *Antiquity*, an ornament added to the edges and borders of garments, much in the manner of *fimbriæ* or fringes, only that theſe were ſingle, and run along the borders of the dreſs; whereas the *cirri* were knotted together, and hung down from the extremities of the robe

CIRRUS, among *Botaniſts*, expreſſes the little fibres which plants ſend out from their STALKS, and by which they are attached to other bodies.

CIRSIUM. See *gentle* THISTLE.

CIRSOCELE, in *Medicine*, a multitude of varices in the teſticles, which prodigiouſly increaſe their bulk, and hinder the due preparation of the ſeed; ſo as ſometimes to render caſtration neceſſary. This diſorder is otherwiſe called HERNIA *varicoſa*.

The word comes from *κιρσος*, *varix*, *vein*, and *κηλη hernia*.

CIRSOS, in *Medical Writers*, is uſed for VARIX.

CISALPINE, any thing on this ſide the Alps.

The word is formed from the prepoſition *cis*, on this ſide, and *Alpes*; which, though properly confined to the mountains ſeparating Italy and France, yet is uſed by authors for any very high mountains.—Thus, Auſonius ſpeaks of the Alps of the Pyreneans, the Alps of the Apennines, &c.

The Romans divided Gaul, and the country now called Lombardy, into *Ciſalpine* and *Tranſalpine*.

That which was *Ciſalpine* with regard to the Romans, is *Tranſalpine* with regard to us.

CISLEU, the ninth month in the eccleſiaſtical year, and the third in the civil or political year among the Hebrews, containing 30 days: it anſwers to part of our November and December. An annual faſt is obſerved by the Jews to this day on the 18th of this month, in commemoration of the taking of Jeruſalem by Nebuchadnezzar.

CISSAMPELOS, in *Botany*, a genus of the *dioecia monadelphia* claſs: its characters are theſe: it is male and female in different plants; the male flowers have no petals, but a ſingle ſtyle in the centre, which extends beyond the empalement, terminated by a large ſummit having four lobes. The female flowers have four nectariums ſtanding round the oval germen, which is hairy, and after becomes a ſucculent berry encloſing a ſingle ſeed. There are two ſpecies which grow naturally in the warm parts of America.

The firſt ſort is ſuppoſed to be the pareira, whoſe root has been ſo much eſteemed as a diuretic.

CISSITES, in *Natural Hiſtory*, a name given by the ancients to that ſpecies of the flinty *ætites*, or EAGLE-*ſtone*, which is covered with the common white coat of the flints. Pliny mentions it as found principally about Captos, and being externally of a white colour, and rattling when ſhaken.

CISSOID, in *Geometry*, an algebraic CURVE, firſt invented by Diocles; whence it is peculiarly called the *ciſſoid* of Diocles.

The geneſis of the *ciſſoid* may be thus conceived: to the diameter AB (*Tab. Analyſis, fig.* 9.) of the ſemicircle AOB, draw an indefinite line, at right angles, BC: then, draw the right line AH, and make AM = IH; or in the other quadrant, LC = AN. Thus will the points M and L be in a curve line, AMOL; which is the *ciſſoid* of Diocles.

Properties of the CISSOID.—From the geneſis it follows,

1. That drawing the right lines PM and KI, perpendicular to AB; we ſhall have AP : KB :: AM : IH. But AM = IH; conſequently, AP = KB. And therefore, AK = PB; and PN = IK.

2. After the ſame manner, it appears, that the *ciſſoid* AMO biſects the ſemicircle AOB.

3. Again, AK : KI :: KI : KB. That is, AK : PN :: PN : AP. And again, AK : PN :: AP : PM; therefore, PN : AP :: AP : PM. Conſequently, AK, PN, AP, and PM, are four lines in continual proportion. And if PN = v, AP = x, PM = y; $x^2 = vy$. And after the ſame manner it may be ſhewn, that AP, PN, AK, and KL, are in continual proportion.

4. In the *ciſſoid*, the cube of the abciſſe AP is equal to a ſolid ariſing from the ſquare of the ſemiordinate PM, multiplied into the complement of the diameter of the generating circle PB.

Hence, when the point P falls on B, then $x = a$, and BC $= y$; conſequently, $y^2 = \frac{a^3}{0}$. Wherefore, $0 : 1 :: a^3 : y^2$; that is, the value of y becomes infinite: and therefore the *ciſſoid* AMOL, though it continually approach BC, will never meet it.

5. BC, therefore, is an aſymptote of the *ciſſoid*.

The ancients made uſe both of the conchoid and *ciſſoid*, for the finding of two mean continual proportionals between two given right lines.

For the *quadrature*, *ſubnormal*, and *ſubtangent of the* CISSOID: ſee QUADRATURE, SUBTANGENT, &c.

CISSOID *angle*. See ANGLE.

CISSUS. This is properly in the Greek writers the name of the ivy. They write it *κισσος*. But the word *κισθος*, *ciſthus*, when the θ is changed into an σ, by the Cretan and Cyprian dialect, is alſo *κισσος*, *ciſſus*. See CISTUS.

CISSUS, in *Botany*, a genus of the *tetandria monogynia* claſs, with a ſingle-ſeeded berry, and a quadripartite corolla.

CISSYBIUM, in *Antiquity*, a drinking cup, moſt in uſe among country people. It was ſo called, either becauſe it was made of the wood of ivy, or was uſually crowned with its leaves.

CISTERCIANS, an order of religious, reformed from the Benedictines, conſiſting of an hundred monaſteries, and near as many nunneries.

The order took its riſe in 1075, from twenty-one zealous monks in the monaſtery of Moleſme in Burgundy; who, with their abbot Robert, complaining that the rule of St. Benedict was not ſtrictly enough obſerved, obtained permiſſion of Hugh archbiſhop of Lyons, and legate of the holy ſee, to ſettle in a place called *Ciſteaux*, five miles from Dijon.

Here, Eudes duke of Burgundy erected them a houſe, into which they were admitted in 1098; endowing it with a conſiderable revenue. The biſhop of Chalons gave Robert the paſtoral ſtaff, in quality of abbot; and erected the new monaſtery into an abbey.

They were, in about a century after their firſt riſe, diſtinguiſhed by the patronage of St. Bernard, abbot of Clairval, whence they obtained the title of *Bernardin* monks; and in the year 1132, they were exempted from the payment of tythes, and inveſted with other privileges and immunities by Innocent II. In 1152 this order had no fewer than 500 convents, all dedicated to the Bleſſed Virgin. They came into England in the year 1128, and had their firſt houſe at Waverley in Surry. Before their diſſolution they had eighty-five houſes here. Such was the beginning of the *Ciſtercians*, ſo famous in after-times, and now ſo extended throughout all Europe.

CISTERN, is properly uſed for a ſubterraneous reſervoir of rain-water.

The word, according to ſome, comes from *cis*, and *terram*, i. e. *in terram*; others derive it from *ciſta*, *a duct*, &c.

Earthen *ciſterns* muſt be made with good cement, to retain the water. And the bottom ſhould be covered with ſand, to ſweeten and preſerve it.

Authors mention a *ciſtern* at Conſtantinople, the vaults whereof are ſupported by two rows of pillars, 212 in each row; each pillar being two feet in diameter. They are planted circularly, and in radii tending to that in the centre.

Anciently there were *ciſterns* all over the country in Paleſtine. There were ſome likewiſe in cities and private houſes. As the cities for the moſt part were built on mountains, and the rains fell regularly in Judea at two ſeaſons of the year only, in ſpring and autumn, people were obliged to keep water in *ciſterns* in the country, for the uſe of their cattle; and in cities, for the conveniency of the inhabitants. There are *ciſterns* of very large dimenſions to be ſeen ſtill at this day in Paleſtine, ſome whereof are an hundred and fifty paces long, and fifty-four wide. There is one to be ſeen at Ramah of two and thirty paces in length, and eight and twenty in width. Wells and *ciſterns*, fountains and ſprings, are generally confounded in the ſcripture language.

If the farmers of England would fall into the method uſed in Spain, and at Amſterdam, Venice, and other places, of ſaving the rain-water for the whole year, or at leaſt ſo much of it as would be neceſſary, in *ciſterns*, they would have always water for their cattle in the ſummer droughts, and many thouſand acres of land, now left uſeleſs, might be turned to profit.

The beſt way of preſerving the water for the ſervice of the houſe, is in *ciſterns* in the cellars. Theſe may be made with brick or ſtone, joined with plaiſter of Paris, which will keep out the wet very well; or with a kind of mortar made of flaked ſifted lime, with linſeed oil, and tow or cotton. A bed of good ſound clay may be laid at the bottom, and on this the bricks for the floor, and then the walls may be raiſed in the ſame manner, only leaving ſpaces behind them, into which clay is to be rammed in the like manner. Thus it will be a clay *ciſtern*, faced with brick; and the bricks will keep the clay moiſt, and prevent it from cracking, though it be not full of water. This will do in any ſhadowy place, as well as in cellars: and thus may a *ciſtern* be made in a garden, in ſome ſhadowy place, and covered over, which may receive the water running from the walks, and will retain it at hand, for the ſervice of the garden, all the year.

Where there is want of water for the cattle in the fields, the way is to dig a pond in ſome place into which there is a deſcent; then cover the bottom and ſides with a double coat of tough clay, each ſix inches thick, and each very well rammed: then to cover the bottom with large ſtones, which will keep the clay moiſt, and prevents its cracking when not covered with water. But this is a troubleſome thing; for if there happen to be a crack in any part, it is often found neceſſary to go over the whole work again before the pond will hold a drop of water.

Another method of making a pond hold water, is to daub it over with clay and mortar mixed together, and then with mortar alone. This has an advantage over the other way, becauſe if any crack happen, it may be mended by a cement of clean hair and tallow, mixed with ſlacked lime and the yolks of eggs, well beat together. This applied to the crack, will cloſe it ſafely, without the neceſſity of undoing the whole work, as in the other caſe.

In chalky countries it is common to find a low place on the downs, and, digging a hole by way of a pit there, they cover the bottom evenly with the chalk rubbiſh, and when it is wetted by the rain, they ram it well, and afterwards drive cattle into it, and fold ſheep in it: the conſequence of all which trampling is, that the bottom at length becomes ſo firm, that it holds the water perfectly well. By one or other of theſe means, *ciſterns* or reſervoirs may be made in every part of the country: and our farmers, if they would carefully try one or the other of them, as their land moſt required, would not have ſo much to complain of from droughts.

CISTIC. } See { CYSTIC.
CIST-*Hepatic*. } { CYST-*Hepatic*.

CISTIS. See CYSTIS, and HYPOCISTIS.

CISTRUM. See SISTRUM.

CISTULA *Catoptric*. See CATOPTRIC.

CISTUS, the Greeks wrote this word κισθος, and, as the word in the Latin tongue is only the Greek name with a Roman termination, it undoubtedly ought to be ſpelt *ciſthus*, not *ciſtus*. The ancient writers have been ſubject to many miſrepreſentations from the near reſemblance of this word κισθος, *ciſthus*, to κισσος, *ciſſus*: the former being the name of the plant we call *ciſtus*, a ſhrubby herb, with leaves like ſage, and a large flower reſembling a roſe; and the other, the name of the common ivy that climbs upon our walls and trees. Pliny has been deceived by the near reſemblance of the two words, and has given the qualities of ivy to the *ciſtus*, and thoſe of *ciſtus* to the ivy: but he is the more excuſable in this, ſince we find the two names uſed indiſcriminately, tho' certainly by a miſtake of the copyiſts, in the books of Theophraſtus.

CISTUS, in *Botany*. See *Rock* ROSE.

Dwarf CISTUS. See *Dwarf* SUN-*flower*.

Marſh CISTUS. See *Wild* ROSEMARY.

Leſſer marſh CISTUS. See ANDROMEDA.

CITADEL, or CITTADEL, a fort, or place fortified with four, five, or ſix baſtions; built ſometimes in the moſt eminent part of a city, and ſometimes only near the city.

The word is a diminutive of the Italian *citta*, *city*, q. d. little city.

In the firſt caſe, the *citadel* ſerves to defend the city againſt enemies.

In the latter, it ſerves to command it, and to keep the inhabitants in their obedience: for which purpoſe the city is left unfortified on the part toward the *citadel*; but the *citadel* is fortified toward the city.

The moſt uſual form for *citadels* is that of a pentagon: a ſquare being too weak, and a hexagon too large.

There is always a large ESPLANADE between the city and *citadel*.

There are uſually two gates to a *citadel*, one communicating with the town and the other with the country.

The *citadel* ought to be ſo formed and ſituated, that the ditch may either be defended by the faces of the baſtions, or by thoſe of the ravelins, in as direct a manner as poſſible; otherwiſe the enemy may attack the town in that place, as being weakeſt, and likewiſe becauſe the ſame attacks may ſerve to reduce both together. The covert-way of the *citadel* ought to be uninterrupted, ſo that the part next the town may have a free communication with the other.

CITADINESCA, in *Natural Hiſtory*, a name given by ſome writers to the Florentine marble, which is ſuppoſed to repreſent towns, palaces, ruins, rivers, &c. Theſe delineations are merely accidental, and are uſually much aſſiſted by the imagination, though the natural lines of a ſtone may ſometimes luckily enough repreſent the ruins of ſome ancient building, or the courſe of a river. We have in England a kind of ſeptaria, or ludus helmontii, which has ſometimes delineations of this kind conſiderably beautiful, though very irregular. The Florentine marble, as we ſee it wrought up in the ornaments of cabinets, &c. owes a great deal to the ſkill of the workmen, who always pick out the proper pieces from the maſs, and diſpoſe them in the work ſo as to make them repreſent what they pleaſe.

CITATION, in the *Eccleſiaſtical Courts*, a ſummons to appear before an eccleſiaſtical judge, on ſome affair relating to the church.

The word comes from *cito*, of *cieo*, *I ſtir up*.

In the civil and ordinary courts, it is called *ſummoning*.

CITATION is alſo uſed in ſpeaking of military and monaſtic, as well as eccleſiaſtical courts. Such a heretic was *cited* to Rome; to a general council, &c.

Knights are *cited* to the general chapters of their order.

King Edward I. of England, was *cited*, by order of Philip IV. of France, to a court of his peers: the *citation* was publiſhed by the ſeigneur d'Arrablay, ſeneſchal of Perigord and Querci; and was paſted up, by his order, on the gates of the city of Libourne, which then belonged to king Edward. And for default in not appearing all his domains and effects in France were confiſcated.

CITATION is alſo an allegation, or quotation of ſome law, authority, or paſſage.

CITELLUS, in *Zoology*, the name of a ſmall animal of the mouſe kind, which lives in caves and holes of the earth. Its body is of the ſhape of the common weaſels, very long and thin: the tail is very ſhort. Its colour is a pale ſilvery grey, like that of ſome rabbits. It reſembles the mole in its want of external ears; but it has apertures which ſerve it to the ſame purpoſe, in the manner of birds. They live together in communities, great numbers being uſually found in the ſame cave, with a large ſtore of nuts, cheſnuts, and other fruits. Their fleſh is very well taſted, and their ſkin much uſed in cloathing in the cold countries. They are found not only in the very cold climates, but in Bohemia, Auſtria, and Hungary.

CITHARA, an ancient muſical inſtrument, by ſome ſuppoſed the ſame with the *lyra*; or, at leaſt, a particular ſpecies of it; by others different: though its preciſe ſtructure does not appear to be known.

The ancients deſcribe it as being triangular, in form of a Greek delta, Δ: the poets aſcribe the invention of it to Apollo. See CYNIRA.

CITHARA *bijuga*. See THEORBO.

CITHAREXYLON, in *Botany*, *fiddle wood*, a genus of the *didynamia angioſpermia* claſs: its characters are theſe: the flower is of one leaf, funnel ſhaped, and divided at the top into five equal parts. It hath four ſtamina which adhere to the tube, two of them being longer than the other. In the centre is ſituated a roundiſh germen, which afterwards becomes a capſule with two cells, each having a ſingle ſeed. There are two ſpecies, which are natives of the Weſt Indies, and grow to be very large trees, greatly valued for durability in building; whence the French gave them the name of *fidelle* wood, which the Engliſh have rendered *fiddle wood*.

CITHAROEDUS, in *Antiquity*, the ſame with *cithariſta*. The *citharoedi* had the preference of all other muſicians, from whom they were diſtinguiſhed by an embroidered cloak, which was peculiar to them.

CITHARUS, in *Zoology*, the name of a fiſh common in the markets of Rome and Venice, and frequent in the German and Mediterranean ſeas. It is a flat fiſh of the TURBOT kind; but it is covered with large ſcales.

CITIZEN, or CITTIZEN, a native or inhabitant of a city, veſted with the freedom and rights thereof.

The word comes from *civis*; which authors derive from *coeo*, becauſe the *citizens* live together; or rather from *cieo, I call together*.

Auguſtus, upon numbering the Roman *citizens*, found they amounted to upwards of four millions.

To make a good Roman *citizen*, there were three things required: that he was an inhabitant of Rome; that he were inrolled in one of the thirty-five tribes; and that he were capable of dignities.—Thoſe ſtrangers to whom were granted the rights and privileges of Roman *citizens*, were properly only *honorary citizens*.

The ſeventh law, *de incolis*, makes a great deal of difference between a *citizen* and a mere inhabitant. Birth, alone, made a *citizen*; and intitled to all the privileges of burgeſſes: time could not acquire it; but the emperor could beſtow it.

The Romans were anciently ſo particularly careful to preſerve even their common *citizens* from any mixture of ſervile blood, that they prohibited all marriages between them and freed ſlaves, or their children. And it was decreed, as a ſpecial privilege and reward to one Hiſpala, of libertine condition, for her diſcovery of the impieties of the Bacchanalian myſteries, that a *citizen* might take her to wife, without any diſgrace and diminution of his rights. Theſe diſtinctions, indeed, began to be diſregarded towards the end of the republic, with reſpect to the ordinary *citizens*, but were kept up to the laſt, with regard to the ſenate. See SENATOR.

CITIZENS *in parliament*. See BURGESSES.

CITOLE, the name of a muſical inſtrument mentioned by the old Engliſh poet Gower, probably derived from *ciſtella, a little cheſt*, meaning the DULCIMER.

CITRAGO, in *Botany*, a name given by ſome authors to the common garden balm.

CITREÆ *menſæ*, called *thyina* by the Greeks, in *Antiquity*, tables made of the wood of the citrum-tree, very beautiful, and greatly eſteemed by the ancient Romans. See CITRUM.

CITRIL, in *Zoology*, a name given by many to the citrinella, or verzellino, a bird common in Italy, and kept in cages for its beauty and fine notes: called by many authors alſo THRAUPIS.

CITRINE *ſtoechas*, or ELYCHRISIUM, in *Botany*. See CUDWEED.

CITRINELLA, in *Zoology*, the name of a ſmall bird, common in Italy, very much reſembling our common linnet in ſhape. Its head and back are green; its rump of a greeniſh yellow, and its neck, with ſomewhat of the hindmoſt part of the head, grey.

It ſings very finely, and is kept in cages in many parts of Italy.

Linnæus enumerates two birds under this name; one a ſpecies of the EMBERIZA, and the other of the FRINGILLA.

CITRINUS, in *Natural Hiſtory*, the name of a peculiar ſpecies of ſprig cryſtal, which is of a beautiful yellow. Many of the common cryſtals, when in the neighbourhood of lead mines, are liable to be accidentally tinged yellow, by an admixture of the particles of that metal; and all theſe, whether finer, or coarſer, have been too frequently confounded together, under the name *citrine*. It is never found colourleſs, like the other cryſtals, but has a great variety of tinges, from that of deeper ochres to a pale lemon-colour. It is very plentiful in the Weſt Indies, and is found in ſome parts of Bohemia. Our jewellers have learnt from the French and Italians, who are very fond of it, to call it *citrine*, and often cut ſtones for rings out of it, particularly out of the pyramid, which is always finer than the column, and theſe, after they have paſſed through two or three hands, are generally miſtaken for topazes.

CITRON-*tree*, *Citrus*, in *Botany*, a genus of the *polyadelphia icoſandria* claſs: its characters are theſe: the flower hath five oblong thick petals, and ten ſtamina, which are not equal, joining in three bodies at their baſe. The oval germen in the centre afterward becomes an oblong fruit with a thick fleſhy ſkin filled with a ſucculent pulp, having many cells each containing two oval ſeeds.

There are ſeveral varieties of this fruit, with which the Engliſh gardens have been ſupplied from Genoa, where is the great nurſery which ſupplies the ſeveral parts of Europe with this, as well as orange and lemon trees. Their culture and management is the ſame with that of the ORANGE; but they are tenderer, and ſhould have a warmer ſituation in winter, otherwiſe they are ſubject to caſt their fruit; they ſhould alſo continue a little longer in the houſe in ſpring, and be carried ſooner into it in autumn, and have a warmer, and better defended ſituation in ſummer.

The *citron* is an agreeable fruit, in colour, taſte, ſmell, &c. reſembling a lemon; and ſerving, like that, to cool, and quench thirſt.

The *citron* is diſtinguiſhed from the lemon, in that it is bigger, and its pulp firmer; its ſmell briſker, and colour higher. It is held excellent againſt poiſons: and Athenæus relates an inſtance of two perſons ſaid to be preſerved ſafe from the moſt dangerous aſpics, by only eating a *citron*.

The diſtillers, perfumers, confectioners, &c. apply *citrons* to various purpoſes; and obtain from them eſſences, oils, confections, waters, &c.

In Italy they make a liquid with the ſmall *citrons*, which they preſerve entire; and a dry ſweetmeat with the large ones, which they preſerve in quarters.

CITRON-*water*, a well known ſtrong water, or cordial, which may be thus made: take of fine thin lemon-peel eighteen ounces, of orange-peel nine ounces, perfect nutmegs one quarter of a pound, alcohol perfect, that is, the fineſt and beſt rectified ſpirit of wine, two gallons and a half; digeſt in balneo mariæ for one night; draw off with a ſlow fire; then add as much water as will juſt make the mixture milky (which will be about ſeven quarts or two gallons) and add alſo about two pounds of fine ſugar-candy.

This compoſition may be improved by freſh elder-flowers hung in a cloth in the head of the ſtill, ſprinkled with ambergriſe in powder, or its eſſence.

CITRON *wood*, the wood of an American tree, called by the natives candle-wood, becauſe being cut into ſplinters, it burns like a candle. The tree is frequent in the Leeward iſlands, and grows to a conſiderable ſize; the leaves are like thoſe of the bay tree, but of a finer green; the flower is ſweet and much like thoſe of the orange; the fruit ſucceeding theſe is black, and of the ſize of a pepper-corn. The trunk is ſo like the yellow ſaunders in colour, that there was an opinion that it was the ſame tree, and much of it was imported into Europe, and ſold as ſuch; but they were ſoon found to be different, the true ſaunders being of a ſweet ſcent, and but moderately heavy and reſinous, but the *citron* wood is conſiderably heavy, very oily, and of a ſtrong ſmell. It is of no known uſe in medicine, but is uſed in France and Germany by the turners, being a firm fine-grained wood, and taking a fine poliſh, and with age becoming of a very beautiful brown.

CITRUL, *citrullus*, in *Botany*, a name given to a genus of plants otherwiſe called *anguria*. See *Water* MELON.

CITRUM. The *citreæ menſæ* have been ſuppoſed by ſome to be made of the *citron* tree, and by others of the cedar; but it appears plainly that they were made of neither, but of a wood peculiar for its fineneſs, and very different from both. The ancient Greeks have deſcribed the cedar under the name κεδρος, and the *citron* tree under the name *malus medica*; and beſide theſe, they have deſcribed another tree under the name of *thya*.

CITTERN, the old Engliſh name of a muſical ſtringed inſtrument reſembling the LUTE, and now called GUITAR.

CITULA, in *Ichthyology*, the name given by Paulus Jovius, and others, to the fiſh we call the DOREE, and the generality of authors *faber*. Pliny calls it *zeus*, and Artedi has hence made *zeus* the generical name, comprehending this, and ſeveral other ſpecies, under this arrangement. The *faber* is called the *zeus*, with the prickly belly, and with the tail rounded at the end. This is the true ſpecific name of the *citula*.

CITY, or CITTY, *Urbs*, a large town incloſed with a wall.

It is hard to give any juſt definition of a *city*; becauſe cuſtom has reſerved the appellation of towns, to many places which ſeem to have every thing requiſite to conſtitute *cities*.

Formerly *city*, according to ſome, was only underſtood of ſuch towns as were biſhops ſees: which diſtinction ſeems ſtill to hold in England; though no-where elſe. See BISHOP, and DIOCESE.

The term *city* had its riſe, among us, ſince the Conqueſt; for in the time of the Saxons there were no *cities*, but all great towns were called BURGHS.—Thus, London was called *Lunden Burgh*.

And for a long time after the Conqueſt, *city* and *burgh* were uſed promiſcuouſly. Thus, in the charter of Leiceſter, that place is called both *civitas* and *burgus*; which ſhews a miſtake in my lord Coke, where he tells us, that every *city* was, or is, a biſhop's ſee. Nor had Gloceſter any biſhop then; though it is called a *city* in Domeſday. The like may be obſerved of Cambridge; to which it may be added, that Crompton, reckoning up our *cities*, leaves out Ely, though it had a biſhop, and a cathedral.

Yet Chaſſanæus, De Conſuetud. Burgund. ſays, France has within its territories 104 *cities*; and gives his reaſon, becauſe it has ſo many archbiſhops and biſhops.

Cities and villages held formerly, in the time of the feudal government, of ſome great lord, on whom they depended for protection, and to whoſe arbitrary juriſdiction they were ſubject. But the freedom of *cities* was firſt eſtabliſhed in Italy towards the beginning of the fourth century, in conſequence of the prevalence of commerce: and it was thence introduced into France and other countries of Europe. And this eſtabliſhment of communities, ſays Dr. Robertſon, contributed more, perhaps, than any other cauſe to introduce regular government, police and arts, and to diffuſe them over Europe. Hiſt. Charles V. vol. i. p. 36 & ſeq. ed. ii. 8vo. See Charters *of Community*.

City, Civitas, in ſpeaking of antiquity, ſignifies a ſtate, or people, with all its dependencies, conſtituting a particular republic. Such are, ſtill, ſeveral *cities* of the empire, and the Swiſs cantons.

Though the ancient Gauls were, in effect, only one nation; they were yet divided into ſeveral people, which formed as many different ſtates: or, to ſpeak with Cæſar, as many different *civitates, cities*. Beſides that each *city* had its peculiar aſſemblies, it ſent deputies, too, from time to time, to the general aſſemblies held on affairs relating to their common intereſt.

City is particularly uſed to expreſs the heart of the place. At Paris they have the *city* and the *univerſity*; at London we have the *city* and the *ſuburbs*.

It has been obſerved that large *cities* are more liable than other places to peſtilential and putrid diſorders, which is owing to the ſtagnation and corruption of the air. This is always the caſe in thoſe which are low and unprovided with common ſewers; where the ſtreets are narrow and foul, the houſes dirty, water ſcarce, and jails and hoſpitals crowded: alſo, when in ſickly times the burials are within the walls, or when dead animals and offals are left to rot in the kennels or on dunghills; when drains are not provided to carry off any large body of ſtagnating water in the neighbourhood; when fleſh-meats make the greateſt part of the diet, without a proper mixture of greens, bread, wine, or fermented liquors; from the uſe of old mouldy grain. In proportion to the number of theſe and the like cauſes concurring, a *city* will be more or leſs ſubject to peſtilential diſeaſes, or to receive the leaven of the true plague, brought into it by any merchandize. An excellent writer emphatically calls them the graves of the human ſpecies. See *Bills of* Mortality.

However, as great *cities* furniſh many materials for vitiating the air, they likewiſe afford two conſiderable antidotes; the firſt ariſes from the circulation of the air, by means of the conſtant motion of people and carriages, and of the draughts made by fires: the other depends on the great quantity of an acid produced by fuel, the ſtrongeſt reſiſter of putrefaction.

City, *Advocate of the.* See Advocate.

City, *Capital.* See Capital.

Cities, *College of.* See College.

Cities, *Foreſt.* See Forest.

City, *Freedom of a.* See Freedom.

City, *Honours of the.* See Honours.

Cities, *Imperial.* See Imperial.

Cities, *Municipal.* See Municipal.

City, *Provoſt of the.* See Provost.

CIVES, in *Botany*, a very ſmall ſpecies of onion, which never produces any bulbs, and ſeldom grows above ſix inches high in the blade, which is very ſmall and ſlender, and grows in tufts and bunches. This uſed to be in great requeſt for ſallads in ſpring, as being milder than other onions which had ſtood the winter, but at preſent it is not much regarded. The way of propagating it is by parting the roots in autumn, and planting them, at ſmall diſtances, three or four in a hole; they will ſtand the winter very well, and be fit for uſe early in the ſpring. See Allium, Garlick, and Onion.

CIVET, a kind of perfume, bearing the name of the animal whence it is taken.

The word comes from the Arabic *zibet*, or *zebed*, *ſcum, froth.*

The *civet*, or *civet-cat*, *zibeta*, is a little animal, in ſhape reſembling the wolf or dog; its ſnout is long and ſmall; its ears ſmall and roundiſh; its hair is like thoſe of the badger, but very ſoft; its feet ſmall and legs ſhort. See *Tab. Quadrupeds*, N° 17.

Some naturaliſts will have it the ſame with the hyæna of Ariſtotle, and call it *hyæna odorifera*. Others ſuppoſe it the panther of the ancients, while the generality take it for a kind of wild cat, and call it *felis zibetica*, on account of the perfume it yields, which the Arabs call *zibet*. Linnæus makes it a ſpecies of the Viverra, with an annulated tail, with wave-like ſtreaks of pale grey and black along the back. It is a native of Africa, the Indies, Peru, Brazil, Guinea, &c.

An ample deſcription of the *civet-bag*, its glands, the reſervoirs of the perfume, &c. is given by M. Morand, in Mem. Acad. R. Scienc. an. 1728. p. 403. H. 14.

It is gathered from time to time; and ſtill abounds, in proportion as the animal is fed.

There is a very conſiderable traffic of *civet*, from Baſſora, Calicut, and other places, where the animal that produces it is bred: though great part of the *civet* among us is furniſhed by the Dutch; who bring up a conſiderable number of the animals.

Before any of theſe animals were ſeen in Europe, or it had been obſerved how the perfume had been gathered, the common opinion, founded on the relations of travellers, was, that it was the ſweat of that animal, when irritated and provoked into rage. To this effect, it was ſaid, that the animal was incloſed in an iron cage; and after having been a long time beaten with rods, they gathered with a ſpoon, through the bars of the cage, and between the thighs of the animal, the ſweat or foam, which the rage and agitation had produced; and that, without this precaution, the animal would yield no perfume at all, which is undoubtedly falſe.

The proper *civet* perfume is only a thick unctuous humour, ſecreted by certain glands between the two tunics of the bag wherein it is amaſſed, under the creature's tail, beneath the anus, and between it and the ſexual parts of the animal.

Civet muſt be choſen new, of a good conſiſtence, a paliſh colour, and a ſtrong ſmell.

However, the ſweat and foam of the animal provoked by fretting, which are highly perfumed, are likewiſe collected, ſerve to ſophiſticate the perfume, or increaſe its quantity.

Beſides the Indian and Dutch *civet*, there is alſo a *civet* from Braſil, or Guinea, like that of India; and an *occidental civet*, which bears no reſemblance to it: this being only a term uſed to expreſs the human excrements.

Civet is little uſed in medicine, except in a thickneſs of hearing from cold; where a grain or two being put in a little cotton, or wool, and the ears ſtopped therewith, is ſometimes of ſervice. It is much uſed among perfumers and confectioners.

This odoriferous, unctuous animal juice is ſoluble in oils, but not in ſpirit of wine, or in water even by means of ſugar. Neumann.

CIVIC, Civicus, an epithet applied to a kind of crown, made of oaken leaves; anciently beſtowed by the Romans on thoſe who ſaved the life of a fellow-citizen in a battle, or an aſſault. The *civic* crown was exceedingly eſteemed; and was even given as an honour to Auguſtus; who on this occaſion ſtruck coins with this device, ob cives servatos. It was alſo granted to Cicero, after his diſcovery of Cataline's conſpiracy. See Crown.

CIVIL, Civilis, in its general ſenſe, denotes ſomething that regards the policy, public good, or peace of the citizens, or ſubjects of a ſtate.

In this ſenſe, we ſay, *civil* government; *civil* law; *civil* rights; *civil* war, &c.

Civil, in a *Legal Senſe*, is alſo applied to the ordinary procedure in an action relating to ſome pecuniary matter, or intereſt. In which ſenſe it is oppoſed to criminal.

Civil *Action.* See Action.

Civil *Architecture.* See Architecture.

Civil *Corporations.* See Corporations.

Civil *Day.* See Day.

Civil *Death*, any thing that retrenches, or cuts off a man from *civil* ſociety: as, a condemnation to the gallies, perpetual baniſhment, condemnation to death, outlawry, and excommunication; all which make a man ceaſe to be looked on as a citizen.

The term is likewiſe applied to thoſe who are no longer capable of acting in temporal concerns; as thoſe who renounce the world, who retire and make vows in a monaſtery, &c.

Civil *Fruits.* See Fruits.

Civil *Hiſtory.* See History.

Civil *Law*, *Lex* **Civilis**, is defined, in the Inſtitutes, to be the laws peculiar to each city, or each people. But in the modern uſe, it properly implies the Roman law, contained in the Inſtitutes, the Digeſt, the Code, and the Novels; otherwiſe called, *lex ſcripta*, or the *written law*.

The Roman law, at its commencement, was very inconſiderable. Under the kings, the people were governed by certain laws prepared by the ſenate, paſſed by the kings, and confirmed in an aſſembly of the people.

Papirius was the firſt who made a collection of the regal laws; which took its name from its author, and was called *jus Papirianum.*

The republic, after aboliſhing the regal government, ſtill retained the royal laws: to theſe they added the law of the Twelve Tables, drawn by the decemviri, from the laws of twelve of the principal cities of Greece; and the more equitable among the laws hitherto practiſed at Rome.

During the time of the republic, and even under the emperors, there were juriſconſulti; who making public profeſſion of the ſtudy of the law, were conſulted on the different ſenſes of the laws, and gave anſwers to the queſtions propoſed to them hereon; which were called *reſponſa prudentum*, and by Juſtinian, the *juriſprudentia media*.

The law of the Twelve Tables was at length found ſo ſevere, and conceived in ſuch obſcure terms, that it was judged proper to moderate, reſtrain, and aſcertain it, by other laws, propoſed to the ſenate by the conſuls, and paſſed at general aſſemblies of the people; according to the practice that had obtained under the kings themſelves: and theſe were called by way of emphaſis *leges*, or the *laws*. Afterwards, the common people differed with the nobility, and during their ſeceſſion enacted laws of their own, which were called *plebiſcita*; and, upon their ſubſequent reconciliation, theſe were admitted and univerſally enforced. The ſenate was likewiſe intruſted with a legiſlative authority; and new laws were made by them, and called *ſenatus conſulta*, and incorporated with the Roman *civil* law. The prætors, likewiſe, in the abſence of the conſuls, had a power of ſupplying and correcting the *civil* law of the Twelve Tables, and of propoſing edicts, which, when approved by the people, were incorporated into the *civil* law, under the title of *jus prætorium*. And the ædiles curules did alſo in ſome caſes enact and eſtabliſh laws. Theſe ſeveral parts, which have been enumerated, compoſed the Roman *civil* law, during the republic.

In the time of Julius Cæſar, Offilius, a lawyer, began a collection of the edicts of the prætors; but this was not finiſhed till the time of Adrian, by another lawyer; who alſo digeſted the edicts of the ædiles curules, which were made perpetual by the Cornelian law.

In the year of Rome 731, the republic expired; and the whole power of the people was transferred to Auguſtus, who was contented to publiſh his new laws in the aſſembly of the people; to keep up ſome image of the republic by this formality. Tiberius aboliſhed theſe occaſional aſſemblies, on pretence of their being too numerous; and in lieu thereof offered his laws to the ſenate, who never failed to confirm them: inſomuch that the laws of Tiberius, and his ſucceſſors, who kept the ſame meaſures with the ſenate, were eſteemed *ſenatus conſulta*. They were alſo called *imperial conſtitutions*, and ſometimes *placita principum*. The *reſponſa prudentum*, obtained from thoſe to whom the emperors gave commiſſion, and to which the judges were obliged to conform, conſtituted a part of the *jus ſcriptum*, or written law. The *imperial conſtitutions*, after they were become very numerous under ſucceeding emperors, were digeſted into four codes. See Code.

Juſtinian, finding the authority of the Roman law almoſt aboliſhed in the Weſt, by the declenſion of the empire, reſolved to make a general collection of the whole Roman juriſprudence, and committed the care thereof to his chancellor Trebonianus.

That miniſter executed his commiſſion with a great deal of diligence, not to ſay precipitation: a new code was finiſhed in 529, and a digeſt, or pandect, containing an abridgment of the *reſponſa prudentum*, in 533.

The ſame year he publiſhed an abridgment thereof, containing the firſt principles and elements of law, under the title of *Inſtitutes*.

In the courſe of this reign, Juſtinian made 168 conſtitutions, and 13 edicts; which made a conſiderable alteration in the ancient law, and were called *Novels*.

All theſe together, viz. the *Code*, the *Digeſt*, the *Inſtitute*, and the *Novels*, make the *corpus juris civilis*, or body of the *civil law*, as reduced by order of Juſtinian.

For the ſpace of about 300 years, this ſyſtem of law obtained without any innovation. But the new conſtitutions, made by the emperors from time to time, at length occaſioning ſome alterations; the emperor Baſil, and Leo his ſon, compoſed a new body of the Roman law, chiefly from the Juſtinian, in the Greek language; dividing it into ſeven volumes, and ſixty books; under the title of *Baſilica*. From which time, Juſtinian's body had but little credit in the Eaſt; the Baſilica taking place of it.

In the Weſt, the *civil law* had a different fortune: for, though ſome traces of its authority remained in Italy, yet it was little known in Europe, till a copy of Juſtinian's *Digeſts* was accidentally found at Amalfi, in Italy, about the year 1130; and this circumſtance, together with the policy of the Romiſh eccleſiaſtics, contributed to introduce it into ſeveral nations, and occaſioned that inundation of voluminous comments, with which this ſyſtem of law, more than any other, is now loaded.

It is true, however, it was never taught publicly till the twelfth century; when the ſtudy of it was introduced into ſeveral univerſities abroad, particularly that of Bologna; whence it was carried by Irnerius's diſciples into other countries, and in a little time was taught in all the univerſities.

It was firſt brought over into England by Theobald, a Norman abbot, who was elected to the ſee of Canterbury in 1138; and he appointed a profeſſor, viz. Roger, ſirnamed Vacarius, in the univerſity of Oxford, to teach it to the people of this country. Nevertheleſs, it gained ground very ſlowly; king Stephen iſſued a proclamation, prohibiting the ſtudy of it. And though the clergy were attached to it, the laity rather wiſhed to preſerve the old conſtitution. However, the zeal and influence of the clergy prevailed; and the *civil* law acquired great reputation from the reign of king Stephen to the reign of king Edward III. both incluſive. Many tranſcripts of Juſtinian's Inſtitute are to be found in the writings of our ancient authors, particularly of Bracton and Fleta; and judge Blackſtone obſerves, that the common law would have been loſt and over-run by the *civil*, had it not been for the incident of fixing the court of common pleas in one certain ſpot, and the forming the profeſſion of the municipal law into an aggregate body.

It is allowed, that the *civil* law contains all the principles of natural equity; and that nothing can be better calculated to form good ſenſe, and ſound judgment. Hence, though in ſeveral countries it has no other authority but that of reaſon, and juſtice, it is every-where referred to for authority.

It is not received at this day in any nation without ſome alterations: and ſometimes the feudal law is mixed with it, or general and particular cuſtoms; and often, ordinances and ſtatutes cut off a great part of it.

In Turky, the *Baſilics* are only uſed. In Italy, the canon law, and cuſtoms, have excluded a good part of it. In Venice, cuſtom hath almoſt an abſolute government. In the Milaneſe, the feudal law, and particular cuſtoms, bear ſway. In Naples and Sicily, the conſtitutions and laws of the Lombards are ſaid to prevail. In Germany, and Holland, the *civil law* is eſteemed to be the municipal law: but yet many parts of it are there grown obſolete; and others are altered, either by the canon law, or a different uſage.

In Friezeland, it is obſerved with more ſtrictneſs: but in the northern parts of Germany, the jus Saxonicum, Lubecenſe, or Culmenſe, is preferred before it. In Denmark and Sweden it hath ſcarce any authority at all. In France only a part of it is received; and that part is in ſome places as a cuſtomary law: and in thoſe provinces neareſt to Italy, it is received as a municipal written law. In criminal cauſes, the *civil law* is more regarded in France; but the manner of trial is regulated by ordinances and edicts.

The *civil law*, in Spain and Portugal, is connected with the jus regium and cuſtom. In Scotland, the ſtatutes of the ſederunt, part of the regiæ majeſtatis, and their cuſtoms, controul the *civil law*.

In England, it is uſed in the eccleſiaſtical courts; in the high court of admiralty; in the court of chivalry; in the two univerſities; and in the courts of equity: yet in all theſe it is reſtrained and directed by the common law. See Law, Common *Law*, &c.

Civil *Liberty*. See Liberty.

Civil *Liſt*, the money allotted for the ſupport of the king's houſhold, and for defraying certain neceſſary charges of government. See 1 Geo. III. cap. 3.

Civil *Month*. See Month.

Civil *Obligation*. See Obligation.

Civil *State*, conſiſts of the nobility and commonalty, excluſive of the clergy, and of the military and maritime orders.

Civil *Subjection*, in *Law*, is a ſpecies of compulſive obligation, whereby an inferior is conſtrained by a ſuperior to an action contrary to what his own reaſon and inclination would ſuggeſt: as when a legiſlator eſtabliſhes iniquity by a law, and commands a ſubject to do what is inconſiſtent with religion or ſound morality. This excuſe cannot be admitted in *foro conſcientiæ*, but it is a ſufficient extenuation of *civil* guilt before the municipal tribunal. Blackſt. Com. vol. iv. p. 28.

CIVIL *War*, a war between people of the ſame ſtate, or the citizens of the ſame city.

CIVIL *Year*, is the legal year, or *civil* account of TIME, which every government appoints to be uſed wiithin its own dominions.

It is thus called, in contradiſtinction to the natural year; which is meaſured exactly by the revolution of the heavenly bodies.

CIVILIANS *College*. See COLLEGE.

CIVILISATION, a law, or judgment, which renders a criminal proceſs CIVIL.

Civiliſation is performed by turning the information into an inqueſt, or vice verſa.

CLACK *wool*, is to cut off the ſheep's mark, which makes it weigh lighter; as to force wool, ſignifies to clip off the upper and hairy part thereof; and to bard it, is to cut the head and neck from the reſt of the fleece. Stat. 8 H. vi. cap. 22.

CLADEUTERIA, in *Antiquity*, a feſtival celebrated at the time of pruning the vines. It was likewiſe called *biſbæa*.

CLADIUS, in *Natural Hiſtory*, a name given by the ancients to the ſtag, or deer, when four years old; in this year, or at the end of it, it was alſo called *ceraſtes*. The Greeks had names for all the years growth of this animal up to its perfection: in the firſt year they called it *nebrus*; in the ſecond *pattalea*; in the third *dicrotus*; and in the fourth *cladius*, or *ceraſtes* toward the end of that year. This name the creature retained all its life afterwards, it being ſuppoſed at its full maturity at that time.

CLAIM, in *Law*, a CHALLENGE of intereſt in any thing that is in POSSESSION of another; at leaſt of a man's own. See NON-CLAIM.

There are divers ſorts of *claims*; as *claim by charter*, *by deſcent*, *by acquiſition*, &c.

CLAIM, *Continual*, a *claim* made from time to time, within every year and day, to land, or other thing, which, on ſome accounts, cannot be attained without danger.

Thus, if I am diſſeiſed of land, into which, though I have a right, I do not enter for fear of being beaten; I am to hold on my right of entry at my beſt opportunity; by approaching as near as I can, once every year, as long as I live: and thus I leave the right of entry to my heir.

CLAIM *of liberty*, a ſuit or petition to the king in the court of Exchequer, to have liberties and franchiſes confirmed there by the king's attorney-general.

CLAIM, *Falſe*. See FALSE.

CLAIM, *Quit*. See QUIT.

CLAIR-OBSCURE, or CHIARO-SCURO, in *Painting*, the art of diſtributing to advantage the lights and ſhadows of a piece; both with regard to the eaſing of the eye, and heightening the effect of the whole compoſition.

Thus, when a painter gives his figures a ſtrong relievo, looſens them from the ground, and ſets them free from each other, by the management of his lights and ſhadows, he is ſaid to underſtand the *clair-obſcure*.

The *clair-obſcure* makes one of the great diviſions, or branches, of painting; the whole of a picture being reſolvable into light and ſhadow. It was firſt invented in Italy by Hugo da Carpi, in the ſixteenth century.

The doctrine of the *clair-obſcure* will come under the following rules. Light may either be conſidered with regard to itſelf, to its effects, the place wherein it is diffuſed, or its uſe. For the 1ſt, light is either *natural*, or *artificial*.

Natural, either comes immediately from the ſun, which is briſk, and its colour various, according to the time of the day; or it is that of a clear air, through which light is ſpread, and whoſe colour is a little bluiſh; or of a cloudy air, which is darker, yet repreſents objects in their genuine colours with more eaſe to the eye.

Artificial light proceeds from fire, or flame, and tinges the object with its own colour: but the light it projects is very narrow and confined.

For the 2d, the effects of light are either *principal*, as when the rays fall perpendicularly on the top of a body, without any interruption; or glancing, as when it ſlides along bodies; or *ſecondary*, which is for things at a diſtance.

3. For the place, it is either the open champaign, which makes objects appear with great ſoftneſs; or an incloſed place, where the brightneſs is more vivid, its diminution more haſty, and its extremes more abrupt.

4. For the uſe, or application: the light of the ſun is always to be ſuppoſed without, and over-againſt the picture; that it may heighten the foremoſt figures; the luminaries themſelves never appearing, in regard the beſt colours cannot expreſs them. The chief light is to meet on the chief group, and as much as poſſible on the chief figure of the ſubject. The light is to be purſued over the great parts, without being croſſed, or interrupted with little ſhadows. The full force of the principal light to be only in one part of the piece; taking care never to make two contrary lights. Not to be ſcrupulouſly confined to one univerſal light; but to ſuppoſe other acceſſory ones, as the opening of the clouds, &c. to looſen ſome things, and produce other agreeable effects. Laſtly, the light to be different, according to the quality of the things whence it proceeds, and the nature of the ſubjects which receive it.

As for ſhadows, they are diſtinguiſhed, 1°, Into thoſe formed on the bodies themſelves, by their proper relievos: 2°, Thoſe made by adjacent bodies: 3°, Thoſe that make part of an whole: and, 4°, The different effects, according to the difference of places. For the firſt, ſince the different effects of lights only appear by ſhadows, their degrees muſt be well managed. The place which admits no light, and where the colours are loſt, muſt be darker than any part that has relievo, and diſpoſed in the front. The reflex, or return of the light, brings with it a colour borrowed from the ſubject that reflects it; and flies off at a greater or leſs angle, according to the ſituation of the reflecting body with regard to the luminous one: hence, its effects muſt be different in colour, and in force; according to the diſpoſitions of bodies. Deepenings, which admit not of any light, or reflux, muſt never meet on the relievo of any member of any great elevated part; but in the cavities or joints of bodies, the folds of draperies, &c. And to find occaſions for introducing great ſhadows to ſerve for the repoſe of the ſight, and the looſening of things; inſtead of many little ſhadows, which have a pitiful effect.

For the 2d, the ſhadows made by bodies, are either in plain and ſmooth places, or on the earth; wherein they are deeper than the bodies that occaſion them, as receiving leſs reflex light; yet ſtill diminiſh as they depart farther from their cauſe; or they are on the neighbouring bodies, where they are to follow the form of the ſaid bodies, according to their magnitude and poſition, with regard to the light.

For the 3d, in ſhadows that have parts, the painter muſt obſerve to take for a light in a ſhadowed place, the teint, or luſtre of the light part; and, on the contrary, for the ſhadow in the lightened part, the teint or luſtre in the ſhadow: to make an agreeable aſſemblage of colour, ſhadow, and reflex in the ſhadowed part, but without interrupting the great maſſes of ſhadow: to avoid forming little things in the ſhadow, as not being perceived, unleſs cloſely looked at; and to work, as it were, in the general, and at one ſight; never to ſet the ſtrong ſhadows againſt the lights, without ſoftening the harſh contraſt by the help of ſome intermediate colour: tho' the maſs of light may be placed either before or behind that of the ſhadow, yet ought it to be diſpoſed, as to illumine the principal parts of the ſubject.

For the 4th, the effects of ſhadows are different, as the place is either wide and ſpacious; as in thoſe coming immediately from the ſun, which are very ſenſible, and their extremes pretty abrupt: from the ſerene air, which are fainter, and more ſweet; from the dark air, which appear more diffuſed, and almoſt imperceptible; and thoſe from an artificial light, which makes the ſhadows deep, and their edges very abrupt: or as it is more narrow and confined, where the lights coming from the ſame place make the ſhadow more ſtrong, and the reflex leſs ſenſible.

CLAIR-OBSCURE, CHIARO-SCURO and OBSCURO, is alſo uſed for a deſign conſiſting only of two colours; ordinarily black and white, ſometimes black and yellow.

Or, it is a deſign only waſhed with one colour; the ſhadows being of a duſky brown colour, and the lights heightened up with white.

The word is alſo applied to prints of two colours, taken off at twice; whereof there are volumes in the cabinets of the curious in prints.

The word *clair-obſcure*, is compounded of two others. *Clair* is uſed among the French for thoſe parts of a painting which reflects the moſt light; and comprehends not only the lights themſelves, but alſo thoſe colours that are luminous. By *obſcure*, is meant not only all the ſhades, but alſo all the colours that are duſky.

CLAKIS, in *Zoology*, a name given by the people of Lancaſhire, and ſome other places, to the BARNACLE, a ſmall ſpecies of wild gooſe.

CLAMATOR, in *Antiquity*, was uſed to ſignify a domeſtic officer, whoſe buſineſs was to call the gueſts to dinner.

CLAMEA *admittenda in itinere per attornatum*, is a writ whereby the king commands the juſtice in eyre to admit a perſon's *claim* by an attorney, who, being employed in the king's ſervice, cannot come in perſon.

CLAMOR, or CLAMEUR *de Haro*, a popular term in the

French laws, importing a complaint, or cry, whereby any one implores the aſſiſtance of juſtice againſt the oppreſſion of another.

Clamor, *βοη*, in *Medicine*, an intenſeneſs of the voice, a loud outcry, a *clamor*. This is ſometimes the cauſe of a rupture of the veſſels, and ſometimes of a diſorder, like an inflammation about the membranes of the fauces and muſcles; which may be compared to that ulcerous and inflammatory laſſitude, which affects the hands, legs, and loins, after exceſſive hard labour: the ſpirituous and humid particles being exhauſted, and the fibres and membranes dried and contracted. A *clamor* is ſometimes alſo a ſort of remedy, and preſcribed as ſuch in order to rouſe perſons out of a lipothymy, or ſyncope.

Clamor *bellicus*, in *Antiquity*. See Huzza and Shout.

CLAMPS, in *Gunnery*. See Cap-*ſquares*.

Clamps, in *Ship-building*, are thick planks in a ſhip's ſide, uſed to ſuſtain the ends of the beams. They include the whole inner range of the ſide cloſe under each deck, from the ſtem to the faſhion-pice of the ſtern. Thoſe of the lower and ſecond decks ſhould be half the thickneſs of the correſponding timbers in that part, and as broad as they can be procured; and they ſhould be ſo diſpoſed as not to be pierced by the ports.

Clamps, in a *Ship*, are alſo pieces of timber applied to a maſt, or yard, to ſtrengthen it, and prevent the wood from burſting.

Clamp, alſo, denotes a little piece of wood, in form of a wheel; uſed inſtead of a pully in a mortice.

Clamp, is likewiſe the term for a pile of bricks built up for burning.

Clamp-*nails*, are ſuch nails as are uſed to faſten on *clamps* in building and repairing of ſhips.

CLAMPING, in *Joinery*, *&c.* When a piece of board is fitted with the grain, to the end of another piece of board croſs the grain; the firſt board is ſaid to be *clamped*. Thus the ends of large old tables were commonly *clamped*, to preſerve them from warping.

CLAMPONNIER, or **Claponnier**, in the *Manege*, a long-jointed horſe; that is, one whoſe paſterns are long, ſlender, and over-pliant.

The word is obſolete, and is properly applicable only to the ox kind: for *la claponniere* in French, is in them what the paſtern is in a horſe.

CLANCULARII, a ſect of Anabaptiſts, who denied the neceſſity of making an open profeſſion of the faith; and taught that a private one would be ſufficient.

Theſe were alſo called *Hortulani*, and *Gardeners*, from the places they choſe to aſſemble in, inſtead of churches.

CLANDESTINA, in *Botany*. See Lathræa.

CLANDESTINE, any thing done ſecretly, and without the knowlege of ſome of the parties intereſted in it; or without the proper ſolemnities.

The word comes from the prepoſition *clam*, of κλειω, *claudo*, *I ſhut*; or κλεμμα, *furtum*, *theſt*.

Thus, a marriage is ſaid to be *clandeſtine*, when performed without the publication of banns, the conſent of parents, or the knowlege of the ordinary. The council of Trent, and the French ordonnances, annul all *clandeſtine* marriages. See Marriage.

CLANGULA, in *Ornithology*. See Duck.

CLAP, in *Medicine*, the firſt ſtage, or ſtate, of the venereal diſeaſe, called alſo a gonorrhoea.

Dr. Cockburn, and others after him, will have the *clap* to conſiſt in an ulceration of the mouths of the glands of the *urethra* in men, and of the glandular *lacunæ* in women; occaſioned by the inſinuation of an acrimonious, purulent matter, contracted from an infected perſon *in actu coitus*.

From theſe glands, iſſues or gleets a ſharp corroſive matter, accompanied with heat of urine, chordee, &c. which makes what is uſually termed the firſt ſtage of the diſtemper.

A *clap* appears ſometimes ſooner, and other times later, though generally in about three or four days after the infection is received; and diſcovers itſelf by the running, &c. of the *penis*, with inflammation of the *glans*, or nut of the yard.

The heat, or burning, which ſuch perſons feel in making water, is a conſequence of this excoriation of the *urethra*; the ſalts contained in the urine pricking and irritating the nervous *fibrillæ* of the *urethra*, thus diveſted of its natural membrane.

If the perſon be affected with a *phimoſis*, or *paraphimoſis*; if the running be of a thin conſiſtence, a yellow or green colour, and in great quantity, and the teſticles ſwelled; it is uſually termed a *gonorrhœa virulenta*; and the *clap* ſuppoſed to be in its ſecond ſtage.

Some authors think, that in this degree, or ſtage, the infection has reached the maſs of blood, and the *veſiculæ ſeminales*: others inſiſt, that theſe ſymptoms may be accounted for, from the running, or *virus*, being more corroſive; and by that means irritating and inflaming the adjacent parts.

The cure of a *clap* conſiſts in proper evacuations, as calomel purgatives, refrigerant emulſions, powders, &c. turbith emetics, and laſtly, proper terebinths, &c. to which ſome add, decoctions of the *lignum vitæ*. As to externals, they are generally comprehended under the form of fomentations, cataplaſms, liniments, and lotions.

Late authors, and eſpecially Dr. Cockburn, have inſiſted on the cure of a *clap* by a particular injection, without the uſe of any other medicine. This has given a handle to quacks, who, by affecting to do the ſame by their injections, generally check the running, and occaſion a confirmed pox.

Turbith mineral, calomel, &c. given in ſmall doſes, and continued for ſome time, ſo as to take effect by way of alteratives, have been lately much commended as to ſucceſs. Mercurial unguents, uſed in ſmall quantities, ſo as not to raiſe a ſalivation, are ſaid to cure all the ſtages of the venereal diſeaſe: this practice is uſed at Montpelier.

Clap-*board*, a board cut, in order to make caſks or veſſels.

Clap-*net*, in *Birding*, a ſort of net contrived for the taking of larks with the looking-glaſs, by the method called daring, or doring. The nets are ſpread over an even piece of ground, and the larks are invited into the place by other larks faſtened down, and by a looking-glaſs compoſed of five pieces, and fixed in a frame, ſo that it is turned round very ſwiftly, backwards and forwards, by a cord pulled by a perſon at a conſiderable diſtance behind a hedge. See Doring.

CLAR, or **Claer**, in *Metallurgy*, bone aſhes perfectly calcined, and finely powdered, kept purpoſely for the covering the inſides of coppels.

CLARAMONT *powder*, the name of a medicinal powder, very famous in Venice, and ſome other places, for its virtues in ſtopping hæmorrhages of all kinds, and in the cure of malignant fevers. It has its name from the perſon who firſt found out its virtues, and who has written a book expreſsly about it. It is a white earth found near Baira, not far from Palermo, and is thence called alſo by ſome writers, *terra de Baira*.

CLARE, *Nuns of St.* were founded at Aſſiſe in Italy, about the year 1212. Theſe nuns obſerved the rule of St. Francis, and wore habits of the ſame colour with thoſe of the Franciſcan friars: and hence were called *Minoreſſes*; and their houſe, without Aldgate, the *Minories*, where they were ſettled when firſt brought over into England, about the year 1293. They had only three houſes beſides this.

CLARENCIEUX, the ſecond king at arms; thus called from the duke of Clarence, to whom he firſt belonged.

Lionel, third ſon of Edward III. having by his wife the honour of Clare in the county of Thomond, was hereupon created duke of Clarence; which dukedom afterwards eſcheating to Edward IV. he made this herald, who properly belonged to the duke, a king at arms; naming him *Clarencieux* in French, and *Clarencius* in Latin.

His office is to marſhal, and diſpoſe of, the funerals of all the lower nobility; as baronets, knights, eſquires, and gentlemen on the South ſide of Trent: whence he is alſo called *Surroy*, or *Southroy*, in contradiſtinction to Norroy.

CLARENDON, *Conſtitutions of*, in *Antiquity*, a charter or code of laws eſtabliſhed by the parliament at *Clarendon* in Wiltſhire, A. D. 1164; ſixteen articles of which related particularly to eccleſiaſtical matters, and were deſigned by king Henry II. to check the power of the pope and his clergy, and to limit the total exemption which they claimed from the ſecular juriſdiction. They were vehemently oppoſed by Becket: and ten of them were condemned by pope Alexander III. and ſix tolerated.

CLARET, or **Clairet**, *pale red*, a name which the French give to ſuch of their red wines as are not of a deep or high colour. See Wine.

The word is a diminutive of *clair*, *bright*, *tranſparent*. There are various accounts in the Phil. Tranſ. of attempts to improve the operation of tapping, by injecting the *abdomen* after the lymph is drawn off with *claret* and other aſtringents. Ibid. vol. xlix. part ii. Nº 65. an. 1756.

Claret, *Claretum*, in the *Ancient Pharmacy*, was a kind of wine ſweetened with ſugar, and impregnated with aromatics; ſometimes alſo called *Hippocras*, or *vinum Hippocraticum*; becauſe ſuppoſed to have been firſt preſcribed by Hippocrates.

It has its name *claret*, from its being clarified by percolation through a flannel bag, called *manica Hippocratis*.

CLARIAS, or **Clarias** *Nilotica*, in *Zoology*, the name of a fiſh of the *ſilurus* kind, common in the Nile, and brought to market at Memphis, and in many other parts of Egypt, but of an inſipid taſte, and eaten only by the poorer ſort of people. The tail is broad and forked, and has externally two horny appendages of a round figure, and a hand's breadth in length, in which it differs from all other fiſhes.

CLARICORD, or MANICORD, a muſical inſtrument, in form of a ſpinett.

It has forty-nine or fifty keys, and ſeventy ſtrings, which bear on five bridges; the firſt whereof is the higheſt, the reſt diminiſhing in proportion. Some of the ſtrings are in uniſon; their number being greater than that of the ſtops.

There are ſeveral little mortiſes for paſſing the jacks, armed with little braſs hooks, which ſtop and raiſe the chords in lieu of the feather uſed in virginals and ſpinetts. But what diſtinguiſhes it moſt, is, that the ſtrings are covered with pieces of cloth, which render the ſound the ſweeter; and deaden it ſo, as that it cannot be heard to any conſiderable diſtance.

Hence ſome call it the *dumb ſpinett*; whence it comes to be particularly in uſe among the nuns, who learn to play, and are unwilling to diſturb the ſilence of the dormitory.

The *claricord* is more ancient than either the ſpinett or harpſicord; as is obſerved by Scaliger, who, however, only gives it thirty-five ſtrings.

CLARIFICATION, in *Chemiſtry*, the act of clearing, or fining of liquors from their groſſer parts.

Clarification is performed by decantation, ebullition, deſpumation, and colature, or filtration.

The term is chiefly applied to juices, decoctions, and ſyrups, which are *clarified* by filtration, or by paſſing them through a ſtrainer, after having beat them up into a froth with the whites of eggs; the viſcous parts of the eggs, entangling the thick groſs particles of the liquor, retain them in the ſtrainer. Sometimes the mixture is boiled; by which means, the eggs entangle the groſſer parts, and carry them up to the top in a tough ſcum; which is either taken off with a ſpoon, or ſeparated by a flannel bag, as before, called *Hippocrates' ſleeve*. Another method is, by letting the liquor ſtand in a convenient veſſel, till the groſſer particles ſettle.

In diſtilled waters, &c. which have a milky hue, or are turbid, this is generally effected with fine ſugar, mixed with a ſmall quantity of alum; which will bear down the oily parts, and leave the reſt clear.

Many liquors are *clarified* by paſſing them through a thick brown paper; among others, hippocras, hydromel, &c.

The ancients *clarified* their wines by pouring them from off the lees, into another barrel, through a tin ſtrainer.

Fine and delicate wines are uſually *clarified* with ichthyocolla, or fiſh-glue: the thicker wines with omelette, or whites of eggs diluted in water; ſometimes by pouring them through a heap of little chips.

It is an error to ſuppoſe, that either iſinglaſs, or omelette, can be prejudicial to the health; ſince both the one and the other fall down with the lees, without producing any ill effect: though Neumann makes a doubt concerning the wholeſomeneſs of wines thus *clarified*; eſpecially if they are drank too ſoon. That which makes wines unwholeſome, is not the *clarifying* by theſe innocent means, but the mixtures and ſophiſtications of the vintners, to make them briſk, and bring them to life again, after the fret; which is done with *aqua vitæ*, ſpices, pigeons dung, &c.

Bay-ſalt is *clarified* with ox's blood.

Sugar is *clarified* with the whites of eggs, and ſugar beat together; and with ox's blood and other materials. See SUGAR.

For MALT *liquors*, particularly beer, there are various methods of clearing; the beſt is by caſting into it fixed nitre: ſome add the quinteſſence of malt and wine; whites of eggs made into balls with a little flour and iſinglaſs: oil, and quinteſſence of barley, have the ſame effect. It is exceedingly cleared and ſtrengthened, by adding to it, during the time of its fermentation, ſome ardent ſpirit.

CLARIGATIO, in *Roman Antiquity*, a ceremony that always preceded a formal declaration of war. It was performed in this manner; firſt four heralds, crowned with vervain, were ſent to demand ſatisfaction for the injuries done the Roman ſtate. Theſe heralds, taking the gods to witneſs that their demands were juſt, one of them, with a clear voice, demanded reſtitution within a limited time, commonly thirty-three days; which being expired, without any reſtitution made, then the *pater patratus*, or prince of the heralds, proceeded to the enemies frontiers, and declared war.

CLARIGATIO is alſo uſed for apprehending a man, and holding him to bail. The Greeks called this action ANDROLEPSIA.

CLARIGATION, in the *Law of Nations*, denotes a loud, clear call, or ſummons made to an enemy, to demand ſatisfaction for ſome injury received; in defect whereof, recourſe will be had to repriſals.

Clarigation amounts to much the ſame with what the Greeks call ανδροληψια. Though Naude uſes the word in a ſomewhat different manner. "Repriſals," ſays he, "ſignify the ſame as *pignorationes Budæo, aut clarigationes* "*Hermolao*: for, as to the Greek word *androlepſia*, it is "equivalent to the Latin *pignorandi poteſtas*."

CLARINO, in the *Italian Muſic*, ſignifies a TRUMPET; thus, *a duoi clarini*, added to any compoſition, denotes that it was made for two trumpets. See CORNET.

CLARION, a kind of trumpet, whoſe tube is narrower; and its tone acuter and ſhriller, than the common trumpet.

Menage derives the word from the Italian *clarino*, of the Latin *clarus*, by reaſon of the clearneſs of its ſound.

Nicod ſays, the *clarion*, as now uſed among the Moors, and the Portugueſe, who borrowed it from the Moors, ſerved anciently for a treble to ſeveral trumpets, which ſounded tenor and baſs. He adds, that it was only uſed among the cavalry, and the marines.

CLARION, in *Heraldry*, is a bearing repreſented in *Tab. Heraldry, fig.* 36.—He bears ruby, three *clarions* topaz; being the arms of the earl of Bath, by the name of Granville.

Guillim takes theſe *clarions* to be a kind of old-faſhioned trumpets; but others rather think, they repreſent the rudder of a ſhip; and others a reſt for a lance.

CLARISSIMI, among the Romans, a title of honour belonging to the third rank of nobility under the emperors. See SPECTABILES.

CLARK-*gooſe*, in *Natural Hiſtory*, a ſpecies of wild gooſe found in Zetland. Phil. Tranſ. Nº 473. ſect. 8.

CLARO *obſcuro*. See CLAIR *obſcure*.

CLARY, *Sclarea*, in *Botany*; Tourn. Linnæus has joined this genus and the next to the SALVIA. Its characters are theſe: the flower has a tubulous empalement, which widens at the top, and has five acute points at the brim. It is of the lip kind, with one petal, having a crooked tube which enlarges at the chaps, where it is divided into two lips; the upper lips erect and arched, the under lip cut into three ſegments. It has two ſtamina, which are ſituated under the upper lip, terminated by oblong erect ſummits; and a four-pointed germen, ſupporting a forked ſtyle longer than the upper lip, crowned by a bifid ſtigma. The germen afterward becomes four roundiſh ſeeds, which ripen in the empalement.

There are ſixteen ſpecies, natives of different places. The firſt ſort grows naturally in Syria, but has been long cultivated in the European gardens, both for the kitchen and ſhops: it is a biennial plant, which periſhes after it has borne ſeeds. The lower leaves of this are large, rough, wrinkled, oblong, and heart-ſhaped; and are ſawed on the edges.

It is propagated by ſeeds, which ſhould be ſown in the ſpring; and when fit to remove, may be planted in an open ſpot of ground in rows, two feet aſunder. In the winter and ſpring following, the leaves, which are the only part uſed, will be in perfection, and in the ſummer will run up to flower; and after ripening their ſeeds, will decay; ſo that young plants ſhould be annually raiſed for uſe.

Clary is accounted to be of a warming and drying nature. Infuſed in wine, it comforts a cold windy ſtomach; it is particularly commended to ſtrengthen the kidneys, to relieve a *fluor albus*, and invigorate a cold relaxed womb.

CLARY-*water*, is compoſed of brandy, ſugar, clary-flowers, and cinnamon, with a little ambergris diſſolved in it. It helps digeſtion, and is cardiac. This water is rendered either purgative or emetic, by adding reſin of jallap and ſcammony, or *crocus metallorum*. Some make *clary-water* of brandy, juice of cherries, ſtrawberries, and gooſeberries, ſugar, cloves, white pepper, and coriander ſeeds; infuſed, ſugared, and ſtrained.

CLARY, *wild*, *Horminum*, in *Botany*; Tourn. Inſt. R. H. 178. Its characters are theſe: the empalement of the flower is permanent, of one leaf, having two lips; the upper ending in three acute points, the under in two. The flower has one petal, divided into two lips; the upper concave, and incurved with a ſlight indenture at the point; the lower broader, and more indented. It hath two ſhort ſtamina, ſituated in the tube of the flower; and in the bottom of the tube are four roundiſh germina, which become four ſeeds lodged in the empalement.

There are five ſpecies, one of which is ſometimes called *oculus Chriſti*. See OCULUS *Chriſti*.

The Engliſh name of this genus of plants is *clary*; but it is an indeterminate one, becauſe it is alſo uſed as the name for the *ſclarea*, a different genus of plants, though by many authors confounded with the other under the name *horminum.* Tourn. Inſt. p. 178.

Horminum has been much celebrated as a cardiac, but is now leſs uſed than formerly. The dried herb, given in infuſion or decoction, is good in the *fluor albus*, but ſhould be given with other medicines. It is alſo commended in colics, flatulencies, and hyſteric complaints; alſo as an antiſpaſmodic, and in epilepſies.

CLASMIUM, in *Natural Hiſtory*, the name of a genus of foſſils of the claſs of the GYPSUMS; the characters of which are, that they are of a ſoft texture, and of a dull and opake look, being compoſed, like all the other gypſums, of irregularly arranged flat particles.

The word is derived from κλασμος, *a fragment*, or *ſmall particle*, from the flaky ſmall particles of which theſe bodies are compoſed. Of this genus there is only one known ſpecies; this is of a tolerably regular and even ſtructure, though very coarſe and harſh to the touch. It is common in Italy, and is greatly eſteemed there: we have of it alſo in ſome parts of Derbyſhire; but with us it is not particulary regarded, but burnt among the reſt. It neither gives fire with ſteel, nor ferments with *aqua fortis*; but calcines readily in the fire, and affords a very valuable plaſter of Paris.

CLASP-*nails.* See Nails.

CLASPERS, in *Botany*, are tendrils, threads, or ligaments, of a middle nature between thoſe of a root, and trunk; whereby ſhrubs, and other leſſer plants, take hold of trees, or other things near them, for their ſupport, &c.

The wiſdom of the Creator is very conſpicuous, in this proviſion for ſome ſpecies of plants, which need it; as ivy, vines, bryony, &c.

The contrivance is various in various ſubjects. Malpighi obſerves, that the *claſpers* of ivy are roundiſh, and covered with hair; and, what is very remarkable, they yield a glutinous terebinthine humour, by means whereof, they adhere cloſely to ſtones, &c. Nature, he adds, uſes no leſs artifice in the *vitis Canadenſis.*

Claſpers ſerve ſometimes for ſupport only: as thoſe of the vine, bryony, &c. whoſe branches being long, ſlender, and brittle, would be weighed down by their own load, and that of their fruit, but for theſe *claſpers*, which by a natural ſpire, or circumvolution, catch hold of any adjacent body.

Claſpers ſometimes alſo ſerve for a ſupply of juice; as in the trunk-roots of ivy, which being a tall plant, and of a compact ſubſtance, the ſap would not be ſufficiently furniſhed to the upper ſprouts, without this expedient.

Claſpers alſo ſometimes ſerve for ſtabiliment, as thoſe of cucumbers; for propagation, as thoſe of camomile; and for ſhade, ſtabiliment, and propagation all together, as thoſe of ſtrawberries.

CLASS, *Claſſis*, a diſtribution of perſons or things, ranged according to their merit, value, or nature. See Rank, &c.

The word comes from *claſſis*, derived by ſome from the Greek καλεω, *congrego*, *convoco*; a *claſs* being nothing but a multitude, aſſembled apart.

Class, in *Botany*, is defined by Linnæus to be an agreement of ſeveral genera in the parts of fructification, according to the principles of nature diſtinguiſhed by art: and he has divided the whole body of vegetables into twenty-four *claſſes.*

Class is particularly uſed for a diſtinction among ſcholars; who are diſtributed into ſeveral *claſſes* or forms, according to their capacities and attainments.

Quintilian uſes the word *claſſis* in this ſenſe, in the firſt book of his Inſtitutiones.

CLASSIC, Classical, a term chiefly applied to authors read in the *claſſes* at ſchools, and who are in great authority there. In this ſenſe, Aquinas, and the maſter of the ſentences, are *claſſic* authors in the ſchool-divinity; Ariſtotle, in philoſophy; Cicero and Virgil, in the humanities. Aulus Gellius ranks among *claſſic* authors, Cicero, Cæſar, Salluſt, Virgil, Horace, &c.

The term *claſſic* ſeems properly applicable only to authors who lived in the time of the Roman republic, and the Auguſtan age, when the Latin was in its perfection.

It appears to have taken its riſe hence, that an eſtimate of every perſon's eſtate being appointed by Servius Tullius, he divided the Roman people into ſix bands, which he called *claſſes.* The eſtate of thoſe of the firſt *claſſis* was not to be under two hundred pounds: and theſe, by way of eminence, were called *claſſics*, *claſſici.*

Hence, alſo, authors of the firſt rank came to be called *claſſics*: all the reſt were ſaid to be *infra claſſem.*

The firſt *claſſis*, again, was ſubdivided into centuries; making fourſcore centuries of footmen, and eighteen of horſemen.

Each *claſſis* conſiſted, one half of the younger ſort, who were to make war abroad; and the other of old men, who ſtaid at home, for the defence of the city.

Classical *learning* may be underſtood to ſignify ſuch an acquaintance with the beſt Latin and Greek writers, as ſhall enable the reader to perceive and admire the peculiar beauty of their compoſitions, and to adopt their diction and ſentiment. The principal *claſſic* Greek authors are, Homer, Heſiod, Plato, Demoſthenes, Æſchines, Xenophon, Plutarch, Iſocrates, Epictetus, Lucian, Sophocles, Euripides, Longinus, Theocritus, Anacreon, Pindar, Ariſtophanes, &c. The chief Latin writers are, Cicero, Livy, Cæſar, Salluſt, Virgil, Horace, Terence, Plautus, Juvenal, Ovid, Pliny, Valerius Paterculus, Tacitus, &c.

CLATHRI, in *Antiquity*, bars of iron, or wood, uſed in ſecuring doors and windows.

There was a goddeſs that preſided over *clathri*, called *Clathra.*

CLATHRUS, in *Botany*, a name given by Micheli, and continued by Linnæus, to a genus of *fungi* in the claſs of *cryptogamia*; the characters of which are theſe: they are always of a roundiſh figure, and have a reticulated and hollowed body, as if full of windows, with ramifications every where annexed.

Clathrus is alſo the name of a ſpecies of TURBO, in the order of *teſtacea*, belonging to the claſs of worms.

CLATTE, in *Heraldry*, a term borrowed from the French, to expreſs ſuch lines as are ſometimes found in the old paintings, and engravings of arms. Theſe lines are of an irregular kind, and not reducible to any other proper lines of heraldry, as the engrailed, indented, embattled, or the like.

CLAVARIA, in *Botany*, the name given by Vaillant, and continued by Linnæus, to a genus of *fungi* in the claſs of *cryptogamia*; the characters of which are, that they grow perpendicularly, and have a ſimple and uniform ſurface; theſe have been called alſo by the ſame Vaillant, under ſome ſmall varieties in the ſpecies, *corallo-fungus*; and by Tournefort, *coralloides.* Dillenius has called them *fungoides.*

CLAVARIUM, in *Antiquity*, an allowance which the Roman ſoldiers had for furniſhing nails to ſecure their ſhoes with. They raiſed frequent mutinies, demanding largeſſes of the emperors under this pretence.

CLAVATA *veſtimenta*, in *Antiquity*, habits adorned with purple *clavi*, which were either broad or narrow. See Clavus.

CLAUDENDA *curia.* See Curia.

CLAUDENS *palpebras*, in *Anatomy*, a name given by Spigelius, and ſome others, to one of the muſcles of the face, called by Albinus and Winſlow, *muſculus orbicularis palpebrarum*, and by others *ſphincter palpebrarum.*

CLAUDICATION. See Lameness.

CLAVELLATI *cineres.* See Pot-*aſhes.*

CLAVES *inſulæ*, a term uſed in the Iſle of Man, where all ambiguous and weighty caſes are referred to twelve perſons, whom they call *claves inſulæ*, i. e. *the keys of the iſland.*

CLAVICULÆ, *collar-bones*, in *Anatomy*, two ſmall bones, ſituate at the baſis of the neck, and top of the breaſt. See *Tab. Anatomy (Oſteol.)*, *fig.* 3. *n.* 3, 3.

They are about half a foot long, of the thickneſs of a finger, and a little bent at each end, and that different ways, ſomewhat like the letter *S*; and are thus called, as being the keys, *claves*, of the *thorax.*

Their inner ſubſtance is ſpongy, whence they are brittle, eaſily broken, and eaſily coaleſcing again. They are joined to the *acromium* of the *ſcapula per ſynchondroſin*; and on the fore-part, *per arthrodiam*, to a *ſinus* on each ſide of the upper part of the *ſternum.*

Their uſe is, to fix the *ſcapulæ* with the *ſternum* and the arms, and to prevent them from ſlipping too forward upon the *thorax.*

The two *clavicles* are ſituated tranſverſely, and a little obliquely, oppoſite to each other, about the ſuperior and anterior part of the *thorax*, between the *ſcapula* and the *ſternum.* Each *clavicle* reſembles in ſome meaſure an Italic *S*, being a long bone irregularly cylindric, bent forwards near the *ſternum*, and backwards near the *ſcapula*, as if it were made up of two arches joined endwiſe in oppoſite directions, that which lies on the fore-part of the breaſt being the largeſt. The *clavicles* are each divided into a body, or middle part, and two extremities, one anterior, inferior, and internal, which may be termed the pectoral or ſternal extremity; the other ſuperior, poſterior, and external, which may be named the humeral, or ſcapular extremity. The pectoral extremity is the thickeſt, and is of a triangular figure, eſpecially near the end, where it is a little enlarged, and ſhews a cartilaginous ſurface, with three angles, of which the loweſt is the moſt prominent, and is turned a little toward the cavity of the *thorax*; near theſe angles there are ſeveral muſcular and ligamentary impreſſions, one of which, near the inferior angle, is ſometimes raiſed like a tubercle. The humeral extremity is flat and broad, and two ſides may be conſidered in it, one ſuperior, the other inferior; as likewiſe two edges, one anterior, the other poſterior; and a ſmall articular ſurface.

The upper ſide has ſeveral inequalities, and in the lower there is a kind of oblong, rough, oblique tuberoſity. The poſterior edge is convex, thick, and uneven, being that of the ſmall arch of the *clavicle:* the anterior edge is concave, thin, and ſmooth, every where except near the great arch, where it has a rough impreſſion. The articular ſurface terminates this extremity, being cartilaginous, turned obliquely forward, and of an oval figure, like that of the *acromium*, with which it is articulated. The body or middle portion, which, together with the pectoral extremity, forms the great curvature of the *clavicle*, is not ſo thick as the extremities; it is a little flatted both on the upper and lower ſides, and therefore two edges may likewiſe be diſtinguiſhed in it; the upper ſide is pretty even, the lower ſomething rougher, and a little depreſſed by a ſuperficial channel. The edges are rounded, the anterior being convex, the poſterior concave; the inner ſubſtance of the extremities is cellular, the reſt is more ſolid, conſiſting of very thick ſides, with a narrow cavity more or leſs filled with reticular bony filaments. Winſlow.

Mr. Weitbrecht has deſcribed and delineated a ligament, which had not been obſerved by anatomical writers, ſtretched from the poſterior part of the anterior extremity of each *clavicle*, behind the *ſternum*, to the ſame part of the other *clavicle*, which makes the articulation of the *ſternum* and *clavicles* ſtronger. See Comment. Acad. Petrop. tom. iv. p. 255.

CLAVICLE, *fracture of the.* The *clavicle* is extremely ſubject to be fractured, both from its tranſverſe poſition, and from its ſmallneſs. Whether it happens to be broken near the *humerus*, or near the *ſternum*, its end that is next the *humerus* always deſcends lower than the other, from the weight of the arm which was before ſuſtained by the *clavicle* and head of the *ſternum*; and notwithſtanding that part of it next the *ſternum* remains immoveable by the deſcent of its other end, it can ſcarce happen but they will in ſome degree collapſe over one another.

The reduction of a fractured *clavicle* is not very difficult, eſpecially when the fracture is tranſverſe; nor is it uſual for the *humerus*, with the fragment of the *clavicle*, to be ſo far diſtorted as not to be eaſily reduced by the fingers. The difficulty, however, is much greater to keep the bone in its place when the fracture has been reduced; and that moſt of all when the bone has been broken obliquely. For this there are two reaſons; for the circular bandages, with which the bones of the arms, and other extremities are uſually held very firm, cannot be applied here, becauſe of the form and diſorder of the part; and then the weight of the depending arm ſoon pulls to pieces what the ſurgeon has been replacing.

This fracture is to be reduced in the following manner: the patient muſt be placed on a low ſeat, and an aſſiſtant is to thruſt his knee againſt the middle of the patient's back, between his two ſhoulders; then laying hold of the heads of both the patient's arms with his hands, he muſt pull them gently and gradually backwards, by which means the *clavicles* will be properly extended: while this is doing, the ſurgeon muſt ſtand before, and endeavour to replace the bone with both his hands, ordering the aſſiſtant to hold the bone in that poſition; he is then to apply a narrow and thick compreſs, ſo as to fill up the cavities above and below the *clavicle*; upon theſe he is to lay two more narrow compreſſes made in the form of an X; over all theſe he is to apply a piece of paſte-board, accommodated to the ſhoulders and neck, and firſt ſteeped in ſpirit of wine, or oxycrate; then he muſt place a ball under the arm, or elſe bind it ſeveral times with a thick roller, to prevent the *humerus* from ſubſiding; and, laſtly, the whole is to be properly bound up, and the arm ſuſpended by a ſaſh or ſling hung acroſs the ſhoulder, about the neck. The plaſters that have been uſed to be employed on this occaſion, have, of later years, been found to be wholly uſeleſs.

Whenever there are any looſe ſplinters of the bone that are entirely ſeparated, which, though they ſhould not wound, or hurt the fleſh, yet will obſtruct the meeting of the *clavicle*, it ſeems altogether requiſite to open the ſkin, and remove them before the reduction of the bone, treating the wound as uſual: but if there ſhould be any ſplinters which ſtill adhere to the bone, and prick the adjacent parts, and impede the reduction, they muſt be alſo either taken off with forceps, or elſe forced back into their places, by which they may be again united to the bone. But to divide the parts, and remove the fragments, requires great caution, leſt ſome of the large ſubclavian veins or arteries be wounded in the operation, and thereby a fatal hæmorrhage be produced. Heiſter, Surg. p. 120.

CLAVICLE, *luxated.* The *clavicles* are but ſeldom diſplaced, by reaſon of their ſtrong ligaments: but they may be diſlocated, however, either from the top of the *ſternum*, or *proceſſus acromion* of the *ſcapula*, to which they are naturally connected. This may be occaſioned either by a fall or blow, or by lifting ſome great weight. With regard to the cure, the ſooner aſſiſtance is had, the more eaſily may the reduction of the *clavicle* be performed; but loſs of time in this caſe is of the utmoſt conſequence, inveterate luxations of the *clavicle* being found incurable. The *clavicles* may be diſlocated in two manners from the *ſternum*, either internally toward the *larynx*, or externally upon the breaſt. When the firſt caſe happens, a cavity may be generally perceived upon the part affected, and the *trachea*, with the carotid veins, and arteries, and nerves, and the *æſophagus*, which are all together, will be very much diſturbed or compreſſed. On the contrary, when it is luxated forward upon the breaſt, it ſhews itſelf by a preternatural tumour, inſtead of a cavity, in that place.

The *clavicles*, when luxated, are to be replaced by the patient's being ſet in a low ſeat, and an aſſiſtant's thruſting his knee againſt the middle of his back, between his ſhoulders, and laying hold of both his arms, and pulling them gently backwards. By this means the *clavicles* will be extended, and are in that ſtate eaſily replaced. When this is done, it muſt be carefully regarded to remove the injuries of the neck. If any kind of luxation requires an accurate retention by bandage, it muſt certainly be this of the *clavicle*, eſpecially when the luxation has happened ſome time before the reduction; for, beſide that the *clavicles* have ſcarce any muſcles to ſupport them, their ligaments are uſually ſo much ſtretched and weakened in this caſe, that they are in no wiſe ſufficient to ſuſtain the weight of the arms. Such luxations of the *clavicles* as happen near the *proceſſus acromion*, are generally much more difficult to diſcover, and have been too often miſtaken, even by ſurgeons, for luxations of the *humerus*. Whenever this luxation happens, the ſuperior part of the *ſcapula* ſticks up: but in the place, when the *clavicles* are ſeparated from the acromion proceſs, a cavity may be obſerved: moſt acute pains alſo ariſe from this luxation, and the arm can by no means be lifted up. If therefore the luxated *clavicle*, in this caſe, is not timely reduced, it is no wonder that the uſe of the arm is entirely loſt afterwards. A ſtrict bandage continued about the part for forty days, to make the diſunited bones again coaleſce, will be found of great ſervice in theſe caſes, and, indeed, is the principal part of the cure. The bones may be replaced by the before adviſed manner of extenſion, but nothing can keep them ſo but a proper and accurately applied bandage. Heiſter. Surg. p. 158.

CLAVICYMBALUM, in *Antiquity*, a muſical inſtrument with thirty ſtrings, in a perpendicular ſituation.

Modern writers apply the name to our harpſichords.

CLAVIS, a Latin word, ſometimes uſed in Engliſh writers for a key.

CLAUSE, an article, or particular ſtipulation in a contract; a charge, or condition in a teſtament, &c.

We ſay, a *derogatory clauſe*, *penal clauſe*, *ſaving clauſe*, *codicillary clauſe*, &c.

CLAUSIT *extremum diem.* See DIEM.

CLAUSTRAL *prior.* See PRIOR.

CLAUSUM *fregit*, an action of treſpaſs; thus called, becauſe the writ demands the perſon ſummoned to anſwer to *quare clauſum fregit*, of the plaintiff, why he committed ſuch a treſpaſs?

CLAVUM *Veneris*, in *Botany*, a name given by ſome authors to the *water*-LILY, or *nymphæa*.

CLAVUS, in *Antiquity*, a band, or fillet of purple, worn on the breaſt by the Roman ſenators and knights, more or leſs broad, according to the dignity of the perſon; from the proportions of which aroſe the difference of *tunica* ANGUSTICLAVIA, and LATICLAVIA. See TUNICA.

This ornament, according to ſome, was called *clavus*, *nail*, as being ſtudded with little round plates of gold, or ſilver, like the heads of nails. Cantelius maintains, that the *clavus* conſiſted of a kind of purple flowers, ſewed upon the ſtuff.

CLAVUS *annalis*, in *Antiquity*. So rude and illiterate were the Romans towards the riſe of their ſtate, that the driving or fixing a nail was the only method they had of keeping a regiſter of time; for which reaſon it was called *clavus annalis*. There was an ancient law, ordaining the chief prætor to fix a nail every year on the ides of September; it was driven into the right ſide of the temple of Jupiter Opt. Max. towards Minerva's temple.

This cuſtom of keeping an account of time, by means of fixing nails, was not peculiar to the Romans, for the Etrurians likewiſe uſed to drive nails into the temple of their goddeſs Nortia, with the ſame view. Vid. Liv. lib. vii. cap. 3.

Clavus, in *Medicine*, a name phyſicians give to a ſhooting pain in the head, commonly ſituate a little above the eyes, viz. on the *ſinus frontalis*; and ſuppoſed to reſemble a boring of the head through with an augre; whence the name. In ſome it is only in one, and in others in both ſides.

It is generally allowed to be a ſpecies of an ague, or an intermittent fever; its periods of coming or going being uſually regular or ſtated. In ſome it is quotidian, in others tertian.

The cure conſiſts in giving an emetic a little before the fit, and after, confirming it with a proper quantity of the cortex, &c. as in intermitting fevers: though bleeding and diaphoretics ſometimes effect a cure without other aſſiſtants.

A pain like to this, on the top of the head, ſometimes attacks hyſterical perſons; which by Dr. Sydenham is termed *clavus hyſtericus*.

Clavus *hyſtericus*, in *Medicine*, denotes a peculiar ſpecies of head-ach, more frequently attacking women than men, and with them uſually owing its origin to a ſuppreſſion of the menſtrual diſcharges. In ſome caſes, the pain is leſs violent, and only attends people during the three or four firſt days of the menſtrual diſcharge. In others, the pain is more violent, and almoſt continual; and when to the common cauſes of it there is added a venereal taint, which is no uncommon caſe, it becomes then the moſt terrible of all pains in the head.

Signs of it. Theſe are a piercing pain about the forehead or temples, reſembling that of a nail driven into the head: this pain ſometimes alſo extends itſelf over the whole head: with this there generally is a ſenſation of pain about the ſagittal ſuture in particular, and a remarkable coldneſs there: often there is an inflation and redneſs of the face, with a noiſe and ringing in the ears. To theſe there are not unfrequently added a ſlight fever, a chillneſs of the extremities, a remarkable laſſitude, and want of appetite, with frequent eructations and nauſeas, and a coſtiveneſs of the bowels. It generally returns about the time of the menſes; or in caſes where it is continual, it rages with more than ordinary violence at that time. Among the women, thoſe are moſt ſubject to it who live ſedentary lives, and feed high, and who are naturally paſſionate, and of a haſty temper.

Cauſes of it. Among the natural cauſes of this terrible pain, the moſt powerful are, an excretion of blood toward the head, and a ſtoppage of the menſes, and of the diſcharges by the hæmorrhoidal veins, by injudicious treatment.

Prognoſtics from it. Nothing gives phyſicians greater trouble, or more expoſes the inſufficiency of the art of healing, than the head-achs to which women are ſubject. The manner of life of the patient is, however, more in fault in theſe obſtinate caſes, than either the nature of the diſeaſe, or the ſkill of the preſcriber: high living, and idleneſs, have too many charms, to be quitted eaſily by thoſe who can enjoy them; and, therefore, while the cauſe always ſubſiſts, the cure can be only palliative or temporary, the diſorder always returning after a time: yet it is certain by experience, that the moſt terrible and inveterate diſorders of this kind may be removed ſo as not to return, by the uſe of proper medicines, and a thorough change in the diet and manner of life of the patient.

Method of cure. The firſt care in this reſpect is to keep the bowels lax, for they are almoſt always naturally coſtive in this diſeaſe: emollient clyſters are the moſt proper means of doing this; and where purges are required beſide, they muſt always be of the moſt gentle and leaſt vellicating kind. After theſe, the violent emotions of the blood are to be quieted by powders of nitre, antimony diaphoretic, crab's eyes, and cinnabar; and if there be a ſpiſſitude in it, the neutral and diuretic ſalts are to be given, in a ſcruple at a time, every day. Tartarum vitriolatum alone, given in this manner, frequently has a very great effect. If it be found neceſſary, beſide this, a gentle opiate may be ſometimes given, ſuch as a ſmall doſe of the ſtorax pill: and externally, ſpirit of wine and camphor is not a little ſerviceable. By way of prevention, it is extremely proper to bleed at ſpring and autumn every year: and above all things, to keep regular in regard to the menſtrual diſcharges. Gentle purges are to be given at times, and neceſſary exerciſe above all things to be adviſed; and this ſhould always be the more inſiſted upon, the more averſe the patients are to it, and the more they love to indulge in a ſedentary courſe. Junker Conſp. Med.

Clavus is alſo uſed in *Medicine*, for a callus formed on the toes; popularly called a *corn*.

Clavi ariſe from a too great compreſſion of the *cutis*; which by this means hardens, and forms itſelf into a knot. See **Callus**.

The cure is by firſt ſoftening them, as with *emplaſt. de ranis cum mercurio*, or with *galban. crecat.* with *ſal ammoniac*; and then pulling them up. A piece of raw beef, applied in manner of a plaſter, and frequently ſhifted, is often found to diſſipate them in a little time. Whether theſe are removed by the knife, or by application of emollient, cauſtic, or corroding medicines, great caution ſhould be uſed to avoid injuring any of the ſubjacent tendons.

After corns are cut away, Harris ſays the *diachylon ſimplex* will prevent their growing again; as alſo will the *galbanum coctum Mynſicbti*, and alſo that ſoft wax which is uſed by the lawyers. But above all a clean linen rag bound about the toe, after the callus is cut away; this was much recommended by king Charles II.

CLAWS, among *Zoologiſts*, denote the ſharp pointed nails, with which the feet of certain quadrupeds and birds are furniſhed.

Elk's **Claws**. See **Elk**.

Claws is alſo uſed for a cloſe or ſmall meaſure of land.

CLAWING, or **Clawing**-*off*, in *Sea-Language*, ſignifies the act of *beating* or turning to windward from a lee-ſhore, ſo as to eſcape the danger of ſhipwreck.

CLAY, *Argilla*, in *Natural Hiſtory*, a ſoft viſcous earth, found in various places, and uſed for various purpoſes; of ſeveral kinds and properties.

Dr. Liſter, in the Philoſophical Tranſactions, gives us a table of twenty-two ſeveral *clays* found in the ſeveral counties of England; five whereof he calls

Pure, i. e. ſuch as are ſoft like butter, to the teeth, with little or no grittineſs in them; viz. 1. Fuller's-*earth*, which he diſtinguiſhes by its colour into yellowiſh, brown, and white. 2. Boles. 3. Pale yellow *clay*. 4. Cowſhot *clay*. 5. Dark blue *clay*, or MARLE. The other ſeventeen,

Impure; whereof eight are harſh and duſty when dry; as, 1. Creta, chalk, or milk-white *clay*. 2. Potters pale yellow *clay*. 3. Blue potters *clay*. 4. Blue *clay*, wherein is found the aſtroites. 5. Yellow *clay*. 6. Fine red *clay*. 7. Soft chalky blue *clay*. 8. Soft chalky red *clay*. Three are ſtony when dry; viz. 1. A red ſtony *clay*. 2. A blue ſtony *clay*. 3. A white ſtony *clay*.

Three are mixed with ſand, or pebbles; viz. 1. A yellow loam. 2. A red ſandy *clay*. 3. A ſecond ſpecies of the ſame kind.

Laſtly, three are mixed with flat or thin ſand, glittering with mica; viz. 1. Crouch white *clay*. 2. Grey or bluiſh tobacco-pipe *clay*. 3. A red *clay*. But this is a very unartful diſpoſition.

Dr. Hill has diſtinguiſhed them by their colours into white, yellow, brown, blue, green, red, and black *clays*; and enumerated ſeveral particular ſorts of *clay* under each of theſe heads. Mr. Mendes Da Coſta alſo, in his Hiſtory of Foſſils, diſtributes them according to their colour into black, white, aſh and grey, red, yellow, brown, blue, green *clays*; and then ſubdivides each claſs into *clays* which are not acted upon by acids, and alcaline *clays*.

The diſtinguiſhing characters of earths principally uſed in the potter's trade are theſe: they are firmly coherent, weighty and compact; ſtiff, viſcid and ductile to a great degree while moiſt; ſmooth to the touch, and unctuous, not eaſily breaking between the fingers, nor readily diffuſible in water, and when mixed in it, not readily ſubſiding from it. It hardens by fire into a kind of ſtony ſubſtance. It is not known that any kind of earth ſhrinks ſo much as *clay*, and hence the purity of *clay* may be judged from the degree of its contraction. Lewis's Commercium Phil Techn. p. 259.

Such as are curious to know more of this ſubject may be fully gratified by conſulting M. Maquer's Mem. on *clays*, in the Mem. of the A. D. S. an. 1762.

Clay-*lands*. See **Soil**.

CLAYES, in *Fortification*, are wattles made with ſtakes, interwoven with oziers, &c. to cover lodgments.

CLAYING *of land*. See **Manuring**.

CLAYTONIA, in *Botany*, a genus of the *pentandria monogynia* claſs. The characters are: the flower hath a two-leaved oval empalement, with a tranſverſe baſe: it hath five oval indented petals, and five recurved ſtamina, ſhorter than the petals, and terminated by oblong ſummits. In the center is ſituated an oval germen, ſupporting a ſingle ſtyle, crowned by a trifid ſtigma. The germen becomes a roundiſh capſule with three cells, opening with three elaſtic valves, and filled with round ſeeds. This is a native of Virginia, and we have but one ſpecies in our Engliſh gardens.

CLEAR, in *Building*, is ſometimes uſed among the workmen for the inſide work of a houſe, &c.

CLEARING *of liquors*. See **Clarification**.

CLEATS, in *Ship-building*, are pieces of wood of different ſhapes, uſed occaſionally to faſten ropes upon, in a ſhip: ſome have one arm, ſome two, and others have no arms but are hollowed in the middle, and nailed to the deck or ſides of the ſhip.

CLEAVERS, Clivers, or Gooſe-*graſs*, *aparine*, in *Botany*, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is bell-faſhioned, very wide, open at the mouth, and divided into ſeveral ſegments; the cup becomes a fruit, which is dry, covered with a very thin ſkin, and compoſed of two round bodies, which contain an umbilicated ſeed. The leaves of this plant are rough and hairy, and ſtand in rundles round the ſtalk.

The ſpecies of *cleavers* enumerated by Mr. Tournefort, are eleven.

The *cleavers* are known from the madders, by their having a dry fruit; and from croſſwort, by having five or more leaves at a joint; and finally, from galium, or ladies bed-ſtraw, by the leaves being rough or hairy. However, Linnæus has claſſed the gooſe-graſs with ſmooth ſeed under GALIUM, and the low trailing gooſe-graſs with a blue flower under *valantia*. It is very common on banks under hedges.

The vulgar have an opinion of this plant as an antiſcorbutic, and eat it in ſpring with nettle-tops and the reſt of that tribe, to ſweeten their blood. It ſtands recommended by many authors as a remedy for the king's evil; and others have aſcribed a very powerful diuretic virtue to it; but theſe have in general ordered a very bad preparation of it for theſe purpoſes, the diſtilled ſimple water; doubtleſs a good decoction muſt be greatly preferable. We have the aſſurance of Dr. Palmer, from his own knowlege, that it is an excellent remedy in a *gonorrhœa ſimplex*.

CLECHE, or Clechy, in *Heraldry*, is explained by Guillim as an ordinary open to the light, or pierced through with another inner one of the ſame figure; e. gr. when a croſs appears as if charged with another croſs of the ſame colour with the field; or as if the field appeared through the apertures thereof.

The word is French, ſuppoſed to be formed of *clef*, *key*; the ends of the croſs being thought to bear ſome reſemblance to the bowls of the ancient keys.

But Colombiere, and ſome other writers, will have this piercing to be only a circumſtance of the croſs *cleché*, and call it by the name *vuide*, voided. The thing that denominates it *cleché*, is its ſpreading from the centre towards the extremities, which are very wide, and end in an angle in the middle; as in the figure repreſented *Tab. Herald. fig.* 37.

CLEDGE, a name given by miners to the upper part of the ſtratum of fuller's-earth. See Fuller's-*earth*.

CLEDONISM, Cledonismus, a kind of divination, in uſe among the ancients.

The word is formed from κληδων, which ſignifies two things, *rumor*, a report, and *avis*, a bird: in the firſt ſenſe, *cledoniſm* ſhould denote a kind of divination drawn from words occaſionally uttered.—Cicero obſerves, that the Pythagoreans made obſervation not only of the words of the gods, but of thoſe of men; and accordingly believed the pronouncing of certain words, v. g. *incendium*, at a meal, very unhappy.—Thus, inſtead of priſon, they uſed the word *domicilium*; and to avoid *erinnyes*, furies, ſaid *eumenides*.

In the ſecond ſenſe, CLEDONISM ſhould ſeem a divination drawn from birds; the ſame with ornithomantia.

CLEF, or Cliff, in *Muſic*, a mark at the beginning of the lines of a ſong, which ſhews the tone, or key, in which the piece is to begin. Or, it is a letter marked on any line, which explains and gives the name to all the reſt.

Anciently, every line had a letter marked for a *clef*; now a letter on one line ſuffices; ſince by this all the reſt are known; reckoning up and down, in the order of the letters.

It is called the *clef*, q. d. *key*, becauſe hereby we know the names of all the other lines and ſpaces; and conſequently the quantity of every degree, or interval.

But becauſe every note in the octave is called a *key*, though in another ſenſe, this letter marked is called in a particular manner the *ſigned clef*; becauſe being written on any line, it not only ſigns and marks that one, but it alſo explains all the reſt.

By *clef*, therefore, for diſtinction-ſake, we mean that letter ſigned on a line, which explains the reſt; and by *key*, the principal note of a ſong, in which the melody cloſes.

There are three of theſe *ſigned clefs*, *c*, *f*, *g*. The *clef* of the higheſt part in a ſong, called *treble*, or *alt*, is *g* ſet on the ſecond line counting upwards. The *clef* of the *baſs*, or the loweſt part, is *f* on the fourth line upwards: for all the other mean parts, the *clef* is *c*, ſometimes on one, ſometimes on another line. Indeed, ſome that are really mean parts, are ſometimes ſet with the *g clef*.

It muſt, however, be obſerved, that the ordinary ſignatures of *clefs* bear little reſemblance to thoſe letters. Mr. Malcolm thinks it would be well if we uſed the letters themſelves. Kepler takes great pains to ſhew, that the common ſignatures are only corruptions of the letters they repreſent. See their figures among the other Characters *of muſic*.

The *clefs* are always taken fifths to one another: that is, the *clef f* is loweſt, *c* a fifth above it, and *g* a fifth above *c*.

When the place of the *clef* is changed, which is not frequent in the *mean clef*, it is with deſign to make the ſyſtem comprehend as many notes of the ſong as poſſible, and ſo to have the fewer notes above or below it. If then there be many lines above the *clef*, and few below it, this purpoſe is anſwered by placing the *clef* in the firſt or ſecond line: if there be many notes below the *clef*, it is placed lower in the ſyſtem. In effect, according to the relation of the other notes to the *clef* note, the particular ſyſtem is taken differently in the ſcale, the *clef* line making one in all the variety.

But ſtill, in whatever line of the particular ſyſtem any *clef* is found, it muſt be underſtood to belong to the ſame of the general ſyſtem, and to be the ſame individual note or ſound in the ſcale. By this conſtant relation of *clefs*, we learn how to compare the ſeveral particular ſyſtems of the ſeveral parts; and know how they communicate in the ſcale, i. e. which lines are uniſon, and which not: for it is not to be ſuppoſed, that each part has certain bounds, within which another muſt never come. Some notes of the treble, v. gr. may be lower than ſome of the mean parts, or even of the baſs. To put together therefore into one ſyſtem all the parts of a compoſition written ſeparately, the notes of each part muſt be placed at the ſame diſtances above and below the proper *clef*, as they ſtand in the ſeparate ſyſtem; and becauſe all the notes that are conſonant (or heard together) muſt ſtand perpendicularly over each other, that the notes belonging to each part may be diſtinctly known, they may be made with ſuch differences as ſhall not confound, or alter their ſignifications with reſpect to time, but only ſhew, that they belong to this or that part. Thus we ſhall ſee how the parts change and paſs through one another; and which, in every note, is higheſt, loweſt, or uniſon. The uſe of particular *ſigned clefs* then, is an improvement with reſpect to the parts of any compoſition; for unleſs ſome one key in the particular ſyſtems were diſtinguiſhed from the reſt, and referred invariably to one place in the ſcale, the relations could not be diſtinctly marked.

It muſt here be obſerved, that for the performance of any ſingle piece, the *clef* only ſerves for explaining the intervals in the lines and ſpaces: ſo that we need not regard what part of any greater ſyſtem it is; but the firſt note may be taken as high or low as we pleaſe. For as the proper uſe of the ſcale is not to limit the abſolute degree of tone; ſo the proper uſe of the *ſigned clef* is not to limit the pitch, at which the firſt note of any part is to be taken; but to determine the tune of the reſt, with relation to the firſt; and conſidering all the parts together, to determine the relation of their ſeveral notes by the relations of their *clefs* in the ſcale: thus, their pitch of tune being determined in a certain note of one part; the other notes of that part are determined by the conſtant relations of the letters of the ſcale, and the notes of the other parts by the relations of their *clefs*.

In effect, for performing any ſingle part, the *clef* note may be taken in an octave, i. e. at any note of the ſame name; provided we do not go too high, or too low, for finding the reſt of the notes of a ſong. But in a concert of ſeveral parts, all the *clefs* muſt be taken, not only in the relations, but alſo in the places of the ſyſtem above mentioned; that every part may be comprehended in it.

The difference of *clefs* in particular ſyſtems makes the practice of muſic much more difficult and perplexed, than it would otherwiſe be; both with reſpect to inſtruments, and to the voice. This occaſioned Mr. Salmon to propoſe a method of reducing all muſic to one *clef*; whereby the ſame writing of any piece of muſic ſhould equally ſerve to direct the voice, and all inſtruments; which he calls an *univerſal character*.

The natural and artificial note expreſſed by the ſame letter, as *c* and *c* ♯, are both ſet on the ſame line or ſpace. When there is no character of flat or ſharp, at the beginning with the *clef*, all the notes are natural: and if in any particular place the artificial note be required, it is ſignified by the ſign of a flat or ſharp, ſet on the line a ſpace before that note.

If a ſharp or flat be ſet at the beginning in any line or ſpace with the *clef*, all the notes on that line or ſpace are artificial ones; i. e. are to be taken a ſemitone higher or lower than they would be without ſuch ſign. And the ſame affects all their octaves above and below, though they be not marked ſo. In the courſe of the ſong, if the natural note be ſometimes required, it is ſignified by this character ♮.

The marking of the ſyſtem thus by flats and ſharps, Mr. Malcolm calls the *ſignature of the clefs.*

CLEFT, in *Grafting*. See Engrafting.

Clefts, or Cracks, in the heels of horſes, are occaſioned by hard labour, unwholeſome food, want of exerciſe, and waſhing them when hot. They are cured by cutting off the hair, and anointing with the oil of hempſeed, or linſeed, and keeping them clean.

CLEIDION, in *Antiquity*, the ſame with *clavicula.* See Claviculæ.

CLEIDOMASTOIDEUS, in *Anatomy*, a name given by Albinus to a muſcle, called by others ſimply mastoidæus, and by Euſtachius *ſeptimus caput moventium.*

CLEMA, in *Antiquity*, a ſpecies of vine, a twig of which was the enſign of a centurion's office.

CLEMATIS, in *Botany*. See Virgin'*s bower.*

CLEMENT, *Conſtitutions of.* See *Apoſtolical* Constitutions.

Clement, *Recognitions of.* See Recognitions.

CLEMENTINA, a ſpurious work attributed to Clement.

CLEMENTINE, a term uſed among the Auguſtins, who apply it to a perſon, who, after having been nine years a ſuperior, ceaſes to be ſo, and becomes a private monk, under the command of a ſuperior.

The word has its riſe hence, that pope Clement, by a bull, prohibited any ſuperior among the Auguſtins from continuing above nine years in his office.

Clementines, in the *Canon Law*, are the conſtitutions of pope Clement V. and the canons of the council of Vienne.

CLENCH-*nails*. See Nails.

CLEOME, in *Botany*, a name given by ſome to the ſea-holly, or eringo. Ger. Emac. Ind. 2.

Cleome, *ſinapiſtrum* of Tournefort, is a genus of the *tetradynamia ſiliquoſa* claſs. The characters are; the flower hath a four-leaved empalement, which ſpreads open: it hath four petals, which incline upward, and ſpread open; the lower being leſs than the other: in the bottom there are three mellous glands, which are roundiſh, and ſeparated by the empalement: it hath ſix or more ſtamina, which are incurved, having riſing ſummits fixed to their ſide: it hath a ſingle ſtyle, ſupporting an oblong germen, which is of the ſame length with the ſtamina, and crowned by a thick ſtigma: the germen becomes a long cylindrical pod, having one cell opening with two valves, and filled with round ſeeds.

CLEPSYDRA, a kind of water-clock, or an hour-glaſs ſerving to meaſure time by the fall of a certain quantity of water.

The word comes from κλεπτω, *condo*, and ὕδωρ, *aqua, water.*

There have likewiſe been *clepſydræ* made with mercury.

The Egyptians, by this machine, meaſured the courſe of the ſun. Tycho Brahe, in modern days, made uſe of it to meaſure the motion of the ſtars, &c. and Dudley uſed the ſame contrivance in making all his maritime obſervations.

The uſe of *clepſydræ* is very ancient: they were probably invented in Egypt under the Ptolemies; though ſome authors aſcribe the invention of them to the Greeks, and others to the Romans. Pliny informs us, that Scipio Naſica, about one hundred and fifty years before Chriſt, gave the firſt hint for the conſtruction of them; and Pancirollus has particularly deſcribed it. According to his account, the *clepſydra* was a veſſel made of glaſs, with a ſmall hole in the bottom of it edged with gold: in the upper part of this veſſel a line was drawn, and marked with the twelve hours: the veſſel was filled with water, and a cork with a pin fixed in it floated on the ſurface, and pointed to the firſt hour; and as the water ſunk in the veſſel, by iſſuing out of the ſmall hole, the pin indicated the other hours in proportion to its decreaſe. Their uſe was chiefly in the winter; ſun-dials ſerved in the ſummer. They had two great defects; the one, that the water ran out with a greater or leſs facility, as the air was more or leſs denſe: the other, that the water ran out more readily at the beginning, than towards the concluſion.

M. Amontons has invented a *clepſydra* free from both theſe inconveniences, and which is ſaid to have the three grand advantages, of ſerving the ordinary purpoſe of clocks; of ſerving in navigation for the diſcovery of the longitude; and of meaſuring the motion of the arteries.

Clepsydra, *conſtruction of a.* To divide any cylindric veſſel into parts to be emptied in each diviſion of time; the time wherein the whole, and that wherein any part is to be evacuated, being given.

Suppoſe, v. gr. a cylindric veſſel, whoſe charge of water flows out in twelve hours, were required to be divided into parts to be evacuated each hour. 1. As the part of time 1 is to the whole time 12, ſo is the ſame time 12 to a fourth proportional, 144. 2. Divide the altitude of the veſſel into 144 equal parts: here, the upper diviſion will fall to the laſt hour; the three next above to the laſt part but one; the five next to the tenth hour, &c. Laſtly, the twenty-three laſt to the firſt hour.

For, ſince the times increaſe in the ſeries of the natural numbers, 1, 2, 3, 4, 5, &c. and the altitudes, if the numeration be in retrograde order from the twelfth hour, increaſe in the ſeries of the unequal numbers, 1, 3, 5, 7, 9, &c. the altitudes computed from the twelfth hour, will be as the ſquares of the times 1, 4, 9, 16, 25, &c. Therefore the ſquare of the whole time 144, comprehends all the parts of the altitude of the veſſel to be evacuated. But a third proportional to 1 and 12, is the ſquare of 12; and conſequently it is the number of equal parts into which the altitude is to be divided, to be diſtributed according to the ſeries of the unequal numbers, through the equal intervals of hours. Since, in lieu of parts of the ſame veſſel, other leſs veſſels equal thereto may be ſubſtituted; the altitude of a veſſel emptied in a given ſpace of time being given, the altitude of another veſſel to be emptied in a given time may be found; viz. by making the altitudes as the ſquares of the times.

Hence we ſee the method of conſtructing the *clepſydræ* uſed by the ancients.

The honourable Mr. Charles Hamilton has deſcribed a curious *clepſydra* of a new conſtruction. An open canal *e e*, (ſee *Tab. Horology*, *fig.* 1.) ſupplied with a conſtant and equal ſtream by the ſyphon *d*, has at each end *f*, *f*, open pipes of exactly equal bores, which deliver the water that runs along the canal *e*, alternately into the veſſels *g* 1, *g* 2, in ſuch a quantity as to raiſe the water from the mouth of the tantalus *t* exactly in an hour. The canal *e e* is equally poiſed by the two pipes *f* 1, *f* 2, upon a center *r*; the ends of the canal *e* are raiſed alternately, as the cups *z z* are depreſſed, to which they are connected by lines running over the pullies *l*, *l*. The cups *z z*, are fixed at each end of the balance *m*, *m*, which moves up and down upon its center *v*. *n* 1, *n* 2, are the edges of two wheels or pullies, moving different ways alternately, and fitted to the cylinder *o* by oblique teeth both in the cavity of the wheel and upon the cylinder, which, when the wheel *n* moves one way, that is, in the direction of the minute-hand, meet the teeth of the cylinder and carry the cylinder with it; and when *n* moves the contrary way, ſlip over thoſe of the cylinder, the teeth not meeting, but receding from each other. One or other of theſe wheels *n n* continually moves *o* in the ſame direction, with an equable and uninterrupted motion. A fine chain goes twice round each wheel, having at one end a weight *x*, always out of water, which equiponderates with *y* at the other end, when kept floating on the ſurface of the water in the veſſel *g*, which *y* muſt always be; the two cups *z*, *z*, one at each end of the balance keep it in equilibrio, till one of them is forced down by the weight and impulſe of the water, which it receives from the tantalus *t t i*: each of theſe cups *z*, *z*, has likewiſe a tantalus of its own *b h*, which empties it after the water has done running from *g*, and leaves the two cups again in equilibrio: *q* is a drain to carry off the water. The dial-plate, &c. needs no deſcription. The motion of the *clepſydra* is effected thus: as the end of the canal *e e*, fixed to the pipe *f* 1, is, in the figure the loweſt, all the water ſupplied by the ſyphon runs through the pipe *f* 1, into the veſſel *g* 1, till it runs over the top of the tantalus *t*; when it immediately runs out at *i* into the cup *z*, at the end of the balance *m*, and forces it down; the balance moving on its center *v*. When one ſide of *m* is brought down, the ſtring which connects it to *f* 1, running over the pulley *l*, raiſes the end *f* 1 of the canal *e*, which turns upon its center *r*, higher than *f* 2; conſequently, all the water which runs through the ſyphon *d* paſſes through *f* 2 into *g* 2, till the ſame operation is performed in that veſſel, and ſo on alternately. As the height the water riſes in *g* in an hour, viz. from *s* to *t*, is equal to the circumference of *n*, the float *y* riſing through that height along with the water, lets the weight *x* act upon the pulley *n*, which carries with it the cylinder *o*; and this, making a revolution, cauſes the index *k* to deſcribe an hour on the dial-plate. This revolution is performed by the pulley *n* 1; the next is performed by *n* 2, whilſt *n* 1 goes back, as the water in *g* 1 runs out through the tantalus; for *y* muſt follow the water, as its weight increaſes out of it. The axis *o* always keeps moving the ſame way; the index *p* deſcribes the minutes; each tantalus muſt be wider than the ſyphon, that the veſſels *g g* may be emptied as low as *s*, before the water returns to them. See drawings of this inſtrument in different poſitions, with a deſcrip-a deſcription of it in the Phil. Tranſ. vol. xliv. art. xiv. p. 171.

CLEPSYDRA is alſo uſed for an HOUR-*glaſs* of ſand.

CLEPSYDRA is alſo applied to a chemical veſſel perforated in the ſame manner.

CLERGY, CLERUS, the aſſembly or body of clerks, or eccleſiaſtics; in contradiſtinction to the LAITY. See CLERK.

In the Romiſh church there are two kinds of *clergy:* the one *regular*, comprehending all the religious of both ſexes: the other *ſecular*, comprehending all the eccleſiaſtics that do not make the monaſtic vows.

Among the Reformed, there are none but ſecular *clergy*. The Roman *clergy* forms a monarchical ſtate, under the pope, as its ſupreme head.

The *clergy* in the firſt century were diſtinguiſhed by the title of PRESBYTERS or BISHOPS; and ſome maintain that they were of equal rank and authority. But towards the cloſe of the ſecond century, a notion prevailing, that the miniſters of the Chriſtian church ſucceeded to the character, rights, and privileges of the Jewiſh prieſthood, this produced a ſubordination of rank among them. The biſhops aſſumed a rank and character ſimilar to thoſe of the Jewiſh high-prieſt, the preſbyters repreſented the prieſts, and the deacons the levites. This diſtinction was ſtill farther promoted towards the end of the third century, and a new ſet of eccleſiaſtical officers was eſtabliſhed, ſuch as ſub-deacons, acolythi, door-keepers, readers, exorciſts, &c. The powers of the *clergy* were conſiderably extended under the patronage of Conſtantine the Great, about the cloſe of the fourth century.

The *clergy* was anciently divided into three orders; viz. prieſts, deacons, and inferior CLERKS; and each order had its chief: the arch-prieſt was the head of the firſt order, the arch-deacon of the ſecond, and the dean of the third.

Under the name of *clergy*, were alſo formerly compriſed all the officers of juſtice; as being ſuppoſed to be men of letters.

Though the *clergy* formerly claimed an exemption from all ſecular juriſdiction, yet Matt. Paris tells us, William the Conqueror ſubjected the biſhops and abbeys who held *per baroniam*, and who, till then, had been exempt from all ſecular ſervice; and ordered they ſhould be no longer free from mortuary ſervices. To this purpoſe he preſcribed arbitrarily what number of ſoldiers every abbey and biſhoprick ſhould provide, to ſerve him and his ſucceſſors in war, and laid up the regiſters of eccleſiaſtical ſervitude in his treaſury.

But, in effect, the *clergy* were not exempt from all ſecular ſervice till then; as being bound by the laws of king Edgar to obey the ſecular magiſtrate in ſome things; viz. upon an expedition to the wars, and in contributing to the building and repairing of bridges, &c. See TRINODA *neceſſitas*.

The privileges of the Engliſh *clergy*, by the ancient ſtatutes, are very conſiderable: their goods are to pay no toll in fairs or markets; they are exempt from all offices, but their own; from the king's carriages, poſts, &c. from appearing at ſheriffs tourns or frank-pledges; and are not to be fined or amerced, according to their ſpiritual, but their temporal means.

A *clergyman* acknowleging a ſtatute, his body is not to be impriſoned: if he be convicted of a crime, for which the benefit of *clergy* is allowed, he ſhall not be burnt in the hand. See *Benefit of* CLERGY.

The *clergy*, by common law, are not to be burdened in the general charges with the laity; nor to be troubled or incumbered, unleſs expreſly named, and charged by the ſtatute; for general words do not affect them. Thus, if a hundred be ſued for a robbery, the miniſter ſhall not contribute; though the words are, *gentes demorantes:* neither are they aſſeſſed to the highway, to the watch, &c. But theſe privileges are in a great meaſure loſt; the *clergy* being included under general words in later ſtatutes: ſo that they are liable to all public charges impoſed by act of parliament, where they are not particularly excepted. They are not now required to bear temporal offices, as thoſe of ſheriff, conſtable, &c. nor to ſerve on juries, nor to appear at tourns and leets, nor to ſerve perſonally in wars. Their bodies are not to be taken on ſtatutes merchant or ſtaple, &c. nor are they liable to an arreſt by *capias*; but a writ ſhould be addreſſed to the biſhop, compelling them to appear: nevertheleſs, when execution is obtained, a ſequeſtration of the profits of their benefices may be had. *Clergymen* are not liable to be arreſted in the church or church-yard, while attending on divine ſervice; and he that beats a *clergyman*, may be obliged to do penance in the ſpiritual court. See BATTERY.

The revenues of the *clergy* were anciently more conſiderable than at preſent: Ethelwolph, in 855, gave them the tythe of all goods, and the tenth of all the lands in England; free from all ſecular ſervices, taxes, &c.

The charter whereby this was given them, was confirmed by ſeveral of his ſucceſſors; Edmund, Edgar, Ethelred, Alfred, and William the Conqueror; the laſt of whom, finding the biſhopricks ſo rich, erected them all into baronies; each barony containing thirteen knights fees, at leaſt. But ſince the Reformation, the biſhopricks are much impaired. See BISHOP.

The revenues of the inferior *clergy*, in the general, are ſmall; a third part of the beſt benefices being anciently, by the pope's grant, appropriated to monaſteries; upon the diſſolution whereof they became lay-fees.

Indeed, an addition was made, 2 Annæ; the whole revenue of FIRST-FRUITS and tenths being then granted, to raiſe a fund for the augmentation of the maintenance of the poor *clergy:* purſuant to which, a corporation was formed, by the name of the governors of the bounty of queen Anne, for the augmentation of the maintenance of the poor *clergy*; to whom the ſaid revenues were conveyed in truſt, &c. See AUGMENTATION.

CLERGY, *articles of the*. See ARTICLES.

CLERGY, *proctors of the*. See PROCTORS.

CLERGY, *Privilegium Clericale*, or *Benefit of Clergy*, denotes an ancient privilege of the church, conſiſting in this, that places conſecrated to religious duties were exempted from criminal arreſts, whence proceeded SANCTUARIES; and that the perſons of *clergymen* were exempted from criminal proceſs before the ſecular judges in particular caſes. This, at firſt, was an indulgence granted by the civil government, but it was afterwards claimed as an inherent, indefeaſible, and *jure divino* right: and the *clergy* endeavoured to extend the exemption not only to almoſt all kinds of crimes, but to a variety of perſons, beſides thoſe who were properly of their own order. In England, though this privilege was allowed in ſome capital caſes, it was not univerſally admitted. The method of granting it was ſettled in the reign of Henry VI. which required, that the priſoner ſhould firſt be arraigned, and then claim his *benefit of clergy*, by way of declinatory plea, or, after conviction, by way of arreſt of judgment; which latter mode is moſt uſually practiſed. This privilege was originally confined to thoſe who had the *habitum & tonſuram clericalem:* but in proceſs of time every one was accounted a clerk, and admitted to this *benefit*, who could read; ſo that, after the invention of printing, and the diſſemination of learning, this became a very comprehenſive teſt, including laymen as well as divines; and, therefore, the ſtat. 4 Henry VII. cap. 13. diſtinguiſhes between lay-ſcholars, and clerks in holy orders; and directs, that the former ſhould not claim this privilege more than once, and, in order to their being afterwards known, that they ſhould be burnt with a hot iron in the brawn of the left thumb. This diſtinction was aboliſhed by 28 Hen. VIII. cap. 4. and 32 Hen. VIII. cap. 3. but was virtually reſtored by 1 Ed. VI. cap. 12. in conſequence of which ſtatute peers of the realm, and lords of parliament, were entitled to an equal privilege with the *clergy*, for the firſt offence, though they could not read, and for all offences *clergyable* to commoners, and ſome others therein ſpecified. When thoſe, admitted to the privilege of their *clergy*, were thus diſcharged from the ſentence of the law in the king's courts, they were delivered over to the ordinary for *canonical* PURGATION. But by ſtat. 18 Eliz. cap. 7. all ſuch perſons, inſtead of being committed to the ordinary, are delivered out of priſon, provided the judge does not think fit to continue them in goal for a limited time, not exceeding a year.

Some alterations were made in the law reſpecting this privilege, by 21 Jac. I. cap. 16. and by 3 and 4 W. and M. cap. 9. and 4 and 5 W. and M. cap. 24. in conſequence of which all women, all peers, and all commoners, who could read, were diſcharged in *clergyable* felonies, abſolutely, if clerks in orders; and for the firſt offence, upon burning in the hand, if lay; all, however, except peers, liable to impriſonment, as before mentioned; and thoſe who could not read, if under the degree of peerage, were hanged. By 5 Ann, cap. 6. the *benefit of clergy* was indiſcriminately granted to all who had a right to aſk it, without the condition of reading. Again, by 4 Geo. I. cap. 11. and 6 Geo. I. cap. 23. it is enacted, that where any perſons ſhall be convicted of larceny, either grand or petit, and ſhall be entitled to the *benefit of clergy*, or liable only to the penalties of branding or whipping, the court in their diſcretion may direct ſuch offenders, inſtead of burning or whipping, to be tranſported to America for ſeven years; and if they return within that time, it ſhall be felony *without benefit of clergy*.

It appears, from the above account, that the perſons to whom this privilege now extends, are clerks in orders, without branding or tranſportation; lords of parliament and peers of the realm, for the firſt offence; and all commoners, not in orders, whether male or female, for *clergyable* felonies, upon being burnt in the hand, or impriſoned at the diſcretion of the judge; and in caſe of larceny, on being tranſported for ſeven years, or ſuffering the puniſhment more lately ſubſtituted in the room of tranſportation.

This privilege is allowed only in petit treaſon and felonies; though not in all felonies, as lying in wait on the highway, deſtroying and ravaging the country, and Arson. Petit treaſon, and other acts of felony, beſides theſe, are excluded by particular acts of parliament; the operation of which reſtores the law to the ſame rigour of capital puniſhment in the firſt offence, which it exerted before the privilege was allowed, and which it ſtill exerts on a ſecond offence in almoſt all kinds of felonies, unleſs committed by clerks in actual orders. By the marine law, declared in ſtat. 28 Hen. VIII. cap. 15. the *benefit of clergy* is not allowed in any caſe whatever.

Thoſe who are entitled to claim this privilege, are for-ever diſcharged of all felonies, committed before conviction, within its extent; and reſtored to all capacities and credits, and the poſſeſſion of their lands, as if they had never been convicted. But, by conviction, they forfeit all their goods to the king, which are not afterwards reſtored, and are ſubject to all the diſabilities of felons, till they have received either the judgment of the law or a pardon. Blackſt. Com. vol. iv. p. 358, &c.

CLERICAL *Crown*. See Crown.

Clerical *Title*. See Title.

CLERICI *non elegantur in officio*. See Quod *Clerici*.

Non-reſidentia pro Clericis *Regis*. See Non *reſidentia*.

Clerico *admittendo*, a writ directed to the biſhop, for the admitting a clerk to a benefice upon a *ne admittas* tried, and found for the party who procured the writ.

Clerico *capto per ſtatutum mercatorum*, is a writ for the delivery of a clerk out of priſon, who is impriſoned upon the breach of ſtatute-merchant.

Clerico *convicto commiſſo gaolæ in defectu ordinarii deliberando*, is a writ for the delivery of a clerk to his ordinary, that was formerly convicted of felony; by reaſon his ordinary did not challenge him according to the prilege of clerks.

Clerico *intra ſacros ordines conſtituto non eligendo in officium*, is a writ directed to the bailiffs, &c. that have thruſt a bailiwick or beadleſhip upon one in holy orders; charging them to releaſe him.

CLERK, Clericus, a word formerly uſed to ſignify a learned man, or man of letters.

The word comes from κληρος, uſed for *clergy*, but more properly ſignifying *lot*, or *heritage*; becauſe the lot and portion of *clerks* or eccleſiaſtics is to ſerve God. Accordingly, *clerus* was at firſt uſed to ſignify thoſe, who had a particular attachment to the ſervice of God. The origin of the expreſſion is derived from the Old Teſtament, where the tribe of Levi is called the *lot*, *heritage*, κληρος; and God is reciprocally called their portion; becauſe that tribe was conſecrated to the ſervice of God, and lived on the offerings made to God, without any other ſettled proviſion, as the reſt had.

Thus, Paſquier obſerves, the officers of the counts *(comites)* were anciently created under the title of *clerks of accompts*; and ſecretaries of ſtate were called *clerks of the ſecrets*. So, *Clericus domini regis*, in the time of Edward I. was rendered in Engliſh, the *king's ſecretary*, or *clerk of his council*.

The term was applied indifferently to all who made any profeſſion of learning; or who knew how to manage the pen: though, originally, it was appropriated to eccleſiaſtics.

As the nobility and gentry were uſually brought up to the exerciſe of arms; there were none but the clergy left to cultivate the ſciences: hence, as the clergy alone made any profeſſion of letters, a very learned man came to be called a *great clerk*, and a ſtupid ignorant man, a *bad clerk*.

Ronſard, in his old language, uſes the word femininely, *clergeſſe*, for a learned woman. "*Mais trop plus eſt à* "*craindre une feme clergeſſe.*"

Clerk (in general) is uſed for all thoſe of the eccleſiaſtical ſtate, who are in holy orders, of any degree, or kind; from the deacon, to the prelate.

Yet, in its utmoſt latitude, the word *clerk* alſo includes chantors, acolythi, exorcistæ, and ostiarii. The canons excommunicate all thoſe who lay hands on a *clerk*. A council held in Africa prohibited the appointing any *clerk* to be a tutor, guardian, or curator, by teſtament. The council of Elvira enjoins continence on all *clerks*, biſhops, prieſts, or deacons, on pain of being ſtripped of their clericature.

Clerk, *acephalous*, in the ſixth century, was a name given to thoſe *clerks* who ſeparated from the biſhop, and choſe not to live any longer in community with him; in contradiſtinction to

Clerks *canonic*, who continued to live with the biſhop, according to the canons.

Clerk, in the way of trade and buſineſs, is one who exerciſes any function with the pen.

Clerk is alſo a title given to ſeveral officers of this kind in the royal palace, the courts of juſtice, revenue, army, navy, &c. The principal of theſe are as follow.

Clerk *of the Acts*, is an officer of the navy, who receives and enters the commiſſions and warrants of the lord admiral; and regiſters the acts and ordinances of the commiſſioners of the navy.

Clerk *of Affidavits*, in the court of chancery, an officer who files all affidavits made uſe of in court.

Clerk *of Aſſiſe*, is he that writeth all things judicially done by the juſtices of aſſiſe, in their circuits.

Clerk *of the Bails*, an officer belonging to the court of king's bench. Stat. 22 and 23 Car. II. He files the bail pieces taken in that court, and attends for that purpoſe.

Clerk *of the Check*. See Check.

Clerk *of the Cloſet*, is a divine, otherwiſe called *confeſſor to his majeſty*; whoſe office is to attend at the king's right hand during divine ſervice, to reſolve all doubts concerning ſpiritual matters, to wait on the king in his private oratory, &c.

Clerk *of the Crown*, or *Crown-Office*, in the king's bench court, an officer whoſe buſineſs is to read, frame, and record all indictments againſt traitors, felons, and other offenders there, arraigned upon any public crime.

Clerk *of the Crown*, in chancery, is an officer, who, by himſelf, or deputy, is continually to attend the lord-chancellor, or lord-keeper, for ſpecial matters of ſtate, by commiſſion, or the like, either immediately from his majeſty, or by order of his council; as well ordinary as extraordinary. All general pardons, upon grants of them at the king's coronation, or in parliament; the writs of parliament, with the names of the knights, citizens, and burgeſſes, are alſo returned into his office: beſides which, he has the making of ſpecial pardons, and writs of execution upon bonds of ſtatute ſtaple forfeited.

Clerk *of the Declarations*, an officer in the court of king's bench that files all declarations in cauſes there depending, after they are engroſſed.

Clerk *of the Deliveries*, is an officer in the Tower, who takes indentures for all ſtores iſſued thence.

Clerk *of the Errors*, in the court of common pleas, tranſcribes, and certifies into the king's bench, the tenor of the records of the cauſe, or action, upon which the writ of error, made by the curſitor, is brought there, to be determined.

Clerk *of the Errors*, in the king's bench, tranſcribes and certifies the records of ſuch cauſes in that court into the exchequer; if the cauſe, or action, is by bill.

Clerk *of the Errors*, in the exchequer, tranſcribes the records certified thither out of the king's bench; and prepares them for judgment in the court of exchequer, to be given by the juſtices of the common-pleas, and barons, there.

Clerk *of the Eſſoins*, in the court of common pleas, keeps the eſſoin-roll, or enters eſſoins. He alſo provides parchment, cuts it into rolls, marks the number on them; delivers out all the rolls to every officer, and receives them again when written. See Essoin.

Clerk *of the Eſtreats*, belongs to the exchequer; and, every term, receives the eſtreats out of the lord-treaſurer's remembrancer's office, and writeth them out to be levied for the king. He alſo maketh ſchedules of ſuch ſums eſtreated as are to be diſcharged. See Estreat.

Clerks *of the Green-Cloth*. See Green-Cloth.

Clerk *of the Hamper*, or *Hanaper*, is an officer in chancery, whoſe buſineſs is to receive all money due to the king for the ſeals of charters, patents, commiſſions, and writs: as alſo fees due to the officers for inrolling and examining the ſame. He is obliged to attend on the lord-chancellor, or lord-keeper, daily, in term-time; and at all times of ſealing.

Clerk *Comptroller of the King's Houſe*, an officer of the court, who has place and ſeat in the compting-houſe; with authority to allow or diſallow the charges and demands of purſuivants, and meſſengers of the green-cloth, purveyors, &c. He has alſo the overſight of all defaults and miſcarriages of inferior officers; and ſits in the compting-houſe with the ſuperior officers, viz. the lord-ſteward, treaſurer, comptroller, and cofferer, for correcting and redreſſing things out of order.

Clerk *of the Inrollments of Fines and Recoveries*, in the court of common pleas, is an officer under the three elder judges of that court, and removeable at their pleaſure, who inrols all fines and recoveries, and returns writs of entry, &c. See INROLLMENT.

CLERK *of the Juries*, or *curata writs*, is an officer belonging to the court of common-pleas, who makes out the writs called *habeas corpus*, and *diſtringas*, for the appearance of juries, either in court, or at the aſſizes; after the panel is returned upon the *venire facias*. See JURY.

CLERK *of the Market*, is an officer of the king's houſe, whoſe duty is to take charge of the king's meaſure, and to keep ſtandards of them, that is, examples of all the meaſures that ought to be uſed through the land.

CLERK *Marſhal* of the king's houſe, ſeems to be an officer who attends the marſhal in his court, and records all his proceedings. See MARSHAL.

CLERK *of the Nichils*, or *Nihils*, is an officer in the exchequer, who makes a roll of all ſuch ſums as are *nic hilled* by the ſheriffs upon their eſtreats of green-wax; and delivers the ſame into the lord-treaſurer's remembrancer's office, to have execution done upon them for the king. See NIHIL.

CLERK *of the Ordnance*, is an officer in the Tower, who regiſters all orders relating to the king's ordnance. See ORDNANCE.

CLERK *of the Outlawries*, is an officer belonging to the court of common-pleas; being a deputy to the king's attorney-general, for making out the writs of *capias utlagatum*, after outlawry; and the king's attorney's name is to every one of thoſe writs.

CLERK *of the Paper-Office*, is an officer of the king's bench, who makes up the paper-books of ſpecial pleadings and demurrers in that court.

CLERK *of the Papers*, an officer in the court of common-pleas, who keeps the papers of the warden of the Fleet, enters commitments and diſcharges of priſoners, delivers out day-rules, &c.

CLERK *of the Parcels*, an officer of the exchequer. See PARCEL-*Makers*.

CLERK *of a pariſh*. See PARISH *Clerk*.

CLERK *of the Parliament*, is an officer who records all things done in parliament; and engroſſes them fairly into parchment rolls, for the better preſervation of them to poſterity. Of theſe there are two: one of the houſe of lords, and the other of the houſe of commons.

CLERK *of the Patents*, or letters patent under the great ſeal. See PATENT.

CLERK *of the Peace*, is an officer belonging to the ſeſſion of the peace, whoſe duty is at the ſeſſion to read the indictments, to inrol the acts, and draw the proceſſes; to inrol proclamations of rates for ſervants wages; to inrol the diſcharge of apprentices; to keep the counterpart of the indenture of armour, &c. Alſo to certify in the king's bench tranſcripts of indictments, outlawries, attainders, and convictions, had before the juſtices of the peace within the time limited by ſtatute. He is appointed by the *cuſtos rotulorum* of the county, and liable to be diſcharged for miſdemeanour by the juſtices of peace in quarter-ſeſſions.

CLERK *of the Pells*, belongs to the exchequer: his buſineſs is, to enter the tellers bill into a parchment roll, called *pellis receptorum*; and alſo to make another roll of payment, called *pellis exituum*, wherein he ſets down by what warrant the money was paid. 22 and 23 Car. II.

CLERK *of the Petty Bag*, is an officer in chancery, whereof there are three; the maſter of the rolls being their chief. Their office is to record the return of all inquiſitions out of every county, all liveries granted in the court of wards, all oſter les mains; to make all patents of cuſtomers, gaugers, comptrollers, and aulnagers; congé d'elires for the creations of biſhops; ſummonſes of the nobility, clergy, and burgeſſes, of parliament; commiſſions directed to the knights and others, of every ſhire, for raiſing of ſubſidies; writs for nomination of collectors for the fifteenths; and all traverſes upon any office, bill, or otherwiſe; and to receive the money due to the king for the ſame. See PETTY-*Bag*.

CLERK *of the Pipe*, belongs to the exchequer. See PIPE-*Office*.

CLERK *of the Pleas*, is an officer in the exchequer, in whoſe office the officers of the court, upon ſpecial privilege belonging to them, ought to ſue, and be ſued, upon any action.

CLERKS *of the Privy-Seal*, are four officers who attend the lord-keeper of the privy-ſeal, or, if there be none ſuch, the principal ſecretary of ſtate; and write, or make out, all things ſent by warrant from the ſignet to the privy-ſeal, and to be paſſed to the great ſeal: as alſo to make out privy-ſeals upon any ſpecial occaſion of the king's affairs; as for loan of money, or the like.

CLERK *of the Rolls*, in *Chancery*, an officer who ſearches for, and copies deeds, offices, &c.

CLERK *of the Rules*, in the court of king's bench, an officer who draws up and enters all the *rules* and orders made in court, and gives rules of courſe in divers writs.

CLERK *of the Sewers*, is an officer belonging to the commiſſioners of the ſewers, who writes down all things they do by virtue of their commiſſion, and the authority given them by 13 El. cap. 9.

CLERK *of a Ship*, is an officer appointed to take care that nothing be ſquandered, or ſpent needleſly.

He is obliged to keep a regiſter, or journal, containing an exact inventory of every thing in the loading of the veſſel; as the rigging, apparel, arms, proviſion, munition, merchandizes; as alſo the names of the paſſengers, if there be any; the freight agreed on; a liſt of the crew, their age, quality, wages; the bargains, purchaſes, ſales, or exchanges the ſhip makes from its departure; the conſumption of proviſion; and, in ſhort, every thing relating to the expence of the voyage. He alſo regiſters the conſultations of the captains, pilots, &c. He alſo does the office of a regiſter in all criminal proceſſes; and of a notary, to make and keep the wills of thoſe who die in the voyage; takes inventories of their effects, &c. The *clerk* is not allowed to quit the veſſel during the voyage, on forfeiture of all his wages, &c. In ſmall veſſels, the maſter, or pilot, does the office of *clerk*.

CLERK *of the Signet*, is an officer continually attending on the king's principal ſecretary; who has cuſtody of the privy-ſignet, as well for ſealing the king's private letters, as for ſuch grants as paſs his majeſty's hands by bills ſigned. Of theſe there are four, who attend in their turn, and have their diet at the ſecretary's table.

CLERK *of the King's Silver*, is an officer belonging to the common-pleas; to whom every fine is brought, after it has been with the *cuſtos brevium*; and by whom the effect of the writ of covenant is entered into a paper-book; and according to that note, all the fines of that term are alſo recorded in the rolls of the court. See QUEEN *Gold*.

CLERK *of the Superſedeas*, is an officer in the court of common pleas, who makes out writs of *ſuperſedeas* (upon the defendants appearing to the exigent on an outlawry) whereby the ſheriff is forbid to return the exigent.

CLERK *of the Treaſury*, an officer of the common pleas, who has charge of the records of the *niſi prius*, the fees due for all ſearches, and the certifying of all records into the king's bench, when a writ of error is brought. He alſo makes out all writs of *ſuperſedeas de non moleſtanda*, which are granted for the defendants while the writ of error is depending; and all exemplifications of records, being in the treaſury.

CLERK *of the King's great Wardrobe*, keeps an account or inventory, in writing, of all things belonging to the king's wardrobe. See WARDROBE.

CLERK *of the Warrants*, is an officer belonging to the court of common-pleas, who enters all warrants of attorney for plaintiff and defendant; and inrols all deeds of indentures of bargain and ſale, which are acknowleged in the court, or before any judges out of the court; and it is his office to eſtreat into the exchequer all iſſues, fines, and amerciaments, which grow due to the king in that court, for which he has a ſtanding fee or allowance.

CLERKS, *miſpriſion of*. See MISPRISION.

CLERK, *riding*. See RIDING.

CLERKS, *ſix*. See SIX.

CLERKS, *Apoſtolic*, in *Eccleſiaſtical Hiſtory*. See JESUATES.

CLERKS, *Regular*, a general denomination, comprehending ſeveral diſtinct religious orders, and aſſumed to denote a reformation attempted to be introduced among them. See THEATINS and FATHERS.

CLERKS, *Regular*, *of the company of Jeſus*. See JESUITS.

CLERKS, *Regular*, of *St. Maieul*. See FATHERS *of Somaſquo*.

CLERKS, *Regular*, *of St. Paul*. See BARNABITES.

CLERMONT *Manuſcript*, is a copy of St. Paul's Epiſtles, found in the monaſtery of Clermont in France, and uſed by Beza, together with the Cambridge MS. in preparing his edition of the New Teſtament. This copy is in the octavo form, and is written on fine vellum in Greek and Latin, with ſome mutilations. Beza ſuppoſes that it is of equal antiquity with the Cambridge copy; but both were probably written by a Latin ſcribe in a later period than he aſſigns to them. The various readings of this MS. were communicated to archbiſhop Uſher, and they are preſerved by Walton. The MS. itſelf was in the poſſeſſion of Morinus; and after his death depoſited among the MS. copies of the Royal Library at Paris, Nº 2245. See the references under CAMBRIDGE *MS.*

CLERODENDRUM, in *Botany*, the name of a genus of plants of the *didynamia angioſpermia* claſs, the characters of which are theſe: the calyx is bell-ſhaped, and divided into five ſegments; the tube of the corolla is ſlender and long, and its limb divided into five equal ſegments. The ſtamina are very long, and the fruit is a ſingle-ſeeded berry.

CLEROMANCY, a kind of divination performed by the throwing of dice, or little bones; and obſerving the points, or marks, turned up.

The word comes from κληρος, *lot*, and μαντεια, *divination.*

At Bura, a city of Achaia, was a temple, and a celebrated oracle of Hercules; where ſuch as conſulted the oracle, after praying to the idol, threw four dies, the points whereof being well ſcanned by the prieſt, he was ſuppoſed to draw an anſwer from them.

Something of this kind ſeems to have been practiſed with regard to Jonah. See Jonah, i. 7.

CLEROTI, among the Athenians, a kind of public arbitrators. See DIÆTETÆ.

CLETHRA, in *Botany. Gronov. Fl. Virg.* 43. a genus of the *decandria monogynia* claſs. Its characters are theſe: the flower hath five oblong petals, and ten ſtamina, which are as long as the petals. In the center is ſituated a roundiſh germen, which afterward becomes a roundiſh capſule encloſed by the empalement, having three cells, which are full of angular ſeeds. We know but one ſpecies of this genus of ſhrubs, which is a native of Virginia and Carolina.

It is hardy enough to bear the open air of England; and is one of the moſt beautiful ſhrubs at its flowering ſeaſon. It thrives beſt in moiſt land, and in a ſheltered ſituation.

CLETHRITES *lapis*, a name given by the ancients to ſuch pieces of foſſile wood as ſhewed a grain reſembling that of the wood of the alder.

CLEW *of the ſail of a ſhip*, is the lower corner of it which reaches down to that earing where the tackles and ſheets are faſtened; ſo that when a ſail is made goring, or ſloping by degrees, ſhe is ſaid to have a *great clew*: and a ſhip is ſaid to have a *great clew*, when ſhe has a very long yard, and ſo has much canvas in her ſails.

CLEW-*garnet*, in *Ship-Building*, a rope faſtened to the *clew* of the ſail, and from thence running in a block ſeized to the middle of the main and fore-yard. Its uſe is to hale up the *clew* of the ſail cloſe to the middle of the yard, in order to its being furled.

CLEW-*line* is the ſame to the top-ſails, top-gallant-ſails, and ſprit-ſails, that the *clew-garnet* is to the main-ſail and fore-ſail, and has the very ſame uſe. In a guſt of wind, when a top-ſail is to be taken in, they firſt hale home the lee *clew-line*, and by that means the ſail is taken in much eaſier.

CLIDOMANCY, from κλεις, a *key*, and μαντεια, *divination*, a ſpecies of divination performed by means of keys. See DATYLIOMANCY.

CLIENT, CLIENS, among the Romans, a citizen who put himſelf under the protection of ſome great man, who in that relation was called his patron, *patronus*.

The patron aſſiſted his *client* with his protection, intereſt, and eſtate; and the *client* gave his vote for his patron, when he ſought any office for himſelf, or his friends. *Clients* owed reſpect to their patrons, as theſe reciprocally owed them their protection.

This right of patronage was appointed by Romulus, to unite the rich and poor together, in ſuch manner, as that one might live without contempt, and the other without envy. But the condition of a *client*, in courſe of time, became little elſe but a moderate kind of ſlavery.

By degrees, the cuſtom extended itſelf beyond Rome; and not only families, but cities, and entire provinces, even out of Italy, followed the example. Thus Sicily, v. gr. put itſelf under the clientela, or protection of Marcellus.

Lazius and Budæus refer the origin of fiefs, and tenures, to the patrons and *clients* of ancient Rome: but the difference is pretty conſiderable between the relation of vaſſals and their lords, and that of *clients* and their patrons. See VASSAL.

The *clients*, beſide the reſpect they bore their patrons, and the vote they gave them, were obliged to aſſiſt them in all affairs; and even to pay their ranſom, if they ſhould be taken priſoners in war, in caſe they were not able to do it of themſelves.

CLIENT is now uſed for a party in a law-ſuit, who has turned over his cauſe into the hands of a counſellor, or ſollicitor.

CLIFFORTIA, in *Botany*, a genus of the *dioecia polyandria* claſs. Its characters are theſe: it hath male and female flowers in different plants; the male flowers have a ſpreading empalement, compoſed of three ſmall oval concave leaves, but no petals, with a great number of hairy ſtamina. The female flowers have a permanent empalement, compoſed of three leaves ſitting upon the germen: theſe have no petals; but the oblong germen, which is ſituated below the empalement, ſupports two long, ſlender, feathered ſtyles. The germen afterward becomes an oblong taper capſule, with two cells, crowned by the empalement, including one narrow taper ſeed. There are three ſpecies, natives of the Cape of Good Hope.

CLIFT, in the *Manege*, a deficiency in the new, ſoft, and rough uneven hoof that grows in horſes feet, upon the hoof caſt.

It is alſo called *chink*, *crack*, or *chop*, and by the French *avalure*. See CLEFT.

CLIFTS, in timber. See TIMBER.

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V	14	30	35	55	XII	20	0	62	44	XIX	84	0	156	148	150	149
VI	15	0	40	32	XIII	22	0	65	10	XX	90	0	188	180	178	177
VII	15	30	44	42	XIV	24	0	65	54							

CLIMATE *for plants*. See TEMPERATURE.

CLIMAX, or *gradation*, in *Rhetoric*, a figure, whereby the diſcourſe aſcends, as it were, by degrees. Such is that of Cicero to Catiline: *Nihil agis, nihil moliris, nihil cogitas; quod ego non audiam, quod etiam non videam, planeque ſentiam: thou doſt nothing, moveſt nothing, thinkeſt nothing; but I hear it, nay ſee it, and perfectly underſtand it.* Thus, the ſame Cicero to Atticus: *Si dormis, expergiſcere; ſi ſtas, ingredere; ſi ingrederis, curre; ſi curris, advola.* See ANTICLIMAX.

CLIMBER, in *Botany*. See VIRGIN'*s Bower*.

CLIMIA of the Arabs. See KLIMIA.

CLIMING *Fumitory*, in *Botany*. See FUMITORY, and Phil. Tranſ. vol. xlix. part 2. p. 841.

CLINCH *of a cable*, is that part of it which is bent about the ring of the anchor, and then ſeized or made faſt.

CLINCH-*bolts*, in a ſhip, are ſuch as are *clinched* with a rivetting hammer at thoſe ends which come through.

CLINCHER-*work*, in *Sea-Language*, the diſpoſition of the planks in the ſide of any veſſel, by which the lower edge of every plank overlays the next under it, like the ſlates on the top of a houſe.

CLINCHING, in *Sea Language*, a kind of ſlight calking uſed about the ports, on a proſpect of foul weather: it is done by driving a little oakum into their ſeams, that the water may not come in at them.

CLINIC, CLINICUS, a term applied by ſome church-hiſtorians to thoſe among the ancients, who received baptiſm on their death-bed.

The word κλινικος is formed from κλινη, a *bed*.

It was the doctrine of many of the fathers, that baptiſm abſolutely waſhed away all previous ſins, and that there was no atonement for ſins committed after baptiſm. On this account, many deferred that ſacrament till they were arrived at the laſt ſtage of life, and were pretty ſafe from the danger of ſinning any more; and ſuch were called *clinici*.

Magnus, in the third century, made a doubt whether or no *clinics* were truly baptized, in regard the ceremony was only performed by aſperſion, inſtead of immerſion: he conſulted St. Chryſoſtom on the point, who replied to him, that the ſacrament does not waſh away ſin after the manner of a corporal bath; and ſhews from ſcripture that aſperſion is ſufficient. See BAPTISM.

CLINIC is alſo uſed, in *Antiquity*, for a patient, or perſon merely ſick, even without keeping his bed; as appears from the life of Charlemagne, in Caniſius.

CLINICUS is alſo uſed for a phyſician: becauſe phyſicians are much converſant about the beds of the ſick.

It was, however, principally the phyſicians of emperors that were called by this title.

CLINIC is now ſeldom uſed but for a quack; or rather for an empirical nurſe, who pretends to have learned the art of curing diſeaſes by attending on the ſick.

CLINICA, *medicina*, was particularly uſed for the method of viſiting, and treating ſick perſons in bed, for the more exact diſcovery of all the ſymptoms of their diſeaſe.

Le Clerc obſerves, that Eſculapius was the firſt who exerciſed the *clinic medicine*.

CLINKERS, among *Brick-Makers*. See BRICK.

CLINOIDES, in *Anatomy*, an epithet given to the four ſmall proceſſes of the *os* SPHENOIDES, one of the bones of the cranium; ſo called, ſay ſome, from their reſembling the feet of a bed.

The word is formed of the Greek κλινη, a *bed*, and ειδος, *form*; either from the reſemblance which the three bones bear to the feet of a bed; or from the cavity they form, which reſembles a bed itſelf.

Theſe together form a little cavity, from its ſhape called *ſella turcia*, or *equina*; wherein is placed the pituitary gland.

CLINOPODIUM, in *Botany*, *Field Baſil*, a genus of the *didynamia gymnoſpermia* claſs. Its characters are theſe: the flower is of the lip kind, with a ſhort tube enlarging to the mouth; the upper lip is erect, and indented at the top; the under lip is trifid, the middle ſegment being broad and indented. It hath four ſtamina under the upper lip, two of which are ſhorter than the other: in the center is ſituated the quadripartite germen, which afterward becomes four oval ſeeds, ſhut up in the empalement. There are ſix ſpecies.

The firſt ſort grows naturally by the ſides of hedges in moſt parts of England.

CLIO, one of the MUSES. In the portraits of Apollo and the Muſes, dug out of Herculaneum, Clio appears ſeated, and her head is crowned with laurels. In her left hand ſhe holds an open volume, in which ſhe is reading. On the outſide is written KLEIΩ ICTOPIAN, *Clio the Hiſtorian*; though it ſhould rather be tranſlated, *Clio invented Hiſtory*. At her feet are ſix other rolls, or antique volumes, incloſed in a cylindrical caſe. Burney's Hiſt. of Muſic, vol. i. p. 294.

CLIO, in *Zoology*, the name of a genus of worms, belonging to the order of *mollusca*: the body of which is oblong, and formed for ſwimming, and furniſhed with two oppoſite *alæ* of a membranaceous ſtructure. They are found in the ocean.

CLIPEUS, in *Natural Hiſtory*, the name of a claſs of the *echinodermata*, which are very depreſſed and flat, and in ſome meaſure reſemble a ſhield. Of this claſs there are only two known ſpecies.

The firſt is the diſcoide echinites of Plot, and the ſecond that of Langius, which has a little higher top.

CLIPPING *the coin*. See COIN.

CLITONES, the eldeſt, and all the ſons of kings. This word is often met with in our ancient authors.

CLITORIA, in *Botany*, a genus of the *diadelphia decandria* claſs. Its characters are theſe: the flower is of the butterfly kind, having a large ſpreading ſtandard, which is erect; the two wings are oblong, and ſhorter than the ſtandard. The keel is ſhorter than the wings, and is hooked. It hath ten ſtamina, nine of which are joined, and one ſtands ſeparate. In the center is ſituated an oblong germen, which afterward becomes a long, narrow, compreſſed pod, with one cell, opening with two valves, encloſing ſeveral kidney-ſhaped ſeeds. There are four ſpecies.

CLITORIDIS *muſculus*, a name given by Verheyen to the muſcle of the female *pudenda*, uſually called *erector clitoridis*. This is the only muſcle that is proper to this long, and its limb divided into five equal ſegments. The ſtamina are very long, and the fruit is a ſingle-ſeeded berry.

CLEROMANCY, a kind of divination performed by the throwing of dice, or little bones; and obſerving the points, or marks, turned up.

The word comes from κληρος, *lot*, and μαντεια, *divination.*

At Bura, a city of Achaia, was a temple, and a celebrated oracle of Hercules; where ſuch as conſulted the oracle, after praying to the idol, threw four dies, the points whereof being well ſcanned by the prieſt, he was ſuppoſed to draw an anſwer from them.

Something of this kind ſeems to have been practiſed with regard to Jonah. See Jonah, i. 7.

CLEROTI, among the Athenians, a kind of public arbitrators. See DIÆTETÆ.

CLETHRA, in *Botany. Gronov. Fl. Virg.* 43. a genus of the *decandria monogynia* claſs. Its characters are theſe: the flower hath five oblong petals, and ten ſtamina, which are as long as the petals. In the center is ſituated a roundiſh germen, which afterward becomes a roundiſh capſule encloſed by the empalement, having three cells, which are full of angular ſeeds. We know but one ſpecies of this genus of ſhrubs, which is a native of Virginia and Carolina.

It is hardy enough to bear the open air of England; and is one of the moſt beautiful ſhrubs at its flowering ſeaſon. It thrives beſt in moiſt land, and in a ſheltered ſituation.

CLETHRITES *lapis*, a name given by the ancients to ſuch pieces of foſſile wood as ſhewed a grain reſembling that of the wood of the alder.

CLEW *of the ſail of a ſhip*, is the lower corner of it which reaches down to that earing where the tackles and ſheets are faſtened; ſo that when a ſail is made goring, or ſloping by degrees, ſhe is ſaid to have a *great clew*: and a ſhip is ſaid to have a *great clew*, when ſhe has a very long yard, and ſo has much canvas in her ſails.

CLEW-*garnet*, in *Ship-Building*, a rope faſtened to the *clew* of the ſail, and from thence running in a block ſeized to the middle of the main and fore-yard. Its uſe is to hale up the *clew* of the ſail cloſe to the middle of the yard, in order to its being furled.

CLEW-*line* is the ſame to the top-ſails, top-gallant-ſails, and ſprit-ſails, that the *clew-garnet* is to the main-ſail and fore-ſail, and has the very ſame uſe. In a guſt of wind, when a top-ſail is to be taken in, they firſt hale home the lee *clew-line*, and by that means the ſail is taken in much eaſier.

CLIDOMANCY, from κλεις, a *key*, and μαντεια, *divination*, a ſpecies of divination performed by means of keys. See DATYLIOMANCY.

CLIENT, CLIENS, among the Romans, a citizen who put himſelf under the protection of ſome great man, who in that relation was called his patron, *patronus*.

The patron aſſiſted his *client* with his protection, intereſt, and eſtate; and the *client* gave his vote for his patron, when he ſought any office for himſelf, or his friends. *Clients* owed reſpect to their patrons, as theſe reciprocally owed them their protection.

This right of patronage was appointed by Romulus, to unite the rich and poor together, in ſuch manner, as that one might live without contempt, and the other without envy. But the condition of a *client*, in courſe of time, became little elſe but a moderate kind of ſlavery.

By degrees, the cuſtom extended itſelf beyond Rome; and not only families, but cities, and entire provinces, even out of Italy, followed the example. Thus Sicily, v. gr. put itſelf under the clientela, or protection of Marcellus.

Lazius and Budæus refer the origin of fiefs, and tenures, to the patrons and *clients* of ancient Rome: but the difference is pretty conſiderable between the relation of vaſſals and their lords, and that of *clients* and their patrons. See VASSAL.

The *clients*, beſide the reſpect they bore their patrons, and the vote they gave them, were obliged to aſſiſt them in all affairs; and even to pay their ranſom, if they ſhould be taken priſoners in war, in caſe they were not able to do it of themſelves.

CLIENT is now uſed for a party in a law-ſuit, who has turned over his cauſe into the hands of a counſellor, or ſollicitor.

CLIFFORTIA, in *Botany*, a genus of the *dioecia polyandria* claſs. Its characters are theſe: it hath male and female flowers in different plants; the male flowers have a ſpreading empalement, compoſed of three ſmall oval concave leaves, but no petals, with a great number of hairy ſtamina. The female flowers have a permanent empalement, compoſed of three leaves ſitting upon the germen: theſe have no petals; but the oblong germen, which is ſituated below the empalement, ſupports two long, ſlender, feathered ſtyles. The germen afterward becomes an oblong taper capſule, with two cells, crowned by the empalement, including one narrow taper ſeed. There are three ſpecies, natives of the Cape of Good Hope.

CLIFT, in the *Manege*, a deficiency in the new, ſoft, and rough uneven hoof that grows in horſes feet, upon the hoof caſt.

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III	13 30	23 8	X	18 0	57 44	XVII	73 0	93	87	89	88
IV	14 0	29 49	XI	19 0	60 39	XVIII	78 6	124	117	120	118
V	14 30	35 55	XII	20 0	62 44	XIX	84 0	156	148	150	149
VI	15 0	40 32	XIII	22 0	65 10	XX	90 0	188	180	178	177
VII	15 30	44 42	XIV	24 0	65 54						

Climate *for plants*. See Temperature.

CLIMAX, or *gradation*, in *Rhetoric*, a figure, whereby the diſcourſe aſcends, as it were, by degrees. Such is that of Cicero to Catiline: *Nihil agis, nihil moliris, nihil cogitas; quod ego non audiam, quod etiam non videam, planeque ſentiam: thou doſt nothing, moveſt nothing, thinkeſt nothing; but I hear it, nay ſee it, and perfectly underſtand it.* Thus, the ſame Cicero to Atticus: *Si dormis, expergiſcere; ſi ſtas, ingredere; ſi ingrederis, curre; ſi curris, advola.* See Anticlimax.

CLIMBER, in *Botany*. See **Virgin**'s *Bower*.

CLIMIA of the Arabs. See Klimia.

CLIMING *Fumitory*, in *Botany*. See **Fumitory**, and Phil. Tranſ. vol. xlix. part 2. p. 841.

CLINCH *of a cable*, is that part of it which is bent about the ring of the anchor, and then ſeized or made faſt.

Clinch-*bolts*, in a ſhip, are ſuch as are *clinched* with a rivetting hammer at thoſe ends which come through.

CLINCHER-*work*, in *Sea-Language*, the diſpoſition of the planks in the ſide of any veſſel, by which the lower edge of every plank overlays the next under it, like the ſlates on the top of a houſe.

CLINCHING, in *Sea Language*, a kind of ſlight calking uſed about the ports, on a proſpect of foul weather: it is done by driving a little oakum into their ſeams, that the water may not come in at them.

CLINIC, **Clinicus**, a term applied by ſome church-hiſtorians to thoſe among the ancients, who received baptiſm on their death-bed.

The word κλινικος is formed from κλινη, a *bed*.

It was the doctrine of many of the fathers, that baptiſm abſolutely waſhed away all previous ſins, and that there was no atonement for ſins committed after baptiſm. On this account, many deferred that ſacrament till they were arrived at the laſt ſtage of life, and were pretty ſafe from the danger of ſinning any more; and ſuch were called *clinici*.

Magnus, in the third century, made a doubt whether or no *clinics* were truly baptized, in regard the ceremony was only performed by aſperſion, inſtead of immerſion: he conſulted St. Chryſoſtom on the point, who replied to him, that the ſacrament does not waſh away ſin after the manner of a corporal bath; and ſhews from ſcripture that aſperſion is ſufficient. See Baptism.

Clinic is alſo uſed, in *Antiquity*, for a patient, or perſon merely ſick, even without keeping his bed; as appears from the life of Charlemagne, in Caniſius.

Clinicus is alſo uſed for a phyſician: becauſe phyſicians are much converſant about the beds of the ſick.

It was, however, principally the phyſicians of emperors that were called by this title.

Clinic is now ſeldom uſed but for a quack; or rather for an empirical nurſe, who pretends to have learned the art of curing diſeaſes by attending on the ſick.

Clinica, *medicina*, was particularly uſed for the method of viſiting, and treating ſick perſons in bed, for the more exact diſcovery of all the ſymptoms of their diſeaſe.

Le Clerc obſerves, that Eſculapius was the firſt who exerciſed the *clinic medicine*.

CLINKERS, among *Brick-Makers*. See Brick.

CLINOIDES, in *Anatomy*, an epithet given to the four ſmall proceſſes of the *os* SPHENOIDES, one of the bones of the cranium; ſo called, ſay ſome, from their reſembling the feet of a bed.

The word is formed of the Greek κλινη, a *bed*, and ειδος, *form*; either from the reſemblance which the three bones bear to the feet of a bed; or from the cavity they form, which reſembles a bed itſelf.

Theſe together form a little cavity, from its ſhape called *ſella turcia*, or *equina*; wherein is placed the pituitary gland.

CLINOPODIUM, in *Botany*, *Field Baſil*, a genus of the *didynamia gymnoſpermia* claſs. Its characters are theſe: the flower is of the lip kind, with a ſhort tube enlarging to the mouth; the upper lip is erect, and indented at the top; the under lip is trifid, the middle ſegment being broad and indented. It hath four ſtamina under the upper lip, two of which are ſhorter than the other: in the center is ſituated the quadripartite germen, which afterward becomes four oval ſeeds, ſhut up in the empalement. There are ſix ſpecies.

The firſt ſort grows naturally by the ſides of hedges in moſt parts of England.

CLIO, one of the Muses. In the portraits of Apollo and the Muſes, dug out of Herculaneum, Clio appears ſeated, and her head is crowned with laurels. In her left hand ſhe holds an open volume, in which ſhe is reading. On the outſide is written KLEIΩ ICTOPIAN, *Clio the Hiſtorian*; though it ſhould rather be tranſlated, *Clio invented Hiſtory*. At her feet are ſix other rolls, or antique volumes, incloſed in a cylindrical caſe. Burney's Hiſt. of Muſic, vol. i. p. 294.

Clio, in *Zoology*, the name of a genus of worms, belonging to the order of *molluſca*: the body of which is oblong, and formed for ſwimming, and furniſhed with two oppoſite *alæ* of a membranaceous ſtructure. They are found in the ocean.

CLIPEUS, in *Natural Hiſtory*, the name of a claſs of the *echinodermata*, which are very depreſſed and flat, and in ſome meaſure reſemble a ſhield. Of this claſs there are only two known ſpecies.

The firſt is the diſcoide echinites of Plot, and the ſecond that of Langius, which has a little higher top.

CLIPPING *the coin*. See Coin.

CLITONES, the eldeſt, and all the ſons of kings. This word is often met with in our ancient authors.

CLITORIA, in *Botany*, a genus of the *diadelphia decandria* claſs. Its characters are theſe: the flower is of the butterfly kind, having a large ſpreading ſtandard, which is erect; the two wings are oblong, and ſhorter than the ſtandard. The keel is ſhorter than the wings, and is hooked. It hath ten ſtamina, nine of which are joined, and one ſtands ſeparate. In the center is ſituated an oblong germen, which afterward becomes a long, narrow, compreſſed pod, with one cell, opening with two valves, encloſing ſeveral kidney-ſhaped ſeeds. There are four ſpecies.

CLITORIDIS *muſculus*, a name given by Verheyen to the muſcle of the female *pudenda*, uſually called *erector clitoridis*. This is the only muſcle that is proper to this part; the other, called the *inferior clitoridis*, being properly a *ſphincter vaginæ*, or, as Albinus calls it, *conſtrictor cunni.*

CLITORIS, in *Anatomy*, a long round body in the forepart of the vulva, or natural parts of a woman, where the *nymphæ* form an angle with each other; being one of the organs of generation in that ſex. See *Tab. Anat.* (*Splanch.*) *fig.* 9. *lit. o. p. fig.* 11. *lit. m. fig.* 13. *lit. a.* Its figure repreſents that of a glans or acorn: ordinarily it is pretty ſmall, but in ſome women thick, and long. In many reſpects, it repreſents the penis of a man; whence ſome call it *mentula*, or *penis muliebris*, the woman's yard.

In effect, it is compoſed of the ſame parts; it has, like it, two cavernous or ſpongious bodies; and a glans at the extremity, covered with a preputium; but it is not pierced through like the penis.

This is thought by ſome to have been firſt diſcovered by modern anatomiſts; but Dr. Tronchin quotes ſeveral ancient authors who knew the *clitoris*, and proves that Bonaciolus mentioned it before Columbus or Fallopius.

It has two muſcles which erect it in coition; on which occaſion it ſwells, and grows hard. Some anatomiſts pretend too, that it has two *muſculi ejaculatores.* See *Tab. Anat.* (*Splanch.*) *fig.* 13. *lit. f. f.*

Its ſenſation is exquiſite; and it is found the chief ſeat of pleaſure; ſo that ſome call it *æſtrum Veneris.* And hence it is ſaid, ſome women are apt to abuſe it. See POLLUTION.

The extremity of this part is ſometimes cut off; as in circumciſion, where it advances out too far. It is ſometimes ſo large and prepondent, that it bears a full reſemblance to the virile member; whence the perſons in whom it is ſo found, frequently paſs for hermaphrodites.

The ſpongious bodies of the *clitoris* ariſe diſtinctly from the lower parts of the *os pubis*; and approaching one another, unite, and form the body of the *clitoris.* Before their union they are called the *crura clitoridis*; and are twice as long as the body of the *clitoris.*

Its muſcles ariſe from the protuberance of the iſchium, and are inſerted into its ſpongious bodies. It has veins and arteries from the hæmorrhoidal veſſels, and pudenda; and nerves from the intercoſtals.

CLIVERS, in *Botany.* See CLEAVERS.

CLOACA, among the *Ancients*, was a ſubterraneous aqueduct, or common-ſewer, for the reception and diſcharge of the filth of a city, or houſe.

The word is formed from κλυζω, *I waſh away.*

Tarquinius Priſcus is ſaid to have been the firſt who contrived *cloacæ* in ancient Rome; to which end, a canal was firſt dug through the mountains whereon the city ſtood, and divided into three branches, called the *great cloaca.*

The care and inſpection of the *cloacæ* belonged to the cenſors, till the time of Auguſtus, who appointed *curatores cloacarum* on purpoſe. The Romans had alſo their *Cloacina*, or goddeſs, who preſided over the *cloacæ.*

CLOACA, in *Comparative Anatomy*, imports that canal in birds, through which the egg deſcends from the ovary in its exit. In this it is remarkable, that the part which is next the ovary is jagged, like the *morſus diaboli*, and fluctuates in the abdomen without any attachment to the ovary: hence anatomiſts have been ſomewhat puzzled to comprehend by what means the egg falls into the ovary. See EGG.

CLOATHS, or CLOTHES. See HABIT.

CLOCK, a kind of movement, or machine, ſerving to meaſure, and ſtrike time.

The uſual chronometers are watches and *clocks*: the former, in ſtrictneſs, are ſuch as ſhew the parts of time; the latter, ſuch as publiſh it by ſtriking: though the name watch is ordinarily appropriated to pocket *clocks*; and that of *clocks* to larger machines, whether they ſtrike or no.

The parts common to both kinds of movements, ſee under the article MOVEMENT. Thoſe peculiar to watches and *clocks*, ſee under WATCH-WORK, and CLOCK-WORK.

The invention of *clocks* with wheels, is referred to Pacificus, archdeacon of Verona, who lived in the time of Lotharius, in the ninth century, ſon of Lewis the Debonnair; on the credit of an epitaph quoted by Ughelli, and borrowed by him from Panvinius. Others aſcribe the invention to Boethius, about the year 510.

They were at firſt called *nocturnal dials*; to diſtinguiſh them from ſun-dials, which ſhewed the hour by the ſun's ſhadow.

Mr. Derham makes *clock-work* of a much older ſtanding; and ranks Archimedes's ſphere, mentioned by Claudian, and that of Poſidonius, mentioned by Cicero, among machines of this kind; not that either their form or uſe were the ſame with thoſe of ours: but that they had their motion from ſome hidden weights, or ſprings, with wheels, or pullies, or ſome ſuch *clock-work* principle. Thus he underſtands the *incluſus variis famulatur ſpiritus aſtris; & vivum certis motibus urget opus.*

But be this as it will, it is certain the art of making *clocks*, ſuch as are now in uſe, was either firſt invented, or at leaſt retrieved, in Germany, about two hundred and fifty years ago.

Clock-makers were firſt introduced into England in 1368, when Edward III. granted a licence for three artiſts to come over from Delft in Holland, and practiſe their occupation in this country.

The *water-clocks*, or *clepſydræ*, and ſun-dials, have both a much better claim to antiquity.

The French annals mention one of the former kind, ſent by Aaron king of Perſia to Charlemagne, about the year 807, which ſeemed to bear ſome reſemblance to the modern *clocks*: it was of braſs, and ſhewed the hours by twelve little balls of the ſame metal, which fell at the end of each hour, and in falling, ſtruck a bell, and made it ſound. There were alſo figures of twelve cavaliers, which at the end of each hour come forth at certain apertures, or windows, in the ſide of the *clock*, and ſhut them again, &c.

Among the modern *clocks*, the moſt eminent for their furniture, and the variety of their motions and figures, are thoſe of Straſburg, and of Lyons. In the firſt, a cock claps his wings, and proclaims the hour; the angel opens a door, and ſalutes the Virgin; and the Holy Spirit deſcends on her, &c. In the ſecond, two horſemen encounter, and beat the hour on each other; a door opens, and there appears on the theatre the Virgin with Jeſus Chriſt in her arms; the magi, with their retinue, marching in order, and preſenting their gifts; two trumpeters ſounding all the while to proclaim the proceſſion.

The invention of PENDULUM *clocks* is owing to the happy induſtry of the laſt age: the honour of it is diſputed between Huygens and Galileo. The former, who has a volume on the ſubject, declares it was firſt put in practice in the year 1657, and the deſcription thereof printed in 1658. Becher, De Nova Temporis dimetiendi Theoria, anno 1680, contends for Galileo; and relates, though at ſecond-hand, the whole hiſtory of the invention: adding, that one Treſler, *clock-maker* to the father of the then grand duke of Tuſcany, made the firſt pendulum *clock* at Florence, by direction of Galileo Galilei; a pattern of which was brought into Holland.

The academy del Cimento ſay expreſly, that the application of the pendulum to the movement of a *clock* was firſt propoſed by Galileo, and firſt put in practice by his ſon Vincenzo Galilei, in 1649.

Be the inventor who he will, it is certain the invention never flouriſhed till it came into Huygens's hands, who inſiſts on it, that if ever Galileo thought of ſuch a thing, he never brought it to any degree of perfection.

The firſt pendulum *clock* made in England, was in the year 1662, by Mr. Fromantil, a Dutchman.

Pendulum CLOCK, *Pocket* CLOCK, and *Repeating* CLOCK. See WATCH, and PENDULUM *clock.*

CLOCK-WORK, is that part of the movement which ſtrikes the hour, &c. on a bell. See *Tab. Horology, fig.* 2.

The wheels it conſiſts of are the great or firſt wheel H; which is moved by the weight or ſpring at the barrel G: in ſixteen or thirty-hour *clocks*, this has uſually pins, and is called the *pin-wheel*; in eight-day pieces, the ſecond wheel I is commonly the pin-wheel, or ſtriking-wheel, which is moved by the former. Next the ſtriking-wheel, is the detent-wheel, or hoop-wheel, K, having a hoop almoſt round it, wherein is a vacancy at which the *clock* locks. The next is the third, or fourth wheel, according to its diſtance from the firſt, called the *warning-wheel* L. The laſt is the flying pinion Q, with a fly, or fan, to gather air, and ſo bridle the rapidity of the *clock's* motion. To theſe muſt be added the pinion of report; which drives round the locking-wheel, called alſo the *count-wheel*; ordinarily with eleven notches in it, unequally diſtant, to make the *clock* ſtrike the hours. See WHEEL.

Beſides the wheels, to the *clock* part belongs the raſh, or ratch; a kind of wheel with twelve large fangs, running concentrical to the dial-wheel, and ſerving to lift up the detents every hour, and make the *clock* ſtrike: the detents, or ſtops, which being lifted up, and let fall, lock and unlock the *clock* in ſtriking; the hammer, as S, which ſtrikes the bell R; the hammer-tails, as T, by which the ſtriking pins draw back the hammers; latches, whereby the work is lifted up and unlocked; and lifting-pieces, as P, which lift up and unlock the detents.

For the mechaniſm of the various parts of a *clock* that ſerve to move the hands, and ſhew the time, ſee WATCH-*work.*

CLOCK-*work, theory and calculation of.* The method of calculating the numbers of a piece of *clock-work* having ſomething in it very entertaining, and at the ſame time very eaſy and uſeful, we ſhall give the readers the rules relating thereto: referring, for the general rules that obtain in the calculation of all movements of watch as well as *clock-work*, to the article **Movement**; and, for the particular rules of watch-work, to the article **Watch-work**.

For the ſtrict calculation itſelf, it bears that affinity to the calculation of watch-work, that, to avoid repetitions, we ſhall refer to that head: what *clock-work* has peculiar to itſelf will be conceived from what follows.

Clock, *rules for calculating the ſtriking part of a.* Firſt then, obſerve, that regard here needs only be had to the counting-wheel, ſtriking-wheel, and detent-wheel, which move round in this proportion: the count-wheel commonly goes round once in 12 or 24 hours: the detent-wheel moves round every ſtroke the *clock* ſtrikes, or ſometimes but once in two ſtrokes; wherefore, it follows, that,

Secondly, As many pins as are in the pin-wheel, ſo many turns hath the detent-wheel in one turn of the pin-wheel; or, which is the ſame, the pins of the pin-wheel are the quotients of that wheel divided by the pinion of the detent-wheel. But if the detent-wheel move but once round in two ſtrokes of the *clock*, then the ſaid quotient is but half the number of pins.

Thirdly, As many turns of the pin-wheel as are required to perform the ſtrokes of 12 hours (which are 78), ſo many turns muſt the pinion of report have, to turn round the count-wheel once: or thus, the quotient of 78, divided by the number of ſtriking-pins, ſhall be the quotient for the pinion of report, and the count-wheel; and this is in caſe the pinion of report be fixed to the arbor of the pin-wheel, which is commonly done.

An example will make all plain: the locking-wheel being 48, the pinion of report 8, the pin-wheel 78, the ſtriking-pins are 13, and ſo of the reſt. Note alſo, that 78 divided by 13 gives 6, the quotient of the pinion of report. As for the warning-wheel, and fly-wheel, it matters little what numbers they have; their uſe being only to bridle the rapidity of the motion of the other wheels.

8) 48 (6.
6) 78 (13.
6) 60 (10.
6) 48 (8.

The following rules will be of good ſervice in this calculation.

1. *To find how many ſtrokes a clock ſtrikes in one turn of the fuſee, or barrel.* As the turns of the great wheel, or fuſee, are to the days of the *clock's* continuance; ſo is the number of ſtrokes in 24 hours, viz. 156, to the ſtrokes of one turn of the fuſee.

2. *To find how many days a clock will go.* As the ſtrokes in 24 hours are to thoſe in one turn of the fuſee; ſo are the turns of the fuſee to the days of the *clock's* going.

3. *To find the number of turns of the fuſee, or barrel.* As the ſtrokes in one turn of the fuſee are to thoſe of 24 hours; ſo is the *clock's* continuance to the turns of the fuſee, or great wheel.

4. *To find the number of leaves in the pinion of report on the axis of the great wheel.* As the number of ſtrokes in the *clock's* continuance is to the turns of the fuſee; ſo are the ſtrokes in 12 hours, viz. 78, to the quotient of the pinion of report fixed on the arbor of the great-wheel.

5. *To find the ſtrokes in the clock's continuance.* As 12 is to 78, ſo are the hours of the *clock's* continuance to the number of ſtrokes in that time.

By ſtat. 9 and 10. W. III. cap. 28. § 2. no perſon ſhall export, or endeavour to export, out of this kingdom, any outward or inward box-caſe or dial-plate, of gold, ſilver, braſs, or other metal, for clock or watch, without the movement in or with every ſuch box, &c. made up fit for uſe, with the maker's name engraven thereon; nor ſhall any perſon make up any clock or watch, without putting their name and place of abode or freedom, and no other name or place, on every clock or watch; on penalty of forfeiting every ſuch box, caſe, and dial-plate, clock and watch, not made up and engraven as aforeſaid; and 20 l. one moiety to the king, the other to thoſe that ſhall ſue for the ſame.

The ingenious Dr. Franklin has contrived a *clock* to ſhew the hours, minutes, and ſeconds, with only three wheels and two pinions in the whole movement. The dial-plate (*Fig.* 8. *Tab.* II. *Horology*,) has the hours engraven upon it in ſpiral ſpaces along two diameters of a circle containing four times 60 minutes. The index A goes round in four hours, and counts the minutes from any hour by which it has paſſed to the next following hour. The time, therefore, in the poſition of the index ſhewn in the figure is either $32\frac{1}{2}$ minutes paſt XII. III. or VIII; and ſo in every other quarter of the circle, it points to the number of minutes after the hours which the index laſt left in its motion. The ſmall hand B, in the arch at top, goes round once in a minute, and ſhews the ſeconds. The wheel-work of this *clock* may be ſeen in (*fig.* 9.) A is the firſt or great wheel, containing an hundred and ſixty teeth, and going round in four hours with the index A in *fig.* 8. let down by a hole on its axis. This wheel turns a pinion B of ten leaves, which therefore goes round in a quarter of an hour: on the axis of this pinion is the wheel C of an hundred and twenty teeth, which goes round in the ſame time, and turns a pinion D, of eight leaves, round in a minute, with the ſecond-hand B of *fig.* 8. fixed on its axis, and alſo the common wheel E of thirty teeth, for moving a pendulum (by pallets) that vibrates ſeconds, as in a common *clock*. This *clock* is wound up by a line going over a pulley on the axis of the great wheel, like a common thirty-hour clock. Many of theſe admirably ſimple machines have been conſtructed, which meaſure time exceedingly well. It is ſubject, however, to the inconvenience of requiring frequent winding by drawing up the weight; and likewiſe to ſome uncertainty as to the particular hour ſhewn by the index A. Mr. Ferguſon has propoſed to remedy theſe inconveniences by the following conſtruction. In the dial-plate of his *clock* (*fig.* 10.) there is an opening *a b c d*, below the center; through which appears part of a flat plate, on which the 12 hours with their diviſions into quarters, are engraved: this plate turns round in twelve hours, and the index A points out the true hour, &c. B is the minute-hand which goes round the large circle of 60 minutes, whilſt the plate *a b c d* ſhifts its place one hour under the fixed index A. There is another opening *e f g h*, through which the ſeconds are ſeen on a flat moveable ring at the extremity of a fleur-de-lis engraved on the face of the dial-plate. A, in *fig.* 11, is the great wheel of this clock, containing an hundred and twenty teeth, and turning round in twelve hours. The axis of this wheel bears the plate of hours, which may be moved by a pin paſſing through ſmall holes drilled in the plate, without affecting the wheel-work. The great wheel A turns a pinion B of ten leaves round in an hour, and carries the minute-hand B on its axis round the dial-plate in the ſame time: on this axis is a wheel C of an hundred and twenty teeth, turning round a pinion D of ſix leaves in three minutes; on the axis of which there is a wheel E of ninety teeth, that keeps a pendulum in motion, vibrating ſeconds by pallets, as in a common *clock*, when the pendulum-wheel has only thirty teeth, and goes round in a minute. In order to ſhew the ſeconds by this *clock*, a thin plate muſt be divided into three times ſixty, or an hundred and eighty equal parts, and numbered 10, 20, 30, 40, 50, 60, three times ſucceſſively; and fixed on the ſame axis with the wheel of ninety teeth, ſo as to turn round near the back of the dial-plate; and theſe diviſions will ſhew the ſeconds through the opening *e f g h*, *fig.* 10. This *clock* will go a week without winding, and always ſhew the preciſe hour; but this *clock*, as Mr. Ferguſon candidly acknowleges, has two diſadvantages of which Dr Franklin's *clock* is free. When the minute-hand B is adjuſted, the hour-plate muſt alſo be ſet right by means of a pin; and the ſmallneſs of the teeth in the pendulum wheel will cauſe the pendulum ball to deſcribe but ſmall arcs in its vibrations; and therefore the momentum of the ball will be leſs, and the times of the vibrations will be more affected by any unequal impulſe of the pendulum-wheel on the pallets. Beſides, the weight of the flat ring on which the ſeconds are engraved will load the pivots of the axis of the pendulum-wheel with a great deal of friction, which ought by all poſſible means to be avoided. To remedy this inconvenience, the ſecond plate might be omitted.

A **clock** ſhewing the apparent diurnal motions of the ſun and moon, the age and phaſes of the moon, with the time of her coming to the meridian, and the times of high and low water; by having only two wheels and a pinion added to the common movement, was contrived by Mr. Ferguſon, and is deſcribed in his Select Exerciſes. The dial-plate of this *clock*, (ſee *Tab.* II. *Horology*, *fig.* 12.) contains all the twenty-four hours of the day and night. S is the ſun, which ſerves as an hour index, by going round the dial-plate in twenty-four hours; and M is the moon, which goes round in twenty-four hours, fifty minutes and a half, the time of her going round in the heavens from one meridian to the ſame meridian again. The ſun is fixed to a circular plate, (ſee *fig.* 13.) and carried round by the motion of that plate, on which the twenty-four hours are engraven; and within them is a circle divided into twenty-nine and a half equal parts for the days of the moon's age, reckoning from new moon to new moon; and each day ſtands directly under the time, in the twenty-four hour circle, of the moon's coming to the meridian; the XII. under the ſun ſtanding for noon, and the oppoſite XII. for midnight. The moon, M, is fixed to another circular plate (*fig.* 12.) of the ſame diameter with that which carries the ſun, part of which may be ſeen through the opening, over which the ſmall wires *a* and *b* paſs in the moon-plate. The wire *a* ſhews the moon's age and time of her coming to the meridian, and *b* ſhews the time of high-water for that day, in the ſun-plate. The diſtance of theſe wires anſwers to the difference of time between the moon's coming to the meridian and high-water at the place for which the *clock* is made. At London their difference is two hours and a half. Above the moon-plate there is a fixed plate N, ſupported by a wire A, fixed to it at one end and fixed at right angles into the dial-plate at the midnight XII. This plate may repreſent the earth, and the dot L London, or the place to which the *clock* is adapted. Around this plate there is an elliptic ſhade on the moon plate, the higheſt points of which are marked *high-water*, and the loweſt *low-water*. As this plate turns round below the plate N, theſe points come ſucceſſively even with L, and ſtand over it at the times when it is high or low water at the given place; which times are pointed by the ſun, S, on the dial-plate; and the plate H, above XII. at noon riſes or falls with the tide.

As the ſun, S, goes round the dial-plate in twenty-four hours, and the moon, M, in twenty-four hours fifty minutes and a half, it is plain that the moon makes only twenty-eight revolutions and a half, whilſt the ſun makes twenty-nine and a half: ſo that it will be twenty-nine days and a half from conjunction to conjunction. And thus the wire *a* ſhifts over one day of the moon's age on the ſun-plate in twenty-four hours.

The phaſes of the moon for every day of her age may be ſeen through a round hole *m* in the moon plate: thus, at conjunction or new-moon the whole ſpace ſeen through *m* is black; at oppoſition or full moon, this ſpace is white: at either quadrature half black and half white; and at every poſition, the white part reſembles the viſible part of the moon for every day of her age. The black ſhaded ſpace N*f*F*l*, (*fig.* 13.) on the ſun-plate ſerves for theſe appearances. N repreſents the new moon, F the full moon, and *f* her firſt quarter, and *l* her laſt quarter, &c.

The wheel-work and tide-work of this *clock* are repreſented in *fig.* 14. A and B are two wheels of equal diameters: A has fifty-ſeven teeth, with an hollow axis that paſſes through the dial of the *clock*, and carries the ſun-plate with the ſun S. B has fifty-nine teeth, with a ſolid ſpindle for its axis, which turns within the hollow axis of A, and carries the moon-plate with the moon M: both wheels are turned round by a pinion C of nineteen leaves, and this pinion is turned round by the common clock-work in eight hours; and as nineteen is the third part of fifty-ſeven, the wheel A will go round in twenty-four hours; and the wheel B in twenty-four hours fifty minutes and a half: fifty-ſeven being to twenty-four as fifty-nine to twenty-four hours fifty minutes and a half very nearly. On the back of the wheel B is fixed an elliptical ring D, which, in its revolution, raiſes and lets down a lever E F, whoſe center of motion is on a pin at F; and this, by the upright bar G, raiſes and lets down the tide plate H, twice in the time of the moon's revolving from the meridian to the meridian again: this plate moves between four rollers R, R, R, R.

A *clock* of this kind was adapted by Mr. Ferguſon to the movement of an old watch: the great wheel of a watch goes round in four hours; on the axis of this he fixed a wheel of twenty teeth, to turn a wheel of forty teeth on the axis of the pinion C; by which means that pinion was turned round in eight hours, the wheel A in twenty-four, and the wheel B in twenty-four hours fifty minutes and a half.

See alſo a deſcription and drawing of an *aſtronomical* CLOCK, ſhewing the apparent daily motions of the ſun, moon, and ſtars, with the times of their riſing, ſouthing and ſetting, the places of the ſun and moon in the ecliptic, and the age and phaſes of the moon for every day of the year, in Ferguſon's Select Exerciſes, p. 19.

To this article of *clock*-work we ſhall ſubjoin a brief account of two curious contrivances; the one for giving motion to the parts of a *clock* by making it to deſcend along an inclined plane, is the invention of Mr. Maurice Wheeler; and the *clock* itſelf may be ſeen in Don Saltero's coffee-houſe at Chelſea. D E (ſee *Tab. Horology*, *fig.* 5.) is the inclined plane on which the *clock* A B C deſcends: this conſiſts externally of a hoop about an inch broad, and two ſides or plates ſtanding out beyond the hoop about one-eighth of an inch all round, with indented edges, that the *clock* may not ſlide, but turn round whilſt it moves down. One of theſe plates is inſcribed with the twenty-four hours, which paſs ſucceſſively under the index L P, *fig.* 6. which is always in a poſition perpendicular to the horizon, and ſhews the hour on the top of the machine: for this reaſon the lower part of the index, or H L is heavieſt, that it may preponderate the other H P, and always keep it pendulous, with its point to the vertical hour, as the movement goes on. Inſtead of this index, an image may be fixed for ornament on the axis *g*, which with an erected finger performs the office of an index. In order to deſcribe the internal part or mechaniſm of this *clock*, let L E T Q be the external circumference of the hoop, and *f*, *f*, the frame plate, on which is placed the train of wheel work, 1, 2, 3, 4, which is much the ſame as in other *clocks*, and is governed by a balance and regulator, as in them. But there is no need of a ſpring and fuſee in this *clock*; their effects being otherwiſe anſwered, as we ſhall ſee. In this machine the great wheel 1 is placed in the center, or upon the axis of the movement, and the other wheels and parts towards one ſide, which would therefore prove a biaſs to the body of the *clock*, and cauſe it to move, even on an horizontal plane, for ſome ſhort diſtance; this makes it neceſſary to fix a thin plate of lead at C, on the oppoſite part of the hoop, to reſtore the equilibrium of the movement. This being done, the machine will abide at reſt in any poſition on the horizontal plane H H; but if that plane be changed into the inclined plane D E, it will touch it in the point D; but it cannot reſt there, becauſe the center of gravity at M acting in the direction M I, and the point T having nothing to ſupport it, muſt continually deſcend, and carry the body down the plane. But now if any weight P be fixed on the other ſide of the machine, ſuch as ſhall remove the center of gravity from M to the point V in the line L D which paſſes through the point D, it will then reſt upon the inclined plane, as in the caſe of the *rolling* CYLINDER. If this weight P be ſuppoſed not fixed, but ſuſpended at the end of an arm, or vectis, which arm or lever is at the ſame time faſtened to a central wheel 1, moving on the axis M of the machine, which wheel by its teeth ſhall communicate with the train of wheels, &c. on the other ſide, and the power of the weight be juſt equal to the friction or reſiſtance of the train, it will remain motionleſs as it did before when it was fixed. And, conſequently, the *clock* alſo will be at reſt on the inclined plane. But, ſuppoſing the power of the weight P to be ſuperior to the reſiſtance of the train, it will then put it into motion, and of courſe the *clock* likewiſe; which will then commence a motion down the plane; while the weight P, its vectis P M, and the wheel 1, all conſtantly retain the ſame poſition which they have at firſt, when the *clock* begins to move. Hence it is eaſy to underſtand, that the weight P may have ſuch an intrinſic gravity, as ſhall cauſe it to act upon the train with any required force, ſo as to produce a motion in the machine of any required velocity; ſuch, for inſtance, as ſhall carry it once round in twenty-four hours: then, if the diameters of the plates A B C be four inches, it will deſcribe the length of their circumference, viz. 12,56 inches in one natural day; and, therefore, if the plane be of a ſufficient breadth, ſuch a *clock* may go ſeveral days, and would furniſh a perpetual motion, if the plane were infinitely extended.

Let S D be drawn through M perpendicular to the inclined plane in the point D; alſo let L D be perpendicular to the horizontal line H H, paſſing through D; then is the angle H D E = L D S = D M T; whence it follows that the greater the angle of the plane's elevation is, the greater will be the arch D T, and, conſequently, the further will the common center of gravity be removed from M; therefore the power of P will be augmented, and of courſe the motion of the whole machine accelerated. Thus it appears, that by duly adjuſting the intrinſic weight of P, at firſt to produce a motion ſhewing the mean time as near as poſſible, the time may be afterwards corrected, or the *clock* made to go faſter or ſlower by raiſing or depreſſing the plane, by means of the ſcrew at S. The angle to which the plane is firſt raiſed is about ten degrees. The marquis of Worceſter is alſo ſaid to have contrived a watch that moved on a declivity. See farther Phil. Tranſ. abr. vol. i. p. 468, &c. or N° 161.

The other contrivance is that of M. de Gennes for making a *clock* aſcend on an inclined plane. To this end let A B D (*fig.* 7.) be the machine on the inclined plane E D E, and let it be kept at reſt upon it, or in equilibrio by the weight P at the end of the lever P M. The circular area C F is one end of a ſpring barrel in the middle of the movement, in which is included a ſpring as in a common watch. To this end of the barrel the arm or lever P M is fixed upon the center M; and thus, when the clock is wound up, the ſpring moves the barrel, and therefore the lever and weight P in the ſituation P M. In doing this, the center of gravity is conſtantly removed farther from the center of the machine, and therefore, it muſt determine the *clock* to move upwards, which it will continue to do as long as the ſpring is unbending itſelf; and thus the weight and its lever P M will preſerve the ſituation they firſt have, and do the office of a chain and fuſee. Phil. Tranſ. N° 140. or Abridg. vol. i. p. 467.

By means of the following table clocks and watches may be ſo regulated as to meaſure true equal time.

Days.	H.	M.	S.
1	0	3	56
2	0	7	52
3	0	11	48
4	0	15	44
5	0	19	39
6	0	23	35
7	0	27	31
8	0	31	27
9	0	35	23
10	0	39	19
11	0	43	15
12	0	47	11
13	0	51	7
14	0	55	3
15	0	58	58
16	1	2	54
17	1	6	50
18	1	10	46
19	1	14	42
20	1	18	38
21	1	22	34
22	1	26	30
23	1	30	26
24	1	34	22
25	1	38	17
26	1	43	13
27	1	46	9
28	1	50	5
29	1	54	1
30	1	57	57

The ſtars make 366 revolutions from any point of the compaſs to the ſame point again in 365 days and one minute: and therefore, they gain a 365th of a revolution every 24 hours of mean ſolar time, near enough for regulating any clock or watch.

This acceleration is at the rate of 3 min. 55 ſec. 53 thirds, 59 fourths in 24 hours; or, in the neareſt round numbers, 3 minutes, 56 ſeconds, by which quantity of time, every ſtar comes round ſooner than it did on the day before.

Therefore, if you mark the preciſe moment ſhown by a clock or watch when any ſtar vaniſhes behind a chimney, or any other object, as ſeen through a ſmall hole in a thin plate of metal, fixed in a window-ſhutter; and do this for ſeveral nights ſucceſſively (as ſuppoſe twenty) if, at the end of that time, the ſtar vaniſhes as much ſooner than it did the firſt night, by the clock, as anſwers to the time denoted in the table for ſo many days, the clock goes true: otherwiſe not. If the difference between the clock and ſtar be leſs than the table ſhews, the clock goes too faſt; if greater, it goes too ſlow; and muſt be regulated accordingly, by letting down or raiſing up the ball of the pendulum, by little and little, by turning the ſcrew-nut under the ball, till you find it keeps true equal time.

Thus, ſuppoſing the ſtar ſhould diſappear behind a chimney, any night when it is XII. by the clock; and that, on the 20th night afterward, the ſame ſtar ſhould diſappear when the time is 41 minutes 22 ſeconds paſt X. by the clock; which being ſubtracted from 12 hours, 0 min. 0 ſec. leaves remaining 1 hour, 18 minutes, 38 ſeconds for the time the ſtar is then faſter than the *clock*: look in the table, and againſt 20, in the left hand column, you will find the acceleration of the ſtar to be 1 hour, 18 min. 38 ſec. agreeing exactly with what the difference ought to be between the *clock* and ſtar: which ſhews that the *clock* meaſures true equal time, and agrees with the mean ſolar time, as it ought to do.

To add chimes to a piece of CLOCK-*work*. See CHIMES.

CLOCK, *Balance of a*. See BALANCE.

CLOCK-*makers, Company of*. See COMPANY.

CLOCK-*makers compaſſes*. See COMPASSES.

CLOERE, a priſon or dungeon; it is conjectured from Britiſh original; the dungeon or inner priſon of Wallingford caſtle, temp. H. 2. was called *Cloere-brien*, i. e. *carcer Brieni*, &c.

CLOISTER, CLAUSTRUM, an habitation ſurrounded with walls, and inhabited by canons, or religious.

In a more general ſenſe *cloiſter* is uſed for a monaſtery of religious of either ſex.

In a more reſtrained ſenſe *cloiſter* is uſed for the principal part of a regular monaſtery, conſiſting of a ſquare built around; ordinarily, between the church, the chapter-houſe, and the refectory; and over which is the dormitory. See DORMITORY, &c.

The *cloiſters* ſerved for ſeveral purpoſes in the ancient monaſteries. Petrus Bleſenſis obſerves, that it was here the monks held their lectures; the lecture of morality at the north-ſide, next the church; the ſchool on the weſt, and the chapter on the eaſt; ſpiritual meditation, &c. being reſerved for the church.

Du Cange concludes, that all theſe different exerciſes were performed in the cloiſter itſelf; but by miſtake. The church, the chapter-houſe, and the ſchool, were not parts of the *cloiſter*, but buildings adjoining to it.

Lanfranc obſerves, that the proper uſe of the *cloiſter* was for the monks to meet in, and converſe together, at certain hours of the day.

The form of the *cloiſter* was ſquare; and it had its name *clauſtrum* from *claudo, I ſhut or cloſe*, as being incloſed on its four ſides with buildings.

Hence, in architecture, a building is ſaid to be in form of a *cloiſter*, when there are buildings in each of the four ſides of the court.

CLOISTERED *monks*. See MONK.

CLONARIUM, in *Botany*, that ſmall pedicle which ſupports every ſeparate flower, or fruit in a cluſter, as every grape in a bunch, every berry in a corymbus of ivy, &c.

CLOSE, in *Heraldry*. When any bird, addicted to flight, is drawn in a coat of arms, in a ſtanding poſture; with its wings cloſe down about it, and not either flying or diſplayed, they blazon it by the word *cloſe*.

In which ſenſe *cloſe* ſtands oppoſed to VOLANT.

Cloſe is not applied to the peacock, dunghill-cock, &c. becauſe that is their ordinary poſture.

The term *cloſe* is likewiſe uſed for the barnacles, or bits of a bridle, when not extended, as they are uſually borne.

It is alſo applied to the bearing a helmet, with the vizor down: a barnacle *cloſe*, helmet, *cloſe*, &c.

CLOSE, in *Muſic*. See CADENCE.

CLOSE, *Breach of*, in *Law*, a ſpecies of treſpaſs, denoting every unwarrantable entry on another's ſoil, which the law ſuppoſes to be *incloſed*, either by a viſible fence, or an inviſible boundary.

CLOSE *Rolls*, and CLOSE *Writs*, in *Law*; charters, or letters of the king, containing grants of lands, &c. ſealed with his great ſeal, and directed to particular perſons, and for particular purpoſes, not being proper for the public inſpection, are *cloſed* up and ſealed on the outſide, and are therefore called *writs cloſe*, *literæ clauſæ*, and they are recorded in the *cloſe rolls*. See LETTERS, and PATENT.

CLOSE *field*. See FIELD.

CLOSE *fights*, aboard a ſhip, are bulk-heads put up fore and aft in the ſhip, for the men to ſtand behind in a cloſe engagement, and fire on the enemy; or, if the ſhips be boarded, to ſcour the decks.

CLOSE *fire*. See FIRE, and REVERBERATION.

CLOSE-*hauled*, in *Sea Language*, denotes the arrangement or trim of a ſhip's ſails when ſhe endeavours to proceed in the neareſt direction poſſible to that point of the compaſs from which the wind blows. The keel of larger ſhips makes an angle of about ſix points with the line of the wind; but ſloops and ſmaller veſſels ſail almoſt a point nearer. All veſſels, when *cloſe-hauled*, make nearly a point of lee-way, and this angle increaſes with the increaſe of wind and ſea. The ſails, in this diſpoſition of them, are all extended ſideways on the ſhip; and the term *cloſe-hauled* is then applied to it, becauſe her tacks are drawn cloſe down to her windward ſide, the ſheets hauled cloſe aft, and all the bow-lines are drawn to their utmoſt extenſion, in order to keep the ſails ſteady.

CLOSE *quarters*, in *Sea Language*, denote ſtrong beams of wood extended along a merchant-ſhip in ſeveral places: as they are a place of retreat, when the ſhip is boarded by an adverſary, they are fitted with ſmall loop-holes, through which the ſhip's crew may fire ſmall arms to defend themſelves and annoy the enemy. They are likewiſe furniſhed with powder-cheſts, filled with powder, old nails, &c. which may be fired upon the boarders.

CLOSE *Pound*. See POUND.

CLOSET, in *Heraldry*, ſignifies the half of a BAR.

CLOSET, *Clerk of the*. See CLERK.

CLOSH, in our old cuſtoms, an unlawful game, forbidden by ſtat. 14 Edw. IV. c. 3. & 33 Hen. VIII. c. 9. It is ſaid to have been the ſame with our *nine-pins*, and is called *cloſh-coyls*, by the 33^d Hen. VIII.

CLOT-*bird*, in *Zoology*, a name by which the common OENANTHE is called in many parts of England.

CLOTH, in *Commerce*, in its general ſenſe, includes all kinds of ſtuffs woven or manufactured on the loom, whether their threads be of wool, hemp, or flax.

CLOTH is more peculiarly applied to a web, or tiſſue of woollen threads, interwoven; whereof ſome called the *warp*, are extended lengthwiſe, from one end of the piece to the other; the reſt, called the *woof*, are diſpoſed acroſs the firſt, or breadthwiſe of the piece.

Cloths are woven on the looms as well as linens, druggets, ſerges, camblets, &c. They are of various qualities, fine, coarſe, ſtrong, &c. ſome are made of wool, and this of different colours; the wool being dyed and dreſſed, is firſt ſpun, then wove: others are wrought white, deſtined to be dyed in ſcarlet, black, blue, green, yellow, &c. Their breadths and lengths are various, according to the places where they are manufactured.

The goodneſs of CLOTH conſiſts, 1°, In the wool's being fine, and being well dreſſed. 2°, In its being ſpun equably; always obſerving, however, that the thread of the warp be finer, and better twiſted, than that of the woof. 3°, In the *cloth*'s being well wrought and beaten on the loom, ſo as to be every where equally cloſe and compact. 4°, In the wool's not being finer and better at one end of the piece than in the reſt. 5°, In the liſts being ſufficiently ſtrong, and of the ſame length with the ſtuff; and that they conſiſt of good matter, as wool, hair, or oſtrich feathers, or the hair of Daniſh dogs;

which laſt is the beſt. 6°, In the *cloth*'s being well cleared of the knots, and other imperfections. 7°, In its being well ſcoured with good fullers-earth, then fulled with the beſt white ſoap, and waſhed out in clear water. See Fulling. 8°, In the hair or knap's being well drawn out with the TEAZLE, or thiſtle, on the pole, without being too much opened. 9°, In its being ſhorn cloſe; yet without laying the ground or thread bare. See Sheering. 10°, In its being well dyed. 11°, In its not being ſtretched, or pulled farther than is neceſſary to ſet it ſquare, and bring it to its juſt length and breadth. See Tenter. 12°, In its only being preſſed cold; hot-preſſing being hurtful to *cloth*.

Manufacturing of white Cloths *for dying*. The beſt wools for the purpoſe are thoſe of England and Spain; eſpecially thoſe of Lincolnſhire, and Segovia.

To uſe them to the beſt advantage; when taken out of the bales, they muſt be ſcoured, by putting them in a liquor ſomewhat more than lukewarm, compoſed of three parts of fair water, and one of urine. After the wool has continued long enough in the liquor to diſſolve and looſen the greaſe, it is taken out, drained, and waſhed in a running water: it is known to be well ſcoured, when it feels dry to the touch, and has no ſmell but the natural ſmell of the ſheep.

In this ſtate it is hung out to dry in the ſhade; the heat of the ſun being apt to make it harſh, and untractable. When dry, it is beat with rods on hurdles of wood, or on ropes, to clear out the duſt and groſſer filth: the more it is thus beat and cleaned, the more ſoft it becomes, and the better it ſpins. After beating, it is well picked, to clear the reſt of the filth, that had eſcaped the rods.

It is now in a ſtate to be oiled, and carded on large iron cards, placed aſlope. The beſt oil for the purpoſe is oil of olives; one fifth of which, at leaſt, ſhould be uſed for the wool deſtined for the woof, and a ninth for that of the warp.

It is now given out to the ſpinners; who firſt card it on the knee, with ſmall fine cards; then ſpin it on the wheel: obſerving to make the thread of the warp ſmaller, by one-third, than that of the woof, and much cloſer twiſted: in order to this, the latter muſt be ſpun with the band, or ſtring open, and the former with it croſſed.

The thread being thus ſpun, reeled, and made into ſkeins; that deſtined for the woof is wound on ſpools, i. e. on little tubes, or pieces of paper, or ruſhes, ſo diſpoſed as that they may be eaſily put in the eye of the ſhuttle. That for the warp is wound on a kind of rochets, or large wooden bobbins, to diſpoſe it for warping.

When warped, it is ſtiffened with ſize; whereof, that made of ſhreds of parchment is the beſt; and, courſe yarn, uſed in kerſeys, is ſtiffened by ſteeping it for a few hours in chalk-water; and, when dry, is given to the weavers, who mount it on the loom.

The warp being on the loom, the weavers, who are two to each loom, one on each ſide, tread at the ſame time, alternately, on the ſame treadle; i. e. now on the right ſtep, and now on the left, which raiſes and lowers the threads of the warp equally; between which they throw, tranſverſly, the ſhuttle from the one to the other. And each time that the ſhuttle is thrown, and ſo a thread of the woof inſerted within the warp, they ſtrike it conjointly with the ſame frame wherein is faſtened the comb, or reed, between whoſe teeth the threads of the warp are paſſed; repeating the ſtroke as often as is neceſſary; in ſome *cloths* no leſs than twelve or thirteen times, viz. ſix with the warp open, and ſeven ſhut.

It may be obſerved, that the more the threads of the woof are ſtruck againſt each other, the cloſer the *cloth* is: and hence it becomes enabled to ſuſtain the violence of the fulling-mill, as well as of the teazing, or fulling-thiſtle, without fretting, or opening. The weavers having continued their work till the whole warp is filled with woof, the *cloth* is finiſhed: it is taken off the loom by unrolling it from the beam whereon it had been rolled in proportion as it was woven; and is now given to be cleared of the knots, ends of thread, ſtraws, and other filth; which is done with little iron nippers: and this operation is called *burling*.

In this condition it is carried to the fullery, to be ſcoured with urine, or a kind of potters clay well cleaned and ſteeped in water, put along with the *cloth* in the trough, wherein it is fulled. See Fulling.

The *cloth* being again cleared from the earth, or urine, by waſhing it in water, is returned to the former hands, to have the leſſer filth, ſmall ſtraws, and almoſt imperceptible knots, taken off as before: It is likewiſe fine-drawn. See Fine-*drawing*. Then it is returned to the fuller, to be beat and fulled with hot water, wherein five or ſix pounds of ſoap have been diſſolved. The ſoap moſt eſteemed is the white, eſpecially that of Genoa. After fulling an hour and a half, it is taken out to be ſmoothed, i. e. to be pulled by the liſts lengthways, to to take out the wrinkles and creaſes occaſioned by the force of the mallets, or peſtles, falling on the *cloth*, when in the troughs: which is often done by racking or tentering the *cloth*. See Tenter.

The ſmoothing is repeated every two hours, till the fulling be finiſhed, and the *cloth* brought to its proper breadth: after which, it is waſhed in clear water, to purge it of the ſoap, and given, all wet, to the carders, to raiſe the hair, or knap, on the right ſide, with the thiſtle, or weed; wherewith they give it two rubs, or courſes; the firſt againſt the grain, the ſecond with the grain: which operation is called ROUGHING it.

The *cloth* being dried after this operation, the cloth-worker takes it, and gives it its firſt cut, or SHEERING. This done, the carders reſume it, and after wetting it, give as many more rubs, or courſes, with the teazle, as the quality of the ſtuff requires: always obſerving to begin againſt the hair, and to end with it; and to begin with a ſmoother thiſtle, proceeding ſtill to a ſharper, and ſharper, as far as the ſixth degree.

After this, the *cloth* being dried, is returned to the cloth-worker, who ſheers it a ſecond time, and returns it to the carder; who wetting it again, gives it as many courſes as he thinks fit, dries it, and gives it back again to the cloth-worker; who after ſheering it the third and laſt time, returns it to the carders, who repeat their operation as before, till the hair, or knap, be well ranged on the ſurface of the *cloth*, from one end of the piece to the other.

It muſt be obſerved, that it is indiſpenſably neceſſary the *cloth* be wet, while in the carders hands; in order to which, it is ſprinkled from time to time with water.

The knap being finiſhed, and the *cloth* dried, the cloth-worker gives it as many cuts as he thinks requiſite for the perfection of the ſtuff. It muſt alſo be obſerved, that all the ſheerings muſt be on the right ſide, except the two laſt, which muſt be on the other; and that the *cloth* cannot be too dry for ſheering.

The *cloth* thus woven, ſcoured, knapped, and ſhorn, and ſometimes *cottened*, or FRIZED, is ſent to the dyer.

When dyed, it is waſhed in fair water, and the cloth-worker takes it again, wet as it is, lays the hair, or knap, with a bruſh on the table, and hangs it on the tenters; where it is ſtretched both in length and breadth, enough to ſmooth it, ſet it ſquare, and bring it to its proper dimenſions, without ſtraining it too much; obſerving to bruſh it afreſh, the way of the hair, while yet a little moiſt on the tenter.

When quite dry, the *cloth* is taken off from the tenter, and bruſhed again on the table, to finiſh the laying of the knap: it is then folded, and laid cold under a preſs, to make it perfectly ſmooth and even, and to give it a little gloſs.

The gloſs is given by laying a leaf of vellum, or cap-paper, in each plait of the piece; and over the whole a ſquare plank of wood: on which, by means of a lever, the ſcrew of a preſs is brought down, with the degree of force judged neceſſary, with regard to the quality of the *cloth*. In France, none but ſcarlets, greens, blues, &c. receive this laſt preparation; blacks being judged better without it.

Laſtly, the *cloth* being taken out of the preſs, and the papers removed, it is in a condition for ſale, or uſe. See the whole proceſs of manufacturing ſheep's wool into *cloth*, deſcribed by Sir W. Petty, in Birch's Hiſt. of the Royal Society, vol. i. p. 55, &c.

For the manufacture of mixt Cloths, or thoſe wherein the wools are firſt dyed, then mixed, ſpun, and woven of the colours intended; the proceſs, except in what relates to the colour, is moſtly the ſame with that juſt ſpoken of.

The method of adjuſting the mixture, is by firſt making a felt, or flock, of the colours of the intended *cloth*, as a ſpecimen: the wool of each colour is weighed, and when the ſpecimen is to the manufacturer's mind, he mixes, for uſe, a quantity in the ſame proportion; eſtimating each grain of the ſpecimen at twenty pounds weight of the ſame wool in the *cloth* to be made.

Thus, if he would mix three colours, v. gr. coffee-colour, feuille-mort, and pale-blue, the firſt to be the prevailing-colour, he weighs a quantity of each; for inſtance, 70 grains of the firſt, 25 of the ſecond, and 20 of the third: then multiplies each by 20 pounds of wool: and thus gains 1400 pounds for the coffee wool; 500 pounds for the feuille-mort, and 400 for the pale-blue.

The wools of the ſpecimen, thus weighed, are mixed, oiled, carded, moiſtened with clear water, rubbed with black ſoap, and in this ſtate wrought a long time in the hands; till they be reduced into a piece of felt like that uſed by hatters.

It is then rinſed in water, to purge out the oil and ſoap; and when dry, the hair, or knap, is carded out with the teazle; then ſhorn carefully, till the ground appear, and the ſeveral colours be diſcoverable.

Laſtly, wetting it a little, and preſſing it, he examines it well; and if he be not contented with it, makes another felt; if he be, he proceeds to mix his wools: when mixed, it is beat on hurdles, cleaned, oiled, carded, ſpun, woven, &c. as in white *cloth*.

For the laws relating to the woollen manufactory, ſee ſtat. 3 and 4 Edw. III. cap. 2. 3 and 4 Edw. IV. cap. 6. 17 Edw. IV. cap. 1. 5 and 6 Edw. VI. cap. 6. 4 and 5 Ph. and M. cap. 5. 29 Eliz. cap. 20. 1 Jac. I. cap. 8. 7 Jac. I. cap. 7. 21 Jac. I. cap. 18. 12 Car. II. cap. 27. 1 Anne. 7 Anne, cap. 13. 10 Anne, cap. 16. 1 Geo. I. cap. 15. 11. Geo. I. 12 Geo. I. 13 Geo. I. 11 Geo. II. 14 Geo. II.

Cloth, *Caſting of lead on.* See Casting.

Cloth, *Cocking.* See Cocking *Cloth.*

Cloth, *Frizing of.* See Frizing.

Cloth, *Green.* See Green.

Cloths, *Hair*, in *Military Affairs.* See Hair.

Cloth, *Houſewife's.* See Housewife.

Cloth, *Incombuſtible.* See Asbestos, and Linum *Incombuſtible.*

Cloth, *Painting on.* See Painting.

Cloth, *Sear.* See Sear-*Cloth.*

CLOUD, in *Phyſiology*, a collection of condenſed vapour, ſuſpended in the atmoſphere.

A *cloud* is a congeries of watery particles, or veſiculæ raiſed from the waters, or watery parts of the earth, by the ſolar, or ſubterraneous, or electrical fire; which at their firſt riſe from our globe, are too minute, and too much ſeparated by their mutual repulſion, to be perceived; but as they mount, meeting with a greater degree of cold, loſing their electricity, or by any other proceſs which nature employs for this purpoſe, are condenſed and rendered opaque, by the reunion of their parts; ſo as to reflect light, and become viſible. For the manner wherein vapours are raiſed into *clouds.* See Evaporation.

Theſe vapours, however raiſed, being ſpecifically lighter than air, mount in it, till having reached ſuch a region of the atmoſphere as is of the ſame ſpecific gravity with themſelves, they will be ſuſpended; till the watery veſicles, which were at firſt too thin to be perceived, being now condenſed by the cold of the ſuperior regions; and conſequently the parts ſet cloſer together; their denſity is firſt augmented ſo as to render them opaque enough to reflect the ſun's light, and become viſible; and their ſpecific gravity increaſed, ſo as to make them deſcend: in the former ſtate they are called *clouds*; and in the latter, when they arrive at us, rain.

Clouds, beſide their uſe when they deſcend in ſhowers, are of ſervice, while ſuſpended in the atmoſphere; as they help to mitigate the exceſſive heat of the torrid zone, and ſcreen it from the beams of the ſun, eſpecially when in his zenith.

From the obſervable motions of the *clouds* it appears, that there are different currents in the air at the ſame time, and in the ſame quarter, under one another. Phil. Tranſ. N° 458. p. 537.

For the colour of the *clouds*, ſee Colour. For the electricity of the *clouds*, ſee Atmosphere, Conductors, Electricity, Evaporation, &c.

Clouds, *Magellanic.* See Magellanic *clouds.*

CLOUDBERRY. See Chamæmorus.

CLOVE-*Tree*, Caryophyllus, in *Botany*, a genus of the *polyandria monogynia* claſs. Its characters are theſe: it hath a double empalement; the flower is of one leaf, cut into four obtuſe parts, upon which the germen is ſituated: the fruit hath another empalement, which is ſmall, and ſlightly divided into four parts, which are permanent. The flower hath four blunt petals, and hath many ſtamina. The germen is ſituated under the flower, which afterwards becomes a ſoft berry with two cells, each containing a kidney-ſhaped ſeed. There are five ſpecies.

The fruit is ſomewhat in form of a nail; whence the term *clove*, from the French *clou*, nail.

The *clove-tree* was anciently very common in the Molucco iſlands; where all the European nations, who traffic in ſpices to the Indies, furniſhed themſelves with what quantity of *cloves* they required. At preſent there are ſcarce any found but in the iſland of Ternate: the Dutch, in order to render themſelves maſters of that merchandize, having dug up the *clove-trees* of the Moluccos, and tranſplanted them to Ternate; ſo that there are none now to be had but through their hands.

The tree is very large; its bark reſembles that of the olive-tree, and its leaves thoſe of the laurel: its fruit falling, takes root, and thus it multiplies itſelf without any culture. It is ſaid, it will not allow any other herb, or tree, to grow near it; its exceſſive heat drawing to it all the humidity of the ſoil.

When the *clove* firſt begins to appear, it is of a greeniſh-white colour; as it ripens, it grows brown. Nor is there any preparation neceſſary in order to render it ſuch as it comes to us, but to dry it in the ſun; whatever ſome authors talk of firſt ſteeping it in ſea-water, to preſerve it from worms.

In the inſide of a *clove* are found a ſtyle and ſtamina, with their apices; and towards the larger end, there ſhoot out from the four angles, four little points like a ſtar; in the middle of which is a round ball, of a lighter colour than the reſt, compoſed of four ſmall ſcales or leaves, which ſeem to be the unexpanded petals of the flower.

Cloves muſt be choſen dry, brittle, harſh to the touch, well grown, of a duſky-reddiſh colour, a rough aromatic taſte, an agreeable ſmell, and, if poſſible, with the ſhank on.

This ſpice acquires weight by imbibing water, which it will do at ſome conſiderable diſtance. The Dutch, who trade in *cloves*, make a conſiderable advantage by knowing this ſecret. They ſell them always by weight; and when a bag of *cloves* is ordered, they hang it ſeveral hours before they ſend it in, at about two feet diſtance over a veſſel of water. They carefully watch the time when the *cloves* have imbibed the proper quantity, that the fraud may paſs undiſcovered. This will add many pounds to the weight, which the unwary purchaſer pays for on the ſpot. This is often practiſed in the ſpice iſlands, and ſometimes in Europe: but the degree of moiſture muſt be more carefully watched in the former place; for there a bag of *cloves* will in one night's time attract ſo much water, that it may be preſſed out of them by ſqueezing them with the hand.

Cloves are the hotteſt and moſt acrid of aromatic ſubſtances, and their properties are, to warm and dry, to correct a fetid breath, to ſharpen the ſight, diſſipate films in the eyes, fortify the ſtomach and liver, and ſtop vomiting. They are uſed in apoplexies, palſies, lethargies, and other diſeaſes of the brain.

Such of the fruit as eſcape the gatherers, grow and ſwell on the tree, and become full of a gum; theſe are ſometimes uſed in medicine, and are called *mother of cloves.*

There is alſo an oil drawn from *cloves* by diſtillation, moderately pungent; which, when new, is of a pale-yellow colour, but reddens as it grows old: it is uſed in medicine as a ſovereign remedy for the tooth-ach, and in compoſitions with the ſame view as the fruit. It is alſo much uſed among the perfumers.

No plant, nor any part of any plant contains ſo large a proportion of eſſential oil as *cloves*; and this oil is heavier than water. From ſixteen ounces of *cloves* Neumann obtained, by diſtillation, two ounces and two drams; and Hoffman obtained from the ſame quantity an ounce and a half. The pungency of *cloves* is owing to a combination of reſin with eſſential oil.

The oil of *cloves* met with in the ſhops, and obtained from the Dutch, is highly acrimonious; but this is not the genuine diſtilled oil of *cloves*. It probably derives its acrimony and high colour from a mixture of the reſinous part of the *clove*. Dr. Lewis, in his Mat. Med. obſerves, that the common oil, as being the moſt pungent, is beſt adapted for external purpoſes, and the genuine oil for thoſe of an internal aromatic.

The natives call the *clove-tree chamque*, the Perſians and Arabs *karumfel*, and the Turks *kalafour*. They make ſeveral preparations both of the flowers, and the fruit. See Antophyllus.

Clove-Cinnamon. See Cinnamon.

Clove-Water, is prepared of brandy, and cloves bruiſed therein and diſtilled.

Clove, in *Commerce*, is uſed for the two and thirtieth part of a weigh of cheeſe, i. e. eight pounds. 9 Hen. VI. cap. 8. See Weigh.

Clove-*july-flowers*, a ſpecies of caryophyllus, greatly recommended as cordials, and given in diſorders of the head, palpitations of the heart, and in nervous complaints of all kinds. See Pink.

Clove-*tongue*, a name uſed by ſome Engliſh writers, for the common black hellebore, the root of which is uſed in medicine.

CLOVER-*graſs.* See Trefoil.

CLOUGH, or *draught*, in *Commerce*, an allowance of two pounds in every hundred weight for the turn of the ſcale; that the commodity may hold out weight when ſold out by retail.

CLOUT-NAILS. See Nail.

CLOUTS, in *Gunnery*, are thin plates of iron nailed on that part of the axle-tree of a gun-carriage, which comes through the nave, and through which the linſpin goes.

CLOWN's *wound-wort*, in *Botany.* See Iron-*wort.*

CLOYED. The ſeamen, when any thing is got into the touch-hole of a great gun, ſo that they cannot with a priming-iron make way for the powder to be put in to prime it, ſay *the touch-hole is cloyed:* wherefore when guns are nailed, &c. they ſay they are *cloyed.*

CLUB-*antennæ*, in *Natural Hiſtory*, a name given by naturaliſts to ſuch of the horns or *antennæ* of butterflies as repreſent a *club*, being larger at the extremities than at the origin.

CLUNY, or Clugni, a celebrated abbey of Benedictine monks, in a city of that name in France; being the head, or chief of a congregation denominated from them.

It is ſituated in the Maſonnois, in the province of Burgundy, on the river Rhone; and was founded by William duke of Berry and Aquitain; or, as others ſay, by the abbot Berno, ſupported by that duke, in the year 910: but owed its diſtinguiſhed reputation to Odo, who was created abbot of *Cluny* in 927.

This order of monks was brought into England by William earl of Warren, ſon-in-law to William the Conqueror, who built a houſe for them at Lewes in Suſſex, about the year 1077. There were twenty-ſeven priories and cells of this order in England, which were governed by foreigners, aſterwards made denizens.

CLUE *of a ſail*, &c. See Clew.

CLUPEA, in the *Artedian Ichthyology*, the name of a fiſh, the characters of which are theſe: it is one of the order of the *malacopterygii*, or ſoft-finned kind: and in the Linnæan ſyſtem of the *abdominales*, under which are claſſed eleven different ſpecies. The branchioſtege membrane contains on each ſide eight bones. The belly is very acute, or, as it were, ſerrated, from the ſingular ſituation of the ſcales; and the back-fin is placed ſomewhat nearer to the ſnout than to the tail.

There are four ſpecies of this genus, enumerated by Artedi; of which the firſt is our common *herring*, the ſecond, the *ſprat*, the third, the *ſhad*, and the fourth, the *anchovy*. See *Tab. of Fiſhes*, N° 39.

CLUSIA, in *Botany*, the balſam-tree, a genus of the *polygamia monoecia* claſs. Its characters are theſe: the flower hath five large roundiſh concave ſpreading petals: in the bottom is ſituated a globular nectarium, including the germen, which is pervious at the top. It hath a great number of ſingle ſtamina: the oblong oval germen is terminated by a plain ſtar-like ſtigma, with ſix obtuſe indentures, which afterward becomes an oval capſule, with ſix furrows and ſix cells, opening with ſix valves, which ſpread in form of a ſtar, including many angular ſeeds fixed to a column, ſurrounded with pulp. There are two ſpecies, natives of the ſouthern parts of America.

CLUSTER-*polype*. See Polype.

CLUTIA, in *Botany*, a genus of the *dioecia gynandria* claſs, and deriving its name from *Clute*, a curious botaniſt. Its characters are theſe. It is male and female in different plants, the male flowers have five heart-ſhaped petals, which are ſhorter than the empalement, and ſpread open. They have five exterior nectariums, which are ſituated in a circle at the bottom of the petals, and five interior, which are ſituated within the other: they have five ſtamina ſituated in the middle of the ſtyle. The female flowers have petals like thoſe of the male; theſe have five double exterior nectariums, but no interior: they have a roundiſh germen which afterward becomes a globular capſule, with ſix furrows and three cells, each containing a ſingle ſeed. There are four ſpecies.

CLYDON, from κλυζω, *I cauſe to fluctuate*; in *Medical Writers*, is uſed for the fluctuation of food taken into the ſtomach, ariſing from the laxity or weakneſs of its fibres, and of the abdominal muſcles.

CLYMENUM, in *Botany*, the name of a genus of plants, the characters of which are in all reſpects the ſame with thoſe of the lathyrus; only in this plant there grow but two leaves on each rib, whereas on the *clymenum* there are ſeveral pairs; the rib finally terminating in a clavicle or tendril. Tournefort enumerates three ſpecies. Inſt. p. 396.

CLYPEOLE, in *Botany*, treacle muſtard; a genus of the *tetradynamia ſiliculoſa* claſs. Its characters are theſe: the flower hath four oblong entire petals, placed in form of a croſs, and ſix ſtamina; two of which ſtanding oppoſite, are ſhorter than the other. In the center is ſituated a roundiſh compreſſed germen, which afterwards becomes an orbicular pod, compreſſed, erect, and indented at the top, with a longitudinal fiſſure, opening in two cells, containing round compreſſed ſeeds. There are four ſpecies, natives of the ſouthern parts of Europe.

CLYPEUS, or Clypeum, *Buckler*; a piece of defenſive armour, which the ancients uſed to carry upon the arm, to ſecure them from the blows of their enemies.

The figure of it was either round, oval, or ſexangular: in the middle was a boſs of iron, or of ſome other metal, with a ſharp point. See Shield.

CLYSSUS, a chemical production, conſiſting of the moſt efficacious principles of any body, extracted, purified, and then remixed.

A *clyſſus* is when the ſeveral ſpecies, or ingredients of a body, are prepared and purified ſeparately, and then combined again. Thus, ſalt, ſulphur, oil, ſpirit, and mercury, reaſſembled into one body, by long digeſtion, &c. make a *clyſſus*.

Clyssus *of Antimony*, denotes the vapours reſulting from the detonation of nitre with *antimony*.

Clyssus *of Nitre*, ſignifies the vapours ariſing from the detonation of *nitre* with charcoal.

Clyssus *of Sulphur*, denotes an acid liquor obtained by the detonation of *ſulphur* with nitre, and is ſimilar to that of antimony. Particular virtues were formerly aſcribed to theſe liquors, of which they are now found to be deſtitute.

The rapidity and violence with which NITRE detonates in certain circumſtances, may occaſion a violent exploſion, and the rupture of the veſſels. To prevent ſuch accidents, and the diſagreeable conſequences of them, the inflammable matter ſhould not be very intimately mixed with the nitre, the DETONATION of which is proportionably ſtronger and quicker as the mixture is more exact and entire; a ſmall quantity only of the mixture ſhould be detonated at a time, and no addition ſhould be made till the detonation of the firſt ſmall quantity be altogether finiſhed.

There is alſo a *clyſſus* of vitriol, which is a ſpirit drawn by diſtillation from vitriol diſſolved in vinegar. This is uſed by phyſicians in various diſeaſes, and to extract the tinctures of ſeveral vegetables.

Clyssus is alſo uſed among ſome authors for a kind of *ſapa*, or extract, made with eight parts of the juice of a plant, and one of ſugar, ſeethed together into the conſiſtence of honey.

CLYSTER, in *Medicine*, a liquid remedy, or injection, introduced into the inteſtines by the fundament; in order to refreſh them, looſen the belly, moiſten and ſoften the fæces, diſſipate wind, &c.

The word comes from κλυζω, *lavo, abluo, I waſh.*

Clyſters are ſometimes made of bran-water and milk, but more uſually of decoctions of certain herbs; to which are added honey, brown ſugar, and ſometimes lenitive electary, and other drugs. *Clyſters* are emollient, carminative, lenitive, aſtringent, laxative, anodyne, uterine, antifebrific, nouriſhing, &c.

In Holland, England, and Germany, *clyſters* are given by means of a pipe of ivory faſtened to a bladder, the patient being made to lie on one ſide, and to retain the liquor as long as he is able. The French, and ſome other nations, uſe a ſort of ſyringe, holding a pint, or more, for this purpoſe; and this is evidently the better method, as, by this means, liquors are not only more quickly, but more forcibly thrown into the inteſtines, and are made to paſs farther than by the Engliſh method. Some alſo uſe a leather pipe of half an ell long, which is faſtened to the ſyringe, and to the pipe introduced into the anus, and by this means the patient can give himſelf the *clyſter*.

Great care muſt be taken in adminiſtring *clyſters*, that the liquor be neither too hot nor too cold, but only tepid, or moderately warm, both extremes being capable of doing great injury to the bowels.

Clyſters are properly uſed, 1. Where a coſtive ſtate is to be removed, and the body rendered ſoluble. 2. For alleviating the pains ariſing from the colic, ſtone, dyſentery, violent hæmorrhoids, and other diſorders of the abdomen. 3. For making revulſions from the head in apoplexies, lethargies, deliriums, and other diſorders of that part. 4. In difficult labours, whether the fœtus be dead or alive, eſpecially if the mother be coſtive, as alſo for expelling the ſecundines, when they adhere too firmly to the womb, or remain longer behind than they ought. 5. *Clyſters* are able to nouriſh perſons, who, from their power of deglutition being impaired, muſt otherwiſe periſh of hunger; and for this purpoſe nouriſhing liquors muſt be uſed, ſuch as broths, and the like, to which a little wine may be added, if the nature of the caſe will allow it.

A very remarkable *clyſter*, which ſeems to have been invented by the Engliſh, and, from us, propagated to other nations, is the ſmoak of tobacco. When all other *clyſters* have proved ineffectual for rendering the body ſoluble, in the iliac paſſion, and ſome other caſes, the end has ſometimes been obtained by injecting a large quantity of the ſmoak of tobacco, by means of a proper inſtrument. There are ſeveral kinds of inſtruments invented for this purpoſe, and deſcribed by Bartholine, Valentini, and others. The general method of making them is this: a box is provided, capable of holding about half an ounce of tobacco; this has two pipes, the one made of ivory, to be introduced into the anus, the other reſembles the mouth-piece of ſome muſical inſtruments, and, by means of blowing into this, the ſmoak of the lighted tobacco in the box is driven forcibly up the anus:

this is to be continued till the patient find a ſtrong ſtimulus to go to ſtool, and if once doing it does not produce the effect, it is to be repeated till it ſucceeds. This is of prodigious ſervice in obſtinate incarcerated hernias of the ſcrotum. And Heiſter obſerves, that he always found it ſucceed ſo well, as never to reduce him to a neceſſity of having recourſe to the knife. When tobacco alone will not anſwer the purpoſe, other more ſtimulating ingredients may be added to it in the box; and this acrid ſmoak ſo contracts the diameters of the inteſtines, that the prolapſed ones are much more eaſily drawn back into the abdomen, than they otherwiſe could be. See FUMIGATOR.

Clyſters of the liquid kind are prepared of different ingredients, according to the intentions propoſed to be anſwered, and as, in practice, thoſe intentions are principally four, to alter and change, to evacuate, to corroborate, and to mitigate pain; ſo *clyſters* are accordingly contrived to ſoften the indurated fæces, to correct the acrid, acid, and ſaline recrements, to evacuate the contents of the large inteſtines, and to corroborate the weak and languid fibres of the inteſtines in general, and ſo ſtrengthen their periſtaltic motion; or laſtly, to mitigate the ſpaſms of their contracted coats, and relax their conſtricted fibres.

When *clyſters* are intended to lubricate and ſoften the dry and indurated fæces, or to obtund acrid, ſaline, corroſive, and acid humours, in the large inteſtines, they are to be prepared with the emollient ingredients, ſuch as broths, milk, decoctions of emollient herbs, as marſhmallows, and the like, with manna, oil, and the like aſſiſtances; and, as all theſe ingredients have a power of relaxing ſpaſms, as well as of ſoftening the fæces, *clyſters* of this kind are extremely beneficial in all ſpaſmodic diſorders, fevers, pains, and caſes where the patient is coſtive, whether it be from ſpaſms of the inteſtines, or from induration of the fæces.

When the intention is at once to evacuate the inteſtines, and to carry off ſtagnant humours, then ſalts, added to the decoctions, admirably anſwer the end. Glauber's ſalt, Epſom ſalt, and ſal gem, are all uſeful for theſe purpoſes: in ſome caſes alſo ſal ammoniac; and experience ſhews, that half an ounce of one of theſe ſalts, in a *clyſter*, will do more toward evacuating the contents of the bowels, than four ounces of any of the common purging electaries. Corroborating *clyſters* are to be prepared of the four greater hot ſeeds, bay and juniper-berries, the carminative oils, &c. and in violent diſorders of the head, ſuch as apoplexies, palſies, lethargies, and the like, rue, marjoram, thyme, roſemary, and lavender flowers, are conveniently added to *clyſters*: as are mugwort, pennyroyal, feverfew, and the like. When there is any diſorder of the womb, or ſuppreſſion of the menſes, the clyſters of the ſedative kind are principally to be compoſed of oil, or the like fatty ingredients, and ſuch as conſiſt purely of oil alone, are found often to do wonders, in allaying the moſt violent pains.

CLYSTERS, *Nouriſhing*, are thoſe applied with deſign to nouriſh perſons who cannot take in any aliment at the mouth. Hildanus tells us, that Aubery, a phyſician, fed a woman of quality ſix weeks with *clyſters* compoſed of capons fleſh, and other fowls, boiled to a pulp, with yolks of eggs, applied twice a day. It is difficult, however, to conceive how *clyſters* ſhould nouriſh; and the caſe is briſkly controverted in the Memoirs of the French Royal Academy, between M. Littre, who maintains the negative, and M. Lemery.

The arguments uſed by the firſt, are, that the materials of the *clyſter*, for want of the ordinary paſſage, want the preparation neceſſary to be converted into nouriſhment; and beſide that, are out of the road for getting into the blood: for in the firſt of the large inteſtines, called the *cæcum*, is a valve called *valvula Baubini*, to oppoſe the paſſage of any food into the ſmall inteſtines: and there are no lacteal veins in the large inteſtines, but abundance in the ſmall ones. But the lacteals are the only canals that can carry the chyle into its receptacle, and the chyle is the only ſubſtance that can nouriſh.

To this, M. Lemery objects, that very great anatomiſts have found lacteals in the large inteſtines, though but in ſmall numbers: but though there were none, adds he, the meſeraic veins are indiſputably diſtributed to theſe inteſtines; and may eaſily be ſuppoſed to pump up the moſt ſubtil part of a broth, and carry it into the blood. M. Merry has paſſed a liquor immediately from the large inteſtines into theſe veins: beſides, the animal machine is ſo porous throughout, that nature ſeems to have intended an extraordinary way of conveying fluids into the blood, to be ready on extraordinary occaſions.

This notion will appear inconteſtible, if M. Morin's theory of the paſſage of the urine be admitted.

Herodotus ſays, the Egyptians were the firſt who invented *clyſters*; or rather, who applied them to uſe. Galen and Pliny add, that they took the hint from a bird of their country, called *ibis*, which they frequently obſerved to make this kind of injection with its beak, and afterwards to diſcharge itſelf ſeveral times Others ſay, that the *ciconia*, or ſtork, firſt taught men the application of *clyſters*.

CLYSTERS, *Uterine*, are injections into the uterus, or womb.

CLYSTERS, *Catholicon for*. See CATHOLICON.

CNEMODACTYLÆUS, in *Anatomy*, a muſcle, otherwiſe called *extenſor tertii internodii digitorum*. See EXTENSOR *tertii internodii*, &c.

CNEORUM, in *Botany*, *widow-wail*; a genus of the *triandria monogynia* claſs. Its characters are theſe: the flower hath three narrow oblong petals, and three ſtamina which are ſhorter than the petals. In the center is ſituated an obtuſe three-cornered germen, which afterward becomes a globular dry berry with three lobes, having three cells, each containing one round ſeed. We have but one ſpecies.

CNICUS, in *Botany*, *Bleſſed Thiſtle*; a genus of the *ſyngeneſia polygamia æqualis* claſs. Its characters are theſe: the empalement of the flower is ſcaly; the flower is compoſed of ſeveral hermaphrodite florets, which are uniform; theſe are funnel-ſhaped, and cut at the top into five equal ſegments, having five ſhort hairy ſtamina. In the centre is ſituated a ſhort germen crowned with down, which afterward becomes a ſingle ſeed crowned with down, and ſhut up in the empalement. There are four ſpecies.

The firſt ſort is the *carduus*, which is uſed in medicine; This is an annual plant, which periſhes ſoon after the ſeeds are ripe. It grows naturally in Spain, and in the iſlands of the Archipelago, but is cultivated in gardens in England to ſupply the market. This plant is ſo well known as to require no deſcription. See *Tab. of Botany*, *Claſs* 12.

COA, in *Natural Hiſtory*, the name given by Plumier to a genus of plants, called by Linnæus HIPPOCRATEA.

COACERVATUM *vacuum*. See VACUUM.

COACH, a vehicle for commodious travelling, ſuſpended on leathers, and moved on wheels.

In England, and throughout Europe, the *coaches* are drawn by horſes, except in Spain, where they uſe mules. In a part of the Eaſt, eſpecially the dominions of the great Mogul, their *coaches* are drawn by oxen. In Denmark they ſometimes yoke rein-deer in their *coaches*; though this is rather for curioſity than uſe.

The *coachman* is ordinarily placed on a ſeat raiſed before the body of the *coach*. But the Spaniſh policy has diſplaced him in that country by a royal ordonnance; on occaſion of the duke d'Olivares, who found that a very important ſecret whereon he had conferred in his *coach*, had been overheard, and revealed by his coachman: ſince that time, the place of the Spaniſh coachman is the ſame with that of the French ſtage-coachman, and our poſtillion, viz. on the firſt horſe on the left.

The invention of *coaches* is owing to the French: yet they are not of any great antiquity even in France; ſcarce reaching earlier than the reign of Francis I.

Their uſe, at their firſt riſe, was only for the country: and authors obſerve, as a thing very ſingular, that there were at firſt no more than two *coaches* in Paris; the one that of the queen, and the other that of Diana, natural daughter of Henry II. The firſt courtier who had one, was Jean de Laval de Bois Dauphin, whoſe enormous bulk diſabled him from travelling on horſeback.

Coaches were firſt introduced into England in 1580, by Fitz-Allen, earl of Arundel, and they were in general uſe by the nobility and gentry at London about the year 1605. Anderſon's Hiſt. Com. vol. i. p. 421, 469.

Coaches have had the fate of all other inventions to be brought by ſteps and degrees to their perfection; at preſent they ſeem to want nothing, either with regard to eaſe, or magnificence.

Louis XIV. of France made ſeveral ſumptuary laws for reſtraining the exceſſive richneſs of *coaches*, prohibiting the uſe of gold, ſilver, &c. therein; but they have had the fate to be neglected.

Coaches may be divided into two kinds; thoſe that have iron bows, or necks, and thoſe that have not; both the one and the other hath two principal parts, the body, and the train, or carriage. See CRANE-*neck*, and PERCH.

The *body* is that part where the paſſengers are diſpoſed; and the *carriage* is that which ſuſtains the body, and to which the wheels are faſtened, that give motion to the whole machine.

Coaches are diſtinguiſhed, with regard to their ſtructure, into *coaches*, properly ſo called, *chariots*, *calaſhes*, and *berlins*. With regard to the circumſtances of their uſe, &c. we diſtinguiſh *ſtage-coaches*, *hackney-coaches*, &c.

Chariot, or *Half*-COACH, is a kind of *coach* that has only a ſeat behind; with a ſtool, at moſt, before. When theſe are very gay, richly garniſhed, and have five glaſſes, they are called CALASHES.

Hackney-COACHES, thoſe expoſed to hire, in the ſtreets of London, and ſome other great cities, at rates fixed by authority.

Theſe firſt began to ply in the ſtreets of London, or rather waited at inns, in 1625, and were only twenty in number: but they were ſo much increaſed in 1635, that king Charles iſſued an order of council for reſtraining them. In 1637 he allowed fifty *hackney-coachmen*, each of whom might keep twelve horſes. In 1652 their number was limited to two hundred, and in 1654 extended to three hundred. In 1661 four hundred were licenſed at 5 l. annually for each. In 1694 ſeven hundred were allowed, and taxed by the 5 and 6 W. and M. at 4 l. per annum. each.

Thoſe in London are under the direction of commiſſioners, who take cognizance of all cauſes and diſputes ariſing thereupon.

By 9 Anne, cap. 23. eight hundred hackney-*coaches* were allowed in London and Weſtminſter; but by 8 Geo. III. cap. 24. the number is increaſed to one thouſand; which are to be licenſed by commiſſioners, and pay a duty of 5 *s.* a week for each licence to the crown: and if any perſon drive a hackney-*coach* without licence, he ſhall forfeit 5 *l.* And coachmen uſing abuſive language, or demanding more than their fare, are liable to a penalty not exceeding 20 *s.*

The ſtat. 1 Geo. I. cap. 57. ordains, that where coachmen refuſe to go at, or exact more for their hire than is limited by the act, they ſhall forfeit not exceeding 3 *l.* nor under 10 *s.* and the commiſſioners have power to determine it. The fare of hackney coachmen in London, or within ten miles thereof, is 12 *s.* 6 *d.* per day, allowing twelve hours to the day; and by the hour, not above 1 *s.* 6 *d.* for the firſt, and 1 *s.* for every hour after; and none are obliged to pay above 1 *s.* for the uſe of any hackney *coach* for any diſtance, not mentioned in the act, which is not above one mile and four furlongs; nor above 1 *s.* 6 *d.* for any diſtance not exceeding two miles. Coachmen are to have numbers on their *coaches*, on tin plates, or ſhall forfeit 5 *l.* and refuſing any perſon to take the number of their *coaches*, or giving a wrong number, incurs the forfeiture of a ſum not exceeding 40 *s.* None but licenſed *coaches* ſhall ply at funerals for hire, under the penalty of 5 *l.* Drivers of hackney *coaches* are to give way to perſons of quality, and gentlemen's *coaches*, on the penalty of 10 *s.* By 8 Geo. III. cap. 28. every hackney-*coach* is to be provided with cheque-ſtrings; and every coachman plying without them, incurs a penalty of 5 *s.* On Sundays there were formerly only a hundred and ſeventy-five *coaches* to ply, which were to be appointed by the commiſſioners; but their number is now unlimited.

COACHES, *ſtage*, are thoſe appointed for the conveyance of travellers from one city or town to another; and theſe, as well as other coaches, chaiſes, &c. with four wheels, pay an annual tax of 5 *l.*

COACH, in *Sea Language*, denotes a chamber or apartment near the ſtern, in a ſhip of war.

COADJUTOR, *Fellow-Helper*, is properly uſed for a prelate joined to another, to aſſiſt him in the diſcharge of the functions of his prelature; and even, in virtue thereof, to ſucceed him.

The *coadjutor* has the ſame privileges with the biſhop himſelf. *Coadjutors* were formerly appointed by kings, for archbiſhops and biſhops grown old, or abſent, and not able to ſuperintend their dioceſes. But the right of appointing *coadjutors*, in Romiſh countries, is now reſerved to the pope alone.

Coadjutors are alſo called biſhops *in partibus infidelium*; becauſe it is neceſſary the *coadjutor* of a biſhop ſhould be a biſhop himſelf; without which, he cannot diſcharge the office.

The uſe of *coadjutors* in the church, is borrowed from the Roman empire. Symmachus ſpeaks of aſſiſtants, or *coadjutors*, given to magiſtrates; and calls them *adjutores publici officii*.

The popes, formerly, made a ſhameful abuſe of the *coadjutories*: ſome they granted to children, and young people, with this clauſe, *donec ingreſſus fuerit: till they were capable of entering upon the adminiſtration of the office.* Others they granted to perſons not in orders, with this clauſe, *donec acceſſerit*: and others to perſons at a great diſtance, with this clauſe, *cùm regreſſus*: but the council of Trent tied down the pope's hands, by adding abundance of reſtrictions on the article of *coadjutors*.

In nunneries they have *coadjutrixes*; who are religious, nominated to ſucceed the ABBESS, under pretence of aiding her in the diſcharge of her office.

COADUNATÆ, in *Botany*, an order of plants in the *fragmenta methodi naturalis* of Linnæus.

COAGMENTATION, is uſed, among *Chemiſts*, for the act of melting down a matter, by caſting in certain powders, and afterwards reducing the whole into a concrete, or ſolid.

COAGULABLE *lymph of the blood.* See LYMPH.

COAGULATION, in *Chemiſtry*, denotes certain operations, in which fluid bodies become ſolid; as, for example, the CHRYSTALLIZATION *of ſalts*. In a general ſenſe, it ſignifies the condenſing, or thickening of a fluid matter, without its loſing any of the ſenſible parts which occaſioned its fluidity; as we frequently ſee in blood, milk, &c.

We diſtinguiſh between that kind of thickening which is effected by the evaporation of the fluid parts of a body, as in clay, which condenſes in the ſun, properly called *hardening*; and that effected without any loſs of its ſubſtance, called *coagulating*. Thus, we ſay, that cold *coagulates* blood, &c.

There is one general term, viz. *concretion*, which includes *coagulation*, condenſation, and hardening.

By injecting an acid into the vein of an animal, the blood coagulates; which ſtops its circulation, and brings immediate death. Several poiſons have their effect by inducing a *coagulation*.

COAGULATION is performed by ſix different agents in the general operations in chemiſtry, and by each of theſe in ſeveral ways.

1. It is performed with water, by congealing, cryſtallizing, and precipitating; as in the *mercurius vitæ*, and ſome other ſuch preparations.

2. With oil, which, by the force of fire, unites to itſelf ſulphur, ſalts, and metals.

3. With alcohol, upon the ſpirit of ſal ammoniac, the white of eggs, the ſerum of the blood, &c.

4. With acid and alkali, growing ſolid together, as in the *tartarum vitriolatum*.

5. With fixed alkali, as in milk. And, 6. With acid ſalts, as in milk, ſerum, and whites of eggs.

COAGULUM, the *coagulum* of the Latins, the ϖιτυα, and the ταμισος of the Greeks, are the ſame with what in Engliſh we call rennet. See RENNET.

COAGULUM, in *Chemiſtry*, denote curdled concretions formed by the mixture of two liquors; ſuch as the precipitate of ſilver in the formation of LUNA *cornea*, &c.

COAGULUM *aluminoſum*, *alum-curd*, a form of medicine, preſcribed long ſince by Riverius, and now taken into the London diſpenſatory. It is ordered to be made by putting whites of eggs into a pewter or earthen veſſel, and ſtirring them about with a large lump of alum till they are coagulated.

COAK denotes a ſort of foſſil *coals* that have undergone a ſimilar operation to that of charring; whereby they are deprived of their phlegm, acid, and the greateſt part of their oil; and are therefore uſed in furnaces for ſmelting iron ore, and for drying malt.

COAL, a black, ſulphureous, inflammable matter, dug out of the earth; ſerving in many countries as the common fuel.

This we ſometimes call *pit-coal*, *foſſil-coal*, *earth-coal*, and *natural coal*, to diſtinguiſh it from an artificial fuel made in imitation hereof, by half burning the branches and roots of trees; properly called *charcoal*, and *ſmallcoal*: in places, whither *coal* is brought by ſea, it is called *ſea-coal*. *Coal* is one of the claſs of opake inflammable foſſils, and is diſtinguiſhed from the reſt by being of a gloſſy hue, ſoft, friable, not fuſible, but eaſily inflammable, and leaving, after burning, a large reſiduum of whitiſh aſhes. We have three ſpecies of this foſſil in common uſe for our fuel in different parts of the kingdom. 1. A hard duſky black coal. This is in common uſe with us, under the name of *Scotch coal* (though that name is not reſtrained to this ſpecies alone, but the following is indiſcriminately known among the dealers by the ſame appellation): this is uſually of a rough and duſty ſurface, and is leſs gloſſy, when freſh broken, than any other coal. It burns briſkly, and turns wholly to aſhes, not leaving any cinders. There is a vaſt deal of this dug about Lymington in Hampſhire, whence it is often called by the dealers *Lymington coal*. 2. A hard gloſſy coal. This is ſometimes ſold in London with the former, under the name of *Scotch coal*, but it is more determinately known in many parts of the kingdom by the name of *Welch coal*. It is diſtinguiſhed from the others by its great hardneſs, and gloſſy black, where freſh broken, and is much eſteemed for burning with leſs ſmoak than any other kind; and in ſome parts of this kingdom, and generally in Wales, they uſe it to make malt. 3. The third is our common *coal*, too well known to need any deſcription, but diſtinguiſhed from all the others by its ſhattery friable ſtructure, and its great gloſs when freſh broken. It is common in moſt countries of Europe; though the Engliſh *coal* is of moſt repute, even in foreign countries;

notwithſtanding ſome pretend that of the Foſſe in Auvergne not to be inferior to it.

The common *pit-coal* contains a large quantity of ſal ammoniac. The mouths of our ſubterranean fires in the *coal* countries all afford it, and it is even found in brick-kilns, where nothing but *coal* is burnt with the clay. It may appear ſtrange indeed to ſome, that this black ſubſtance ſhould yield ſo white and fine a ſalt; but chemiſts know, that all volatile ſalts whatever may be freed from their fœtor and intenſe colour, by tranſmuting them into a ſal ammoniac, by the mediation of an acid, as the ſpirit of ſalt, vitriol, or alum; after ſublimation with which, they become white, ſweet, and pure. The reaſon of this change is, that though the ſalts always carry over ſome of the fœtid oil with them in a ſtate of volatility, yet being thus in a manner fixed, the fœtid oil muſt by force of fire riſe firſt, leaving the ſubſequent ſal ammoniac without ſmell: though it is ſtill a doubt, whether the ſalt be the better or the worſe for this labour. Phil. Tranſ. N° 130.

The goodneſs of *coal* is found by its being as free as poſſible from ſulphur, in its heating iron well, and in its burning a long time in the ſmith's forge. The Engliſh *coal* has this property peculiar to it, that it never lights ſo perfectly, as when water is thrown on it.

The commerce of *coal* is very conſiderable in England; great quantities are exported to France, &c. by way of Rouen. The meaſure whereby it is ſold is the chaldron, containing thirty-ſix buſhels.

In the Memoirs of the French Royal Academy, we have an account of two experiments on the common *pit-coal*, made by M. Des Landes while in England, and which he thinks have eſcaped the Engliſh philoſophers.

1ſt, Pounding ſome *coal*, and putting half an ounce of it in a phial of water, the mixture became quite black: but leaving it expoſed to the air in a window, during a cold winter night, in the morning it was found frozen, and turned to a reddiſh colour. The reaſon of the change muſt be, that the froſt had diſengaged the ſulphurs of the *coal*; though one would little expect ſuch an effect from it.

2dly, From an infuſion of cinders in brandy, mixed with iron filings, ariſes a black tincture, which brightens in proportion as it is heated; when arrived at the heat of boiling, the colour becomes perfectly fine and ſoft, and gives a dye to cloth, which no workman can imitate.

The ſtrata, or veins of *coals* in *coal-pits*, are numerous, and their order, quality, &c. are very different in different places. In thoſe at Dudley in Staffordſhire, the ſtrata, below the turf, are two or three clays, a grey ſtone, and a hard grey rock; then they are expreſſed in the Philoſophical Tranſactions, to be, 1. *coal*, called *bench-coal*; 2. *ſlipper-coal*, leſs black, and ſhining than the former; 3. *ſpin-coal*, more black and ſhining; 4. *ſtone-coal*, much like *canal-coal.*

Theſe ſtrata have between each of them a bat, or bed, of a peculiar ſort of matter, about the thickneſs of a crown piece. Below theſe are divers metalline ſtrata; as a black ſubſtance, called the *dun-row bat*; a grey iron ore, called the *dun-row iron-ſtone*; a bluiſh bat, called *white-row*; a blackiſh iron ore, called *white-row grains*, or *iron-ſtone*; a grey iron ore, called *mid-row grains*; a black foſſil ſubſtance, called the *gublin-bat*; a black iron ore, called *gublin iron-ſtone*; a dark grey iron ore, called *rubble iron-ſtone*; and laſtly, the *table-bat.*

Then, 5. comes a coarſe ſort of *coal*, called *foot-coal*; a black brittle bat; 6. the *heathen-coal*; 7. a ſubſtance like coarſe *coal*; though called a *bat*, becauſe it does not burn well; and 8. *bench-coal.*

Coal, *Bovey*, ſo called from Bovey Heath in Devonſhire, where it is found. Dr. Milles, whoſe paper of remarks upon it is publiſhed in the Philoſophical Tranſactions, vol. li. part 2. N° 53. anno 1760, thinks it is the ſame with the foſſil wood, or as the miners call it, the foſſil coal deſcribed by Hollman, ibid. vol. xlix. p. 506. ib. N° 85.

Coal, *Canal.* See Ampelites.

Coal-*balls*, balls made of *coal* and clay, or flack, for firing. Theſe balls are made with $\frac{1}{3}$ of clay, without ſand or gravel, and $\frac{2}{3}$ of *coal-duſt*, or culm, well mixed, and formed either into round balls or into bricks. This *coal-duſt* being the refuſe of the mine, makes this ſort of firing cheap. See Phil. Tranſ. N° 460. ſect. 3.

Coal-*mines.*—Wilfully ſetting *coal-mines* on fire, is by ſtatute felony, without benefit of clergy. 10 G. II. c. 32. § 6.

Coal-*ſoot.* See Soot.

Coal-*ſpirit.* *Coals* diſtilled in a retort not only afford a phlegm, and black oil, but a ſpirit, which is apt to force the lute and break the glaſſes, and will catch fire at the flame of a candle. We are told that bladders may be filled with this ſpirit, which may be kept a conſiderable time. If the bladder be pierced with a pin, and ſqueezed near the flame of a candle, the ſpirit will take fire, and afford an amuſing ſpectacle. See Phil. Tranſ. N° 452. ſect. 5. See Damps.

Small-Coal is a ſort of charcoal, prepared from the ſpray, and bruſh-wood, ſtripped off from the branches of coppice-wood, ſometimes bound in bavins for that purpoſe, and ſometimes prepared without binding.

The wood they diſpoſe on a level floor, and ſetting a portion of it on fire, they throw on more and more, as faſt as it kindles; whence ariſes a ſudden blaze, till all be burnt that was near the place. As ſoon as all the wood is thrown on, they caſt water on the heap, from a large diſh, or ſcoop; and thus keep plying the heap of glowing *coals*, which ſtops the fury of the fire, while, with a rake, they ſpread it open, and turn it with ſhovels till no more fire appears. When cold, the *coals* are put up into ſacks for uſe.

COALESCENCE, the union or growing together of two bodies before ſeparate. It is principally applied to ſome bones in the body, which are ſeparate during infancy, but afterwards grow together; or to ſome morbid union of parts, which ſhould naturally be diſtinct from each other. Thus there is a *coaleſcence* of the ſides of the vulva, anus, and nares; of the eye-lids, fingers, toes, and many other parts.

COALITION, the re-union, or growing together of parts before ſeparated. See Conglutination, &c.

COAMINGS, in *Ship-Building*, are thoſe planks, or that frame, forming a border round the hatches, which raiſe them up higher than the reſt of the deck. Loop-holes for muſkets to ſhoot out at, are often made in the *coamings*, in order to clear the deck of the enemy when the ſhip is boarded.

COANE, among the Greeks, a name given to a peculiar ſpecies of *tutia* or tutty, which was always found in a tubular form. It had its name from κωνη, a word uſed to expreſs a ſort of cylindric tube, into which the melted braſs was received from the furnace, and in which it was ſuffered to cool. In cooling, it always depoſited a ſort of recrement on the ſides of the veſſel or tube, and this was the *tutty* called *coane.*

COAST, a ſea-ſhore, or the country adjoining to the edge of the sea.

Coast-*Mary*, or Cost-*Mary*, in *Botany.* See Tanzy.

COASTING, that ſort of navigation, wherein the places ſailed to and from, are not far diſtant; ſo that a ſhip may ſail in ſight of the land, or within ſounding, between them.

Such are the voyages on the Narrow, or Britiſh ſeas, between England, Holland, and France; alſo thoſe about the Britiſh ſeas, and in the Mediterranean, &c.

For the performance hereof, there is only required good knowlege of the land, of the time and direction of the tide, of the reigning winds, of the roads and havens, the uſe of the compaſs, and of the lead, or ſounding-line.

Coasting *Pilot.* See Pilot.

Coasting, in *Agriculture*, &c. denotes the tranſplanting of a tree, and placing it in the ſame ſituation, with reſpect to eaſt, weſt, north, &c. as it ſtood in before.

COAT, in *Anatomy.* See Tunic and Eye.

Coat *of Arms*, in *Heraldry*, a cloak, or habit, worn by the ancient knights over their arms, both in war, and at tournaments; and ſtill borne by the heralds at arms.

It was a kind of ſurcoat, reaching only as low as the navel; open at the ſides, with ſhort ſleeves; ſometimes furred with ermines and vair; whereon were applied the armories of the knight, embroidered in gold and ſilver, and enamelled with beaten tin, coloured black, green, red, and blue: whence the rule, never to apply colour on colour, nor metal on metal.

The *coats of arms* were frequently open, and diverſified with bands and fillets of ſeveral colours, alternately placed, as we ſtill ſee cloths ſcarleted, watered, &c. hence they were alſo called *divizes*, or *diviſes*, as being divided, or compoſed of ſeveral pieces, ſewed together; whence the words *feſſe*, *pale*, *chevron*, *bend*, *croſs*, *ſaltier*, *lozenge*, &c. which have ſince become honourable pieces, or ordinaries of the ſhield. See each in its place, Bend, Cross, Fesse, &c.

Coats of arms, and *banners*, were never allowed to be worn by any but knights, and ancient nobles. They were not introduced into seals, nor indeed to any other uſe, till about the reign of Richard I. who brought them from the croiſade in the Holy Land, where they were firſt invented and painted on the ſhields of the knights, to diſtinguiſh the variety of perſons from every nation, who, when completely clad in ſteel, could not otherwiſe be known. Blackſt. Com. vol. ii. p. 306.

Coat *of Mail*, *jacque de mail*, a kind of armour made in form of a ſhirt, conſiſting of iron rings wove together net-wiſe. See Mail.

Coat, in a *Ship*, a piece of tarred canvas put about that part of the maſts, or bowſprit, which joins to the deck, or lies over the ſtem of a ſhip. They are alſo put about the pumps at the decks, that no water may go down there; and they are alſo uſed at the rudder's head.

Coat likewiſe denotes the materials with which the ſhip's ſides and maſts are varniſhed, to preſerve them, as tar, &c.

COATI, in *Zoology*. See Rackoon.

COATING, in *Chemiſtry*. See Lorication.

Coating, in *Electricity*, denotes a covering of ſheet-lead, tin-foil, or any other conducting ſubſtance, applied to the Leyden phial, or to any electric body, and ſerving to accumulate the electricity, to increaſe the force of the charge, and to facilitate the operation of *diſcharging*. The firſt perſon who diſcovered the uſe of *coating* in electrical experiments, was Dr. Bevis: it was firſt applied to the Leyden phial, but has been ſince extended to a great variety of other electrical ſubſtances. When glaſs plates, or jars, ſufficiently wide at the neck, are to be *coated*, the beſt method is to *coat* them with tin-foil on both ſides, which may be fixed on the glaſs with varniſh, gum-water, bees-wax, &c. but if the internal *coating* cannot be conveniently introduced, braſs filings may be uſed, and ſtuck to the ſurface of the glaſs with gum-water, or bees-wax, &c. However, care ſhould be taken that the oppoſite *coatings* do not come too near to each other: that of glaſs jars ſhould be kept at the diſtance of, at leaſt, two inches from the top. Glaſs phials may be *coated* with ſilver, by burning it into the very ſubſtance of the glaſs, ſo that nothing can remove it without injuring the glaſs, together with the metal. Glaſs, thus *coated* and burniſhed, exhibits an elegant appearance, has no inequalities in its ſurface, and is capable of being charged as highly and readily, as when *coated* with tin-foil. Glaſſes of this kind will diſcharge ſpontaneouſly, and are apt to burſt by the exploſion. Phil. Tranſ. vol. lxvii. part i. p. 108.

Electric ſubſtances, which are eaſily melted, ſuch as reſin, ſealing-wax, &c. may be eaſily *coated* by pouring them on a circular plate of tin-foil, placed on a marble table, and two inches leſs in diameter than the electric plates propoſed; and then preſſing them with a pane of glaſs, or any thing elſe with a ſmooth ſurface, to the required dimenſions. When this is done, let another piece of tin-foil, of equal ſize with the former, be applied to the upper ſurface, by preſſing it gently with a hot iron. Electric ſubſtances in a fluid ſtate may be *coated* by fixing a piece of tin-foil to the bottom of an earthen diſh, reaching within an inch of the ſides, and by introducing, through a hole in the bottom, a ſlender wire, ſo as to communicate with the tin-foil; then pour the fluid electric into the diſh; and let a braſs plate of the ſame dimenſions with the tin-foil be ſuſpended from a glaſs arm, or from the prime conductor, and touch the ſurface of the electric. A plate of air may alſo be *coated*, by means of two ſmooth circular boards, about three or four feet in diameter: let one ſide of each of theſe boards be *coated* with tin-foil, which ſhould be paſted down, and burniſhed, and turned over the edge of the boards. Then inſulate the boards in an horizontal poſition, and with their *coated* ſides turned towards each other, and ſo diſpoſed, that they may be eaſily moved to or from each other. If theſe boards are placed at the diſtance of about an inch aſunder, they may be uſed exactly as the *coatings* of a pane of glaſs. It will be ſhewn, that the electric matter does not reſide in the *coating* of a charged electric under the article Leyden *Phial*.

COB *nut*. See Hazle.

COBALT, in *Natural Hiſtory*, a denſe, compact, and ponderous mineral, very bright and ſhining, and much reſembling ſome of the antimonial ores.

It is ſometimes found of a deep, duſky, bluiſh black, very heavy and hard, and of a granulated ſtructure, looking like a piece of pure iron, when freſh broken. At other times, it is more compact and heavy, of a very even texture, and not granulated, or compoſed of any ſeparate moleculæ, but reſembling a duſky maſs of melted lead, not an ore.

The inner part, when freſh cut or broken, is in ſome ores found much more beautiful than in either of theſe ſtates, being of a fine bright ſilvery grey, and of a beautiſul and evenly ſtriated ſtructure; the ſtriæ all running great lengths, but being all variouſly inflected and undulated, and in ſome parts broken. Theſe are the more uſual appearances of *cobalt* in its ore: but beſide theſe, it is ſubject to an alteration in the bowels of the earth, by means of ſubterraneous fires and ſulphur, which reduce it to a body which cannot be ſuppoſed at firſt ſight the ſame with *cobalt*, though it proves to be exactly the ſame ſubſtance, on a chemical analyſis.

In theſe ſtates, inſtead of the lead-like appearance of the common kind, it is of a fine florid red colour, though ſometimes debaſed by accidental mixtures to a grey, black, or yellow, either wholly, or in part; and in this ſtate it has two ſubordinate diſtinctions, as it appears ſometimes in form of a compact maſs of an uniform texture, and ſometimes in a ſtriated and beautifully ridged maſs, reſembling the fibraria. The three firſt ſtates of *cobalt* are commonly called *cobalt* ore, without any diſtinction; but the firſt of theſe red kinds is called by the Germans *kupfſer nicol*, and the latter, or ſtriated one, the flower of *cobalt*. It contains arſenic or ratſbane, and a fixt earth, which on fuſion with fluids and pot-aſh, or any other alkali ſalt, yields that fine blue glaſs which we call ſmalt, and which our painters and waſher-women uſe under the names of ſmalt and powder-blue. It is dug about Sneeberg and Annaberg, and in ſome parts of Bohemia. It is always found below, not mixt with the ores of metals, and is very rich in the arſenic in ſome places, and but poor in others: all our arſenic is made from it. The miners are directed where the veins of *cobalt* lie, by a ſort of foſſil which they call therefore the flower of *cobalt*: it is a very elegant ſubſtance, of a fine blooming red colour, and of a radiated ſtructure; ſometimes of a paler red, and in form of powder.

Cobalt is found in Germany, Saxony, Bohemia, England, and Scotland, and probably in other parts of Europe; and that it is in the eaſtern parts of Aſia, appears from the colouring on old oriental porcelain. Ours is but a poor kind, but is met with in conſiderable plenty on Mendip-hills, and at Giſennep in Cornwall. The German *cobalt* generally contains a large quantity of biſmuth, and the Bohemian of ſilver.

The world is obliged to Kunckel for the hiſtory of the ſeveral arſenics, zaffre, and ſmalt, which are all the produce of *cobalt*. See Arsenic, &c.

Cobalt, when expoſed for a conſiderable time by itſelf in a heap to the ſun and rain, yields an efflореſcence of a roſe or peach-bloſſom colour, called by the miners the flower of *cobalt*, and very much reſembling the native flowers of *cobalt* deſcribed before, but leſs beautiful: this effloreſcence, when properly treated, affords a very fine red colour for the painter's uſe, and a little green vitriol. Spirit of nitre diſſolves the *cobalt* with a violent efferveſcence; four times the quantity of the acid is ſufficient to diſſolve ſome *cobalt*, but other ores require ſix times or more: this is owing to the purity or impurity of the ore. The ſolution is of an uncertain colour, according to the other matters contained in the *cobalt*; when it contains vitriol it is blue, when it contains copper, as is often the caſe, but particularly in that kind called, by the miners, *copper nickle*, which has an appearance of copper on the ſurface, the ſolution is then green; it is alſo ſometimes green from the pureſt ores to appearance. This green colour reſembles very much that of ſalt of ſteel well purified, but it ſtill ſeems to have ſome ſhare of copper in it.

Oil of vitriol, and ſpirit of ſea-ſalt, act on *cobalt*, but do not properly diſſolve it: they may rather be ſaid to erode it, and particularly the acid of vitriol, which turns it into a white powder, ſo that ſpirit of nitre ſeems the proper ſimple ſolvent of it. Phil. Tranſ. Nº 396. p. 199.

The *cobalt* is roaſted in a reverberatory furnace, and the flowers, which it yields in great abundance, are collected in long wooden funnels, which ſupply the place of chimnies, on the inſide of which it ſticks in form of ſoot, and from this ſoot or flower are made all the ſeveral ſorts of arſenic or ratſbane. If this is only reſublimed, or but barely melted in a covered veſſel, the ſubſtance which we call white arſenic, or common ratſbane, is produced. If a tenth part of ſulphur be mixed with them, and they are ſublimed together, the product is our yellow arſenic; and the red arſenic is made by adding to the flowers only one fifth of ſulphur, and a little copper-ſlag.

When the flowers or ſoot of *cobalt* is all diſcharged, the remaining matter is powdered very fine, and being mixed with three times the weight of common flints in powder, and wetted with water, the whole concretes into a ſolid maſs, and is what is called zaffer.

Two parts of this being fuſed with three parts of common ſalt, and one part pot-aſh, the whole becomes a beautiful blue ſubſtance, called smalt.

As ſprinkling the powder of the calx of flints and *cobalt*, for making them into *zaffer*, gives them a pretty firm coaleſcenee, and even the hardneſs of a common ſtone, perſons who were unacquainted with the proceſs, have taken *zaffer* for a native mineral.

Cobalt is alſo uſed by ſome to expreſs that ſuffocative vapour or damp in mines, which often proves fatal to the miners. It is common among the Germans, to ſay on this occaſion, that the *cobalt* roſe and choaked them. See Damps.

COBBAN, in *Botany*, a ſmall tree like a peach-tree, which grows in Sumatra, called *Perſicæ affinis in Taprobana*, C. B.

C. B. *Arbor Getruph, ſive cobban*, J. B. It bears a ſmall leaf, like that of the tree which produces the *ſiliqua cathartica*, with ſhort branches, and a yellowiſh or ſaffron-coloured bark. The fruit is thick and round like a tennis-ball, encloſing a nut as big as a filberd, which contains a very bitter kernel, taſting like the root of angelica.

The fruit is very proper to quench thirſt; but the kernel, however bitter, is far ſuperior in virtue. The inhabitants of Sumatra, where the tree grows, extract an oil from the kernel, which is very efficacious in pains of the liver and ſpleen, taken inwardly, or uſed by way of unction; and is alſo a ſovereign remedy in the pain of the gout, to which the inhabitants of that iſland are very ſubject.

From the ſame tree diſtils a gum, which is very ſerviceable in the before mentioned diſorders, if it be diſſolved with a moderate quantity of oil, and applied to the affected parts by way of cataplaſm.

COBBING, in *Sea Language*, a puniſhment inflicted at ſea on thoſe who quit their ſtation during the night-watch. It conſiſts of a number of ſtrokes on the breech with a flat piece of wood called the *cobbing-board*.

COBELLA, in *Zoology*. See Coluber.

COBITIS, in *Zoology*, the name of a ſmall freſh-water fiſh, commonly called in Engliſh the *loach*. It very much reſembles our common gudgeon, both in figure and colour, but it is much ſmaller, about two inches being its uſual length, and three, or a little more, the utmoſt that it ever arrives at. Its body is ſoft and ſlippery; its tail flat and broad, and it has either extremely minute ſcales, or none at all. It is of a brown colour, ſpotted all over with black ſpecks, and it has three pair of beards at its upper-jaw. It is caught in freſh water in many parts of the world, and is eſteemed by many a very delicate fiſh, eſpecially when very young and ſmall.

Artedi enumerates three ſpecies of this fiſh. This is the fiſh called *miſgum* and *fiſgum* at Nuremberg and Ratiſbon. It has ten or more *cirri* at the mouth.

The word *cobitis* is truly Roman, and uſed by the beſt authors to expreſs the ſame fiſh we now call by it; but its derivation is uncertain.

Linnæus makes this a genus of the *abdominales*, including five ſpecies.

Cobitis *aculeata*, called alſo *cobitis oxyrynchus*, a ſmall freſh-water fiſh of the loach kind, but armed with two prickles on the coverings of each of its gills, by means of which it moves nimbly about among the ſtones. See Dacolithus.

COBIUS, in *Ichthyology*, a name given by Ariſtotle, Ælian, Appian, and the other Greek writers, to the GOBIUS *marinus*, or ſea-gudgeon of authors, diſtinguiſhed by Artedi by the name of the blackiſh variegated gobius, with fourteen rays on the ſecond fin of the back. It is called by the French *goulerot*, or *boulerot*.

Cobius *leucoterus*, in *Ichthyology*, a name given by Ariſtotle, Athenæus, and ſome other of the old Greek writers, to the fiſh called GOBIUS *albus* by later authors. It is a genuine ſpecies of the gobius, and is diſtinguiſhed by Artedi by the name of the gobius with the ventral fin blue, and the rays of the anterior back fin riſing above the membrane. This is a ſufficient diſtinction from all the other *gobii*.

COBLE, a boat uſed in the turbot fiſhery, twenty feet ſix inches long, and five feet broad. It is about one ton burthen, rowed with three pair of oars, and admirably conſtructed for encountering a mountainous ſea.

COBOB, the name of a diſh among the Moors. It is made of ſeveral pieces of mutton wrapt up in the cawl, and afterwards roaſted in it; the poorer people, inſtead of the meat, uſe the heart, liver, and other parts of the entrails, and make a good diſh, though not equal to the former. Phil. Tranſ. Nº 251.

COBOOSE, in *Sea-Language*, is derived from the Dutch *kambuis*, and denotes a ſort of box, reſembling a ſentry-box, uſed to cover the chimneys of ſome merchant ſhips. It generally ſtands againſt the barricade, on the fore-part of the quarter deck. It is called in the Weſt Indies *cobre vega*.

COBRA *de las cabeças*, in *Zoology*, the Portugueſe name for an American ſpecies of ſerpent of the *amphiſbæna* kind, whoſe bite is very fatal. It lives under ground, and feeds on ants. See Ibijara.

Cobra *de coral*, in *Zoology*, the name of a ſpecies of ſerpent found in America, and called by the natives IBEBOBOCA; it is about two foot long, and has a great deal of a fine red in its variegations.

Cobra *de cipo*, in *Zoology*, the name given by the Portugueſe in America, to a ſpecies of ſerpent more uſually known by its Braſilian name BOITJAPO.

COBRAS *de capello*, in *Zoology*, the Portugueſe name of a peculiar ſpecies of ſerpent, called by authors *ſerpens Indicus coronatus diademate, ſeu conſpicillo inſignis*, and by us the *ſpectacle-ſnake*, from the ſtrange reſemblance on the back of his head and neck to a pair of ſpectacles. It grows to ſomewhat more than the ſize of our viper; its ſnout is long; its head flat or depreſſed; its bite is very terrible. It is thought by many that there is a ſtone in the back part of its head, which is a remedy for the bite; but the ſtones commonly ſold with us, under the name of *lapides cobræ de capello*, are well known to be all artificial compoſitions.

COBRE *de verd*, in *Zoology*, the name given by the Portugueſe in America, to a ſpecies of ſerpent called by the natives, and from them, by moſt authors, BOIOBI.

COBWEB. See Web, and Silk.

COCCEIRA, in *Botany*, a name by which ſome authors have called the coco-nut tree, the *palma nucifera Indica* of moſt writers.

COCCIFEROUS, in *Botany*, ſuch plants or trees as bear berries. See Bacciferous.

COCCINELLA, in *Zoology*, a genus of inſects of the *coleoptera* order, the characters of which are theſe: the *antennæ* are clavated and truncated; and the *thorax*, with the exterior wings, which are marginated, conſtitute an hemiſpherical figure. Of this genus are ſeveral ſpecies, diſtinguiſhed by the colour and ſpots of their wings, among which are comprehended our common *lady-cows*.

COCCO, the name of a plant in the Weſt Indies, and in ſome of the iſlands of the South Sea, called alſo *Indian kale*.

COCCODES, in *Natural Hiſtory*, a name given by Mercatus to thoſe ſtones of the AMMITES kind, whoſe grains are very large.

COCCOLOBA, in *Botany*. See *Sea-ſide* Grape.

COCCOTHRAUSTES, in *Zoology*, the name of a very remarkable bird, conſiderably larger than the chaffinch, very ſhort-bodied, and large-beaked, whence it is called in Engliſh the *groſs-beak* or *hawfinch* Its head is very large in proportion to its body, and its great beak tapers from a very thick baſe to a ſharp point, reſembling the ſhape of a funnel. It is common in Germany, and lives there in the woods and mountains all ſummer; in winter it comes into the flat country. It is never ſeen in England, except in the winter months; it feeds on the kernels in the ſtones of fruits, as cherry-ſtones, and the like, and breaks theſe with great dexterity; it will alſo eat the ſeeds of many different plants. Ray.

Coccothrauſtes *criſtata*, in *Zoology*, the name by which naturaliſts call the bird uſually known among us by the name of the *Virginian nightingale*, it being truly a *coccothrauſtes*, though called by the improper name NIGHTINGALE. Ray.

COCCULUS *Indicus*, a poiſonous narcotic berry, known moſtly now to poachers, who have got a trick of intoxicating fiſh therewith, ſo as to take them out of the water with their hands; for which reaſon theſe berries are called *baccæ piſcatoriæ*, *fiſher-berries*.

The good women uſe it with ſtaveſacre, for deſtroying vermin in childrens heads. Brewers have uſed it alſo in their brewing; but this is expreſly prohibited by act of parliament.

Coccus, in the *Writings of the Ancients*, a name given by ſome authors to that fine ſhining red colour uſed to illuminate the capital letters in manuſcripts, and more generally known by the name of *encauſtum ſacrum*, from its being uſed in ornamenting the manuſcript Bibles, and its reſembling the fine red glow of the enamel of that colour.

Coccus, in the *Hiſtory of Inſects*, the name of a very comprehenſive genus of the *hemiptera* claſs, the trunk of which ariſes from their breaſt; the body is cetoſe behind; the wings only two, placed erect, and to be found only on the males.

This genus comprehends all the *progal-inſects* of Reaumur.

Coccus, or Cocos, in *Botany*, the name of a genus of plants of the *palmæ* claſs, called in the Hortus Malabaricus, TEUGA. It produces male and female flowers on the ſame plant. The male flowers have the whole ear for their cup, which is divided into three ſegments; the corolla has three petals; the ſtamina are ſix ſingle filaments, of the length of the flower; the apices are oblong and incumbent. The germen of the piſtil is ſo ſmall in theſe flowers as to be ſcarce viſible. The ſtyle is ſhort and thick, and is obſcurely trifid, and the ſtigma is ſmall. Theſe flowers never produce any fruit, yet they are not ſimply male flowers, but a ſort of hermaphrodite ones, the female organs of which are always abortive. The female flowers grow on the ſame ſpike with the male. The calyx is divided into five parts, but the ſegments are very ſmall; the corolla has three petals; the germen of the piſtil is of an oval figure, and terminates in a ſhort-pointed ſtyle; the ſtigma is ſmall, and is divided into three parts. The fruit is very large, and membranaceous; it is of a ſomewhat rounded figure, but with ſome obſcure traces of a trigonal form; the ſeed is a very large nut of an oval form, pointed, trivalve, and obtuſely trigonal, as the fruit is; it has three holes in the baſe, and the kernel is hollow.

The *coco-tree*, which the Malabarians call *teuga*, grows ſtrait, without any branches, and ordinarily is thirty or forty feet high; its wood is too ſpongious to be uſed in carpentry. At the top it bears twelve leaves, ten feet long, and half a foot broad, uſed in the covering of houſes, making mats, &c. Above the leaves grows a large excreſcence, in form of a cabbage, excellent to eat; but the taking this off is mortal to the tree. Between the leaves and the top ariſe ſeveral ſhoots, of the thickneſs of the arm; which, when cut, diſtil a white, ſweet, agreeable liquor, ſerving as a wine, and intoxicating: it becomes acid, if kept a few hours; and at the end of twenty-four hours is converted into a ſtrong vinegar; but it may be prepared into brandy. While this liquor diſtils, the tree yields no fruit; but when the ſuckers are let grow, it puts forth a large cluſter or bunch, wherein the *coco-nuts* are faſtened, to the number of ten or twelve.

While they are yet new, and the bark tender, they yield each about half a pint of clear cooling water, which in a little time becomes firſt a white ſoft pulp, and at length condenſes, and aſſumes the taſte of the nut.

The tree yields fruit thrice a year, and thoſe ſometimes as big as a man's head. Many travellers aver, from the ſize, and the many uſeful products of this tree, that from a ſingle *coco*-tree, and its fruit, a ſhip might be built, equipped, and loaden with merchandize and proviſion.

The *cocos* of the Antilles are not ſo large as thoſe of the Eaſt Indies, Africa, and Arabia: the trees ſeldom exceed twenty-five feet in height; and the fruits are in proportion: theſe are uſed among us.

In the kingdom of Siam, the *coco* fruit, dried, and emptied of its pulp, ſerves as a meaſure, both for things liquid and dry.

As theſe ſhells are not all of the ſame capacity, but are ſome larger, others leſs; their content is firſt meaſured with cauris, thoſe little Maldives ſhells, which ſerve as ſmall money in ſeveral ſtates of the Indies. Some *cocos* contain a thouſand cauris, others five hundred, &c.

The ſhell is likewiſe much uſed by miners, carvers, &c. in divers works.

Coccus *Maldivia*, the Maldivia nut, in the *Materia Medica*, the name of the fruit of the *palma Maldivienſis* of Johnſton, an oval-figured fruit, of a ſweet taſte, and famous for its virtues in nervous diſorders. See Coll. Acad. P. Etr. tom. iii. p. 525.

Coccus *Polonicus*, an inſect which may properly enough be called the *cochineal* of the northern part of the world. As the cochineal loves only the hot climates, this creature affects only the cold ones. It is collected for the uſe of dyers, but the crops of it are much ſmaller, more difficultly made, and the drug itſelf greatly inferior to the true cochineal. It is commonly known by the name of *coccus Polonicus*, or the ſcarlet grain of Poland. Poland is indeed the place where it is gathered in greateſt abundance, but it is not the only one; it is found in many other of the northern countries, and may very poſſibly be produced in ſome of the more temperate ones, where it is not known, as it is very much hid by nature from the eyes of common obſervers.

This kermes of Poland, if it may be ſo called, is found affixed to the root of a ſmall plant, and uſually to the ſame plant, which has been thence called the *polygonum cocciferum*. Authors have informed us of the ſame berry, as it is often called, alſo growing at the roots of the mouſe-ear, rupture-wort, pimpernel, and pellitory of the wall, and that it is in no other than dry ſandy places, that it is found at the roots of theſe plants. Breynius, in 1731, printed at Dantzick a very curious account of this production, which proves it inconteſtably to be an animal, and gives us many reaſons for knowing it to be of the progall-inſect claſs. There is a particular account of this inſect in the Philoſophical Tranſactions, vol. liv. Nº 15. and vol. lvi. Nº 20. See Cochineal.

COCCYGÆUS *anterior*, a muſcle fixed, by a broad inſertion, in the anterior portion of the ſmall tranſverſe ligament at the upper part of the *foramen ovale* of the *os innominatum*; from thence it runs between this great ligament and the *muſculus obturator intimus*, with which it is often confounded by anatomiſts, and contracting in breadth, it is inſerted in the lower part of the *os coccygis*.

Coccygæus *poſterior*, a muſcle fixed to the inner, or concave edge of the two firſt *vertebræ* of the *os ſacrum*, to the inner and lower edge of the *ligamentum ſacro-ſciaticum*, and to the ſpine of the *os iſchium*; from thence, contracting in breadth, it is inſerted in the inſide of the *os coccygis*, above the anterior.

COCCYGIS *Os*, in *Anatomy*, a bone joined to the extremity of the *os ſacrum*; compoſed of three or four bones, whereof the lower is ſtill leſs than the upper, till the laſt ends in a ſmall cartilage. See *Tab. Anat.* (*Oſteol.*) *fig.* 7. *n.* 21.

It reſembles a little tail turned inwards; or rather, as ſome imagine, the beak of a cuckow; whence the name.

Its uſe is to ſuſtain the ſtrait gut: it yields to the preſſure of the fœtus in women in travail; and midwives uſe to thruſt it backwards; but ſometimes too violently, which is the occaſion of great pain, and ſeveral bad effects.

The *os coccygis* may be thruſt inwards by a violent fall or blow, and it is often puſhed outward in hard births. When this happens it is uſually attended with violent pain and inflammation about the lower part of the ſpine; abſceſſes are formed in the *inteſtinum rectum*, and the fæces are conſtipated, or ſuppreſſed. The replacing this bone is not very difficult, if an able ſurgeon is applied to in time. If it be thruſt outwards, it muſt be depreſſed into its right place by the thumb; after which compreſſes dipt in warm wine, or ſpirit of wine, are to be applied to the part; theſe are to be made broad above, and narrow below, that they may fill up the *poſterior ſinus* of the *nates*; and theſe may be conveniently held on by the T bandage.

When the *os coccygis* happens to be luxated inwards, the fore-finger is to have its nail cut cloſe, and being dipt in oil, is to be introduced up the *anus*, and muſt be thruſt in as far as poſſible, that it may the more readily drive out the depreſſed bone: the other fingers being placed externally, are to conduct the bone into its right poſture. When the bone is replaced, the patient muſt reſt ſome time upon a bed; and when he ſits up, it muſt be in a chair with a hole in its bottom, leſt the affected part ſhould otherwiſe be compreſſed or diſturbed.

Coccygis *oſſis muſculi*. Theſe are ſmall, thin, radiated muſcles, lying on the inner, or concave ſide of the *os ſacrum*, and neighbouring parts of the *pelvis*. They are four in number, two on each ſide, one placed more forward, the other more backward; for which reaſon the firſt may be termed *coccygæus anterior*, ſive *iſchio coccygæus*, and the other *coccygæus poſterior*, ſive *ſacro coccygæus*.

COCCYGRIA, in *Botany*. See Sumach.

COCCYX, in *Anatomy*. See Coccygis *Os*.

Coccyx, in *Ichthyology*, a name given by Ariſtotle, and the other old Greek writers, to the fiſh called cuculus, and lyra, by other authors. It is a ſpecies of the trigla, diſtinguiſhed by Artedi by the name of the trigla all over red, with a bifid ſnout, and the coverings of the gills ſtriated.

COCETUM, among the *Ancients*, a kind of drink made of honey and poppies.

COCHIA, in *Medicine*, the name of officinal pills, which are diſtinguiſhed into the greater and leſs: the former is a compoſition of hiera picra, troches of Alhandal turpeth, diagrydium, and ſyrup of buckthorn, taken from Rhaſes, but ſeldom uſed in the preſent practice. The latter is compounded of equal quantities of bright aloes, the pureſt ſcammony, and the pulp of colocynth, made into a maſs with ſyrup of buckthorn. Two drams of the diſtilled oil of cloves are added to an ounce of each of the former ingredients. Theſe pills are preſcribed to diſcuſs viſcidities, watry humours, and flatulencies.

COCHINEAL, or Cocheneel, a drug uſed by the dyers, &c. for giving red colours, eſpecially crimſons and ſcarlets, and for making carmine; and likewiſe in medicine as a cardiac, cordial, ſudorific, alexipharmic, and febrifuge.

It is brought from the Weſt-Indies; but authors have been divided as to its nature; ſome taking it to be a kind of worm, and others for the berry of a tree. F. Plumier, a celebrated botaniſt, has maintained the former opinion, and Pomet very abſurdly the latter. That author is very wide of the truth in the deſcription he has given of *cochineal*.

The *cochineal*, in the ſtate in which it is brought to us, is in ſmall bodies of an irregular figure, uſually convex, and ridged and furrowed on one ſide, and concave on the other. The colour of the beſt is a purpliſh grey, powdered over with a ſort of white duſt. All that the world knew of it for a long time was, that it was gathered from certain plants in Mexico, and therefore it was naturally ſuppoſed to be a ſeed.

In the year 1692, father Plumier gave Pomet, the French author of a Hiſtory of Drugs, an account of its being an animal: this, however, was diſregarded; but Meſſrs. Hartſoeker, De La Hire, and Geoffroy, afterwards evidently proved it to be one; and after this there were printed the depoſitions, in form, of a number of perſons upon the ſpot, who all declare it to be a viviparous animal, and that it paſſes a great part of its life fixed to the vegetable body on which it feeds, and that it was a creature ſubject to no change, nor ever appearing in any other ſtate. Theſe and many other qualities found in the *cochineal*, all analogous to thoſe of the claſs of *progall-inſects*, give great room to believe that it is truly and properly an inſect of this claſs.

There are two kinds of *cochineal*, the finer called *meſtique*, the other termed the wild *cochineal*. The firſt is gathered from ſuch plants of the opuntia as are prepared and managed properly on purpoſe for the production of the animal, the other is found wild on the wild plant, and is much inferior to the *meſtique* in value.

Dampier tells us there are two ſorts; one an inſect, and the other a ſeed; and gives a preciſe deſcription of each kind.

The **COCHINEAL** *worm*, *Coccus*, otherwiſe called the *progall-inſect*, is an inſect engendered in a fruit reſembling a pear: the plant which bears it is five or ſix feet high. At the top of the fruit grows a red flower, which, when mature, falls on the fruit; and that opening, diſcovers a cleft two or three inches in diameter. The fruit then appears full of little red inſects, having wings of ſurpriſing ſmallneſs, and which would continue and die, and rot there, if not taken out.

The Indians, therefore, ſpreading a cloth under the tree, ſhake it with poles, till the inſects are forced to quit their lodging, and fly about the tree; which they cannot do many moments, but tumble down dead into the cloth; where they are left till they be entirely dry: when the inſect flies, it is red; when it is fallen, black; and when firſt dried, it is greyiſh; though it afterwards changes colour. Dampier's Voyages. See *Tab. Nat. Hiſt. fig.* 24.

The figure of this inſect is oval, and its utmoſt ſize is that of a ſmall pea. It has ſix legs armed with claws, two eyes, and a trunk by which it ſucks its nouriſhment. The ants, and many other little animals, are very fond of eating the *cochineals*; and it is with great difficulty that the Indians defend the young brood from thoſe devourers.

After the Indians have gathered the *cochineal* they kill it, otherwiſe they would loſe a great part of their harveſt; for the parent race would live ſome days after their being taken from the plant, and would produce their young, which would be nimble enough to run away in great numbers. Some to kill the creatures plunge them in hot water, and afterwards dry them in the ſun; others kill them by a proper degree of heat, and others again by ſmoke.

The accounts from the place where the *cochineal* is produced, furniſh all theſe particulars; but to decide the long diſputed point, whether they are of the animal or vegetable kingdom, we have the means in our own hands, even in this part of the world. We need only moiſten and ſoak in water, or in vinegar, a number of *cochineals* till they are ſwelled and diſtended, to know that every one is the more or leſs perfect body of an inſect; the moſt imperfect and mutilated ſpecimens always ſhew the rings of the body, and from obſerving others it will be eaſy to find the number and diſpoſition of the legs; parts, or even whole ones, being left on ſeveral, and often complete pairs. In this way the legs, antennæ, and proboſcis, may be diſcovered.

If a full grown *cochineal* be ſoaked a conſiderable time in water or vinegar, and afterwards gently preſſed, there will frequently be protruded from its hinder part a number of ſmooth oblong bodies, which might be eaſily miſtaken for eggs; but a good microſcope will ſhew in theſe the traces of the legs and other lineaments ſufficient to prove it to be a true embryo fœtus. Theſe eggs exhibit a vivid crimſon hue.

It is eaſy to ſee in ſome the head, and ſometimes a tubercle on each ſide of it, which may very naturally be ſuppoſed the eyes, or elſe the roots of the *antennæ* or horns. The firſt pair of legs are thus found to be very near the head of the animal, and placed exactly as in all the gall-inſect and *progall-inſect* claſs; a little above theſe one may diſtinguiſh alſo the remainder of the trunk ſituated exactly as in the gall-inſects and *progall-inſects*; the anus is alſo eaſily diſtinguiſhed.

As the manner of the fecundation of the gall-inſects was ſo long unknown in Europe, it is no wonder that that of the *cochineal* ſhould not be very early diſcovered in Mexico: but we have an account among Mr. Ruyſche's pieces, from whence almoſt all the true hiſtory of this animal is had, that at the ſeaſon of the *cochineals* becoming big, there is ſeen continually among them a ſmall butterfly, which is bred upon the ſame plants, and by means of which the *cochineals* conceive. This is ſo ſtrictly analogous to the manner of the gall-inſect claſs, that there is no room to doubt the fact; and it is a farther great proof, how little truth was before in the gueſſes concerning the claſs of animals this belonged to. Reaumur's Hiſt. of Inſects, tom. iv.

The female *cochineal* has been long known, and is well deſcribed by Reaumur, Dr. Brown, and Linnæus; but neither of them had ever ſeen the male; and therefore the hiſtory of this valuable inſect has been very defective. Mr. Ellis, being informed that this inſect bred in great abundance on the *cactus opuntia* of Linnæus, in South Carolina and Georgia, as well as on the *cactus coccinellifer* in Mexico and Jamaica, obtained from Dr. Garden ſome branches of the former, with the inſects upon them. In examining ſeveral of theſe ſpecimens, he, at laſt, diſcovered three or four minute dead flies with white wings; and having moiſtened them in ſpirit of wine, and obſerving them with a microſcope, found, that they were of a bright red colour, which convinced him, that theſe were the true male inſects. Dr. Garden, to whom this diſcovery was communicated, made ſeveral obſervations on the male ſpecies. This is very rarely found; ſo that he imagines there may be a hundred and fifty, or two hundred females, for one male. The male is much leſs than the female, more active, and better made; and the body of it is of a lighter red than that of the other. See a minute deſcription of the male ſpecies, illuſtrated by microſcopical drawings, in the Phil. Tranſ. vol. lii. part ii. art. 107.

The male-fly of the Poliſh *cochineal* was alſo diſcovered by Dr. Wolfe of Warſaw. See Phil. Tranſ. vol. liv. p. 95. and vol. lvi. art. 20.

Cochineal has been ſuppoſed to poſſeſs ſeveral medicinal virtues, ſimilar to thoſe of the KERMES; but its principal uſe is as a colouring drug. When infuſed or boiled in water, it yields a crimſon tincture, inclining to a purple. Fixed alkali renders the crimſon deeper, but leſſens its luſtre. Volatile alkali heightens the colour, without diminution of luſtre. The beſt method of applying volatile alkali for this purpoſe in dying, was found by M. Hellot to be, by dipping the cloth dyed with *cochineal* in a ſolution of ſal ammoniac, and then throwing into the ſolution ſome pot-aſh, by which the volatile alkali of the ſal ammoniac is diſengaged. By a ſmall quantity of vitriolic acid the crimſon decoction of *cochineal* is rendered purple; a greater quantity makes it fleſh-coloured; and by adding more ſtill, it becomes colourleſs. This colour is firſt changed to a yellow, and afterwards deſtroyed by nitrous acid. Solution of tin in aqua regia heightens the colour of this decoction to a ſcarlet, which is darker or brighter as the quantity is leſs or greater. Other metallic ſolutions have different effects. French dyers give fire to their ſcarlets, by the addition of turmeric; but this tinge does not penetrate the cloth, and ſoon periſhes. Woollen cloth requires, for the ſcarlet dye, about one ſixteenth its weight of *cochineal*, part of which is uſed with tartar in the preparatory liquor, and the reſt for finiſhing the dye, to each of which decoctions a proper quantity of the ſolution of tin is added. M. Hellot obſerves, that if *cochineal*, after the uſual pulverization, be mixed with one fourth of its weight of pure dry cryſtals of tartar, and the mixture be levigated into an impalpable powder, the ſaving of *cochineal*, both for the crimſon and ſcarlet dye, will be about one part in four, without any injury to the colour. The wild or ſylveſter *cochineal* is much inferior to the other: four parts of the former have no greater effect in dying than one of the latter; nor does it give equal beauty to the colour, eſpecially the ſcarlet. Neumann's Works, with Dr. Lewis's additions, p. 506, &c. See DYING.

Joſſelin, in his account of the products of New England, mentions a particular kind of ſun-flower, called by ſome a ſpecies of *golden-rod*; the ſtalks of which are covered about the knots, in the ſummer months, with inſects of the ſize of large fleas. Theſe, preſerved in a proper manner, yield a very elegant ſcarlet colour, and the author thinks might be made to ſupply the uſe of *cochineal*.

There are whole plantations of the *cochineal* plant, or *tonna*, as the natives call it, about Guatimala, Chepe, and Guexaca, in the kingdom of Mexico. It is called renegrida, jaſpeada, &c. according to the manner of its preparation.

The **COCHINEAL** *grain*, or, as Dampier calls it, *ſylveſtris*, is a red berry, growing in America, found in a fruit reſembling that of the *cochineal* plant, or *tonna*. The firſt ſhoot produces a yellow flower; then comes the fruit, which is long, and, when ripe, opens with a cleft of three or four inches. The fruit is full of kernels, or grains, which fall on the leaſt agitation, and which the Indians take care to gather. Eight or ten of theſe fruits may yield about an ounce of grain. See *fig.* 24. *n.* 2.

This berry yields a dye almoſt as beautiful as that of the inſect; and a perſon may be eaſily deceived in them; though the other is much the moſt eſteemed. Dampier is miſtaken in ſuppoſing this laſt a ſeed. It is an animal of the ſame kind with the other.

COCHLEA, in *Anatomy*, the third part of the labyrinth, or inner cavity of the EAR.

The *cochlea* lies directly oppoſite to the ſemicircular canals, and is properly ſo called from the reſemblance it has to the ſhells that ſnails lie in; through its parietes a ſmall branch of the auditory nerve paſſes.

Its canal is divided by a ſeptum compoſed of two ſubſtances, one almoſt cartilaginous, the other membranous.

The two canals that are divided by the ſeptum, are called *ſcalæ*: whereof the one, looking towards the tympanum, by the feneſtra rotunda, is called *ſcala tympana*; the other, having a communication with the veſtibulum, by the feneſtra ovalis, is called the *ſcala veſtibuli*: the firſt lies uppermoſt, and is the largeſt; the laſt lowermoſt, and is the leaſt.

The parts to be diſtinguiſhed in this in its true ſituation, are the *baſis*, the *apex*, the ſpiral *lamina*, the half ſeptum, by which its cavity is divided into two half canals; the ſpindle round which the *cochlea* turns; and laſtly, the orifices and union of the two ducts. The baſis is turned directly inward, toward the internal *foramen auditorium*; the apex outward, and the axis of the ſpindle is nearly horizontal; but in all of theſe allowance muſt be made for the obliquity of the *os petroſum*, in which they lie. The baſis of the *cochlea* is gently hollowed, and towards the middle is perforated by ſeveral ſmall holes. The ſpindle is a kind of ſhort cone, with a very large baſis, which is the middle of the baſis of the *cochlea*; through its whole length runs a double ſpiral groove, which, through a microſcope, ſhews a great number of pores. The *cochlea* makes about two turns and a half from the baſis to the apex, and the two ducts being ſtrictly united together, through their whole courſe, form an entire common ſeptum, which muſt not be confounded with the half ſeptum, or ſpiral lamina, as is often done. The firſt of theſe may be properly termed the common ſeptum, the other the particular, or half ſeptum; both of them are cloſely joined to the ſpindle, being thicker there than in any other place. The common ſeptum is complete, and ſeparates the turns entirely from one another, whereas the half ſeptum in the ſkeleton is only a ſpiral lamina, the breadth of which is terminated all round by a very thin border lying in the middle cavity of the *cochlea*. In a natural ſtate there is a membranous half ſeptum, which completes the partition between the two ducts. The two half canals turn jointly about the ſpindle, one being ſituated towards the baſis of the *cochlea*, the other toward the apex; for which reaſon, one of them may very well be termed the internal, the other the external; the uſual diviſion of them into the upper and lower flight not being agreeable to the natural ſtate, but liable to convey a falſe idea of it. The ſpiral volute of the *cochlea* begins at the lower part of the veſtibulum, runs from thence forward to the top, then backward down to the bottom, afterwards upward and forward, and ſo on from the baſis, which is turned inward, to the apex, which is turned outward. It is eaſy hence to know to which ear a *cochlea* has belonged, when it is ſeen prepared. The two half canals communicate fully at the apex of the *cochlea*. Their ſeparate openings are toward the baſis, one of them being immediately into the lower part of the veſtibulum, the other into the feneſtra rotunda. Theſe two openings are ſeparated by a particular turning. Winſlow's Anat. p. 51.

COCHLEA, in *Conchyology*, the name of a very large family of ſea ſhell-fiſh, which are divided by authors into three diſtinct genera, from the figure of their mouths, ſome of which are circular, ſome ſemicular, ſome oval. Theſe are expreſſed by the generical names *cochleæ lunares*, *cochleæ ſemilunares*, and *cochleæ ore depreſſo*. The two former genera ſee under LUNARIS *cochlea*, and SEMILUNARES *cochleæ*.

The characters of the third are theſe: it has an univalve ſhell of a broad figure, with a conoide baſe and an elevated ſummit, or ſometimes a plane and depreſſed one. It is umbilicated, and of a pearly colour within, and has a mouth of an oval figure, ſometimes furniſhed with teeth, ſometimes without any. The conic figure of theſe ſhells uſually diſtinguiſhes them at firſt ſight from all the other kinds.

Some of the ſpecies of this genus have their apex elevated to a conſiderable height, and forming ſeveral ſpiral turns. Theſe are properly called *ſabots* by the French, and *trochi* by the authors of other nations. Others have the apex leſs elevated, and are more of the common ſhape of ſnails. And finally, ſome of them have the apex quite depreſſed. This is enough to ſhew that in ſhells, in general, the elevation of the apex is no genuine character of a genus. Among the *trochi* there is one ſingle ſpecies which is umbilicated, the others are none of them ſo; and hence this forms a very grand diſtinction. Rondeletius obſerves that this genus of *cochleæ* was called *trochus*, from the reſemblance of ſome of the ſpecies to the ſhape of a boy's whipping top.

From the figures of theſe ſeveral ſpecies of ſhells, it will be eaſily ſeen that the name *trochus*, according to the common derivation of the word, very badly expreſſes the ſeveral kinds, ſome of which are of that figure, and ſome no way approaching to it. They are much better expreſſed by the name *cochlea ore depreſſo*, which conveys an idea of an abſolute diſtinction, which takes place in them all, and in no other ſhells. See *Tab. of Shells*, Nº 5, 6, 7.

COCHLEA, in *Mechanics*, one of the five mechanical powers; otherwiſe called the SCREW.

It is thus denominated, from the reſemblance a ſcrew bears to the ſpiral ſhell of a ſnail, which the Latins call *cochlea*.

COCHLEARIA. See *Horſe*-RADISH, and SCURVY-*Graſs*.

COCK, *Gallus*, in *Ornithology*, the name of the males of gallinaceous birds; the diſtinguiſhing characters of which are, that the feet have each four toes, the front of the head has a comb, and the wattles are two, and are naked and flat. See GALLINÆ and GALLINACEUS.

In the choice of a *dunghill-cock*, he ſhould be of a large body, very long from the head to the rump, thick in the girth, the neck long, looſe, and high; the comb, wattles, and throat large; the eyes round and large, and anſwerable to the colour of his plume or main, as grey with grey, yellow with yellow, and ſo of the reſt; his beak ſhould be ſtrong and hooked; and his main or neck-feathers very long and gloſſy, covering his neck and ſhoulders; the legs ſhould be ſtraight, and of a long beam, with very large and long ſpurs, a little bending; the colour ſhould be black, yellow, or browniſh; the claws ſhould be long and ſtrong; the tail long, bending back, and covering the whole body; the wings very ſtrong; and the general colour ſhould be reddiſh. See FOWL.

COCK, *game*. In the choice of the *game*, or *fighting-cock*, four things are principally to be conſidered; theſe are the ſhape, colour, courage, and ſharpneſs of the heel. As to the ſhape, ſuch a one ſhould be choſen, as is neither too ſmall nor too large; the very large ones are always clumſy and unwieldy, and the ſmall ones are ſlow and tedious in fighting, and are generally too weak to ſtand a very tight battle: another diſadvantage in theſe extremes is, that both are very difficult to be matched; the middle ſized one ought therefore ever to be preferred, as he is generally the moſt nimble and active with his ſtrength, and the matching him is eaſy. The head ought to be ſmall, the eyes large and briſk, and the beak ſtrong and hooked at the ſetting on; its colour ought alſo to anſwer to that of the principal or general colour of the feathers, whether that be yellow, reddiſh, or grey. The beam of his leg ought to be very ſtrong, and according to his plumage, either blue, grey, or yellow; and the ſpurs ought to be rough, long, and ſharp, a little bending, and pointing inward. The three colours eſteemed in the *game-cock* are grey, yellow, and red, with a black breaſt. The perfection of a *cock* is not, however, tied down abſolutely to theſe colours; for experience has ſhewn, that there are *cocks* of other colours which have proved excellent ones, but theſe are in general the beſt; the pied *cock* ſometimes turns out good, but the white and dun are ſeldom of any value.

If the neck of a *cock* be inveſted with a circle of a ſcarlet complexion, it is a ſign that he is ſtrong, vigorous, and has great courage; but, on the contrary, if it be pale and wan, it denotes him to be defective in theſe material particulars.

In order to prepare a *cock* for fighting, his mane is to be clipped off with a pair of ſhears cloſe to the fleſh, all the way down the neck, from the head to the ſhoulders; the feathers are alſo all to be clipped off cloſe to the rump, and the redder that appears, the better condition the *cock* is in. The wings are to be ſpread by the length of the firſt riſing feather, and all the others are to be cut ſloping with ſharp points, that in riſing he may endanger the eyes of his adverſary. There muſt be no feathers left on the crown of the head, that the opponent can take hold of, and his head ſhould be moiſtened with ſpittle; then the ſpurs being put on, he is to be turned into the pit to try his fortune.

The beſt ſeaſon for breeding the *game-cocks* is from the beginning of February to the middle or latter end of March; the neſt for the hen is to be made of ſweet and clean ſtraw, and ſhould be placed in ſome warm corner, out of the way of diſturbance from other fowl; for this ſort of interruption provokes this quarrelſome bird in ſuch a manner, as to endanger the eggs. That ſhe may never have occaſion to leave the neſt, and cool her eggs, it will be proper to lay all ſorts of food, that ſhe is likely to approve of, before her, and to put clean water every day, not only for her to drink, but to waſh and trim herſelf in; ſome aſhes, ſand, and gravel, ſhould alſo be ſifted on about the neſt. The chickens are hatched in about three weeks, and the neſt is to be carefully watched about this time, for there are always ſome of the chickens hatched before the others; theſe ſhould be taken away as ſoon as out of the ſhell, and laid before the fire, or in ſome warm place in wool, and as ſoon as the reſt are hatched, theſe ſhould be given back to the hen. They are not to be ſuffered to go abroad for the firſt fortnight, and the room they are kept in muſt be boarded, all other floors being too cold and too moiſt. At about a month old the chickens may be turned out into a walk of ſome freſh graſs, that they may feed at liberty, and eat worms and other inſects; but there muſt be no puddle of water near the place, for they are apt to get into ſuch, and it occaſions them a number of diſeaſes. As ſoon as the comb and wattles appear on the *cocks*, they muſt be cut away, and the ſore place anointed with freſh butter till it is well. The chickens may all be ſuffered to run together till they begin to peck one another, then the *cocks* are to be ſeparated; each muſt have his particular walk, and the more free from diſturbance this is, the better. The place of feeding them muſt either be a boarded floor, or a very ſoft and dry piece of ground. If the place be hard, as a ſtony pavement, or a plaſtered floor, the taking up their food will injure and blunt their beaks, ſo that they will never be able to hold faſt afterwards. Any white corn is good for the young *game-cock* in his walks, and ſo is a white bread toaſt ſteeped in ale; at times this may be given him ſteeped in urine, which will ſerve to ſcour and cool him very well. There ſhould never be more than three hens allowed to one *cock* in his walk; for if there are more, he will conſume his ſtrength in the treading; and though his courage may *not* fail, yet he will never have the ability to go through a battle. Care is to be taken alſo as to his rooſting place, that the perch be not too ſmall in the gripe, and be ſo placed, that he may ſit on it without ſtradling; if the perch be crooked it is alſo very diſadvantageous, for it will accuſtom the *cock* to ſuch an uneven diſpoſition of his feet, that he will be no good ſtriker in the battle. The beſt method of contriving the rooſting place is to have a row of ſhort perches, about eight inches long, and the loweſt ten inches from the ground, that he may aſcend with the more eaſe; and when he is come to the rooſting perch, be conſtrained to ſit with his legs cloſe together. A *cock* bred in this manner may be fought young; but the beſt method is not to hazard a battle till he is ſomewhat more than two years old.

Game-cocks are commonly brought to the ſtate of their greateſt ſtrength and activity in about ten days, which Dr. Robinſon calls their *athletic* WEIGHT; but they will ſcarce remain twenty-four hours in this condition; nay, ſome have been known to change for the worſe in twelve hours.

COCK, *black*. See GROUSE.

COCK, *bloody-heeled*. See HEELER.

COCK, *gor*. See GOR-*cock*.

COCK, *grubbing a*. See GRUBBING.

COCK, *high-bearing*, is a term uſed with reſpect to fighting cocks; denoting one larger than the *cock* he fights.—As a *low-bearing cock* is one overmatched for height.

COCK, *Indian*. See CRAX.

COCK *of the mountain*, *Urogallus*, the name of a bird of the gallinaceous kind, being a ſpecies of the TETRAO. See *Tab. of Birds*, Nº 25.

In ſhape it reſembles the turkey, and approaches to it in ſize. Its legs are feathered down to the toes before, and naked behind. It is common on the Alps, and in ſome parts of Italy, and is ſaid to be found alſo in the mountainous parts of Ireland. Its fleſh is very delicate.

COCK, *wood*. See WOOD-*cock*.

COCK-*boats*, ſmall boats uſed in rivers, or near the ſhore, which are of no ſervice at ſea, becauſe too tender, weak, and ſmall.

COCK'*s-comb*, in *Botany*. See LOUSEWORT, and AMARANTH.

COCK *of a dial*, the pin, ſtyle, or gnomon, See GNOMON.

COCK'*s-foot graſs*. See GRASS.

COCK'*s-head*. See SAINTFOIN.

COCK-*paddle*, the Scotch name for the *lumpus*, a ſea-fiſh, common on the Engliſh coaſts, and called the lump-fiſh, or ſea-owl.

COCK-*throppled*, a name given by dealers in horſes to one whoſe wind-pipe is ſmall, and bends like a bow when he bridles his head. See HORSE and HUNTER.

COCK-*water*, is a ſtream of water brought in a trough, through a long pole, in order to waſh out the ſand of the TIN-*ore* into the *launder*, while it is bruiſing in the coffer of a ſtamping-mill.

COCK in a watch or clock. See BALANCE.

COCKS aboard a ſhip, are little ſquare pieces of braſs, with holes in them, and put into wooden ſhivers, to keep them from ſplitting and galling by the pins of the blocks in which they move.

COCKATOON, a name uſually given to the white MACAW, but more properly belonging to the whole MACAW-*tribe*.

COCKERINGS, an exaction, or tribute, in Ireland, now reduced to chief-rents.

COCKET, or COCQUET, a SEAL belonging to the king's cuſtom-houſe.

COCKET, or COCQUET, is a ſcroll of parchment, ſealed and delivered by the officers of the cuſtom-houſe to the merchants, upon entering their goods; certifying that the goods were cuſtomed. It likewiſe gives name to an office appointed for this purpoſe.

The ſame word is alſo uſed in the ſtatute of bread and ale, 15 Hen. III. where there is mentioned *cocket-bread*, among ſeveral other kinds: it ſeems to have been hard ſea-biſcuit, which, perhaps, had then ſome *cocket*, mark, or ſeal; or elſe was ſo called from its being deſigned for the uſe of the cockſwains, or ſeamen.

COCKING *Cloth*, a device for the catching of pheaſants. It conſiſts of a piece of coarſe canvas, about an ell ſquare, dipped in a tan-pit to colour it; and kept ſtretched by two ſticks, placed from corner to corner, diagonal-wiſe; a hole being left to peep through. The ſportſman then, being provided with a ſhort gun, carries the cloth before him at arms-end; under cover of which, he may approach his game as near as he pleaſes: when near enough, he puts the noſe of his gun through the hole, and ſhoots.

COCKLE, *Pectunculus*. See PECTEN.

COCKLE. See *Darnel*-GRASS.

COCKLE-*ſtairs*. See STAIRS.

COCKPIT, a ſort of theatre, whereon game-cocks fight their battles. The *cockpit* is uſually a houſe, or hovel, covered over: they fight on the clod, or green ſod; which is generally marked out round, and encompaſſed with ſeats, one above another.

The COCKPIT *Laws*, are principally theſe: when cocks are ſet, none are to be on the ſod but the two ſetters. When the cocks are ſet beak to beak, in the middle of the clod, and there left by the ſetters, if the ſet cock does not ſtrike in counting twenty, and ſix times ten, and twenty after all, the battle is loſt: but if he does ſtrike, the battle is to begin again, and they muſt count again. If any one offers a mark to a groat, or forty to one, and the wager be taken, the cock muſt be ſet, and they are to fight it out. Done, and done, is a ſufficient bet, or wager, when the cocks are caſt on the clod.

COCKPIT, in a man of war, is a place on the lower floor, or deck, abaft the main-capſtan, lying between the platform, and the ſteward's room; where are ſubdiviſions, or partitions, for the purſer, the ſurgeon, and his mates. See *Tab. Ship. fig.* 2. *lit.* Z.

COCKROAD, a contrivance for the taking of woodcocks. This bird lies cloſe by day, under ſome hedge, or near the root of an old tree, to peck for worms under dry leaves, and will ſcarce ſtir out, unleſs diſturbed; as not ſeeing his way ſo well in the morning; toward the evening he takes wing, to ſeek for water, flying generally low; and when he finds any thoroughfare in a wood, he ventures through it.

To take them, therefore, they plant nets in ſuch places; or, for want of ſuch places ready to their hands, they cut roads through woods, thickets, groves, &c.

Theſe roads they uſually make thirty-five, or forty feet broad, perfectly ſtrait, and clear; and to two oppoſite trees they tie the net, which has a ſtone faſtened to each corner. Then, having a ſtand, or place to lie concealed in, at a proper diſtance, with a ſtake near the ſame, to faſten the lines of the net to; when they perceive the game flying up the road, they unwind the lines from off the ſtake; upon which, the ſtones drawing it down, the birds are entangled in the ſame.

COCKSWAIN, or COCKSON, an officer on board a man of war, who hath the care of the boat, or ſloop, and all things belonging to it. He is to be always ready with his boat's gang, or crew, and to man the boat on all occaſions. He ſits in the ſtern of the boat, and ſteers; and hath a whiſtle to call and encourage his men.

COCOA, or more properly CACAO, the nut whoſe kernel yields the chocolate. See CACAO.

COCOI, in *Zoology*, the name of a very beautiful bird of the Braſils, of the heron-kind, of the bigneſs of the common ſtork: its fleſh is very well taſted.

COCOON. See SILK.

COCROTALEON, in *Natural Hiſtory*, a name given by the ancients to an animal generated between the hyæna and the lioneſs. This animal is deſcribed as having many of the qualities of the MANTICHORA; and it ſeems with ſome to be only another name for the ſame beaſt. It is called alſo LEOCROCOTTA, and *leucocrotta*, and ſometimes ſimply *crocotta*, or *cocrotta*.

COCTION, a general name for all alterations made in bodies, by the application of fire, or heat.

There are various ſpecies of *coction*; as MATURATION, FRICTION, ELIXATION, ASSATION, TORREFACTION, USTION, DECOCTION, and CONCOCTION.

Various liquors are uſed, and different portions of time allotted, for *coction*, according to the different intentions of operators, or the particular natures of the ſubſtances to be boiled; ſo that nothing general can be determined with reſpect to this, the obſervation of which would be of general uſe to the operator: but we are to judge of the manner in which particular ſubſtances are to be boiled, from a knowlege of the reſpective natures of the bodies to be ſubjected to this operation.

The *coction* of the aliments in the ſtomach, is their digeſtion or reduction to a ſort of emulſion or chyle.

COD-*fiſh*, is the largeſt of the genus of the *aſelli*, called ASELLUS *maximus* by authors; and ſometimes, ASELLUS *varius*, *ſive ſtriatus*. The characters by which this is diſtinguiſhed from other fiſhes of the ſame genus are theſe: its colour on the back and ſides is a duſky olive colour, variegated with yellow ſpots; its belly is white; its ſides have a long white line running their whole length, from the gills to the tail, which, at the abdomen, is curved, but elſewhere is ſtraight; its ſcales are very ſmall, and adhere firmly to the ſkin; its eyes are large; at the angle of the lower jaw there hangs a ſingle beard, which is ſhort, ſeldom exceeding a finger's length; its tongue is broad; it has ſeveral rows of teeth, one of which is much longer than all the others. Among theſe there are ſome moveable teeth, as in the pike; and in the palate, near the orifice of the ſtomach, and near the gills, it has ſmall cluſters of teeth. It has three back-fins, two at the gills, and two at the breaſt, and two others behind the anus; and the tail is plain.

This fiſh, according to its age, the places where it is caught, or cured, and other accidents, has alſo ſeveral names given it. From the various places, it is called, the *Haberdeen*, from Aberdeen in Scotland; the *Green-fiſh*, from Greenland; the *North-ſea cod*, from the Northern ocean; and the *Iceland-fiſh*, from Iceland. From other cauſes, it is called *ſtock-fiſh*, from the neceſſity of beating it with ſticks, before it is fit to be dreſſed; *barrelled-cod*, when cured, and put up in barrels; when young, a *codling*; and by the Dutch and Americans, *cabelow*.

According to the Artedian ſyſtem, it is a ſpecies of GADUS; and it is diſtinguiſhed from the other ſpecies of that genus, by having beards at the mouth, the upper jaw longeſt, and the tail not forked.

The *cod*, when freſh, produces good juice, and is nouriſhing; but when ſalted, and become too old, it is neither ſo well taſted, nor ſo eaſy of digeſtion. The pickle of *cod* is of a diſſolving and drying nature, when outwardly applied; it is alſo uſed, among other things, in clyſters; for it is laxative, becauſe it contains much ſalt, irritates the inteſtinal glands, and forces liquor out of them.

COD-*fiſhery*. See *Cod* FISHERY.

CODA, in *Italian Muſic*, literally ſignifies a *tail*; but is uſed often at the end of a canon, for two or three meaſures to cloſe with, after having repeated it ſeveral times. The *coda* ſerves only to end the piece, which, without it, might be carried on to infinity.

CODA *lancea*, in *Zoology*, the name given by the Italian authors to the ſpecies of duck called by others the *anas caudacuta*, and vulgarly known, in ſome parts of England, by the names of the CRACKER, or *ſea-pheaſant*. It differs from all other birds of the duck kind in the ſhape of its tail, which has two feathers longer than the reſt, and ending in a point.

CODAGA-*bark*, a name given to that otherwiſe called CONESSI, or *coneſti*.

CODDAM-*pulli*, in *Botany*, a name by which ſome authors have called the tree which produces the gamboge, the *gutta gamba* of the ſhops.

CODDY-*moddy*, in *Zoology*, the Engliſh name of a common water-fowl of the *larus*, or GULL kind, and diſtinguiſhed by the names of the *larus fuſcus*, or *larus Hybernus*.

CODE, CODEX, a collection of the laws and conſtitutions of the Roman emperors; made by order of Juſtinian.

The word comes from the Latin *codex*, *a paper book*; ſo called *à codicibus*, or *caudicibus arborum*, *the trunks of trees*; the bark whereof, being ſtripped off, ſerved the ancients to write their books on.

The *Code* is compriſed in twelve books, and makes the ſecond part of the civil, or Roman law.

There were ſeveral other *Codes* before the time of Juſtinian; all of them collections, or abridgments of the Roman laws. Gregorius and Hermogenes, two lawyers, made each a collection of this kind, called, from their names, the *Gregorian Code*, and *Hermogenean Code*. The former included the conſtitutions of the emperors from Adrian, or, as ſome ſay, of Auguſtus, to Diocleſian and Maximian. The latter was compiled in the age of the Conſtantines, and compriſed all the imperial conſtitutions of Diocleſian and Maximian, beſides thoſe of Claudius, Aurelian, Probus, Caius, and Caginus, to the year 306 or 312. We have nothing remaining of them but a few fragments; the compilations themſelves falling to the ground, for want of authority to put them in execution.

Theodoſius the Younger was the firſt emperor who made a *Code*, which was compriſed in ſixteen books, formed out of the conſtitutions of the emperors from Conſtantine the Great to his own time; abrogating all other laws not included in it: and this is what we call the Theodoſian *Code*; which was publiſhed in the year 438, and received and obſerved, till annulled by the *Code* of Juſtinian.

The Theodoſian *Code* has been a long time loſt in the Weſt: Cujas took a great deal of pains to retrieve it, and to publiſh it in a better condition than ever. Gothofred has given us a comment on the Theodoſian *Code*; a work which coſt him thirty years.

In 506, Alaric king of the Goths made a new collection of the Roman laws, taken from the three former *Codes*, the Gregorian, Hermogenean, and Theodoſian, which he likewiſe publiſhed under the title of the Theodoſian *Code*. This *Code* of Alaric continued a long time in force; and was all the Roman law received into France.

This *Code* of Alaric is ſometimes called the *Code* of Anian, becauſe compiled by Anian, who was chancellor to Alaric.

Laſtly, the emperor Juſtinian, finding the authority of the Roman law exceedingly weakened in the Weſt, upon the decline of the empire, made a general collection of the whole Roman juriſprudence. The management hereof he committed to his chancellor Trebonianus; who choſe out the moſt excellent conſtitutions of the emperors, from Adrian to his own time; and publiſhed his work in 529, under the title of the New *Code*.

But becauſe Juſtinian had made ſeveral new deciſions, which made ſome alteration in the ancient juriſprudence, he retrenched ſome of the conſtitutions inſerted by Trebonianus, and added his own in their place: on which account he publiſhed a new edition of the *Code* in 534, and abrogated the former. See CIVIL *Law*.

There have been various other later *Codes*, particularly of the ancient Gothic, and ſince of the French kings; as the *Code* of Frederic, the *Code* Michault, *Code* Louis, *Code* Neron, *Code* Henry, *Code* Marchand, *Code* des Eaux, *code* Noire, &c.

CODE *of canons*, *Codex canonum*. See CANON.

CODEX, in *Antiquity*, a kind of puniſhment by means of a clog, or block of wood, to which ſlaves, who had offended, were tied faſt, and obliged to drag it along with them; and ſometimes they ſat on it cloſely bound.

CODIA, Κωδία, in *Botany*, is uſed for the top, or head of any plant; but, by way of eminence, for that of the white poppy: whence the ſyrup made therewith is called *diacodium*.

CODICIL, a ſchedule, or ſupplement to a will, or other writing.

It is uſed as an addition to a teſtament, when any thing is omitted which the teſtator would add, explain, alter, or retract; and is of the ſame nature as a teſtament, except that it is without an heir, or executor.

So that a *codicil* is a leſs ſolemn will, of one that dies either teſtate or inteſtate, without the appointment of an heir: teſtate, when he that hath made his *codicil* hath either before or afterwards made his teſtament, on which that *codicil* depends, or to which it refers: inteſtate, when one leaves behind him only a *codicil* without a teſtament, wherein he gives legacies only to be paid by the heir at law, and not by any heir inſtituted by will, or teſtament.

A *codicil*, as well as a will, may be either *written*, or *nuncupative*. Some authors call a teſtament, a *great will*; and a *codicil*, a *little one*.

But there is this further difference between a *codicil* and a teſtament, that a *codicil* cannot contain the inſtitution of an heir; and that in a *codicil*, a man is not obliged to obſerve ſtrictly all the formalities preſcribed by law for ſolemn teſtaments.

In cuſtomary countries, teſtaments, properly ſpeaking, are no more than *codicils*; becauſe cuſtom itſelf names the heir, and does not allow of teſtamentary inheritors.

Codicils were firſt brought into uſe in the time of Auguſtus, by L. Lentulus: they were originally intended to follow the teſtament; which was, as it were, their baſis. In proceſs of time, *codicils* came to have their effect, even though made before the teſtament; provided there was nothing in the teſtament contrary to the *codicil*. People were alſo allowed to make *codicils* without teſtaments.

Raymond Lully has a book which he calls The *Codicil*; wherein he pretends to have left his readers the ſecret of the philoſophers ſtone; provided they do but underſtand it.

CODLIN-*tree*. See APPLE-*tree*.

CODON, in *Antiquity*, a cymbal, or rather little braſs-bell, reſembling the head of a poppy. They were faſtened to the trappings and bridles of horſes.

CODON is alſo uſed to ſignify the orifice of a trumpet.

COECUM, in *Anatomy*, the *blind gut*; the firſt of the thick inteſtines; ſo called, becauſe made like a ſack, having but one aperture, which ſerves it both for entrance and exit.

It is ſituate on the right ſide, below the kidney; and in length is about the breadth of three or four fingers. In children new-born, and in quadrupeds, it is found full of excrements; but in adults, &c. it frequently diſappears, or hangs like a worm.

Its uſe in adults is very obſcure: in a *fœtus*, or infant newly born, it appears to ſerve as a receptacle of the *fæces* during ſuch time as the animal does not diſcharge by ſtool. See APPENDIX.

Dr. Gliſſon imagines it may likewiſe ſerve in ſuch animals as have it large, as dogs, coneys, rats, &c. for a kind of ſecond ventricle, or bag, wherein the prepared aliment may be retained, while a richer and more nutritious juice is drawn from it.

Others will have it contain a ferment; and others, the flatus of the inteſtines: others fancy it may ſeparate a humour, by ſome glands placed in it to harden the excrements as they paſs through the colon.

Dr. Liſter aſſigns the uſe of the *cœcum* to be, to keep the excrements which paſs into the cavity (as moſt of thoſe of found animals, he thinks, do), till they are ſufficiently drained, baked, and hardened, to receive the figure to be given them by the colon and rectum. He adds, to confirm this, that wherever there are regularly figured excrements of the firſt kind, there is a capacious *cœcum*, and *vice verſa*. This indeed is true, that ſome animals, which are naturally looſe, have either no *cœcum* at all, or very little; as the *talpa*, *echinus terreſtris*, *gula*, &c. The intention of nature, in thus providing for the figuration of the excrements, he takes to be, firſt, to prevent diarrhœas; ſecondly, to make the creature abide hunger the better (thus it is, that ſnails, in winter, reſt with full inteſtines); and, laſtly, to heighten the digeſtion and fermentation in the ſtomach and ſmall guts.

Dr. Muſgrave gives us an account, in the Philoſophical Tranſactions, of the *cœcum* of a dog being cut out, without any prejudice to the animal. M. Giles gives us another, of the *cœcum* of a lady being diſtended ſo as to form a tumour, that held almoſt three chopines of a thin, greyiſh, and almoſt liquid ſubſtance, whereof ſhe died. And Mr. Knowles, a third, of a boy's *cœcum* being vaſtly extended, and ſtuffed with cherry-ſtones, which likewiſe proved mortal.

Some ſay, the name *cœcum* is miſtaken; not allowing this to be the *cœcum* of the ancients, which they imagine to be the thick globous part of the colon, immediately appended to the ileum; and therefore give this part the name of *appendicula vermiformis*.

CO-EFFICIENTS, in *Algebra*, are numbers, or given quantities, prefixed to letters, or unknown quantities, into which they are ſuppoſed to be multiplied; and therefore, with ſuch letters, or with the quantities repreſented by them, make a rectangle or product, *co-efficient production*; whence the name.

Thus, in $3a$, or bx, or Cxx; 3 is the *co-efficient* of $3a$; b, of bx; and C, of Cxx. If a letter have no number prefixed, it is always ſuppoſed to have unit for the *co-efficient*. Thus, a, or bc, import as much as $1a$, or $1bc$. The *co-efficient*, in a quadratic equation, is according to its ſign, either the ſum, or the difference of the two roots.

In any equation of a higher nature, the *co-efficient* of the ſecond term is always the aggregate of all the roots retaining their proper ſigns: ſo that if all the negatives be equal to all the affirmatives, the ſecond term will vaniſh; and where the ſecond term is thus wanting, it is a ſign that the quantities under contrary ſigns were thus equal.

The *co-efficient* of the third term is the aggregate of all the rectangles ariſing by the multiplication of every two of the roots, how many ways ſoever thoſe combinations of duals can be had; as three times in a cubic, ſix in a biquadratic equation, &c.

The *co-efficient* of the fourth term is the aggregate of all the ſolids made by the continual multiplication of every three of the roots, how often ſoever ſuch a ternary can be had; as there may be four in a biquadratic, five in an equation of five dimenſions, &c. And thus it will go on infinitely.

CO-EFFICIENTS *of the ſame order*, in *Algebra*, is a term ſometimes uſed for the *co-efficients* prefixed to the ſame unknown quantities, in different equations.

Thus, in the equations $\left\{\begin{array}{l} ax+by+cz=m \\ dx+ey+fz=n \\ gx+hy+kz=p \end{array}\right\}$ the *co-efficients* a, d, g are of the ſame order, being the *co-efficients* of x; alſo b, e, h are of the ſame order, being the *co-efficients* of y, &c. The *co-efficients* alſo that affect no unknown quantity, are ſaid to be of the ſame order.

CO-EFFICIENTS, *oppoſite*, ſuch as are taken each from a different equation, and from a different order of *co-efficients*. Thus, in the foregoing equations, a, e, k, and a, h, f, as alſo d, b, k, are *oppoſite co-efficients*.

COELESTIAL, in a general ſenſe, denotes any thing belonging to *cœlum* or the heavens. Thus,

COELESTIAL *obſervations*, are obſervations of the phænomena of the heavenly bodies, made with a proper apparatus of aſtronomical inſtruments, in order to determine their places, motions, phaſes, &c.

The inſtruments chiefly uſed in *cœleſtial* obſervations are the aſtronomical GNOMON, QUADRANT, MICROMETER, and TELESCOPE.

Obſervations in the day-time are eaſy; becauſe the croſs hairs in the focus of the object-glaſs of the teleſcope are then diſtinctly perceivable: in the night, thoſe croſs hairs are to be illumined to make them viſible.

This illumination is either performed by a candle, placed obliquely near them, ſo that the ſmoke doth not intercept the rays; or, where this is inconvenient, by making an aperture in the tube of the teleſcope, near the focus of the object-glaſs, through which a candle is applied to illumine the croſs hairs.

M. De la Hire has made an improvement on the firſt method, which renders it of very good uſe; and it is by covering that end of the tube next to the object-glaſs with a piece of gauſe, or fine white ſilken crape. For, in ſuch caſe, a link, placed at a good diſtance from the tube, ſo enlightens the gauſe, as to render the croſs hairs very perceivable.

Obſervations of the ſun are not to be made without placing a glaſs, ſmoked in the flame of a lamp or candle, between the teleſcope and the eye; to take off from its luſtre, which would otherwiſe damage the eye, were not a good part of its beams intercepted.

Note, when any of the heavenly bodies are obſerved through a teleſcope of only two glaſſes, they appear inverted.

Cœleſtial obſervations are chiefly of two kinds: the one, when the objects are in the MERIDIAN; the other, when they are in VERTICAL circles.

COELESTIAL *globe*. See GLOBE.

COELIA, Κοιλια, or Κοιλιη. This has many different ſignifications: firſt, it imports a cavity in any part of the body, or in any of the viſcera; ſecondly, it implies the ſame as *aleres*. The κοιλιη, with the addition of ανω, that is, ἡ κατω κοιλιη, is the lower belly, or inteſtinal tube.

COELIAC *artery*, the firſt artery detached from the deſcending trunk of the aorta into the abdomen.

It divides into two branches, the one on the right ſide, the other on the left: of which the firſt gives the *gaſtrica dextra*, which goes to the ſtomach; the *cyſtica*, which goes to the gall-bladder; the *epiplois dextra* to the *omentum*; the *inteſtinalis* to the *duodenum*, and to a part of the *jejunum*; and the *gaſtro epiploïs* to the ſtomach, to the *omentum*, and ſome branches to the liver, which enter the *capſula communis*, to accompany the branches of the *vena porta*.

The left branch of the *cœliaca* gives the *gaſtrica dextra*, which is alſo ſpread upon the ſtomach; the *epiploïs ſiniſtra*, which goes to the *omentum*; and the *ſplenica* to the ſubſtance of the ſpleen. See each branch deſcribed in its place.

COELIAC *paſſion*, is a ſort of diarrhœa, or flux of the belly; wherein the aliment comes away either crude or chylified, in lieu of excrements.

Dr. Freind recommends for this diſorder, ſuch medicines as gently ſtimulate the inteſtinal tube, and deterge the obſtructed glands; ſuch as light and frequent purges, and gentle vomits of ipecacuanha.

Authors frequently confound the *cœliac paſſion* with the *lientery*; but they are different.

There is alſo a COELIAC *diabetes*, called *cœliaca urinalis*, wherein the chyle paſſes off along with, or inſtead of urine. See DIABETES.

COELIAC *vein*, is that which runs through the *inteſtinum rectum*. See RECTUM.

COELICOLOR, in *Natural Hiſtory*, a name given by ſome to the OPAL.

COELOMA, in *Medicine*, a hollow and round ulcer, in the horny tunic of the eye.

COELUM. See HEAVEN.

COELI *fundus*. See FUNDUS.

COELUM is alſo uſed by ſome anatomiſts for the cavity of the eye towards the angles, or *canthi*. See EYE, CANTHUS, &c.

COELUS, in *Mythology*, one of the heathen deities, the ſame with the Greek *Uranus*.

COEMETERIUM. See CEMETERY.

COEMPTIONALES, among the Romans, an appellation given to old ſlaves, which were ſold in a lot with others, becauſe they could not be ſold alone.

COENA *domini*, *bull*. See BULL.

COENOBITE, a religious, who lives in a convent, or in community, under a certain rule; in oppoſition to ANACHORET, or HERMIT, who lives in ſolitude.

The word comes from κοινος, *communis*, and βιος, *vita*, *life*. Caſſian makes this difference between a *convent* and a *monaſtery*, that the latter may be applied to the reſidence of a ſingle religious, or recluſe; whereas the *convent* implies *cœnobites*, or numbers of religious living in common.

Fleury ſpeaks of three kinds of monks in Egypt: *anachorets*, who live in ſolitude; *cœnobites*, who continue to live in community; and *ſarabaites*, who are a kind of monks errant, that ſtroll from place to place.

He refers the inſtitution of *cœnobites* to the times of the apoſtles, and makes it a kind of imitation of the ordinary lives of the faithful at Jeruſalem. Though St. Pachomius is ordinarily owned the inſtitutor of the *cœnobite* life; as being the firſt who gave a rule to any community.

COENOBIUM, the ſtate of living in a ſociety, or community, where all things are in common. Pythagoras is thought to be the author, or firſt inſtitutor of this kind of life, his diſciples, though ſome hundreds in number, being obliged all to give up their private eſtates, in order to be annexed to the joint ſtock of the whole. The Eſſenians among the Jews, and Platoniſts, are ſaid to have lived in the ſame manner. Many of the Chriſtians alſo have thought this the moſt perfect kind of ſociety, as being that in which Chriſt and his apoſtles choſe to live. See COENOBITE.

COENOTAPH. See CENOTAPH.

CO-EQUALITY, a term expreſſing the relation of EQUALITY between two things.

The retainers to St. Athanaſius's doctrine of the Trinity hold the Son and Holy Spirit *co-equal* with the Father. The Arians, &c. deny the *co-equality*. See TRINITY, and ARIAN.

COERULEUM *montanum*, ſignifies MOUNTAIN-BLUE, which is called by ſome authors, CHRYSOCOLLA; it is a blue ORE *of copper*.

COERULEUM *nativum*. See ARMENIUS *lapis*.

COES, among *Miners*, are little houſes which the miners make over their mines to lay ore in.

CO-ETERNITY is uſed among *Divines* to denote the ETERNITY of one being equal to that of another.

The orthodox hold the ſecond and third perſons in the Trinity *co-eternal* with the firſt.

COEUR, in *Heraldry*.—*Party en* COEUR, ſignifies a ſhort line of partition in pale, in the center of the eſcutcheon, which extends but a little way, much ſhort of top and bottom; being met by other lines, which form an irregular partition of the eſcutcheon, as repreſented in *Tab. Herald. fig.* 43.

CO-EXISTENCE, a term of relation, denoting two or more things to exiſt together at the ſame time, &c. See EXISTENCE.

COFFEE, in *Natural Hiſtory*, a ſeed, or berry, brought from Arabia Felix; uſed for making a potable liquor of the ſame name.

That from the Levant is moſt eſteemed, being greener, heavier, and appearing riper and plumper, than that from Mocha; which is larger, lighter, and whiter.

For *coffee-berries*, ſome ſubſtitute peas, beans, rye, and barley, which, roaſted, yield an oily matter, reſembling in flavour, but leſs agreeable, as well as much leſs ſtrong, than *coffee*.

COFFEE alſo denotes a kind of drink prepared from theſe berries; very familiar in Europe for more than a hundred years, and among the Turks for two hundred and fifty. Its original is not well known: ſome aſcribe it to the prior of a monaſtery, who, being informed by a goat-herd, that his cattle, ſometimes browſing on the tree, would wake and caper all night, became curious to prove its virtue: accordingly, he firſt tried it on his monks, to prevent their ſleeping at matins. Others, from Schehabeddin, refer the invention of *coffee* to the Perſians; from whom, they ſay, it was learned in the fifteenth century by Gemaleddin, mufti of Aden, a city near the mouth of the Red ſea; and who, having tried its virtues himſelf, and found that it diſſipated the fumes which oppreſſed the head, inſpired joy, opened the bowels, and prevented ſleep, without being incommoded by it; recommended it firſt to his derviſes; with whom he uſed to ſpend the night in prayer.

Their example brought *coffee* into vogue at Aden; the profeſſors of the law for ſtudy, artiſans to work, travellers to walk in the night, in fine, every body at Aden, drank *coffee*. Hence it paſſed to Mecca, where firſt the devotees, then the reſt of the people, took it. From Arabia Felix it paſſed to Cairo.

In 1511, Khaiae Beg prohibited it, from a perſuaſion that it inebriated, and that it inclined to things forbidden. But ſultan Cauſou immediately after took off the prohibition, and *coffee* advanced from Egypt to Syria and Conſtantinople.

The derviſes declaimed againſt it from the Alcoran, which declares that coal is not of the number of things created by God for food. Accordingly, the mufti ordered the *coffee*-houſes to be ſhut up; but his ſucceſſor declaring *coffee* not to be coal, they were opened again.

During the war in Candia, the aſſemblies of news-mongers making too free with ſtate-affairs, the grand vizier Cuproli ſuppreſſed the *coffee*-houſes at Conſtantinople; which ſuppreſſion, though ſtill in force, does not prevent the public uſe of the liquor there. Thevenot the traveller was the firſt who brought it into France; and a Greek ſervant, called Peſqua, brought into England by Mr. Dan. Edwards, a Turky merchant, in 1652, to make his *coffee*, firſt ſet up the profeſſion of *coffee*-man, and introduced the drink among us: though ſome ſay Dr. Harvey had uſed it before. The firſt mention of it in our ſtatute-books is in the year 1660, when a duty of four pence was laid on every gallon of *coffee* made and ſold; and in 1675, king Charles iſſued a proclamation to ſhut up the *coffee*-houſes, becauſe they were ſeminaries of ſedition. The French firſt conveyed ſome plants to Martinico in 1727, whence it probably ſpread to the neighbouring iſlands.

The word *coffee* is originally Arabic: the Turks pronounce it *cahueh*, and the Arabs *cahuah*; which ſome authors maintain to be a general name for any thing that takes away the appetite; others, for any thing that promotes appetite; and others, again, for any thing that gives ſtrength and vigour.

The Mahometans, it is obſerved, diſtinguiſh three kinds of *cahuah*: the firſt is wine, or any liquor that inebriates: the ſecond is made of the pods that contain the *coffee*-berry; this they call the *ſultanas coffee*, from their having firſt introduced it, on account of its heating leſs than the berry, as well as its keeping the bowels open: the third is that made with the berry itſelf, which alone is uſed in Europe, the pods being found improper for tranſportation. Some Europeans, who imported the pods, called them the *flower of the coffee-tree*.

The deep brown colour of the liquor occaſioned its being firſt called *ſyrup of the Indian mulberry*; under which ſpecious name it firſt gained ground in Europe.

The preparation of *coffee* conſiſts in roaſting, or giving it a juſt degree of torrefaction, on an earthen, or metalline plate, till it hath acquired a browniſh hue, equally deep on all ſides: it is then ground in a mill, as much of it as ſerves the preſent occaſion. A proper quantity of water is next boiled, and the ground *coffee* put in it. After it has juſt boiled, it is taken from the fire; and the decoction having ſtood a-while to ſettle, and fine, they pour, or decant it into diſhes.

The cuſtom is to drink *coffee* as hot as poſſible, with ſugar; though the Turks do not trouble themſelves to take off its bitterneſs with any ſugar: their grandees add to each diſh a drop of eſſence of ambergris; others boil it with a couple of cloves; others, a little Indian aniſe; others, cacouleh, or the grain of the cardamomum minus.—*Coffee* is one of the neceſſaries with which the Turks are obliged to furniſh their wives.

The ordinary method of roaſting *coffee* among us, is in a tin cylindrical box, full of holes; through the middle whereof runs a ſpit: under this is a ſemicircular hearth, wherein is a large charcoal fire: by help of a jack, the ſpit turns ſwift, and ſo roaſts the berries; being now and then taken up to be ſhaken. When the oil riſes, and it is become of a dark brown colour, it is emptied into two receivers, made with large hoops, whoſe bottoms are iron plates, into which theſe ſhut: there the *coffee* is ſhaken, and left till almoſt cold; and if it look bright and oily, it is a ſign it is well done.

Coffee is taken with very different, nay, frequently with directly oppoſite intentions; ſome uſe it to prevent ſleep, others to promote digeſtion, &c. Its more real virtues, owned by the phyſicians, conſiſt in this; that being an excellent drier, it carries off fumes and diſorders of the head, ariſing from too much moiſture, diſſipates megrims, and abſorbs acrimonies of the ſtomach; whence its uſe after a debauch of ſtrong liquors; and hence alſo its uſe in promoting watching, bracing the fibres, and rendering them too tenſe for the relaxation required in ſleep.

It likewiſe promotes circulation, but that beſt with people of a pretty corpulent habit; being found hurtful to thoſe who are thin, lean, dry, and of a bilious temperament; as it dries up the nerves, and inclines them to tremors: it is ſaid to be prejudicial likewiſe to thoſe who digeſt too faſt; where the circulation is too quick, or where there is a ſpitting of blood ariſing from the mouths of any of the veins and arteries being too open, or the blood too thin and ſharp.

Mr. Boyle mentions an inſtance of a perſon to whom *coffee* always proved emetic; and that much drinking of it produced the palſy. It is alſo known to be purgative to others.

The oily matter that ſeparates from the *coffee*, and appears on its ſurface when roaſted; and its particular ſmell, which diſtinguiſhes it from peas, beans, rye, &c. which ſome ſubſtitute in lieu of *coffee*, are to be the real indications of its effects. If conſidered with regard to the oil drawn by the retort, this, as well as that, contains volatile principles, both ſaline and ſulphureous.

It is to the diſſolution of its ſalts, and the mixture of its ſulphurs in the blood, that its chief faculty of promoting watchfulneſs is to be attributed: hence alſo its property of promoting digeſtion, of precipitating foods, of preventing eructations, and of correcting acrimonies of the ſtomach, when taken after meals.

Hence alſo that fermentation in the blood, ſerviceable to corpulent people: hence alſo its diuretic virtue. By experience it is found of ſervice to drink a glaſs of water before *coffee*, to render it laxative; and to mix it with milk or cream, to extinguiſh its ſulphurs, embarraſs its ſaline principles, and to render it nouriſhing.

S. Pauli, a Daniſh phyſician, maintains, that it enervates men, and renders them incapable of generation; and it is certain the Turks attribute the ſame effects to it; and from the immoderate uſe hereof, account for that thinneſs of inhabitants found in their provinces formerly the beſt peopled. But this opinion is refuted by Du Four.

M. Malebranche gave the Royal Academy of Sciences an account of a perſon cured of an apoplexy, by means of ſeveral clyſters of *coffee*. It has proved of ſervice in the caſe of an ASTHMA.

For the laws relating to this commodity, ſee 6 and 7 W. III. c. 7. 3 and 4 Ann. c. 4. 10 Ann. c. 26. 5 Geo. I. c. 11. 10 Geo. I. c. 10. 11 Geo. I. c. 30. 5 Geo. II. c. 24. 15 Geo. II. c. 11. 5 Geo. III. c. 45. The duty on *coffee* paid on importation is three pence a pound; beſides an inland duty to be charged on the maker or ſeller of 2*s.* 6*d.* a pound, excepting for *coffee* grown in America, which pays only 1*s.* 6*d.* a pound. No perſon is allowed to ſell or retail *coffee* without a licence, under the penalty of 5*l.* a month; and no perſon ſhall mix any materials to increaſe the weight, under a penalty of 100*l.*

COFFEE-*tree*, *Coffea*, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower hath one petal, which is funnel-ſhaped, having a narrow cylindrical tube; and is plain at the top, where it is indented in five parts: it hath five ſtamina, which are faſtened to the tube. The roundiſh germen afterward becomes an oval berry, containing two hemiſpherical ſeeds, plain on one ſide, and convex on the other. We have but one ſpecies, which is ſuppoſed to be a native of Arabia Felix, where it was firſt cultivated for uſe; and to this day is the country from whence the beſt *coffee* is brought to Europe. It is a low tree in the native country of its growth, where it ſeldom riſes more than ſixteen or eighteen feet high.

The great faults of the American *coffee*, is the want of flavour, or having a diſagreeable one; though the berries are much larger than thoſe imported from Arabia. It is the conſtant practice of the planters to gather the fruit while it is red; at which time the berries are larger, and of greater weight, than thoſe which are permitted to ripen perfectly on the trees, which is not until they are turned black: whereas in Arabia they always ſhake the berries from the trees, ſpreading cloths under them to receive them; and take only ſuch as readily fall each time.

As the *coffee-tree* is an ever-green, it makes a beautiful appearance at every ſeaſon in the ſtoves; but particularly when it is in flower, and alſo when the berries are red, which is generally in the winter, ſo that they continue a long time in that ſtate: there is ſcarce any plant therefore which deſerves a place in the ſtove more than this.

It is propagated by the berries, which muſt be ſown ſoon after they are gathered from the tree; for if they are kept out of the ground any time, they will not grow.

COFFER, a long ſquare box about three feet long, and one and a half broad, uſed for breaking in pieces tin ore in a ſtamping-mill.

COFFER, *Capſa*, in *Architecture*, a ſquare depreſſure, or ſinking, in each interval between the modillions of the Corinthian cornice; ordinarily filled up with a roſe, ſometimes with a pomgranate, or other enrichment.

Theſe ſinkings, called alſo *panels*, are of different figures in the compartments of vaults and ſoffits.

COFFER, in *Fortification*, denotes a hollow lodgment, athwart a dry moat, from ſix to ſeven feet deep, and from ſixteen to eighteen feet broad; the upper part made of pieces of timber raiſed two feet above the level of the moat; which little elevation has hurdles laden with earth for its covering; and ſerves as a parapet, with embraſures.

The *coffer* is nearly the ſame with the caponiere, excepting that this laſt is ſometimes made beyond the counterſcarp on the glacis, and the *coffer* always in the moat, taking up its whole breadth, which the caponiere does not.

It differs from the traverſe, and gallery, in that theſe latter are made by the beſiegers, and the *coffer* by the beſieged.

The beſieged generally make uſe of *coffers* to repulſe the beſiegers, when they endeavour to paſs the ditch. To ſave themſelves from the fire of theſe *coffers*, the beſiegers throw up the earth on that ſide towards the *coffer*.

COFFER-*dams*, in French *Battardeaux*, in *Bridge-Building*, denote incloſures formed for laying the foundation of piers, and for other works in water, in order to prevent the ambient water from interrupting the workmen. Theſe incloſures are ſometimes ſingle, ſometimes double, with clay rammed between them: ſometimes they are made with piles driven cloſe by one another; ſometimes the piles are notched or dove-tailed into one another; but the moſt uſual method is to drive piles with grooves in them, at the diſtance of five or ſix feet from each other, and then boards are let down between them. See BRIDGE.

COFFERER *of the King's Houſhold*, a principal officer in the court, next under the comptroller; who, in the compting-houſe, and elſewhere at other times, has a ſpecial charge and overſight of other officers of the houſe, for their good demeanour and carriage in their offices: to all whom he pays the wages. See HOUSHOLD.

COFFIN, in a general ſenſe, a wooden box or trunk, into which the bodies of dead perſons are put, in order for burial.

COFFIN, in the *Manege*, the whole hoof of a horſe's foot, above the coronet; including the *coffin*-bone, the ſole, and the fruſh.

COFFIN-*bone*, is a ſmall ſpongy bone, encloſed in the midſt of the hoof, and poſſeſſing the whole form of the foot.

COFFIN-*joint*, is that where the leſſer paſtern joins the foot. A ſtrain in this joint occaſions a ſtiffneſs, which can only be removed by bliſtering and firing.

COFFIN, in the *Manufacture of China*. See CASSETTE.

COGGESHALL's *Sliding-Rule*, an inſtrument uſed in gauging, ſo called from its inventor. See the deſcription and uſe under SLIDING-RULE.

COGGLE, or COG, a ſmall fiſhing-boat upon the coaſts of Yorkſhire: and *cogs* (*cogones*) are a kind of little ſhips or veſſels uſed in the rivers Ouſe and Humber. Stat. 23 H. VIII. c. 18. *Præparatis* cogonibus, *galleis, & aliis navibus, &c.* Mat. Paris, ann. 1066. And hence the cogmen, boatmen, and ſeamen, who after ſhipwreck or loſſes by ſea, travelled and wandered about to defraud the people by begging and ſtealing; until they were reſtrained by divers good laws.

COGITATION, the act or operation of thinking. See THINKING.

COGNATION, in the *Civil Law*, the bond of relation between all the deſcendents of the ſame ſtock, both males and females: by which it is diſtinguiſhed from *agnation*, which only comprehends the deſcendents of the male ſex.

In France, for the ſucceſſion to the crown they follow *agnation*; in England, Spain, &c. *cognation*; women coming to the ſucceſſion, according to the degree of proximity, in default of males, or their deſcendents from branch to branch.

In the *Roman Law*, the words *cognatio* and *cognati* are alſo taken in a more limited ſenſe; *cognatio* ſignifying only the bond of relation between the deſcendants from the ſame ſtock by women; and *cognati* thoſe between whom there was ſuch a bond of relation ſubſiſting.

COGNIOL, in *Zoology*, a name given by ſome to the fiſh more uſually called *colias*, a kind of mackrel, differing from the common kind in nothing but that it is much ſmaller.

COGNISEE, or Connusee, in *Law*, is the perſon to whom a fine of lands, &c. is acknowleged.

COGNISOR, or Conusor, is he that paſſeth, or acknowlegeth, a FINE of lands and tenements to another. See Cognizance.

COGNITIVE is ſometimes applied to that faculty or power of the human mind, by which we know any thing, or are enabled to diſtinguiſh truth from falſity.

Latin writers uſe the term *facultas cognoſcitiva* in the ſame ſenſe.

Hobbes has made uſe of the term *cognitive* power, for the power of knowing, or conceiving, in contradiſtinction to *motive* power, or appetite.

COGNITIONIBUS *mittendis*, in *Law*, a writ to any of the king's juſtices of the common pleas, who has the power of taking a fine, and who, having taken a fine, defers to certify it, commanding him to certify the ſame.

COGNIZANCE, or Cognisance, in *Heraldry*. See Crest.

Cognizance, or Conusance, in *Law*, is the acknowlegement of a fine; or the conceſſion of a thing done. In which ſenſe we ſay, *cognoſcens latro, a thief that confeſſes*.

Cognizance is alſo uſed for a power, or juriſdiction. Thus, *cognizance of pleas*, denotes an ability to call a plea out of another court; which no one but the king can do, unleſs he can ſhew a particular charter for it. Thus, if a ſcholar, or other privileged perſon of the univerſities of Oxford or Cambridge, is impleaded in the courts of Weſtminſter, for any cauſe of action, except a queſtion of freehold; in ſuch a caſe, the chancellor or vice-chancellor, by charter confirmed by ſtatute, may put in a claim of *cognizance*; which, if made in time, and accompanied with due proof of the facts alleged, is allowed by the courts.

Cognizance is ſometimes uſed alſo for an audience, or hearing of a matter judicially. In which ſenſe we ſay, *to take cognizance*, &c.

Cognizance, again, is uſed for a badge on a waterman's, or ſervingman's ſleeve, which is commonly the giver's creſt, whereby he is diſcerned to belong to this or that nobleman, or gentleman.

COGNOVIT *actionem*, in *Law*, is where a defendant acknowleges or confeſſes the plaintiff's cauſe againſt him to be juſt and true; and after iſſue, ſuffers judgment to be entered againſt him without trial. But moſt frequently the defendant confeſſes one part of the complaint, ad traverſes or denies the reſt.

COGS. See Coggle.

COGWARE is ſaid to be a ſort of coarſe cloths, made in divers parts of England, of which mention is made in 13 R. II. c. 10.

CO-HABITATION, implies a concubinage, copulation, or carnal knowlege, between two perſons. It is rarely uſed, except in a criminal ſenſe.

CO-HEIR, a perſon who ſhares an inheritance or eſtate with another HEIR.

COHERENCE, a ſchool-term, applied to propoſitions, diſcourſes, &c. which have a CONNEXION, or dependance, on one another.

COHESION, or Cohæsion, in *Phyſics*, the action whereby the particles, or primary corpuſcles, whereof natural bodies conſiſt, are connected, or bound together, ſo as to form particles; and thoſe, again, kept together, ſo as to form ſenſible maſſes, or bodies.

The cauſe of this *coheſion*, or *nexus materiæ*, has extremely perplexed the philoſophers of all ages. In all the ſyſtems of phyſics, matter is ſuppoſed originally to be in minute, indiviſible atoms.

How and by what principle, theſe ſeveral and diſtinct corpuſcles ſhould come firſt joined and combined into little ſyſtems; and how they ſhould come to perſevere in that ſtate of union; is a point of the moſt difficulty, and even of the moſt importance, of any in phyſics.

The opinion maintained by many, is that ſo ſtrenuouſly defended by J. Bernouilli, De Gravitate Ætheris; who accounts for the *cohesion* of the parts of matter, from the uniform preſſure of the atmoſphere: confirming this doctrine from the known experiment of two poliſhed marble planes, which cohere very ſtrongly in the open air, but eaſily drop aſunder in an exhauſted receiver.

However, if two plates of this kind be ſmeared with oil, to fill up the pores in their ſurfaces, and prevent the lodgment of air, and one of them be gently rubbed upon the other, they will adhere ſo ſtrongly, when ſuſpended even in an exhauſted receiver, that the weight of the lower plate will not be able to ſeparate it from the upper one.

But though this theory might ſerve tolerably well to explain the *cohesion* of compoſitions, or greater collections of matter; yet it falls ſhort of accounting for that firſt *cohesion* of the atoms, or primitive corpuſcles, whereof the corpuſcles of hard bodies are compoſed.

Sir Iſaac Newton delivers his doctrine of *cohesion* thus:
“ The particles of all hard homogeneous bodies, which
“ touch one another, *cohere* with a great force; to ac-
“ count for which, ſome philoſophers have recourſe to a
“ kind of hooked atoms, which, in effect, is nothing
“ elſe but to beg the thing in queſtion. Others imagine,
“ that the particles of bodies are connected by reſt, i. e.
“ in effect, by nothing at all; and others by conſpiring
“ motions, i. e. by a relative reſt among themſelves.
“ For myſelf, it rather appears to me, that the particles
“ of bodies *cohere* by an attractive force, whereby they
“ tend mutually toward each other: which force, in
“ the very point of contact, is very great; at little diſ-
“ tances is leſs; and at a little farther diſtance is quite
“ inſenſible.”

It is not certain in what proportion this force increaſes or decreaſes: Deſaguliers conjectures, from ſome phænomena, that it decreaſes in a biquadratic ratio of the increaſed diſtance, ſo that at twice the diſtance it acts ſixteen times more weakly, &c.

“ Now, if compound bodies be ſo hard, as by expe-
“ rience we find ſome of them to be, and yet have a
“ great many hidden pores within them, and conſiſt of
“ parts only laid together; no doubt thoſe ſimple parti-
“ cles which have no pores within them, and which
“ were never divided into parts, muſt be vaſtly harder.
“ For ſuch hard particles, gathered into a maſs, cannot
“ poſſibly touch in more than a few points: and there-
“ fore much leſs force is required to ſever them, than
“ to break a ſolid particle, whoſe parts touch through-
“ out all their ſurfaces, without any intermediate pores
“ or interſtices. But how ſuch hard particles, only laid
“ together, and touching only in a few points, ſhould
“ come to *cohere* ſo firmly as in fact we find they do, is
“ inconceivable; unleſs there be ſome cauſe, whereby
“ they are attracted and preſſed together.
“ Now, the ſmalleſt particles of matter may *cohere* by
“ the ſtrongeſt attractions, and conſtitute larger, whoſe
“ attracting force is feebler: and, again, many of theſe
“ larger particles *cohering*, may conſtitute others ſtill
“ larger, whoſe attractive force is ſtill weaker; and ſo
“ on for ſeveral ſucceſſions, till the progreſſion end in
“ the biggeſt particle, on which the operations in che-
“ miſtry, and the colours of natural bodies, do depend;
“ and which by *cohering* compoſe bodies of a ſenſible
“ magnitude.”

The different degrees of *cohesion*, conſtitute bodies of different forms and properties. Thus, the ſame great author obſerves, the particles of fluids, which do not *cohere* too ſtrongly, and are ſmall enough to render them ſuſceptible of thoſe agitations which keep liquors in a fluor, are moſt eaſily ſeparated and rarefied into vapour, and make what the chemiſts call *volatile bodies*; being rarefied with an eaſy heat, and again condenſed with a moderate cold.

Thoſe whoſe particles are groſſer, and ſo are leſs ſuſceptible of agitation, or *cohere* by a ſtronger attraction, are not ſeparable without a greater degree of heat; and ſome of them not without fermentation: and theſe make what the chemiſts call *fixt bodies*.

Air, in its fixed ſtate, poſſeſſes the interſtices of ſolid ſubſtances, and probably ſerves as a bond of union to their conſtituent parts; for when theſe parts are ſeparated, the air is diſcharged, and recovers its elaſticity. See Air, *fixed*.

This kind of attraction is evinced by a variety of familiar experiments; as, by the union of two contiguous drops of mercury; by the mutual acceſs of two pieces of cork, floating near each other in a baſon of water; by the adheſion of two leaden balls, whoſe ſurfaces are ſcraped and joined together with a gentle twiſt, which is ſo conſiderable, that, if the ſurfaces are about a quarter of an inch in diameter, they will not be ſeparated by a weight of 100 lb.; by the aſcent of oil or water between two glaſs planes, ſo as to form the hyperbolic curve, when they are made to touch on one ſide, and kept ſeparate at a ſmall diſtance on the other—ſee Ascent; by the depreſſion of mercury, and by the riſe of water in CAPILLARY *tubes*, and on the ſides of glaſs veſſels; and alſo in ſugar, ſponge, and all porous ſubſtances. And where this *cohesive* attraction ends, a power of REPULSION begins.

Profeſſor Muſchenbroek has made many experiments, in order to determine the force of *coheſion* in a great variety of different ſubjects. The adheſion of poliſhed planes, about two inches in diameter, heated in boiling water, and beſmeared with greaſe, required the following weight to ſeparate them:

	Cold greaſe.	Hot greaſe.
Planes of Glaſs,	130 lb.	300 lb.
Braſs,	150	800
Copper,	200	850
Marble,	225	600
Silver,	150	250
Iron,	300	950

But when the planes were made to adhere by other ſorts of matter, the reſults were as in the following table:

With Water,	12 ounces.
Oil,	18
Venice turpentine,	24
Roſin,	850 lb.
Tallow candle,	800
Pitch,	1400

In eſtimating the *abſolute coheſion* of bodies, he applied weights to ſeparate them according to their length: his pieces of wood were of a long ſquare figure, each ſide of which was .26 of an inch, and they were broken aſunder by the following weights:

Wood of Linden tree,	1000 lb.
Alder,	1000
Fir,	600
Oak,	1150
Elm,	950
Beech,	1250
Aſh,	1250

He alſo tried wires of metal one tenth of a Rhinland inch in diameter: the metals and weights were as follow:

Of Copper,	299¼ lb.
Yellow braſs,	360
Gold,	500
Silver,	370
Iron,	450
Tin,	40¼
Lead,	29¼

He then tried the *relative coheſion*, or the force with which bodies reſiſt an action applied to them in a direction perpendicular to their length. For this purpoſe he put pieces of wood by one end into a ſquare hole of a metal plate, and hung weights towards the other end ſufficient to break them at the hole: the weights and diſtances from the hole are exhibited in the following table:

	Diſtance.	Weights.
Fir,	9 inches,	40 ounces.
Oak,	8½	48
Elm,	9	44
Pine,	9½	36½
Alder,	9¼	48
Beech,	7	56½

See Introductio ad Cohærentiam Corporum firmorum apud Phyſicæ Exper. & Geom. Diſſertationes, p. 431, &c. and Introductio ad Philoſ. Nat. 4to. ed. 1762. tom. i. cap. 21.

COHOBATION, in *Chemiſtry*, a repeated diſtillation of the ſame matter, with the liquor drawn from it; that liquor being again and again returned upon the matter left at the bottom.

Cohobation is a kind of circulation; only differing from it in this, that the liquor is drawn off in *cohobation* as in common diſtillation, and thrown back again; whereas in CIRCULATION it riſes and falls in the ſame veſſel, without ever being carried out.

The intention of *cohobation* is to diſſolve the body, or to produce ſome change upon it. The operation is now neglected; but the ancient chemiſts practiſed it with great patience and zeal. To make it eaſier, and to prevent the great trouble of changing or moving the veſſels, a particular kind of alembic is contrived, very convenient for the purpoſe, which is called a PELICAN.

COHORS *equitata*, in old inſcriptions, has perplexed ſeveral antiquaries, who have been taught to conſider the *cohorts* as appropriated to the foot ſervice, as the *alæ* and *turmæ* were to the horſe. Mr. Horſeley, in particular, imagines, the *cohors prima Claudia equitata*, which he had met with, was intended to intimate that this *cohort* had been promoted from the horſe ſervice; but when, by another inſcription, he was led to conſider that corps as conſiſting of a thouſand horſe, his difficulty is increaſed to that degree, that he knows not what to affirm upon it. But the learned Dr. Taylor thinks there is an eaſy ſolution of this difficulty.

The auxiliary, or provincial *cohorts*, were either entirely, or purely foot, like the legionary, or ordinary *cohorts*; or elſe they had a mixture of both kinds of militia, as appears from Gruter, DLXXIV. 5. This latter ſort, as they could not properly be ranked under either denomination of horſe, or foot, being made up of both, ſeem to have appropriated to themſelves the diſtinguiſhing title of *cohortes equitatæ*, corps of infantry with a mixture of horſe. And of this term we find frequent mention in inſcriptions.

Hyginus alſo, De Caſtrametatione, gives us a full and deciſive proof of this denomination, and of the number of which ſuch COHORTS conſiſted. Theſe troops conſiſted of a thouſand men, part horſe, and part foot, and were hence called *milliariæ*. The proportion of the horſe to the foot was 240 to 760. His words are; *Habet* cohors equitata *milliaria pedites ſeptingentos ſexaginta, centurias decem*; *equites ducentos quadraginta, turmas decem.* Vid. Phil. Tranſ. Nº 482. ſect. 3.

COHORS *milliaria.* See above COHORS *equitata.*

COHORT, COHORS, in *Roman Antiquity*, a body of infantry, conſiſting of five or ſix hundred men; anſwering in moſt reſpects to our BATTALION.

The *cohort* was divided into three manipules, or companies; the manipule into two centuries; and the century into an hundred men.

The firſt centurion in the firſt *cohort* was called *primipilus*; and had the charge of the eagle, or ſtandard of the legion.—A legion conſiſted of ten *cohorts.*

When the army was ranged in order of battle, the *cohorts* were diſpoſed in the following manner: the firſt *cohort* took up the right of the firſt line, as the companies of grenadiers do in our regiments; the reſt followed in their natural order; ſo that the third was in the center of the firſt line of the legion, and the fifth on the left; the ſecond between the firſt and third; and the fourth between the third and fifth. The five remaining *cohorts* formed a ſecond line in their natural order: thus the ſixth was behind the firſt, and ſo of the reſt.

The firſt, third, and fifth *cohorts* were eſteemed the beſt; at leaſt it appears ſo from the poſts they took up, which were looked on by the Romans as the moſt important.

Marius is by ſome ſaid to have been the firſt who divided the Roman forces into *cohorts:* which opinion ſeems confirmed by Roſinus; *Non enim in tota Livii hiſtoria cohortium fit mentio. Ideoque docti viri ſentiunt a C. Mario primum cohortes eſſe inſtitutas.* But yet this is a great miſtake; for the *cohorts* are often mentioned in Livy, and particularly, lib. xxvii. c. 13. *Marcellus—cohortibus quæ ſigna amiſerant hordeum dari juſſit: centurioneſque manipulorum quorum ſigna amiſſa fuerant diſtrictis gladiis diſtinctos deſtituit.* This happened A. U. C. 543. and conſequently ſeveral years before Marius was born.

COHORTS were diſtinguiſhed according to their appointment and office, into *auxiliary*, which were ſent by allies; *equitata*, ſee above; *peditata*, which conſiſted of foot-ſoldiers only; *prætorian*, which was formed of the beſt ſoldiers, and ſerved to guard the *prætor* or general. This *cohort* was inſtituted by Publius Poſthumus, the dictator. Auguſtus likewiſe formed a *cohort*, under this appellation, conſiſting of nine thouſand men: which was afterwards increaſed by Septimius Severus. There were alſo the *cohort togata*, a kind of militia, which guarded the ſtreets of Rome; the *cohorts vigilum*, inſtituted by Auguſtus, which ſerved on occaſion of fires; and the *cohorts urbanæ*, eſtabliſhed by Auguſtus, to guard the city.

COHUAGIUM, a tribute paid by thoſe who meet promiſcuouſly in a market, or fair; *cohua* ſignifying a promiſcuous multitude of men in a fair, or market, probably from the French *cohue.*

COIF, the badge of a ſerjeant at law; who is hence alſo called SERJEANT *of the coif.*

The *coif* is of lawn, and is worn on the head, under the cap, when they are created, and ever after.

The uſe of the *coif* was to cover the *tonſura clericalis*, or clerical crown; becauſe the crown of the head was originally cloſe ſhaved, and only a border of hair left around the lower part, which gave it the appearance of a CROWN. See TONSURE, &c.

COILE, on board a ſhip. See QUOIL.

COILON, in *Antiquity.* See CAVEA.

COIN, *Matrice*, in the manufacture of money, medals, and counters, is a piece of ſteel well tempered, four or five inches deep, ſquare at bottom, and round at top; whereon are engraved, dent-wiſe, with puncheons, and other inſtruments, the ſeveral figures, marks, &c. to be ſtruck on the moneys, &c. See COINING.

For the manner of engraving COINS, ſee ENGRAVING *on ſteel.*

COIN is more generally uſed for a piece of metal converted into money, by the impreſſing of certain marks or figures thereon.

Coin may be defined, a ſpecies of money, ſtruck either with a hammer, or mill.

Hence, *coin* differs from money, as the ſpecies does from the genus. Money is any matter, whether metal, wood, leather, glaſs, horn, paper, fruits, ſhells, or kernels, which have courſe as a medium in commerce.

Coins are a particular branch of moneys, viz. ſuch as are made of metal, gold, ſilver, or copper, and ſtruck according to a certain proceſs, called *coinage*.

It is obſerved, under the article MONEY, that the preciſe epocha of the invention of money is not known; it is too ancient for our annals: and if we might argue from the neceſſity and obviouſneſs of the thing, it muſt be nearly coeval with the world.

Whether *coins* be of equal antiquity, may admit of ſome doubt; eſpecially as moſt of the ancient writers are ſo frequent and expreſs in their mention of leathern moneys, paper moneys, wooden moneys, &c. Some, however, notwithſtanding all this, are of opinion, that the firſt moneys were of metal: the reaſons they give, are the firmneſs, neatneſs, cleanlineſs, durableneſs, and univerſality of metals; which, however, do rather conclude, that they ought to have been ſo, than they actually were ſo.

In effect, the very commodities themſelves were the firſt moneys, i. e. they were current for one another by way of exchange; and it was the difficulty of cutting, or dividing certain commodities, and the impoſſibility of doing it without great loſs, that firſt put men on the expedient of a general medium.

Indeed, thus much may be ſaid in behalf of *coins*, that, on this view, it was natural for men to have their firſt recourſe to metals as being almoſt the only things whoſe goodneſs, and as it were integrity, is not diminiſhed by partition; beſides the advantages above expreſſed, and the conveniencies of melting, and returning them again into a maſs of any ſize or weight.

It was probably, then, this property of metals which firſt accuſtomed people, who trafficked together, to account them in lieu of quantities of other merchandizes in their exchanges; and at length to ſubſtitute them wholly in their ſtead; and thus aroſe money: as it was their other property to preſerve any mark or impreſſion a long time, which confirmed them in the right; and thus was the firſt riſe of *coins*.

In the firſt ages, each perſon cut his metal into pieces of different ſizes and forms, according to the quantity to be given for any merchandize, or according to the demand of the ſeller, or the quantity ſtipulated between them: to this end, they went to market, loaden with metal, in proportion to the purchaſe to be made, and furniſhed with inſtruments for proportioning it, and with ſcales for dealing it out, according as occaſion required.

By degrees it was found more commodious to have pieces ready weighed; and as there were different weights required, according to the value of the different wares, all thoſe of the ſame weight began to be diſtinguiſhed with the ſame mark, or figure: thus were *coins* carried one ſtep further.

At length, the growing commerce of money beginning to be diſturbed with frauds, both in the weights and the matter, the public authority interpoſed; and hence aroſe the firſt ſtamps, or impreſſions, of money: to which ſucceeded the names of the moneyers; and at length the effigy of the prince, the date, legend, and other precautions to prevent the alterations of the ſpecies: and thus were *coins* completed.

On the foot whereon money now ſtands, it is divided into *real*, or *effective* money; and *imaginary* money, or money of *accompt*.

Coins, *modern*, or *ſpecies current in Europe, Aſia, Africa, and America.*—All the current ſpecies in the four quarters of the earth, at this day, are either made of metals, or they are ſhells, and fruits.

The metals are, gold, ſilver, copper, tin, and lead; to which may be added billon, a mixture of ſilver and copper in a certain proportion.

In Europe none are uſed beſide gold, ſilver, copper, and billon: in ſome parts of the Eaſt Indies they likewiſe uſe tin and lead: as to ſhells and fruits, they are the ſmall money of ſeveral nations in Aſia, Africa, and America.

Coins, *Britiſh*.—In England, the current ſpecies of gold are, the guinea, half-guinea, jacobus, laureat, angel, and roſe-noble; the four laſt of which are now ſeldom met with, having been moſt of them converted into guineas, chiefly during the reigns of Charles II. and James II.

The ſilver *coins* are, the crown, half-crown, ſhilling, and ſix-pence; the copper *coins* are, the half-penny, and farthing.

Value and proportions of the Engliſh Coins.

	Farthing.	Halfpenny.	Shilling.	Half-crown.	Crown.	Pound Accompt.
Halfpenny.	2					
Shilling.	48	24				
Half-crown.	120	60	$2\frac{1}{2}$			
Crown.	240	120	5	2		
Pound Accompt.	960	480	20	8	4	
Guinea, or piece.	1008	504	21	$8\frac{2}{5}$	$4\frac{1}{5}$	$1\frac{1}{20}$
The Jacobus,			25	10	5	$1\frac{1}{4}$
The Carolus, or Laureat,			23	$9\frac{1}{5}$	$4\frac{3}{5}$	

It was made treaſon to counterfeit the *coin* of this realm, or to import counterfeit money, with intent to utter it, knowing it to be falſe, by 25 Edw. III. ſtat. 5. c. 2.

Counterfeiting foreign *coin*, current in this realm, is made treaſon by 1 Mary, ſeſſ. 2. c. 6.

Clipping, waſhing, filing the proper *coin* of this realm, or of any other realm current within this realm by proclamation, for lucre or gain, is made treaſon by 5 Eliz. c. 11.

Impairing, diminiſhing, falſifying the proper *coin* of this realm, is made treaſon by 18 Eliz. c. 1.

Making, mending, or aſſiſting in ſo doing; buying, ſelling, or having in poſſeſſion, inſtruments proper only for the coinage of money; and marking *coin* on the edges, by perſons not employed in the mint; are made treaſon by ſtat. 8 and 9 W. III. c. 26. ſect. 3. which is made perpetual by 7 Ann. c. 25.

Colouring, gilding, caſing, or waſhing any *coin*, reſembling the current gold *coin* of the realm, is treaſon, by ſtat. 8 and 9 W. III. c. 26. ſect. 4. 15 and 16 Geo. II. c. 28.

Lord Hale makes a query whether counterfeiting copper *coin* be not treaſon within the ſtatute of 25 Edw. III.?

Clippings or filings of the *coin*, bought or ſold, or knowingly found in the cuſtody of any perſon other than the officers of the mint, forfeited, with 500*l.* half to the king, and half to the informer. 6 and 7 W. III. c. 19. ſect. 4. And the offender ſhall be branded in the cheek with the letter R.

Selling of blanched copper, or any compoſitions of metals or minerals, in imitation of ſtandard gold, is made felony by 8 and 9 W. III. c. 26. ſect. 6. 9.

Receiving or paying any diminiſhed or counterfeit money, under value, is made felony by 8 and 9 W. III. c. 26. ſect. 6. 9. 15 and 16 Geo. II. c. 28.

In Scotland, by the articles of the Union, it is appointed, that all the *coins* be reduced to the Engliſh, and the ſame accompts obſerved throughout. Till then the Scots had their pounds, ſhillings, and pence, as in England; but their pound was but twenty pence Engliſh, and the others were in proportion: accordingly, their mark was $13\frac{1}{3}$*s.* Scotch, current in England at $13\frac{1}{2}$*d.* their noble in proportion.

Beſide theſe, they had their Turnorer pence, and halfpence; their penny, one twelfth of that of England; beſides baſe money of achiſons, babees, and placks: the bodle, one ſixth of the penny, one fourth of the achiſon, one third of the babee, and one half of the plack.

In ſome parts of Scotland and the Iſle of Man, the penny is ſix ſevenths of the Engliſh penny, the ſhilling or Manks equal to 10*d.* $\frac{2}{7}$, and the Engliſh ſhilling equal in value to 14*d.* and the pound or Manks equal to 17*s.* 1*d.* $\frac{5}{7}$.

In Ireland, the *coins* are as in England; viz. ſhillings, pence, &c. with this difference, that their ſhilling, or harper, is but equal to $11\frac{3}{40}$ *d.* ſterling; or a ſhilling Engliſh is equal to twenty-ſix halfpence: whence their pound is only 18*s.* 5*d.* $\frac{1}{2}$ of Engliſh money.

Coins, *French*.—The only gold *coin* now current in France is, the lewidore, or louis d'or; with the half, and the double louis. Till the year 1700, they had gold lys, and ecus, or crowns; but they are now no more.

The ſilver *coins* are, the greater ecu, or crown of ſix livres, the ecu of three livres, the piece of a livre four ſols, and pieces of twelve ſols, and of ſix.

The billon *coins* are of three kinds, each called *ſols*; ſome of twenty-four deniers, others of eighteen, and others of twelve; beſides the old half-ſol of nine deniers. To theſe may be added the deniers current in the Lionnois, Provence, Dauphiné, and other parts.

Laſtly, the copper *coin* is the liard, equal to three deniers; the double liard equal to ſix, and the ſou law of twelve deniers.

Value and proportion of the French Coins.

Denier, equal to 1/24 of a penny ſterling.

									l.	s.	d.
2	Double.										
3	1½	Liard.									
6	3	2	Dardene.								
12	6	4	2	Sol Paris, equal to					0	0	0½
240	120	80	40	20	Livre Tournois of acc.				0	0	10
720	360	240	120	60	3	Ecu of exch.			0	2	6
1440	720	480	240	120	6	2	Ecu,		0	5	0
2400	1200	800	400	200	10	3⅓	1⅔	A piſtole of acc.	0	8	4
5760	2880	1920	960	480	24	8	4	Louis d'or,	1	0	0

Beſides theſe, there are other *coins* of accompt in different provinces: as, the petard of 15 deniers; the piette of 15 petards, and alſo the piette of 15 ſols; the florin of 20 petards; the ducat current of 10½ livres; and the moeda of 30⅓ livres.

Coins, *Spaniſh*.—In Spain, and the ſtates depending thereon, the gold *coin* is the piſtole; above which is the double-piſtole, and the piece of four piſtoles; and under it the half-piſtole: to which muſt be added the caſtillans of gold. See Pistole.

The ſilver money are, the piaſtre, or piece of eight rials, and its diminutions; as alſo the ſimple rial, with its diminution. See Rial.

The copper *coins* are, the ochavos, or octavos; which are of three kinds: the one equal to two maravedis; the next equal to four maravedis, and ordinarily called quarta, or quartil; the other double this, and called double quarta: laſtly, the maravedis. See Maravedis.

It muſt be obſerved, that in Spain they have new money and old. The old, current in Seville, Cadiz, Andaluſia, and ſome other places, is worth 25 *per cent.* more than the new, current at Madrid, Bilboa, St. Sebaſtian, &c. i. e. 100*l.* old is equal to 125*l.* new. This difference is owing to their king Charles II. who, in 1668, to prevent the export of money abroad, raiſed it 25 *per cent.* which, however, he was only able to effect in part; ſeveral provinces ſtill retaining the ancient rate.

Value and proportion of the Spaniſh Coins.

Maravedis of Madrid, &c. new plate, equal to 43/272 of a penny Engliſh.

									l.	s.	d.
2	Quartil.										
34	17	Rial, equal to							0	0	5⅜
68	34	2	Piſtarine,						0	0	10¾
272	136	8	4	Piaſtre of exch.					0	3	7
340	170	10	5	1¼	Dollar,				0	4	6
375						Ducat of exch.			0	4	11½
1088	544	32	16	4			Piſtole of exch.		0	14	4
1224	612	36	18	4½				Piſtole,	0	16	9

Maravedis of Barcelona, &c. old plate, equal to 27/128 of a penny Engliſh.

					l.	s.	d.
16	Soldo, equal to				0	0	3⅜
32	2	Rial,			0	0	6¾
320	20	10	Libra of acc.		0	5	7½
256	16	8	⅘	Dollar of acc.	0	4	6
336	21	10½	1 1/20	Ducat of acc.	0	5	10⅞
352	22	11	1 1/10	Ducat of acc.	0	6	2¼
384	24	12	1⅖	Ducat of acc.	0	6	9
960	60	3	3	Piſtole,	0	16	9

N. B. At Gibraltar, Malaga, &c. the maravedis of account is equal to 23/272 of an Engliſh penny; two of theſe are equal to an ochavo, and four equal to a quartil: 34 maravedis = a rial velon of 2⅞*d.*: 15 rials = a piaſtre of exchange; and 512 maravedis = a piaſtre current: 60 rials = a piſtole of exchange, or 14*s.* 4*d.*; and 70 rials = a piſtole of 16*s.* 9*d.*

Coins, *Portugueſe*.—Thoſe of gold are, the milre, or St. Stephen; and the moeda d'oro, or, as we call it, the moidore, which is properly their piſtole: above this are doppio moedas, or double piſtoles; and quadruple ſpecies, equal to five piſtoles. See Moidore, Doubloon, &c.

Their ſilver *coins* are, the cruzada, pataca, or piece of eight; and the vintin, whereof they have two ſorts, the one ſilver, and the other billon.

The re is of copper, which ſerves them in accompts, as the maravedis do the Spaniards.

Re, or Rez, equal to 27/480 of a penny ſterling.

						l.	s.	d.
10	Half-vintin.							
20	Vintin,					0	0	1 7/20
100	5	Teſtoon,				0	0	6¾
400	20	4	Cruſade of exch.			0	2	3
480	24	4⅘	New Cruſade,			0	2	8⅖
1000	50	10	Milre of acc.			0	5	7½
4800	240	48	4⅘	Moeda,		1	7	0
25600	320	64	6⅖	1⅓	Joaneſe,	1	16	0

Coins, *Dutch*.—Thoſe of ſilver are, crowns, or dollars, ducatoons, florins, and ſhillings; each whereof has its diminution. The ſtiver, or common ſhilling, is of billon; the duyt, and penny, of copper.

Pening of account, equal to 21/320 Engliſh penny.

						l.	s.	d.
8	Grot of acc.							
16	2	Stiver,				0	0	1 1/20
96	12	6	Scalin, or ſhilling groſs,			0	0	6 3/10
320	40	20	3⅓	Guilder, or Florin,		0	1	9
800	100	50	8⅓	2 167/333 &c.	Rixdollar,	0	4	4¼
960	120	60	10	3⅓ &c.	Dry-guilder,	0	5	3
		105			Ducat,	0	9	3
1920	240	120	20	6	Pound Fleming of acc.	0	10	6

N. B. Theſe are the *coins* of currency and account in Holland and Zealand.

Coins, *Flemiſh*.—Thoſe of gold are imperials, rides, or philips, alberts, and crowns.

Thoſe of ſilver are philips, rixdollars, patagons, ſcalines, and guldens; and thoſe of copper, petards.

Pening of account, equal to 9/160 Engliſh penny.

							l.	s.	d.
4	Urche.								
8	2	Grot of account.							
16	4	2	Petard.						
96	24	12	6	Scalin of account,			0	0	5⅖
112	28	14	7	Scalin,			0	0	6 3/10
320	80	40	20	2 6/7	Florin of account,		0	1	6
1960	490	245	122½	17½	6 7/28 &c.	Ducat,	0	9	3
1920	480	240	120	17 1/7		Pound Fleming of ac.	0	9	0

N. B. Theſe are the *coins* of currency and account in Flanders and Brabant.

Note. The rixdollar, dollar, and patagon, are nearly on the ſame foot with the crown, or piece of eight.

Coins, *German*.—Thoſe of gold are ducats, which are of various kinds; oboli of the Rhine; and florins: of this laſt kind there are ſome, likewiſe, of ſilver; beſide rixdollars and izelottes, which are all of that metal.

Thoſe of copper are, the creux, or kreutzer, and fening.

Coins *of Hamburgh, Bremen, &c.*

Tryling of account, equal to 3/128 Engliſh penny.

				l.	s.	d.
2 trylings,	=	ſexling of account.				
2 ſexlings,		fenning.				
12 fennings,		ſhilling,		0	0	1⅛
16 ſhillings,		marc of account,		0	1	6
2 marcs,		flet-dollar,		0	3	0
3 marcs,		rix-dollar,		0	4	6
6¼ marcs,		ducat,		0	9	4½
120 ſhillings,		pound Flem. of ac.		0	11	3

Coins *of Hanover, Lunenburgh, &c.*

Fening of account, = 7/48 Engliſh penny.

		l.	s.	d.
3 fenings,	1 dreyer.			
8,	1 marien,	0	0	1⅙
12,	1 groſh,	0	0	1¾
8 groſhen,	1 half-gulden,	0	1	2
16,	1 gulden,	0	2	4
24,	1 rix-dollar of ac.	0	3	6
32,	1 double gulden,	0	4	8
4 guldens,	1 ducat,	0	9	2

Coins *of Saxony and Holſtein.*

Heller of account, = 7/96 Engliſh penny.

		l.	s.	d.
2 hellers,	1 fening.			
6,	1 dreyer.			
16,	1 marien,	0	0	1⅙
12 fenings,	1 groſh,	0	0	1¾
16 groſhen,	1 gould,	0	2	4
24,	1 rix-dollar of ac.	0	3	6
32,	1 ſpecie dollar,	0	4	8
4 goulds,	1 ducat,	0	9	4

Coins *of Brandenburgh and Pomerania.*

Denier of account,	=	$\frac{7}{270}$ Engliſh penny.			
9 deniers,		1 polchen.			
18,		groſh.			
3 polchens,		abraſs.	*l.*	*s.*	*d.*
20 groſhen,		marc of account,	0	0	$9\frac{1}{3}$
30,		florin,	0	1	2
90,		rix-dollar of acc.	0	3	6
108 groſhen,		albertus,	0	4	2
8 florins,		1 ducat,	0	9	4

Coins *of Cologn, Mentz, Triers, and Liege.*

Dute,	=	$\frac{7}{80}$ Engliſh penny.			
3 dutes,		a cruitzer.			
2 cruitzers,		an albus.			
8 dutes,		a ſtiver.	*l.*	*s.*	*d.*
3 ſtivers,		a plapert,	0	0	$2\frac{1}{10}$
4 plaperts,		a copſtuck,	0	0	$8\frac{2}{5}$
40 ſtivers,		a guilder,	0	2	4
2 guilders,		a hard dollar,	0	4	8
4 guilders,		a ducat,	0	9	4

Coins *of Bohemia, Sileſia, and Hungary.*

Fening,	=	$\frac{7}{60}$ Engliſh penny.			
2 fenings,		a dreyer.			
3,		a groſh.			
4,		a cruitzer.			
2 cruitzers,		a white groſh.	*l.*	*s.*	*d.*
60,		a gould,	0	2	4
90,		a rix-dollar of acc.	0	3	6
2 goulds,		a hard dollar,	0	4	8
4,		a ducat,	0	9	4

Coins *of Auſtria and Swabia.*

Fening,	=	$\frac{7}{60}$ Engliſh penny.			
2,		a dreyer.			
4,		a cruitzer.	*l.*	*s.*	*d.*
14,		a groſh,	0	0	$1\frac{10}{30}$
4 cruitzers,		a batzen,	0	0	$1\frac{13}{15}$
15 batzen,		a gould,	0	2	4
90 cruitzers,		a rixdollar of acc.	0	3	6
30 batzen,		a ſpecie dollar,	0	4	8
60,		a ducat,	0	9	4

Coins *of Franconia.*

Fening,	=	$\frac{7}{60}$ Engliſh penny.			
4,		a cruitzer.	*l.*	*s.*	*d.*
3 cruitzers,		a keyſer groſh,	0	0	$1\frac{2}{5}$
4,		a batzen,	0	0	$1\frac{13}{15}$
15,		an ort gould,	0	0	7
60,		a gould,	0	2	4
90,		a rix-dollar of acc.	0	3	6
2 goulds,		a hard dollar,	0	4	8
240 cruitzers,		a ducat,	0	9	4

Coins, *Italian.*—In Italy, the ſeveral ſtates have ſeveral current moneys: though there are ſome common to them all; ſuch as the piſtole of gold, and the ducatoon and florin of ſilver; which, being of various weights, fineneſs, and value; ſee under the articles PISTOLE, DUCATOON, &c.

Coins *of Genoa and Corſica.*

Denari,	=	$\frac{43}{1280}$ Engliſh penny.			
12,		a ſoldi.	*l.*	*s.*	*d.*
4 ſoldi,		a chevalet,	0	0	$1\frac{18}{25}$
20,		a lire of account,	0	0	$8\frac{3}{5}$
30,		a teſtoon,	0	1	$0\frac{9}{10}$
5 lires,		a croiſade,	0	3	7
115 ſoldi,		a pezzo of exch.	0	4	2
6 teſtoons,		a genouine,	0	6	$2\frac{2}{5}$
20 lires,		a piſtole,	0	14	4

Coins *of Piedmont, Savoy, and Sardinia.*

Denari,	=	$\frac{1}{16}$ Engliſh penny.			
3,		a quatrini.			
12,		a ſoldi.	*l.*	*s.*	*d.*
12 ſoldi,		a florin of acc.	0	0	9
20,		a lire of acc.	0	1	3
6 florins,		a ſcudi,	0	4	6
7,		a ducatoon,	0	5	3
13 lires,		a piſtole,	0	16	3
16,		a louis d'or,	1	0	0

Coins *of Milan, Modena, Parma, &c.*

Denari,	=	$\frac{3}{32}$ Engliſh penny.			
3,		a quatrini.			
12,	=	a ſoldi.	*l.*	*s.*	*d.*
20 ſoldi,		a lire of acc.	0	0	$8\frac{11}{41}$
115,		a ſcudi cur.	0	4	$2\frac{1}{2}$
117,		a ſcudi of exch.	0	4	3
6 lires,		a philip,	0	4	$4\frac{1}{2}$
22,		a piſtole,	0	16	0
23,		a Spaniſh piſtole,	0	16	9

Coins *of Leghorn, Florence, &c.*

Denari,	=	$\frac{1}{144}$ Engliſh penny.			
4,		quatrini.			
12,		a ſoldi.			
5 quatrini,		a craca.	*l.*	*s.*	*d.*
8 cracas,		a quilo,	0	0	$5\frac{5}{9}$
20 ſoldi,		a lire of account,	0	0	$8\frac{1}{3}$
6 lires,		a piaſtre of exch.	0	4	2
$7\frac{1}{2}$,		a ducat,	0	5	$2\frac{1}{2}$
22,		a piſtole,	0	15	6

Coins *of Rome, &c.*

Quatrini,	=	$\frac{1}{20}$ Engliſh penny.			
5,		a bayoc.	*l.*	*s.*	*d.*
8 bayocs,		a julio,	0	0	6
10,		a ſtampt julio,	0	0	$7\frac{1}{2}$
24,		a teſtoon,	0	1	6
10 julios,		a crown current,	0	5	0
12,		a crown ſtampt of account,	0	6	0
18,		a chequin,	0	9	0
31,		a piſtole,	0	15	6

Coins *of Naples, &c.*

Quatrini,	=	$\frac{2}{15}$ Engliſh penny.			
3,		a grain.	*l.*	*s.*	*d.*
10 grains,		a carlin,	0	0	4
40 quatrini,		a paulo,	0	0	$5\frac{1}{3}$
20 grains,		a tarin,	0	0	8
40,		a teſtoon,	0	1	4
100,		a ducat of exch.	0	3	4
23 tarins,		a piſtole,	0	15	4
25,		a Spaniſh piſtole,	0	16	9

Coins *of Sicily and Malta.*

Pichili,	=	$\frac{1}{39}$ Engliſh penny.			
6,		a grain.			
8,		a ponti.	*l.*	*s.*	*d.*
10 grains,		a carlin,	0	0	$1\frac{7}{13}$
20,		a tarin,	0	0	$3\frac{1}{13}$
6 tarins,		a florin of exch.	0	1	$6\frac{6}{13}$
13,		a ducat of exch.	0	3	4
60 carlins,		an ounce,	0	7	$8\frac{4}{13}$
2 ounces,		a piſtole,	0	15	4

Coins *of Bologna, &c.*

Quatrini,	=	$\frac{1}{10}$ Engliſh penny.			
6,		a bayoc.	*l.*	*s.*	*d.*
10 bayocs,		a julio,	0	0	6
20,		a lire of account,	0	1	0
3 julios,		a teſtoon,	0	1	6
85 bayocs,		a ſcudi of exch.	0	4	3
105,		a ducatoon,	0	5	3
100,		a crown,	0	5	0
31 julios,		a piſtole,	0	15	6

Coins *of Venice.*

Picoli,	=	$\frac{1}{36}$ Engliſh penny.			
12,		a ſoldi.	*l.*	*s.*	*d.*
$6\frac{1}{2}$ ſoldi,		a gros of account,	0	0	$2\frac{1}{6}$
18,		a jule,	0	0	6
20,		a lire of account,	0	0	$6\frac{2}{3}$
3 jules,		a teſtoon,	0	1	6
124 ſoldi,		a ducat cur.	0	3	$5\frac{1}{3}$
24 gros,		a ducat of exch.	0	4	4
17 lires,		a chequin,	0	9	2

Coins *of Switzerland, Baſil, &c.*

Rap,	=	$\frac{1}{24}$ Engliſh penny.			
3,		a fening.	*l.*	*s.*	*d.*
4 fenings,		a cruitzer,	0	0	$0\frac{1}{2}$
12,		a ſol of account,	0	0	$1\frac{1}{2}$
15,		a coarſe batzen,	0	0	$1\frac{7}{8}$
18,		a good batzen,	0	0	$2\frac{1}{4}$
20 ſols,		a livre of acc.	0	2	6
60 cruitzers,		a gulden,	0	2	6
108,		a rix-dollar,	0	4	6

Coins *of St. Gall.*

Heller,	=	$\frac{1}{16}$ Engliſh penny.			
2,		a fening.			

4 fenings,

		l.	s.	d.
4 fenings,	= a cruitzer.			
12,	a ſol of account,	0	0	$1\frac{1}{2}$
4 cruitzers,	a coarſe batzen,	0	0	2
5,	a good batzen,	0	0	$2\frac{1}{2}$
20 ſols,	a livre of acc.	0	2	6
60 cruitzers,	a gould,	0	2	6
102,	a rix-dollar,	0	4	3

Coins *of Bern*, viz. of *Lucern*, *&c.*

		l.	s.	d.
Denier,	= $\frac{1}{10}$ Engliſh penny.			
4,	a cruitzer.			
3 cruitzers,	a ſol of acc.	0	0	$1\frac{1}{5}$
4,	a plapert,	0	0	$1\frac{3}{5}$
5,	a gros,	0	0	2
6,	a batzen,	0	0	$2\frac{2}{5}$
20 ſols,	a livre of acc.	0	2	0
75 cruitzers,	a gulden,	0	2	6
135,	a crown,	0	4	6

Coins *of Geneva.*

		l.	s.	d.
Denier,	= $\frac{1}{32}$ Engliſh penny.			
2,	a denier current.			
12,	a ſmall ſol.			
12 deniers current,	a ſol current.			
12 ſmall ſols,	a florin of acc.	0	0	$4\frac{1}{2}$
20 ſols current,	a livre cur. of acc.	0	1	3
$10\frac{1}{2}$ florins,	a patacon,	0	3	$11\frac{1}{4}$
$15\frac{3}{4}$ florins,	a croiſade,	0	5	$10\frac{7}{8}$
24 florins,	a ducat,	0	9	0

Coins, *Poliſh and Pruſſian.*

		l.	s.	d.
Shelon,	= $\frac{7}{45}$ Engliſh penny.			
3,	a groſh			
5 groſh,	a couſtic,	0	0	$2\frac{1}{3}$
3 couſtics,	a tinſe,	0	0	7
18 groſh,	an ort,	0	0	$8\frac{2}{5}$
30,	a florin,	0	1	2
90,	a rix-dollar of acc.	0	3	6
8 florins,	a ducat,	0	9	4
5 rix-dollars,	a frederic d'or,	0	17	6

Coins *of Livonia.*

		l.	s.	d.
Blacken,	= $\frac{7}{90}$ Engliſh penny.			
6,	a groſh.			
9,	a vording.			
2 groſh,	a whiten.			
6,	a marc,	0	0	$2\frac{4}{5}$
30,	a florin,	0	1	2
90,	a rix-dollar of acc.	0	3	6
108,	an albertus,	0	4	$2\frac{6}{15}$
64 whitens,	a copper-plate dol.	0	5	0

Coins *of Denmark, Zealand, and Norway.*

		l.	s.	d.
Schilling,	= $\frac{9}{16}$ Engliſh penny.			
6,	a duggen,	0	0	$3\frac{3}{8}$
16,	a marc of acc.	0	0	9
20,	a rix-marc,	0	0	$11\frac{1}{4}$
24,	a rix-ort,	0	1	$1\frac{1}{2}$
4 marcs,	a crown,	0	3	0
6,	a rix-dollar,	0	4	6
11,	a ducat,	0	8	3
14,	a hatt ducat,	0	10	6

Coins *of Sweden and Lapland.*

		l.	s.	d.
Runſtick of account,	= $\frac{7}{36}$ Engliſh penny.			
2,	a ſtiver.			
8,	a copper marc,	0	0	$1\frac{5}{9}$
3 copper marcs,	a ſilver marc,	0	0	$4\frac{2}{3}$
4,	a copper dollar,	0	0	$6\frac{2}{9}$
9,	a caroline,	0	1	2
3 copper dollars,	a ſilver dollar,	0	1	$6\frac{2}{3}$
3 ſilver dollars,	a rix-dollar,	0	4	8
2 rix-dollars,	a ducat,	0	9	4

The Swediſh money, properly ſo called, is a kind of copper, very ſoft and malleable, cut in little ſquare pieces, or plates, about the thickneſs of three Engliſh crowns, and weighing five pounds and an half; ſtamped at the four corners with the Swediſh arms; and current in Sweden for a rix-dollar, or piece of eight.

Coins *of Ruſſia and Muſcovy.*

		l.	s.	d.
Poluſca,	= $\frac{27}{200}$ Engliſh penny.			
2,	a denuſca.			
2 denuſcas,	a copec of acc.			
3 copecs,	an altin,	0	0	$1\frac{31}{50}$
10,	a grievener,	0	0	$5\frac{2}{5}$
25,	a polpotin,	0	1	$1\frac{1}{2}$
50,	a poltin,	0	2	3
100,	a ruble,	0	4	6
2 rubles,	a xervonitz,	0	9	0

Coins *of Turky*, viz. of *Morea, Candia, Cyprus, &c.*

		l.	s.	d.
Mangar,	= $\frac{3}{20}$ Engliſh penny.			
4 mangars,	an aſper of acc.			
3 aſpers,	a parac,	0	0	$1\frac{4}{5}$
5,	a beſtic,	0	0	3
10,	an oſtic,	0	0	6
20,	a ſolota,	0	1	0
80,	a piaſtre of acc.	0	4	0
100,	a caragrouch,	0	5	0
10 ſolotas,	a xeriff,	0	10	0

Coins *of the coaſts of Barbary*, viz. of *Algiers, Tunis, &c.*

		l.	s.	d.
Aſper,	= $\frac{5}{9}$ Engliſh penny.			
3,	a medin,	0	0	$1\frac{2}{3}$
10,	a rial old plate,	0	0	$6\frac{2}{3}$
2 rials,	a double,	0	1	$1\frac{1}{2}$
4 doubles,	a dollar,	0	4	6
24 medins,	a ſilver chequin,	0	3	4
30,	a dollar,	0	4	6
180 aſpers,	a zequin,	0	8	10
15 doubles,	a piſtole,	0	16	9

Other *coins* of Africa are thoſe of Egypt and Morocco.

Coins *of Egypt, &c.*

		l.	s.	d.
Aſper,	= $\frac{5}{9}$ Engliſh penny.			
3,	a medin.	0	0	$1\frac{2}{3}$
24 medins,	an Italian ducat,	0	3	4
80 aſpers,	a piaſtre of acc.	0	4	0
30 medins,	a dollar,	0	4	6
96 aſpers,	an ecu,	0	5	0
32 medins,	a crown,	0	5	0
200 aſpers,	a ſultanin.	0	10	0
70 medins,	a pargo dollar,	0	10	6

Coins *of Morocco, &c.*

		l.	s.	d.
Fluce,	= $\frac{1}{12}$ Engliſh penny.			
24,	a blanquil,	0	0	2
4 blanquils,	an ounce,	0	0	8
7,	an octavo,	0	1	2
14,	a quarto,	0	2	4
2 quartos,	a medio,	0	4	8
28 blanquils,	a dollar,	0	4	6
54,	a xequin,	0	9	0
100,	a piſtole,	0	16	9

Coins, *Perſian.*—Theſe are either ſilver, or copper; gold they have none. Of the firſt kind are, the abaſſi, mamoudi, ſhahee, and biſti; of the ſecond. the kabeſqui, and half-kabeſqui: the tela, or cheraſis, indeed, is gold; but it is leſs a money than a medal, though it has ſome courſe in commerce.

		l.	s.	d.
Coz,	= $\frac{2}{5}$ Engliſh penny.			
4,	a biſti,	0	0	$1\frac{3}{5}$
10,	ſhahee,	0	0	4
20,	mamooda,	0	0	8
25,	larin,	0	0	10
4 ſhahees,	an abaſhee,	0	1	4
5 abaſhees,	an or,	0	6	8
12,	a bovello,	0	16	0
50,	a tomond or TOMAN of acc.	3	6	8

Some relations make the biſti a *coin* worth about one penny half-penny; but others only a term of accompt, ſignifying ten demars, or one thouſandth part of a toman. See Toman.

Caſbequi, or cabeſqui, equals five twelfths of a penny ſterling. Tela, or cheraſis, is uſually ſtruck at the acceſſion of a new king, and at the beginning of a new year; its weight and worth various.

Coins, *Chineſe.*—Throughout the kingdom of China and Tonquin, there are not properly any *coins* ſtruck: inſtead of theſe, they cut their gold and ſilver into little pieces of different weights. Thoſe of gold, the Dutch, from their figure, which reſembles a boat. call *golchuts*: thoſe of ſilver, the natives call *leam*; the Portugueſe, *taels*. Their ſmall money is of copper: ten of theſe pieces make their ſhilling; and ten of thoſe their crown, or leam. Beſide theſe, they have a ſmall money of lead, mixed with the ſcum of copper, having holes in the middle to ſtring them on for the eaſe of numbering: this ſpecies is called caxa, cas, and pitis; and the ſtring, which uſually holds two hundred, is called ſanta. They are ſo very brittle, that they never fall without breaking into a great number of pieces; and, if left all night in ſalt water, they ſtick ſo cloſe together, that they cannot be ſeparated.

There are two kinds of golchuts; great, and ſmall. Golchut, an ingot, which, at 3 *l.* 3 *s.* per ounce, uſually amount to 101 *l.* 5 *s.* ſterling. Other golchuts only weigh half as much; their value is in proportion.

		l.	s.	d.
A caxa,	= $\frac{2}{25}$ Engliſh penny.			
10,	a candereen.			
10 candereens,	a mace,	0	0	8
35,	a rupee,	0	2	6
2 rupees,	a dollar,	0	4	6
70 candereens,	a rix-dollar,	0	4	$4\frac{1}{2}$
7 maces,	an ecu,	0	5	0
2 rupees,	a crown,	0	5	0
10 maces,	a tael of acc.	0	6	8

Coins *of Japan.*—The Japoneſe, ſtrike coupants, both of gold and ſilver; and copper pieces with holes in the middle, like thoſe of China : ſix hundred of theſe make the tael, or tale. Their other moneys, or quaſi-moneys, are, ignots, which they cut, like the Chineſe, of different weights, chiefly three; the largeſt of the weight of ſix rials, viz. forty-eight taels, the tael equivalent to ſeventy-five Dutch ſtivers. The ſecond equal to ſix taels and an half; and the third to $\frac{5}{8}$ of a rial, or one tael $\frac{1}{16}$.

Beſide theſe, they have a ſmall ſilver money, in form of round beans, of no determinate weight, but uſually weighed by maiſes; the common payment being by ten maiſes, which make one tael.

(Sterling.)	l.	s.	d.
Coupant of gold, weighing one ounce ſix drachms; its figure is a long oval, the longeſt diameter about four inches, and the ſhorteſt half an inch.	6	12	6
Other coupants of gold, near $\frac{1}{3}$ of the former, amounting to about	2	4	2
Coupant of ſilver, current at -	0	4	6

Other *coins* are as follow :

		l.	s.	d.
Piti,	= $\frac{1}{5}$ Eng. penny.			
20,	a mace,	0	0	4
15 maces,	an ounce ſilver,	0	4	$10\frac{1}{3}$
20 maces,	a tale,	0	6	8
30 maces,	an ingot,	0	9	$8\frac{2}{3}$
13 ounces ſilver,	an ounce gold,	3	3	0
2 ounces gold,	a Japaneſe,	6	6	0
2 Japaneſes,	a double,	12	12	0
21 ounces gold,	a cattee of account,	66	3	0

Coins *of Siam,* viz. of *Pegu, Malacca, Sumatra, Java, Borneo, &c.* In the dominions of Siam are ſtruck gold pieces five or ſix grains heavier than the half piſtole of Spain; but theſe are rather pieces of curioſity, than of uſe in commerce. Their ſilver *coin* is the tical, or baat; the diminutions whereof are the mayon, or ſeling, foang, and ſompayc. Theſe pieces are all ſtrangely ſtruck: in form they reſemble nuts, a little flatted at the extremities; and are ſome of them cloven like horſe-ſhoes; on two of the ſides there are ſome Siameſe letters. Their copper money, called bia, is round and thick: beneath this is the cauris, or cork.

		l.	s.	d.
Cori,	= $\frac{3}{40000}$ Eng. penny.			
800,	a fettee,			
125 fettees,	a ſataleer,	0	0	$7\frac{1}{2}$
250,	a ſooco,	0	1	3
500,	a tutal,	0	2	6
900,	a dollar,	0	4	6
2 ticals,	a rial,	0	5	0
4 ſoocos,	an ecu,	0	5	0
8 ſateleers,	a crown,	0	5	0

Coins *of the coaſts and iſlands of the Indies.*—The principal, and thoſe moſt generally current, are pagodas, rupees, larins, fanos, or fanons, and coupans, each whereof are ſtruck both of gold and ſilver.

Beſide theſe general *coins*, there are alſo particular ones, viz. at Goa, S. Thomas's of gold.—Along the Perſian Gulf, about Mecca, and throughout Arabia, the larin; along the coaſts of Malabar, and at Goa, the parado and xeraphin of ſilver.—At Bantam, the fardos; at Malabar, the tare; at Siam the tayl, with its diminutions the mayam, foang, ſompayc, and demi-foang: all of ſilver.—At Surat, Agra, and the reſt of Indoſtan, the pecha, or peſſa, and doudous, all of copper.—The baſarucos and chedas, of tin. See laſt and following articles.

Coins, *Mogul.*—In the dominions of the Great Mogul, are roupies, mamoudas, and pechas; the firſt both of gold and ſilver; the ſecond of ſilver alone; and the third of copper.

There are others ſtruck by the princes tributary to him, and the powers bordering on him; but theſe are ſcarce current beyond their reſpective territories: particularly a ſmall ſilver *coin* ſtruck by the king of Matoucha, whoſe territories lie to the north of Agra, of the value of the pecha of Mogul, but half as heavy again.—The rajah of Parta-jajamoula, to the north of Patua, likewiſe ſtrikes ſome little pieces, both of ſilver and copper, of ſmall value.—The rajah of Ogden, who commands between Brampour, Seronge, and Amadabath, a ſmall ſilver *coin*, equal to ſix pence ſterling; and another of copper, equal to an halfpenny ſterling.—The king of Cheda and Pera, a tin money called cheda.—The king of Achem, little ſlight gold pieces, worth about fifteen pence ſterling.—And tin pieces, eighty of which are equal to the Engliſh penny, current in the iſles of Sumatra.—The gold *coin* of the king of Macaſſer and Celebes, is taken by the Dutch for a florin.—The king of Camboyas ſtrikes only pieces of ſilver and copper: his gold, wherein he abounds, is negotiated by weight.—The king of Java and Bantam, in the ſame iſland, and thoſe of the Molucca iſlands, ſtrike only copper *coins*: they allow foreign ſilver ſpecies to be current in their territories, but they coin none.

Coins *of Gazzurat, &c.*

		l.	s.	d.
Pecka, or pecha,	= $\frac{15}{64}$ Eng. penny.			
2,	a pice,			
4 pices,	a fanam, or tanos	0	0	$1\frac{7}{8}$
5,	a viz,	0	0	$2\frac{11}{32}$
16,	an ana,	0	0	$7\frac{1}{2}$
4 anas,	a rupee,	0	2	6
2 rupees,	an Engliſh crown,	0	5	0
14 anas,	a pagoda, denominated from its impreſſion, the Indian idol,	0	8	9
4 pagodas,	a gold rupee,	1	15	0

Coins *of Malabar,* &c. are thoſe of *Bombay,* &c. and of *Goa,* &c.

Coins *of Bombay,* are the

		l.	s.	d.
Budgrook, or baſaruco,	= $\frac{27}{800}$ Eng. penny.			
2,	a re of account,			
5 rez,	a pice,			
16 pices,	a laree,	0	0	$5\frac{2}{5}$
20 pices,	a quarter,	0	0	$6\frac{3}{4}$
240 rez,	a xeraphim,	0	1	$4\frac{1}{2}$
4 quarters,	a rupee,	0	2	3
14 quarters,	a pagoda,	0	8	0
60 quarters,	a gold rupee,	1	15	0

Coins *of Goa, &c.* are

		l.	s.	d.
A re of account,	= $\frac{27}{400}$ Eng. penny.			
2 rez,	a bazſaraco,			
2 bazſaracos,	a pecka,			
20 rez,	a vintin,	0	0	$1\frac{7}{20}$
4 vintins,	a laree,	0	0	$5\frac{2}{5}$
3 larees,	a xeraphim,	0	1	$4\frac{1}{5}$
42 vintins,	a tangu,	0	4	6
4 tangus,	a paru,	0	18	0
8 tangus,	a gold rupee,	1	15	0

Coins *of Coromandel, &c.*

		l.	s.	d.
A caſh,	= $\frac{3}{80}$ Eng. penny.			
5 caſh,	a viz,			
2 viz,	a pice,			
6 pices,	a pical,	0	0	$2\frac{1}{4}$
8 pices,	a fanam,	0	0	3
10 fanams,	a rupee,	0	2	6
2 rupees,	an Engliſh crown,	0	5	0
36 fanams,	a pagoda,	0	8	9
4 pagodas,	a gold rupee,	1	15	0

Coins *of Bengal, &c.*

		l.	s.	d.
A pice,	= $\frac{5}{32}$ Eng. penny.			
4 pices,	a fanam,			
6,	a viz,			
12,	an ana,	0	0	$1\frac{7}{8}$
10 anas,	a fiano,	0	1	$6\frac{3}{4}$
16,	a rupee,	0	2	6
2 rupees,	a French ecu,	0	5	0
2,	an Engliſh crown,	0	5	0
56 anas,	a pagoda,	0	8	9

Coins *of Arabia.*

		l.	s.	d.
Carret,	= $\frac{1}{8}$ Eng. penny.			
5¼ carrets,	a caveer,			
7,	a comaſhee,			
80,	a larin,	0	0	$10\frac{1}{5}$
18 comaſhee,	an abyſs,	0	1	$4\frac{1}{5}$
60,	a piaſtre of account,	0	4	$6\frac{1}{5}$
80 caveers,	a dollar,	0	4	6
100 comaſhees,	a ſequin,	0	7	6
80 larins,	a tomond of account,	3	7	6

Coins *of the Weſt Indies*, comprehend thoſe of the Engliſh, French, &c. iſlands.

Coins *of the Engliſh iſlands, as Jamaica, Barbadoes, &c.*

A halfpenny of account, = $\frac{57}{160}$ Eng. penny.

		l.	s.	d.
2 halfpence,	a penny of acc.			
$7\frac{1}{2}$ pence,	a bit,	0	0	$5\frac{3}{8}$
12,	a ſhilling of ac.	0	0	$8\frac{11}{20}$
75,	a dollar,	0	4	6
7 ſhillings,	a crown,	0	5	0
20,	a pound of ac.	0	14	3
24,	a piſtole,	0	16	9
30,	a guinea,	1	1	0

Coins *of the French iſlands, as St. Domingo, Martinico, &c.*

Half ſol of account, = $\frac{117}{640}$ Eng. penny.

		l.	s.	d.
2	a ſol of account,			
$7\frac{1}{2}$ ſols,	a half ſcalin,	0	0	$2\frac{11}{16}$
15,	a ſcalin,	0	0	$5\frac{3}{8}$
20,	a livre of account,	0	0	$7\frac{5}{16}$
7 livres,	a dollar,	0	4	6
8,	an ecu,	0	4	$10\frac{1}{2}$
26,	a piſtole,	0	16	9
32,	a louis d'or,	1	0	0

For all the Spaniſh, Portugueſe, Dutch and Daniſh dominions in the Weſt Indies, or on the American continent, ſee the *coins* of the reſpective nations: but it muſt be obſerved, that the value of the CURRENCY alters according to the plenty or ſcarcity of *coins* imported. See Univerſal Table of *Coins*, annexed to Guthrie's Geography.

To the number of current *coins* which have diſtinct names to ſpecify them, may be added many more, both in Europe and Aſia, only denominated and known from their value: ſuch are thoſe called ſimply *pieces*, with the addition of their price; as in Spain, the piece of eight rials; in England, the piece of twenty-one ſhillings, or guinea; in France, the piece of four francs; pieces of ten ſols, or ſhillings; piece of four ſols; piece of two ſols; or of ſix franks, of 30, 15, 6, 4, &c. deniers, or pence. See PIECE.

Coins, *Shells current for.*—Theſe ſerve in many places for money; and are brought from the Maldives, and called in the Indies *cowries:* on the coaſts of Africa they change their names, and are called *bouges*.

In America they take a third name, viz. *porcelains.* Indeed theſe laſt do not come from the Maldives; there being ſhells found in the Weſt Indies much like thoſe of the Eaſt.

In the kingdom of Congo there is another kind of ſhells, called *zimbi*; though ſome will have them the ſame with the cowries. Cowries, coris, or bouges, are white ſhells, current particularly in the ſtates of the Great Mogul; ſixty-five are uſually reckoned equivalent to the done, a ſmall copper *coin*, worth about an halfpenny ſterling; which brings each cowry to $\frac{1}{130}$ of a penny ſterling.

Porcelains are nearly on the ſame footing with the cowries. See PORCELAIN.

Zimbi are current, particularly in the kingdoms of Angola and Congo. Two thouſand zimbis make what the negroes call a *maciute*, or *macoute*; which is no real money, whereof there is none in this part of Africa, but only a manner of reckoning: thus, two Flemiſh knives they eſteem a macoute; a copper baſon, two pounds weight, and twelve inches diameter, three macoutes; a fuſee ten, &c.

Coins, *Fruits current for.*—There are kinds of fruits current for *coins*; two in America, particularly among the Mexicans; which are the cacao and maiſe: the other in the Eaſt Indies, viz. almonds; brought thither from Lar, and growing in the deſarts of Arabia.

Cacao, fifteen of theſe are eſteemed equivalent to a Spaniſh rial, or ſeven pence ſterling. See CACAO.

Maiſe has ceaſed to be a common money ſince the diſcovery of America by the Europeans.

Almonds are chiefly uſed where the cauris are not current. As the year proves more or leſs favourable to this fruit, the value of the money is higher or lower: in a common year, forty almonds are ſet againſt a peſcha, or halfpenny ſterling; which brings each almond to $\frac{1}{20}$ of a farthing.

Coins, *Ancient*, are thoſe chiefly which have been current among the Greeks, Jews, and Romans.

For Jewiſh COINS, *their Values and Proportion ſtand thus:*

				(Sterling.)	l.	s.	d.
Gerah,					0	0	$1\frac{59}{160}$
10	Bekah,				0	1	$1\frac{11}{16}$
20	2	Shekel,			0	2	$3\frac{3}{8}$
1200	120	50	Maneh, Mina Hebraica,		5	14	$0\frac{3}{4}$
60000	6000	3000	60	Talent,	342	3	9
Solidus aureus, or ſextula, worth,					0	12	$0\frac{1}{2}$
Siclus aureus, worth,					1	16	6
A talent of gold, worth,					5475	0	0

Value and Proportion of the ancient Grecian COINS.

										(Sterling.)	s.	d.	qrs.
Lepton,											0	0	$0\frac{31}{336}$
7	Chalcus,										0	0	$0\frac{31}{48}$
14	2	Dichalcus,									0	0	$1\frac{7}{24}$
28	4	2	Hemiobolum,								0	0	$2\frac{7}{12}$
56	8	4	2	Obolus,							0	1	$1\frac{1}{6}$
112	16	8	4	2	Diobolum,						0	2	$2\frac{1}{3}$
224	32	16	8	4	2	Tetrobolum,					0	5	$0\frac{2}{3}$
336	48	24	12	6	3	$1\frac{1}{2}$	Drachma,				0	7	3
662	96	48	24	12	6	3	2	Didrachmon,			1	3	2
1324	112	96	48	24	12	6	4	2	Tetradrach. ſtater,		2	7	0
1660	384	120	60	30	15	$7\frac{1}{2}$	5	$2\frac{1}{2}$	$1\frac{1}{4}$	Pentadrach.	3	2	3

Note, Of theſe the drachma, didrachma, &c. were of ſilver, the reſt for the moſt part of braſs. The other parts, as tridrachm, triobolus, &c. were ſometimes coined.

Note alſo, the drachma is here, with the generality of authors, ſuppoſed equal to the denarius: though there is reaſon to believe, the drachma was ſomewhat the weightier. See DRACHMA, and DENARIUS.

(Sterling.)	l	s.	d.
The Grecian gold *coin* was the ſtater aureus, weighing two Attic drachms, or half of the ſtater argenteus; and exchanging uſually for 25 Attic drachms of ſilver; in our money,	0	16	$1\frac{3}{4}$
According to our proportion of gold to ſilver,	1	0	9
There were likewiſe the ſtater Cyzicenus, exchanging for 28 Attic drachms, or	0	18	1
Stater Philippicus, and ſtater Alexandrinus, of the ſame value.			
Stater Daricus, according to Joſephus, worth 50 Attic drachms, or	1	12	$3\frac{1}{2}$
Stater Crœſius, of the ſame value.			

Value and Proportion of the Roman COINS.

					(Sterling.)	s.	d.	qrs.
Teruncius,						0	0	$0\frac{775}{1000}$
2	Sembella,					0	0	$1\frac{55}{100}$
4	2	Libella, As,				0	0	$3\frac{1}{10}$
10	5	$2\frac{1}{2}$	Seſtertius,			0	1	$3\frac{3}{4}$
20	10	5	2	Quinarius, Victoriatus,		0	3	$3\frac{1}{2}$
40	20	10	4	2	Denarius,	0	7	3

Note, Of theſe the denarius, victoriatus, ſeſtertius, and ſometimes the as, were of ſilver, the reſt of braſs.

There were ſometimes alſo coined of braſs the triens, ſextans, uncia, ſextula, and dupondius.

(Sterling.)	l.	s.	d.
The Roman gold *coin* was the aureus, which weighed generally double the denarius; the value of which, according to the firſt proportion of coinage, mentioned by Pliny, was,	1	4	$3\frac{1}{4}$
According to the proportion that obtains now amongſt us, worth,	1	0	9
According to the decuple proportion, mentioned by Livy and Julius Pollux, worth,	0	12	11
According to the proportion mentioned by Tacitus, and which afterwards obtained, whereby the aureus exchanged for 25 denarii, its value,	0	16	$1\frac{1}{4}$

Theſe tables are formed on the ſuppoſition that ſilver is worth five ſhillings, and gold four pounds an ounce.

See Arbuthnot's Tables of Ancient Coins. See alſo on this ſubject an excellent paper by M. Raper, Eſq. intitled an Enquiry into the Value of the Ancient Greek and Roman Money, in the Phil. Tranſ. vol. lxi. part ii. art. 48. p. 462. See DENARIUS and DRACHM.

COIN, in *Architecture*, a kind of dye, cut diagonal-wiſe, after the manner of the flight of a ſtaircaſe; ſerving at bottom to ſupport columns in a level; and at top to correct the inclination of an entablature, ſupporting a vault.

Theſe *coins* have alſo the ſame effect with round baluſters, which are not inclined according to any flight.

COIN is alſo uſed for a ſolid angle, compoſed of two ſurfaces inclined towards each other; whether that angle be exterior, as the *coin* of a wall, a tree, &c. or interior, as the *coin* of a chamber, or chimney: from the word *cuneus*, wedge. See QUOIN.

COIN, or **QUOIN**, in *Artillery*, a wedge of wood, ſerving to raiſe, or lower, the breech of a gun.

COINS, on board a man of war. See QUOINS.

COIN-*moulds*. See MOULDS.

Canting **COINS**, on board a ſhip, little ſhort pieces of wood, or billets, cut wedge-like, to lie betwixt the caſks.

Standing **COINS**, on board a ſhip, billets, or pipe-ſtaves, to keep the caſks from ſtirring, or giving way.

Standing-coins are made of barrel boards, about four inches broad, and of a fit length to be driven in between the ends of a caſk, about two or three hoops from the chine hoops, to keep the buts from jogging.

COINAGE, or **COINING**, the art, or act of making money.

Coining, is either performed by the hammer or the mill. The firſt method is now little uſed in Europe, eſpecially in England, France, &c. though the only one known till the year 1553, when a new machine, or *coining* mill, invented by an engraver, one Antoine Brucher, was firſt tried in the French king's palace at Paris, for the *coining* of counters: though ſome attribute the invention of the mill to Varin, a famous engraver, who, in reality, was no more than an improver of it; and others to Aubry Olivier, who had only the inſpection of it.

The mill has met with various fate ſince its firſt invention; being now uſed, and again laid by, and the hammer reſumed: but it has at length got that footing, by the neatneſs and perfection of the ſpecies ſtruck with it, that there appears no great probability of its ever being again diſuſed. See MILL.

In either kind of *coining*, the pieces of metal are ſtamped, or ſtruck with a kind of punchions or dyes, wherein are engraven the prince's effigies, with the arms, legend, &c. The manner of preparing and cutting of which, ſee under ENGRAVING.

The firſt operations in *coining* are the mixing, and melting of the metal. For the firſt, it is to be obſerved, that there are no ſpecies coined of pure gold or ſilver, but always a quantity of ALLOY of copper is mixed with them, or a mixture of ſilver and copper, for gold; becauſe ſilver alone would make the gold too pale, and copper too red: the reaſons are partly the ſcarcity of thoſe two metals, partly the neceſſity of making them harder by ſome foreign admixture; and partly to defray the expences of *coining*.

Now there are two kinds of alloying or mixing. The proportioning of the alloy with the fine metal is eaſy in the firſt caſe; in the other it is more difficult. See ALLOY. Yet it is readily effected by the following method, taken from the anonymous author of the treatiſe at the end of that of Mr. Boiſard; viz.

Write down the ſeveral materials to be melted, their quality, weight, and fineneſs, in two diſtinct articles; the one containing thoſe above the ſtandard, the other thoſe under it: by caſting up the firſt, you ſhall have the exceſs; by the latter, the defect. Then comparing the two ſums, you will find, by ſubtraction, how much alloy muſt be added to bring the ſeveral matters to the fineneſs required.

For the melting, if the metal be gold, it is done in earthen crucibles; if ſilver, or copper, in pots or crucibles of iron.

There are two kinds of furnaces proper for the melting of the metals; thoſe with only a draught of wind, and thoſe with bellows. See each explained under FURNACE.

When the gold and ſilver are in balneo, i. e. are entirely melted, they are to be ſtirred and brewed together; the ſilver and copper with an iron ſtirrer, the gold with one of baked earth. In this ſtate they are poured into moulds or frames, for caſting them into long flat bars: the method of doing which, is exactly the ſame with that uſed by the founders, in ſand; both with regard to the frame, the manner of working the earth, and that of ranging the models or patterns.

The models are flat plates of copper, about fifteen inches long, and nearly of the thickneſs of the ſpecies to be ſtruck. In each mould are placed eight of theſe to make bars or plates, ten for half guineas, five for crowns, &c. and in proportion for copper; all the difference between caſting the bars of gold, and thoſe of the other metals, conſiſting in this; that the latter are taken out of the crucibles with ladles, and poured into the aperture of the mould; and that for gold, the pot or crucible is taken off the fire with a kind of tongs, and thence poured into the mould.

Thus far the proceſs is the ſame, in *coining* either with the mill, or the hammer: when the bars are taken out of the moulds, the difference commences; ſo that here the article of *coining* divides into two branches.

COINING *by the Mill, or milled Money.*—The bars or plates being taken out of the moulds, and ſcraped, and bruſhed, are paſſed ſeveral times through a mill, to flatten them further, and bring them to the juſt thickneſs of the ſpecies to be coined; with this difference, however, that the plates of gold are heated again in a furnace, and quenched in water, before they undergo the mill; which ſoftens and renders them more ductile: whereas thoſe of ſilver paſs the mill juſt as they are, without any heating; and when afterwards they are heated, they are left to cool again of themſelves, without water.

The plates, whether gold, ſilver, or copper, thus reduced as near as poſſible to their thickneſs, are cut into round pieces, called *blanks* or *planchets*, near the ſize of the intended ſpecies, with a cutting inſtrument faſtened to the lower extremity of an arbor, whoſe upper end is formed into a ſcrew; which, being turned by an iron handle, turns the arbor, and lets the ſteel, well ſharpened, in form of a punch-cutter, fall on the plates; and thus is a piece punched out. See the cutting inſtrument repreſented in *Tab. Miſcellany*, *fig.* 1.

Theſe pieces are now given to be adjuſted, and brought by filing, or raſping, to the weight of the ſtandard, whereby they are to be regulated: and what remains of the plate between the circles is melted again, under the denomination of *ſizel*.

The pieces are adjuſted in a fine balance; and thoſe which prove too light, are ſeparated from thoſe too heavy; the firſt to be melted again, and the ſecond to be filed down. For it may be obſerved, that the mill through which the plates are paſſed, can never be ſo juſt, but there will be ſome inequality, whence will ariſe a difference in the blanks. And this inequality, indeed, may be owing to the quality of the matter as well as of the machine; ſome parts being more porous than others.

When the blanks are adjuſted, they are carried to the blanching, or whitening-houſe, i. e. the place where the gold blanks have their colour given them, and the ſilver ones are whitened; which is done by heating them in the furnace, and, when taken out and cooled, boiling them ſucceſſively in two copper veſſels, with water, common ſalt, and tartar; and, after that, ſcouring them well with ſand, and waſhing them with common water, drying them over a wood fire, in a copper ſieve, wherein they are put when taken out of the boilers.

The whitening, or BLANCHING, was formerly performed very differently from what it now is: and as the ancient method is ſtill in uſe among goldſmiths, and other workmen who uſe gold and ſilver, we have made a diſtinct article of it.

Formerly the planchets, as ſoon as blanched, were carried to the preſs, to be ſtruck, and receive their impreſſions; but now they are firſt marked with letters or graining, on the edges, to prevent the clipping and paring of the ſpecies, which is one of the ways wherein the ancient money uſed to be damaged. The machine uſed to mark the edges is very ſimple, yet ingenious; it conſiſts of two plates of ſteel, in form of rulers, about the thickneſs of a line, on which the legend or edging is engraven, half on the one, and half on the other. One of theſe plates is immoveable, being ſtrongly bound with ſcrews to a copper plate; and that again to a ſtrong board, or table: the other is moveable, and ſlides on the copper plate by means of a handle, and a wheel, or pinion of iron, the teeth whereof catch in a kind of other teeth, on the ſurface of the ſliding plate. Now, the planchet, being placed horizontally between theſe two plates, is carried along by the motion of the moveable one; ſo as by that time it has made half a turn, it is found marked all round. See *Fig.* 2.

This machine is ſo eaſy, that a ſingle man is able to mark twenty thouſand planchets in a day: Savang pretends it was invented by the Sieur Caſtagin, engineer to the French king, and firſt uſed in 1685. But it is certain we had the art of lettering the edges in England long before that time; witneſs the crowns and half-crowns of Oliver

Cromwell ſtruck in 1658, which for beauty and perfection far exceed any French *coins* we have ever ſeen.

Laſtly, the planchets, being thus edged, are to be ſtamped, i. e. their impreſſion is to be given them in a ſort of mill, or preſs, by the French called a *balancier*, invented towards the latter end of the ſixteenth century. See its figure in *Tab. Miſcellany*, *fig.* 3.

Its chief parts are a beam, ſcrew, arbor, &c. all contained in the body of the machine, except the firſt, which is a long iron bar, with a heavy ball of lead at each end, and rings, to which are faſtened cords, which give it motion: this is placed horizontally over the body of the machine. In the middle of the beam is faſtened a ſcrew, which, by turning the beam, ſerves to preſs the arbor underneath it; to the lower extremity of which arbor, placed perpendicularly, is faſtened the dye, or matrice, of the reverſe, or arm ſide, in a kind of box, or caſe, wherein it is retained by ſcrews: and under this is a box, or caſe, containing the dye of the image-ſide, firmly faſtened to the lower part of the engine, *fig.* 4. See **Matrice.**

Now when a planchet is to be ſtamped, it is laid on the image-matrice, upon which two men draw, each on his ſide, one of the ropes of the beam, and turn the ſcrew faſtened in it; which by this motion lowers the arbor to which the dye of the arms is faſtened: by which means the metal being in the middle, at once receives an impreſſion on each ſide, from either dye. As to the preſs formerly uſed; it has all the eſſential parts of a balancier, except the beam, which is here, as it were, divided, and only drawn one way.

The blanks having now all their marks and impreſſions, both on the edges and faces, become money; but they have not currency till they have been weighed and examined.

For the **Coining** *of Medals*, the proceſs is the ſame, in effect, with that of money: the principal difference conſiſts in this, that money, having but a ſmall relievo, receives its impreſſion at a ſingle ſtroke of the engine; whereas, for medals, the height of their relievo makes it neceſſary, that the ſtroke be repeated ſeveral times: to this end the piece is taken out from between the dyes, heated, and returned again; which proceſs, in medallions, and large medals, is ſometimes repeated fifteen or twenty times, before the full impreſſion be given; care being taken, every time the planchet is removed, to take off the ſuperfluous metal ſtretched beyond the circumference, with a file.

Add to this, that medallions, and medals of high relievo, on account of the difficulty of ſtamping them in the balancier, or preſs, are uſually firſt caſt or moulded in ſand, like other works of that kind, and are only put in the preſs to perfect them; becauſe the ſand does not leave them clean, ſmooth, and accurate enough. Medals, therefore, receive their form and impreſſion by degrees; money all at once.

The rule whereby they judge the metal to be ſufficiently ſtamped, is, when feeling it with the hand, it is found firm, and not to be ſhaken, as filling the dye equally every where.

Coining *with the hammer, or hammered money*.—In this method of making money, the bars or plates of gold, ſilver, or copper, being taken out of the moulds, or frames, as above, are heated and ſtretched, by beating them on the anvil: when ſufficiently beaten, they are cut into pieces; which being again heated, flatted, and further ſtretched with the hammer, are adjuſted by cutting off the angles with ſheers: thus, by cutting and rounding them, they are reduced to the weight of the ſtandard; and their roundneſs finiſhed with another hammer, which beats down all the points and angles ſtill remaining on the edges. In this manner they are brought to the ſize of the ſpecies to be coined.

In this ſtate the pieces become blanks or planchets, and are carried to the blanching-houſe; where they undergo the ſame preparation as the milled money already deſcribed, and are given to the minter to ſtamp them with the hammer.

For this laſt operation, which finiſhes the money, they uſe two punchions, or matrices; the one called the *pile*, and the other the *truſs*, or *quiver*; each engraven dentwiſe; the pile bearing the arms, and the truſs the image, or croſs; both their legend, date, &c.

The pile, which is about eight inches high, has a kind of talon or heel in the middle, and ends in a point: which figure it had, for the ſake of being more eaſily ſunk, and more firmly faſtened to the block whereon the money is ſtruck.

The minter, then, laying the planchet horizontally on the pile, and covering it with the truſs, which he holds ſteadily in his left hand, gives ſeveral ſmart blows on the truſs with an iron mallet held in the right; more or leſs, as the graving of the dyes is more or leſs deep. If after theſe firſt ſtrokes, the planchet be not ſufficiently ſtamped, it is returned again between the matrices, exactly in its former poſition, and the ſtrokes are repeated till the impreſſion be perfect.

Thus is the *coinage* finiſhed, and the planchets converted into money; which, after they have been examined as to their weight become current.

Coinage, *Engliſh*. - Since the invention of milling money (the author whereof is not agreed on, nor even the country, where it took its riſe, though the French lay claim to both) it has been imitated by ſeveral other nations; but by none with ſucceſs equal to that of the Engliſh, who carried it to the utmoſt perfection; both by the beauty of their graving, and by their inventing the impreſſions on the edges, that admirable expedient, for preventing the alteration of the ſpecies, abovementioned.

Till the time of K. Charles II the Engliſh money was generally ſtruck with the hammer, as that of other nations; and in effect, it is but very late, viz. in the reign of king William III. that the hammered ſpecies ceaſed to be current. Before they were put down, the Engliſh money was in a woful condition; having been filed and clipped by natives as well as foreigners, eſpecially the Dutch, ſo as to be ſcarce left of half the value: the retrieving this diſtreſſed ſtate of the Engliſh money is looked upon as one of the glories of king William's reign; for which we are obliged, in good meaſure, to the happy conduct of the earl of Halifax.

The *coinage* of England is now performed wholly in the Tower of London; where there is a corporation for it, under the title of the *mint*.

Formerly there were here, as there are ſtill in other countries, what we call the *rights of ſeignorage and braſſage*; but ſince the eighteenth year of king Charles II. there is nothing taken, either for the king, or for the expences of *coining*; it having been ſettled by act of parliament, that all money ſhould be ſtruck at the public expence: ſo that weight is returned for weight, to all perſons who carry their gold and ſilver to the Tower.

There is a duty of ten ſhillings per tun on wine, beer, and brandy imported, called the *coinage* duty, granted for defraying the expence by ſtat. 18 Car. II. cap. 5. and continued and advanced by ſubſequent ſtatutes, 4 and 5 Anne, cap. 22. 1 Geo. I. cap. 43. 4 Geo. II. cap. 12. 1 Geo. III. cap. 16, &c.

The ſpecies coined in England are eſteemed contraband goods, and not to be exported; all foreign ſpecies are allowed by act of parliament, made in 1673, to be ſent out of the realm; as well as gold and ſilver in bars, ingots, duſt, &c. Indeed, in the ſeſſion of parliament in 1718, endeavours were made to put a ſtop to this licence, which drains England of its richeſt metals; but in vain; the parliament having laid aſide the bill, without coming to any reſolution.

Coinage *of Fez and Tunis* is not under any diſcipline; each goldſmith, Jew, and even every private perſon, undertaking it at pleaſure: which renders their money exceedingly bad, and their commerce very unſafe.

Coinage, *Muſcovite*.—The czar ſtrikes no money but ſilver, and that only in the cities of Moſcow, Novogrod, Twere, and Pleſcou; to which may be now added Peterſburg, the favourite city of her late czarian majeſty. The *coinage* of each of theſe cities is let out to farm, and makes part of the royal revenue.

Coinage, *Perſian*.—All the money made in Perſia is ſtruck with the hammer: and the ſame may be underſtood of the reſt of Aſia and America, and the coaſts of Africa, and even Muſcovy; the invention of the mill not being yet gone out of Europe, nor even eſtabliſhed in every part of it. The king's duty, in Perſia, is ſeven and a half per cent. for all the monies coined; which are now reduced to ſilver and copper: there being no gold coined there, except a kind of medals at the acceſſion of a new ſophi.

Coinage, *The Spaniſh*, is eſteemed one of the leaſt perfect in Europe: it is ſettled at Seville and Segovia, the only cities where gold and ſilver are ſtruck. It is true, there are brought from Mexico, Peru, and other provinces of the Spaniſh America, ſuch vaſt quantities of pieces of eight, and other ſpecies both of gold and ſilver, that, in this reſpect, it muſt be owned, there is no ſtate in the world where ſo much money is coined, as in that of the king of Spain.

To take the repreſentation of a *coin* on paper, card, or paſteboard. See **Medal.**

CO-INDICATIONS, in *Medicine*, ſigns which do not indicate by themſelves alone, but together with other circumſtances, &c. help the phyſician to form a judgment.

COINING, in the *Tin-works*, is the marking the tin, when caſt into blocks, or ſlabs, with the figure of the lion rampant. This is done by the king's officer. The king's cuſtom is four ſhillings for every hundred weight.

COINUS, in *Natural Hiſtory*, a name given by ſome writers to the genus of ſhells called PORCELLANA and *Concha venerea.*

COITION, the intercourſe between male and female in the act of generation.

It is obſerved that frogs are forty days in the act of *coition.*

Bartholine, &c. relate, that butterflies make an hundred and thirty vibrations of the wings in one act of *coition.*

COITION is alſo ſometimes uſed for that mutual attraction, or tendency toward each other, which is found between iron and the magnet.

COJUMERO, in *Ichthyology*, a name given by ſome to the *manati*, or *ſea-cow.*

COIX, in *Botany*. See JOB's *Tears.*

COKE, denotes pit-coal or ſea-coal charred. It is prepared by burning them in ovens conſtructed for this purpoſe; and extinguiſhing the fire in the manner uſed for making CHARCOAL.

COLAPTICE, the art of carving, or cutting, the reſemblances and figures of natural things in ſtone. The term for the artiſt is *lithoxos.*

COLARBASIANS, or COLORBASIANS, a ſect of Chriſtians in the ſecond century; ſo called from their leader Colarbaſus, a diſciple of Valentinus; who, with Marcus, another diſciple of the ſame maſter, maintained the whole plenitude, and perfection, of truth and religion, to be contained in the Greek alphabet; and that it was upon this account that Jeſus Chriſt was called the *alpha* and *omega*. This ſect was a branch of the VALENTINIANS. See alſo MARCOSIANS.

COLARIN, in *Architecture*. See HYPOTRACHELIUM and GORGERIN.

COLARIN is alſo uſed for the CINCTURE.

COLASISI, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a very ſmall but very beautiful ſpecies of the parrot, common in that part of the world, and called by others *cuſi* and *gula ſiſi.*

COLATURE. See FILTRATION.

COLCHESTER-PLOUGH. See PLOUGH.

COLCHICUM, in *Botany*, ſee *Meadow* SAFFRON.

COLCHICUM, in *Medicine*. The general conſent of authors condemns the root of the *colchicum* as a poiſon, on account of its acid and corroſive quality: yet it is evident that the ancients eſteemed it greatly: they called it *hierobulbus*. Some even gave it internally, in caſes where it was neceſſary to make the patient vomit, it being eſteemed a very good emetic: and others ordered its uſe externally, bruiſing it, and applying it to places where there were fixed and violent pains.

Wedelius recommends it as an alexipharmic, and has written a treatiſe expreſly on this ſubject. He frankly confeſſes to have taken his knowlege of its virtues from an obſcure author, who, in a treatiſe of the plague, recommends it internally as a very beneficial medicine, and tells us, that people were ſo well acquainted with its virtues, that they took it in conſiderable doſes, and wore it about their necks, as a preſervative againſt the infection. He found the virtues of this medicine were not confined to the peſtilential and petechial fevers alone, but he gave it with the ſame ſucceſs in the ſmall-pox, the purple-fever, and even in the worſt kind of the meaſles.

M. Storck, of Vienna, diſcovered to the public the medicinal virtues of *colchicum*, and by experiments on himſelf aſcertained it to be a moſt powerful diuretic, and a kind of miraculous remedy in the moſt deſperate dropſies. He digeſted an ounce of the ſolid root in a pound of vinegar for twenty-four hours, and then made an oxymel of this vinegar by mixing with it twice its quantity of honey: this medicine adminiſtered in doſes of a tea-ſpoonful, or a dram, promoted a copious diſcharge of urine. He alſo found, by many trials, that by giving a dram of it twice a day, and encreaſing the doſe to an ounce or an ounce and a half in the day, it proved a very powerful diuretic, and of excellent ſervice in hydropic and other ſerous diſorders.

COLCOTHAR, in *Natural Hiſtory*, &c. The Latin writers of the middle ages uſe *colcothar* as a name of vitriol in general, which was called by the Greeks *chalcanthum.*

Colcothar is originally an Arabic word, which does not ſignify the common vitriol, but the *chalcitis*. The word has been ſpelt *calchuthar*, and from this the word *chalcitis* differs not very much. The Greeks of the middle ages followed the Arabians in the uſe of the word *colcothar*, but added to it a termination proper to their language, and particularly to the cuſtom of thoſe times, which ſeemed not to expreſs exactly the ſame thing, but a diminutive of it: they wrote it *colcotharion*, or *chalcitarion*. This they alſo called the *orchis*, *orchidion*, the *ladi eladion*, and ſo in a thouſand other inſtances. Aviſenna uſes the word *zagi* to expreſs this ſubſtance, but then he is by no means determinate in it, but makes it include the *miſy*, *ſory*, and *melanteria*, as well as the *chalcitis*; but diſtinguiſhing in another place the ſeveral kinds of *zagi*, he tells us, that one was the *chalcand*, which was green; a ſecond the *chalcitis*, which was yellow; a third the *ſory*, which was red. *Alzagiat* is a name alſo uſed by him to expreſs all theſe kinds; and this word the interpreters generally render *atramenta*, inks. This is generally ſuppoſed to expreſs their being all black ſubſtances, which is not the caſe; but it properly ſignifies, that they are all vitriolic foſſils: *atramentum* being a name of vitriol, as a ſubſtance uſed in the making of ink.

There are two kinds of *colcothar*, *natural*, and *factitious.*

COLCOTHAR, *Natural*, otherwiſe called *chalcitis*, is a red vitriol, brought from Germany; formed from the common green vitriol, calcined naturally by ſome ſubterraneous fire.

COLCOTHAR *Artificial*, is a ſubſtance which remains after martial vitriol has been calcined, and diſtilled for a long time by an intenſe fire; and by that means reduced to the redneſs of blood.

Mr. Le Fevre propoſes an eaſy method of making *colcothar of vitriol:* he mixes two parts of filings of iron with one of ſulphur, and a little water. After the acid of the ſulphur has diſſolved the iron, he expoſes the paſte to the air, and it changes into *colcothar*. See Mem. of the A. D. S. an. 1730, H. 52.

Colcothar of vitriol, after the action of the fire being dulcified, or the metallic parts precipitated by an alkali, or by zink, or any other of the imperfect metals, and ſublimed with ſal armoniac, in either caſe an inflammable ſulphur is prepared in the operation, and may be ſeparated both from the ſublimed flowers, and from the caput mortuum. This, and the ſulphureous ſmell of ſpirit of vitriol, together with the ſulphur produced by oil of vitriol and ſpirit of wine, prove abundantly what has been ſuſpected by ſome, that vitriol contains ſulphur as one of its principles, and a natural and neceſſary part of its compoſition. Phil. Tranſ. Nº. 103.

Colcothar, after calcination, retains ſome of its acid and imbibes moiſture from the air: but if it is waſhed in water, the remaining acid is diſcharged; it no longer attracts moiſture, and becomes what is called the *ſweet earth* of vitriol. Unwaſhed *colcothar* is an antiſeptic, tonic, aſtringent and corroſive, and is therefore applied externally to all putrid, ſanious, and fungous ulcers. See VITRIOL.

COLCUICUILTIC, in *Zoology*, the American name of a bird of the partridge kind, deſcribed by Nieremberg. It is variegated with black, white and red, and is a very beautiful bird. Its colours are for the moſt part diſpoſed not in ſpots, but in longitudinal lines on the back; but on the belly they are rather in form of ſmall and ſhort ſpots. Its legs and feet are blue. It is a well-taſted bird.

COLD, ſomething devoid of HEAT, or which contains in it no particles of FIRE.

This definition is agreeable to the ſentiments of moſt of the modern philoſophers, who make *cold* a mere negative term; and ſuppoſe the thing to conſiſt in a privation, or diminution of heat. Others define *cold*, much on the ſame principle, to be that ſtate of the minute parts of a body, wherein they are more ſlowly and faintly agitated than thoſe of the organs of feeling.—In which ſenſe, *cold* is a mere term of relation; and hence the ſame body become liable to be perceived hot or *cold*, as its particles are in a greater or leſs degree of motion than thoſe of the ſenſible organs.

Heat is ſuppoſed to conſiſt in a particular motion of the parts of the hot body; and hence the nature of *cold*, which is its oppoſite, is eaſily deducible: for *cold*, we find, extinguiſhes, or rather abates heat; whence it ſeems to follow, that thoſe bodies are *cold*, which check and reſtrain the motion of the particles wherein heat conſiſts.

Now, there are three kinds of bodies which may do this; viz. either thoſe whoſe particles are perfectly at reſt; or thoſe whoſe particles are indeed agitated, but that leſs violently than thoſe of the hot body to which they are applied: or, laſtly, thoſe whoſe particles have a motion proper for exciting the ſenſation of heat, but which move with a different determination; ſo as to retain and change the motion of the particles of the organ.

Hence, there ariſe three different kinds of *cold*, or cold bodies: the firſt is, that *cold* common to all hard bodies, which conſiſts in the reſt of their parts. The ſecond is that which ariſes on plunging any part of our body in water; which conſiſts in this, that the parts of our præcordia, being more briſkly agitated than thoſe of the fluid, communicate part of their motion to it. The third, the *cold* felt on collecting even warm air with a fan, or in blowing hot breath out of our mouth, with the lips cloſe ſhut; which conſiſts in this, that the direct motion of the particles of air does, in ſome meaſure, change and rebate the motion and determination of the parts of the body: and hence it is, that a *cold* body cannot cool another without heating itſelf. Hence alſo it is, that the more parts of a frigid body are at reſt, the more muſt the particles of a warm body, applied to heat them, loſe of their motion, and by conſequence of their heat. Thus a marble, having more quieſcent parts than wood, which is full of pores and interſtices, is felt colder than wood. Hence alſo we ſee why air, near marble and other denſe bodies, feels ſomewhat colder than in other places.

On this principle, the two latter kinds of *cold* appear ſomewhat more than privations: the particles inducing the *cold* may be eſteemed real frigorific corpuſcles; and the coldneſs be deemed a real quality as well as hotneſs.

Theſe particles do not only check the agitation of thoſe continually diffuſed from the inner parts of the animal to the outer; but, having an elaſtic power, they bend and hang about the filaments of the body, pinch and ſqueeze them; and hence that acute pungent ſenſation called *cold*.

That *cold* is more than a mere relation, or compariſon, is evident from its having real and poſitive effects; ſuch as FREEZING, CONGELATION, CONDENSATION, RAREFACTION, BURSTING, &c.

Cold is the deſtroyer of all vegetable life, when increaſed to an exceſſive degree; and it is difficult to ſay how much increaſe of it the hardier of them are, or are not able to bear. We find many of our garden plants and flowers, which ſeem to be very ſtout and hardy, go off at a little increaſe of *cold* beyond the ordinary ſtandard. In the ſevere winter in 1683, Mr. Robarts tells us, that the artichoaks and cauliflowers all periſhed; and that the odoriferous ſuffrutices, ſuch as thyme, ſage, lavender cotton, and the like, were generally killed, very few eſcaping, except ſuch as had been planted the preceding year, and were therefore ſo low as to have the advantage of a covering of ſnow over them; which is the defence nature has given to the natives of the coldeſt countries, and proves ſuperior to any thing that can be invented by art for their preſervation. In the corn-fields, ſuch parts of them as had remained covered with ſnow, had eſcaped very well, the corn all looking freſh and vigorous, after the melting of it in the ſpring: but when the lands had lain ſo expoſed that the ſnow had melted off, the crop was generally deſtroyed, and the farmer obliged to ſow the place anew. Phil. Tranſ. N° 165. See Frost.

Dr. Clarke takes *cold* to be owing to certain nitrous, and other ſaline particles, endued with particular figures proper to produce ſuch effects. Hence, ſal ammoniac, ſaltpetre, or ſalt of urine, and many other volatile and alkalizate ſalts, mixed with water, increaſe its degree of *cold* very ſenſibly. Hence alſo that popular obſervation, that *cold* prevents corruption; which, however, muſt not be admitted without an exception; ſince, if a hard, porous body have its interſtices filled with water, and this be too much dilated by freezing, the including body will be burſt. And thus it is, that *cold* proves deſtructive to the parts of ſome plants.

Cold, *Artificial.* See Freezing, or Thermometer.

Cold, *Potential.* See Potential.

Cold *Baths.* See Baths.

Cold *Fuſion.* See Fusion.

Cold *Diamargariton.* See Diamargariton.

Cold *Diatragacanth.* See Diatragacanth.

Cold *Diſtillations.* See Distillation.

Cold, in *Medicine*, ariſes from obſtructed perſpiration, and is found to be productive of inflammatory diſorders, as frozen limbs, gangrenes, coughs, pleuriſies, peripneumonics, rheumatic pains, conſumptions, apoplexies, palſies, &c. which ſee under their proper heads.

To remove a cold in the beginning, ſmall and repeated bleedings are recommended, which likewiſe prove beneficial in coughs, and in the confirmed conſumption, even after a purulent ſpitting and hectic ſymptoms have appeared. The quantity to be taken away at a time, may be from four to ſeven or eight ounces, once in eight or ten days: concerning which it is obſervable, that the patients do not find themſelves ſo much relieved on the firſt, as on the ſecond or third night after bleeding.

What we commonly call catching *cold*, may be cured by lying much in bed; by drinking plentifully of warm ſack whey, with a few drops of ſpirits of hartſhorn in it; poſſet-drink, water-gruel, or any other warm ſmall liquor. In ſhort it ought to be treated firſt as a ſmall fever, with gentle diaphoretics; and afterward, if any cough or ſpitting ſhould remain, by ſoftening the breaſt with a little ſugar-candy, and oil of ſweet almonds, or a ſolution of gum ammoniac in barley-water; taking care to go abroad well cloathed.

This is a much more eaſy, natural, and effectual way, than the common practice by balſams, linctuſes, pectorals, &c. which ſerve only to ſpoil the ſtomach, oppreſs the ſpirits, and hurt the conſtitution.

To prevent the catching of *cold*, the Jeſuits bark is recommended in the Philoſophical Tranſactions. Phil. Tranſ. N° 478. p. 3. See Peruvian-*bark*.

Cold is alſo a diſeaſe to which horſes are ſubject: this is uſually occaſioned by want of regular exerciſe, by overheating them in riding, and ſuffering them to cool too faſt, or neglect of rubbing them down when they come in hot after journeys. The ſigns of a *cold* are a cough, heavineſs, watery eyes, kernels about the ears and under the jaws, gleets of the noſe, and rattles in breathing, &c. Bleedings, hot maſhes of bran and water, and moderate exerciſe will, in moſt caſes, be an effectual remedy. To theſe may be added balls conſiſting of warm opening ingredients: Dr. Bracken preſcribes the following; take anniſeed, carraway ſeed, and greater cardamoms, finely powdered, of each one ounce, two ounces of flower of brimſtone, one ounce and a half of turmeric in fine powder, two drams of ſaffron, two ounces of Spaniſh juice diſſolved in water, half an ounce of oil of anniſeed, one ounce and a half of liquorice powder, and a ſufficient quantity of wheat flour: let theſe ingredients be well beat in a mortar and made into a ſtiff paſte; and given in ſmall quantities about the ſize of a pullet's egg.

Cold-*charge*, in *Farriery*, a medicine, conſiſting of vinegar, bole, and the whites of eggs, mixed to the conſiſtence of a poultice, and ſpread over the injured part for the cure of ſtrains, &c.

Cold-*finch*, in *Zoology*, the name of a bird of the *œnanthe* kind, or nearly approaching to that genus, common about the Peak in Derbyſhire. Its belly is white; its breaſt of a yellowiſh brown, and its head and back of a browniſh or greeniſh grey; the long feathers of its wings and tail are black, but with ſome variegation of white toward the end; its beak is ſlender, ſtraight, and ſomewhat ridged or triangular; it feeds on worms and other inſects.

Cold *water*. See Water.

COLDENIA, in *Botany*, a genus of the *tetrandria tetragynia* claſs. Its characters are theſe; it hath a funnel-ſhaped flower of one petal, ſpreading at the top, and obtuſe; and four ſtamina, which are inſerted in the tube of the petal. In the centre are inſerted four oval germina, each ſupporting a hairy ſtyle: the germina afterward become ſo many oval, compreſſed, rough fruits, terminated by four beaks, incloſed by the empalement. We know but one ſpecies of this genus, which is a native of India.

COLDSHIRE *Iron*, ſuch as is brittle when it is cold; ſee Iron.

COLE-*fiſh*, a name for a fiſh of the whiting-kind, called by authors *aſellus niger*, by Artedi and Linnæus reckoned a ſpecies of the GADUS, and in Cornwall, and ſome other parts of England, the *rawlin-pollack*. It is very common on the coaſts of Northumberland, Yorkſhire, and other northern counties of England, and is called the *cole-fiſh*, or coal-fiſh, from its blackneſs. It has ſomething of the taſte of the cod, but much inferior to it. This fiſh is ſalted and dried for ſale.

Cole-*mouſe*, in *Zoology*, the name of a ſmall bird of the tit-mouſe kind, diſtinguiſhed from all the reſt by being the ſmalleſt of all the tit-mouſe kind, and having a white ſpot on the back part of its head. See Parus.

Cole-*pearch*, in *Natural Hiſtory*, a name given to a ſmall fiſh, much eſteemed about Dantzick and other places, for its delicate flavour. It is very like the common river pearch, but that it does not grow ſo large, and has a greater variety of colours, and its head is proportionably larger. Phil. Tranſ. N° 83.

Cole-*ſeed*, the ſeed of the naphew or napus, propagated in many parts of England to great advantage, for the oil expreſſed from the ſeeds. It is much ſowed in the moory land in the fen countries; and the land is prepared for it by the method of Burn-*baking*, or Burning. The freſheſt mould is found beſt for it, or what the farmers call a luſty ſoil, which is newly broken up, and has been long at reſt; but with plenty of manure, and deep frequent plowing, it will grow in any ſoil. Indeed the land cannot be too mellow, nor too much pulverized for this plant.

It loves rich fat land, and ſucceeds very well on marſh and fen-lands, and particularly on ground newly recovered from the ſea. The ranker the land is for *cole-ſeed* the better. This ſeed is principally brought from Holland, though it is very good when taken from our own plants, for growth as well as other uſes. The ſowing this ſeed is a very advantageous piece of huſbandry. The beſt ſeed is that which is largeſt, faireſt, and of the cleareſt colour. It is very apt to be mouldy, if not kept very dry. It is to be ſown in July, the land being previouſly ploughed and harrowed: the quantity of ſeed is half a peck allowed for an acre.

The plants are afterwards hoed like turneps. The ſlugs and inſects which infeſt this plant are deſtroyed by a mixture of ſlacked lime and wood aſhes; ten buſhels of lime and fifteen of aſhes being allowed to an acre, and this alſo ſerves to forward the crop.

Some ſow it for the ſake of the ſeed: others by way of a winter food for the cattle in the months of January February, and March, when other food is wanting. It will do very well in poor lands for this purpoſe; but the richer grounds only will make it rank enough for ſeed. If the winter be mild, it will after feeding grow again, and afford a ſecond winter's ſupply, and after cutting up the ſtumps, will ſhoot out young ſprouts, very ſweet, and in great abundance.

But Mr. Young obſerves, that turneps will anſwer the purpoſe much better; and he diſcourages the culture of it for food in April and May to ſucceed turneps, becauſe it produces only a ſmall quantity per acre: as he obſerves that if it is fed off with ſheep or cattle, and afterward reſerved for ſeed, the crop is much damaged by it; and he adds, that the principal profit of the crop is the ſeed, which amounts to five times the value of food gained by it.

Mr. Miller, however, alleges that one acre of land planted with *cole*, will produce nearly as much food as two acres of turneps: and there is this advantage attending the culture of this plant, that it will bear a ſevere froſt, and yield a conſtant ſupply of food, when the ground is ſo frozen, that the turneps cannot be taken up. But caution ſhould be uſed in feeding cattle with this plant In the fen countries they turn their ſheep to fatten upon the ſeed about Michaelmas; and it is obſerved that ſheep will thrive more on this paſture in a month than they will on turneps in two.

In Flanders *cole-ſeed* is ſown and tranſplanted like cabbages: the land in which it is ſown is ploughed twice before winter; it is again ploughed in May, harrowed two or three times and rolled: and theſe operations are repeated in July; when the ſeed is ſcattered over it by the three fingers, the land lightly harrowed and afterwards rolled. Twenty-four pounds of ſeed will ſow three acres, and yield plants ſufficient for twelve acres. The land for the plants, when the previous crop is removed, is thrice ploughed; afterwards harrowed, and ploughed again with an open trench at ſmall intervals in September. In the beginning of October the plants are removed and placed in rows acroſs the furrows, at the diſtance of a foot, and about ſix inches diſtant from one another. The ground may be afterwards ſown with pulverized pigeon's dung, which is the beſt manure for theſe plants; allowing about thirty buſhels to an acre. The looſe earth in the trenches is then thrown among the plants in the rows: which is again repeated early in the ſpring. When it turns yellow, or about the beginning of July, it is reaped like corn, and after remaining three or four days ſtacked in the field, where it heats and yields a greater quantity of oil than it would have otherwiſe done, in September it is threſhed and dreſſed on a kind of floor in the field.

When it is kept for ſeed, it is to be reaped in the manner of wheat, as ſoon as one half of the ſeed looks brown: it is to be left a fortnight to dry on the ground, never turning it, for fear of ſhedding the ſeed; and when this time is over, it is to be gathered up in large ſheets, and carried to the barn for immediate threſhing; or it may be threſhed in the field on a large ſheet. Its common produce is five quarters of ſeed from an acre, and the value of this about five pounds.

Mr. Donellan, near Dublin, obtained a crop by the horſe-hoeing culture, of ſeventy-three tons ſix hundred weight on an Engliſh acre; but Mr. Young, by broadcaſt ſowing, and hand-hoeing, which he reckons the beſt method of cultivating this plant, obtained only five tons per acre.

The land where this has grown, is very well prepared by it for wheat; though ſome ſow oats upon it, as what ſucceeds beſt of all after it. When the oil is preſſed out of the ſeeds, they uſe the remaining cakes in ſome places as firing; but in others they give them to their cows and other cattle in winter, when other food is ſcarce. They will very ſoon fatten thoſe deſigned for ſale; and the yellowneſs and rankneſs of the fat may eaſily be remedied, by feeding them on dry fodder a fortnight or three weeks before they are killed. In ſome places, they mix the powder of theſe cakes with water, and give it to their calves till they are three or four days old, inſtead of milk, and it does as well for them, till they are able to eat graſs or hay. It is a good method to burn the ſtubble on the *cole-ſeed* lands, for it is ſo ſtumpy that it is of no uſe to plow it in.

COLEOPTERIA, in *Zoology*, an order of inſects, comprehending all thoſe with four wings; the external pair of which are hard, rigid, and opake, and form a kind of caſe for the interior pair; add to this, that the mouth conſiſts of two tranſverſe jaws.

Theſe animals are known in Engliſh by the general name of beetles; whereof authors have eſtabliſhed a great many genera, from the different figures of their antennæ, or horns, and other general diſtinctions; ſuch are the *ſcarabæus*, or beetle properly ſo called, the *dermeſtes*, *caſſida*, *coccinella*, *chryſomela*, *dytiſcus*, *tenebrio*, &c.

COLEWORTS, in *Gardening*, for the botanical characters ſee BRASSICA. The common *colewort*, or Dorſetſhire kale, is now almoſt loſt near London; where the markets are uſually ſupplied with cabbage plants inſtead of them. Indeed, where farmers ſow *coleworts* to feed their milch cattle in the ſpring, when there is a ſcarcity of herbage, the common *colewort* is to be preferred, as being ſo very hardy that no froſt will deſtroy it. The beſt method to cultivate this plant in the field, is, to ſow the ſeeds about the beginning of July, in moiſt weather, which will bring up the plants in about a fortnight. The quantity of ſeed for an acre of land is nine pounds. When the plants have got five or ſix leaves they ſhould be hoed, as is practiſed for turneps; but they ſhould be kept thicker than turneps, as being in greater danger of being deſtroyed by the fly: this work ſhould be performed in dry weather, that the weeds may be killed. About ſix weeks after, the plants ſhould have a ſecond hoeing, which if carefully performed will clean the ground, ſo that they will require no farther culture. In the ſpring they may be drawn up and carried out to feed the cattle, or theſe may be turned in to feed upon them as they ſtand; but the former method is to be preferred; for when the cattle are turned in among the plants, they will tread down and deſtroy more than they eat; eſpecially if they are not fenced off by hurdles. Miller.

COLIBERTS, *Coliberti*, in *Law*, were tenants in ſoccage, and particularly ſuch villeins as were manumitted, or made freemen. Domeſday.

But they had not an abſolute freedom; for though they were better than ſervants, yet they had ſuperior lords to whom they paid certain duties, and in that reſpect might be called ſervants, though they were of middle condition between freemen and ſervants. Du-Cange.

COLIBRI, in *Ornithology*, the name of a bird very remarkable for its beauty, its form, its manner of living, and its littleneſs. It ſucks its food from flowers, on which it ſeldom lights, but extracts the honey from their nectaria with its long, fine, delicate tongue. There are ſpecies of them which have all the colours of precious ſtones, and the fineſt and moſt beautiful plumage imaginable. They fly with great rapidity, and are heard before they are ſeen, making a kind of humming noiſe, from which they are called HUMMING-*birds*.

COLIC, in *Medicine*, a ſevere gnawing pain, felt in the lower venter; ſo called, becauſe the ordinary ſeat of the diſorder was anciently ſuppoſed to be in the inteſtine colon.

Phyſicians uſually diſtinguiſh four kinds of *colic*, the *bilious*, *inflammatory*, *windy*, and *nephritic*.—The *bilious* COLIC has its riſe from certain ſharp, bilious, ſtimulating humours, which, being diffuſed through the inteſtines, vellicate their fibres, and occaſion a ſenſation of pain: though Willis takes the part here principally affected to be the meſentery.

Dr. Sydenham obſerves, that the *bilious colic* uſually attacks people about the beginning of ſummer; that it is generally attended with a vomiting of bilious green liquor; that the patient complains of exceſſive heat, great gripings, faintneſs, &c. and that if it be not ſoon remedied, it is apt to turn into the iliac paſſion.

Baglivi notes, that if the patient ſweat much, and be much enfeebled, the diſeaſe is apt to degenerate into a palſy. The cure, he ſays, depends on bleeding, gentle cathartics, and clyſters; and if it ariſe from a crapula, an emetic is to proceed: after which, the cure is to be completed with proper anodynes.

COLIC, *Inflammatory*, is the moſt dangerous, and ariſes from an inflammation of the ſtomach and inteſtines. See INFLAMMATION.

COLIC, *Wind*, is a vague pain, never ſtaying in any fixed place; being produced by windy vapours, which ſwell and diſtend the inteſtines they are incloſed in.

COLIC, *Nephritic*, is that felt particularly in the reins, whence it has its name.

It uſually has its riſe from ſome ſtone, or gravel detached from the kidneys, and fallen into the pelvis. The pareira brava is ſaid to be a ſpecific for *nephritic caſes*.

Some, particularly Sydenham, mention a *nervous colic*, moſtly incident to hyſteric and hypochondriac perſons; but this appears only a ſpecies of the *windy colic*.

Perſons ſubject to colics. Theſe are diſeaſes that attack both ſexes, but in general women are more ſubject to them than men; and they are the more violent, and uſually of longer duration in that ſex than in the other. In women they uſually appear gentle, and often trifling at firſt; but they gain ſtrength by time, and often become convulſive. The perſons of that ſex, peculiarly ſubject to *colics*, are thoſe of a ſanguine temperament, and ſuch as have had obſtructions of the menſes. Women in child-bed are alſo very ſubject to flatulent *colics*, when the belly has not been properly bound round after delivery: in this caſe, the *colics* not only are troubleſome during the month of lying-in, but often become habitual, and do not leave them afterwards. In men, the middle-age is more ſubject to *colics*, than either the young or old periods of life; and people are moſt ſubject to fall into them who have been ſubject to irregularities in the hæmorrhoidal diſcharges, and who have nephritic complaints. Men are often thrown into the bilious *colic* by violent paſſions of anger, eſpecially if they eat or drink immediately afterwards, or they themſelves be of a *choleric* temperament.

Prognoſtics in colics. The oftener any perſon has been afflicted with *colics*, the more ſubject they are to return on any ſlight occaſion, and the more likely to become habitual. All *colics* that attack perſons with a chillneſs firſt, are more violent than thoſe which do not, and they often are either attended at the very firſt with an inflammation, or have one come on ſoon afterwards. In general alſo, *colics* attended with coſtiveneſs are worſe than thoſe in which the patients have ſome ſtools. Reachings to vomit are always bad ſymptoms in *colics*, and give a ſuſpicion of the caſe turning to a miſerere or iliac paſſion: but this is to be obſerved, that when the patient has juſt before eaten very heartily, and drank much, eſpecially of cold liquors, then ſuch reachings are natural, and are not to be accounted the bad ſymptoms they are at other times. In women, when the reachings are violent, there is always danger of a vomiting of blood. The more violent the pains of the *colic* are, the more danger there is of their bringing on convulſions. A *colic* ariſing from a ſtoppage of the menſes, and attended with a ſtagnation of blood about the viſcera, when it is of long ſtanding, threatens the coming on of a quartan, a dropſy, or a cachexy. And a hæmorrhoidal *colic*, when ariſing from a retropulſion of the gout or ſciatica, by wrong medicines, is always a caſe of great danger. This, however, always happily goes off, if there comes on a diſcharge of blood, or even of a ſerous matter, from the hæmorrhoidal veins. Sometimes alſo it goes off at once, but very unhappily, by a ſudden regurgitation of the matter upon the viſcera, eſpecially upon the liver, the conſequences of which are, obſtruction of that viſcus, aſcites, hectics, or dropſies. Sometimes alſo this *colic* goes off by the appearance of ſcorbutic ſpots on the body, in different parts.

The bilious *colic*, if the offending matter be not immediately evacuated, after its acrimony has been obtunded by a proper medicine to fit it for evacuation, too often brings on dangerous inflammatory fevers. In *colics* which have held the patient a long time, a hiccough coming on is a very bad omen. Finally, a *colic*, when improperly treated with opiates and anodynes, often brings on a palſy.

Method of cure. In flatulent and mucous colics, carminative and emollient clyſters are to be injected, compoſed of decoctions of chamomile-flowers, marſhmallows, and a mixture of the elixir proprietatis, or common ſalt, by way of ſtimulus; and after this the carminative medicines, ſuch as angelica-root, winter's bark, aniſe and caraway ſeeds, and cloves, with the other ſpices, are to be given, with intermediate doſes of laxative medicines; and to theſe medicines may be added occaſionally, the digeſtive ſalts, ſuch as vitriolated tartar, with nitre and cinnabar, and the ſpirit of tartar, and ſweet ſpirit of nitre, with the eſſence of orange-peel, &c.

In the bilious colic, the attemperating and abſorbent medicines are to be given; as nitre, mother of pearl, calcined cryſtal, oil of almonds, and manna, with the broths of white meats, and the carminative ſeeds. If theſe things are thrown up by vomit, recourſe muſt be had to clyſters, and to applications of warm things to the abdomen, ſuch as are before deſcribed.

In the hæmorrhoidal and nephritic colic, clyſters are to be frequently given of oil of olives and linſeed, with a little nitre. After this, warm broths, with oil of ſweet almonds, are to be drank in frequent draughts, and powders compoſed of nitre, crab's eyes, and cinnabar, are to be given at frequent intervals; and if the pains are vehement, a ſmall doſe of theriaca, or of the ſtorax-pill, may be given with the powder, to be taken at night. When the violence of the fit is over, the gentle alexipharmics are to be given, with ſtrengthening medicines, to reſtore the due tone of the parts. Externally, fomentations may be applied to the rectum, and cataplaſms of the leaves of mullein and mellilot, on which the patient may ſit while they are warm; and heat may be applied to the abdomen by bladders half filled with water, or milk made of a due warmth, and by bricks heated a little, and by bags containing carminative and nervine ingredients. Liniments may alſo be rubbed in of the oils of nutmegs and bays, and ſpirit of wine and camphor, particularly in the part where the pain is moſt violent.

In the hyſteric colic, clyſters are frequently to be injected, made of decoctions of the herb veronica in broth, with a little of the oil of dill and common ſalt. When the patient is averſe to clyſters, and the caſe is not violent, warm baths for the feet, and the ſitting over the ſteam of warm water, will ſometimes prove ſufficient, and gentle purges of decoctions of ſena, and the like, are to be given, or a gentle doſe of the reſin of jalap, diſſolved with the yolk of an egg in ſome of the uterine waters: after theſe, alexipharmics and carminatives are to be given, ſuch as the roots of pimpernel and angelica, with aniſe, and the other warm ſeeds. If the caſe is violent, the attemperating nitrous medicines may be given, and with them gentle anodynes; and finally, ſuch things as will reſtore the due tone of the parts. The perſon ſhould be kept in a gentle warmth during the whole time of the diſeaſe, and ſpirit of caſtor may be occaſionally rubbed in on the abdomen.

By way of preſervative from the hæmorrhoidal and hyſteric *colic*, it is very proper to bleed in the foot at the ſpring and autumn ſeaſons, and proper uterine medicines ſhould be taken to keep up the menſtrual diſcharges; and to prevent ſuppreſſions of the hæmorrhoidal, leeches ſhould be applied to the parts, and the bowels ſhould be carefully kept gently lax. Juncker's Conſp. Med. p. 573.

Dr. Percival recommends alum, in doſes of ten to twenty grains every four or ſix hours, as an effectual remedy in various painful diſorders of the bowels. CASTOR-oil, adminiſtered either in clyſters, or by the mouth, is likewiſe an excellent remedy in all caſes of this kind. See Med. Obſ. vol. ii. d. 285, &c.

This diſtemper has ſometimes taken its riſe from concretions formed on plum-ſtones lodged in the guts. See Medic. Eſſ. Edinb. vol. i. art. 32. Abridgm. vol. ii. p. 214.

Colic pains ſometimes ariſe from viſcidities in the inteſtines; and the VITRUM *antimonii ceratum* has been found ſucceſsful in ſuch caſes.

Baglivi recommends chamomile as an antidote againſt the *colic*, from what cauſe ſoever it ariſe. Where the diſeaſe is obſtinate, much riding has been found of eſpecial ſervice.

COLICA *Dammoniorum*, or *Devonſhire* COLIC of Huxham, is probably the ſame diſeaſe with the *colica ſaturnina* of Juncker, the *colica Pictonum*, and *plumbariorum*, of others, and the dry belly-ache of the Weſt Indies; and has been deſcribed by different writers under a variety of names, as the *bilious colic*, the *painters colic*, &c. taken from the peculiar circumſtances that have attended it: and as the immediate cauſe of it is a ſpaſm, it has been frequently called the *ſpaſmodic colic*. The *colic* of *Poitou*, and that of *Devonſhire*, have been aſcribed by Dr. Baker to the ſame cauſe: viz. the poiſonous quality of lead. As the former diſeaſe prevailed moſt, where the wines were weak and ſour, ſome writers attributed it to the acid of the wine; whilſt others, with greater probability, aſcribed it to the litharge which was uſed to correct the acid, and to improve the taſte of the wine: and it is obſervable, that the moſt acid wines were drank with impunity, till this fraudulent adulteration was introduced. Dr. Baker has attributed the endemial *colic* of Devonſhire to the lead, with which the cyder of that county is impregnated: in proof of which charge, he alleges, that this diſeaſe is no longer known in the province of Poitou, and other parts of France and Germany, ſince the pernicious method of adulteration, above recited, has been made puniſhable with death: and that in the counties of Hereford, Glouceſter, and Worceſter, where no lead is uſed in the cyder apparatus, this diſeaſe is not known: that it prevails moſt in thoſe parts of Devonſhire where the greateſt quantity of cyder is made; and that their machinery for making it has a quantity of lead in it; and that the muſt, or expreſſed juice of the apples before fermentation appeared, by experiment, to have diſſolved lead in it. Others have aſcribed this diſeaſe to the roughneſs and acidity of the Devonſhire cyder, and not to the lead ſolution. Gentle purges and opiates have been recommended for the cure of this diſorder: ſome have preſcribed mercurial ſalivation: others have applied bliſters to the thighs, near the groin, and to the belly; and others again have extolled alum. Med. Tranſ. vol. i. p 175, &c. &c. Ib. vol. ii. p. 68, &c. Huxham de Morbo Colico Dammoniorum apud Obſerv. de Aere, &c. vol. i.

COLICA *Arteria* and *Vena*, in *Anatomy*; ſee MESENTERIC.

COLIC-*ſhell*, in *Natural Hiſtory*, a name given by ſome to the *porcellana*, or *concha venerea*, from its ſuppoſed virtue in curing that diſeaſe.

COLIC-*ſtone*, in *Natural Hiſtory*, the name given by ſome modern authors to a ſtone found in New Spain, and ſome other parts of America, and eſteemed of great virtues there in the cure of the colic, and in diſeaſes of the womb. It is a ſpecies of jaſper very nearly approaching to the lapis nephriticus, and called by the natives *tlayotic*, and by the Spaniards, *piedra de hyada*. It is of a conſiderable weight and hardneſs, and is of a duſky green colour, without any variegations. The Indians cut it into various forms, ſometimes of men, ſometimes of their idols; ſometimes alſo they figure it into long and even columns, and ſometimes into round and flat pieces. All theſe are nicely poliſhed, and thoſe of the laſt ſhape are what are principally uſed in the cure of the colic. They wet theſe with their ſpittle, and then rubbing them, till hot, with their hands, they apply them to the navel in a fit of the colic; and they ſay, that they immediately carry it off, by determining the humours to paſs off, either upwards, or downwards, or both ways. They ſometimes cut this ſtone into flat plates alſo with two holes cut at each end, by means of which it may be worn, tied to the wriſt by a ribband, and it is ſuppoſed thus to be a preſervative from all diſeaſes of this kind, and from many others.

COLIN, in *Zoology*, the name of an American bird, called by moſt authors a quail, but ſuppoſed by Nieremberg to be rather a ſpecies of partridge. There are ſeveral diſtinct ſpecies of this bird, all very common in the Spaniſh Weſt Indies, very well taſted, and much valued at table.

COLIPHIUM, a name given by Athenæus, and ſome other authors, to coarſe bread made of meal with the bran among it, and ſuch as is eaten by the poorer people in moſt countries.

The word is derived from κῶλον, *a limb*, and ἶφι, *ſtrength*, and is a very expreſſive word, as this ſort of bread makes people robuſt and ſtrong, and is greatly preferable to any other kind for people of ſtrong conſtitutions, who uſe hard labour, or much exerciſe. It ſignifies alſo a kind of food compoſed of bread, new cheeſe, and roaſted fleſh, which Pythagoras taught the athletæ to uſe, who before had been uſed to live on figs.

COLIR, an officer in China, who inſpects what paſſes in every court or tribunal in the empire; and though himſelf not of the number yet is aſſiſting at all aſſemblies, the proceedings whereof are communicated to him.

He is properly what we may call an *inſpector*: he gives ſecret intelligence to the court; and even, on occaſion, accuſes the mandarins of their faults openly; and that not only of faults in their public offices, but even in private life. To keep him impartial, he is kept independent; by having the poſt for life. Theſe *colirs* make even the princes of the blood tremble.

COLISEUM, or **COLISÆUM**, in the *Ancient Architecture*, an oval amphitheatre, built at Rome by Veſpaſian, in the place where ſtood the baſon of Nero's gilded houſe.

The word is formed from *coloſæum*, on account of the coloſſus of Nero, that ſtood near it; or, according to Nardini, from the Italian *coliſeo*.

In this were placed ſtatues, repreſenting all the provinces of the empire; in the middle whereof ſtood that of Rome, holding a golden apple in her hand. The ſame term, *coliſeum*, is alſo given to another amphitheatre of the emperor Severus.

In theſe *coliſea* were repreſented games, and combats of men and wild beaſts; but there are now little remaining of either of them; time and war having reduced them to ruins.

COLITES, in *Natural Hiſtory*, a name given by ſome writers to a ſtone ſuppoſed to imitate the human *penis*, or *teſtes*, ſeparately, or both together.

COLLAR, an ornament, worn by the knights of ſeveral military orders, hanging over their ſhoulder, on the mantle; and its figure drawn around their armories.

The *collar* ordinarily conſiſts of a chain of gold, enamelled; frequently ſet with cyphers, or other devices, and having the badge of the order ſuſpended at bottom.

The *collar* of the order of the garter conſiſts of SS, with roſes enamelled red, within a garter enamelled blue, the George at the bottom.

Maximilian is ſaid to have been the firſt of the emperors, who put the *collar* of an order round his arms, upon his being made chief of that of the golden fleece.

COLLAR, in *Roman Antiquity*, a chain fixed round the necks of ſlaves who had run away, after they were taken, with an inſcription denoting that they were deſerters, and requiring them to be reſtored to their proper owners.

COLLARS, in *Antiquity*, were not only worn by way of ornament, but alſo as AMULETS, againſt incantations, &c.

COLLAR, *Knights of the*, a military order in the republic of Venice; called alſo the *order of St. Mark*, or *the medal*. It is the doge and the ſenate that confer this order: the knights bear no particular habit, only the *collar*, or chain, which the doge puts around the neck; with a medal, whereon is repreſented the winged lion of the republic.

COLLAR *of Brawn*. See BRAWN.

COLLAR, in *Building*; ſee CINCTURE.

COLLAR *of the plough*, a term uſed in agriculture to expreſs a ring of iron, which is fixed to the middle of the beam, and ſerves to receive the ends of two chains, the lower one called the tow chain, and the upper one called the bridle chain. The lower chain is fixed at its other end to the box, and the upper, or bridle chain, to the ſtake which runs parallel with the left hand crow-ſtaff. Theſe chains, by means of this *collar*, and their other inſertions, ſerve to join the head and tail of the PLOUGH together. In ſome places the bridle chain is not fixed to the *collar*, but to the beam itſelf, by means of a pin; and this is the better way on many accounts.

COLLAR-*beam*, among *Houſe Carpenters*, the beam which is framed acroſs between two principal rafters.

COLLAR, in *Ship-building*, a rope faſtened about her beak-head, into which the dead man's eye is raiſed that holds the main ſtay. There is alſo a *collar*, or garland, about the main-maſt head, which is a rope wound about there, to ſave the ſhrouds from galling.

COLLATERAL, in *Geography*, any thing, place, country, &c. ſituate by the ſide of another.

The word is compounded of *con*, *with*, and *latus*, *ſide*.

COLLATERAL *Points*, in *Coſmography*, the intermediate points; or thoſe between the cardinal points. The *collateral points* are either *primary*, which are thoſe removed by an equal angle on each ſide from two cardinal points: or *ſecondary*; which, again, are either thoſe of the firſt, or ſecond order. The firſt are thoſe equally diſtant from a cardinal and firſt primary; the latter equally diſtant from ſome cardinal or primary, and firſt ſecondary.

COLLATERAL *Winds*, are thoſe blowing from *collateral* points. See WIND.

Such are the north-eaſt, ſouth-eaſt, north-weſt, ſouth-weſt, &c. with their ſubdiviſions.

COLLATERAL *Bee-boxes*. See HIVE.

COLLATERAL, in *Genealogy*, is underſtood of thoſe relations which proceed from the ſame ſtock, but not in the ſame line of aſcendants, or deſcendants; but being, as it were, aſide of each other.

Thus uncles, aunts, nephews, nieces, and couſins, are *collaterals*, or in the *collateral* line. Thoſe in a higher degree, and nearer the common root, repreſent a kind of paternity with regard to thoſe more remote; but there is a kind of equality between *collaterals* in the ſame degree.

Collateral deſcent ſtands in oppoſition to *direct deſcent* to poſterity; the former paſſing to brothers children, but the latter only from father to ſon. See DISTRIBUTION, INTESTATE, KINDRED.

COLLATERAL *Aſſurance*, in *Law*, is a bond, or other ſecurity, made over, and beyond the deed itſelf, for the performance of covenants between man and man; thus called, as being external, and without the nature and eſſence of the covenant.

Crompton ſays, that to be ſubject to the feeding of the king's deer, is *collateral* to the ſoil within the foreſt. It may be added, that liberty to pitch booths in a fair, or another man's ground, is *collateral* to the ground.

COLLATERAL *Condition*. See CONDITION.

COLLATERAL *Warranty*. See WARRANTY.

COLLATERALIS *Penis*, in *Anatomy*, a muſcle, otherwiſe called *erigens*, or ERECTOR *penis*.

COLLATIO *Honorum*. See HOTCHPOT.

COLLATION, in *Canon Law*, the conferring, or beſtowing of a benefice by a biſhop, who has it in his own gift, or patronage, and this he does *jure pleno*.

Collation differs from *inſtitution*, in that the latter is performed by the biſhop, at the motion or preſentation of another: and the former on his own motion.

Beſides, by *collation* the church is not full; for the higheſt patron may at any time remove the collatee, except he hath a right to *collate*, which *plenarty* by *collation* may be pleaded: the biſhop's *collation* in this reſpect is no more than a temporary proviſion for celebration of divine ſervice, till the patron preſents.

Collation alſo differs from *preſentation*, in that the latter is properly the act of a patron, offering his clerk to the biſhop, to be inſtituted into a benefice; whereas the former is the act of the biſhop himſelf. The *collator* can never confer a benefice on himſelf.

In the Romiſh church, the pope is the collator of all benefices, even elective ones, by prevention; ſetting aſide conſiſtorial benefices, and thoſe in the nomination of lay patrons. Prelates and biſhops are called *ordinaries*, or ordinary collators.

If the ordinary collator neglect to exerciſe his right for ſix months, the ſuperior collator may collate by devolution. Thus, if the biſhop neglect, the metropolitan may confer;

then the primate; and ſo on from degree to degree. In France, the king is the collator of all the benefices whereof he is patron, excepting conſiſtorial ones, to which he has only the nomination, and the pope, by virtue of the concordat, is obliged to confer on whomſoever the king nominates. For the reſt, he is direct and abſolute collator; and may confer them, by virtue of a kind of prieſthood annexed to the royalty.

Other laypatrons have ſeldom more than a mere preſentation; the *collation* properly belonging to the biſhop: yet there are ſome abbots who have the full right of *collation*. The canoniſts reckon two kinds of *collation*; the one free and voluntary, the other neceſſary. The firſt depending on the mere will of the collator, who may chuſe whom he pleaſes to fill the vacancy. In the latter, the collator is not at his liberty: which is the caſe where a benefice has been reſigned, or changed, and that reſignation or permutation allowed of by the ſuperior; for here the collator is obliged to grant the proviſion to the reſignatory, or compermutant.

It is a maxim in the new cannon law, *collationes ſunt in fructibus*; "Thoſe who have the fruits of a benefice, "have the *collation*." But in that caſe, the word *collation* is uſed for preſentation.

COLLATION, in *Common Law*, is the compariſon, or preſentation of a copy to its original, to ſee whether or no it be conformable: or the report, or act of the officer who made the compariſon.

A collated act is equivalent to an original, provided all the parties concerned were preſent at the *collation*

COLLATION is alſo uſed among the Romaniſts for the meal or repaſt made on a faſt-day, in lieu of a ſupper.

Only fruits are allowed in a *collation*: F. Lobineau obſerves, that anciently there was not allowed even bread in the *collations* in lent: nor any thing beſide a few comfits, and dried herbs, and fruits: which cuſtom, he adds, obtained till the year 1513.

Cardinal Humbert obſerves further, that in the middle of the eleventh century, there were no *collations* at all allowed in the Latin church in the time of lent; and that the cuſtom of *collations* was borrowed from the Greeks; who themſelves did not take it up till about the eleventh century.

COLLATION, *collatio*, *συμϐολη*, in *Rhetoric*, is uſed for COMPARISON.

But Scaliger diſtinguiſhes, alledging that in *collation*, one thing is compared to another that has preceded it; and that the contrary happens in compariſon. That to which any thing is compared is called protaſis, and that which is compared is called antapodoſis.

COLLATION is alſo popularly uſed for a repaſt between dinner and ſupper.

The word *collation*, in this ſenſe, Du-Cange derives from *collocutio*, *conference*; and maintains, that originally, *collation* was only a conference, or converſation on ſubjects of piety, held on faſt-days in monaſteries; but that, by degrees, the cuſtom was introduced of bringing in a few refreſhments; and that by the exceſſes to which thoſe ſober repaſts were at length carried, the name of the abuſe was retained, but that of the thing loſt.

COLLATION *of ſeals*, denotes one ſeal ſet on the ſame label, on the reverſe of another.

COLLATIONE *facta uni poſt mortem alterius*, in *Law*, a writ directed to the juſtices of the common-pleas, commanding them to iſſue their writ to the biſhop, for the admiſſion of a clerk, in the place of another preſented by the king, who died during the ſuit between the king and the biſhop's clerk: for, judgment once paſſed for the king's clerk, and he dying before admittance, the king may beſtow his preſentation on another.

COLLATIONE *heremitagii*, in *Law*, a writ whereby the king conferred the keeping of an hermitage upon a clerk.

COLLATIONIS *forma*. See CONTRA.

COLLATIVE *Advowſons*. See ADVOWSON.

COLLEAGUE, a companion, partner, or ASSOCIATE in the ſame office, or magiſtrature. See ADJUNCT.

The word is particularly uſed in ſpeaking of the Roman conſuls, and emperors.

COLLECT, COLLECTION, a voluntary gathering of money, for ſome pious or charitable purpoſe.

Some ſay, the name *collect* or *collection*, was uſed, becauſe thoſe gatherings were anciently made on the days of *collects*, and in *collects*, i. e. in aſſemblies of Chriſtians; but it was more probably, *quia colligebatur pecunia*.

COLLECT is ſometimes alſo uſed for a tax, or impoſition, raiſed by a prince for any pious deſign.—Thus, hiſtories ſay, that in 1166, the king of England, coming into Normandy, appointed a *collect* for the relief of the Holy Land, at the deſire, and after the example, of the king of France.

COLLECT, in the liturgy of the church of England, and the maſs of the Romaniſts, denotes a prayer accommodated to any particular day, occaſion, or the like. In the general, all the prayers in each office are called *collects*; either becauſe the prieſt ſpeaks in the name of the whole aſſembly, whoſe ſentiments and deſires he ſums up by the word *oremus*, *let us pray*, as is obſerved by pope Innocent III. or becauſe thoſe prayers are offered when the people are aſſembled together; which is the opinion of Pamelius on Tertullian.

The congegation itſelf is in ſome ancient authors called *collect*.

The popes Gelaſius and Gregory are ſaid to have been the firſt who eſtabliſhed *collects*. Deſpenſe, a doctor of the faculty of Paris, has an expreſs treatiſe on *collects*, their origin, antiquity, authors, &c.

COLLECTIVE *Idea*, in *Logic*, is a COMPLEX idea, which unites many ideas of the ſame kind under one name, or under one view: as army, dictionary, flock, &c. See COMPOUNDED *idea*.

COLLECTION, *collectio*, in *Logic*, a term uſed by ſome for what is commonly called SYLLOGISM, and RATIOCINATION.

COLLECTIVE, in *Grammar*, a term applied to a word that expreſſes a multitude; though itſelf be ſingular.

Thus, troop, company, and army, are nouns *collective*.

COLLECTOR, a perſon nominated by the commiſſioners of any duty, the inhabitants of a pariſh, or the like, to raiſe or gather any tax, &c.

COLLECTORS, in *Botany*, ſuch ſtudents as have attempted the knowledge of plants, without reducing it to any certain ſcience, being barely employed about obſerving, or getting together the various ſpecies. Linnæi Fund. Bot. p. 1.

COLLEGATARY, in the *Civil Law*, a perſon to whom is left a legacy in common with one or more other perſons. If the thing be bequeathed *in ſolido*, the portion of a deceaſed *collegatary* accrues to the reſt.

COLLEGE, an aſſemblage of ſeveral bodies, or ſocieties; or even of ſeveral perſons into one ſociety.

College, *collegium*, among the Romans, was uſed for an aſſemblage of ſeveral perſons employed in the ſame functions, and as it were bound together to act, or ſerve in concert. It ſerved indifferently for thoſe employed in the offices of religion, of government, the liberal arts, and even mechanical arts, or trades; ſo that the word properly ſignified what we call a *corporation*, or *company*. In the Roman empire, there were not only the *college of augurs*, and the *college of capitolini*; i. e. of thoſe who had the ſuperintendence of the capitoline games; but alſo *colleges* of artificers, *collegia artificum*; *college* of carpenters, *fabricorum*, or *fabrorum tignariorum*; of potters, *figulorum*; of founders, *ærariorum*; the *college* of lockſmiths, *fabrorum ferrariorum*; of engineers of the army, *tignariorum*; of butchers, *laniorum*; of dendrophori, *dendrophororum*; of centonaries, *centonariorum*; of makers of military caſques, *ſagariorum*; of tent-makers, *tabernaculariorum*; of bakers, *piſtorum*; of muſicians, *tibicinum*, &c.

Plutarch obſerves, that it was Numa who firſt divided the people into *colleges*; which he did to the end, that each conſulting the intereſts of their *college*, whereby they were divided from the citizens of the other *colleges*, they might not enter into any general conſpiracy againſt the public repoſe.

Colleges were diſtinguiſhed from other ſocieties not formed into *colleges* by public authority, in this, that thoſe who compoſed a *college*, were qualified to treat of the common intereſts of their *college*, which was, as it were, a member of the ſtate, and had a common purſe, an agent to negotiate their affairs; ſent deputies to the magiſtrates when they wanted to treat with them; might make ſtatutes and by-laws for the adminiſtration of their *college*, &c.

There are various *colleges* on foot among the moderns, built on the model of thoſe of the ancients; as the *three colleges of the empire*, viz. the *college of electors*, *college of princes*, and *college of cities*, &c.

COLLEGE *of Electors*, is the body of electors, or their deputies, aſſembled in the diet at Ratiſbon. See ELECTOR.

Anciently, the king of Bohemia had no deputy in this *college*; at preſent he has.

COLLGE *of Princes*, is the body of princes, or their deputies, at the diet of Ratiſbon.

COLLEGE *of Cities*, is, in like manner, the body of deputies which the ſeveral imperial cities ſend to the diet.

COLLEGE *of Cardinals*, or the *ſacred* COLLEGE, is a body compoſed of the three orders of cardinals, viz. cardinal-biſhops, cardinal-prieſts, and cardinal-deacons.

Each order has its dean, or chief. The dean of the cardinal-biſhops is always the biſhop of Oſtia. See CARDINAL.

COLLEGE is alſo uſed for a public place, endowed with certain revenues, where the ſeveral parts of learning, both divine and human, are taught, in ſchools, halls, or claſſes, appointed for that purpoſe.

An aſſemblage of ſeveral of theſe *colleges* conſtitute an univerſity.

The univerſity of Oxford conſiſts of twenty *colleges*, and five halls; that of Cambridge of twelve *colleges*, and four halls; and that of Paris of fifty-four *colleges*, ſuch as they are: in reality there are but eleven where there is *full exerciſe*, as it is called; for the reſt, the author of a late deſcription of Paris ſays it is needleſs to recite their names, ſince there is no teaching in them.

Among the Greeks, the lyceum and academy were celebrated *colleges*; the latter of which has given its name to our univerſities, which in Latin are called *academiæ*. With them, the houſe or apartment of each philoſopher, or rhetor, might be eſteemed a kind of *college* of itſelf.

The Romans came late into the inſtitution of ſuch *colleges:* they had, however, ſeveral, founded by their emperors; eſpecially in Gaul; the chief whereof were thoſe of Marſeilles, Lions, Beſançon, and Bourdeaux.

The Jews, and Egyptians too, have had their *colleges*; the chief of the firſt were thoſe of Jeruſalem, Tiberias, Nardea, Pompodita, Sura, and Babylon: this laſt is ſaid to have been inſtituted by Ezekiel, and to have ſubſiſted in the time of Mahomet.

Colleges of this kind have been generally in the hands of thoſe conſecrated to the offices of religion: the Magi in Perſia, the Gymnoſophiſts in the Indies, and the Druids in Gaul and Britain, had the care of educating youth in the ſciences.

After Chriſtianity became eſtabliſhed, there were almoſt as many *colleges* as monaſteries; Charlemagne, in his Capitulars, injoining the monks to inſtruct youth in muſic, grammar, and arithmetic: but this calling the monks from their ſolitude, and taking up too much of their time, the care of the *colleges* was at length put into the hands of thoſe who had nothing elſe to do.

In the canon law, it is ſaid, three perſons make a *college, tres collegium faciunt.*—The *colleges* in London, are,

COLLEGE *of Civilians*, commonly called *Doctors Commons*; a *college* founded by Dr. Harvey, dean of the arches, for the profeſſors of the civil law reſiding in this city; where uſually, likewiſe, reſides the judge of the arches court of Canterbury, judge of the admiralty, of the prerogative court, &c. with other *civilians*; who all live, as to diet and lodging, in a collegiate manner, commoning together; whence the appellation of *Doctors Commons*.

Their houſe being conſumed in the great fire, they all reſided at Exeter-houſe in the Strand, till 1672; when their former houſe was rebuilt, at their own expence, in a very ſplendid manner. To this *college* belong thirty-four proctors; who make themſelves parties for their clients, manage their cauſes, &c.

COLLEGE, *Greſham*, or **COLLEGE** *of Philoſophy*; a *college* founded by Sir Thomas Greſham, and endowed with the revenue of the Royal Exchange: one moiety of this endowment the founder bequeathed to the mayor and aldermen of London, and their ſucceſſors, in truſt, that they ſhould find four able perſons to read, within the *college*, divinity, geometry, aſtronomy, and muſic; who are choſen by a committee of the common council, conſiſting of the lord mayor and three aldermen and eight commoners, and allowed each, beſides lodging, fifty pounds *per annum*. The other moiety he left to the company of mercers, to find three more able perſons, choſen by a committee of that company, conſiſting of the maſter and three wardens, during their office, and eight of the court of aſſiſtants, to read law, phyſic, and rhetoric, on the ſame terms; with this limitation, that the ſeveral lecturers ſhould read in term-time, every day in the week, except Sundays; in the morning in Latin, in the afternoon the ſame in Engliſh: but that in muſic to be read only in Engliſh.

By 8 Geo. III. cap. 32. the building appropriated to this *college* was taken down, and the exciſe-office erected in its room. Each of the profeſſors is allowed fifty pounds *per annum*, in lieu of the apartments, &c. relinquiſhed by them in the *college*, and is permitted to marry, notwithſtanding the reſtriction of Sir Thomas Greſham's will. The lectures are now read in a room over the Royal Exchange; and the city and mercers company are required to provide a proper place for this purpoſe.

In this *college* formerly met the Royal Society, that noble academy, inſtituted by king Charles II. and celebrated throughout the world, for their improvements in natural knowlege. See their hiſtory and policy, under **SOCIETY**.

COLLEGE *of Heralds*, or **COLLEGE** *of Arms*, a corporation founded by charter of king Richard III. who granted them ſeveral privileges; as, to be free from ſubſidies, tolls, offices, &c. See **HERALD**.

They had a ſecond charter from king Edward VI. and a houſe built near Doctors Commons, by the earl of Derby, in the reign of king Henry VII. was given them by the duke of Norfolk, in the reign of queen Mary; which houſe is now rebuilt.

Of this collegiate ſociety, are three officers ſtyled *kings of arms, reges armorum Anglicorum*, see **KING** *at arms*; *ſix* **HERALDS**, and four **PURSUIVANTS**.

COLLEGE *of Heralds* in Scotland, conſiſts of Lyon king at arms, ſix heralds, and ſix purſuivants, and a number of meſſengers.

COLLEGE *of Phyſicians*, a corporation of phyſicians, in London; who, by ſeveral charters, and acts of parliament of Henry VIII. and his ſucceſſors, have certain privileges, whereby no man, though a graduate in phyſic of any univerſity, may, without licence under the ſaid *college-ſeal*, practiſe phyſic, in, or within ſeven miles of London; with power to adminiſter oaths, fine and impriſon offenders, in that and ſeveral other particulars: to ſearch the apothecaries ſhops, &c. in and about London, to ſee if their drugs, &c. be wholſome, and their compoſitions according to the form preſcribed by the ſaid *college* in their diſpenſatory.

By the ſaid charter they are alſo freed from all troubleſome offices; as to ſerve on juries, be conſtable, keep watch, provide arms, &c.

The ſociety had anciently a *college* in Knight-rider-ſtreet, the gift of Dr. Linacre, phyſician to king Henry VIII. Since that they have had a houſe built them by the famous Dr. Harvey, in 1652, at the end of Amen-corner, which he endowed with his whole inheritance in his lifetime; but this being burnt in the great fire in 1666, a new one was erected at the expence of the fellows, in Warwick-lane; with a noble library, given partly by the marquis of Dorcheſter, and partly by Sir Theodore Mayerne.

Of this *college* there are at preſent, a preſident, four cenſors, eight electors, a regiſter, and a treaſurer, choſen annually in October: the cenſors have, by charter, power to ſurvey, govern, and arreſt, all phyſicians, or others practiſing phyſic, in, or within ſeven miles of London; and to fine, amerce, and impriſon them, at diſcretion.

The number of fellows was anciently thirty, till king Charles II. increaſed their number to forty; and king James II. giving them a new charter, allowed the number of fellows to be enlarged, ſo as not to exceed fourſcore; reſerving to himſelf and ſucceſſors the power of placing and diſplacing any of them for the future.

The *college* is not very rigorous in aſſerting their privileges; there being a great number of phyſicians, ſome of very good abilities, who practiſe in London, &c. without their licence, and are connived at by the *college:* yet, by law, if any perſon, not expreſly allowed to practiſe, take on him the cure of any diſeaſe, and the patient die under his hand, it is deemed felony in the practiſer.

In 1696, the *college* made a ſubſcription, to the number of forty-two of their members, to ſet on foot a diſpenſatory for the relief of the ſick poor: ſince that, they have erected two other diſpenſatories.

COLLEGE, *Royal, of Phyſicians*, in Scotland, is a corporation of phyſicians at Edinburgh, eſtabliſhed by patent of Charles II. This *college* conſiſts of a preſident, two cenſors, a ſecretary, and the ordinary ſociety of fellows. They have ſimilar rights and privileges with thoſe of the Engliſh *college*.

COLLEGE, *Sion*, or the *college* of the London clergy; which has been a religious houſe time out of mind, ſometimes under the denomination of a priory, ſometimes under that of a ſpital, or hoſpital: at its diſſolution under 31 Hen. VIII. it was called Elſyn's *Spital*, from the name of its founder, a mercer, in 1329.

At preſent it is a compoſition of both, viz. a *college* for the clergy of London, who were incorporated in 1630, in purſuance to the will of Dr. White, under the name of the *Preſident and Fellows of* **SION-COLLEGE**; and an hoſpital for ten poor men, and as many women.

The officers of the corporation are the preſident, two deans, and four aſſiſtants; who are annually choſen from among the rectors and vicars of London; and are ſubject to the viſitation of the biſhop. They have a good library, built and ſtocked by Mr. Simpſon, and furniſhed by ſeveral other benefactors, chiefly for the clergy of the city, without excluding other ſtudents on certain terms; and a hall, with chambers for ſtudents, generally occupied by the miniſters of the neighbouring pariſhes.

COLLEGE *de propaganda fide*, was founded at Rome, in 1622, by Gregory XV. and enriched with ample revenues. It conſiſts of thirteen cardinals, two prieſts, one monk, and a ſecretary; and was deſigned for the propagation and maintenance of the Romiſh religion in all parts of the world. The funds of this *college* have been very conſiderably augmented by Urban VIII. and many private donations. Miſſionaries are ſupplied by this inſtitution, together with a variety of books ſuited to their ſeveral appointments. Seminaries for their inſtruction are ſupported by it, and a number of charitable eſtabliſhments connected with, and conducive to the main object of its inſtitution.

Another *college* of the ſame denomination was eſtabliſhed by Urban VIII. in 1627, in conſequence of the liberality of John Baptiſt Viles, a Spaniſh nobleman. This is ſet apart for the inſtruction of thoſe who are deſigned for the foreign miſſions. It was at firſt committed to the care of three canons of the patriarchal churches; but ever ſince the year 1641 it is under the ſame government with the former inſtitution.

COLLEGE *of juſtice*, in Scotland. See SESSION.

COLLEGES *of common law*. See INNS *of Court*, and CHANCERY.

COLLEGES *for diſabled ſoldiers, ſeamen, &c.* See HOSPITALS.

COLLEGIAL. See COLLEGIATE.

COLLEGIANS, COLLEGIANI, COLLEGIANTS, a religious ſect formed among the Arminians and Anabaptiſts in Holland, about the beginning of the ſeventeenth century; ſo called, becauſe of their *colleges*, or meetings, twice every week; where every one, females excepted, has the ſame liberty of expounding the Scripture, praying, &c.

They are ſaid to be all either Arians, or Socinians: they never communicate in the *college*, but meet twice a year from all parts of Holland at Rhinſbergh, whence they are alſo called *Rhinſberghers*, a village two miles from Leyden, where they communicate together; admitting every one that preſents himſelf, profeſſing his faith in the divinity of the holy Scriptures, and reſolution to live ſuitably to their precepts and doctrines, without regard to his ſect or opinion. They have no particular miniſters, but each officiates as he is diſpoſed. They never baptize without dipping.

COLLEGIATE, or COLLEGIAL *churches*, are thoſe which have no biſhop's ſee, yet have the ancient retinue of the biſhops, the canons and prebends.

Such are, among us, Weſtminſter, Rippon, Windſor, &c. governed by DEANS and CHAPTERS.

Of theſe *collegiate* churches, there are two kinds; ſome of royal foundation, others of eccleſiaſtical foundation: each of them, in matters of divine ſervice, are regulated in the ſame manner as the cathedrals.

There are even ſome *collegiate* churches which have the epiſcopal rights. Some of theſe churches were anciently abbeys; which, in time, were ſecularized.

The church of St. Peter's, Weſtminſter, was anciently a cathedral; but the revenues of the monaſtery being, by act of parliament, 1 Eliz. veſted in the dean and chapter, it commenced a *collegiate* church.—In ſeveral cauſes, the ſtyling it *cathedral*, inſtead of *collegiate church of* Weſtminſter, has occaſioned error in the pleadings.

COLLEGIATE *auditors*. See AUDITOR.

COLLEGIATE *churches, vergers of*. See VERGER.

COLLET, in the *Glaſs Trade*, that part of a glaſs veſſel which, in the manufacture, ſticks to the hollow iron by which the metal is firſt taken out of the melting-pot. This is broken off before the veſſel is faſhioned, and is never ſeen in the leaſt mark, when finiſhed.

Theſe they throw together, and afterwards grind down, and put into the green glaſs metal, for the pureſt green glaſs, but never into any other, though they be the product of the fineſt virgin metal.

COLLET, among *Jewellers*, the ſmall horizontal plane, or face, at the bottom of the brilliant.

COLLETICS, COLLETICA, in *Medicine*, ſuch remedies as join and glue together the ſeparated parts, or lips, of a wound, or ulcer; and thus re-eſtabliſh them in their natural union. See AGGLUTINANT.

The word comes from κολλητικος, ſomething that has the virtue of gluing together: of κολλα, *gluten*.

Colletics are more deſiccative than SARCOTICS; but leſs ſo than EPULOTICS. Among *colletics* are ranked litharge, aloes, myrrh, &c.

COLLICLÆ, in *Anatomy*, is uſed by ſome, as Steno, for the CARUNCULÆ *lacrymales*.

COLLIERS, are veſſels employed to carry coals from one port to another; and ſerving as an excellent nurſery for ſeamen.

COLLIERY, ſee COAL.

The moſt remarkable *colliery*, or coal-work, that we have ever had in this iſland, was that wrought at Burrowſtoneneſs, under the ſea. The veins of coal were found to continue under the bed of the ſea in this place, and the colliers had the courage to work the vein near half way over; there being a mote half a mile from the ſhore, where there was an entry that went down into the coal-pit, under the ſea. This was made into a kind of round key, or mote, as they call it, built ſo as to keep out the ſea, which flowed there twelve feet. Here the coals were laid, and a ſhip, of that draught of water, could lay her ſide to the mote, and take in the coal.

This famous *colliery* belonged to the earl of Kinkardin's family. The freſh water which ſprung from the bottom and ſides of the coal pit, was always drawn out upon the ſhore by an engine moved by water, that drew it forty fathom. This coal pit continued to be wrought many years to the great profit of the owners, and the wonder of all that ſaw it; but, at laſt, an unexpected high tide drowned the whole at once, and the labourers had not time to eſcape, but periſhed in it. Phil. Tranſ. Nº 93.

COLLIGENDUM *bona defuncti, letters ad.* See ADMINISTRATION.

COLLIMATION, *line of*, in a teleſcope, is a line paſſing through the interſection of thoſe wires, which are fixed in the focus of the object-glaſs, and the center of the ſame glaſs. It is alſo called the line of *ſight*.

COLLINSONIA, in *Botany*, a genus of the *diandria monogynia* claſs. The characters are theſe: the flower is funnel-ſhaped, of one petal, which is unequal, cut into five parts at the top, the upper part being ſhort and obtuſe, and two of them reflexed; the lower lip or beard being longer, and ending in many points. It hath two long briſtly ſtamina, which are erect; and a quadrifid obtuſe germen, with a large gland, ſupporting a briſtly ſtyle, which afterward becomes a ſingle roundiſh ſeed, ſituated in the bottom of the empalement. We have but one ſpecies of this plant, which was brought from Maryland.

COLLINS's *Quadrant*. See QUADRANT.

COLLIQUAMENTUM denotes a very tranſparent fluid obſervable in an egg two or three days after incubation, containing the firſt rudiments of a chick. It is incloſed in its own proper membrane, diſtinct from the *albumen*. Harvey calls it *oculus*.

COLLIQUATION, from *colliqueo, to melt*, in *Pharmacy*, the action of melting together two, or more, ſolid ſubſtances; or rendering them liquid by fuſion, or diſſolution; as wax, mucilages, &c. by heat; gums, &c. by moiſture.

COLLIQUATION is alſo uſed to expreſs ſuch a temperament, and diſpoſition of the animal fluids, as proceeds from a too lax compages; whereby they flow off through the ſeveral glands, and particularly through thoſe of the ſkin, faſter than they ought; which occaſions fluxes of many kinds, but moſtly, profuſe, greaſy, clammy ſweats.

If this *colliquation* continue, it generally terminates in an hectic fever, and is uſually a concomitant of one.

The curative intention in this caſe is the giving a better conſiſtence to the juices by balſamics and agglutinants; and the hardening of the ſolids by ſubaſtringents. Hence,

COLLIQUATIVE *fever* is a fever attended with a diarrhœa, or profuſe ſweats, from too looſe a contexture of the fluids.

COLLISEUM. See COLISEUM.

COLLISION, the friction, or PERCUSSION, of two bodies moving violently with different directions, and daſhing againſt each other.

COLLOQUIUM, in *Law*, (*a colloquendo*) a talking together, or affirming of a thing, laid in declarations for words in actions of ſlander, &c.

COLLUCIANISTÆ, in *Church Hiſtory*, a deſignation given to the Arians, from the martyr Lucian, a preſbyter of Antioch.

COLLURIO, in *Zoology*, a name by which ſome authors have called the lanius, or butcher bird, a very ſmall ſpecies of hawk, not larger than a thruſh, but a great deſtroyer of ſmall birds. See LANIUS.

COLLUM, in *Anatomy*. See NECK, and CERVIX.

COLLI *interſpinales*. See INTERSPINALES.

COLLI *intertranſverſales*. See INTERTRANSVERSALES.

COLLI *tranſverſalis*. See TRANSVERSALIS.

COLLUSION, a ſecret underſtanding between two parties, who plead, or proceed, fraudulently againſt each other, to the prejudice of a third.

In the canon law, *colluſion*, in matters of benefices, vacates the benefice, and incapacitates the perſon from holding any benefice at all.

COLLUTHIANS, a religious ſect, who roſe about the beginning of the fourth century; on occaſion of the indulgence ſhewn to Arius by Alexander patriarch of Alexandria.

Several people being ſcandalized at ſo much condeſcenſion; and, among the reſt, Colluthus, a prieſt of the ſame city; he hence took a pretence for holding ſeparate aſſemblies, and by degrees proceeded to the ordination of prieſts, as if he had been a biſhop; pretending a neceſſity for this authority, in order to oppoſe Arius. To his ſchiſm he added hereſy; teaching, that God did not create the wicked; that he was not author of the evils that befal men, &c.—He was condemned by a council held at Alexandria by Oſius, in the year 330.

COLLUTION, *Collutio*, in *Medical Writers*, is ſometimes uſed for the waſhing of the mouth, particularly, when done to clean or faſten bad or looſe teeth; or free the gums, &c. from ulcers.

COLLYBUS, Κολλυϐος, in *Antiquity*, the ſame with what is now called the rate of EXCHANGE.

COLLYRÆ, or COLLYRIDES, in *Antiquity*, a certain ornament of hair, worn by the women on their necks. It was made up in the form of the ſmall, roundiſh cakes, called κολλυραι, *collyræ*.

COLLYRIDIANS, in *Church Hiſtory*, a ſect, towards the cloſe of the fourth century, denominated from a little cake, called by the Greeks κολλυριδιαι, *collyridia*, which they offered to the Virgin Mary.

This ſect, it ſeems, conſiſted chiefly of Arabian women, who, out of an extravagance of devotion to the Virgin, met on a certain day in the year, to celebrate a ſolemn feaſt, and to render divine honours to Mary as to a goddeſs; eating the cake which they offered in her name.—St. Epiphanius, who relates the hiſtory of this ſuperſtitious ceremony, ridicules it. They ſprung up in oppoſition to the ANTIDICO-MARIANITES.

COLLYRIUM, in *Medicine*, an external remedy, appropriated to diſeaſes of the eyes.

The word comes from κολλυριον; and that, according to Martinius, from κολλαν τον ῥυν; becauſe it glues up, and prevents defluxions.

There are two kinds of *collyriums*; the one *liquid*, the other *dry*. *Liquid collyriums*, ὑδροκολλυρια, are compoſed of ophthalmic powders in water; as roſe-water, plantain-water, that of fennel, eyebright, &c. wherein they diſſolve tutty, white vitriol, or ſome other proper powder.

The *dry collyria*, ξηροκολλυρια, are troches of rhaſis, ſugar-candy, iris, tutty prepared, &c. blown into the eye with a little pipe.

COLLYRIUM is alſo a name given to unguents uſed for the ſame purpoſe; as unguent of tutty, and ſeveral others.

COLLYRIUM is alſo a denomination given, though improperly, to ſome liquid medicines uſed againſt venereal ulcers.

COLLYRIUM *Samium*. See SAMIA *terra*.

COLMESTRE, in *Zoology*, the name of a bird of the LAGOPUS kind, more uſually called OTOMO, and ſuppoſed not to differ from the lagopus, otherwiſe than by its changing its colour, in the ſummer months.

COLOBIUM, Κολοϐιον, from κολυω, *I mutilate*, among the *Ancients*, an upper garment, without ſleeves, longer than the tunic.

COLOBOMA, in *Medical Writers*, is uſed for the preternatural growing together of the lips, or eyelids, or for the adheſion of the ears to the head.

COLOCOLO, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of bird, called alſo there *caſſili*, and by ſome authors, the water raven, *corvus fluviatilis*. It is very much of the ſhape of a common raven, but is truly an amphibious bird, living more of its time under water than in the air; it is black in colour; its neck is remarkably long; and it feeds on fiſh, which it hunts under water, as they do one another; it feeds likewiſe on frogs, ſerpents, and ſhell-fiſh. It is common to ſee it under water in clear rivers, where it ſeems perfectly at eaſe, and runs about with great ſwiftneſs; at times it comes up to the ſurface, and dries its wings in the air and ſunſhine. Phil. Tranſ. N° 285. p. 1896.

COLOCYNTHIS, in *Botany*, the name of a genus of plants of the gourd kind, of which there are many ſpecies, the COLOQUINTIDA of the ſhops being the pulp of one of them. In the Linnæan diſtribution, it is a ſpecies of the CUCUMBER, or *cucumis*. The characters which diſtinguiſh this genus from the others of the ſame claſs, are, that the leaves are very deeply divided, and the fruit is not eatable, but of an intolerable bitterneſs.

COLOGNE *Earth*, a ſubſtance uſed in painting, as a water-colour, much approaching to amber in its ſtructure, and of a deep brown. It has generally been eſteemed a genuine earth, but has been diſcovered to contain a great deal of vegetable matter, and, indeed, it is a very ſingular ſubſtance.

It never conſtitutes an entire ſtratum in the earth, but is lodged among other ſtrata in large flat detached maſſes. It is moderately dry, while in the earth, and of a ſoft crumbly texture. When dried, it is of a deep, duſky brown, of a very cloſe, compact, and fine ſtructure, and very remarkably light; it is of a ſmooth, even ſurface, dry, but not harſh to the touch, crumbles eaſily to pieces between the fingers, and ſlightly ſtains the hands; it adheres firmly to the tongue, and is of a very auſtere and aſtringent taſte, but not at all reſembling the aſtringency of the boles, or any thing elſe of the mineral kingdom, but plainly reſembling the taſte of oak bark. It makes no effervеſcence with acids; if thrown into water, it ſwims on the ſurface, till thoroughly wetted; and if brought into contact with burning coals, it takes fire, and burns of itſelf, till reduced to yellowiſh aſhes.

It is eaſy to diſcern from this account, that, though this is generally eſteemed an earth, and known to the world by no other name, it is no pure native foſſil, but contains more vegetable than mineral matter, and owes its origin to the remains of wood which has been long buried in the earth. It is dug in Germany and France: the quantities conſumed in painting, in London, are brought from Cologne, where it is found very plentifully; but our own kingdom is not without it, it being found near Birmingham, and on Mendip hills in Somerſetſhire; but what has been yet found there is not ſo pure or fine, as that imported from Cologne. Hill's Hiſt. of Foſſils, p. 64. and Da Coſta's Hiſt. of Foſſils, p. 121.

COLON, in *Anatomy*, denotes the ſecond of the thick inteſtines.

Some derive the word from κωλυειν, *to retard*; in regard it is in the folds of this inteſtine that the excrements are ſtopped and formed. Others fetch it from κοιλον, on account of its capacity: others again from κολαζεσθαι, *to be tormented*; in regard of the grievous pain it frequently undergoes.—It is from this part that the colic takes its name.

The *colon* is placed between the *ilion* and *rectum*, and is wider than either of them: in length it is eight or nine hands. It begins where the *ilion* ends, viz. in the cavity of the *os ilium*, on the right ſide; whence, aſcending by the kidney on the ſame ſide, it paſſes under the concave ſide of the liver, to which it is ſometimes tied, as likewiſe to the gall-bladder, which tinges it yellow in that place: then it runs under the bottom of the ſtomach to the ſpleen in the left ſide, to which it is alſo knit; from thence it turns down to the left kidney; and thence paſſing in form of an S, it ends at the upper part of the *os ſacrum* in the *rectum*.

At the beginning of this gut, there is a valve formed by the production of the inmoſt coat of the inteſtines in this place; which hinders the excrements, when once fallen into the *colon*, from returning again to the *ilium*.

It has ſtrong ligaments, which running along its upper ſide, from the *ilium* to the *rectum*, ſtrengthens it againſt the weight of the excrements, and draws it together into cells; which, with the *valvulæ conniventes*, retard the paſſages of the excrements, that we may not be continually obliged to be going to ſtool.

The fleſhy fibres of its ſecond coat are greater and ſtronger than thoſe of the other inteſtines; becauſe a greater ſtrength is requiſite to cauſe the excrements to aſcend.

The chief deſign of the *colon* ſurrounding the abdomen, and, with the *rectum*, touching all the parts contained in it, ſeems to be, that by immediate fomentation with clyſters, they might be eaſed of their maladies.

Meſo-COLON. See MESO-COLON.

COLON, in *Grammar*, a point, or character, formed thus [:] ſerving to mark a pauſe, and to divide the members of a period. See POINTING. See alſo PERIOD, COMMA, and SEMICOLON.

Grammarians generally aſſign the uſe of a *colon* to be to mark the middle of a period; or to conclude a ſenſe leſs perfect than the dot, or period: but a ſenſe leſs perfect than the period is an expreſſion extremely vague and indeterminate.

Others ſay, a *colon* is to be uſed when the ſenſe is perfect, but the ſentence not concluded: but neither is this ſufficiently clear and expreſs. Add to this, that in practice our beſt writers confound the *colon* with the ſemicolon.

F. Buffier attempts to fix the uſe of the *colon*; but he does not much diſtinguiſh it from the ſemicolon: he preſcribes the uſe of either, indifferently; and calls them by a common name, *intermediate pointings*; as being mediums between the comma, and full-point, or period. Their uſe, according to this author, is to diſtinguiſh the ſupernumerary members of a period. By ſupernumerary members are meant ſuch as the precedent ones do not raiſe any expectation of; i. e. ſuch parts as have indeed dependence on what goes before, even though what goes before has a complete ſenſe, independent hereon: v. gr. *The Auguſtan age was ſo eminent for good poets, that they have ſerved as models to all others: yet did it not yield any good tragic poets.* Where the ſupernumerary member, and the uſe of the *colon*, are obvious. The moſt obvious and ſenſible uſe of the *colon*, he adds, is, when the ſupernumerary member is diſtinguiſhed by ſome conjunction; as, *notwithſtanding, however, but, except that, unleſs, inaſmuch as, yet, ſince, the rather as, provided that*, &c. Some, indeed, uſe the *colon* in the middle of long periods, without any regard to ſupernumerary members: which cuſtom was probably introduced, to mark that the breath is here to be taken almoſt as much as in a common period, in the place where the ſupernumerary period commences. But this, at beſt, is arbitrary; and the intermediate pointings may always be omitted in a period, if there be no ſubſequent ſupernumerary member, i. e. if there be no ſubſequent member, but what is expected from the precedent. As to the occaſions where the *colon* is to be uſed, rather than the ſemicolon, there is nothing preciſe to be ſaid of it; except that the *colon* ſhews the ſupernumerary member more detached, and ſets it at a greater diſtance from the reſt; and therefore marks a longer pauſe than the ſemicolon.

Accordingly it ſeems preferable to the ſemicolon before conjunctions adverſative, reſtrictive, conditional, &c. as, *nevertheleſs*, *but*, *excepting that*, *however*, *otherwiſe*, *provided that*. Again, where the ſupernumerary phraſes not only ſuppoſe the precedent, but depend on them for their regimen, and are, as it were, new parts thereof; there the ſemicolon ſeems preferable to the *colon*: v. gr. *You are regardleſs of the goodneſs of God, who firſt choſe you; a God who is only jealous of your heart for your own happineſs; a God who could be equally glorious in deſtroying you by his juſtice, as in ſaving you by his mercy.* Or thus: *The diſcourſe conſiſted of two parts; in the firſt was ſhewn the neceſſity of fighting; in the ſecond, the advantages that would redound from it.* But this difference, it muſt be owned, has a dependence on ſomething that influences all the points, and ſways the whole doctrine of punctuation; viz. the length, or ſhortneſs, of the members and periods: for, when the phraſes are long, we point higher than when ſhort.

A later author, in an ingenious diſcourſe, De Ratione Interpungendi, marks the office of the *colon*, and its difference from the ſemicolon, &c. more preciſely; a *colon*, on his principles, ſerves to diſtinguiſh thoſe conjunct members of a ſentence, which are capable of being divided into other members; whereof one, at leaſt, is conjunct.

Thus, in the ſentence, *As we cannot diſcern the ſhadow moving along the dial-plate, ſo the advances we make in knowlege are only perceived by the diſtance gone over*; the two members being both ſimple, are only ſeparated by a comma: in this, *as we perceive the ſhadow to have moved, but did not perceive it moving; ſo our advances in underſtanding, in that they conſiſt of ſuch minute ſteps, as are only perceivable by the diſtance*; the ſentence being divided into two equal parts, and thoſe conjunct ones, ſince they include others; we ſeparate the former by a ſemicolon, and the latter by commas: but in this, *as we perceive the ſhadow to have moved along the dial, but did not perceive it moving; and it appears the graſs has grown, though nobody ever ſaw it grow: ſo the advances we make in knowlege, as they conſiſt of ſuch minute ſteps, are only perceivable by the diſtance.* The advancement in knowlege is compared to the motion of a ſhadow, and the growth of graſs; which compariſon divides the ſentence into two principal parts: but ſince what is ſaid of the movement of the ſhadow, and likewiſe of the growth of graſs, contains two ſimple members, they are to be ſeparated by a ſemicolon; conſequently a higher pointing is required to ſeparate them from the other part of the ſentence, which they are oppoſed to: and this is a *colon*.

Biſhop Lowth obſerves, that a *colon* diſtinguiſhes a member of a ſentence, whether ſimple or compounded, which of itſelf would make a complete ſentence, and ſo requires a greater pauſe than a ſemicolon, yet is followed by an additional part, making a more full and perfect ſenſe. He adds, that a *colon* may be alſo uſed, when a ſemicolon has preceded, and a greater pauſe is ſtill neceſſary, though the ſentence be incomplete; and that it is commonly uſed, when an example, or a ſpeech, is introduced. Introd. to Eng. Gram. ed. 1772. p. 207.

COLONEL, an officer in the army, who has the command in chief of a regiment, either of horſe, foot, or dragoons.

Skinner derives the word from *colony*; being of opinion, the chiefs of colonies, called *coloniales*, might give the name to chiefs of forces.

In the French and Spaniſh armies, *colonel* is confined to the infantry and dragoons: the commanding officer of a regiment of horſe they uſually call *meſtre de camp*.

Formerly, inſtead of *colonel*, the French uſed the word *coronel*; and this old ſpelling comes nearer to our common way of pronouncing the word *colonel*.

COLONEL *Lieutenant*, is he who commands a regiment of guards, whereof the king, prince, or other perſon of the firſt eminence, is *colonel*.

Theſe *colonels lieutenants* have always a *colonel's* commiſſion, and are uſually general officers.

COLONEL-*Lieutenant* is the ſecond officer in the regiment: who is at the head of the captains, and commands in the abſence of the *colonel*.

Lieutenant-colonel of horſe, or dragoons, is the firſt captain of the regiment. See CAPTAIN.

COLONNADE, a PERISTYLE of a circular figure; or a ſeries of columns diſpoſed in a circle, and inſulated within-ſide. Such is that of the little park at Verſailles, which conſiſted of thirty-two Ionic columns; all of ſolid marble, and without incruſtation.

A polyſtile COLONNADE is that whoſe number of columns is too great to be taken in by the eye at a ſingle view. Such is the *colonnade* of the palace of St. Peter at Rome; which conſiſts of two hundred and eighty-four columns of the Doric order, each above four feet and an half in diameter; all of Tiburtine marble.

COLONUS, an huſbandman, or villager, who was bound to pay yearly a certain tribute, or, at certain times of the year, to plow ſome part of the lord's land; and from hence comes the word *clown*, who is called by the Dutch *boor*.

COLONY, COLONIA, a company of people, of all ſexes and conditions, tranſported into a remote province, in order to cultivate and inhabit it.

Originally the word *colony* ſignified no more than a *farm*; i. e. the habitation of a peaſant, *colonus*, with the quantity of land ſufficient for the ſupport of his family; *quantum colonus unus arare poterat*.

We may diſtinguiſh three kinds of *colonies*: thoſe ſerving to eaſe, or diſcharge the inhabitants of a country; where the people are become too numerous, ſo that they cannot any longer conveniently ſubſiſt.

The ſecond are thoſe eſtabliſhed by victorious princes and people, in the middle of vanquiſhed nations, to keep them in awe and obedience.

The third may be called *colonies of commerce*; becauſe, in effect, it is trade that is the ſole occaſion and object thereof.

It was by means of the firſt kind of *colonies*, that ſome ages after the deluge, the eaſt, firſt, and ſucceſſively all the other parts of the earth, became inhabited: and without mentioning any thing of the Phœnician and Grecian *colonies*, ſo famous in ancient hiſtory, it is notorious that it was for the eſtabliſhment of ſuch *colonies*, that, during the declenſion of the empire, thoſe torrents of barbarous nations, iſſuing, for the generality, out of the North, over-ran the Gauls, Italy, and the other ſouthern parts of Europe; and after ſeveral bloody battles, divided it with the ancient inhabitants.

For the ſecond kind of *colonies*, the Romans uſed them more than any other people; and that to ſecure the conqueſts they had made from the weſt to the eaſt. Every one knows how many cities in Gaul, Germany, Spain, and even in England, value themſelves on their having been of the number of Roman *colonies*.

Laſtly, the *colonies of commerce* are thoſe eſtabliſhed by the Engliſh, French, Spaniards, Portugueſe, and other nations, within theſe two laſt centuries, and which they continue ſtill to eſtabliſh in ſeveral parts of Aſia, Africa, and America; either to keep up a regular commerce with the natives, or to cultivate the ground, by planting ſugar-canes, indigo, tobacco, and other commodities. See CHARTER-*Governments*.

The principal of this kind of *colonies* are, or were, in the one and the other America, northern and ſouthern; particularly Peru, Mexico, Canada, Virginia, New England, Carolina, la Louiſiane, l'Acadia, Hudſon's Bay, the Antilles iſlands, Jamaica, Domingo, and the other iſlands.—In Africa, Madagaſcar, Cape of Good Hope, Cape Verd, and its iſlands, and all thoſe vaſt coaſts extended thence as far as to the Red Sea.—Laſtly, in Aſia, the famous Batavia of the Dutch; Goa, Diu, of the Portugueſe; and ſome other leſs conſiderable places of the Engliſh, French, and Danes.

There were two kinds of *colonies* among the Romans; thoſe ſent by the ſenate; and the military ones, conſiſting of old ſoldiers, broken and diſabled with the fatigues of war, who were thus provided with lands, as the reward of their ſervices.

The *colonies* ſent by the ſenate were either Roman, or Latin; i. e. they were compoſed either of Roman citizens, or Latin. The *colonies* of Roman citizens had the right of ſuffrages; but had no part in the offices or honours of the republic. The inhabitants of Latin *colonies* had no right of ſuffrages without an expreſs permiſſion.

According to Ulpian, (lib. i. D. de Cenſ.) there were other *colonies*, which had little more than the name; only enjoying what they called *jus Italicum*, i. e. they were free from the tribute and taxes paid by the provinces.—Such were the *colonies* of Tyre, Berytus, Heliopolis, Palmyra, &c.

M. Vaillant has filled a volume in folio with medals ſtruck by the ſeveral *colonies*, in honour of the emperors who founded them. The ordinary ſymbol they engraved on their medals, was, either an eagle; as when the veteran legions were diſtributed in the *colonies*: or a labourer, holding a plough drawn by a pair of oxen; as when the *colony* conſiſted of ordinary inhabitants. On all the medals are ſeen the names of the decemviri, who held the ſame rank, and had the ſame authority there as the conſuls had at Rome.

Colony *of Bees*. See Hive.

COLOPHONY, in *Natural Hiſtory* and *Chemiſtry*, a reſinous ſubſtance prepared of turpentine, by boiling it in water. When cold, it becomes of a hard conſiſtence, and has the ſame properties as other reſins, and the ſame principles may be obtained from it by analyſis.

The chief uſe of this drug is in the cure of venereal ailings, ſeminal weakneſſes, the whites in women, &c. The apothecaries make it into pills, which they roll in liquorice-powder, or cover with gold-leaf, and call them *turpentine-pills*.

It is alſo uſed by muſicians, to rub the hairs of their bow; the effect whereof is, that the gum cleaving to the hairs, and communicating to them a tenacious quality, prevents their ſliding too eaſily over the ſtrings; and promotes that trembling which forms the ſound.

The common black *colophony*, or black reſin, is ſaid to be procured from the turpentine of the mountain pine. The oil being extracted from this by diſtillation, what remains in the ſtill is the *colophony*.

To be good, it muſt be ſhining and odoriferous; and when thrown on the fire, render a ſmoke like that of frankincenſe.

Pliny ſays, *colophony* took its name from *Colophon*, a city of Ionia, whence it was firſt brought. It is now frequently called *Spaniſh wax*, or *Grecian reſin*, as it is brought from the one or the other of thoſe countries. It is found to warm, dry, ſoften, and agglutinate; and uſually enters the compoſition of plaſters and unguents.

COLOQUINTIDA, or Colocynthis, uſually called *bitter apple*; the fruit of a plant of the ſame name, brought from the Levant; about the bigneſs of a large orange.

This word comes from κολοκυνθις, a name which was given it, becauſe it κοιλιαν κινει, *moves the belly*.

Its colour is a ſort of golden brown: its inſide is full of kernels, which are to be taken out before the *colocynth* be uſed. The pulp is intolerably bitter.

Coloquintida is of conſiderable uſe in medicine, but moſtly in officinal compoſitions; the violence of its operation rendering it unſafe to be given inwardly in extemporaneous preſcriptions, except with great caution.

It enters, as an ingredient, in the confectio hamec, and moſt of the purging pills, called *pilulæ corticæ*; and in ſuch caſes as require briſk purging, is attended with great ſucceſs. But it requires proper management, as it is one of the moſt violent purgative drugs known; inſomuch that it excoriates the paſſages to that degree, as ſometimes to bring away blood, and induce a ſuperpurgation. Sometimes it is taken boiled in water, or ſmall beer, in obſtructions of the menſes; which, in ſtrong conſtitutions, is often attended with ſucceſs. Some women have made uſe of it, in the ſame manner, in the beginning of pregnancy, to procure abortion; which it often effects by the violence of its operation.

The powder of *coloquintida* is ſometimes uſed externally, with aloes, &c. in unguents, emplaſters, &c. with remarkable ſucceſs againſt worms; and ſome, for the ſame purpoſe, recommend decoctions of the pulp, given clyſterwiſe. In the iliac paſſion, clyſters of *coloquintida* have been found of ſervice, after moſt other medicines have failed.

In the common analyſis by chemiſtry, there appears no principle predominant in this fruit, by which its violent effects may be accounted for. Diſtilled by the retort, it yields firſt a phlegm; then a phlegm with an acid ſalt diſſolved in it; after this, a phlegm leſs acid, and containing a quantity of an urinous alkaline ſalt, which ſtrongly affects the ſmell. Theſe three liquors bring over with them a fœtid oil, and the fixed ſalt drawn from the remainder in the retort, was of the nature of the reſt of the ſalts of that kind. Mem. Acad. Par. 1701.

Colocynth, infuſed in rain water, yields only an inſipid phlegm by diſtillation, but the remainder yields a very fine extract of a tolerably mild purgative virtue; a pound of the pulp of *colocynth* thus yields two ounces and an half of extract, and the remaining maſs of the *colocynth* does not appear to contain any reſin. It is uſual to attribute the violence of all purgative medicines to their abounding in reſinous parts. To try whether this was the caſe in this ſimple, Mr. Boulduc finiſhed his experiments on it by making an extract from it, by means of ſpirit of wine. Eight ounces of the clean pulp yielded only half an ounce of a reſinous extract, and the reſiduum yielded two ounces of a coarſe extract, by means of water; but this was of a bad conſiſtence, and would ſcarce hang together.

Either of theſe extracts, given alone, proved troubleſome medicines: and all that appeared from this, and from the whole, was, that in order to have the virtues of this fruit in a gentle, and ſafe manner, its ſaline and reſinous parts muſt be left together, and only ſeparated from its terreſtrial and mucilaginous ones, by means of long fermentation with muſt or water, before its being evaporated into an extract; becauſe all its violent effects are owing to theſe terreſtrial and mucilaginous particles.

Troches made of *colocynth* are called *troches of alhandal*: they are prepared by cutting the *coloquintida* very ſmall, and reducing it to a fine powder in a mortar, rubbed with oil of ſweet almonds; adding gum tragacanth, and maſtich afterwards.

COLOR, in the *Ancient Muſic*. See Colours.

Color *Indicus*. See Indicus *color*.

COLORATURA, in the *Italian Muſic*, is uſed to denote all ſorts of variations, trillos, diminutions, &c. that can render a ſong agreeable.

COLOBRASIANS. See Colarbasians.

COLORISATION, or Coloration, in *Pharmacy*, a term applied to the ſeveral changes of colour which bodies undergo in the various operations of nature, or art; as by fermentations, lotions, coctions, calcinations, &c.

COLORITES, in *Eccleſiaſtical Hiſtory*, a congregation of Auguſtin monks inſtituted about 1530, and ſo called from *Colorito*, a mountain near Morano in Calabria, where a church was erected to the Virgin Mary.

COLOSSAL *column*. See Column.

COLOSSUS, a ſtatue of enormous, or gigantic ſize.

The moſt eminent of this kind was the *coloſſus* of Rhodes, one of the wonders of the world, a brazen ſtatue of Apollo, ſo high, that ſhips paſſed with full ſails betwixt its legs. It was the workmanſhip of Chares, a diſciple of Lyſippus; who ſpent twelve years in making it; it was at length overthrown by an earthquake, after having ſtood ſixty-ſix years. Its height was a hundred and five feet: there were few people who could fathom its thumb, &c.

Some critics obſerve, that the *coloſſus* of Rhodes gave its own name to the people among whom it ſtood; and that many, at leaſt among the ancient poets, call the Rhodians, *Coloſſians*: hence they advance an opinion, that the Coloſſians in Scripture, to whom St. Paul directs his Epiſtle, are, in reality, the inhabitants of Rhodes. Of this ſentiment are Suidas, Calepine, Munſter, &c.

When the Saracens became poſſeſſed of the iſland, A.D. 672, the ſtatue was found proſtrate on the ground: they ſold it to a Jew, who loaded nine hundred camels with the braſs, which amounted to ſeven hundred and twenty thouſand pounds weight.

The baſis that ſupported it was of a triangular figure: its extremities were ſuſtained with ſixty pillars of marble. There was a winding ſtair-caſe to go up to the top of it; from whence one might diſcover Syria, and the ſhips that went into Egypt, in a great looking-glaſs that was hung about the neck of the ſtatue. Among the antiquities of Rome, there are ſeven famous *coloſſuſes*: two of Jupiter, as many of Apollo, one of Nero, one of Domitian, and one of the ſun.

COLOSTRUM, or Colostra, in *Medicine*, the firſt milk of any animal after bringing forth young, called in common *beaſtings*.

It is remarkable that this milk is generally cathartic, and purges off the meconium; thus ſerving both as an aliment and medicine.

This name is likewiſe given to a diſeaſe which this thick coagulated milk ſometimes occaſions.

An emulſion prepared with turpentine, diſſolved with the yolk of an egg, is ſometimes alſo called by this name.

COLOUR, Color, in *Philoſophy*, a property inherent in light, whereby, according to the different ſizes or magnitudes of its parts, it excites different vibrations in the fibres of the optic nerve; which, propagated to the ſenſorium, affect the mind with different ſenſations.

Or, *colour* may be defined a ſenſation of the ſoul, excited by the application of light to the retina of the eye; and different, as that light differs in the degree of its refrangibility, and the magnitude of its component parts.

In the former view, therefore, light is the ſubject of *colour*; in the latter it is the agent. See its properties under the article Light.

Various are the opinions of ancient and modern authors, and of the ſeveral ſects of philoſophers, with regard to the nature and origin of the phænomenon *colour*: the moſt popular opinion was long that of the Ariſtotelians; who maintain *colour* to be a quality reſiding in the coloured body; and to exiſt independently of light.

The Carteſians come nearer the matter: they own, that as the coloured body is not immediately applied to the organ, to occaſion the ſenſation; and that as no body can affect the ſenſe but by immediate contact, the coloured body does not excite the ſenſation of itſelf, or contribute any thing to it, otherwiſe than by moving ſome interpoſed medium, and by that the organ of ſight.

They add, that, as we find that bodies do not affect the ſenſe in the dark, light only occaſions the ſenſe of *colour*, by moving the organ; and that coloured bodies are no further concerned in this, than as they reflect the light with a certain modification: the differences in their *colours* ariſing from a difference in the texture of their parts, whereby they are diſpoſed to reflect the light with this or that modification.

B. Porta thought that light was *colourleſs*, but that it was capable of having *colour* ſuperinduced upon it from foreign cauſes, in certain circumſtances. Dr. Hooke maintained, that the primary *colours* are only two, viz. blue and red, and that all the reſt are compoſed of them; and that theſe two *colours* are occaſioned by impreſſions on the retina from pulſes of light, of different ſtrength. M. de la Hire reſolves the difference of *colours* into the degree in which the light agitates or affects the optic nerve; and he obſerves, that whatever tends to weaken this impreſſion, makes a change in the *colour*. See Prieſtley's Hiſt. of Viſion, &c. p. 43. 146, 147.

But it is to Sir Iſaac Newton alone we are to refer for a ſolid and conſiſtent theory of *colours*; built on ſure experiments, and ſolving all the phænomena thereof: his doctrine is as follows.

It is found by experience, that rays, or beams of light, are compoſed of particles very heterogeneous, or diſſimilar to each other: i. e. ſome of them, as it is highly probable, are larger, and others leſs. For a ray of light, as FE (*Tab. Optics, fig.* 5.) being received on a refracting ſurface, as AD, in a dark place, is not wholly refracted to L; but it is ſplit, as it were, and diffuſed into ſeveral radioli, or little rays, ſome whereof are refracted to L, and others to the other intermediate points between L and G; i. e. thoſe particles of the light which are the moſt minute, are of all others the moſt eaſily and moſt conſiderably diverted, by the action of the refracting ſurface, out of their rectilinear courſe towards L; and with reſpect to the reſt, as each exceeds another in magnitude, ſo is it with more difficulty, and leſs conſiderably, turned out of its right line to the points between L and G. Now, each ray of light, as it differs from another in its degree of refrangibility, ſo does it differ from it in *colour*: this is warranted by numerous experiments. Thoſe particles, v. gr. which are moſt refracted, are found to conſtitute a ray of a violet *colour*, i. e. in all probability, the moſt minute particles of light, thus ſeparately impelled, excite the ſhorteſt vibrations in the retina; which are thence propagated by the ſolid fibres of the optic nerves into the brain, there to excite the ſenſation of violet *colour*; as being the moſt duſky and languid of all *colours*.

Again, thoſe particles which are the leaſt refracted, conſtitute a radiolus, or ray of a red *colour*; i. e. the largeſt particles of light excite the longeſt vibrations in the retina; ſo as to excite the ſenſation of red *colour*, the brighteſt and moſt vivid of all others.

The other particles, being in like manner ſeparated, according to their reſpective magnitudes, into little rays, excite the intermediate vibrations, and thus occaſion the ſenſations of the intermediate *colours*; much in the ſame manner as the ſeveral vibrations of the air, according to their reſpective magnitudes, excite the ſenſations of different ſounds.

To this it may be added, that not only the more diſtinct and notable *colours* of red, yellow, blue, &c. have thus their riſe from the different magnitude and refrangibility of the rays; but alſo the intermediate degrees or ſhades of the ſame *colour*; as of yellow up to green, or red down to yellow, &c.

Further, the *colours* of theſe little rays, not being any adventitious modifications thereof, but connate, primitive, and neceſſary properties; as conſiſting, in all probability, in the magnitudes of their parts, muſt be perpetual and immutable; i. e. they cannot be changed by any future refraction or reflexion, or any modification whatſoever.

This is confirmed by abundance of experiments; all endeavours having been uſed, after ſeparating a coloured ray from thoſe of other kinds, to change it into ſome other *colour*, by repeated refractions, but to no effect. Apparent tranſmutations of *colours*, indeed, may be effected; viz. where there is an aſſemblage, or mixture of rays of different kinds, the component *colours* never appearing in their natural hue in ſuch mixtures, but always allayed and tempered with each other: whence reſults an intermediate kind of *colour*, which, by refraction, may be ſeparated into the component ones: and theſe after ſeparation, being remixed, return to their former *colour*.

Hence, the tranſmutation of *colours*, by mixing thoſe of different kinds, are not real, but mere appearances, or deceptions of the ſight; for the rays, being again ſevered, exhibit the ſame *colours* as at firſt. Thus, blue and yellow powders, well mixed, appear to the naked eye green; yet, without having paſſed any alteration; for, when viewed through a microſcope, the blue and yellow particles ſtill appear diſtinct.

Mr. Melvill apprehends, that differently *coloured* rays may be affected with different velocities at their emiſſion from the luminous body, and that the velocity is greater, if the luminous body is placed in a denſer medium, and proportional to its refractive power; and this hypotheſis he thinks preferable to that of Sir Iſaac Newton, which makes them to conſiſt of particles of different ſizes and denſities. Mr. Muſchenbroeck alſo infers, from the leſs degree of refrangibility of red rays, that they move more ſlowly than the reſt, after their ſeparation from thoſe of other *colours*, though in a ſtate of union with the reſt, they have the ſame velocity; but he does not think that the *colour* depends upon the velocity, ſince this changes with the medium through which the rays are tranſmitted. Their different refrangibility will be the ſame on this hypotheſis, and their different velocities will be nearly as the ſines of refraction out of air into glaſs, beginning from the extreme red, and ending with the extreme violet, viz. as 78000, 77873, 77797, 77663, 77496, 77330, 77220, 77000, the ſine of incidence being 120120: therefore, ſince the time which the extreme violet rays take to move through any ſpace, is to that which the red takes as 78 to 77, the laſt violet light reflected from a ſatellite, before its total immerſion into the ſhadow of Jupiter, in a quadrate aſpect with the ſun, when his light takes about 41′ in coming to the earth, ought to affect the eye 32 ſeconds after the red light, reflected at the ſame time, is gone; and at the emerſion, there would be a contrary ſucceſſion of *colours*; and the difference of time between the arrival of the different *coloured* rays, being more than half a minute, would afford time ſufficient to make the obſervation. The marquis de Courtivron, in a treatiſe publiſhed in 1752, advanced the ſame opinion with Mr. Melvill, and propoſed the ſame trial of his hypotheſis, viz. by obſerving the eclipſes of Jupiter's ſatellites; but he ſtates the difference of velocity, by a theorem of M. Clairaut, in the proportion of 45 to 44. Mr. Short made the obſervation recommended by Mr. Melvill, and could not perceive the leaſt alteration in the *colour* of the light reflected by the ſatellite; and therefore the hypotheſis ſtill wants that kind of confirmation. By this hypotheſis, Mr. Melvill accounts for Newton's fits of reflexion and tranſmiſſion, as ariſing from the pulſes of the medium through which the differently *coloured* rays paſs; theſe pulſes muſt overtake rays, moving with different velocities, at different times; and thus the intervals of the fits would be leaſt in the violet, and gradually increaſing in the priſmatic order, agreeably to obſervation. This hypotheſis, however plauſible, is liable to many inſuperable objections. The difficulty, which prevented Mr. Muſchenbroeck from aſcribing the *colour* of rays to their velocity, viz. that the *colour* of homogeneous rays is not altered by paſſing through different mediums, though their velocity is thereby always increaſed or diminiſhed, is reſolved by Mr. Melvill, by ſuppoſing that every ray, as it muſt at laſt paſs through the humours of the eye, in order to viſion, falls upon the retina with one given velocity, however it may have been previouſly refracted; ſince the velocity of any ray, in any one medium, is to its velocity in any other medium, in a conſtant and invariable proportion. It has been objected, that if this hypotheſis were true, a ſtar muſt change its place, on account of the aberration $\frac{1}{77}$th more for the deepeſt blue rays than the red ones, according to Mr. Melvill, and $\frac{1}{45}$th more, according to M. de Courtivron; and conſequently a ſtar placed in the pole of the ecliptic, whoſe mean ABERRATION is about 20″, ought to appear in the form of a ſpectrum, formed by a priſm of $\frac{20}{77}''$, or 17‴ nearly in length, by the former hypotheſis, and of $\frac{20}{45}''$, or 27‴, by the latter. This is a quantity which would be ſufficiently viſible in teleſcopes of pretty high magnifying powers; but no ſuch appearance has yet been obſerved. Beſides, the experiments of Mr. Dollond clearly prove, that the different refrangibility of the rays of light reſults from properties that are independent of their different velocity; ſince the proportion of it varies according to the nature of the ſubſtance from which it falls; (ſee ABERRATION) and the diſtances at which differently *coloured* rays are attracted and repelled are different. M. Clairaut, in the courſe of his inquiry concerning Mr. Dollond's improvements in teleſcopes, has taken occaſion to examine this hypotheſis, and found, that the refractions which would reſult from it, were very different from thoſe which actually took place in nature. Phil. Tranſ. vol. xlviii. part i. art. 38. and part ii. art. 92. Hiſt. Acad. Sc. 1756. p. 194. and Prieſtley's Hiſt. of Viſion, &c. p. 401, &c.

From the Newtonian theory above explained, there ariſe two kinds of *colours*, the one *original* and *ſimple*, produced by homogeneal light; or by rays that have the ſame degree of refrangibility, and the ſame magnitude of their parts: ſuch as red, yellow, green, blue, violet-purple, orange, and indigo; with all their intermediate teints and gradations.

The other kind of *colour* is *ſecondary*, or *heterogeneous*; compounded of the primary ones, or of a mixture of rays differently refrangible, &c.

There may alſo be ſecondary *colours* produced by compoſition, like the primary ones, or thoſe conſiſting of homogeneal light, as to the ſpecies or appearance of the *colour*; but not as to the permanency, or immutability thereof. Thus, yellow and blue make green; red and yellow, orange; orange and yellowiſh green, yellow: and in the general, if any two colours be mixed, which, in the ſeries of thoſe generated by the priſm, are not too far apart, from their mixture there reſults that *colour*, which in the ſaid ſeries is found in the mid-way between them: but thoſe ſituated at too great a diſtance do not produce the ſame effect.

Indeed, the more any *colour* is compounded, the leſs perfect and vivid it is; by too much compoſition they may be diluted and weakened till they ceaſe. By compoſition there may likewiſe be produced *colours* not like any of thoſe of homogeneal light.

The moſt extraordinary compoſition is that of whiteneſs; for to this, all the primary *colours* above mentioned are required; and theſe to be mixed in a certain degree. Hence it is that white is the ordinary *colour* of light; light being nothing elſe but a confuſed aſſemblage of rays of all *colours*.

If the rays of different *colours* do thus begin to be ſeparated by one refraction of one ſingle ſurface, that ſeparation is much promoted, ſo as even to become ſenſible to the eye by a double refraction. This is obſerved in the two ſurfaces of any glaſs, provided thoſe ſurfaces be not parallel; but, of all others, it is moſt ſenſible in the two faces of a triangular priſm; the phænomena whereof, as they are the touchſtone of all theories of *colours*; and as they contain the foundation of that here delivered, we ſhall lay down as follows.

1. The rays of the ſun, tranſmitted through a triangular priſm, exhibit an image of various *colours* (the chief whereof are red, yellow, green, blue, and violet) on the oppoſite wall.

The reaſon is, that the differently coloured rays are ſeparated by refraction: for the blue rays, v. gr. marked with the dotted lines (*Tab. Optics*, *fig*. 6.) which begin to be ſeparated from the reſt by the firſt refraction in *d d*, of the ſide *ca* of the priſm *abc* (as alſo in the firſt ſurface of the globe of water *a b c*, *fig*. 7.) are ſtill farther ſeparated in the other ſide of the priſm *bc* (as alſo in their egreſs out of the globe *abc*) by a ſecond refraction in *c e*, in the ſame direction as in the former: whereas, on the contrary, in the plain glaſs *a b c f*, *fig*. 9. (as alſo in the priſm *g l c*, *fig*. 8. now placed in another ſituation) thoſe blue rays which begin to be ſeparated from the reſt in the firſt ſurface, in *d d*, by a ſecond refraction, the contrary way, paſs out parallel, i. e. remixed with all the *colours* of the other rays.

2. This image is not round, but oblong; its length, when the priſm forms an angle of 60 or 65 degrees, being five times its breadth. The reaſon is, that ſome of the rays are refracted more than others; and by that means, they exhibit ſeveral images of the ſun, extended lengthwiſe, inſtead of one.

3. Thoſe rays which exhibit yellow, are turned farther from the rectilinear courſe, than thoſe which exhibit red; thoſe which exhibit green, farther than thoſe which exhibit yellow; but of all others, thoſe which exhibit violet the moſt: accordingly, if the priſm through which the light is tranſmitted be turned about its axis, ſo that the red, yellow, green, &c. rays be projected in order, through a narrow aperture into another priſm, placed at the diſtance of about twelve feet; the yellow, green, &c. rays, though falling through the ſame aperture, in the ſame manner, and on the ſame point of the ſecond priſm, will not be refracted to the ſame place as the red, but to a point at ſome diſtance from it; on that ſide to which the rotation is made.

This is what Sir Iſaac Newton calls the ***experimentum crucis***: being that which led him out of the difficulties into which the firſt phænomenon, &c. had thrown him; and plainly ſhewed a different degree of refrangibility, and a different *colour* correſponding thereto in the rays of light; and that yellow rays, v. gr. are more refracted than red ones, green ones more than yellow ones, and blue and violet ones moſt of all.

4. The *colours* of coloured rays, well ſeparated by the priſm, are not at all changed or deſtroyed by paſſing thro' an illuminated medium, nor by their mutual decuſſation, their bordering on a deep ſhadow, nor their being reflected from any natural body, or refracted through any one in a place howſoever obſcure.

The reaſon is, that *colours* are not modifications ariſing from refraction or reflexion, but immutable properties; and ſuch as belong to the nature of the rays.

5. An aſſemblage of all the kinds of coloured rays, collected either by ſeveral priſms, by a convex lens, or a concave mirror, or in any other manner, form what we call *whiteneſs*; yet each of theſe, after decuſſation, becoming ſeparated, again exhibits its proper *colour*: for, as the ray was white before its parts were ſeparated by refraction; ſo, the parts being remixed, it becomes white again: and coloured rays, when they meet together, do not deſtroy one another, but are only interſperſed.

Hence, a red, green, yellow, blue, and violet *colour*, being mixed in a certain proportion, appear whitiſh, i. e. they are of ſuch a *colour* as ariſes from white and black mixed together; and if there were not ſome rays abſorbed and loſt, they would be plainly white. In like manner, if a paper cut into a circle, be ſtained with each of thoſe *colours*, ſeparately, and in a certain proportion; then ſwiftly turned round its centre, ſo that the ſpecies of *colours* be mixed together in the eye, by the briſkneſs of the motion, the ſeveral *colours* will diſappear, and the whole paper appear of one continued *colour*; which will be a mean between white and black.

6. If the rays of the ſun fall very obliquely on the inner ſurface of a priſm, thoſe that are reflected will be violet; thoſe tranſmitted, red.

For the rays were coloured before any ſeparation; and by how much they are the more refrangible, by ſo much they are the more eaſily reflected; and by that means are ſeparated.

7. If two hollow priſms, the one filled with a blue fluid, the other with a red one, be joined together, they will be opake; though each, apart, be tranſparent.

For, the one tranſmitting none but blue rays, and the other none but red ones, the two together will tranſmit none at all.

8. All natural bodies, eſpecially white ones, viewed through a priſm held to the eye, appear fimbriated, or bordered, on one ſide with red and yellow, and on the other with blue and violet. For thoſe *fimbriæ* are the extremes of entire images, which the rays of any kind, as they are more or leſs refracted, would exhibit nearer, or at a greater diſtance from the real place of the object.

9. If two priſms be ſo placed, as that the red of the one, and the purple of the other, meet together, in a paper fit for the purpoſe, encompaſſed with darkneſs, the image will appear pale; and if viewed through a third priſm, held to the eye at a proper diſtance, it will appear double; the one red, the other purple.

In like manner, if two powders, the one perfectly red, the other blue, be mixed; any little body covered pretty deeply with this mixture, and viewed through a priſm held to the eye, will exhibit a double image, the one red, and the other blue: becauſe the red and purple of blue rays are ſeparated by their unequal refraction.

10. If the rays tranſmitted through a convex lens, be received on a paper before they meet in a focus, the confines or boundary of light and ſhadow will appear tinged with a red *colour*: but if they be received beyond the focus, with a blue one.

Becauſe, in the firſt caſe, the red rays, being ſomewhat more refracted, are the higher; but, in the ſecond, after decuſſation in the focus, the blue ones.

11. If the rays about to paſs through either ſide of the *pupilla*, be intercepted by the interpoſition of any opake body near the eye; the extremes of bodies, placed as if viewed through a priſm, will appear tinged with *colours*; though they are not very vivid.

For, then, the rays tranſmitted through the reſt of the pupil, will be ſeparated by refraction into *colours*; without being diluted with the admixture of the intercepted rays, which would be refracted in a different manner.—And hence it is, that a body viewed through a paper pierced with two holes, appears double, and alſo tinged with *colours*.

COLOURS *of thin laminæ, or plates*. As rays of different *colours* are ſeparated by the refraction of priſms, and other thick bodies; ſo are they ſeparated, though in a different manner, in the thin lamellæ, or plates of any pellucid matter, v. gr. in the bubbles raiſed in water, thickened by ſoap, &c. For all lamellæ, under a determinate thickneſs, tranſmit rays of all *colours*, without reflecting any at all: but, as they increaſe in thickneſs, in arithmetical proportion, they begin to reflect, firſt, blue rays; then, in order, green, yellow, and red, all pure: then, again, blue, green, yellow, red, more and more mixed and diluted; till, at length, arriving at a certain thickneſs, they reflect rays of all *colours* perfectly intermixed, viz. white.

But, in whatſoever part a ſlender lamella reflects any one *colour*, v. gr. blue, or violet, in that part it always tranſmits the oppoſite *colour*, v. gr. red, or yellow.

It is found, by experiment, that the difference of *colour* of a plate does not depend on the medium that encompaſſes it; but the degree of vividneſs does: *cæteris paribus*, the *colour* will be more vivid, if the denſer medium be encompaſſed with the rarer. A plate, *cæteris paribus*, reflects more light as it is thinner; as far as a certain degree of thinneſs, beyond which it reflects no light at all.

In plates whoſe thickneſſes increaſe in the arithmetical proportion of the natural numbers, 1, 2, 3, 4, 5, &c. If the firſt, or thinneſt, reflect any homogeneal ray, the ſecond will tranſmit it; the third again will reflect it: and thus is the ſame ray alternately reflected and tranſmitted; i. e. the plates correſponding to the odd numbers, 1, 3, 5, 7, &c. will reflect the ſame rays that thoſe correſponding to the even ones, 2, 4, 6, 8, &c. tranſmit. Hence, an homogeneous *colour* in a plate is ſaid to be of the *firſt order*, if the plate reflect all the rays of that *colour*. In a plate whoſe thinneſs is triple the firſt, it is ſaid to be of the *ſecond order:* in another, whoſe thinneſs is five times that of the firſt, it is ſaid to be of the *third order*, &c.

A *colour* of the firſt order is the moſt vivid of any; and, ſucceſſively, the vividneſs of the *colour* increaſes, as the quantity of the order increaſes: the more the thickneſs of the plate is increaſed, the more *colours* it reflects; and thoſe of more different orders. In ſome plates, the *colour* will vary as the poſition of the eye varies; in others it is permanent. See on this ſubject Prieſtley's Hiſt. of Viſion, p. 279, &c. p. 311, &c. p. 498. and Rings *of Colours*.

Colours *of natural bodies*. Bodies only appear of different *colours*, as their ſurfaces are diſpoſed to reflect rays of this or that *colour* alone; or of this or that *colour* more abundantly than any other: hence bodies appear of that *colour* which ariſes from the mixture of the reflected rays. See Body.

All natural bodies conſiſt of very thin, tranſparent *lamellæ*; which, if they be ſo diſpoſed, with regard to each other, as that there happen no reflexions or refractions in their interſtices, thoſe bodies become pellucid, or tranſparent: but if their intervals be ſo large, and thoſe filled with ſuch matter; or ſo empty (with regard to the denſity of the parts themſelves) as that there happen a number of reflexions and refractions within the body; the body, in that caſe, becomes opake.

The rays which are not reflected from an opake body, penetrate into it; and there, ſuffering innumerable reflexions and refractions, at length unite themſelves to the particles of the body itſelf.

Hence, an opake body grows hot the ſooner, as it reflects light leſs copiouſly: whence we ſee why a white body, which reflects almoſt all the rays that ſtrike upon it, is heated much more ſlowly than a black one, which reflects ſcarce any.

To determine that conſtitution of the ſurface of bodies whereon their *colour* depends, it muſt be obſerved, that the ſmalleſt corpuſcles, or firſt particles whereof ſurfaces are made up, are moſt thin and tranſparent, and ſeparated by a medium of a different denſity from the particles themſelves. In the ſurface, then, of every coloured body, are innumerable ſmaller thin plates, correſponding to thoſe of bubbles: wherefore, what has been obſerved of thoſe, may be underſtood of theſe. Hence we gather, that the *colour* of any body depends on the denſity and thickneſs of the parts of the body, between the pores of the ſurface: that the *colour* is more vivid and homogeneous, as the parts are thinner: that, *cæteris paribus*, the ſaid parts are the thickeſt when the body is red; and the thinneſt when violet: that the parts of bodies are uſually much denſer, than the medium contained in their interſtices; but that in the tails of peacocks, in ſome ſilks, and, generally, in all bodies whoſe *colour* varies according to the ſituation of the eye, it is leſs: and that the *colour* of a body is leſs vivid to the eye, as it has a denſer medium within its pores.

Now, of the ſeveral opake bodies, thoſe conſiſting of the thinneſt *lamellæ* are black; thoſe conſiſting either of the thickeſt *lamellæ*, or of *lamellæ* very different from each other in thickneſs, and on that account fitted to reflect all *colours*, as the froth of water, &c. are white: thoſe, again, conſiſting of *lamellæ*, moſt of which are of ſome intermediate thickneſs, are blue, green, yellow, or red; inaſmuch as they reflect the rays of that particular *colour*, much more copiouſly than that of any other *colour*; moſt of which laſt they either abſorb and extinguiſh, by intercepting them, or elſe tranſmit. Hence it is, that ſome liquors, v. gr. an infuſion of *lignum nephriticum*, will appear red, or yellow, if viewed by reflected light; and blue by tranſmitted light; and gold leaves yellow in the former circumſtances, but green or blue in the latter.

To this may be added, that ſome of the powders uſed by painters have their *colour* changed by being very finely ground; which muſt be occaſioned by the comminution or breaking of their ſmaller parts into others ſtill ſmaller; juſt as a *lamella* has its *colour* altered, by altering its thickneſs.

In fine, thoſe odd phænomena ariſing from the mixture of liquors of different *colours*, can no way be better accounted for, than from the various actions of the ſaline, &c. corpuſcles of one liquor, with the coloured corpuſcles of another: if they unite, the maſs will either ſwell or ſhrink, and thereby its denſity will be altered: if they ferment, the ſize of the particles may be diminiſhed, and thereby coloured liquors may become tranſparent: if they coagulate, an opake liquor may be produced out of two tranſparent ones.

Hence it is eaſy to ſee why a coloured liquid, in a glaſs of a conical figure, placed between the eye and the light, appears of a different *colour* in different parts of the veſſel; there being more and more rays intercepted, as they paſs through a longer or a ſhorter ſection of the veſſel; till, at the baſe, they are all intercepted, and none ſeen but thoſe reflected.

From the various *colours* of natural bodies, Sir Iſaac Newton obſerves, the bigneſs of their component parts may be eſtimated: becauſe the parts of bodies do properly exhibit the ſame *colour* with a *lamella* of equal thickneſs, provided the denſity in both be the ſame.

The Newtonian doctrine concerning the *colours* of bodies, as depending on the thickneſs of thoſe *lamellæ*, or fine plates, which form their ſurfaces, is more lately confirmed by means of electrical exploſions. Dr. Prieſtley found, that, if theſe are received on the ſurface of any metal, they will mark it with a ſpot, conſiſting of all the priſmatic *colours* diſpoſed in concentric circles, and formed by ſcales of the metal ſeparated by the force of the exploſion. Beſides other curious obſervations, he informs us, that when a pointed piece of metal is fixed oppoſite to a plain ſurface, the nearer it is placed to the ſurface, ſo much the ſooner the *colours* appear, the cloſer do the rings ſucceed one another, and the leſs ſpace they occupy, and *vice verſa*; and that the more acutely the wire or needle, from which the electric matter iſſues, or at which it enters, is pointed, ſo much greater is the number of rings that appears: whilſt a blunt point produces larger, but fewer rings. He adds, that it is of no importance, whether the electric matter iſſue from the pointed body on the plate, or from the plate on the pointed body, and that the points themſelves are *coloured* in concentric rings to a conſiderable diſtance, but not very diſtinctly. Mr. Canton likewiſe produced all the priſmatic *colours* from all the metals, by extending fine wires of them over the ſurface of pieces of glaſs; and when the wires were exploded, he obſerved that the glaſs was tinged with all the *colours*. The experiment has been often repeated, and with peculiar advantage, by the ingenious Mr. Henly. Phil. Tranſ. vol. lviii. art. 10. Prieſtley's Hiſt. of Elect. vol. ii. p. 260. 8vo. ed. 1775. See Circular *Spots*, and Fairy *Circles*.

Colours, *accidental*. See Accidental.

Colour *of the clouds* is thus accounted for by Sir Iſaac Newton. Concluding from a ſeries of experiments, that the tranſparent parts of bodies, according to their ſeveral ſizes, reflect rays of one *colour*, and tranſmit thoſe of another, he hence obſerves, that when vapours are firſt raiſed, they are divided into parts too ſmall to cauſe any reflexion at their ſurfaces, and therefore do not hinder the tranſparency of the air; but when they begin to coaleſce, in order to compoſe drops of rain, and conſtitute globules of all intermediate ſizes, theſe globules are capable of reflecting ſome *colours*, and tranſmitting others, and thus form clouds of various *colours*, according to their ſizes. Mr. Melvill controverts this doctrine, in its application to the red *colour* of the morning and evening clouds. "Why, he ſays, ſhould the particles of the " clouds become at that particular time, and never at " any other, of ſuch a magnitude as to ſeparate theſe " *colours?* And why are they rarely, if ever, ſeen tinc- " tured with blue and green, as well as red, orange, or " yellow? Is it not more credible, that the ſeparation " of rays is made in paſſing through the horizontal at- " moſphere, and that the clouds only reflect and tranſ- " mit the ſun's light, as any half-tranſparent colourleſs " body would do? For ſince the atmoſphere reflects a " greater quantity of blue and violet rays than of the " reſt, the ſun's light tranſmitted through it ought to " incline towards yellow, orange, or red; eſpecially " when it paſſes through a long tract of air: and thus "it is found that the ſun's horizontal light is tinctured "with a deep orange, and even red; and the *colour* becomes ſtill deeper after ſun-ſet." And hence he concludes, that the clouds, according to their different altitudes, may aſſume all the variety of *colours* at ſun riſing and ſetting, by barely reflecting the ſun's incident light as they receive it. Edinb. Eſſ. vol. ii. p. 75. Prieſtley's Hiſt. of Viſion, p. 446, &c.

For the diſtinct properties, &c. of the ſeveral Colours, ſee Black, White, Blue, &c. See alſo Rainbow, &c.

Colour, in *Painting*, is applied both to the drugs, and to the teints produced by thoſe drugs, variouſly mixed and applied.

The principal *colours* uſed by painters, are red and white lead or ceruſs; yellow okers; ſeveral kinds of earth, as umber, &c. beſide orpiment, black lead, cinnabar, gamboge, lake, bice, verditer, indigo, vermilion, verdegris, ivory black, biſtre, lamp black, ſmalt, ultramarine, and carmine; each of which, with the manner of preparing them, their uſes, &c. ſee under their reſpective heads.

Of theſe *colours*, ſome are uſed ground in oil, others only in freſco, others in water, and others only for miniature.

Colours, *dark and light.* Under theſe two claſſes the painters reduce all the *colours* they uſe: under *light colours* are comprehended white, and all thoſe which approach neareſt it; and under *dark colours*, black, and all thoſe which are obſcure and earthy, as umber, biſtre, &c.

Colours, *ſimple and mineral*, is another diviſion among the painters: under *ſimple colours*, they range all thoſe uſed by limners, illuminers, &c. extracted from vegetables; and which will not bear the fire: as the yellow made of ſaffron, of French berries, &c. lacca, and other tinctures extracted from flowers. The reſt are *mineral*, drawn from metals, &c. and are able to bear the fire: theſe alone are uſed in enamelling.

Colours, *changeable and permanent*, is another diviſion of *colours:* by *changeable*, are meant thoſe which depend on the ſituation of objects with regard to the eye; as that of taffetas, of a pigeon's neck, &c. The laſt, however, being attentively viewed with a microſcope, each fibre of the feathers appears compoſed of ſeveral little ſquares, alternately red and green; ſo that they are really fixed *colours*.

Kircher tells us, that the *changeable colours* obſerved in the necks of pigeons, peacocks, &c. ariſe from the feathers being tranſparent, and of a figure reſembling a priſm; and conſequently the light's being differently refracted from them. On the contrary, the fixed and *permanent colours* are not exhibited by refraction, but reflexion.

M. Mariotte obſerves, that there are two different gradations, or ſeries of *colours*, from white to black; the one white, yellow, red, and black; the other white, blue, violet, and black.

Colours, *local.* See Local.

Colours, *rings of.* See Rings.

Colours, *water.* See Water.

Colour, in *Dying.*—There are five ſimple, primary, or mother *colours*, uſed by the dyers; from the mixture whereof all the other *colours* are formed: theſe are blue, red, yellow, brown, and black; each of which ſee under their proper head, Blue, Red, &c.

Of theſe *colours*, variouſly mixed and combined, they form the following *colours*, *panſy*, *blue*, *red:* from the mixture of blue and ſcarlet, are formed *amaranth*, *violet*, and *panſy:* from the ſame mixture of blue and crimſon-red, are formed the *columbine*, or *dove-colour*, *purple*, *crimſon*, *amaranth*, *panſy*, and *crimſon-violet*. It may be obſerved, that they give the name *crimſon* to all *colours* made with cochineal. See Crimson, Cochineal, &c.

Of blue, and red madder, they likewiſe make a good *purple*, *a pepper-colour*, *tan-colour*, and *dry roſe*. The ſame blue, with red half in grain, makes *amaranth*, *tan-colour*, and *dry roſe*. Blue, and half-red crimſon, compoſe *amaranth*, *tan-colour*, *dry roſe*, a *brown panſy*, and *ſurbrun*.

Blue and yellow. Theſe two *colours*, mixed together, compoſe a *yellow green*, *ſpring green*, *graſs green*, *laurel green*, *brown green*, *dark green*; as well as *ſea green*, *parrot green*, and *cabbage green*, &c. Theſe three laſt *colours* are to be leſs boiled than the firſt.

Note, with regard to green, there is no ſimple ingredient or drug in nature that will dye it; but the ſtuffs are dyed twice; firſt in blue, then in yellow.

Blue and brown. Theſe two *colours* are never mixed alone; but with the addition of red, either of madder or cochineal, they form ſeveral *colours*.

Red and yellow. All the ſhades compoſed of theſe two *colours*, as *gold-yellow*, *aurora*, *marigold*, *orange*, *nacarat*, *granat-flower*, *flame-colour*, &c. are made with yellow, and red of madder; ſcarlet being leſs proper, as well as too dear.

Red and brown. Of theſe two *colours* are formed *cinnamon-colours*, *cheſnut*, *muſk*, *bears-hair*, and even *purple*; if the red be that of madder.

Yellow and brown. The *colours* formed from theſe two are all the ſhades of *feuille-morts* and *hair-colours*.

It may be obſerved, that though we ſay there are no *colours*, or ſhades, made from ſuch and ſuch mixtures, it is not that none can be made; but only that they are more eaſily formed from the mixture of other *colours*. See Dying.

The greateſt perfection in the art of *colours* would be to find the means of preparing the fineſt *colours* without the uſe either of acid or alkaline ſalts, which uſually ſubject the *colours* to change, or elſe are apt to prey upon the cloth, canvas, &c. as we ſee in verdigriſe, the blue and green cryſtals of copper, &c. It appears highly probable, that the Indians, for making the fine bright and durable *colours*, wherewith their chintzes and callicoes are ſtained, make uſe of metalline ſolutions; for ſome ſtained callicoes, brought from thence, having been kept forty or fifty years, the bright *colours* have been obſerved to eat out the cloth, exactly in the ſame manner as acid ſpirits, which diſſolve metals, are found to do.

Since theſe, then, are the inconveniencies attending ſuch *colours*, we ought to ſearch for menſtruums with which to extract *colours*, which are neither acid, nor alkaline; and for ſuch metalline calxes, precipitates, or powders, as will not loſe their *colours*, by being well waſhed to get out their ſalts; to prepare certain metalline matters by mere calcination, or the bare aſſiſtance of fire; and laſtly, to look out for native *colours*, wherein no ſaline matter abounds.

Mr. Geoffroy has given a very curious proceſs for making two clear, ſpirituous, inflammable liquors, which differ very little in taſte and ſmell, and being mixt together give a fine carnation *colour*, without any ſenſible fermentation.

To make the firſt of theſe liquors, put a ſmall handful of dried red roſes into a glaſs bottle; pour on them rectified ſpirit of wine, till it covers them an inch; let this ſtand in a cold infuſion four or five hours; then pour off the liquor, which will be clear and colourleſs, as when put on. The ſecond liquor is made by dropping into rectified ſpirit of wine ſo much oil of ſulphur, by the bell, or ſpirit of vitriol, as will be borne in it without giving it any very ſenſible acidity when taſted. When theſe liquors are thus prepared, let a ſmall quantity of the latter be dropped into ſome of the former, and the whole will become of a fine carnation *colour*, though there is no fermentation, nor any other change perceived in it, but barely that of *colour*. If, inſtead of this laſt liquor, there be added to the firſt a few drops of the ſpirit of ſal ammoniac, the whole will become green.

Make a ſlight infuſion of galls in water, ſo as not to *colour* the water; make alſo a weak ſolution of green vitriol in water, ſo that it may appear colourleſs; mix theſe two colourleſs liquors together, and an inky blackneſs is immediately produced; add to this black liquor a little oil of vitriol, and the liquor becomes pellucid and colourleſs again; then add to this a little ſalt of tartar, and the whole is black again.

Put a little bruiſed camphor into rectified clear oil of vitriol; ſhake the mixture, and it will become black, and the camphor will be diſſolved; add to this a little water, and the liquor becomes clear, and the camphor is found ſeparated at top, in its own form, and native whiteneſs.

Infuſe lignum nephriticum in cold water, and pour off the clear liquor. This held up againſt the light, appears of a fine yellow, but, viewed from the light, of a beautiful blue; a little ſpirit of nitre put to this liquor makes it loſe the power of reflecting the blue rays, and a little oil of tartar, afterwards added, recovers that power again.

Logwood, infuſed in water, gives a red colour. Put to this a little ſpirit of urine, and it becomes of a fine purple; and drop in afterwards a little ſpirit of ſalt, and it becomes of a pale red.

A beautiful blue tincture may be made from filings of copper, by digeſting them in ſpirit of urine, hartſhorn, or the like. The addition of oil of vitriol deſtroys the blue *colour*; and a little ſpirit of ſalt turns it green.

Pellucid oil of vitriol, mixed with pellucid oil of turpentine, produces a thick red balſam. And common oil, mixed with fair water, by means of a little wax, and continued rubbing, turns into a thick white balſam, called cold cream.

Oil of vitriol, diſtilled from quickſilver, leaves a white powder behind, which, if water be poured on it, becomes yellow.

Diſſolve quickſilver in ſpirit of nitre, and to part of it add ſpirit of urine, and a white powder is precipitated; to another part of the ſolution add oil of tartar, and a yellow powder falls to the bottom.

Dip a new pen in ſpirit of vitriol, and write with it on common blue paper, and the letters will appear red.

A pellucid ſolution of ſaccharum ſaturni being written with on paper, becomes inviſible, when dried; but the bare fumes of an infuſion of quick lime, and orpiment, in water, will render the inviſible writing black and legible.

Volatile ſalt of ſal ammoniac, which is white, mixed with cryſtals of copper, which are green, produce a fine purple.

The original and ſimple, as well as the mixt, *colours* are producible by mixture. Thus, if the ſun's rays paſs through two pieces of glaſs, the one blue, and the other yellow, and be afterwards received upon a white paper, the *colour* there ſeen is green. The dyers make cloth blue with woad, and then turn it green by the yellow herb called luteola, or dyer's weed. To a yellow ſolution of gold in aqua regia, add a blue one of copper in ſpirit of urine, and the mixture becomes green. The painters every day practiſe this art of producing new colours by mixture.

Metalline and mineral matters are reducible to a conſiderable degree of ſubtlety, or ſmallneſs of parts, by fire, or dry calcination, ſo as to leave them durably poſſeſſed of their native or adventitious *colours*. Thus lapis lazuli, by being calcined, becomes the fine rich blue called ultramarine; light ochre, by the ſame treatment, becomes a light red, or fleſh-colour, the moſt uſeful fleſh-colour in painting. Lead, by calcination, becomes durably red, and iron durably brown; but a proper method ſeems wanting for the dry calcinations of the nobler metals, gold and ſilver; though, for the uſes of gilding, theſe are eaſily prepared by dipping linen rags in their reſpective ſolutions, and then drying, and burning them to aſhes, whereby a dry and fine metalline powder is procured.

Colours *from metals*. See Metal.

Colour, *gold*. See Gold.

Colour *wine*. See Wine.

Colour, in *Heraldry*. The *colours* generally uſed in heraldry, are red, blue, black, green, and purple; which, by the learned in that ſcience, are called *gules*, *azure*, *ſable*, *vert*, or *ſinople*, and *purpure*. *Tenne*, or *tawny*, and *ſanguin*, are not ſo common. See each *colour* under its proper article, Gules, Azure, Vert, Sinople, &c. As to yellow and white, called *or* and *argent*, they are metals, not *colours*.

Theſe *colours* and metals are ſometimes alſo expreſſed in blazon by the names of precious ſtones; and ſometimes by thoſe of planets, or ſtars.—Thus, or is called *Sol*, and *topaz*; argent, *Luna* and *pearl*; gules, *Mars*, and *ruby*; azure, *Jupiter*, and *ſapphire*; ſable, *Saturn*, and *diamond*; vert, *Venus*, and *emerald*; purpure, *Mercury*, and *amethyſt*; tenne, the *Dragon's-head*, and *hyacinth*; and ſanguin, the *Dragon's-tail*, and *ſardonyx*.

It is a general and fundamental rule in blazon, not to place *colour* upon *colour*, nor metal upon metal. That is, if the field be of a *colour*, the bearing muſt be of a metal: though this rule, on ſome occaſions, and in ſome circumſtances, is diſpenſed with; as in the diminutions and differences which diſtinguiſh the younger from the elder branches of families; and in the extremities of animals tongues, claws, horns, &c. In which caſes *colour* may be on *colour*, and metal on metal, without falſe heraldry.

Oenomaus is ſaid to have firſt invented the diſtinction of *colours*, to diſtinguiſh the quadrillæ of combatants at the Circenſian games: the green for thoſe who repreſented the earth; and the blue for thoſe who repreſented the ſea.

Hence the ancient cavaliers took occaſion to diſtinguiſh themſelves in their tournaments, by habits, plumes, and ribbands of different *colours*; which were ordinarily thoſe of their miſtreſſes, and were the ſymbol of ſome paſſion or quality.—Hence alſo the origin of *colours* in liveries.

Colours, in the *Military Art*, include the banners, flags, enſigns, &c. of all kinds, borne in an army, a fleet, or the like. See Flag, and Standard.

Colours, *field*. See Field.

Colours, are alſo uſed both in the Latin and Greek churches, to diſtinguiſh ſeveral myſteries and feaſts celebrated therein.

In the Latin church are only regularly admitted five *colours*; viz. *white*, *red*, *green*, *violet*, and *black*: the *white* is for the myſteries of our Saviour, the feaſts of the Virgin, thoſe of the angels, ſaints, and confeſſors; the *red* for the myſteries and ſolemnities of the holy ſacrament, the feaſts of the apoſtles and martyrs; the *green* for the time between Pentecoſt and Advent, and from Epiphany to Septuageſima; *violet* in Advent, Chriſtmas, in vigils, rogations, and in votive maſſes in time of war: laſtly, *black* for the dead, and the ceremonies thereto belonging. Cloths of gold and ſilver, and embroideries, ſerve indifferently for all ſolemnities.

In the Greek church the uſe of *colours* is almoſt obliterated, as well as among us: *red*, among them, was the *colour* for Chriſtmas, and the dead; as black is ſtill for the laſt among us.

Colour, in *Law*, is a probable, or plauſible plea; though in reality falſe at bottom; and only calculated to draw the trial of the cauſe from the jury to the judge.

Thus, e. gr. in an action of treſpaſs for taking away the plaintiff's beaſts, the defendant urges, that before the plaintiff had any intereſt in them, he himſelf was poſſeſſed of them, as his proper goods; and delivered them to A. B. to deliver to him again, when, &c. and A. B. gave them to the plaintiff: and the plaintiff, ſuppoſing the property to be in A. B. at the time of the gift, took them; and the defendant took them again from the plaintiff; whereupon the plaintiff brings his action.—This is a good *colour*, and even a good plea. Doct. and Stud.

Colours, *Colores*, in the *Ancient Muſic*, was uſed to ſignify the muſical ſpecies belonging to a genus.

In this ſenſe the chromatic *genus* was ſaid to have three *colours*; and the diatonic two. The enharmonic, having no ſubordinate ſpecies, had but one *colour*. Hence the ancients reckoned three *genera*, and ſix *colours*, in muſic; that is, ſo many different diviſions of the *diateſſaron*, or fourth.

Colour *of office*, is when ſome unjuſt action is done, under countenance of office, or authority.

To **Colour** *ſtrangers goods*, is when a freeman allows a foreigner to enter goods at the cuſtom-houſe in his name.

COLOURABLE *title*. See Title.

COLOURING, in *Painting*, the manner of applying, and conducting the colours of a picture; or the mixture of lights and ſhadows, formed by the various colours employed in a painting.

The *colouring* is one of the principal branches in painting. M. Felibien divides the painter's art into three parts; the deſign, the compoſition, and the *colouring*. The *colouring* ſtrikes the moſt; but among maſters it always gives place to exactneſs of deſign.

De Piles obſerves, that the word *colouring*, in its confined ſenſe, is chiefly applicable to a hiſtory-piece; ſcarce at all to a landſcape. He adds, that the term *colouring* relates more immediately to the carnations than any thing elſe.

The *colouring*, in its general ſenſe, takes in whatever relates to the nature and union of *colours*; their agreement or antipathy; as alſo how to uſe them to advantage in light and ſhadow, ſo as to ſhew a relievo in the figures, and a ſinking of the ground; what relates to the aereal perſpective, i. e. the diminution of colours by means of the interpoſition of air; the various accidents and circumſtances of the luminary and the medium; the different lights, both of the bodies illuminating and illuminated; their reflexions, ſhadows, different views, with regard either to the poſition of the eye, or the object; what produces ſtrength, boldneſs, ſweetneſs, &c. in paintings well coloured; the various manners of *colouring*, both in figures, landſcapes, &c.

Colouring, *doctrine of*. *Colours* are conſidered, either in reſpect of their uſe, or their œconomy and diſpoſition.

1. With regard to their uſe. They are either in oil, or water: thoſe in oil, again, may either be conſidered with a view to their preparation, or application.

In the preparation of oil colours, care muſt be taken that they be ground fine; that in putting them on the pallet, thoſe which will not dry of themſelves, be mixed with drying oil, or other driers; and that the tinged colours be mixed in as ſmall quantities as poſſible.

For their *application*, it is conſidered either with regard to the kinds of painting, whether in works of various colours, or in thoſe of one ſingle colour.

For the *firſt*: in the larger pieces, the colours are either laid on full, ſo as that they may be impaſted, or incorporated together, which makes them hold the more firmly. Or elſe they mix thoſe more agreeable ones, which dry too hard, and too haſtily, with a little colour, and the cleareſt of the oil: but, in both caſes, the colours are to be laid on ſtrong at firſt; it being eaſy to weaken thoſe that are to be thruſt back, and to heighten the others: the touches to be bold, by the conduct of a free and ſteady pencil; that the work may appear the moſt finiſhed at a proper diſtance, and the figures animated with life and ſpirit.

For glazed colours, particular care muſt be taken that the under-colour be painted ſtrong, and that it be a body-colour, and laid ſmooth.

In finiſhed works, which are to be viewed near at hand, they proceed, either by applying each colour in its place; preſerving their purity, without fretting or tormenting them, but ſweetly ſoftening off their extremities; or by filling up all the great parts with one ſingle colour; and laying the other colour, which are to form the little things, upon it; which is the more expeditious way, but is more apt to decay.

For the *ſecond:* the kinds of pictures in one colour are two; viz. *camieux*, where the degradations of colours of objects afar off are uſually managed by lights, as with crayons; and *baſſo-relievo*, which is an imitation of ſculpture, of whatſoever matter and colour: in both theſe, the colours are wrought dry.

For water-colours, they are wrought various ways; viz. in *diſtemper*, as the painters expreſs it, where the colours are prepared in ſize; which method is uſed in all kinds of matter; in *freſco*, or painting on freſh mortar; where the *colouring* muſt be quick, that the matter dry not; and with much care and neatneſs, laying each colour in its place, and intermingling them by parcels: in *agouache*, where the colours are mixed with gum, and the pencil dragged; as in paint and waſhings: in *miniature*, for ſmall and delicate works; where the colours are to be very fine and clean, mixed with gums, and wrought in dots or points.

But in all the kinds of painting, both in oil and diſtemper, eſpecially the latter, proper care muſt be taken, that the deſign be fixed, and all the parts marked out, before any colours be applied.

For the ſecond part of *colouring*, or the œconomy and diſpenſing thereof in paintings; regard is either had, firſt, to the qualities of the colours, to appropriate them according to their value or agreement; or, ſecondly, to their effect, in the union and œconomy of the work.

For the *qualities*, it muſt be obſerved, that white repreſents light, and gives the briſkneſs and heightening: black, on the contrary, like darkneſs, obſcures and effaces the objects: again, black ſets off the light parts; and by that they ſerve each other to looſen the objects. A proper choice is to be made of colours, and the too much charged manner to be avoided; both in carnations, where red colours are not to be affected, as rather reſembling the fleſh when flayed than the ſkin; and all bright glowing colours: the ſkin, how delicate ſoever, being always of a down colour; in the drapery, where the painter has his whole ſtock of colours to chuſe out of, to procure a good effect; and in the landſcape to diſpoſe thoſe colours near one another, which mutually aſſiſt and raiſe each other's force and briſkneſs; as red and green, yellow and blue. He is likewiſe to manage them ſo, as that they be accommodated to the effects of the great parts of light and colour: that the ſtrong colours lead to the ſoft ones, and make them more looked at; bringing them forwards, or keeping them back, according to the ſituation, and the degree of force required.

For the *effects of colours*, they either regard the union, or the œconomy: with reſpect to the firſt, care muſt be taken, that they be laid ſo as to be ſweetly united, under the briſkneſs of ſome principal one; that they participate of the prevailing light of the piece; and that they partake of each other by the communication of light, and the help of reflexion.

For the *œconomy in managing their degrees*, regard is to be had to the contraſt, or oppoſition, intervening in the union of the colours, that by a ſweet interruption, the briſkneſs, which otherwiſe fades and palls, may be raiſed to the harmony, which makes the variety of colours agree; ſupplying and ſuſtaining the weakneſs of ſome by the ſtrength of others; neglecting ſome places, on purpoſe to ſerve as a baſis or repoſe to the ſight, and to enhance thoſe which are to prevail through the piece: alſo, to the degradation, where, the better to proportion the colours that fall behind, ſome of the ſame kind are to be preſerved in their purity, as a ſtandard for thoſe carried afar off to be compared by, in order to juſtify the diminution: regard muſt always be had to the quality of the air, which, when loaded with vapours, weakens the colours more than when clear: to the ſituation of the colours, where care muſt be taken, that the pureſt and the ſtrongeſt be placed before, or in the front of the piece; and that by their force the compound ones, which are to appear at a diſtance, be kept back; particularly the glazed colours to be uſed in the firſt rank: laſtly, to the expreſſion of the ſubject, and the nature of the matters, or ſtuffs, whether ſhining or dull, opake or tranſparent, poliſhed or rough.

Colouring *and* **Non-colouring** *drugs.* Thus the dyers diſtinguiſh their materials: the firſt are applicative, and communicate their colours to the matters boiled in them, or paſſed through them; as woad, ſcarlet, green, cochineal, indigo, madder, turmeric, &c.

The ſecond ſerve to prepare and diſpoſe the ſtuffs, and other matters; and to extract the colour out of the *colouring* ingredients; as alum, ſalt or cryſtal of tartar, arſenic, realgal, ſalt-petre, common ſalt, ſal ammoniac, ſal gemmæ, agaric, ſpirit of wine, bran, peas-flour, wheat, ſtarch, lime, and aſhes.

Colouring *of glaſs.* See Glass.

Colouring *of earthen ware.* See Glazing.

Colouring *of porcelain.* See Porcelain.

Colouring *of ſpirits.* See Spirits.

COLPISCIS, a name given by ſome to the *falx Venetorum*, or ſickle fiſh, commonly called the marmot fiſh by the people of Venice. See Falx.

COLT, in *Zoology*. See Foal.

Colt-*evil*, a diſeaſe incident both to horſes and geldings. It is an unnatural ſwelling of the yard and cods, proceeding from wind, or elſe through the abundance of ſeed in horſes. It happens to geldings for want of natural heat.

Colt's-*foot*, *Tuſſilago*, in *Botany*, a genus of the *ſyngeneſia polygamia ſuperflua* claſs. Its characters are theſe: the flower has one common cylindrical empalement, whoſe ſcales are linear, ſpear-ſhaped, and equal. The flower is made up of hermaphrodite florets, which compoſe the diſk, and female half-florets, which compoſe the rays or border. The hermaphrodite florets are funnel-ſhaped, cut at the brim into five ſegments; theſe have five ſhort, hair-like ſtamina, terminated by cylindrical ſummits, and a ſhort crowned germen, ſupporting a ſlender ſtyle, crowned by a thick ſtigma. The germen afterward becomes an oblong, compreſſed ſeed, crowned with a hairy down. The female half-florets are ſtretched out on one ſide with a narrow tongue-ſhaped ſegment: theſe have no ſtamina, but have a ſhort crowned germen, which turns to a ſeed like thoſe of the hermaphrodite florets, which ripen in the empalement. There are three ſpecies, the firſt of which is very common in watery places in moſt parts of England. See *Tab. of Botany*, *Claſs* 14.

The common *colt's-foot* ſtands generally recommended as a very great medicine in coughs, and all diſorders of the breaſt and lungs. It is alſo ſometimes uſed externally in inflammations.

Colt's-*foot*, *Alpine*, or *foreign*, *Cacalia*, in *Botany*, a genus of the *ſyngeneſia polygamia æqualis* claſs. Its characters are theſe: it hath compound flowers, which are included in one common cylindrical empalement; the flowers are tubulous and funnel-ſhaped, and have each five ſhort ſlender ſtamina. The germen is crowned with down, and afterward becomes a ſingle oblong ſeed, crowned with long down. There are eight ſpecies.

The root of *cacalia*, macerated in wine, and made into an eclegma, or chewed by itſelf, is ſaid to cure coughs. Its ſeeds pulveriſed and made into a cerate, and uſed as an ointment, render the ſkin ſmooth and free from wrinkles.

COLTIE, among the *Timber-Merchants*, a word uſed to expreſs a tree which has a defect in ſome one of its annual circles, which renders it unfit for many of the uſes it might have been otherwiſe fit for. In this caſe ſome one of the annual circles near the center is perceived by the eye to be thicker than the reſt, and its ſap-veſſels larger. It has an appearance much different from that of the others, and is ſo looſely connected both to its inveſtient, and inveſted circles, that, on ſawing a tranſverſe piece of the trunk off, it will ſlip out from the others, and ſo leave the heart looſe, and the reſt hollow, ſeeming to have been only fitted, not connected, to the others. In ſplitting the wood for other uſes, it yet more readily drops out, and the timber of ſuch a tree is therefore much leſs fit for general uſe than that of others. It is not eaſy to ſay to what accident, in the growth of the tree, this is owing, but it ſeems probable that it expoſes the tree to other accidents; in particular Bobart ſeems to think, that among the trees which were ſplit by the hard froſt, in the year 1683, while other trees of the like ſizes and kinds eſcaped, this *coltineſs* might be the occaſion of the miſchief, as well as their being windſhaken, or lagged. Phil. Tranſ. N° 165.

COLUBER, in *Zoology*, the name of a very numerous genus of ſerpents, the abdomen of which is covered with *ſcuta*, and the under part of the tail with *ſquamæ*, or ſcales.

COLUBRINUM *lignum*. See Lignum *colubrinum*.

COLUM, in *Ornithology*, is probably a ſpecies of the crane, and common at Surat in the Eaſt Indies. Theſe birds have a remarkable flection in the *aſpera arteria*, taken notice of by Dr. Parſons; and which he conjectures may ſerve for the retention of inſpired air, whilſt they plunge deep into the water in purſuit of food, or traverſe different climates through various degrees of rarefied and condenſed air. Phil. Tranſ. vol. lvi. art. 24. p. 211.

COLUMBA. See Pigeon.

Columba *Greenlandica*, in *Zoology*, a name given by authors to a ſmall, well-taſted, water-fowl, called, in Engliſh, the *ſea* turtle-*dove*.

Columba *marina*, the *ſea-dove*, in *Zoology*, the name of an Eaſt Indian fiſh, and appearing to be a ſpecies of the orbis, or moon-fiſh. It has its name from its head, and prominent cheſt, reſembling that of the dove; it has no ſcales, but is variegated with ſeveral very oddly placed marks on the back and ſides. It is a ſcarce fiſh, and not much valued, being but an ill-taſted one.

COLUMBA is alſo the name of a military order inſtituted by John I. of Caſtile, about the year 1739.

COLUMBA *Noachi*, a ſmall conſtellation in the ſouthern hemiſphere, conſiſting of ten ſtars. In Sharp's Catalogue their longitudes, latitudes, &c. are as follow.

Names and ſituations of the ſtars.	Signs	Longitud.			Latitude			Magnitude
		°	′	″	°	′	′	
Firſt of the brighteſt	♊	18	21	34	57	23	41	2.3
Second		22	35	46	59	15	31	2.3
Firſt of all the ſtars		14	54	27	58	38	34	4
The Northern		20	56	16	55	42	26	6
The next to the firſt of the brighteſt		23	33	23	57	16	6	5
5.								
Next to the ſecond		25	13	59	58	44	31	5
In the head of the Dove		29	14	39	60	41	40	5
Firſt in the branch	♋	2	39	46	58	31	23	5
Second, or λ, in CANIS *Major*		4	34	28	56	44	38	5
Laſt in the branch		6	45	15	55	47	37	5

COLUMBAC denotes that part of the AGALLOCHUM, which is between the heart, and that part next to the bark.

COLUMBINA, a name given by Actuarius, and ſome other medical writers, to the *verbena*, or common VERVAIN.

COLUMBINA *Marga*. See MARLE.

COLUMBINE, *Aquilegia*, in *Botany*, a genus of the *polyandria pentagynia* claſs. Its characters are theſe: the flower hath no empalement, but is compoſed of five equal oval petals, which are plain, and ſpread open within, and have five equal nectariums, ranged alternately with the petals, each of the horns widening upward. It hath many awl-ſhaped ſtamina, and five oval germina, which afterward become five cylindrical veſſels, which are filled with oval ſhining ſeeds. There are four ſpecies.

The manner of propagating theſe flowers is either by ſowing, or parting the old roots; but the old roots being very apt to degenerate, the ſowing them is much the beſt method.

The ſeeds muſt be ſown in a nurſery-bed in Auguſt or September, and in the March following the plants will appear above the ground, at which time they muſt be carefully cleared of weeds, and watered gently at times, if the dryneſs of the ſeaſon requires it. In the beginning of May they will be ſtrong enough to be tranſplanted, and muſt then be placed at eight inches diſtance, in beds of good, freſh, undunged earth, and they muſt here be alſo kept cleaned from weeds, and watered as they may require it; at Michaelmas they may be removed into the borders of the flower-garden, and in the May following they will flower.

Its medicinal virtues are various; it removes the ſcurvy, promotes a diſcharge of urine, and the menſes. The flowers have a cordial quality, and are eſteemed good in malignant fevers, ſmall-pox, and meaſles. Its ſyrup is excellent in diſorders of the throat and breaſt; and a decoction of the whole herb and root in wine, with the addition of a little ambergris, is alſo recommended againſt impotency and barrenneſs.

COLUMBINE, *feathered*, in *Botany*. See *Meadow* RUE.

COLUMBINE, a kind of *violet*-COLOUR, called alſo *dove-colour*. See DYING.

COLUMBO *root* derives its name from *Columbo*, a town in the iſland of Ceylon, whither it was tranſplanted from Aſia. This root is compoſed of three laminæ, the cortical about one fourth of an inch thick, the ligneous about half an inch, and the medullary, which is about an inch in diameter. It is brought into Europe in circular pieces about three inches thick, covered with a wrinkled bark of a dark brown hue, and internally it is of a light yellow. It hath an aromatic ſmell, and is bitter, and ſlightly pungent to the taſte. It is reckoned almoſt a ſpecific in the cholera morbus, nauſea, indigeſtion, bilious fever, diarrhœa, dyſentery, and moſt diſorders of the ſtomach and bowels. It is ſedative, corroborant, and antiſeptic. It is more effectual than the bark in preſerving the bile from putridity, and in ſome caſes a good ſubſtitute for it. The common doſe is from ten to fifteen grains every three or four hours. A tincture is made by infuſing an ounce of this root in a pint of brandy, which may be taken in the quantity of a table ſpoonful, and ſpeedily relieves colicky pains ariſing from flatulence and indigeſtion. An extract likewiſe of this root is prepared by digeſting twelve ounces of the powder in three pints of rectified ſpirit of wine; then filtring the tincture, and boiling the reſiduum in different waters, till it yields little or no taſte to the liquor. This decoction is ſtrained and evaporated, until only ſix pints remain; which, after evaporation in a vapour bath, and having the tincture added to it, may be reduced to the conſiſtence of a pill.

COLUMBUS, *Congregation of St.* is the name of a congregation of regular canons, formerly of great extent; having under it an hundred abbeys, or monaſteries, in the Britiſh iſlands. See CONGREGATION, and CANON.

COLUMELLA, in *Natural Hiſtory*, a name given by Mr. Lhuyd to the *mycetitæ*, or FUNGITÆ, a ſort of ſea-corals, when found foſſil, as they very frequently are, in beds of clay, or lodged in ſtone.

COLUMELLA, in *Anatomy*. See UVULA.

COLUMELLÆ *muſculus teres*, a name given by Morgagni, and ſome others, to the muſcle called by Albinus *azygos uvulæ*.

COLUMN, in *Architecture*, a round pillar, made to ſupport, or adorn, a building.

The *column* is the principal, or reigning part, of an architectonical order.

The principal laws and properties of this eminent member of architecture are thus deduced. Every fulcrum, or ſupport, is ſo much the more perfect, as it is the firmer, or carries the greater appearance of firmneſs: and hence all *columns*, or pillars, ought to have their baſe, or foot, broader than themſelves. See BASE.

Again, as a cylinder and a quadrangular priſm are more eaſily removed out of their place than a truncated cone, or a pyramid, on the ſame baſe, and of the ſame altitude; the figure of *columns* ought not to be cylindrical; nor, that of a pilaſter, pyramidal; but both the one, and the other, to be contracted, or diminiſhed; i. e. to grow leſs and leſs, like a truncated cone, and a truncated pyramid.

For the ſame reaſon, the loweſt parts of *columns* ought to be cylindrical; that of pilaſters, pyramidal: hence, again, as *columns* are more firm, if their diameter bears a greater proportion to their height, than if it bore a leſs; the greater ratio is to be choſen, where a large weight is to be ſuſtained; and leſs, where a leſſer. Further, as the deſign of a *column* is to ſupport a weight, it muſt never be ſuppoſed without an entablature: though a *column* raiſed on an eminent place, ſo as to leave no room to fear its being thruſt out of its place, needs no pedeſtal.

The entire *column*, in each order, is compoſed of three principal parts; the *baſe*, the *ſhaft*, and the *capital*. See the proportions of each, under its reſpective head, CAPITAL, &c. Each of theſe parts, again, is ſubdivided into a great number of leſſer, called *members*, or *mouldings*: ſome whereof are eſſential, and found in all *columns*; others are only accidental, and found in particular orders.

Columns are different, according to the ſeveral orders they are uſed in; and likewiſe, not only with regard to their order, but alſo to their matter, conſtruction, form, diſpoſition, and uſe. With regard to order, we have the

COLUMN, *Tuſcan*, the ſhorteſt, and moſt ſimple, of all the *columns*. Its height, according to Vitruvius, Palladio, and Vignola, is ſeven diameters, or fourteen modules; according to Scamozzi, it is fifteen modules; to De Lorme, twelve; to Trajan's *column*, ſixteen. Its diminution, according to Vitruvius, is one fourth of the diameter; according to Vignola, a fifth; and according to Trajan's *column*, a ninth. Its ſeveral parts, mouldings, &c. ſee under their proper heads; and the entire figure, ſee repreſented in *Tab. Architect. fig.* 24.

COLUMN, *Doric*, is ſomewhat more delicate: its ſhaft is adorned with flutings: its height, according to Vitruvius, is from fourteen to fifteen modules; to Scamozzi, ſeventeen; to Vignola, ſixteen; in the Coliſeum, nineteen; in the theatre of Marcellus, fifteen two thirds. Its diminution, according to the theatre of Marcellus, twelve minutes; to the Coliſeum, four minutes and a half. See *Tab. Architect. fig.* 25.

COLUMN, *Ionic*, is more delicate ſtill; it is diſtinguiſhed from the reſt by the volute in its capital, and by its baſe. See VOLUTE.

Its height, according to Palladio, is ſeventeen modules one third; according to Vignola, eighteen. Its diminution, in the temple of Concord, ten minutes and a half; of Fortuna Virilis, ſeven and a half; Coliſeum, ten minutes. See *Tab. Architect. fig.* 26.

COLUMN, *Corinthian*, is the richeſt and moſt delicate of all the *columns*. Its capital is adorned with two rows of leaves, and with caulicoles; whence ſpring out little volutes.

Its height, according to Vitruvius, and many remains of antique porticos, temples, &c. is nineteen modules; according to Serlio, eighteen: to the Coliſeum, ſeventeen and ſeven tenths; to the three *columns* in the Campo Vaccino, twenty; the baſilica of Antoninus, twenty. Its diminution, according to the temple of Peace, is ſix minutes and a half; the Pantheon, ſix one eighth; temples of Sybil and Fauſtina, eight; Conſtantine's arch, ſeven; portico of Septimius, ſeven and a half. See *Tab. Architect. fig.* 27.

Column, *Compoſite*, has two rows of leaves in its capital, like the Corinthian; and angular volutes, like the Ionic. See Composite.

Its height, according to Vignola, and the arch of Titus, is twenty modules; to Scamozzi, and the temple of Bacchus, nineteen and a half; the arch of Septimius, nineteen and nine tenths. Its diminution, according to Titus's and Septimius's arches, ſeven minutes; baths of Diocleſian, eleven minutes one third; temple of Bacchus, ſix and a half. See *Tab. Architect. fig.* 28.

An ingenious architect has furniſhed the editor with the following table, accommodated to the meaſures of the moſt approved architects for the four firſt orders; and as the Compoſite (which many will not allow to be a diſtinct order) has the beſt effect when put to the meaſures of the Corinthian, the meaſures may be ſupplied from thoſe of that order.

			TUSCAN.		DORIC.		IONIC.		CORINTHIAN.	
			Altitude.	Projection.	Altitude.	Projection.	Altitude.	Projection.	Altitude.	Projection.
CORNICE.	Fillet,		3½	66	2¼	76	2½	72	2¼	74
	Cima Recta,		10		6¼		7		6¼	
	Fillet,		2	54¼	¾	68	1	64	⅔	66½
	Cima Reverſa,				3¼		3½		3	
	Corona,		10	52¼	8	64½	8	59½	7⅓	63
	Ovolo,		9	42	6	39½				
	Fillet,		1½	32	1	35½			⅔	62
	Cymatium of the Modilions,						3	55 53	2⅓	61 59
	Modilion,						7½	52	7½	40½
	Fillet,						1½	37	1	40
	Ovolo,						6	36	4½	39
	Fillet,								1	36
	Dental,								5½	35
	Fillet,						1	31½	1	32
	Ogee,								4½	31 27
	Cavetto,		7½	23½	5	31	5	27		
	Capital of Trigliphs,				5	30½				
FRIEZE,			26	22½	45	26	27	34	28½	26
ARCHITRAVE.	Fillet,		5	27½	4½	28	2¾	34	2½	34½
	Cima Reverſa,						4¾	33 30	5	30 30½
	Aſtragal or Fuſirole,								2	29½
	Third Faccia,						10½	29	10½	28
	Aſtragal,						2	29	1¼	28
	Second Faccia,		17½	24	14½	27	8½	27½	8¼	27
	Aſtragal,						1⅓	27½	1⅓	27
	Firſt Faccia,		12½	22½	11	26	6½	26½	6¼	26
CAPITAL.	Abacus,	Ovolo,			1¼					
		Fillet,			1¼	38¾	1¼	31½	1¼	42
		Cavetto,							5⅔	39
	Baſket Rim,								2	
	Cima Reverſa,				2½	37¾ 36¼	3⅓	30¾ 29		
	Abacus,		10	30	6¼	35¾				
	Volute,	Fillet or Rim,					1⅓			
		Chaw or Hollow,					5⅓			
	Ovolo,		10	29	6½	34⅓	7½	35		
	Aſtragal,									
					1⅑	29¾				
	Fillet,		1½	24½	1⅑	28½				
					1⅑	27¼				
	Colorino,		8½	22½	10	26				
SHAFT.	Aſtragal,		4	27	3½	30	3⅐	30	3⅔	30
	Fillet,		1½	24½	1½	28¼	1⅔	28⅓	1⅓	28
	Body of Column,		354½	22½ 30	413¾	26 30	482¼	26 30	460¼	26 30
	Fillet,		2½	33¼	1¼	33½	1¼	33	1¼	33½
	Aſtragal,						2¼	34½	2	35½
BASE.	Torus,				5½	36⅔	5⅔	37	5	37½
	Aſtragal,								1½	35½
	Fillet,				1¼	35	1¼	34½	⅔	34
	Scotia,				4½		4⅔		3¾	
	Fillet,				1¼	36⅔	1½	37	¾	37
	Aſtragal,								1¼	38½
	Torus,		12½	40	12½	40	7½	41¼	7	42
	Plinth,		15	40	10	40	10	41¼	9⅔	42

It may be here obſerved, that there ſeems more of caprice than reaſon in that diverſity found in the heights of *columns* of the ſame order, in different authors; each of whom frequently takes the liberty of diſpenſing with his own rules. Vitruvius, for inſtance, makes the Doric *columns* of temples ſhorter than thoſe of porticos behind theatres; Palladio gives a greater height to *columns* ſtanding on pedeſtals, than to thoſe which have none; and Serlio makes his *column* a third ſhorter, when inſulate, or detached, than when contiguous to a wall.

But notwithſtanding the diverſity of height in *columns* of the ſame order in different authors, they ſtill bear a like proportion in the ſeveral orders compared with each other; by which they go increaſing, as the orders are leſs maſſive.

But this augmentation is greater in ſome ordonnances than in others: for in the antique it is but of five modules, or ſemidiameters for the five orders; the ſhorteſt *column*, that is, the Tuſcan, being fifteen modules; and the longeſt, the Compoſite, twenty. In Vitruvius, this increaſe is alſo of five modules; but commences from fourteen modules, and ends at nineteen. The moderns uſually make it greater: Scamozzi makes it five modules and a half; Palladio and Serlio, ſix.

From the ſeveral proportions of *columns* aſſigned by ſeveral authors, M. Perrault has drawn a new one; which is a mean between the extremes of the reſt. Thus, he makes the Tuſcan *column* fourteen modules two thirds; which is a kind of mean between the Tuſcan of Vitruvius, fourteen, and that of Trajan's *column*, eighteen: the height of the Doric *column* he makes ſixteen modules; which is a mean between the fourteen of Vitruvius, and the nineteen of the Coliſeum: the Ionic he makes ſeventeen modules one third; which is a mean between the ſixteen of Serlio, and the nineteen of the Coliſeum: the Corinthian *column* he makes eighteen modules two thirds; as being a medium between the ſixteen modules ſix minutes of the temple of the Sybil, and the twenty modules ſix minutes of the three *columns* of the Roman Forum: laſtly, the Compoſite *column*, by the ſame rule he makes twenty modules; that height being a mean between the arch of Titus, and the temple of Bacchus.

Indeed, the rule by which he proceeds ſeems very reaſonable; viz. that the progreſſional advance of each *column* in the different orders is to be equal; ſo that having ſettled the whole progreſſion, from the Tuſcan to the Compoſite, at five modules ten minutes; this being a mean between the five modules of the antique, and the five and a half of the moderns; he divides this ſum, which is one hundred and ſixty minutes, into four equal parts, giving forty minutes to the progreſſion of each order: this makes the Tuſcan *column* fourteen modules twenty minutes; the Doric becomes ſixteen, the Ionic ſeventeen ten minutes, the Corinthian eighteen twenty minutes, and the Compoſite twenty modules.

For the diſtinguiſhing characters of each order of *columns*, ſee **ORDER**. For the matter of *columns*, ſee **STONE**, **MARBLE**, &c. For their uſe and application, ſee **BUILDING**. For the ranging of *columns*, and the ſpaces to be obſerved between each, ſee **INTERCOLUMNATION**.

COLUMNS, *different with regard to their matter.*

COLUMN, *fuſible.* Under this term are comprehended, not only *columns* of various metals, and other fuſible matters, as glaſs, &c. but alſo thoſe of ſtone, ſaid to have been caſt; the ſecret of which ſome will have us believe to have been known to the ancients.

COLUMN, *hydraulic*, is that whoſe ſhaft appears to be of cryſtal; being formed by a number of little threads of water, falling from holes made in a girt of metal, at equal diſtances, by means of a pipe mounting through the middle thereof; as in the gardens at Verſailles.

COLUMN, *hydraulic*, alſo denotes a *column* from whoſe top proceeds a *jet d'eau*, to which the capital ſerves as a baſon; whence the water deſcends by a little pipe, which turns ſpirally around the ſhaft. Such are the Ionic *columns* of the caſcade of the Belvidera at Freſcati; and thoſe of the vineyard Matthei at Rome.

COLUMN, *moulded*, is that made by impaſtation, of gravel and flints of divers colours, which are bound together with a cement, which grows perfectly hard, and receives a poliſh like marble.

The ſecret of making theſe, it appears, the ancients were maſters of, by the *columns* lately diſcovered near Algiers; which are, doubtleſs, the ruins of the ancient Julia Cæſarea: on all theſe is found the very ſame inſcription in antique characters; the contours, accents, and even faults, being repeated in every ſhaft: an inconteſtable proof of their being moulded.

COLUMN, *tranſparent*, any *column* made of tranſparent matter: as were thoſe of cryſtal in the theatre of Scaurus, mentioned by Pliny; and thoſe of tranſparent alabaſter, in the church of St. Mark, at Venice.

COLUMN, *water*, is a ſort whoſe ſhaft is formed of a large *jet d'eau*; which, ſpouting out water violently from the baſe, drives it within the tambour of the capital, which is made hollow; whence, falling down again, it has the effect of a liquid cryſtal *column*. See **FOUNTAIN**.

An inſtance of this we have at Quinta d'Aveiro, near Liſbon.

COLUMN *of bands*, or *tambours*, that whoſe ſhaft is formed of ſeveral courſes of ſtone, or blocks of marble, leſs high than the diameter of the *column*: this is what Uppian means by *columna ſtructilis*, or *adpacta*; which is oppoſite to the *columna ſolida*, or *integra*, i. e. of one piece.

COLUMNS, *with regard to their conſtruction.*

COLUMN *of Joinery*, is that made of ſtrong timber-boards, joined, glued, and pinned together: it is hollow, turned in the lathe, and uſually fluted. Such are the *columns* in moſt altar-pieces.

COLUMN *of Maſonry*, is made of rough ſtone, well laid and covered with plaſter; or of bricks moulded triangular-wiſe, and covered with ſtucco.

COLUMN *in truncheons*, or pieces, conſiſts of three, four, or five pieces of ſtone, or metal; differing from the tambours, as being higher than the diameter of the *column*.

COLUMN, *geminated*, that whoſe ſhaft is formed of three ſimilar and equal ſides, or ribs of ſtone, fitted within one another; and faſtened at bottom with iron pins, and at the top with cramp-irons. This is to be fluted, that the joints may be the leſs diſcernible.

COLUMN, *incruſtated*, is made of ſeveral ribs, or thin ſhells of fine marble, or ſome other rare ſtone, cemented upon a mould of ſtone, brick, or the like. This is done with deſign both to ſave the precious matter, as oriental jaſper, lapis lazuli, agat, &c. or to repreſent pieces of ſuch ſtones of an extraordinary ſize, by the neatneſs and cloſeneſs of the incruſtation, which renders the joints imperceptible.

COLUMN, *cabled*, or *rudented*, is a *column* having projectures in form of cables, or canes, in the naked of the ſhaft; each cable having an effect oppoſite to that of a fluting; and accompanied with a little liſt on each ſide.

COLUMN, *corolitic*, that adorned with foliages, or leaves and branches turned ſpirally around the ſhaft; or in form of crowns and feſtoons.

Theſe were uſed by the ancients for erecting ſtatues on; which hence took the denomination of *corolitic*. They are very ſuitable in triumphal arches, and decorations of theatres.

COLUMN, *coloſſal*, a *column* of enormous ſize, too large to enter any ordonnance of architecture; to be placed ſolitary, in the middle of a ſquare, &c.

Such is the Trajan *column*; whoſe proportions are Doric, its profile Tuſcan, and its pedeſtal Corinthian; twelve feet and one eighth in diameter, and one hundred in height, including the baſe and the capital. Its baſe conſiſts of twelve ſtones of an enormous ſize, and it is raiſed on a ſocle or foot of eight ſteps. The pedeſtal of this *column* has eighteen feet, and the crowning ſixteen and a half. It ſupports a brazen ſtatue of St. Peter, thirteen feet high; the whole making one hundred and forty-ſeven ancient Roman feet. It was built by Apollodorus, in a large ſquare at Rome called the Forum Romanum; and conſiſts of thirty-four tambours, or blocks, or pieces of white marble, taking in the crowning. It is adorned from top to bottom with baſſo relievos, repreſenting the great actions of that emperor againſt the Dacæ.

Several learned men have explained the bas reliefs of the Trajan *column*; and among others, Ciaconius and Fabretti. The late king of France, Lewis XIV. had models of all the bas reliefs taken off in plaiſter of Paris. See **COLUMN**, *hiſtorical*, and *hollow*.

The Antonine *column*, which is alſo of white marble, is inferior to the Trajan in beauty of ſculpture, but exceeds it in height; being one hundred and ſixty-eight feet to the capital, beſides ſeven feet of the pedeſtal under-ground. See **COLUMN**, *hollow*.

Laſtly, the London *column*, or **MONUMENT**, is of ſtone, fiſteen feet in diameter, and two hundred and two high; taking in the pedeſtal and crowning.

COLUMN, *cylindrical*, is that which has neither ſwelling nor diminution.

COLUMN, *diminiſhed*, is that which has no ſwelling, but begins to taper, or diminiſh, from the baſe; in imitation of trees.

Such are moſt of the antique *columns* of granite; particularly the Corinthian ones in the porch of the Pantheon.

To diminiſh a column. Draw a tranſverſe line (*Plate Architecture*, *fig.* 36.) at one third of the whole height of the *column*; then ſet off the diminution on each end of that line: on the extreme diameter of the *column* inwards deſcribe a ſemicircle, and continue the diviſions laſt made to the neck of the *column*; divide the intermediate ſpace into ſix equal parts, and make the like number of diviſions on that part of the circle which is between the perpendiculars of the necking and the greateſt diameter; lines drawn from theſe diviſions will interſect the ſeveral tranſverſe lines, and give the diameter at each of thoſe points: a curve drawn that will touch in thoſe points, will form the outline of the *column* properly diminiſhed.

COLUMNS *denominated from their form.*

COLUMN, *fluted*, called alſo *channelled*, and *ſtriated column*; that whoſe ſhaft is adorned with flutes, or channellings; either from top to bottom, or only two thirds of its height.

Column, *fluted and cabled*, is that whoſe flutes are filled up with cables, reeds, or ſtaves; beginning from the bottom of the ſhaft, and reaching one third of its height.

Column, *fluted, enriched*, is that whoſe flutings are filled up with ornaments of foliages, rinds, ribbons, &c. inſtead of cables.

Column, *Gothic*, a round pillar, either too ſhort for its bulk, or too ſlender for its height; as having, ſometimes, twenty diameters; and this without either diminution, or ſwelling: yet its ornaments, and the characters of its work, being as far from thoſe of the antique, as its proportions.

Column, *Hermetic*, a kind of pilaſter, in manner of a terme; having the head of a man, in lieu of a capital. It had its name from a cuſtom, among the ancients, of placing Mercury's head, whom the Greeks call *Hermes*, at the top of *columns*.

Columns, *maſſive*, are thoſe too ſhort for the order whoſe capital they bear; as the pillars in Gothic churches uſually are. See Massive.

Under the term *maſſive* are, likewiſe, frequently comprehended *ruſtic* and *Tuſcan columns*.

Column, *oval*, that whoſe ſhaft has a flatneſs; its plan being made oval, to reduce the projecture.

Column, *paſtoral*, that whoſe ſhaft is formed in imitation of the trunk of a tree, with bark and knots.

This kind of *column*, in the Tuſcan proportion, may be uſed in the gates of parks and gardens; and in the decoration of paſtoral ſcenes, &c.

Column, *polygonous*, has ſeveral ſides, or faces: the moſt regular of theſe have eight faces.

This, with the oval and cylindrical *columns*, Daviler regards as abuſes in architecture.

Column, *ſerpentine*, a *column* formed of three ſerpents, twiſted together; the heads whereof ſerve as a capital.

An inſtance of this is at Conſtantinople, in the ſquare called Atmeidan, anciently the Hippodrome. P. Gyllius calls this the *Delphic column*; as imagining it anciently ſerved for the tripod of Apollo, in the temple at Delphos. It is now ordinarily called the *taliſman*, or *enchanted column*.

Columns, *ſwelled*, are thoſe which have a bulging, or ſwelling, in proportion to the height of the ſhaft.

Authors are much divided on the ſubject of this *ſwelling*. Sir H. Wotton treats it as a moſt ridiculous abuſe: yet the practice obtains among the modern architects; who generally make their *columns* a little bigger at one third of their height, than at the baſe; i. e. they diminiſh the *column* near the baſe; which makes the upper part appear big, and occaſions a ſwelling at about one third of the height.

This ſwelling appears to have been unknown to the ancients. M. Le Clerc obſerves, it ought not to exceed one minute and a half at moſt. He thinks it ought never to be uſed, excepting where there is a particular occaſion for it; as where *columns* are to be placed over one another.

Column, *twiſted*, is that whoſe ſhaft is twiſted round, in manner of a ſcrew, with ſix circumvolutions; being, ordinarily, of the Corinthian order. Vignola firſt found a method of drawing it by rule.

Column, *twiſted fluted*, is that whoſe flutes follow the contour of the ſhaft, in a ſpiral line throughout the whole length; whereof there are ſome antique ones of porphyry, and hard marble.

Column, *twiſted and enriched*, is that, one third of whoſe ſhaft is fluted, and the reſt adorned with foliages and other enrichments: and which, being all of marble, is enriched with ſculpture from bottom to top.

Sometimes, again, the *twiſted column* is formed of two or three ſlender ſhafts, twiſted round, ſo as to leave a cavity in the middle. Sometimes the flutings are ſpiral, yet the ſhaft ſtrait; which ſucceeds very well in the more delicate orders.

Columns *denominated from their diſpoſition.*

Column *inſerted*, or *backed*, is that let into a well, a third or fourth part of its diameter.

Column *niched*, is that whoſe ſhaft enters, with half its diameter, into a wall, which is hollowed for its reception; with its plane parallel to the projecture of the tore. Such is that in the portal of St. Peter at Rome.

Column, *angular*, is an inſulated *column*, placed in the coin, or corner of a portico; or inſerted into the corner of a building: or even a *column* that flanks an angle, either acute or obtuſe, of a figure of many ſides.

Column, *attic*, according to Pliny, is a pilaſter inſulated; having four equal faces, or ſides; and of the higheſt proportion, v. g. Corinthian.

Columns, *cantoned*, are thoſe engaged in the four corners of a ſquare pillar, to ſupport four ſprings of an arch.

Columns, *coupled*, are thoſe diſpoſed, by two and two, ſo as almoſt to touch each other at their baſes, and capitals.

Column, *doubled*, is an aſſemblage of two *columns*, joined in ſuch a manner, as that the two ſhafts penetrate each other with a third of their diameter. Such are thoſe of the four angles in the court of the Louvre.

Column, *flanked*, according to M. Blondel, is a *column* engaged with one half, or at leaſt one third of its diameter, between two demi-pilaſters.

Columns, *grouped*, are thoſe placed on the ſame pedeſtal, or ſocle; either by three and three, or by four and four.

Column, *inſulated*, is that ſtanding free, and detached on all ſides, from any other body.

Columns, *median*. Vitruvius gives the name *columnæ medianæ* to the two *columns* in the middle of a porch, which have their intercolumniation larger than the reſt: that if theſe laſt, for inſtance, be *pycnoſtyle*, the *medianes* are *euſtyle*.

The term may alſo be applied to the middle row of *columns*, in a frontiſpiece adorned with three orders.

Column, *Trajan*, a famous hiſtorical column, erected in Rome, in honour of the emperor Trajan. See Column, *coloſſal*.

Columns *denominated from their uſe.*

Column, *aſtronomical*, is a kind of obſervatory, in form of a very high tower; built hollow, and with a ſpiral aſcent to an armillary ſphere placed at the top, for obſerving the motions of the heavenly bodies.

Such is that, of the Doric order, erected at the Hotel de Soiſſons, at Paris, by Catherine De Medicis, for the obſervations of Orontius Fineus, a celebrated aſtronomer of that time.

Column, *chronological*, that which bears ſome hiſtorical inſcription, digeſted according to the order of time; as by luſtres, olympiads, faſti, epochas, annals, &c. At Athens there were *columns* of this kind, whereon were inſcribed the whole hiſtory of Greece, digeſted into olympiads.

Column, *funeral*, is that which bears an urn, where are ſuppoſed to be incloſed the aſhes of ſome deceaſed hero; and whoſe ſhaft is ſometimes overſpread with tears, or flames; which are ſymbols of grief, and of immortality.

Column, *gnomonic*, is a cylinder, whereon the hour of the day is repreſented by the ſhadow of a ſtyle.

Of theſe there are two kinds: in the one, the ſtyle is fixed, and the hour-lines are no more than the projection of a vertical dial on a cylindrical ſurface.

In the other, the ſtyle is moveable; and the hour-lines are drawn to the different heights of the ſun, in the different ſeaſons of the year. See Dial.

Column, *hiſtorical*, is that whoſe ſhaft is adorned with a baſſo relievo, running in a ſpiral line its whole length, and containing the hiſtory of ſome great perſonage. Such are the Trajan and Antonine *columns* at Rome.

Hiſtorical columns may likewiſe be divided by bands, or tambours, into ſeparate baſſo relievos, containing diſtinct ſubjects; by which means, the ſame *columns* may likewiſe be made to anſwer the end of chronological ones. This manner Vignola prefers to the former; which, he thinks, appears too much confuſed.

Column, *hollow*, that which has a ſpiral ſtaircaſe withinſide, for the convenience of aſcending to the top. As the Trajan *column*, the ſtaircaſe whereof conſiſts of one hundred and eighty-five ſteps, and is illumined by forty-four little windows.—The Antonine *column* has one hundred and ninety-eight ſteps, with fifty-ſix windows; each of theſe is divided by tambours of white marble. The monument or fire-*column* at London, has alſo a ſtaircaſe; but it does not reach to the top. Theſe kind of *columns* are called alſo *columnæ coclides*, or *cochlideæ*. See Monument.

Column, *indicative*, that which ſerves to ſhew the tides, &c. along the ſea-coaſts. Of this kind, there is one at Grand Cairo, of marble, whereon the overflowings of the Nile are expreſſed: by this they form a judgment of the ſucceeding ſeaſon: when the water, for inſtance, aſcends to twenty-three feet, it is a ſign of great fertility in Egypt.

Column, *inſtructive*, that raiſed, according to Joſephus, lib. i. cap. 3. by the ſons of Adam, whereon were engraven the principles of arts and ſciences.

Baudolet tells us, that the ſon of Piſiſtratus raiſed another of this kind, of ſtone; containing the rules and precepts of agriculture.

Column, *itinerary*, a *column* with ſeveral faces, placed in the croſs-ways in large roads; ſerving to ſhew the different routes, by the inſcriptions thereupon.

Column, *lactary*, at Rome, according to Feſtus, was a *column* erected in the herb-market, which is now the place Montanara; which had a cavity in its pedeſtal, wherein young children, abandoned by their parents, out of poverty or inhumanity, were expoſed, to be brought up at the public expence.

Column, *legal.* Among the Lacedæmonians, there were *columns* raiſed in public places, whereon were engraven the fundamental laws of the ſtate.

Column, *limitrophous*, or *boundary*, is that which ſhews the limits of a kingdom, or country conquered. Such was that, which Pliny ſays Alexander the Great erected at the extremities of the Indies.

As to thoſe of Hercules, ordinarily called his *columns*, or *pillars*; they are two very ſteep mountains in the ſtreights of Gades, now Gibraltar.

Column, *luminous*, is a ſort of *column* formed on a cylindrical frame, mounted and covered over with oiled paper, or gauze; ſo that lights being diſpoſed in ranks within, over each other, the whole appears as on fire.

This ſort of *column* is likewiſe made with rows of lamps, or torches running round its ſhaft; either in horizontal belts, or bands; or in a ſpiral line, over a continued feſtoon of flowers.

Column, *manubiary*, from the Latin *manubiæ*, *ſpoils of the enemy*; a *column* adorned with trophies, built in imitation of trees, whereon the ſpoils of enemies were anciently hung.

Column, *memorial*, that raiſed on occaſion of any remarkable event; as the monument in London, built to perpetuate the memory of the burning of that city, in 1666. It is of the Doric order, fluted, hollow, with a winding ſtaircaſe; and terminated at top with waving flames. See Monument.

There is alſo another of the like kind, in form of an obeliſk, on the banks of the Rhine in the Palatinate, in memory of the famous paſſage of that river, by the great Guſtavus Adolphus, and his army.

Column, *menian*, any *column* which ſupports a balcony, or meniana. The origin of this kind of *column*, Suetonius and Aſcanius refer to one Menias; who, having ſold his houſe to Cato and Flaccus, conſuls, to be converted into a public edifice, reſerved to himſelf the right of raiſing a *column* without-ſide, to bear a balcony; whence he might ſee the ſhews.

Column, *miliary*, was a *column* of marble, raiſed by order of Auguſtus, in the middle of the Roman Forum; from whence, as a center, the diſtances of the ſeveral cities, &c. of the empire were reckoned, by other *miliary columns* diſpoſed at equal diſtances, on all the grand roads. This *column* was of white marble; the ſame with that which is now ſeen on the balluſtrade of the perron of the Capitol at Rome. Its proportion is maſſive; being a ſhort cylinder, ſupporting a ſymbol of the globe of the earth.

It was called *milliarium aureum*, as having been gilt, at leaſt the ball, by order of Auguſtus. It was reſtored by the emperors Veſpaſian and Adrian; as appears by the inſcriptions.

Column, *military*, among the Romans, a *column* whereon was engraven a liſt of the forces in the Roman army, ranged by legions, in their proper order; with deſign to preſerve the memory of the number of ſoldiers, and of the order preſerved in any military expedition.

The Romans had another kind of *military column*, which they called *columna bellica*, ſtanding before the temple of Janus; at the foot whereof the conſul declared war, by throwing a javelin towards the enemies countries.

Column, *phoſphorical*, a *light-houſe*; or a hollow *column*, built on a rock, or the tip of a mole, or other eminence, to ſerve as a lantern to a port.

Column, *roſtral*, that adorned with the beaks or prows of ſhips, and gallies, with anchors and grapplers; erected, either in memory of a naval victory; as the Tuſcan *column*, in the Capitol: or, in honour of ſome admiral; as the Doric ones, at the entrance of the caſtle de Richelieu.

Column, *ſepulchral*, anciently, was a *column*, erected on a a tomb or ſepulchre; with an inſcription on its baſe. See Tomb, &c.

Thoſe over the tombs of perſons of diſtinction were very large; thoſe for the common people ſmall: theſe laſt are called *ſtelæ* and *cippi*.

Column, *ſtatuary*, that which ſupports a ſtatue. Such was that erected by pope Paul V. on a pedeſtal before the church of St. Maria Major at Rome; to ſupport a ſtatue of the Virgin, which is of gilt braſs. See Statue.

This *column* was dug up in the temple of Peace; its ſhaft is a ſingle block of white marble, forty-nine feet and an half high, and five feet eight inches diameter; of the Corinthian order, fluted.

The term *ſtatuary column*, may likewiſe be applied to Caryatides, Perſians, Termini, and other human figures; which do the office of *columns*; and which Vitruvius calls *Telamones*, and *Atlantes*.

Column, *ſymbolical*, is a *column* repreſenting ſome particular country, by the attributes proper thereto; as that of the French order, ſet with fleurs-de-lis, in the frontiſpiece of the Jeſuits church at Rouen: or ſome memorable action; as the *Corvinian column*, on which was a crow; erected to Valerius Maximus, ſurnamed Corvinus, in memory of his defeat of a giant in the army of the Gauls, by the aſſiſtance of a crow.

Under the title of *ſymbolic columns*, may alſo be comprehended thoſe which ſerve for ſymbols. Such is that on a medal of Nero, which expreſſes the ſtability of the Roman empire. See Symbol.

Column, *triumphal*, a *column* erected among the ancients in honour of an hero; the joints of the ſtones, or courſes whereof, were covered with as many crowns, as he had made different military expeditions.

Each crown had its particular name: as vallaris, which was beſet with ſpikes, in memory of having forced a paliſade: muralis, adorned with little turrets, or battlements; for having mounted an aſſault: navalis, of prows and beaks of veſſels; for having overcome at ſea: obſidionalis, or graminalis, of graſs; for having raiſed a ſiege: ovans, of myrtle; which expreſſed an ovation or little triumph: and triumphalis, of laurel; for a grand triumph.

Procopius tells us of a *column* of this kind, erected in the place called Auguſteum, before the imperial palace of Conſtantinople, ſupporting an equeſtrian ſtatue of the emperor Juſtinian.

Column, *zoophoric*, a kind of ſtatuary *column*, whereon is placed a figure of ſome animal. Such is one of the two *columns* of the great gate of Venice; whereon is the lion of St. Mark, and the arms of the republic: or that at Sienna, which bears the wolf that ſuckled Romulus and Remus.

Column, *ſcenography of a.* See Scenography.

Column, in *War*, denotes a deep file, or row of troops; or diviſion of an army, which marches at the ſame time, and towards the ſame place, at intervals large enough to avoid confuſion.

An army marches in one, two, three, or more *columns*, according as the ground will allow, and the general ſees expedient.

The word is ſometimes alſo uſed in ſpeaking of veſſels at ſea, following each other in the ſame line.—It is difficult to form *columns* at ſea, unleſs the wind be in ſtern.

Column, among *Printers*, is half a page, when the page is divided into two parts, from top to bottom. See Printing.

COLUMNA *naſi*, is uſed by ſome writers of anatomy, for the fleſhy end of the nose, jutting out over the upper lip.

Columna *oris*, is ſometimes uſed for the uvula.

COLUMNÆ *carneæ*, in *Anatomy*, called alſo *lacertuli*, and *columnæ cordis*, are ſeveral ſmall muſcles in the ventricles of the heart; derived, and, as it were, detached from the parietes of thoſe ventricles, and connected by tendinous extremities to the valves of the heart.

Theſe little *columns*, or pillars, being faſtened to the parietes of the heart on one ſide, and the tricuſpid and mitral valves on the other, do, by their contraction in the ſyſtole of the heart, draw out the valves; and by that means, not only ſhut the orifices of the veins, but more exactly cloſe their ventricles in their ſyſtole.

COLUMNAR *marble.* See Basaltes.

COLUMNARIS, in *Botany*, a name given by ſome to the tall, milky bell-flower; the *campanula lateſcens.* Ger. Emac. Ind. 2.

COLUMNARIUM, in *Roman Antiquity*, a heavy tribute, demanded for every pillar of a houſe. It was firſt laid on by Julius Cæſar, in order to put a ſtop to the extravagant expences laid out on ſumptuous buildings.

COLUMNEA, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Its characters are theſe: the flower hath one petal, of the ringent or grinning kind, with a ſwelling tube, divided above into two lips; the upper erect and entire, the lower divided into three parts which ſpread open: it hath four ſtamina, two longer than the other; theſe are encloſed in the upper lip. In the center is ſituated a roundiſh germen, which afterward becomes a globular berry with two cells ſitting in the empalement, containing ſeveral oblong ſeeds. We know but one ſpecies, which grows naturally in the warmeſt parts of America.

COLUMNELLA, *little column*, in *Botany*, denotes the ſubſtance that paſſes through the capſule, and connects the ſeveral partitions and ſeeds.

COLUMNIATED *winding ſtairs.* See Stairs.

COLUMNIFERI, an order of plants in the Fragmenta Methodi Naturalis of Linnæus.

COLURES, in *Geography* and *Aſtronomy*, are two great circles, imagined to interſect each other at right angles, in the poles of the world.

The word is derived from κολος, *mutilus*, or *truncatus*, and ουρα, *tail*; q. d. *appearing with the tail cut off*; becauſe never ſeen entire above the horizon.

The *colures* paſs, one of them through the ſolſtitial, and the other through the equinoctial point of the ecliptic: whence the firſt is denominated the *ſolſtitial*, and the ſecond the *equinoctial colure*.

The equinoctial *colure* determines the equinoxes; and the ſolſtitial, the ſolſtices.

By thus dividing the ecliptic into four equal parts, they alſo mark the four ſeaſons of the year.

It is diſputed over what part of the back of Aries the equinoctial *colure* paſſed in the time of Hipparchus. Sir Iſaac Newton, in his Chronology, takes it to have been over the middle of the conſtellation. Father Souciet inſiſts on its having paſſed over the dodecatemorion of Aries, or midway between the rump and firſt of the tail. We have ſome obſervations, in the Philoſophical Tranſactions, N° 466, concerning the poſition of this *colure* in the ancient ſphere, from a draught of the conſtellation Aries, in the Aratæa publiſhed at Leyden and Amſterdam, 1652, which ſeem to confirm Sir Iſaac's opinion; but the antiquity and authority of the original draught may ſtill remain in queſtion. See CHRONOLOGY.

COLUTEA, in *Botany*. See *Bladder* SENA.

COLYBA, or COLYBUS, a term in the *Greek Liturgy*, ſignifying an offering of corn, and boiled pulſe, made in honour of the ſaints, and for the ſake of the dead.

Balſamon, P. Goar, Leo Allatius, and others, have written on the ſubject of *colybæ*: the ſubſtance of what they have ſaid, is as follows.

The Greeks boil a quantity of wheat, and lay it in little heaps on a plate; adding beaten peas, nuts cut ſmall, and grape-ſtones, which they divide into ſeveral compartments, ſeparated from each other by leaves of parſley. A little heap of wheat, thus ſeaſoned, they call κολυβα.

They have a particular formula for the benediction of the *colybæ*: wherein, praying that the children of Babylon may be fed with pulſe, and that they may be in better condition than other people, they deſire God to bleſs thoſe fruits, and thoſe who eat them, becauſe offered to his glory, to the honour of ſuch a ſaint, and in memory of the faithful deceaſed. Balſamon refers the inſtitution of this ceremony to St. Athanaſius; but the Greek Synaxary to the time of Julian the Apoſtate.

Many of the Latin divines having ſpoken injuriouſly of this ceremony, Gabriel archbiſhop of Philadelphia, has written a diſcourſe in its vindication: wherein he endeavours to ſhew, that the deſign of the *colyba* is only to repreſent the reſurrection of the dead, and to confirm the faithful in the belief thereof. The *colybæ*, he ſays, are ſymbols of a general reſurrection; and the ſeveral ingredients added to the wheat, ſignify ſo many different virtues.

COLYMBIS, in *Zoology*, a name given by Bellonius to a ſpecies of duck, remarkable for a large tuft of feathers behind its head, and thence called by us the tufted duck, and known among authors by its Venetian name CAPO *negro*. See DUCK.

COLYMBUS, the *diver*, in the Linnæan ſyſtem of *Zoology*, the name of a diſtinct genus of birds, of the order of the *anſeres*. See DIVER.

COLYTEA, in *Botany*, is uſed by ſome to denote the *arbor Judæa*, or SILIQUASTRUM.

COMA, in *Medicine*, a ſort of ſleepy diſeaſe, otherwiſe called *cataphora*; always bringing on a violent propenſity to ſleep, whether ſleep enſue, or not.

If ſleep do enſue, the diſeaſe is called *coma ſomnolentum*, wherein the patient continues in a profound ſleep; and when awaked, immediately relapſes, without being able to keep open his eyes. If he does not ſleep, but is continually awaked with frightful dreams, it is called *coma vigil*: in this caſe alſo his eyes are ſhut, and he appears aſleep.

The cauſe of the *coma ſomnolentum* may be any thing that prevents the courſe of the ſpirits; as a cold humid temperature of the brain; hot putrid vapours aſcending into the head, and ſtopping the canals of the animal ſpirits; narcotic vapours, &c. The *coma vigil* is ſuppoſed to ariſe from the conflict, or jarring mixture of bile with pituita; the one urging to ſleep, the other to waking. Hence the patient ſleeps either not at all, or, at moſt, but for a moment; is uneaſy, ſtarts, riſes up, and ſometimes throws himſelf on the perſons near him; his eyes continuing all the time faſt cloſed.

The remedies for a *coma*, are thoſe which occaſion great evacuations, as violent clyſters, or vomitives; medicines that purge, and dry the brain; and thoſe which occaſion revulſion of humours, as veſicatories, cauteries, &c. to which may be added volatile ſpirits, ſalts, and moſt cephalics. See LETHARGY.

The natural proceſs of death is deſcribed by phyſicians by the following words in the following order; *ſingultus, convulſio, coma, mors*.

COMA, in *Botany*, a ſpecies of fulcra, compoſed of large bracteæ in form of a bruſh of hair, which terminates the ſtalk.

COMA AUREA, in *Botany*. See GOLDY *locks*.

COMA BERENICES, *Berenice's Hair*, in *Aſtronomy*, a modern conſtellation of the northern hemiſphere; compoſed of unformed ſtars between the Lion's tail, and Bootes.

This conſtellation is ſaid to have been formed by Conon, an aſtronomer, in order to conſole the queen of Ptolemy Euergetes, for the loſs of a lock of her hair, which was ſtolen out of the temple of Venus, where ſhe had dedicated it on account of a victory obtained by her huſband. Ricciol. Alm. lib. vi. cap. 4.

The ſtars in the conſtellation *Coma Berenices*, in Tycho's Catalogue, are fourteen; in Hevelius's, twenty-one; and in the Britannic Catalogue, forty-three. The order, names, longitudes, latitudes, magnitudes, &c. whereof are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
		♍	16	53	24	20	21	46	7
			17	44	9	20	2	11	6
			21	14	30	16	27	0	6
			7	21	15	24	45	23	6
			19	56	6	19	59	7	6
5.									
			23	16	44	15	13	55	5
Firſt of all in the circle of the hair, to the ſouth.	*b*		19	18	19	23	28	33	4.5
			20	24	1	22	56	57	7
			17	56	28	27	34	35	6
			17	50	59	27	51	56	6
10.									
			3	5	51	18	19	53	4.5
Third of the prec. from the cuſp, or point.	*e*		9	45	29	25	47	32	5
Second of the preced.	*f*		20	2	23	26	11	47	4.5
That preced. in the cuſp.	*b*		19	55	40	27	26	54	4.5
In the cuſp towards the north.	*c*		19	32	24	28	24	2	4.5
15.									
That under this.	*a*		20	16	55	27	6	50	4.5
That following this.	*d*		21	10	29	26	29	11	4.5
Firſt of three contiguous ones behind this.			22	9	44	24	54	50	5
			20	41	32	27	36	36	6
			23	43	26	22	2	38	6
20.									
Middle of the contiguous ones.	*g*		22	18	15	25	29	10	5
Subſequent, and leſs.			23	1	59	25	29	11	7
Another following all theſe, and more ſouth.	*k*		24	7	1	24	7	9	4
That preceding ſeveral under the hair.			26	7	23	20	17	57	5
			27	6	49	19	19	12	6
25.									
			25	48	38	23	8	10	5
			29	34	49	19	48	42	5
		♎	1	16	5	17	12	57	6
			1	10	30	17	48	0	5
		♍	24	57	52	29	58	24	6
30.									
Preced. in the hair.			25	30	24	30	12	24	4.5
		♎	0	38	35	20	49	4	7
			0	40	9	20	51	56	7
More ſouth in the hair.		♍	25	59	58	30	5	31	5
			28	59	44	24	42	42	4.5
35.									
		♎	2	3	55	21	46	56	5
		♍	25	43	4	33	56	36	5.6
		♎	2	42	23	21	45	14	6
			2	5	7	25	55	56	5
			1	22	51	27	14	39	6
40.									
Former of two in the extremity of the hair.		♍	29	2	42	31	49	41	5.4
		♎	4	38	35	22	59	12	4.5
Poſterior in the extremity of the hair.			0	6	31	32	28	33	5.6

All theſe ſtars Ptolemy ranks among the *informes* of Leo; and the cluſter of little ſtars, in form of a nebulous one, between the Lion and Bear, he calls ſimply Πλοκαμον; as reſembling an ivy leaf; the pointed part whereof is turned towards the north, and the ſides bounded by the ſeventh and twenty-ſecond ſtars. Bayer, inſtead of hair, gives a ſheaf of corn.

COMARCHIOS, in *Antiquity*, the name of a particular air, or tune, deſigned to be ſung at entertainments.

COMARIS, in *Lithology*, a name given by the Greek writers to the SELENITIS, or *aphroſelene*.

They called this ſtone alſo *cupholithos*.

COMARUM, in *Botany*, a genus of the *icoſandria polygynia* claſs; *marſh cinquefoil.* Its characters are theſe: the flower hath five oblong petals, which are inſerted in the empalement, but are much ſmaller. It hath twenty permanent ſtamina, which are inſerted into the empalement; and a great number of ſmall roundiſh germina collected into a head. The common receptacle afterward becomes a large fleſhy fruit, having many pointed ſeeds adhering to it. We know but one ſpecies of this plant, which grows naturally in bogs.

COMB, in *Huſbandry*, a meaſure of corn, conſiſting of four Wincheſter buſhels: in ſome places the buſhel contains eight gallons and a quart.

Comb, in *Natural Hiſtory*, the creſt, or red fleſhy tuft growing on the head of a cock.

Comb, in a ſhip, a little piece of timber ſet under the lower part of the beak-head, near the middle: it has two holes in it, and ſupplies to the fore-tacks, what the cheſt-trees do to the main-tacks; that is, to bring the main-tacks aboard.

Comb, in the *Manufacture of Tapeſtry*. See Tapestry.

Comb, *Ladies*, or *Venus's* Comb, the name of a diſtinct genus of plants, called by Tournefort *ſcandix*. See Scandix.

Comb-*fiſh*, *pecten*, in *Ichthyology*. See Pecten.

COMBARONES, in *Antiquity*, the fellow-barons or commonalty of the cinque-ports.

COMBAT, in a general ſenſe, denotes an engagement; or a difference decided by means of arms.

Authors ſometimes diſtinguiſh, in an army, between a *combat* and a battle; the latter expreſſing the general action of the whole army; the former only a particular ſkirmiſh, or engagement of a ſingle part: ſo that the *combat* is properly a part of a BATTLE.

Combat, in *Law*, or, *ſingle combat*, denotes a formal trial, between two champions, of ſome doubtful cauſe or quarrel, by the ſword, or batoons.

This form of proceeding was anciently very frequent, particularly among the barbarous nations in their original ſettlements; and obtained not only in criminal, but alſo in civil cauſes: being built on a preſumption, that God would never grant the victory, but to him who had the beſt right. It was originally permitted, in order to determine points reſpecting the reputation of individuals, but afterwards became much more extenſive. See Duel.

The form and ceremony of the *combat*, is deſcribed in the grand Coutumier of Normandy. The accuſer, firſt, ſwore to the truth of his accuſation; the accuſed gave him the lye: upon which, each threw down a gage, or pledge of battle; and the parties were committed priſoners to the day of *combat*. See Champion.

Hiſtorians tell us, that Alphonſus king of Caſtile, in the eleventh century, deſiring to aboliſh the Moſarabic liturgy, and to introduce the Roman office; the people oppoſing it, it was agreed to terminate the difference by *combat*, and to leave the cauſe to the deciſion of Heaven. One of the earlieſt reſtrictions of this practice that occurs in the hiſtory of Europe, is that of Henry I. of England; which was afterwards followed by an edict of Louis VII. of France to the ſame effect. Robertſon's Hiſt. of Charles V. vol. i. p. 61, &c. and 350, &c. 8vo.

Combat is alſo uſed for the ſolemn games of the ancient Greeks and Romans, performed in honour of their gods; as the Olympic games, Pythian, Iſthmian, and Nemæan games; the ludi Actiaci, Circenſes, &c. which ſee in their places, Olympic, Isthmian, &c.

The *combats* here celebrated, were *running*, *wreſtling*, *boxing*, *ceſtus*, &c. The combatants, who were called *athletæ*, prepared themſelves for it from their youth, by conſtant exerciſe, and a very rigid regimen: they only eat certain things, and at certain hours; drank no wine; had no commerce with women; and both their labour and their reſt were regulated.

COMBATANT, in *Heraldry*, a term for two beaſts, as lions or boars, borne in a coat of arms in a fighting poſture, erect on their hinder feet, and affrontee, or with their faces toward each other.

COMBER, in *Ichthyology*, a ſpecies of fiſh in Cornwall, of a ſlender form, with red back-fins, and tail; yellow belly; a ſmooth, even ſtripe from gills to tail, of a ſilvery colour; and a round tail. Ray, Syn. 163. fig. 5.

COMBINATION, is properly underſtood of an aſſemblage of ſeveral things by two and two: but is more particularly uſed in *Mathematics* to denote the variation, or alternation of any number of quantities, letters, ſounds, or the like, in all the different manners poſſible.

P. Merſenne gives us the *combinations* of all the notes and ſounds in muſic, as far as ſixty-four; the ſum whereof amounts to ninety figures, or places.

The number of poſſible *combinations* of the twenty-four letters of the alphabet, taken firſt two by two, then three by three, &c. according to Mr. Preſtet's calculation, amount to 1391724288887252999425128493402200. The words in the following verſe may be combined a thouſand twenty-two ſeveral ways.

Tot tibi ſunt dotes, virgo, quot ſidera cœlo.

F. Truchet, in the Memoirs of the French Academy, ſhews, that two ſquare pieces, each divided diagonally into two colours, may be arranged and *combined* ſixty-four different ways, ſo as to form ſo many different kinds of chequer-work; which appears ſurpriſing enough, when one conſiders that two letters, or figures, can only be combined twice.

This note may be of uſe to maſons, paviours, &c. See Pavement, and Changes.

Combination, *doctrine of.—Any number of quantities being given, together with the number in each* combination; *to find the number of* combinations.

One quantity, we obſerve, admits of no *combination*; two, *a* and *b*, of one; of three, *a*, *b*, *c*, there are three *combinations*, viz. *ab*, *ac*, *bc*; of four, ſix, *ab*, *ac*, *bc*, *ad*, *bd*, *cd*; of five, ten, *ab*, *ac*, *bc*, *ad*, *bd*, *cd*, *ae*, *be*, *ce*, *de*.

Whence it appears, that the numbers of *combinations* proceed as 1, 3, 6, 10, &c. i. e. are triangular numbers, whoſe ſide differs by unity from the number of given quantities: if that, v. gr. be q, the ſide of the number of *combinations* will be $q-1$; and therefore the number of *combinations* $\frac{q-1}{1}\times\frac{q-0}{2}$. See Triangular *number*.

If three quantities are to be combined, and the number in each *combination* be three, there will be only one *combination*, *abc*; if a fourth be added, the *combinations* will be found *abc*, *abd*, *bcd*, *acd*; if a fifth, ten, *abc*, *abd*, *bcd*, *acd*, *abe*, *bde*, *bce*, *ace*, *ade*, *cde*; if a ſixth, twenty, &c. The numbers of *combinations*, therefore, proceed as 1, 4, 10, 20; i. e. they are the firſt pyramidal triangular numbers, whoſe ſides differ by two units from the number of given quantities. See Pyramidal *number*. Hence, if the number of given quantities be q, the ſide will be $q-2$; and therefore, the number of *combinations* $\frac{q-2}{1}\times\frac{q-1}{2}\times\frac{q-0}{3}$.

Hence is eaſily deduced a general rule of determining the number of *combinations* in any caſe: for, ſuppoſe the number of quantities to be combined, q, the exponent of the *combination* n, the number of *combinations* will be $\frac{q-n+1}{1}\times\frac{q-n+2}{2}\times\frac{q-n+3}{3}\times\frac{q-n+4}{4}\times\frac{q-n+5}{5}$, &c. till the number to be added be equal to n.

Suppoſe, v. gr. the number of quantities to be combined $=6$; the exponent of the *combination* 4: the number of *combinations* will be $\frac{6-4+1}{1}\times\frac{6-4+2}{2}\times\frac{6-4+3}{3}\times\frac{6-4+4}{4}=\frac{6-3}{1}\times\frac{6-2}{2}\times\frac{6-1}{3}\times\frac{6-0}{4}=\frac{3}{1}\times\frac{4}{2}\times\frac{5}{3}\times\frac{6}{4}=15$.

Coroll. If it be deſired to have all the poſſible *combinations* of the given quantities beginning with the *combinations* of the ſeveral two's, proceeding to three's, &c. there muſt be added $\frac{q-1}{1}\times\frac{q-0}{2}$, $\frac{q-2}{1}\times\frac{q-1}{2}\times\frac{q-0}{3}$, $\frac{q-3}{1}\times\frac{q-2}{2}\times\frac{q-1}{3}\times\frac{q-0}{4}$, &c.

Whence the number of *combinations* poſſible will be $\frac{q}{1}\times\frac{q-1}{2}+\frac{q}{1}\times\frac{q-1}{2}\times\frac{q-2}{3}+\frac{q}{1}\times\frac{q-1}{2}\times\frac{q-2}{3}\times\frac{q-3}{4}+\frac{q}{1}\times\frac{q-1}{2}\times\frac{q-2}{3}\times\frac{q-3}{4}\times\frac{q-4}{5}$, &c. which is the ſum of the unciæ of the binomial, raiſed to the power q, and abridged of the exponent of the power increaſed by unity, $q+1$. Wherefore, if $1+1=2$ repreſents the binomial to which theſe unciæ belong, 2^q-q-1 is the number of all the poſſible *combinations*. V. gr. If the number of quantities be 5, the number of poſſible *combinations* will be $2^5-6=32-6=26$.

2. *Any number of quantities being given, to find the number of changes and alternations, which theſe quantities, combined in all the manners poſſible, can undergo.*

Suppoſe two quantities, *a* and *b*: their variations will be 2; conſequently, as each of thoſe may be combined, even with itſelf, to theſe there muſt be added two variations. The whole number, therefore, will be $2+2=4$. If there were three quantities, and the exponent of the variation were 2; the *combination* will be 3, and the changes 3; to which if the three *combinations* of each quanity with itſelf *aa*, *bb*, *cc*, be added, we ſhall have the number of changes, $3+3+3=9$.

In like manner it is evident, if the given quantities were 4, and the exponent 2, the number of changes would be 16; if 5, 25, &c. in general, if n, n^2.

Suppoſe the quantities 3, and the exponent of variation 3; the number of changes is found $27=3^3$; viz. *aaa*, *aab*, *aba*, *baa*, *abb*, *aac*, *aca*, *caa*, *abc*, *bac*, *bca*, *acb*, *cab*, *cba*, *acc*, *cac*, *cca*, *bba*, *bab*, *bbb*, *bbc*, *cbb*, *bcb*, *bcc*, *cbc*, *ccb*, *ccc*.

After the ſame manner, it will appear, if the quantities were 4, and the exponent 3; the number of changes would be $64=4^3$: and, in general, if the number of quantities be $=n$, and the exponent 3, the number of changes will be n^3. By thus proceeding, it will be found, that if the number of quantities be n, and the exponent n, the number of changes will be n^n: wherefore, if all the antecedents be added, where the exponent is leſs, the number of poſſible changes will be found $n^n+n^{n-1}+n^{n-2}+n^{n-3}+n^{n-4}+n^{n-5}+n^{n-6}$, &c. Till at length, the number ſubtracted from n leaves 1; becauſe the beginning is from ſingle quantities taken once.

Since then the number of poſſible changes is in a geometrical progreſſion, whoſe firſt or ſmalleſt term is n^1, the greateſt n^n, and the ratio n; it will be $=\dfrac{n^{n+1}-n}{n-1}$.

Suppoſe, v. gr. $n=4$, the number of poſſible changes $\dfrac{4^5-4}{4-1}=\dfrac{1020}{3}=340$. Suppoſe, again, $n=24$, the number of poſſible changes will be $\dfrac{24^{25}-24}{24-1}=$ $32009658644406818986777955348272600 \div 23 =$ $1391724288887252999425128493402200$. In ſo many various manners, therefore, may the twenty-four letters of the alphabet be varied and combined among themſelves.

Combination, in *Chemiſtry*, denotes the union of two bodies of different natures, from which a new compound body reſults. An acid united with an alkali furniſhes an inſtance of *combination*. See AFFINITY.

Combinations, in *Law*. *Combinations* to do unlawful acts, are puniſhable before the unlawful acts are executed: this is to prevent the conſequences of *combinations* and conſpiracies, &c. 9 Rep. 57.

COMBINATORY *diſtillation*. See DISTILLATION.

Combinatory *muſic*, *Muſica combinatoria*, that part of muſic which teaches the manner of combining ſounds variouſly; that is, of changing their place and figure in different manners. See MUSIC.

COMBING *of wool*, in *Commerce*, the drawing, or paſſing wool acroſs the teeth of a kind of card, called a *comb*, to diſpoſe it for ſpinning.

COMBRETUM, in *Botany*, a genus of the *octandria monogynia* claſs; the characters of which are, that the calyx is bell-ſhaped, and ſeparated into four horizontal points; the corolla has four petals inſerted in the calyx; the ſtamina are very long; and the ſeed is ſingle and quadrangular.

COMBS *of bees*. See HONEY-COMB.

COMBURENDO *hæretico*. See HÆRETICO.

COMBUST, in *Aſtronomy*. When a planet is in conjunction with the ſun, or not diſtant from it above half their diſk; it is ſaid to be *combuſt*, or in COMBUSTION.

According to Argol, a planet is *combuſt*, or in *combuſtion*, when not above eight degrees and thirty minutes diſtant from the ſun, either before or after him.

COMBUSTIO *pecuniæ*, the ancient way of trying mixed and corrupt money, by melting it down, upon payments into the Exchequer. In the time of king Henry II. a conſtitution was made, called the trial by *combuſtion*; the practice of which differed little or nothing from the preſent method of aſſaying ſilver. But whether this examination of money by *combuſtion* was to reduce an equation of money only of ſterling, viz. a due proportion of alloy with copper, or to reduce it pure fine ſilver, does not appear. On making the conſtitution of trial it was conſidered, that though the money did anſwer *numero et pondere*, it might be deficient in value; becauſe mixed with copper or braſs, &c. Vide Lowndes's Eſſay upon Coin, p. 5.

COMBUSTION, in *Chemiſtry*, denotes the decompoſition of bodies by the action of fire; or the diſengagement of the phlogiſton or inflammable principle contained in them, from the union of which in larger or leſs quantities, or in various degrees of combination, they are ſaid to be more or leſs *combuſtible*. The more *combuſtible* bodies are either ſuch as poſſeſs a large quantity of phlogiſton in an oily ſtate, and burn with a bright flame, accompanied with ſmoke and ſoot; as wood, dry vegetables, reſins, oils, and fat: or ſuch, in which the inflammable principle is not in an oily ſtate, nor intimately combined, whoſe flame is leſs luminous, and unattended with ſmoke and ſoot; of this kind are ſpirit of wine, ſulphur, phoſphorus, charcoal, ſome metallic ſubſtances, and particularly zinc. The leſs *combuſtible* bodies are thoſe in which a ſmaller quantity of phlogiſton is ſtrongly combined with incombuſtible principles, and which burn with difficulty, and without any ſenſible flame: ſuch are ſome animal coals, ſoot, aſhes of vegetables, and imperfect metals. *Combuſtion* requires free acceſs of air; and the proceſs is more rapid and complete, as the contact of the burning body with air is more immediate and entire. Macquer.

See AIR, CALCINATION, FIRE, and PHLOGISTON.

COME. The ſmall fibres or tails of malt, upon its firſt ſhooting forth, is thus called.

Come *ſopra*, in the *Italian Muſic*, literally ſignifies *as above*, and is uſed when any foregoing part is to be repeated.

COMEDONES, a name given to a ſpecies of worm, with which the children of Miſnia, and ſome other countries, are terribly afflicted; and of which Hoffman, in his Treatiſe of Endemial Diſeaſes, gives this account; children in the country are frequently ſeized with a ſort of tabes, which ſo deſtroys their fleſh, that they appear merely like ſhadows. The common people generally ſuppoſe theſe children to be under the influence of witchcraft; but ſuch as have inquired more narrowly into the diſtemper, have found that it is owing to certain worms, reſembling black hairs, or cords, lodged under the ſkin. When the ſkin is rubbed with honey, in a bath, or any warm place, they will appear and come out; but when it is contracted by cold, they keep concealed within. See AFFECTIO *bovina*, and DRACUNCULI.

COMEDY, in its proper ſenſe, a dramatic piece, repreſenting ſome agreeable and diverting tranſaction: or an allegorical repreſentation of ſomething in private life, for the amuſement and inſtruction of the audience.

There are thoſe who derive the word *comedy* from *comus*, and who ſuppoſe that κωμωδειν is the ſame with *como digna canere*. This etymology appears to be the better founded, in that the firſt farces were exhibited at feaſts, which have been ſince improved to *comedies* in their preſent ſtate.

In this ſenſe, *comedy* is oppoſed to *tragedy*, the ſubjects whereof are grave, and the perſons of higher rank.

Scaliger defines *comedy*, a dramatic poem, very buſy, pleaſant in the concluſion, and written in a popular ſtyle. Ariſtotle calls it an imitation of the worſt, or, rather, of the loweſt claſs of perſons, by way of ridicule. This definition Corneille finds fault with, and maintains, that the actions of kings themſelves may enter *comedy*; provided they be ſuch as are not very momentous, nor attended with any conſiderable danger. He adds, that a poem wherein the greateſt peril is the loſs of a miſtreſs, has no right to any higher appellation than that of *comedy*: but then he makes a diſtinction in *comedies*, and dignifies thoſe where great perſonages are introduced, with the epithet of *heroic comedies*, to diſtinguiſh them from the ordinary ones. Mr. Congreve ſeems pretty much of the ſame ſentiment: he underſtands Ariſtotle's definition as meant of the worſt men; on which foundation it is ſufficient to conſtitute a *comedy*, that the action repreſented be that of ſome ill man brought on the ſtage to be expoſed.

M. Dacier is of a contrary opinion: he maintains, that *comedy* allows of nothing grave, or ſerious, unleſs it be turned to ridicule; and that raillery and ridicule are its only proper and genuine characteriſtics: in which opinion he is warmly ſeconded by Mr. Dennis.

Thus different are critics and comic authors in their ſentiments on the nature of *comedy*: ſome diſtinguiſh it from tragedy by the lowneſs of the ſubject; others by the ridiculous light it is ſet in.

The accurate F. Boſſu fixes the notion of *comedy* much better: according to that critic, *comedy* differs from tragedy in this, that the comic writer invents both the names of his perſons, and the action which he preſents; whereas the tragic writers only invent the latter, the former they are to take from hiſtory. See ACTION.

Upon the whole, *comedy* may be defined an image, or repreſentation of the ordinary life of men: it exhibits their common actions and paſſions; expoſes and ridicules their failings, to preſerve the ſpectators from them, or to correct them. Cicero defines it the imitation of life, the mirror of cuſtom, and the image of truth.

There is a diſpute among critics, whether *comedy* be a poem, or a mere converſation? They who maintain the latter, contend, that a poem is a diſcourſe in verſe: F. Boſſu inſiſts on the former, and ſhews that *comedy* has its fable, or allegory, with every thing eſſential to poetry.

Comedy and tragedy were originally one and the ſame thing: their common origin ſee under TRAGEDY.—M. Boileau ſays, *comedy* took its riſe at Athens, from the happy iſſues or concluſions of tragedies. On this principle, the cataſtrophe ſhould have been the proper criterion, or diſtinguiſhing mark between tragedy and *comedy*; and all other differences only accidental.

After the grave and ſerious became ſeparated from the ridiculous, and tragedy and *comedy* were become two diſtinct arts; people applied themſelves to cultivate the former, and neglected the latter: ſo that *comedy* continued in its infancy, with little improvements, while tragedy grew up to a perfect art: this once arrived at its height, they began to think of cultivating *comedy*.

With regard to the various changes and revolutions *comedy* has undergone, it is commonly diſtinguiſhed into three kinds; viz. the *ancient*, wherein there was nothing feigned; the *middle*, where the ſubject was real, but the names fictitious; the *new*, where both names and things are fictitious.

The *ancient* was that firſt in uſe, when the ſupreme power was in the hands of the people; and when, on that account, the poets were at their full liberty to ſay what they pleaſed, and of whom they pleaſed; by name to rail at people in authority, and openly to charge magiſtrates with crimes; ſparing no age, ſex, or quality.

This is very obſervable in the Frogs, and the Clouds of Ariſtophanes; where it is to be noted, that though the railing part was occaſionally diſtributed among all the actors, yet the chief of it was laid on the chorus.

When the Athenian liberties became ſunk in the tyranny of a few, it was no longer ſafe for the poets to uſe their old licence; men of office being now to be ſcreened from reproach. The chorus, hereupon, became uſeleſs, and was therefore dropped; and thus commenced what we call *comœdia media*, μεσην, or the *middle comedy*. See CHORUS.

Under this, the poets were not allowed to name the perſons; and therefore names were to be invented: but then the perſons were ſo well pointed out, that it was no difficult matter to know them.

At length, however, they were obliged to repreſs even this licence: and this reform gave occaſion to the *new comedy*; which only brought upon the ſtage feigned adventures, and imaginary names.

This laſt kind alone was received among the Romans; who yet made a new ſubdiviſion thereof into *ancient*, *middle*, and *new*; according to the various periods of the commonwealth. Among the *ancient comedies* were ranked thoſe of Livius Andronicus; among the *middle*, thoſe of Pacuvius; and among the *new* ones, thoſe of Terence.

Comedy, as well as tragedy, has its eſſential, and its integrant parts. Its eſſential parts, in the language of the ancients, are the *protaſis*, *epitaſis*, *cataſtaſis*, and *cataſtrophe*.

The *protaſis* is the beginning, or opening; where the ſubject is juſt entered upon, the characters of the perſons ſhewn, and the intereſt, or part each has in the action ſignified.

In the *epitaſis*, the intrigues begin; they are carried on, and heightened, in the *cataſtaſis*; and unravelled in the *cataſtrophe*.

Theſe are called parts of quantity, by way of contradiſtinction from thoſe of quality, which are the fable, the manners, the ſentiments, and the diction; to which may be added the muſic and decoration, pertaining only to the repreſentation.

The integrant parts are the five acts into which the *comedy* is divided, agreeable to that precept of Horace:

Neve minor quinto, neu ſit productior actu.

The acts are divided into ſcenes: the number whereof is not fixed, but depends on the buſineſs to be done in each act, and the number of perſons to be employed. See ACT, SCENE, &c. See alſo HUMOUR, MANNERS, &c.

Among the ancient Romans, *comedies* were diſtinguiſhed according to the quality of the perſons repreſented, and the dreſs they wore, into *togatæ*, *prætextæ*, *trabeatæ*, and *tabernariæ*; which laſt were thoſe where the ſcene lay in colleges, or among people of the loweſt rank, agreeing pretty nearly with our farces.

In the repreſentation, *comedy* was diſtinguiſhed from tragedy by the ſock worn in the former, and the buſkin in the latter. Among us, *comedy* is diſtinguiſhed from farce, in that the former repreſents nature as ſhe is; the other diſtorts or overcharges her. They both paint from life, but with different views: the one to make nature known, the other to make her ridiculous.

COMET, a heavenly body, in the planetary region, appearing ſuddenly, and again diſappearing; and during the time of its appearance moving in a proper, though very eccentric orbit, like a planet.

Comets, popularly called *blazing ſtars*, have this to diſtinguiſh them from the other ſtars, that they are uſually attended with a long train of light, always oppoſite to the ſun, and which is of a fainter luſtre, the farther it is from the body. Hence ariſes a popular diviſion of *comets* into three kinds; viz. *bearded*, *tailed*, and *hairy comets*; though, in effect, this diviſion rather relates to the ſeveral circumſtances of the ſame *comet*, than to the phænomena of ſeveral.

Thus, when the *comet* is eaſtward of the ſun, and moves from it, the *comet* is ſaid to be *bearded*, becauſe the light precedes it, in manner of a beard.

When the *comet* is weſtward of the ſun, and ſets after it, it is ſaid to be *tailed*, becauſe the train follows it, in manner of a tail.

Laſtly, when the *comet* and the ſun are diametrically oppoſite (the earth between them), the train is hid behind the body of the *comet*, excepting a little that appears around it, in form of a border of hair, hence called *hairy*.

COMETS, *nature of*.—As to the nature of *comets*, the unfrequency of their appearing, together with the ſeeming irregularities of their phænomena, have left philoſophers much in the dark. Thoſe who lived before Ariſtotle, accounted for them by ſuppoſing the heavenly ſpaces full of an infinite number of ſtars; and many of them too remote, or too ſmall, to have ever come under the notice of aſtronomers: theſe inviſible ſtars they further ſuppoſed to move by their own proper motion every way; finiſhing their courſes in very unequal times. Now, a *comet*, according to them, was a vaſt heap or aſſemblage of theſe little ſtars meeting together, by reaſon of the inequality of their motions, and uniting into a viſible maſs; which muſt again diſappear, as thoſe ſtars ſeparated, and each proceeded in its courſe.

But how theſe ſtars ſhould thus meet, coaleſce, and form a body, which in all poſitions of the ſun ſhould reſemble a tail, and again ſeparate, is a myſtery.

This opinion, therefore, Ariſtotle eaſily overturned; ſubſtituting another in its ſtead. According to Ariſtotle, *comets* were only a kind of tranſient fires, or meteors, conſiſting of exhalations raiſed to the upper region of the air, and there ſet on fire; far below the moon's courſe.

But neither is this hypotheſis more juſt than the other: for on this principle, the light of the *comet*, being independent of the ſun, would be diſperſed every way alike, without any appearance of a train, or tail, which is contrary to the phænomena. Moreover, they are obſerved at the ſame time in places on the earth very remote from each other. Beſides, the modern aſtronomers, who have meaſured the diſtance between the *comets* and the earth, find that the *comets* have no ſenſible diurnal parallax; which could not be, were they not much more remote than the moon, whoſe parallax is ſenſible: and yet as they have a ſenſible annual PARALLAX, they are not ſo remote as the fixed ſtars. Tycho Brahe was the firſt among the moderns, who, after diligently obſerving the *comet* of 1577, and finding that it had no ſenſible diurnal parallax, aſſigned it its true place in the planetary regions. See his book De Cometa, anni 1577.

Hevelius, from a great number of obſervations, propoſes it as his opinion, that the *comets*, like the ſolar maculæ or ſpots, are formed and condenſed out of the groſſer exhalations of his body. In which notion he agrees nearly with Kepler, who maintains, that *comets* are generated in the æther in vaſt numbers, like fiſhes in the ocean; though they do not at all become viſible; either becauſe of their ſmallneſs, or becauſe they lie a long time under the horizon.

But Sir Iſaac Newton has ſhewn the fallacy of this hypotheſis, by proving that the *comet* of 1680, in its paſſage through the neighbourhood of the ſun, would have been diſſipated, had it conſiſted of exhalations of the ſun and planets: for the heat of the ſun, it is allowed, is as the denſity of his rays, i. e. reciprocally as the ſquares of the diſtances of places from the ſun. Wherefore, ſince the diſtance of that *comet* in its perihelion, December the 8th, was obſerved to be to the diſtance of the earth from the ſun, nearly as 6 to 1000; the ſun's heat in the *comet*, at that time, was to his heat with us at midſummer, as 1000000 to 36, or 28000 to 1.

And again, finding by experiment, that the heat of boiling water is little more than three times the heat of our dry earth, when expoſed to the midſummer's ſun; and aſſuming the heat of red-hot iron to be about three or four times as great as that of boiling water; he thence concludes, that the heat of the dried earth, or body of the *comet* in its perihelion, muſt be near 2000 times as great as that of red-hot iron.

Such an immenſe heat once acquired in its perihelion, the *comet* muſt be a long time in cooling again. The ſame author computes, that a globe of red-hot iron, of the dimenſions of our earth, would ſcarce be cool in

50000 years. If then the *comet* be ſuppoſed to cool 100 times as faſt as red-hot iron; yet ſince its heat was 2000 times greater, ſuppoſing it of the bigneſs of the earth, it would not be cool in a million of years.

James Bernouilli, in his Syſtema Cometarum, ſuppoſes ſome primary planet revolving round the ſun in the ſpace of four years and one hundred and fifty-ſeven days; and at the diſtance, from his body, of 2583 ſemidiameters of the magnus orbis: this planet, he concludes, either from its vaſt diſtance, or ſmallneſs, to be inviſible to us; but, however, to have, at various diſtances from him, ſeveral ſatellites moving round him, and ſometimes deſcending as low as the orbit of Saturn; and that theſe becoming viſible to us, when in their perigæum, are what we call *comets*.

Des Cartes advances another opinion: he conjectures that *comets* are only ſtars, formerly fixed, like the reſt, in the heavens; but which, becoming, by degrees, covered with maculæ, or ſpots, and at length wholly robbed of their light, cannot keep their place, but are carried off by the vortices of the circumjacent ſtars; and, in proportion to their magnitude and ſolidity, moved in ſuch manner, as to be brought nearer the orb of Saturn; and thus coming within reach of the ſun's light, rendered viſible.

But the vanity of all theſe hypotheſes abundantly appears from the phænomena of *comets*; the chief of which we ſhall enumerate: as being the teſt by which all theories are to be tried.

Firſt, then, thoſe *comets* which move according to the order of the ſigns, do all, a little before they diſappear, either advance ſlower than uſual, or elſe go retrograde, if the earth be between them and the ſun; and more ſwiftly, if the earth be ſituate in a contrary part. On the other hand, thoſe which proceed contrary to the order of the ſigns, proceed more ſwiftly than uſual, if the earth be between them and the ſun; and more ſlowly, or go retrograde, when the earth is in a contrary part.

2. So long as their velocity is increaſed, they move, nearly, in great circles; but towards the end of their courſe, they deviate from thoſe circles; and as often as the earth proceeds one way, they go the contrary way.

3. They move in ellipſes, having one of their foci in the center of the ſun; and by radii drawn to the ſun, deſcribe areas proportionable to the times.

4. The light of their bodies, or nuclei, increaſes in their receſs from the earth toward the ſun; and on the contrary, decreaſes in their receſs from the ſun.

5. Their tails appear the largeſt and brighteſt, immediately after their tranſit through the region of the ſun, or after their perihelion.

6. The tails always decline from a juſt oppoſition to the ſun towards thoſe parts which the bodies, or nuclei, paſs over, in their progreſs through their orbits.

7. This declination, *cæteris paribus*, is the ſmalleſt, when the heads, or nuclei, approach neareſt the ſun: and is leſs, ſtill, nearer the nucleus of the *comet*, than towards the extremity of the tail.

8. The tails are ſomewhat brighter, and more diſtinctly defined in their convex, than in their concave part.

9. The tails always appear broader at their upper extreme, than near the center of the *comet*.

10. The tails are always tranſparent, and the ſmalleſt ſtars appear through them.

Theſe are the chief phænomena of *comets*; which, it is evident, cannot eaſily be reconciled with the wild notions of the ancients, and the weak conjectures of many of the moderns. Indeed, there were ſome, Pliny tells us, among the ancients, who "had juſter notions; who took theſe "ſtars to be perpetual, and believed they moved in their "proper orbs; but were never ſeen, unleſs when left "by the ſun." Apollonius Myndius declared, that he took *comets* for regular ſtars; and ventured to foretel, that one day the periods and laws of their motion would be diſcovered. And more fully Seneca, Quæſt. Nat. lib. vii. "I am not of the common opinion, nor do I "take a *comet* to be a ſudden fire, but eſteem it among "the eternal works of nature." *Quid autem miramur cometas, tam rarum mundi ſpectaculum, nondum teneri legibus certis, nec initia illorum fineſque innoteſcere, quorum ex ingentibus intervallis recurſus eſt? Veniet tempus quo iſta quæ nunc latent, in lucem dies extrahat, & longioris ævi diligentia. Veniet tempus quo poſteri noſtri tam aperta nos neſciſſe mirentur. Erit qui demonſtret aliquando, in quibus cometæ partibus errent; cur tam ſe ducti a cæteris errent, quanti qualeſque ſint.*

This prediction we have ſeen accompliſhed in our days, by the great Sir Iſaac Newton; whoſe doctrine is as follows:

The *comets*, he ſays, are compact, ſolid, fixed, and durable bodies: in one word, a kind of planets; which move in very oblique orbits, every way with the greateſt freedom; perſevering in their motions, even againſt the courſe and direction of the planets: and their tail is a very thin, ſlender vapour, emitted by the head, or nucleus of the *comet*, ignited or heated by the ſun.

This at once ſolves all the foregoing phænomena: for, 1. "It is evident, that thoſe which proceed according to "the order of the ſigns, a little before they diſappear, "muſt move more ſlowly, or appear retrograde, if the "earth be betwixt them and the ſun; and ſwifter, if the "earth be in a contrary part. On the contrary, thoſe "proceeding againſt the order of the ſigns," &c. For ſince this courſe is not among the fixed ſtars, but among the planets; as the motion of the earth either conſpires with them, or goes againſt them; their appearance, with regard to the earth, muſt be changed; and, like the planets, they muſt ſometimes appear ſwifter, ſometimes ſlower, and ſometimes retrograde.

2. "When the *comets* move the ſwifteſt, they muſt pro"ceed in ſtrait lines; but in the end of their courſe "decline," &c. Becauſe, in the end of their courſe, when they recede almoſt directly from the ſun, that part of the apparent motion which ariſes from the parallax, muſt bear a greater proportion to the whole apparent motion.

3. "The *comets* muſt move in ellipſes, having one of "their foci in the center of the ſun." Becauſe they do not wander precariouſly from one fictitious vortex to another; but, making a part of the ſolar ſyſtem, return perpetually, and run a conſtant round.

Hence, their elliptic orbits being very long and eccentric, they become inviſible, when in that part moſt remote from the ſun.

From conſidering the curvity of the paths of *comets*, Sir Iſaac concludes, that when they diſappear, they are much beyond the orb of Jupiter; and that in their perihelion they frequently deſcend below the orbits of Mars, and the inferior planets.

4. "The light of their nuclei muſt increaſe in their re"ceſs from the ſun, and *vice verſa*." Becauſe, as they are in the regions of the planets, their acceſs toward the ſun bears a conſiderable proportion to their whole diſtance.

From obſervations of the *comet* of 1680, Sir Iſaac Newton found that the vapour in the extremity of the tail, January 25th, began to aſcend from the head before December 11th; and had therefore ſpent more than forty-five days in its aſcent: but that all the tail which appeared December 10th, aſcended in the ſpace of thoſe two days, then juſt paſt ſince its perihelion. The vapour, therefore, at the beginning, when the *comet* was near the ſun, aſcended prodigiouſly ſwift; and afterwards continued to aſcend with a motion retarded by the gravity of its particles; and by that aſcent increaſed the length of the tail: but the tail, notwithſtanding its length, conſiſted almoſt wholly of vapours, which had aſcended from the time of the perihelion; and the vapour which aſcended firſt, and compoſed the extreme of the tail, did not vaniſh, till it was too far from the ſun to be illumined by him, and from us to be viſible. Hence, alſo, the tails of *comets* that are ſhorter, do not aſcend with a quick and continual motion from the head, and then preſently diſappear; but are permanent columns of vapours and exhalations, gathered from the head by a very gentle motion, and in a great ſpace of time; which yet, by participating of that motion of their heads they had at the beginning, continue eaſily to move along with their heads through the celeſtial regions: whence alſo the vacuity of thoſe regions is argued. See VACUUM.

5. "Their tails muſt appear the largeſt and brighteſt "immediately after their tranſit through the region of "the ſun." Becauſe, then, their heads being the moſt heated, will emit the moſt vapours.

From the light of the nucleus, or apparent ſtar, we infer their vicinity to the earth, and that they are by no means in the region of the fixed ſtars, as ſome have imagined; ſince, in that caſe, their heads would be no more illumined by the ſun, than the planets are by the fixed ſtars.

6. "The tails muſt ſtill decline from a ſtrict oppoſition "to the ſun, towards thoſe parts which the heads paſs "over, in their progreſs through their orbits." Becauſe all ſmoke, or vapour, emitted from a body in motion, tends upwards obliquely, ſtill receding from that part, towards which the ſmoking body proceeds.

7. "That declination will be ſtill the leaſt near the nu"cleus of the *comet*; and when the *comet* is neareſt the "ſun." Becauſe the vapour aſcends more ſwiftly near the head of the *comet*, than in the higher extremity of its tail; and when the *comet* is at a leſs diſtance from the ſun, than when at a greater.

8. "The tail is brighter, and better defined in its con-"vex part, than in its concave." Becauſe the vapour in the convex part, which goes firſt, being ſomewhat nearer and denſer, reflects the light more copiouſly.

9. "The tail muſt appear broader towards the higher "extremity of the *comet*, than towards the head." Becauſe the vapour in a free ſpace perpetually rarefies and dilates.

10. "The tails muſt be tranſparent." Becauſe conſiſting of infinitely thin vapour, &c.

Thus accurately does the hypotheſis tally to the phænomena.

Comets, *phaſes of*.—The nuclei, which we alſo occaſionally call the *heads* and *bodies* of *comets*, viewed through a teleſcope, ſhew a very different face from thoſe of the fixed ſtars, or planets. They are liable to apparent changes, which Sir Iſaac Newton aſcribes to changes in the atmoſphere of *comets*: and this opinion was confirmed by obſervations of the *comet* in 1744. Hiſt. Acad. Scienc. 1744. Sturmius tells us, that, obſerving the *comet* of 1680, with a teleſcope, it appeared like a coal dimly glowing, or a rude maſs of matter illumined with a duſky fumid light, leſs ſenſible at the extremes than in the middle; rather than as a ſtar, which appears with a round diſk, and a vivid light.

Hevelius obſerved of the *comet* of 1661, that its body was of a yellowiſh colour, very bright and conſpicuous, but without any glittering light: in the middle was a denſe ruddy nucleus, almoſt equal to Jupiter, encompaſſed with a much fainter, thinner matter. February 5th, its head was ſomewhat bigger and brighter, of a gold colour; but its light more duſky than the reſt of the ſtars: here, the nucleus appeared divided into ſeveral parts. February 6th, the diſk was leſſened; the nuclei ſtill exiſted, though leſs than before: one of them, on the lower part of the diſk, on the left, much denſer and brighter than the reſt; its body round, and repreſenting a very lucid little ſtar: the nuclei ſtill encompaſſed with another kind of matter. February 10th, the head ſomewhat more obſcure, and the nuclei more confuſed, but brighter at top than bottom. February 13th, the head diminiſhed much, both in magnitude and brightneſs. March 2d, its roundneſs a little impaired, its edges lacerated, &c. March 28th, very pale, and exceeding thin; its matter much diſperſed; and no diſtinct nucleus at all appearing.

Weigelius, who ſaw the *comet* of 1664, the moon, and a little cloud illumined by the ſun at the ſame time, obſerved, that the moon, through the teleſcope, appeared of a continued luminous ſurface; but the *comet* very different; being perfectly like a little cloud in the horizon, illumined by the ſun. From theſe obſervations it was, that Hevelius concluded *comets* to be like maculæ, or ſpots formed out of the ſolar exhalations.

Comets, *magnitude of*.—The eſtimates that have been given by Tycho, Hevelius, and ſome others, of the magnitude of *comets*, are not ſufficiently accurate to be depended upon; for it does not appear, that they diſtinguiſhed between the nucleus and the ſurrounding atmoſphere. Thus Tycho computes that the true diameter of the *comet* in 1577, was in proportion to the diameter of the earth as 3 is to 14. Hevelius made the diameter of the *comet* of 1652 to that of the earth, as 52 to 100. The diameter of the atmoſphere is often ten or fifteen times as great as that of the nucleus: the former, in the *comet* of 1682, was meaſured by Flamſteed, and found to be 2′, but the diameter of the nucleus only 11 or 12″. Some *comets*, from their apparent magnitude and diſtance compared, have been judged to be much larger than the moon, and even equal to ſome of the primary planets. The diameter of that of 1744, when at the diſtance of the ſun from us, meaſured about 1′, and therefore its diameter muſt be about three times the diameter of the earth: at another time the diameter of its nucleus was nearly equal to that of Jupiter.

The lengths of the tails of *comets* are various, and depend on a variety of circumſtances. Longomontanus mentions a *comet* that in 1618, December 10th, had a tail above 100° in length: that of 1680, according to Sturmius, about the 20th of November, was but ſmall; at moſt, not exceeding 20° in length; in a little time it grew to a length of 60°, after which it dwindled very ſenſibly. The *comet* of 1744 had a tail which at one time appeared to extend above 16° from its body; and which, allowing the ſun's parallax 10″, muſt have been above twenty-three millions of miles in length.

Comets, *formation of the tails of*.—Sir Iſaac Newton ſhews, that the atmoſpheres of *comets* will furniſh vapour ſufficient to form their tails: this he argues from that wonderful rarefaction obſerved in our air, at a diſtance from the earth: a cubic inch of common air, at the diſtance of half the earth's diameter, or four thouſand miles, would neceſſarily expand itſelf ſo as to fill a ſpace larger than the whole region of the ſtars. Since then the coma, or atmoſphere of a *comet*, is ten times higher than the ſurface of the nucleus, counting from the center thereof; the tail, aſcending much higher, muſt neceſſarily be immenſely rare: ſo that it is no wonder the ſtars ſhould be viſible through it.

Now, the aſcent of vapours into the tail of the *comet*, he ſuppoſes occaſioned by the rarefaction of the matter of the atmoſphere at the time of the perihelion. Smoke, it is obſerved, aſcends the chimney by the impulſe of the air wherein it floats; and air, rarefied by heat, aſcends by the diminution of its ſpecific gravity, taking up the ſmoke along with it: why then ſhould not the tail of a *comet* be ſuppoſed to be raiſed after the ſame manner by the ſun? for the ſun-beams do not act on the mediums they paſs through, any otherwiſe than by reflexion and rarefaction.

The reflecting particles, then, being warmed by the action, will again warm the æther wherewith they are compounded; and this, rarefied by the heat, will have its ſpecific gravity, whereby it before tended to deſcend, diminiſhed by the rarefaction; ſo as to aſcend, and carry along with it thoſe reflecting particles, whereof the tail of the *comet* is compoſed.

This aſcent of the vapours will be promoted by their circular motion round the ſun; by means whereof, they will endeavour to recede from the ſun, while the ſun's atmoſphere, and the other matters in the celeſtial ſpaces, are either at reſt, or nearly ſo; as having no motion but what they receive from the ſun's circumrotation.

Thus are the vapours raiſed into the tails of *comets* in the neighbourhood of the ſun, where the orbits are moſt curve; and, where the *comets*, being within the denſer atmoſphere of the ſun, have their tails of the greateſt length.

The tails thus produced, by preſerving that motion, and at the ſame time gravitating towards the ſun, will move round his body in ellipſes, in like manner as their heads; and, by this means, will ever accompany, and freely adhere to their head. In effect, the gravitation of the vapours towards the ſun will no more occaſion the tails of the *comets* to forſake their heads, and fall down towards the ſun, than the gravitation of their heads will occaſion them to fall off from their tails: but by their common gravitation, they will either fall down together to the ſun, or be together ſuſpended, or retarded. This gravitation, therefore, does not at all hinder, but that the heads and tails of *comets* may receive and retain any poſition towards each other, which either the above mentioned cauſes, or any other, may occaſion. The tails, therefore, thus produced in the perihelion of *comets*, will go off along with their head into remote regions; and either return thence, together with the *comets*, after a long ſeries of years; or, rather, be there loſt, and vaniſh by little and little, and the *comet* be left bare; till at its return, deſcending towards the ſun, ſome little ſhort tails are gradually and ſlowly produced from the heads; which afterwards, in the perihelion, deſcending down into the ſun's atmoſphere, will be immenſely increaſed.

The vapours, when they are thus dilated, rarefied, and diffuſed through all the celeſtial regions, the ſame author obſerves, may probably, by little and little, by means of their own gravity, be attracted down to the planets, and become intermingled with their atmoſpheres.

He adds, that for the conſervation of the water, and moiſture of the planets, *comets* ſeem abſolutely requiſite; from whoſe condenſed vapours and exhalations, all that moiſture which is ſpent in vegetations and putrefactions, and turned into dry earth, &c. may be reſupplied and recruited. For all vegetables grow and increaſe wholly from fluids; and, again, as to their greateſt part, turn, by putrefaction, into earth again; an earthly ſlime being perpetually precipitated to the bottom of putrefying liquors. Hence, the quantity of dry earth muſt continually increaſe, and the moiſture of the globe decreaſe, and at laſt be quite evaporated, if it has not a continual ſupply from ſome part or other of the univerſe. And I ſuſpect, adds our great author, that the ſpirit, which makes the fineſt, ſubtileſt, and beſt part of our air, and which is abſolutely requiſite for the life and being of all things, comes principally from the *comets*.

On this principle, there ſeems to be ſome foundation for the popular opinion of preſages from *comets*; ſince the tail of a *comet* thus intermingled with our atmoſphere, may produce changes very ſenſible in animal and vegetable bodies. See Medium, and Spirit.

But the tranſmutation of water into earth is now juſtly exploded: Woodward, Boerhaave, and others, having obſerved that water is only an agent in conveying the nutritious matter to vegetable bodies, and not that matter itſelf.

Another uſe which he conjectures *comets* may be deſigned to ſerve, is that of recruiting the ſun with freſh fewel, and repairing the conſumption of his light by the ſtreams continually ſent forth in every direction from that luminary. In ſupport of this conjecture he obſerves, that *comets* in their perihelion may ſuffer a diminution of their projectile force, by the reſiſtance of the ſolar atmoſphere; ſo that by degrees their gravitation towards the ſun may be ſo far increaſed, as to precipitate their fall into his body.

There have been various conjectures about the generation of the tails of *comets*. Apian, Tycho Brahe, and ſome others, apprehended that they were produced by the ſun's rays tranſmitted through the nucleus of the *comet*, which they ſuppoſed to be tranſparent, and there refracted as in a lens of glaſs, ſo as to form a beam of light behind the *comet*. Des Cartes accounted for the phænomenon of the tail by the refraction of light from the head of the *comet* to the eye of the ſpectator. Mairan ſuppoſes that the tails are formed out of the luminous matter that compoſes the ſun's atmoſphere; M. De la Lande combines this hypotheſis with that of Newton above recited. Mr. Rowning, who is not ſatisfied with Sir Iſaac's opinion, accounts for the tails of *comets* in the following manner. It is well known, ſays he, that when the light of the ſun paſſes through the atmoſphere of any body, as the earth, that which paſſes on one ſide, is by the refraction thereof made to converge toward that which paſſes on the oppoſite one; and this convergency is not wholly effected either at the entrance of the light into the atmoſphere, or at its going out; but beginning at its entrance, it increaſes in every point of its progreſs. It is alſo agreed that the atmoſpheres of the *comets* are very large and denſe. He therefore ſuppoſes that by ſuch time as the light of the ſun has paſſed through a conſiderable part of the atmoſphere of a *comet*, the rays thereof are ſo far refracted toward each other, that they then begin ſenſibly to illuminate it, or rather the vapours floating therein; and ſo render that part they have yet to paſs through, viſible to us: and that this portion of the atmoſphere of a *comet* thus illuminated, appears to us in form of a beam of the ſun's light, and paſſes under the denomination of a *comet*'s tail. Rowning's Natural Philoſophy, part iv. chap. 11.

We have an inquiry into the cauſe of the tails of *comets*, by Mr. Euler, in the Mem. de l'Acad. de Berlin, tom. ii. p. 117, ſeq. He thinks there is a great affinity between theſe tails, the zodiacal light, and the Aurora borealis; and that the common cauſe of them all, is the action of the ſun's light on the atmoſpheres of the *comets*, of the ſun, and of the earth. He ſuppoſes that the impulſe of the rays of light on the atmoſphere of *comets*, may drive ſome of the finer particles of that atmoſphere far beyond its limits; and that this force of impulſe combined with that of gravity towards the *comet*, would produce a tail, which would always be in oppoſition to the ſun, if the *comet* did not move. But the motion of the *comet* in its orbit, and about an axis, muſt vary the poſition and figure of the tail, giving it a curvature, and deviation from a line drawn from the center of the ſun to that of the *comet*; and that this deviation will be greater, as the orbit of the *comet* has the greater curvature, and that the motion of the *comet* is more rapid. It may even happen, that the velocity of the *comet*, in its perihelion, may be ſo great, that the force of the ſun's rays may produce a new tail, before the old one can follow; in which caſe the *comet* might have two or more tails. The poſſibility of this is confirmed by the *comet* of 1744, which was obſerved to have ſeveral tails while it was in its perihelion. See Aurora *borealis*, and Zodiacal *light*.

Dr. Hamilton urges ſeveral objections againſt the Newtonian hypotheſis; and concludes that the tail of a *comet* is formed of matter which has not the power of refracting or reflecting the rays of light; but that it is a lucid or ſelf-ſhining ſubſtance: and from its ſimilarity to the Aurora *borealis*, produced by the ſame cauſe, and a proper electrical phenomenon. Dr. Halley ſeemed inclined to this hypotheſis, when he ſaid, that the ſtreams of light in an Aurora borealis ſo much reſembled the long tails of *comets*, that at firſt ſight they might well be taken for ſuch: that this light ſeems to have a great affinity to that which the effluvia of electric bodies emit in the dark. Phil. Tranſ. N° 347. Hamilton's Philoſophical Eſſays, p. 91, &c.

M. Fatio has ſuggeſted, that ſome of the *comets* have their nodes ſo very near the annual orbit of the earth; that if the earth ſhould happen to be found in that part next the node, at the time of a *comet*'s paſſing by; as the apparent motion of the *comet* will be incredibly ſwift, ſo its parallax will become very ſenſible; and the proportion thereof to that of the ſun will be given: whence, ſuch tranſits of *comets* will afford the beſt means of determining the diſtance of the earth and ſun.

The *comet* of 1472, *v. gr.* had a parallax above twenty times greater than the ſun's: and if that of 1618, had come down in the beginning of March to its deſcending node, it would have been much nearer the earth, and its parallax much more notable. But, hitherto, none has threatened the earth with a nearer appulſe than that of 1680: for, by calculation, Dr. Halley finds, that November 11th, 1 h. 6 min. P. M. that *comet* was not above one ſemidiameter of the earth, to the northward of the way of the earth; at which time, had the earth been in that part of its orbit, the *comet* would have had a parallax equal to that of the moon: what might have been the conſequence of ſo near an appulſe, a contact, or, laſtly, a ſhock of the celeſtial bodies? Mr. Whiſton ſays, a DELUGE!

Comets, *motion of.*—If the paths of *comets* be ſuppoſed directly parabolical, as ſome have imagined, it would follow, that being impelled towards the ſun by a centripetal force, they deſcend as from ſpaces infinitely diſtant; and by their falls acquire ſuch a velocity, as that they may again run off into the remoteſt regions; ſtill moving upwards, with ſuch a perpetual tendency as never to return. But the frequency of their appearance, and their degree of velocity, which does not exceed what they might acquire by their gravity towards the ſun, ſeem to put it paſt doubt that they move, planet-like, in elliptic orbits, though exceedingly eccentric; and ſo return again, though after very long periods. See Elliptic.

The apparent velocity of the *comet* of 1472, as obſerved by Regiomontanus, was ſuch as to carry it through 40° of a great circle in 24 hours: and that of 1770 was obſerved to move through more than 45° in the laſt 25 hours.

Newton, Flamſteed, Halley, and the Engliſh aſtronomers, &c. ſeem ſatisfied of the return of *comets*: Caſſini, and others of the French, think it highly probable; but De la Hire, and others, oppoſe it.

Thoſe on the affirmative ſide ſuppoſe the *comets* to deſcribe orbits prodigiouſly eccentric, inſomuch that we can only ſee them in a very ſmall part of their revolution: out of this, they are loſt in the immenſe ſpaces; hid not only from our eyes, but our teleſcopes. That little part of their orbit next us, M. Caſſini, &c. have found to paſs between the orbits of Venus and Mars.

For the reaſons of the return of *comets*, M. Caſſini gives theſe which follow. 1. In conſidering the courſe of the *comets*, with regard to the fixed ſtars, they are found to keep a conſiderable time in the arch of a great circle, i. e. a circle whoſe plane paſſes through the center of the earth: indeed, they deviate a little from it, chiefly towards the end of their appearance; but this deviation is common to them with the planets.

2. *Comets*, as well as planets, appear to move ſo much the faſter as they are nearer the earth; and when they are at equal diſtances from their perigee, their velocities are nearly the ſame.

By ſubtracting from their motion the apparent inequality of velocity occaſioned by their different diſtance from the earth, their equal motion might be found: but we ſhould not be certain this motion were their true one; becauſe they might have conſiderable inequalities, not diſtinguiſhable in that ſmall part of their orbit viſible to us. It is, indeed, probable, their real motion, as well as that of the planets, is unequal in itſelf; and hence we have a reaſon why the obſervations made during the appearance of a *comet*, cannot give the juſt period of their revolution. See Period.

3. There are no two different planets whoſe orbits cut the ecliptic in the ſame angle, whoſe nodes are in the ſame points of the ecliptic, and whoſe apparent velocity in their perigee is the ſame: conſequently, two *comets* ſeen at different times, yet agreeing in all thoſe three circumſtances, can only be one and the ſame *comet*.

And this were the *comets* of 1577 and 1680 obſerved to do; and thoſe of 1652 and 1698: not that this exact agreement, in theſe circumſtances, is abſolutely neceſſary to determine them the ſame *comet*. M. Caſſini finds the moon herſelf irregular in them all: accordingly, he is of opinion, there are ſeveral which diſagree herein, and yet may be accounted the ſame.

The great objections againſt the return of *comets*, are, the rarity of their appearance, with regard to the number of revolutions aſſigned to them.

In 1702, there was a *comet*, or rather the tail of one, ſeen at Rome, which M. Caſſini takes to be the ſame with that obſerved by Ariſtotle, and that ſince ſeen in 1668, which would imply its period to be thirty-four years. Now, it may ſeem ſtrange, that a ſtar which has ſo ſhort a revolution, and of conſequence ſuch frequent returns, ſhould be ſo ſeldom ſeen.—Again, in April, of the ſame year, 1702, a *comet* was obſerved by Meſſ. Bianchini, and Maraldi, ſuppoſed by the latter to be the ſame with that of 1664, both by reaſon of its motion, velocity, and direction. M. De la Hire took it to have ſome relation to another he had obſerved in 1698, which M. Caſſini refers to that of 1652. On this ſuppoſition, its period appears to be forty-three months; and the number of revolutions between 1652 and 1698, fourteen: but it is hard to ſuppoſe, that in this age, wherein the heavens are ſo narrowly watched, a ſtar ſhould make fourteen appearances unperceived; eſpecially ſuch a ſtar as this, which might appear above a month together; and of conſequence be frequently diſengaged from the crepuſcula.

For this reaſon M. Caſſini is very reſerved in maintaining the hypotheſis of the return of *comets*, and only propoſes thoſe for planets, where the motions are eaſy and ſimple, and are ſolved without ſtraining, or allowing many irregularities.

M. De la Hire propoſes one general difficulty againſt the whole ſyſtem of the return of *comets*, which would ſeem to hinder any *comet* from being a planet: and it is this; that by the diſpoſition neceſſarily given to their courſes, they ought to appear as ſmall at firſt as at laſt; and always increaſe, till they arrive at their greateſt proximity to the earth: or, if they ſhould chance not to be obſerved, as ſoon as they become viſible, for want of attention thereto, at leaſt it is impoſſible but they muſt frequently ſhew themſelves before they have arrived at their full magnitude and brightneſs. But he adds, that none were ever yet obſerved till they had arrived at it.

But the appearance of a *comet* in the month of October, 1723, while at a great diſtance, ſo as to be too ſmall and dim to be viewed without a teleſcope, may ſerve to remove this obſtacle, and ſet the *comets*, ſtill, on the ſame footing with the planets.

Sir Iſaac Newton ſuppoſes, that as thoſe planets which are neareſt the ſun, and revolve in the leaſt orbits, are the ſmalleſt; ſo among the *comets*, ſuch as in their perihelion come neareſt the ſun, are the ſmalleſt, and revolve in leſſer orbits.

Dr. Halley has given us a table of the aſtronomical elements of all the *comets* that have been yet obſerved with due care; whereby, whenever a new *comet* ſhall appear, it may be determined, by comparing it therewith, whether it be any of thoſe which have yet appeared; and conſequently its period, and the axis of its orbit, be determined, and its return foretold. This table contains the aſtronomical elements of twenty-four *comets*, on the ſuppoſition that they moved in parabolas; though he thought it extremely probable that they really moved in very eccentric ellipſes, and conſequently returned after long periods of time. This table commences with the year 1337, and cloſes with 1698. See his Synopſis of the Aſtronomy of *Comets*, annexed to Gregory's Aſtronomy.

There are many things in the *comet* of 1532, obſerved by Peter Apian, which intimate its being the ſame with that of 1607, obſerved by Kepler and Longomontanus; and which Dr. Halley himſelf again obſerved in 1682. All the elements agree, and there is nothing contradicts the opinion, but that inequality in the periodic revolution; which, however, he thinks is no more than may be accounted for from phyſical cauſes: no more, in effect, than is obſerved in Saturn; the motion of which planet is ſo diſturbed by the reſt, eſpecially Jupiter, that its period is uncertain for ſeveral days together: to what errors then may not a *comet* be liable, which riſes to almoſt four times the height of Saturn; and whoſe velocity, if but a little increaſed, would change its elliptic orb into a parabolic one?

What further confirms the identity, is the appearance of another *comet* in the ſummer of 1456, which, though obſerved by none with accuracy, yet, by its period, and the manner of its tranſit, he concludes to be the ſame; and thence ventures to foretel its return in the year 1758, or the beginning of the next year: and time has verified the prediction. The *comet* of 1661 ſeems to be the ſame with that of 1532, and to have its period in one hundred and twenty-nine years: and Halley alſo thought that the *comet* of 1680 was the ſame that was obſerved in 1106, 1531, and in the forty-fourth year before Chriſt, when Julius Cæſar was murdered; and that its period was five hundred and ſeventy-five years. Mr. Dunthorne, in the Phil. Tranſ. vol. xlvii. has endeavoured to ſhew from a MS. in Pembroke-hall library, that the *comet* of 1106 could not be the ſame with that of 1680. But M. De la Lande adopts the opinion of Dr. Halley.

Another table has ſince been computed, from obſervations contained in the Philoſophical Tranſactions, De la Caille's Aſtronomy, and De la Lande's Hiſtoire de la Comete de 1759, & Connoiſſance des Movemens Celeſtes 1762 & 1764. In this table are ſeen the elements of twenty-five other *comets*, from the year 1264 to 1762.

HALLEY's TABLE OF THE ELEMENTS OF COMETS.

Comets, A. D.	Aſcending node.				Inclin. of orbit.			Perihelion.				Perihelion diſtance from the ſun; the diſtance of the earth being 100000.	Equat. time of perihel.				
		°	′	″	°	′	″		°	′	″			D.	H.	′	
1337	♊	24	21	0	32	11	0	♉	7	59	0	40666	June,	2	6	25	retrog.
1472	♑	11	46	20	5	20	0	♉	5	33	30	54273	Feb.	28	22	23	retrog.
1531	♉	19	25	0	17	56	0	♒	1	39	0	56700	Aug.	24	21	18½	retrog.
1532	♊	20	27	0	32	36	0	♋	21	7	0	50910	Oct.	19	22	12	direct.
1556	♍	25	42	0	32	6	30	♑	8	50	0	66390	Apr.	21	20	3	direct.
1577	♈	25	52	0	74	32	45	♌	9	22	0	18342	Oct.	26	18	45	retrog.
1580	♈	18	57	20	64	40	0	♋	19	5	50	59628	Nov.	28	15	0	direct.
1585	♉	7	42	30	6	4	0	♈	8	51	0	109358	Sept.	27	19	20	direct.
1590	♍	15	30	40	29	40	40	♏	6	54	30	57661	Jan.	29	3	45	retrog.
1596	♒	12	12	30	55	12	0	♏	18	16	0	51293	July,	31	19	55	retrog.
1607	♉	20	21	0	17	2	0	♒	2	16	0	58680	Oct.	16	3	50	retrog.
1618	♊	16	1	0	37	34	0	♈	2	14	0	37975	Oct.	29	12	23	direct.
1652	♊	28	10	0	79	28	0	♈	28	18	40	84750	Nov.	2	15	40	direct.
1661	♊	22	30	30	32	35	50	♋	25	58	40	44851	Jan.	16	23	41	direct.
1664	♊	21	14	0	21	18	30	♌	10	41	25	102575½	Nov.	24	11	52	retrog.
1665	♏	18	2	0	76	5	0	♊	11	54	30	10649	April,	14	5	15½	retrog.
1672	♑	27	30	30	83	22	10	♉	16	59	30	69739	Feb.	20	8	37	direct.
1677	♏	26	49	10	79	3	15	♌	17	37	5	28059	April,	26	0	37½	retrog.
1680	♑	2	2	0	60	56	0	♐	22	39	30	00612½	Dec.	8	0	6	direct.
1682	♉	21	16	30	17	56	0	♒	2	52	45	58328	Sept.	4	7	39	retrog.
1683	♍	23	23	0	83	11	0	♊	25	29	30	56020	July,	3	2	50	retrog.
1684	♐	28	15	0	65	48	40	♏	28	52	0	96015	May,	29	10	16	direct.
1686	♓	20	34	40	31	21	40	♊	17	0	30	32500	Sept.	6	14	33	direct.
1698	♐	27	44	15	11	46	0	♑	0	51	15	69129	Oct.	8	16	57	retrog.

A SUPPLEMENT TO HALLEY's TABLE OF THE ELEMENTS OF COMETS.

Equated time of perihelion.					Aſcending node.				Inclin. of orbit.			Perihelion.				Perihelion diſtance from the ſun.	
A. D.		D.	H.	′		°	′	″	°	′	″		°	′	″		
1264	July,	6	8	0	♍	19	0	0	36	30	0	♑	21	0	0	44500	direct.
1533	June,	16	19	30	♌	5	44	0	35	49	0	♌	27	16	0	20280	retrog.
1593	July,	8	13	38	♍	14	14	15	87	58	0	♍	26	19	0	8911	direct.
1678	Aug.	16	14	3	♍	11	40	0	3	4	20	♒	27	46	0	123802	direct.
1699	Jan.	3	8	22	♒	21	45	35	69	20	0	♏	2	31	6	74400	retrog.
1702	March,	2	14	12	♎	9	25	15	4	30	0	♌	18	41	3	64590	direct.
1706	Jan.	19	4	56	♈	13	11	23	55	14	5	♊	12	36	25	42686½	direct.
1707	Nov.	30	23	43	♉	22	50	29	88	37	40	♊	19	58	9	85904	direct.
1718	Jan.	4	1	15	♌	7	55	20	31	12	53	♌	1	26	36	102565	retrog.
1723	Sept.	16	16	10	♈	14	16	0	49	59	0	♉	12	52	20	99865	retrog.
1729	June,	12	6	36	♒	10	35	15	77	1	58	♒	22	16	53	406980	direct.
1737	Jan.	19	8	20	♏	16	22	0	18	20	45	♒	25	55	0	22282⅓	direct.
1739	June,	6	10	0	♈	27	25	14	55	42	44	♋	12	38	40	67358	retrog.
1742	Jan.	28	4	21	♎	5	34	45	67	4	11	♏	7	33	44	76555½	retrog.
1742	Dec.	30	21	15	♊	8	10	48	2	15	50	♋	2	58	4	83811½	direct.
1743	Sept.	9	21	16	♈	5	16	25	45	48	21	♐	6	33	52	52157	retrog.
1744	Feb.	19	8	17	♉	15	45	20	47	8	36	♎	17	12	55	22206	direct.
1747	Feb.	17	11	45	♌	26	58	27	77	56	55	♑	10	5	41	229388	retrog.
1748	April,	17	19	25	♏	22	52	16	85	26	57	♏	5	0	50	84066⅔	retrog.
1748	June,	7	1	24	♉	4	39	43	56	59	3	♑	6	9	24	65525½	direct.
1757	Oct.	21	7	55	♏	4	12	50	12	50	20	♌	2	58	0	33754	direct.
1759	March,	12	13	50	♉	23	45	35	17	40	15	♒	3	8	10	58490⅖	retrog.
1759	Nov.	27	2	19	♌	19	39	24	78	59	22	♉	23	24	20	79851	direct.
1759	Dec.	16	12	41	♊	18	56	19	4	37	23	♌	19	2	48	96193	retrog.
1762	May,	28	15	18	♓	19	23	0	84	45	0	♋	15	14	0	101240	direct.

By comparing theſe tables, it will be found that none of theſe *comets*, except that of 1759, appears to be the ſame with any other in either of the tables; unleſs we admit thoſe of 1264 and 1556, and thoſe of 1596 and 1699, to be the ſame. See the elements of the *comet* of 1770, and the trajectory of its path, in the Tranſactions of the American Philoſophical Society, vol. i.

See Whiſton's Solar Syſtem, where the orbits of the ſeveral *comets* are delineated, and the periods of as many of them as are known, expreſſed.

To determine the place and courſe of a COMET.—Obſerve the diſtance of the *comet* from two fixed ſtars, whoſe longitudes and latitudes are known: from the diſtances thus found, calculate the place of the *comet* by trigonometry, after the manner delivered under PLANET. By repeating the obſervations and operations for ſeveral days ſucceſſively, the courſe of the *comet* will be had.

To determine the courſe of a COMET *mechanically, and without any apparatus of inſtruments.*—The following ingenious method, by a thread, we owe to Longomontanus: Obſerve four ſtars round the *comet*, ſuch, as that the *comet* may be in the interſection of the right lines that join the two oppoſite ſtars; which is eaſily found by means of a thread placed before the eye, and extended over-againſt the ſtars and *comet*.

Suppoſe, v. gr. the *comet*'s place in the heavens A (*Tab. Aſtronomy, fig.* 23.) between the four ſtars, B, C, D, E; where the line joining the ſtars B and D paſſes through the body of the *comet*; and the like does the line paſſing through C and E.

On a globe, whereon theſe four ſtars are found, extend a thread through B and D, and another through C and E; the point of interſection will give the place of the *comet*. This practice being repeated for ſeveral days, the *comet*'s courſe will be had on the globe; which courſe will be found to be a great circle: from any two points whereof, it will be eaſy to find its inclination to the ecliptic, and the place of the nodes; only by obſerving where a thread ſtretched through the two points cuts the eliptic.

To determine the parallax of a COMET. See PARALLAX.

COMET, *trajectory of a*. See TRAJECTORY.

COMETARIUM, a curious machine, exhibiting an idea of the revolution of a *comet* about the ſun. It is contrived in ſuch a manner, as by elliptical wheels to ſhew the unequal motion of a *comet* in every part of its orbit. The *comet* is repreſented by a ſmall braſs ball, carried by a radius vector, or wire, in an elliptic groove about the ſun in one of its foci; and the years of its period are ſhewn by an index moving with an equable motion over a graduated ſilver circle. See a particular deſcription, with a cut, in Ferguſon's Aſtronomy, 4to. p. 288.

COMETIS, in *Botany*, a genus of the *tetrandria monogynia* claſs, of which there is only one known ſpecies. The involucrum is formed of three leaves and three flowers; the calyx has four leaves; and the capſule contains three berries.

COMETITES, in *Natural Hiſtory*, a name given by ſome writers to a kind of aſtroites, which has ſtars much larger than thoſe of the common kind, and therefore called *comets*.

COMEUS, in *Mythology*, a ſurname of Apollo, under which title he was worſhipped at Seleucia, whence his ſtatue was carried to Rome, and placed in the temple of Apollo Palatine.

COMFREY, *ſymphytum*, in *Botany*, a genus of plants, of the *pentandria monogynia* claſs; the characters of which are theſe: the flower has a five-cornered, erect, permanent empalement, cut into five acute parts: it has one petal with a ſhort tube, above which the limb has a ſwelling belly and thicker tube. The brim is indented in five obtuſe parts, which are reflexed; the chaps are armed with five awl-ſhaped rays, which are connected in a cone; it has five awl-ſhaped ſtamina, which are alternate with the rays of the chaps, terminated by erect acute ſummits; and four germina, ſupporting a ſlender ſtyle the length of the petal, crowned by a ſingle ſtigma. The germina afterwards turn to four gibbous, acute, pointed ſeeds, which ripen in the empalement. There are ſeveral ſpecies; but only three are to be found in the Engliſh gardens; which are cultivated either by ſeed, or by parting the roots, which latter is the more expeditious way. They are extremely hardy, and will grow on almoſt any ſoil, and in any ſituation.

Comfrey-root has been extolled as a famous vulnerary, both externally and internally; and as a noble balſamic and agglutinant; and given with ſucceſs in diarrhœas from dyſenteries, and ſpittings of blood. The beſt way of taking it is in decoction, or ſyrup; but the decoction muſt not be too ſtrong. A conſerve of them is found of excellent uſe in hæmorrhages of all kinds. They have been alſo recommended in the gout and ſciatica, as of great virtues in mitigating the pain, and ſhortening the paroxyſms. It is now rarely employed in practice, though it may be deemed ſuperior to the althea roots. The mucilage derived from the root is its only medicinal principle.

Symphytum was a name given among the ancients to ſeveral different plants, which had the common virtues of agglutinators. We have appropriated the word to *comfrey*; but Dioſcorides plainly uſes it ſometimes as the name of elecampane, and ſometimes as that of the common horſe-tail. Pliny has collected the virtues and characters of the *ſymphytum* from all the authors he had, in whom the word occurred, and therefore he has given a liſt of virtues that belong to no one plant.

Comfrey, *ſpotted*, in *Botany*. See Lung-*wort*.

COMIOLA, in *Botany*, a name given by ſome of the old Roman authors to the plant commonly called luteola, or dyer's weed. See Dyer's *weed*.

COMITATU *commiſſo*, in *Law*, a writ, or commiſſion, by which a ſheriff is authoriſed to take upon him the charge of the county.

Comitatu *et caſtro commiſſo*, a writ by which the charge of a county, together with the keeping of a caſtle, is committed to the ſheriff.

COMITATUS, in *Law*, a county. Ingulphus tells us, that England was firſt divided into counties by king Alfred; and the counties into hundreds, and theſe again into tythings: and Forteſcue writes, that *regnum Angliæ per* comitatus, *ut regnum Franciæ per ballivatus diſtinguitur*.

Sometimes it is taken for a territory or juriſdiction of a particular place; as in Mat. Paris, anno 1234. See County.

Comitatus *poſſe*. See Posse.

COMITIA, an aſſembly of the Roman people, either in the Comitium, or Campus Martius, i. e. Field *of Mars*; meeting for the election of magiſtrates, or for conſulting on the important affairs of the republic.

The word comes from the verb *coeo*, or *comeo*, *to go together*.

There were certain days fixed for theſe aſſemblies, called *dies comitiales*; marked with a C in the calendar of Julius Cæſar. *Comitial* aſſemblies, held for the election of conſuls, were called *conſular comitia*: in like manner, the other *comitia* took names from the officer to be created; whether a tribune, a pontiff, ædile, or the like.

There were three kinds of theſe *comitia*, viz. *curiata*, *centuriata*, and *tributa*; ſo diſtinguiſhed, from the manner wherein the people voted, and gave their ſuffrages, viz. by curiæ, or pariſhes, tribes, or centuries.

The power of calling theſe aſſemblies pertained to moſt of the chief magiſtrates, and ſometimes to the ſovereign pontiff.

Authors make the difference between *comitia*, and *concilia*, to conſiſt in this; that in the former the whole people were called together, in the latter only a part.

Comitia *curiata*. Romulus inſtituted the *comitia curiata*, or the public aſſemblies of the people, called to vote in their ſeveral curiæ; and it is agreed by all, that the matters ſubjected to their deciſion, were the choice of all the magiſtrates, and the right of making laws, war, and peace: an ample juriſdiction, and in the moſt important articles of government, yet not wholly abſolute, according to Dionyſius, unleſs the ſenate concurred with them. This method of tranſacting all the greater affairs by the people, aſſembled in their curiæ, after it had ſubſiſted through five ſucceſſive reigns, was found to be inconvenient.

Servius Tullius, the ſixth king of Rome, in order to correct the inconvenience of the *comitia curiata*, inſtituted a new diviſion of the people into ſix claſſes, according to a cenſus, or valuation of their eſtates; whence proceeded the *comitia centuriata*: then he ſubdivided theſe claſſes into one hundred and ninety-three centuries, and contrived to throw a majority of theſe centuries, that is, ninety-eight of them, into the firſt claſs of the richeſt citizens. By which regulation, though every man voted now in his century, as before in his curia; yet, as all matters were decided by a majority of the centuries, ſo the balance of power was wholly transferred into the hands of the rich; and the poorer ſort deprived of their former weight and influence in the affairs of ſtate: which wiſe inſtitution was ever after obſerved, through all ſucceeding ages, in the elections of the principal magiſtrates, and the determination of all the principal tranſactions of the republic.

COMITIAL *days*. Paulus Manutius is of opinion, that there were certain days on which the Roman ſenate might regularly be aſſembled; and others, on which it could not: and that theſe laſt were called *comitial* days, and marked under that name in the calendars, as days wholly deſtined, and ſet apart by law, for the aſſemblies of the people. But Sigonius contends, that the ſenate might meet on any of thoſe days, unleſs when the people were actually aſſembled, and tranſacting buſineſs on them; and conſequently that the title of *comitial* denoted ſuch days only, on which the people might be legally aſſembled, not ſuch on which they were of courſe to be aſſembled. Middlet. of Rom. Senat. p. 138, ſeq.

The truth of the matter ſeems to be this, that though the days called *comitial* were regularly deſtined to the aſſemblies of the people, yet the ſenate alſo might not only be convened on the ſame, after the popular aſſemblies were diſſolved; but had the power likewiſe, whenever they found it expedient, to ſuperſede and poſtpone the aſſemblies of the people to another day; and, by a particular decree, to authoriſe their own meetings upon them, for the diſpatch of ſome important affair, therein ſpecified.

COMITIALIS *morbus*, an ancient term for the epilepsy, or falling-ſickneſs; ſo called, becauſe if any perſon was ſeized with it in the Roman *comitia*, the aſſembly was immediately diſſolved; this being eſteemed an unlucky omen; or, rather, becauſe thoſe liable to it were chiefly ſeized in the *comitia*, or great aſſemblies.

COMITIUM, the place where the *comitia* were ordinarily held, was a large hall in the Roman Forum: it was a long time open at top; on which account, the aſſemblies were often interrupted by bad weather: it was firſt covered over in the time of the ſecond Punic war. See Forum.

Roſinus obſerves, that the conſuls and tribunes were not created in the *Comitium*, but in the Campus Martius.

It was in this place that the roſtra were placed. See Comitia.

COMMA, in *Grammar*, a point, or character, formed thus [,]; ſerving to mark a ſhort ſtop, or pauſe; and to divide the members of a period.

The word is formed of κοπτω, *ſeco*, *I cut*.

It is very difficult to fix the preciſe uſe of the *comma*; different authors define, and uſe it differently: the ordinary doctrine is, that the *comma* ſerves to diſtinguiſh nouns, verbs, adverbs, and the ſeveral parts of a period that are not neceſſarily joined together. But this conveys no clear, preciſe idea; for what is it *to diſtinguiſh the parts of a period not neceſſarily joined together?* F. Buffier has carried the doctrine of the *comma* farther: according to him, the *comma* ſerves to diſtinguiſh thoſe members of a period, in each whereof is a verb, and the nominative caſe of the verb. Thus, *That ſo many people are pleaſed with trifles, is owing to a weakneſs of mind, which makes them love things eaſy to be comprehended.*

Beſides this, the *comma* is uſed to diſtinguiſh, in the ſame member of a period, ſeveral nouns ſubſtantives, or nouns adjectives, or verbs, not united by a conjunction. Thus, *Virtue*, *wit*, *knowlege*, *are the chief advantages of a man*: or, *A man never becomes learned without ſtudying conſtantly*, *methodically*, *with a guſt*, *application*, *&c.*

If thoſe words be united in the ſame phraſe by a conjunction, the *comma* is omitted: thus, *The imagination and the judgment do not always agree.* The *comma* may alſo be omitted between the phraſes that are very ſhort, eſpecially if they depend on the ſame regimen, and are united by a conjunction: thus, *Alexander conquered Aſia and eſtabliſhed the monarchy of the Greeks.*

The ingenious author of the tract De Ratione Interpungendi, printed with Voſſius's Element. Rhetor. Lond. 1724, lays down the uſe of a *comma* to be, to *diſtinguiſh the ſimple members of a period, or ſentence*; i. e. ſuch as only conſiſt of one ſubject, and one definite verb. Thus Cicero, *Venio nunc ad voluptates agricolarum, quibus ego incredibiliter delector, quæ nec ulla impediuntur ſenectute, & mihi ad ſapientis vitam proxime accedere videntur.* See Sentence.

But this rule does not go throughout; the ſame author inſtancing many particular caſes, not included herein, where yet the *comma* is adviſable.

Sometimes, e. gr. a propoſition includes another, which may be called *partitive*, as being only a part of the entire phraſe; in which caſe, the two are to be divided from each other by *commas*. Thus, *He always ſays, as he tells us, the fineſt things in the world.*

The points, or pauſes in diſcourſe, it is obſerved, are in a kind of muſical proportion: the *comma* ſtops the reader's voice while he may privately tell one; the ſemicolon, two; the colon, three; and the period, or full-ſtop, four. Others make the ſtop at the colon, four; and at the period, ſix. Profeſſor Ward obſerves, that the ſuſpenſion of the voice ſhould be twice as long for a *comma* as between words ſeparated by no mark of diſtinction; thrice for the ſemicolon; and ſo on in the ſame proportion. Biſhop Lowth aſſigns to the period a pauſe in duration double to the colon; to the colon, double of the ſemicolon; and to the ſemicolon, double of the *comma*: ſo that they are in the ſame proportion to one another as the ſemibreve, the minim, the crotchet, and the quaver, in muſic. But, whatever be the duration of the ſeveral pauſes, the proportion between them would be ever invariable, if the doctrine of punctuation were exact. Introd. to Engliſh Grammar, ed. 1772. p. 197.

The ancients only made uſe of two kinds of points, or pauſes, in a period; the larger they called *members*, the Greeks *cola*, marked thus [:]; the ſmaller *inciſa*, the Greeks *commata*, thus [,].

The moderns, refining on their predeceſſors, have ſubdivided the firſt into a colon, and ſemicolon; ſome ſay, without any good foundation in nature; though others maintain the uſefulneſs of the diviſion.

As the member, or colon, divides the period into two parts, each containing a ſenſe, though that imperfect: thus, *Antequam de republica, patres conſcripti, dicam ea quæ dicenda hoc tempore arbitror*; where the ſenſe does not reſt, nor is the period or ſentence perfect, without the addition of, *exponam vobis breviter & profectionis & reverſionis meæ:* the *comma* ſubdivides each member into intermediate diviſions, which, of themſelves, have no preciſe meaning at all: v. gr. *Nihil eſt, mihi crede, virtute formoſius, nihil pulchrius, nihil amabilius.*

Frequent *commas*, as on other occaſions they promote perſpicuity and diſtinctneſs, and eaſe the reader, both in the rehearſal and comprehenſion of his author; ſo, in oratory, are of eſpecial uſe and effect; particularly where an adverſary is to be cloſely and pointedly attacked, upbraided, reprehended, wounded, &c. Witneſs that of Cicero againſt Verres: *Non enim nos color iſte ſervilis, non piloſæ genæ, non dentes putridi deceperunt: oculi, ſupercilia, frons, vultus denique totus, qui ſermo quidam tacitus mentis eſt, hic in fraudem, homines impulit: hic, eos, quibus erat ignotus, decepit, fefellit, in fraudem induxit: pauci tua iſta lutulenta vitia novimus; pauci tarditatem ingenii, ſtuporem, debilitatemque linguæ, &c.*

Comma, in *Muſic*, is the ſmalleſt of all the ſenſible intervals of tone. Ptolemy conſidered it as inſenſible; but Salinas aſſerts, that he was capable of diſtinguiſhing it. Muſical writers have enumerated three kinds of *comma.* The greater *comma*, or the interval of two ſounds, having the ratio of 81 to 80, which is the difference of the major and minor tones. To this the term is commonly applied. It is ſeldom in uſe, except in the theory of muſic, to ſhew the juſtneſs of the concords; for in the practice, the diviſion is drowned and loſt.—The ſmaller *comma* is the difference between the greater and leſſer ſemitones; and the proportion expreſſing it is that of 2048 to 2025.—The *comma* of Pythagoras is expreſſed by the ratio of 531441 to 524288: or, it is the difference between ſix tones major and an octave. The tone, in the diſtribution aſcribed by Boetius and others to Philolaus, contained nine *commas.* See Tone, &c.

COMMAND, in the *Royal Navy*, implies the rank or power of an officer, who has the management of a ſhip of war of any kind under twenty guns. He ranks with a major in the army.

COMMANDER, is a name given to a large wooden mallet uſed in a ſhip.

COMMANDING *Ground*, in *Fortification*, an eminence, or riſing ground, which overlooks any poſt, or ſtrong place.

Of this they reckon three ſorts: 1°, *A front commanding ground*; which is an height oppoſite to the face of the poſt, which plays upon its front.

2°, *A reverſe commanding ground*, which is an eminence that can play upon the back of any place or poſt.

3°, *An enfilade commanding ground*, or *curtin commanding ground*; which is an high place, that can with its ſhot ſcour all the length of a ſtrait line.

COMMANDMENT, in a *Legal Senſe*, has various uſes: as, *Commandment of the King*, when, on his own mere motion, and from his own mouth, he caſts a man into priſon.

Commandment of the juſtices, is either *abſolute*, or *ordinary*; *abſolute*, as when, on their own authority, and their own diſcretion, they commit a man to priſon for puniſhment. *Ordinary*, as when they commit him rather for ſafe cuſtody, than puniſhment.—A man committed to an ordinary *commandment* is repleviable.

Commandment is alſo uſed for the offence of him who directs or wills another to tranſgreſs the law; as by murder, theft, and the like.

He that *commandeth* any one to do an unlawful act, is acceſſary to it and all the conſequences, if it be executed in the ſame manner as *commanded:* but if the *commander* revoke the *command*; or if the execution varies from it, or in the nature of the offence; in ſuch caſe he will not be acceſſary. 3 Inſt. 51, 57. 2. Inſt. 182.

In another ſenſe of this word, magiſtrates may *command* others to aſſiſt them in the execution of their offices, for the doing of juſtice; and ſo may a juſtice of peace, to ſuppreſs riots, apprehend felons; or any officer to keep the king's peace, &c. Bro. 3.

In treſpaſs, &c. the maſter ſhall be accountable for the act of the ſervant done by his *command*; but ſervants ſhall not be excuſed for committing any crime, when they act by *command* of their maſter, who have no authority to enforce ſuch *command.* The *command* of infants and feme coverts are void.

Commandments, *Ten.* See Decalogue.

COMMANDRY, a kind of benefice, or fixed revenue belonging to a military order, and conferred on ancient knights, who had done conſiderable ſervice to the order.

There are *ſtrict*, or *regular commandries*, obtained in order, and by merit: there are others of *grace* or *favour*, conferred at the pleaſure of the grand maſter.

There are alſo *commandries* for the religious in the orders of St. Bernard and St. Antony.—The kings of France have converted ſeveral of the hoſpitals for lepers into *commandries* of the order of St. Lazarus.

The commandries of Malta are of different kinds; for as the order conſiſts of knights, chaplains, and brother ſervitors, there are peculiar *commandries*, or revenues, attached to each.

The knight to whom one of theſe benefices or *commandries* is given, is called *commander:* which agrees pretty nearly with the *præpoſitus* ſet over the monks in places at a diſtance from the monaſtery, whoſe adminiſtration was called *obedientia:* becauſe depending entirely on the abbot who gave him his commiſſion. Thus it is with the ſimple *commanders* of Malta, who are rather farmers of the order, than beneficiaries; paying a certain tribute, or rent, called *reſponſio*, to the common treaſure of the order.

The *commandries* belonging to the priory of St. John of Jeruſalem in England, conſiſting of manors, lands, &c. ſuch was that of New Eagle in Lincolnſhire, were given to Henry VIII. by ſtatute 32 Hen. VIII.

COMMELINA, in *Botany*, a genus of the *triandria monogynia* claſs; ſo named by F. Plumier, in compliment to Dr. Commeline, a famous profeſſor of botany at Amſterdam. Its characters are theſe: It hath a permanent heart-ſhaped ſpatha, the flower hath ſix concave petals, three of which are ſmall and oval, the other large roundiſh and coloured. It hath three nectariums, (which hath been ſuppoſed to be ſtamina) and three awl-ſhaped ſtamina which recline: in the center is ſituated a roundiſh germen, which afterward becomes a naked globular capſule with three furrows, having three cells, each containing two angular ſeeds. There are five ſpecies, natives of Africa and America. Miller's Gard. Dict.

No medicinal properties are attributed to this plant.

COMMEMORATION, the remembrance of any one; or ſomething done in honour of a perſon's memory.

Among the Romaniſts, it is a practice for dying perſons to leave a legacy to the church, for the rehearſing ſo many maſſes in *commemoration* of them.

The euchariſt is a *commemoration* of the ſufferings of Jeſus Chriſt.

Commemoration is alſo the name of two religious feaſts. otherwiſe called All-saints, and All-souls. The occaſion of their inſtitution is variouſly related.

COMMENDAM, in the *Canon Law*, expreſſes the charge, truſt, and adminiſtration of the revenues of a benefice, given to a layman to enjoy, by way of depoſitum, for the ſpace of ſix months, in order to its being repaired, &c. or to another biſhop, or eccleſiaſtic, to perform the paſtoral offices thereof, till ſuch time as the benefice is provided of a regular incumbent.

Anciently, the adminiſtration of vacant biſhopricks belonged to the neareſt neighbouring biſhop; which is ſtill practiſed between the archbiſhoprick of Lyons, and the biſhoprick of Autun: on this account they were called *commendatory biſhops.*

This cuſtom appears to be very ancient: St. Athanaſius ſays of himſelf, according to Nicephorus, that there had been given him in *commendam*, i. e. in adminiſtration, another church beſides that of Alexandria, whereof he was ſtated biſhop.

The care of churches, it ſeems, which had no paſtor, was committed to a biſhop, till they were provided with an ordinary: the regiſter of pope Gregory I. is full of theſe commiſſions, or *commendams*, granted during the abſence or ſickneſs of a biſhop, or the vacancy of a ſee. Some ſay, that pope Leo IV. firſt ſet the modern *commendams* on foot, in favour of eccleſiaſtics who had been expelled their benefices by the Saracens; to whom the adminiſtration of the vacant churches was committed for a time, in expectation of their being reſtored: though St. Gregory is ſaid alſo to have uſed the ſame, while the Lombards deſolated Italy.

In a little time, the practice of *commendams* became exceedingly abuſed; and the revenues of monaſteries were given to laymen for their ſubſiſtence. The biſhops alſo procured ſeveral benefices, or even biſhopricks, *in commendam*, which ſerved for a pretext for holding them all without directly violating the canons. Part of the abuſe has been retrenched; but the uſe of *commendams* is ſtill retained, as an expedient to take off the incompatibility of the perſon, by the nature of the benefice.

When a parſon is made biſhop, his parſonage becomes vacant; but if the king give him power, he may ſtill hold it *in commendam*; but this muſt be done before conſecration. There are ſeveral ſorts of *commendams* founded on the ſtat. 25 Hen. VIII. cap. 21. as a *commendam ſemiſtus*, which is a proviſionary act of the ordinary, and only implies a ſequeſtration of the cure and fruits till the patron preſents his clerk: a *commendam retinere*, by means of which a biſhop retains benefices on his preferment, which has operated for a certain number of years, or even as long as the *commendatory* lived, and continued biſhop: a *commendam recipere*, which is to take a benefice *de novo*, in the biſhop's own gift, or of ſome other patron, whoſe conſent is obtained; and for life.

A benefice cannot be *commended* by parts, any more than it may be preſented unto by parts; ſo that one ſhall have the glebe, another the tythes, &c. Nor can a commendatory have a *juris utrum*, or take to him and his ſucceſſors, ſue or be ſued, in a writ of annuity, &c. But a *commenda perpetua* may be admitted to do it, 11 Hen. IV. Compl. Incumb. 360. See 1 Nelſ. Abr. 454.

Commendam, in popiſh countries, is a real title of a regular benefice; as an abbey, or priory given by the pope to a ſecular clerk, or even to a layman, with power to diſpoſe of the fruits thereof during his life.

No benefice that has a cure of ſouls, i. e. no parſonage, or biſhoprick, can be given *in commendam*. This practice being entirely contrary to the canons, none but the pope, who has a power of diſpenſing with the canons, can confer it.

When the *commendam* becomes vacant by the death of the *commendatory*, it is not eſteemed vacant by his death; but as it was before the *commendam* was granted; that making no alteration in the thing: yet the pope gives the ſame benefice *in commendam* again, by a privilege which he ſtill continues.

By the pope's bulls, a *commendatory* abbot has the full authority of the regular abbot to whom he is ſubſtituted. For this reaſon, the bulls expreſly require, that he be a prieſt; or, that if he have not yet attained the age of prieſthood, he ſhall take orders as ſoon as he has. But this is a mere formality, or matter of ſtyle; the thing is never executed.

Indeed, the ſpiritual direction of the abbey, while it is *in commendam*, is lodged wholly in the clauſtral prior. The *commendatory* abbots have not any authority over the religious *in ſpiritualibus*: they even cannot either appoint or ſet aſide the clauſtral priors, who are nominated in the bulls the adminiſtrators of the ſpiritualities; in which, however, this reſtriction is added, viz. till the abbot arrive at the age of twenty-five years, to aſſume the prieſthood.

The pope grants benefices *in commendam*, not only to clerks, by diſpenſing with their age, and other qualifications required; but they alſo diſpenſe with the clericate even in children yet in the cradle, till they become of age to take the tonſure: it being ſufficient to obtain a bull, that it be repreſented at Rome, that the child is deſtined for the eccleſiaſtic ſtate.

In this caſe there is an Oeconomus, or ſteward, appointed to take care of the temporal concerns.

COMMENDATORY *Abbot*. See Abbot *in commendam*.

Commendatory *Letters*, are ſuch as are written by one biſhop to another, in behalf of any of the clergy, or others of his dioceſe travelling thither; that they may be received among the faithful: or that the clerk may be promoted; or neceſſaries may be adminiſtered to others, &c. Several forms of theſe letters may be ſeen in our hiſtorians; as in Bede, lib. ii. cap. 18.

COMMENDATUS, one that lives under the protection of a great man.

Commendati homines, were perſons who by voluntary homage, put themſelves under the protection of any ſuperior lords. For ancient homage was either predial, due for ſome tenure, or perſonal, which was by compulſion, as a ſign of neceſſary ſubjection; or voluntary, with a deſire of protection. And thoſe who by voluntary homage put themſelves under the protection of any men of power, were ſometimes called *homines ejus commendati*; ſometimes only *commendati*, as often occurs in Domeſday. *Commendati dimidii*, were thoſe who depended on two ſeveral lords, and paid one half of their homage to each; and *ſub commendati*, were like under tenants, under the command of perſons who were dependents themſelves on a ſuperior lord. There were alſo *dimidii ſub commendati*, who bore a double relation to ſuch depending lords. Domeſday. This phraſe ſeems to be ſtill in uſe, in the uſual compliment, *commend* me to ſuch a friend, &c. which is to let him know I am his humble ſervant. Spelm. of Feuds, cap. 20.

COMMENSURABLE *quantities*, in *Geometry*, are ſuch as have ſome common aliquot part, or which may be meaſured by ſome common meaſure, ſo as to leave no remainder in either. Thus, a foot and a yard are *commenſurable*; there being a third quantity which will meaſure each, viz. an *inch*; which taken 12 times makes a *foot*, and 36 times a *yard*.

Commenſurables are to each other, either as units to a rational whole number; or as one rational whole number to another. In *incommenſurables* it is otherwiſe. The ratio of *commenſurables* therefore is rational; that of *incommenſurables* irrational: hence, alſo, the exponent of the ratio of *commenſurables* is a rational number.

Commensurable *numbers*, whether integers or fractions, are ſuch as have ſome other number which will meaſure or divide them without any remainder.

Thus, 6 and 8, $\frac{8}{12}$, and $\frac{3}{4}$, are reſpectively *commenſurable* numbers.

Commensurable *in power*. Right lines are ſaid to be *commenſurable in power*, when their ſquares are meaſured by one and the ſame ſpace, or ſuperficies.

Commensurable *ſurds*, are ſuch ſurds as, being reduced to their leaſt terms, become true figurative quantities of their kind; and are therefore as a rational quantity to a rational: ſuch are $3\sqrt{2}$ and $2\sqrt{2}$.

COMMENTACULA, among the Romans, the rod which the flamens carried in their hands when going to ſacrifice.

COMMENTARIENSIS, among the Romans, an officer who had the keeping of the priſon, and was to obey the *triumviri capitales*.

COMMENTARY, or **Comment**, a gloſs, or interpretation, affixed to ſome ancient, obſcure, or difficult author, to render him more intelligible, or to ſupply what he has left undone.

Commentary is alſo uſed for a ſort of hiſtory, written by a perſon who had a chief hand in the tranſactions related.

Such are the *commentaries* of Cæſar, of Sleidan, of Montluc, &c.

The word is alſo uſed for certain books written on ſome particular ſubject: Kepler has an excellent book of *commentaries on Mars*, containing obſervations on the motion of that planet.

COMMERCE, the exchange of commodities; or, the buying, ſelling, or trafficking of merchandize, money, or even paper, in order to profit by the ſame.

There is no doubt but *commerce* is nearly as ancient as the world itſelf: neceſſity ſet it on foot; the deſire of conveniency improved it; and vanity, luxury, and avarice, have brought it to its preſent pitch. At firſt it could only conſiſt in the exchange of things neceſſary for life: the plowman gave his corn and his pulſe to the ſhepherd, and received milk and wool in exchange: which method of *commerce* by exchange ſubſiſts ſtill in many places; as about the coaſts of Siberia, and the Daniſh, and Muſcovite Lapland; among ſeveral nations on the coaſts of Africa; among ſome of thoſe of America, and many of Aſia. See Exchange.

It is not preciſely known when the *commerce* by buying and ſelling firſt began; nor when coins, and the ſeveral ſpecies of gold, ſilver, and copper, had their riſe. The firſt moneys were wood, leather, and iron; and even at this day, it is the cuſtom in ſome places of both Indies, to give a certain value in ſea-ſhells and coco-nuts, for merchandizes, drugs, &c. See Money, and Coin.

The firſt inſtance of this kind of *commerce* in the ſacred writing, is in the time of the patriarch Abraham. As for prophane authors, they uſually fix its epocha to the reign of Saturn and Janus in Italy; and the ancient authors, according to Cæſar, attribute its invention to the god Mercury.

The Egyptians, Phœnicians, and Carthaginians, who were a Tyrian colony, were the firſt, the moſt daring, and expert traders of all antiquity: at leaſt, it is evident they were the firſt who ran the hazard of long voyages; and who ſet on foot a traffic by ſea between coaſts very remote.

Among the ancients, *commerce* did not appear unworthy the application of perſons of the firſt rank: Solomon, we are told, frequently joined his merchant-fleets with thoſe of the king of Tyre, for their voyage to Ophir; and by this means rendered himſelf, though in a little kingdom, the richeſt king of his time in the univerſe. Under the Aſiatic and Grecian empires, ancient hiſtory gives us from time to time the traces of a *commerce* cultivated by ſeveral nations: but it flouriſhed more conſiderably under the dominion of the Romans; as appears from that vaſt number of colleges and companies of merchants in the ſeveral cities mentioned in hiſtorians, and ancient inſcriptions.

The deſtruction of the Roman empire by the irruptions of the barbarians, brought that of *commerce* along with it; or at leaſt ſuſpended its ordinary operation for ſome time: by degrees it began to recover itſelf, and made a new progreſs; eſpecially in Italy. Hence, the Piſans, Florentines, Genoeſe, and Venetians, who, abounding in ſhipping, took occaſion to ſpread themſelves through all the ports of the Levant and Egypt; bringing thence ſilk, ſpices, and other merchandiſes; and furniſhing the greateſt part of Europe therewith. And thus was the modern *commerce* founded on the ruins of that of the ancient Greeks and Romans to the ſame places: and thus did thoſe famous republics acquire their luſtre and power; which were conſiderably increaſed by the commercial effects of the cruſades. Theſe republics furniſhed the cruſaders with tranſports, military ſtores and proviſions, and obtained charters very favourable to the eſtabliſhment and extenſion of their *commerce*. When Conſtantinople was taken under the banner of the holy croſs, many valuable branches of trade, which formerly centered in that city, were transferred to Venice, Genoa, or Piſa. Robertſon's Hiſt. vol. i. chap. v. p. 34, &c. 8vo.

The Germans, however, had a long time carried on a ſeparate *commerce*; which was not borrowed from the Romans, nor did it fall with theirs. Towards the end of the twelfth century, the German cities ſituate on the coaſt of the Baltic, and the rivers that run into it, got into a conſiderable traffic with the neighbouring ſtates. As their *commerce* was much interrupted by pirates, ſeventy-two of them united together for their mutual defence; and were thence called *Hanſeatic*, or *Hans towns*. See Hans *Towns*.

Thus they flouriſhed till the beginning of the ſixteenth or the end of the fifteenth century; when a diviſion ariſing among them, and about the ſame time a new paſſage to the Indies, by the Cape of Good Hope, being diſcovered by the Portugueſe; and ſettlements made on the coaſt of Africa, Arabia, and the Indies; the ancient Italian and Hanſeatic *commerce* ſunk; and the chief trade came into the hands of the Portugueſe.

The Portugueſe had not poſſeſſed thoſe different trades above an hundred years, when, about the beginning of the ſeventeenth century, the Dutch began to ſhare it with them; and in a little time diſpoſſeſſed them of almoſt the whole. The Engliſh, French, Danes, and Hamburghers, excited by their ſucceſs, have likewiſe made ſettlements in the Indies, and on the coaſts of Africa; though much leſs conſiderable ones, excepting thoſe of the Engliſh.

Laſtly, America, diſcovered by Columbus in 1492, in favour of the Spaniards, ſoon after the Portugueſe had diſcovered the new way to the Indies, likewiſe became the object of a new, vaſt, and moſt important *commerce*, for all the nations of Europe; whereof Cadiz and Seville were made the centre.

It is true, the firſt conquerors of this new world ſtill poſſeſs the greateſt and richeſt part of it; and preſerve the *commerce* thereof to themſelves with great jealouſy: yet, beſides that the Engliſh, French, Portugueſe, and Dutch, have ſeveral rich and flouriſhing colonies, both in the iſlands and the continent; it is certain, that it is as much for other nations as themſelves that the Spaniards every year ſend their flotas for the treaſures of Peru and Mexico.

The trade of Europe was no ſufferer by this new one of America; the north and ſouth have ſtill the ſame mutual occaſion for each other as before.

The navigation from the Baltic to the Mediterranean was tedious and difficult: the ſituation of Flanders, and the manufactures which there flouriſhed from the tenth century, together with the free fairs of that country, engaged the merchants, both of the north and ſouth, to eſtabliſh their magazines firſt in Bruges, and then in Antwerp.

The eſtabliſhment of the republic of Holland, the favourable reception it gave to ſtrangers, and the refuge it afforded to religionaries, drew ſtore of manufacturers to it, as well as manufactures; and ſoon ſunk the *commerce* of Antwerp.

And the ſame reaſons, the convenience and multitude of the ports of England, the goodneſs of the wools, and the induſtry of the workmen, have brought hither a conſiderable part of the *commerce* of Europe.

In France, the nobles are allowed to exerciſe *commerce* without derogating from their nobility: by an ordonnance of Louis XIII. merchants are allowed to take on them the quality of nobles; and by another of Louis XIV. they are declared capable of being ſecretaries of ſtate, without laying aſide their *commerce*. It may be added, for the honour of trade, that ſome of the Italian princes, looking on themſelves as the chief merchants of their ſtates, do not diſdain to make their own palaces ſerve as magazines: and there are ſeveral kings in Aſia, as well as moſt of thoſe on the coaſts of Africa and Guinea, who negotiate with the Europeans by their factors, and frequently in perſon.

Commerce, on the foot it now ſtands, is divided into *commerce by land*, and *by ſea*; *inland* or *domeſtic*, and *foreign*; and by *wholeſale* and *retail*.

With reſpect to domeſtic *commerce*, we may obſerve, that the king is the arbiter of it; as it pertains to his prerogative to eſtabliſh public marts, as markets and fairs, to regulate weights and meaſures, and to give money, which is the univerſal medium of *commerce*, authority and currency.

A great part of the foreign *commerce* of England is now carried on by collective companies: ſome incorporated by the king's charters, with an excluſive privilege, as the Eaſt India company; others only private aſſociations, as the Turky and Hamburgh companies. See Company.

Commerce, *Chambers of.* See Chamber.

Commerce, *Characters in.* See Character.

COMMINATORY, a clauſe inſerted in a law, edict, patent, &c. importing a puniſhment wherewith delinquents are menaced; which, however, is not to be executed in its rigour.

Thus, in France, when an exile is enjoined not to return on pain of death, it is deemed a *comminatory* penalty; ſince, if he do return, it is not ſtrictly executed; but a ſecond injunction is then laid on him, which is more than *comminatory*, and from the day of the date thereof, imports death without remedy.

COMMINUTION, the act of grinding, or breaking any matter into ſmaller particles.—The effect of chewing, or maſticating our food, is the *comminution* thereof.

COMMISSARY, an officer of the biſhop, who exerciſes eccleſiaſtical juriſdiction in thoſe parts of the dioceſe, which are ſo remote from the ſee, that the chancellor cannot call the ſubjects thereof to the biſhop's principal conſiſtory, without their too great moleſtation.

This officer, called by the canoniſts *commiſſarius*, or *officialis foraneus*, is appointed to ſupply the biſhop's office in the out-parts of the dioceſe, and in ſuch parts as are peculiar to the biſhop, and exempted from the juriſdiction of the archdeacon: for where the archdeacons have juriſdiction, as in moſt places they have, either by preſcription or compoſition, the *commiſſary* is ſuperfluous, and frequently vexatious.

Commissary, in an *army*.—There are ſeveral ſorts of *commiſſaries*:

Commissary *of horſes*, an officer in the artillery, appointed to have the inſpection of the artillery-horſes, to ſee them muſtered, and to ſend ſuch orders as he receives from the commanding officer of the artillery, by ſome of the conductors of horſes, of which he has a certain number for his aſſiſtants.

Commissary-General *of the muſters*, or muſter-maſter general, takes an account of the ſtrength of every regiment, reviews them, ſees that the horſe be well mounted, and all the men well armed and accoutred.

Commissary *of proviſions*, is he who has the inſpection of the bread and proviſions of the army.

Commissary *of ſtores*, an officer in the artillery who has the charge of all the ſtores, for which he is accountable to the office of ordnance; he is allowed an aſſiſtant, clerks, and conductors, under him.

COMMISSION, in *Common Law*, is the ſame with *delegation* among the civilians; and is taken for the warrant, or patent, which any man exerciſing juriſdiction, either ordinary or extraordinary, hath to authoriſe him to hear or determine any cauſe or action.

The term, however, is ſometimes extended farther than to matters of judgment; as in the *commiſſion* of purveyors, which ſeems to be null by the ſtatute for taking away purveyance, 12 Car. II. and the high *commiſſion court*, which was founded on the ſtatute 1 Eliz. and is alſo aboliſhed by act of parliamen 16 Car. I. The perſons charged with a *commiſſion* are hence called *commiſſioners*; ſometimes *committees*.

Commission *of anticipation*, was anciently a *commiſſion* given under the great-ſeal, to collect a ſubſidy before the day. See Anticipation.

Commission *of aſſociation*, is a *commiſſion* under the great-ſeal to aſſociate two, or more learned perſons, with the ſeveral juſtices, in the ſeveral circuits and counties in Wales.

Commission *of bankruptcy*, a *commiſſion* under the great-ſeal, directed to five or more commiſſioners, to enquire into the particulars of a man's circumſtances, who hath failed, or broke; and to act according to certain ſtatutes made in that behalf. See Bankrupt.

Commissions *of charitable uſes* go out of the chancery to the biſhop and others, where any lands given to charitable uſes are miſemployed, or there are any fraud or diſputes concerning them, to enquire of and redreſs the abuſe, &c. 43 Eliz. cap. 4.

Commission *of Delegates*. See Delegates and Court.

Commission *of lunacy*, a commiſſion out of chancery to enquire whether a perſon repreſented to be lunatic, be ſo or not; that, if lunatic, the king may have the care of his eſtate, &c. 17 Edw. II. cap. 10.

Commission *of peace*. See Justice *of peace*.

Commiſſion *of rebellion*, or *writ of rebellion*, is iſſued out when a man, after proclamation iſſued out of the chancery, or the exchequer, and made by the ſheriff, to preſent himſelf, under pain of his allegiance, to the court by a certain day, does not appear. See Rebellion.

This *commiſſion* is directed, by way of command, to certain perſons; three, two, or one of them; to apprehend, or cauſe to be apprehended, the party as a rebel; and to bring him to the court on a day aſſigned.

This writ or *commiſſion* goes forth after an attachment returned, *non eſt inventus*, &c.

Commiſſion *of ſewers*, is directed to certain perſons to ſee drains and ditches well kept, and maintained, in the marſhy and fenny parts of England, for the better conveyance of water into the ſea, and preſerving the graſs upon the land. Stat. 23 Hen. VIII. cap. 5. 13 Eliz. cap. 9.

Commiſſion *to examine witneſſes*, is ſometimes appointed by the court of equity in caſes that require it, as when the cauſe ariſes in a foreign country, and the witneſſes are at home, or when the witneſſes are abroad, or ſoon to leave the kingdom; or again, when they are aged and infirm. This *commiſſion* is impowered to exerciſe the ſame juriſdiction as would have been exerciſed if the witneſſes had attended.

Commiſſion-*Officers*. See Officer.

Book of Commiſſions. See Book.

Commiſſion, in *Commerce*. See Factorage.

COMMISSIONER, he who has a commiſſion, e. gr. a patent, or other legal warrant, to execute any public office. See Warrant, &c.

Such are, *commiſſioners* of hawkers and pedlars, *commiſſioners* of alienation, *commiſſioners* of the ſtamps, &c.

Commiſſioners *of the Cuſtoms*. See Customs.

Commiſſioners *of the Dock-yards*. See Dock-*yards*.

Commiſſioners *of Exciſe*. See Excise.

Commiſſioners *of the Navy*. See Navy.

Lords Commiſſioners *of the Treaſury*. See Treasury, and Exchequer.

Commiſſioners *of Trade*, &c. See Board.

COMMISUM *Fidei*. See Fidei.

COMMISSURE, Commiſſura, a term uſed by ſome authors, for the junctures, or for the ſmall interſtices of bodies; or the little clefts between the particles; eſpecially when thoſe particles are broadiſh and flat, and lie contiguous to one another, like thin plates, or lamellæ. See Pore.

The word literally ſignifies *a joining*, or connecting of one thing to another.

Commiſſure, in *Architecture*, &c. denotes the joint of two ſtones; or, the application of the ſurface of the one to that of the other.

Among anatomiſts, *commiſſure* is ſometimes alſo uſed for a ſuture of the cranium, or ſkull.

COMMITMENT, in *Law*, the ſending of a perſon to priſon by warrant or order, who hath been guilty of any offence not bailable, or for which bail is refuſed. It may be by the king and council, by the judges of the law, juſtices of peace, and other magiſtrates, who have authority by the laws and ſtatutes of the realm to do it, which muſt be exactly purſued. Every *commitment* to priſon ought generally to be made by warrant, under the hand and ſeal of him who commits the party, and the cauſe of *commitment* to be expreſſed in the warrant, &c. And where a man is committed as a criminal, it muſt be until he is diſcharged by due courſe of law; but if it be for contumacy, then it is only until he comply and perform the thing required. Carthew's Rep. 153. If the words of a ſtatute are not purſued in a *commitment*, the party ſhall be diſcharged by *habeas corpus*. Ib. 291. See Bail, Impriſonment, Mittimus, &c.

COMMITTEE, in *Law*, one or more perſons, to whom the conſideration of any matter is referred, either by a court, or by conſent of the parties concerned.

Committee *of Parliament*, is a board conſiſting of a certain number of members, appointed by the whole houſe, for the examining of a bill, or making report of an inquiry, or proceſs of the houſe, &c.

Sometimes, the whole houſe is reſolved into a *committee*; on which occaſion each perſon has a right to ſpeak, and reply as much, and as often as he pleaſes: an expedient they uſually have recourſe to in extraordinary caſes, and where any thing is to be thoroughly canvaſſed.—When the houſe is not in a *committee*, each gives his opinion regularly, and is only allowed to ſpeak once, unleſs to explain himſelf.

The ſtanding *committees*, appointed by every new parliament, are thoſe of *privileges* and *elections*, of *religion*, of *grievances*; of *courts of juſtice*, and of *trade*: though only the former act.

Commitee *of the king*, is uſed for a widow of one of the king's tenants: thus called, as being by the ancient law of the realm *committed* to the king's care and protection. See Widow.

COMMODATE, Commodatum, in the *Civil Juriſprudence*, the loan, or free conceſſion of any thing moveable or immoveable, for a certain time, on condition of reſtoring again the ſame individual after a certain term.

The *commodate* is a kind of loan: there is this difference, however, between a loan and a *commodate*, that the latter is gratis, and does not transfer the property: the thing muſt be returned in eſſence, and without impairment: ſo that things which conſume by uſe, or time, cannot be objects of a *commodate*, but of a loan; in regard they may be returned in kind, though not in identity.

COMMODAVIENSIS, an appellation given by ſome authors to a ſpecies of *lapis calaminaris* found in Bohemia. But as it yields no zink, Mr. Marggraf denies it to be true calamine.

COMMODITIES *Staple*. See Staple.

COMMODORE, in the *Britiſh Marine*, a general officer, inveſted with the command of a detachment of ſhips of war deſtined on any particular enterprize: during which time he bears the rank of a brigadier-general in the army, and his ſhip is diſtinguiſhed by a broad red pendant tapering towards the outer end, and ſometimes forked.

Commodore is alſo a name given to a ſelect ſhip in a fleet of merchantmen, which leads the van in time of war, bearing a light in her top to conduct the reſt.

COMMOIGNE, in *Law*, a word ſignifying a fellow-monk, that lives in the ſame convent. 3 Inſt. 15.

COMMON, Communis, ſomething that belongs to all alike; is owned or allowed by all; and is not confined to this more than that.

In which ſenſe, *common* ſtands oppoſed to *proper*, *peculiar*, &c. Thus, the earth is ſaid to be our *common* mother; in the firſt, or golden age, all things were in *common*, as well as the ſun and elements: the name animal is *common* to man and beaſt; that of ſubſtance to body and ſpirit.

Philoſophers diſpute whether there be any ſuch thing as *common* notions, innate, or impreſſed on the mind by nature herſelf; or whether our ideas are all adventitious.

Common, *communia*; (i. e. *quod ad omnes pertinet*) ſignifies that ſoil, the uſe whereof is *common* to a particular town or lordſhip: or it is a profit that a man hath in the land of another perſon, uſually in common with others; or a right which a perſon hath to put his cattle to paſture into ground that is not his own. And there is not only *common* of pasture, but alſo *common* of piscary, *common* of estovers, *common* of turbary, &c. And in all caſes of *common*, the law doth much reſpect the cuſtom of the place: for there the rule is, *conſuetudo loci eſt obſervanda*. 7 Rep. 5. *Common* of paſture is divided into *common* in groſs, *common* appendant, *common* appurtenant, and *common per cauſe de vicinage*.

Common *in groſs*, is a liberty to have *common* alone, that is, without any land or tenement in another man's land, granted either to a perſon for life, or to him and his heirs. This is commonly paſſed by deed, or ſpecialty, and claimed by preſcriptive right.

Common *appendant*, and Common *appurtenant*, are uſually confounded; both being defined to be a liberty of *common* appertaining to, or depending on, ſuch or ſuch a freehold; which *common* muſt be taken with beaſts *commonable*; as horſes, oxen, &c. being accounted fitteſt for the plowman; and not with goats, geeſe, and hogs.

Others diſtinguiſh between the two, thus; *common appurtenant* may be ſevered from the land whereto it appertains; and is where the owner of land has a right to put in other beaſts not *commonable*; as hogs, goats, &c. which neither plough nor manure the land. Whereas *common appendant*, according to my lord Coke, had its original in the following manner:

> “When a lord enfeoffed another in arable lands to hold of him in ſoccage; the feoffee, to maintain the ſervice of his plow, had at firſt, by courteſy of his landlord, *common* in his waſtes, for neceſſary beaſts, to eat and compoſt his lands: and that for two cauſes; 1°. Becauſe it was tacitly implied in the feoffment; by reaſon the feoffee could not till, or compoſt his paſture: by conſequence, therefore, the feoffee had, as a thing neceſſary, or incident, *common* in the waſtes, or lands of the lord. 2°. For the maintenance and advancement of tillage.”

Common *per Cauſe de Vicinage*, i. e. by reaſon of neighbourhood; is a liberty that the tenants of one lord in one town, have to *common* with the tenants of another lord in another town.

But it is to be obſerved, that thoſe who claim this kind of *common* (which is uſually called intercommoning) may not put their cattle into the *common* of the other two, for then they are deſtrainable; but, turning them into their own fields, if they ſtray into their neighbours *common*, they muſt be ſuffered.

COMMON, in *Geometry*, is applied to an angle, line or the like, which belongs equally to two figures, or makes a neceſſary part of both.

COMMON, in *Grammar*, denotes the gender of nouns which is equally applicable to both ſexes, male and female.

Such is that of *parens* parent; which is either maſculine, or feminine, as it is uſed to ſignify either father, or mother.

The Latin Grammarians, beſides this, which they call the *common of two*, alſo make a *common of three*; which extends to maſculine, feminine, and neuter.

COMMON, *communis*, in *Ancient Muſic*, was an appellation given to the ſeventh ſpecies of the diapaſon. See DIAPASON.

COMMON *Bail*. See BAIL.

COMMON *Baretry*. See BARETRY.

COMMON *bench*. The court of *common* PLEAS was anciently called *common bench*.

In law books and references, the court of *common* pleas is writ C. B. from *communi banco*: and the juſtices of that court are ſtyled *juſticiarii de banco*.

COMMON *Center of Gravity*. See CENTER *of Gravity*.

COMMON *Chords*, in *Muſic*, is ſometimes uſed to denote the third, fifth, and octave of any note, conſidered as a baſs.

COMMON *Clerk*. See TOWN *Clerk*.

COMMON *Crier*. See CRIER.

COMMON *Council*. See *Mayor's* COURTS.

COMMON *day*, in plea of land, ſignifies an ordinary day in court, as *octabis Hilarii, quindena Paſchæ*, &c. It is mentioned in 13 Rich. II. ſtat. i. cap. 17. and in the ſtatute 51 Hen. III. concerning general days in bank. *Blount* and *Cowel*.

COMMON *Duct*, in *Anatomy*. See DUCTUS *Communis*.

COMMON *Fine*, in *Law*, a certain ſum of money, which the reſiants within the liberty of ſome leets pay to the lord thereof; called, in ſome places, *head-ſilver*; in others, *cert-money*, or *certum letæ*, and *head-pence*.

It was firſt granted to the lord towards the charge of his purchaſe of the court-leet; whereby the reſiants have now the conveniency of doing their ſuit-royal near home, without being compelled to go to the ſheriff's turn.

COMMON *Hunt*, the chief huntſman belonging to the lord mayor and aldermen of London.

COMMON *Intendment*, in *Law*, the *common* underſtanding, meaning, or conſtruction of any thing; without ſtraining it to any foreign, remote, or particular ſenſe.

Bar to COMMON *Intendment*, is an ordinary or general BAR, which commonly diſables the declaration of the plaintiff. See INTENDMENT.

COMMON *Law*, that body of rules generally received, and held as law in this nation, in contradiſtinction to the ſtatute, or written law, and to particular cuſtoms and uſages.

After the decay of the Roman empire, Britain became invaded by three kinds of German people, viz. the Saxons, Angles, and Jutes. From the Jutes deſcended the men of Kent, and thoſe of the Iſle of Wight; from the Saxons came the people called the Eaſt, South, and Weſt Saxons; and from the Angles came the Eaſt Angles, Mercians, and Northumbrians.

Now, as each people had its peculiar cuſtoms, ſo each inclined to different laws; whereof, thoſe of the Weſt Saxons, and Mercians, who inhabited the midland countries, were, upon the diſſolution of the heptarchy, and eſtabliſhment of a monarchy, preferred to the reſt, and acquired the common appellation of *Jus Anglorum*. Their particular names were *Weſt Saxon-lage*, and *Merchen-lage*.

The firſt Saxon laws publiſhed in England, were thoſe of king Ethelbert, in the ſixth century. Three hundred years after, king Alfred, whom our hiſtorians call *magnus juris Anglicani conditor*, having united the heptarchy, and rendered himſelf maſter of the whole nation, made a collection from among the ſeveral laws of the ſeveral provinces of his domains; and commanded them to be obſerved throughout his kingdom. This collection was denominated *folk-right*, and ſoon after, the *common law*; as being *common* to the whole nation.

This was written in Alfred's *dome-book*, or *liber judicialis*, which was deſigned for the general uſe of the whole kingdom.

By theſe laws the nation was governed for a conſiderable time, till, being at length ſubdued by the Danes, the cuſtoms of thoſe people were introduced, and incorporated with the reſt; and thus a new form of *common* law aroſe, called *Danelage*.

The three ſyſtems of law above recited, viz. the *Danelage*, the *Weſt Saxon-lage*, which was the ſame with the code compiled by Alfred, and the *Merchen-lage*, were in uſe about the beginning of the eleventh century, in different counties of the realm. In proceſs of time king Edgar begun what his grandſon Edward the Confeſſor, on this account called *legum Anglicanarum inſtitutor*, completed; viz. to form one digeſt or body of laws to be obſerved hroughout the whole kingdom. This ſeems to have been only a new edition, or freſh promulgation of Alfred's *dome-book*, with ſuch additions and improvements as the experience of a century and a half had ſuggeſted.

The Danes being afterwards, in their turn, overcome by the Normans; the Conqueror, on a review of the ſeveral laws and cuſtoms that then obtained, abrogated ſome, and aboliſhed others; adding ſome of his own country laws.

His ſon, William Rufus, broke through the ancient laws and cuſtoms which his father had eſtabliſhed; but his next ſon, Henry I. excluded the civil cuſtoms which his brother had introduced, and reſtored the laws of Edward the Confeſſor, with thoſe amendments made by his father, under the advice of his barons. Theſe were afterwards confirmed in ſucceeding reigns.

Hence is derived that ſyſtem of maxims and unwritten cuſtoms, now known by the name of the *common law*, which is of Saxon parentage; though the cuſtoms and maxims themſelves are of higher antiquity than memory or hiſtory reach; many of them being as old as the primitive Britons.

The *common law* of England is, properly, the common cuſtoms of this kingdom; which, by length of time, have obtained the force of laws.

It is called *lex non ſcripta*, the *unwritten law*: not but that we have moſt of it written in the old Norman dialect, and the monuments and evidences of our legal cuſtoms are contained in the records of the ſeveral courts of juſtice, in books of reports and judicial deciſions, and in the treatiſes of learned ſages of the profeſſion, preſerved and tranſmitted from times of the higheſt antiquity; but becauſe it does not appear to be made by charter, or parliament; for thoſe are always matters of record. Its original inſtitution and authority are not ſet down in writing, but it receives its binding power and the force of law, by long and immemorial uſage, and by univerſal reception through the kingdom. See AUTHORITIES and REPORTS.

Beſide the common *law* of England in general, there are in divers parts of the nation particular cuſtoms, and common uſages, which have the force of *common law* among thoſe people who have retained them: ſuch as the Borough-Engliſh, Gavelkind, &c.—Where the *common law* is ſilent, there the STATUTE-*law* ſpeaks. See STATUTE.

All TRIALS at *common law* are by a JURY of twelve men.

COMMON *meaſure diviſor*, in *Arithmetic*, a number that exactly meaſures two other numbers, without a remainder.

And the greateſt number that can meaſure any two other numbers, is called their greateſt *common meaſure*; thus 4 is the greateſt *common meaſure* of 8 and 12.

To find the greateſt *common meaſure* of two numbers; divide the greater by the leſs, and if there be no remainder, the leſs number is the meaſure required. If there be a remainder, divide the laſt diviſor by it, and thus proceed, till there be no remainder left, and the laſt diviſor is the greateſt *common meaſure*. For algebraic quantities, the remainders are to be divided by their ſimple diviſors, and the quotients will be the quantities required. And if FRACTIONS are divided by their greateſt *common meaſure*, they will thus be reduced to their loweſt terms.

COMMON *mouth*, *motion*, and *object*. See the ſubſtantives.

COMMON-PLACE *Book*, *Adverſaria*, among the learned, denotes a regiſter, or orderly collection of things which occur worthy to be noted, and retained in the courſe of a man's reading, or ſtudy; ſo diſpoſed, as that among a multiplicity of ſubjects, any one may be eaſily found.

Common-place-books are of great ſervice: they are a kind of promptuaries or ſtorehouſes, wherein to repoſit the moſt valuable parts of authors, to be ready at hand when wanted. Several perſons have their ſeveral methods of ordering them: but that which comes beſt recommended, is the method of that great maſter of order Mr. Locke. He has thought fit to publiſh it in a letter to M. Toiſnard; determined thereto, by the great conveniency and advantage he had found from it in twenty years experience; as well as by the recommendations and intreaties of many of his friends, who had likewiſe proved it.

The ſubſtance of this method we ſhall here give the reader; whereby he will be eaſily enabled to execute it himſelf.

The firſt page of the book you intend to take down the *common-places* in, is to ſerve as a kind of index to the whole; and to contain references to every place, or matter, therein: in the commodious contrivance of which index, ſo as it may admit of a ſufficient copia, or variety of materials, without any confuſion, all the ſecret of the method conſiſts.

In order to this, the firſt page, as already mentioned, or, for more room, the two firſt pages that front each other, are to be divided, by parallel lines, into twenty-five equal parts; whereof, every fifth line is to be diſtinguiſhed, by its colour, or ſome other circumſtance. Theſe lines are to be cut perpendicularly by others, drawn from top to bottom; and in the ſeveral ſpaces thereof, the ſeveral letters of the alphabet, both capital and minuſcule, are to be duly written. The form of the lines and diviſions, both horizontal and perpendicular, with the manner of writing the letters therein, will be conceived from the following ſpecimen; wherein what is to be done in the book for all the letters of the alphabet, is here ſhewn in the firſt four, *A*, *B*, *C*, and *D*.

A	*a*		*C*	*a*	
	e			*e*	
	i			*i*	
	o			*o*	
	u			*u*	
B	*a*		*D*	*a*	
	e	2. 3.		*e*	
	i			*i*	
	o			*o*	
	u			*u*	

The index of the *common-place* book being thus formed, matters are ready for the taking down any thing therein.

In order to this, conſider to what head, the thing you would enter is moſt naturally referred; in this head, or word, regard is had to the initial letter, and the firſt vowel that follows it; which are the characteriſtic letters whereon all the uſe of the index depends.

Suppoſe, e. gr. I would enter down a paſſage that refers to the head *beauty*; *B*, I conſider, is the initial letter, and *e* the firſt vowel: then looking upon the index for the partition *B*, and therein the line *e* (which is the place for all words whoſe firſt letter is *B*, and firſt vowel *e*; as *Beauty*, *Beneficence*, *Bread*, *Bleeding*, *Blemiſhes*, &c.), and finding no numbers already down to direct me to any page of the book where words of this characteriſtic have been entered, I turn forward to the firſt blank page I find, which in a freſh book, as this is ſuppoſed to be, will be page 2, and here I now write what I have occaſion for on the head *beauty*; beginning the head in the margin, and indenting all the other ſubſervient lines, that the head may ſtand out, and ſhew itſelf: this done, I enter the page where it is written, viz. 2, in the index, in the ſpace *B e*; from which time, the claſs *B e* becomes wholly in the poſſeſſion of the 2d and 3d pages, which are conſigned to letters of this characteriſtic.

Had I found any page or number already entered in the ſpace *B e*, I muſt have turned to the page, and have written my matter in what room was left therein: ſo, if after entering the paſſage on beauty, I ſhould have occaſion for *benevolence*, or the like, finding the number 2 already poſſeſſed of the ſpace of this characteriſtic, I begin the paſſage on benevolence in the remainder of the page; which not containing the whole, I carry it on to page 3, which is alſo for *B e* and add the number 3 in the index.

When the two pages deſtined for one claſs are full, look forwards for the next backſide that is blank; if it be that which immediately follows, write at the bottom of the margin of the page filled, the letter *v* for *verte*, turn over; and the ſame at the top of the next page; and continue from this new page as before. If the pages immediately following be already filled with other claſſes; then write at the botom of the page laſt filled the letter *v*. with the number of the next blank page; and at the top of that page, the number of the page laſt filled: then entering that head in this new page, proceed as before. By theſe two numbers of reference, the one at the top, and the other at the bottom of the page, the diſcontinued matters are again connected. It may not be amiſs, every time you put a number at the bottom of a page, to put it likewiſe in the index. Note, if the head be a monoſyllable beginning with a vowel, the vowel is at the ſame time both the initial letter, and the characteriſtic vowel: thus the word *art* is to be wrote in *A a*. Mr. Locke omits three letters of the alphabet in his index, viz. *K*, *Y*, and *W*; which are ſupplied by *C*, *I*, *U*, equivalent to them: and as for *Q*, ſince it is always followed by an *u*, he puts it in the fifth place of Z; and ſo has no Z *u*, which is a characteriſtic that very rarely occurs. By thus making *Q* the laſt in the index, its regularity is preſerved, without diminiſhing its extent. Others chooſe to retain the claſs Z *u*, and aſſign a place for *Q u* below the index.

If any imagine, that thoſe hundred claſſes are not ſufficient to comprehend all kinds of ſubjects without confuſion. he may follow the ſame method, and yet augment the number to five hundred, by taking in one more characteriſtic to them.

But the inventor aſſures us, that in all his collections, for a long ſeries of years, he never found any deficiency in the index, as above laid down.

COMMON *Places*, in *Rhetoric*. See ARGUMENTS and TOPICS.

COMMON-PLEAS. See COURT *of Common Pleas*.

COMMON *Prayer*, is the liturgy in the church of England. Clergymen are obliged to uſe this liturgy in the ſervice of the church; and refuſing to do ſo, or uſing any other public prayers, is puniſhable by 1 Eliz. cap. 2. and every incumbent, reſident on his living, is obliged, once every month at leaſt, to read the *common prayer* in his pariſh church, in his own perſon, under a forfeiture of 5 *l.* for every failure, by 14 Car. II. cap. 4. and by the ſame ſtat. every church is to be provided with a book of *common prayer*, under the penalty of 3 *l.* a month. Every miniſter who ſpeaks any thing in derogation of this book is liable to ſix months impriſonment, and the forfeiture of a year's value of his benefice, and for the ſecond offence to deprivation: and any perſon, convicted of reviling it, ſhall forfeit for the firſt offence an hundred marks, four hundred for the ſecond; and for the third offence all his goods and chattels, and ſuffer impriſonment for life, Stat. 1 Eliz. cap. 2.

COMMON *ray*. See RAY.

Tenants in COMMON. See TENANT.

COMMON *receptacle*. See RECEPTACULUM.

COMMON *Recovery*. See RECOVERY.

COMMON *Senſe*. See SENSE.

COMMON *Senſory*. See SENSORY.

COMMON *Serjeant*. See SERJEANT.

COMMON *Time*. See TIME.

COMMON *Year*. See YEAR.

COMMONER, is uſed for a ſtudent in ſome univerſities, entered in a particular rank.

The word is alſo applied to a member of the houſe of *commons*; in contradiſtinction to a *peer*.

COMMONS, in parliament, are the lower houſe, conſiſting of knights elected by the counties, and of citizens and burgeſſes by the cities and borough towns.

In theſe elections, anciently, all the people had votes; but king Henry VI. to avoid tumults, firſt appointed, that none ſhould vote for knights but ſuch as were freeholders, did reſide in the county, and had forty ſhillings yearly revenue: the perſons elected for counties to be *milites notabiles*, at leaſt eſquires, or gentlemen fit for knighthood; native Engliſhmen, at leaſt naturalized; and twenty-one years of age: no judge, ſheriff, or eccleſiaſtical perſon, to ſit in the houſe for county, city, or borough.

The *houſe of commons*, in Forteſcue's time, who wrote during the reign of Henry VI. conſiſted of upwards of three hundred members: in Sir Edward Coke's time their number amounted to four hundred and ninety-three. At the time of the union, there were five hundred and thirteen members for England and Wales, to which forty-five repreſentatives for Scotland were added; ſo that the whole number of members is at this day five hundred and fifty-eight.

All members of either houſe, with their menial ſervants, and neceſſary goods brought with them, are privileged by the common law from all attachments and impriſonments; except for treaſon, felony, or breach of peace, all the time of the ſeſſion, and till they arrive at home, *eundo, morando, ad propria redeundo.*

By 12 and 13 W. cap. 3. and 11 G. II. cap. 24. actions may be brought againſt members of parliament and their ſervants immediately after the diſſolution or prorogation, or any adjournment for more than fourteen days, till they are reaſſembled: and in the mean while the courts may give judgment and award execution. By 4 G. III. cap. 33. the petitioners, in a caſe of bankruptcy, where the debtor is a trader within the ſtatutes, may ſue out a ſummons or an original bill and ſummons, and ſerve a member with a copy of it: and if the debt with coſts be not paid within two months, the creditors may proceed, as againſt other bankrupts: arreſt during the time of privilege excepted. And by 10 G. III. cap. 50. action may be proſecuted in any court of record, of equity, of admiralty, or ſuch as have cognizance of cauſes matrimonial and teſtamentary, againſt any peer or member of the *houſe of commons*, or any of their ſervants, or any other perſon intitled to privilege of parliament, provided that the perſon of any member of the *commons* is exempted from arreſt or impriſonment.

The *commons* ſit in their houſe promiſcuouſly; only the *ſpeaker* has a chair, or ſeat, fixed towards the upper end; and the clerk, with his aſſiſtant, ſits near him.

The members have no robes, as the lords ever had; excepting the ſpeaker and clerks; and ſometimes the profeſſors of law in term-time, and the members of the city of London.

On the firſt day of the new parliament, before any affair is meddled with, all the members take the oaths; uſually before the lord ſteward, and in the court of wards. They then proceed to the choice of a ſpeaker. And after the election of a SPEAKER, they take the oaths a ſecond time.

Privileges of the COMMONS. All bills for levying money on the ſubject, begin in the houſe of *commons*; in regard, it is from them the greateſt part of the moneys ariſe: nor will they allow the lords to make any alteration in a money-bill. They have the privilege to propoſe laws, and are, in effect, the grand inqueſt of the realm; preſent public grievances; impeach public delinquents, even the higheſt officers of the kingdom; and proſecute them before the houſe of lords, which is a court of judicature, though the *commons* are not.

The *commons* were formerly allowed their expences during parliament time, *rationabiles expenſas*, as the words of the writ are; i. e. ſuch allowance as the king, conſidering the prices of things, ſhall think proper to impoſe on the people they repreſent. In 17 Edward II. the allowance was ten groats for knights, and five for burgeſſes, per day; afterwards it was raiſed to four ſhillings a day for dubbed knights, and two ſhillings for all the reſt: but all allowance is now grown into diſuſe; and conſiderable ſums are too often expended in order to obtain the honour or advantage accruing from a ſeat in PARLIAMENT. See BRIBERY.

COMMONS is alſo uſed in oppoſition to *nobles*, or *peers*, viz. for all ſorts of perſons under the degree of a baron; including the orders of knights, eſquires, gentlemen, the ſons of the nobility, and yeomen. See each under its proper Article, ESQUIRE, GENTLEMAN, YEOMAN, &c.

Doctors COMMONS. See COLLEGE *of Civilians*.

Proctor of the COMMONS. See PROCTOR.

COMMONS is alſo uſed for the ſtated and ordinary diet, or eating, of a college, inn of court, or other ſociety. See INN, &c.

COMMONWEALTH. See REPUBLIC.

COMMOTE, an ancient term in Wales, denoting half a cantred, or HUNDRED; containing fifty villages.

Wales was anciently divided into three provinces; each of theſe ſubdivided into cantreds; and every cantred into two *commotes*, or half-hundreds.

Silveſter Girald, however, tells us, in his Itinerary, that a *commote* is but a quarter of a hundred.

COMMOTION, an inteſtine motion, or luctation in the parts of any thing.

In medicine, the term is chiefly uſed for a blow, or ſhake of the brain. A convulſion is a *commotion* of the fine medullary fibres of the brain. A fall occaſions a *commotion*, whence frequently ariſes a counterſtroke on the oppoſite part; which occaſions ſometimes a contrafiſſure, and at other times a rupture of the veſſels, and an impoſthume, by ſhaking the whole maſs of the brain.

COMMUNAM *appropriare*. See APPROPRIARE.

COMMUNE *rectum*. See RECTUM.

COMMUNEM *legem*, *Writ of Entry ad*. See LEGEM.

COMMUNIBUS *locis*, a Latin term, in frequent uſe among philoſophical, &c. writers; implying ſome medium, or mean relation, between ſeveral places.

Dr. Keil ſuppoſes the ocean to be one quarter of a mile deep, *communibus locis*, q. d. at a medium, or taking one place with another.

COMMUNIBUS *annis*, has the ſame import with regard to years, that *communibus locis* has with regard to places.

Mr. Derham obſerves, that the depth of rain, *communibus annis*, i. e. one year with another, were it to ſtagnate on the earth, would amount to, at Townly in Lancaſhire, $42\frac{1}{2}$ inches; at Upminſter in Eſſex $19\frac{1}{4}$; at Zurick, $32\frac{1}{4}$; at Piſa, $43\frac{1}{4}$; and at Paris, to 19 inches.

COMMUNICATING, in *Theology*, the act of receiving the ſacrament of the EUCHARIST.

Thoſe of the *reformed*, and of the Greek church *communicate* under both kinds; thoſe of the Romiſh only under one.

The oriental communicants receive the ſpecies of wine by a ſpoon; and anciently they ſucked it through a pipe, as has been obſerved by Beat. Rheanus on Tertullian.

COMMUNICATION, the act of imparting a thing to another, or making him a ſharer with us therein.

The uſe of ſpeech is for the *communicating* of our ideas and ſentiments to each other.

COMMUNICATION is alſo uſed for the connexion of one thing with another; or the paſſage from one place to another.

Anciently, it was frequent to have ſubterraneous *communications* between one place and another.

Bridge of COMMUNICATION. See BRIDGE.

Lines of COMMUNICATION, in war, called alſo ſimply *lines*; are trenches ſix or ſeven feet deep, and twelve broad, made between one fort, or work, and another; deſigned for a ſafe paſſage between one quarter and another; eſpecially in ſieges. See *Tab. Fortification*, *fig.* 21, 22, &c.

COMMUNICATION *of idioms*, in *Theology*, the act of imparting the attributes of one of the natures in Jeſus Chriſt to the other.

The *communication of idioms* is founded on the ſuppoſed union of two natures in the perſon of Chriſt: by this *communication of idioms* it is, that ſome divines ſay, God ſuffered, died, &c. which is ſtrictly underſtood of the human nature; and ſignifies that God ſuffered in his humanity, that he died as to his human nature, &c.

The Lutherans carry the *communication of idioms* ſo far, as to ſay, that Jeſus Chriſt is not only in his divine nature, and by reaſon of his divine perſon, but alſo really and properly in his humanity, immortal, immenſe, &c.

COMMUNICATION *of motion*, that act of a moving body, whereby another body at reſt is put by it in motion, or a body already in motion is accelerated.

F. Malebranche looks on the *communication of motion* as ſomething metaphyſical; i. e. as not neceſſarily ariſing from any phyſical principles, or any properties of bodies, but flowing from the immediate agency of God: there being, according to him, no more connexion, or dependence, between the motion or reſt of one body, and that of another, than between the form, colour, magnitude, &c. of one body, and thoſe of another. The motion of one body, therefore, on his principle, is not any phyſical cauſe of that of another. See CAUSE.

The *communication of motion* reſults from, and is an evidence of the impenetrability and inertia of matter as ſuch: unleſs we admit the hypotheſis of penetrable matter, advanced by M. Boſcovich and Mr Michell, and aſcribe to the powers of repulſion thoſe effects which have been uſually aſcribed to its ſolidity and actual reſiſtance. See MATTER.

Laws of the COMMUNICATION *of motion*.—Action, and reaction, Sir Iſaac Newton demonſtrates, are equal and oppoſite; ſo that one body ſtriking againſt another, and thereby occaſioning a change in its motion, does itſelf undergo the very ſame change in its own motion, the contrary way. See MOTION.

Hence, a moving body ſtriking directly againſt another at reſt, the one loſes juſt as much of its motion as it *communicates* to the other; and they will proceed with the ſame velocity as if united into one maſs.

If, therefore, the body in motion be triple that at reſt againſt which it ſtrikes, it will loſe a fourth part of its motion; and whereas, before, it would have run over (v. g.) a line of twenty feet, in a given time, it will now only run over fifteen; i. e. it will loſe a fourth part of its velocity.

If the moving body ſtrike on another already in motion, the firſt will augment the velocity of the latter; but will loſe leſs of its own motion, than had the latter been abſolutely at reſt. Thus, v. gr. if a body in motion be triple of another at reſt, and ſtrike againſt it with thirty-two degrees of motion; it will *communicate* eight degrees of its motion to the other, and retain twenty-four to itſelf. If the other body had already four degrees of motion, the firſt would only *communicate* five, and retain twenty-ſeven; ſince thoſe five were ſufficient, on account of the inequality of the bodies, to make them proceed with equal velocity.

After the ſame manner may the other laws of *communication* of motion in bodies perfectly hard, and void of all elaſticity, be determined. But all hard bodies, that we know of, have an elaſtic power; and in elaſtic bodies, the laws are different, and much more intricate. See

Elasticity; and the laws of percuſſion in elaſtic bodies, ſee under Percussion.

If a body, when moved by another, happen to decline out of the way, ſo as to leave a free paſſage to the body whereby it was moved; yet, that will only proceed with the velocity which it had after its *communication* to the other, not with that it had before: it being a rule, that every thing endeavours to perſevere, not in the ſtate wherein it was formerly, but in that wherein it is at that juncture: therefore, a body which has already loſt part of its motion, by its meeting with another, may loſe ſtill more by a ſecond and a third, ſo as at length to become perfectly quieſcent.

Hence, firſt, if two unequal homogeneous bodies move in a right line with the ſame velocity, in a reſiſting medium, the greater muſt perſevere in motion longer than the ſmaller: for the motions of both bodies are as their maſſes; but each *communicates* of its motion to the circumjacent bodies which touch its ſurface, in proportion to the magnitude of its ſurface; the larger body, therefore, though it has more ſurface than the ſmaller, yet having leſs, in proportion to its maſs or quantity of matter, than the ſmaller, will loſe a leſs portion of its motion every moment than a ſmaller.

Suppoſe, e. gr. a cube, A, to be two feet every way, and another B, one foot: the ſurfaces here will be as four to one, but their maſſes as eight to one. If therefore thoſe bodies move with the ſame velocity, the cube A will have eight times as much motion as the cube B (the quantity of motion being ever as the quantity of matter). That each of them, therefore, may become quieſcent at the ſame time, the cube A muſt loſe eight times as much motion every moment as the cube B: but that is impoſſible, becauſe as their ſurfaces are to each other as four to one; the bodies againſt which they ſtrike, will only be as four to one: therefore, when the cube B is become perfectly quieſcent, A will have half its motion.

Hence, ſecondly, we ſee the reaſon why any long body, as a dart, thrown lengthwiſe, continues its motion longer than when thrown tranſverſly: it meeting fewer bodies in the way to *communicate* its motion to in the one caſe than in the other.

Hence alſo, thirdly, if a body be moved almoſt wholly within itſelf, ſo as to *communicate* little of its motion to the ambient bodies, it muſt continue its motion a long time. Thus, a ſmooth braſs ball of half a foot diameter, ſupported on a ſlender ſmooth axis, with a very weak impulſe, is found to revolve, for the ſpace of three or four hours.

Communication, *communicatio*, in *Rhetoric*. See Anacoinosis.

COMMUNION, in *Theology*, an uniform belief in ſeveral perſons; whereby they are united under one head, in one church. See Unity, Uniformity, &c.

In this ſenſe, the Lutherans, Calviniſts, &c. are ſaid to have been cut off from the Romiſh *communion*.

This is the primitive uſe of the word *communion*, as appears from the canons of the council of Elvira.

Though the term has been more extenſively applied to denote a general agreement in matters of doctrine, diſcipline, and worſhip. And unleſs the term be underſtood in this large ſenſe, ſo various are the opinions of men, there could be no *communion* among the members of any one church on earth.

Communion is alſo uſed for the act of *communicating* in, or participating of, the ſacrament of the eucharist.

The ſourth council of Lateran decrees, that every believer ſhall receive the *communion*, at leaſt, at Eaſter; which ſeems to import a tacit deſire, that they ſhould do it oftener; as, in effect, they did it much oſtener in the primitive days. Gratian, and the maſter of the ſentences, preſcribe it as a rule for the laity, to *communicate* three times a year, at Eaſter, Whitſuntide, and Chriſtmas. But in the thirteenth century, the practice was got on foot, never to approach the euchariſt except at Eaſter; and the council thought fit to injoin it then by a law, leſt their coldneſs and remiſſneſs ſhould go farther ſtill.

And the council of Trent renewed the ſame injunction, and recommended frequent *communion* without enforcing it by an expreſs decree.

In the ninth century, the *communion* was ſtill received by the laity in both kinds; or, rather, the ſpecies of bread was dipped in the wine, as is owned by the Romaniſts themſelves. Acta SS. Benedict. Sæc. III. M. de Marca obſerves, that they received it at firſt in their hands, Hiſt. de Bearn. and believes the *communion* under one kind alone to have had its riſe in the Weſt under pope Urban II. in 1096. at the time of the conqueſt of the Holy Land. And it was more ſolemnly enjoined by the council of Conſtance in 1414. The twenty-eighth canon of the council of Clermont injoins the *communion* to be received under both kinds, diſtinctly: adding, however, two exceptions; the one of neceſſity, the other of caution, *niſi per neceſſitatem, & cautelam*; the firſt in favour of the ſick, the ſecond of the abſtemious, or thoſe who had an averſion for wine.

It was formerly a kind of canonical puniſhment, for clerks guilty of any crime, to be reduced to *lay communion*, i. e. only to receive it as the laity did, viz. under one kind.

They had another puniſhment of the ſame nature, though under a different name, called *foreign communion*; to which the canons frequently condemned their biſhops, and other clerks. This puniſhment was not any excommunication, or depoſition; but a kind of ſuſpenſion from the function of the order, and a degradation from the rank they held in the church.

It had its name becauſe the *communion* was only granted to the criminal on the foot of a foreign clerk, i. e. being reduced to the loweſt of his order, he took place after all thoſe of his rank, as all clerks, &c. did in the churches to which they did not belong. The ſecond council of Agda orders every clerk that abſents himſelf from the church, to be reduced to foreign *communion*.

Infant **Communion**. Some inſtances occur in the early ages of the church, of the practice of adminiſtering the euchariſt to infants: and ſome few have imitated this practice in more modern times. Mr. Peirce pleads the uſe of it even to this day among the Greeks, and in the Bohemian churches till near the time of the Reformation; and he refers to the uſage of the ancient churches, recorded by Photius, Auguſtin, and Cyprian. He urges from Scripture the right which children have to all the privileges of which they are capable, as well as the Jewiſh children under the law, who were allowed to eat of the paſſover, and other ſacrifices. To which it has been anſwered, that the ſacrifices, of which they were allowed to partake, were chiefly peace-offerings, which became the common food of the family, and were not conſidered as acts of devotion in ſuch a degree as our euchariſt. He replies to the objection founded on the incapacity of infants to examine themſelves and diſcern the Lord's body, by obſerving, that the precept extends only to thoſe who were capable of underſtanding and complying with it; on the ſame ground that faith is required previous to baptiſm. Biſhop Bedell ſuggeſts the following enquiry relative to this ſubject: what neceſſity of baptiſing infants, if their baptiſm produces no effect till they come to years of diſcretion? To which he replies, though the moſt principal effect be not attained preſently, the leſs principal are not to be refuſed: ſo children were circumciſed, who could not underſtand the reaſon of it; and the ſame alſo did eat the paſſover: and ſo did children baptiſed, in the primitive church, communicate in the Lord's ſupper: which I know not why it ſhould not be ſo ſtill; *de quo alias.* It has been alleged, that the foundation of this practice was a miſtaken apprehenſion of the abſolute neceſſity of this ordinance in order to ſalvation, reſulting from an erroneous interpretation of John vi. 53. See Biſhop Bedell's Letter to Dr. Ward, in p. 442 of Archbiſhop Uſher's Life by Parr. Peirce's Eſſay on the Euchariſt. Wall's Hiſt. of Infant Baptiſm, part ii. cap. 9. § 15 and 16. Waterland's Review of the Doctrine of the Euchariſt, and preface to his two volumes of Poſthumous Sermons, p. 32, &c. and Inquiry concerning Infant Communion, vol. ii. p. 75, &c.

Communion *Service*, denotes that part of the liturgy of the church of England which relates to the adminiſtration of the ſacrament.

Communion-*table*. See Altar.

COMMUNIS *capſula*. See Capsula.

Communis *ductus choledochus*. See Ductus.

Communis *digitorum manus extenſor*. See Extensor.

Communis *labiorum depreſſor*. See Depressor.

Communis *labiorum elevator*. See Elevator.

Communis *miſericordia*. See Misericordia.

COMMUNITY, a ſociety or body of men united together under certain common laws, agreed on among themſelves, or impoſed by a ſuperior.

The Romans, who ſeem to have given the firſt hint of *communities* to the ſeveral nations into which their empire was divided, doubtleſs borrowed it from ſome rules of their neighbours: they called them *colleges*; which term, among them, had nearly the ſame ſignification with *community* among us.

Communities now are of two kinds, *eccleſiaſtic*, and *laic*: the firſt are either *ſecular*, as chapters of cathedral and collegiate churches; or *regular*, as convents, monaſteries, &c.

Lay communities are of various kinds; ſome contracted by a fixed abode of a year and a day in the ſame place;

others formed by the diſcharge of the ſame office, the profeſſion of the ſame art, or attending the ſame place of worſhip; as thoſe of pariſhes, fraternities, &c.

Accordingly, the word is commonly underſtood of pious foundations for the ſupport of ſeveral perſons, either in a ſecular or regular life; as *colleges*, *abbies*, *convents*, *priories*, *ſeminaries*, *hoſpitals*, *inns*, &c.

Community is more particularly uſed in the French law, for the joint property in goods between the huſband and the wife: the reſult of which is, that during marriage they are equally intitled to all effects, and liable to all debts, contracted either before or under marriage.

Community is a ſpecies of ſucceſſion, and the acceptance of *community* reſembles an *additio hæreditatis.*

Community was ſet on foot in favour of the wives, to enter them as ſharers in their huſbands effects.

In countries where the civil law obtains, this *community* has no place; nor even in ſeveral cuſtomary countries; as being reputed a burden on the man.

Anciently, the woman's ſhare in the *community* was only one third: and this appears ſtill the ſenſe of the law among us; the widow, at the deceaſe of her huſband, being only intitled to one third part of the moveables.

COMMUNITY *continued*, in the *French Law*, is that which ſubſiſts between the ſurvivor of two perſons joined in marriage, and the minor children of that marriage; when the ſurvivor has not made an inventory of the effects in poſſeſſion during marriage. The widow may either renounce *community* with her children, or continue it.

COMMUNITY *tacit*, is a *community* contracted between a man and woman, by the mere mingling of their effects; provided they have lived together the ſpace of a year and a day: this *community*, being odious, is now aboliſhed.

COMMUTATION, in *Aſtronomy*. *Angle of* COMMUTATION, is the diſtance between the ſun's true place ſeen from the earth, and the place of a planet reduced to the ecliptic. See PLACE.

Thus the angle ESR (*Tab. Aſtronomy*, *fig.* 25), ſubtended between the ſun's true place E, viewed from the earth at S, and that of a planet reduced to the ecliptic, R, is the *angle of commutation.*

The *angle of commutation*, therefore, is found by ſubtracting the ſun's longitude from the heliocentric longitude of the planet R; or contrarily.

COMMUTATION, in *Law*, a change of a penalty, or puniſhment, viz. of a greater for a leſs, &c. as when death is commuted for, by baniſhment or perpetual impriſonment, &c.

Some doubt whether the word be properly applied to any change but that of puniſhment: others will have it indifferently ſerve for the exchanging, or trucking of any thing.

COMORTH, in our *Statutes*, is uſed for a contribution or ſubſidy. It is ſaid to be derived from the Britiſh *cymorth*, *ſubſidium.*

The ſtat. 4 Hen. IV. cap. 27. and Hen. VIII. cap. 6. prohibit the levying any ſuch in Wales, or the Marches.

It is ſaid this *comorth* was gathered at marriages, and when young prieſts ſaid their firſt maſſes, and ſometimes for redemption of murders or felonies.

COMOSANDALOS, in *Antiquity*, a crown of flowers worn in the feſtival CHTHONIA.

COMPACT, in *Phyſics*, is a relative term, denoting a body to be cloſe, denſe, and heavy; having few pores, and thoſe ſmall ones.

The heavieſt metals, as gold and ſilver, are the moſt *compact.* See GRAVITY.

COMPACT, in a *Legal Senſe*, ſignifies an agreement, or a contract, ſtipulated between ſeveral parties. See CONTRACT.

COMPACT is alſo the name of a celebrated bull, confirmed by pope Paul IV. relating to the cardinals.

In virtue of the bull of *compacts*, cardinals can only confer benefices in their natural ſtate; i. e. regular benefices on regulars.

COMPAGES *circularis montium*, a term deviſed by Kircher to expreſs what he in other places calls the annularity, or annular diſpoſition of MOUNTAINS, which he ſays run in continued chains, forming belts or ridges in the manner of ſpines, all round the globe of the earth, from north to ſouth, and ſo on from that point to north again, and in the ſame manner from eaſt to weſt, and from weſt to eaſt again.

COMPAGUS, in *Antiquity*, a kind of ſummer-ſhoe worn by the Roman ſenators, conſiſting only of a ſole at the bottom; it was faſtened with leathern ſtraps, croſſing one another many times about the leg.

Rubenius makes the *compagi* to have been a ſort of caligæ worn by the Roman generals as well as ſenators. Under the later emperors, in the middle age, we read of the ſame worn by popes, biſhops, and abbots.

COMPANY, a collective term, underſtood of ſeveral perſons aſſembled together in the ſame place, or with the ſame deſign. See SOCIETY.

The word is formed of the French *compagnie*, and that of *companio*, or *companies*, which, Chifflet obſerves, are found in the Salic law, tit. 66. and are properly military words, underſtood of ſoldiers, who, according to the modern phraſe, are comrades, or meſs-mates, i. e. lodge together, eat together, &c. of the Latin *cum*, *with*, and *panis*, *bread.* It may be added, that in ſome Greek authors under the Weſtern empire, the word κυμπανια occurs in the ſenſe of *ſociety.*

COMPANY, in *Commerce*, is an aſſociation of ſeveral merchants, or others, who unite in one common intereſt, and contribute by their ſtock, their counſel, and ſtudy, to the ſetting on foot, or ſupporting, of ſome lucrative eſtabliſhment.

Though *company* and ſociety, or fellowſhip, be, in effect, the ſame thing, yet cuſtom has made a difference between them; ſociety, or partnerſhip, being underſtood of two, or three dealers, or not many more; and *company* uſually of a greater number. See SOCIETY.

A ſecond difference between *companies* and ſocieties is, that the firſt, eſpecially when they have excluſive privileges, cannot be eſtabliſhed without the conceſſion of the prince; and need letters patent, charters, &c.

Whereas, for the latter, the conſent of the members, fixed and certified by acts and contracts; and authorized by bye-laws, is ſufficient.

The ſeveral profeſſions and trades exerciſed in the city of London, being incorporated into diſtinct fraternities, governed by their particular laws, a tabular view of them may not be unacceptable.

The abſtract of their incorporations, and particular privileges, is taken from the records of the Tower, &c. and from the Firma-Burgi of Madox, the king's hiſtoriographer; the account of their charities from thoſe eminent hiſtorians Stow and Strype; and the number of the liverymen, with their fines on admiſſion, is taken from the returns to the clerk of the parliament, and the ſcrutiny-books made after the ſeveral polls for the magiſtrates and repreſentatives of the city.

The companies are here placed according to their precedence, beginning with the twelve principal ones, of one or other of which the lord mayors have generally made themſelves free at their election, if they were not ſo before; for they are not only the oldeſt, but the richeſt, many of them having had the honour of kings and princes to be their members, and the apartments of their halls being fit to entertain a monarch.

	Companies.	Halls.	Incorporated by	A. D.	Livery men.	Livery fines			Charitable Gifts, paid yearly, and Privileges, &c.	
						l.	*s.*	*d.*	*l.*	
1	Mercers	Cheapſide	Richard II.	1393	232	2	13	4	3000	Excluſive of 20 per cent. paid yearly to the widows of ſubſcribing clergymen during life, purſuant to a propoſal accepted in 1698, when they ſettled a fund of 14,000 l. a year for that purpoſe.
2	Grocers	Poultry, Groc. alley	Edward III.	1345	127	20	0	0	700	
3	Drapers	Throgmorton-ſtr.	Henry VI.	1439	140	25	0	0	4000	
4	Fiſhmongers	Thames-ſtreet	Henry VIII.	1536	140	13	6	8	800	
5	Goldſmiths	Foſter-lane	Richard II.	1393	198	20	0	0	1000	They had a privilege from Ed. IV. to inſpect, try, and regulate all gold and ſilver wares throughout the kingdom, and to puniſh all workers in either that was adulterated.
6	Skinners	Dowgate-hill	Edward III.	1327	137	15	0	0	700	
7	Merchant Taylors	Threadneedle-ſtr.	Edward IV.	1466	394	20	0	0	2000	They were once ſtyled taylors and linen-armourers.
8	Haberdaſhers	Maiden-lane	Henry VI.	1407	342	25	0	0	3500	Were anciently ſtyled Milaners, becauſe they dealt in moſt that came from Milan.
9	Salters	Swithin's-lane	Q. Elizabeth	1558	190	20	0	0	500	

Companies.	Halls.	Incorporated by	A. D.	Livery men.	Livery fines.			Charitable Gifts, paid yearly, and Privileges, &c.	
					l.	s.	d.	l.	
10 Ironmongers	Fenchurch ſtreet	Edward IV.	1464	100	31	10	0	1800	In 1724, Mr. Betton, a Turkey merchant, left 26,000 *l.* in truſt; one moiety of the profits of it to be always applied to the ranſom of Britiſh captives from Mooriſh ſlavery; the other for the poor of the company, and to the charity-ſchools in the city and its liberty.
11 Vintners	Thames-ſtreet	Henry VI.	1437	194	31	13	4	600	
12 Clothworkers	Mincing-lane	Edward IV.	1482	154	31	10	0	1400	
13 Dyers	Elbow-lane	Edward IV.	1472	147	15	0	0		
14 Brewers	Addle-ſtreet	Henry VI.	1438	108	6	13	4		
15 Leatherſellers *	Little St. Helens	Henry VI.	1442	156	20	0	0		* Hen. VII. made their wardens inſpectors of ſheep, lamb, and calves leather throughout the kingdom.
16 Pewterers ‡	Lime-ſtreet	Edward IV.	1474	78	20	0	0		‡ By act of Parl. 25 Hen. VIII. their wardens had the inſpection of pewter throughout England.
17 Barber-ſurgeons †	Monkſwell-ſtreet	Edward IV.	1461	322	10	0	0		† In the reign of Hen. VIII. the ſurgeons of this company, then but 19, were exempted by parliament from ward and pariſh-offices, and from military ſervice. They were incorporated ſeparately by 18 Geo. II. cap. 15. and the company of ſurgeons have an elegant hall in the Old Bailey, with a theatre for the diſſection of human bodies.
18 Cutlers	Cloak-lane	Henry V.	1417	110	10	0	0		
19 Bakers	Harp-lane	Edward II.	1307	195	10	0	0		
20 Wax-chandlers	Maiden-lane	Richard III.	1483	113	5	0	0		
21 Tallow-chandlers	Dowgate-hill	Edward IV.	1463	170	15	0	0		
22 Armourers §	Coleman-ſtreet	Henry VI.	1423	80	15	0	0		§ The braſiers are united to this company.
23 Girdlers ‖	Baſinghall-ſtreet	Henry VI.	1449	77	5	0	0		‖ Q. Eliz. incorporated the pinners and wire-drawers with them.
24 Butchers †	Pudding-lane	James I.	1615	214	11	11	0		† This is an ancient fraternity; of which we have an account in the reign of Henry II. A. D. 1180.
25 Sadlers	Cheapſide	Edward I.		70	10	0	0		
26 Carpenters	London-wall	Edward III.	1344	100	8	0	0		
27 Cordwainers	Diſtaff-lane	Henry IV.	1410	174	10	0	0		
28 Painter-ſtainers	Little Trinity-lane	Q. Elizabeth	1582	124	14	0	0		
29 Curriers	Near Cripplegate	James I.	1605	103	9	13	4		
30 Maſons	Baſinghall-ſtreet	Charles II.	1677	70	5	0	0		
31 Plumbers	Near Dowgate-hill	James I.	1611	57	10	0	0		
32 Innholders	Elbow-lane	Henry VIII.	1515	139	10	0	0		
33 Founders **	Lothbury	James I.	1614	132	8	0	0		** All braſs weights made in London, or three miles from it, muſt be ſized with the company's ſtandard, and have their mark; the averdupois to be ſealed at Guildhall, and the troy at goldſmith's hall. And the company are impowered by charter to view and ſearch all braſs weights, and braſs and copper wares made within the ſaid diſtrict.
34 Poulters	No hall	Henry VII.	1504	106	10	0	0		
35 Cooks	Hall burnt	Edward IV.	1480	78	10	0	0		
36 Coopers	Baſinghall-ſtreet	Henry VII.	1501	244	15	0	0		
37 Tylers and bricklayers	Leadenhall-ſtreet	Q. Elizabeth	1568	103	12	0	0		
38 Bowyers	No hall	James I.	1620	30	8	0	0		
39 Fletchers ¶	St. Mary Axe	No charter		25	10	0	0		¶ It is only a company by preſcription.
40 Blackſmiths	Lambeth-hill	Q. Elizabeth	1577	220	8	0	0		
41 Joyners and cielers	Thames-ſtreet	Q. Elizabeth	1569	323	8	0	0		
42 Weavers	Baſinghall-ſtreet	Henry II.		279	6	0	0		
43 Woolmen	No hall	No charter		No livery; but they have a maſter, 2 wardens, and 11 aſſiſtants. They are only a company by preſcription, yet ſuppoſed to have commenced with the wool-trade.					
44 Scriveners	No hall	James I.	1616	53	5	0	0		
45 Fruiterers	No hall	James I.	1605	63	5	0	0		
46 Plaiſterers	Addle-ſtreet	Henry VII.	1501	77	8	0	0		
47 Stationers ††	Ludgate-ſtreet	Phil. & Mary	1557	294	20	0	0		†† This company, which alſo includes bookſellers, letter-founders, printers, and bookbinders, have a ſtock which is employed in printing almanacks, primers, pſalters, ſchool-books, &c. of which they have the ſole privilege, by virtue of a grant from the crown. This ſtock conſiſts of ſhares, which are diſtributed in different proportions among thoſe who have fined for, or ſerved the office of renter-wardens: whoſe ſhares, if they die married, devolve to their widows. They pay above 200 l. a year in penſions and other charities. They are likewiſe truſtees for the diſpoſal of the conſiderable legacies of Mr. William Bowyer, a learned printer, (who died Nov. 18, 1778) conſiſting of 30 l. a year to the moſt learned journeyman that can be met with; and 180 l. a year in annuities of 20 l. each to nine neceſſitous printers of ſixty-three years of age or upwards.
48 Broderers	Gutter-lane	Q. Elizabeth	1591	115	5	0	0		
49 Upholders	No hall	Charles I.	1627	131	4	10	0		
50 Muſicians	No hall	James I.	1604	308	10	0	0		
51 Turners	College-hill	James I.	1604	144	8	0	0		
52 Baſket-makers	No hall	No charter		No livery; yet a company by preſcription, governed by 2 wardens and 48 aſſiſtants, with this motto to its arms, *Let us love one another.*					
53 Glaſiers ‖	No hall	Charles I.	1637	91	3	0	0		‖ The glaſs-painters are incorporated with them.
54 Horners	No hall	Charles I.	1638	No livery; yet they have a maſter, 2 wardens, and 9 aſſiſtants, with a warehouſe in Spital-fields; where they divide in lots, among themſelves, ſuch horns as are bought up by their members in Leadenhall and other markets: And in 1465, they obtained an act of parliament that none ſhould be exported, but ſuch as they refuſed.					
55 Farriers	No hall	Charles II.	1673	76	5	0	0		
56 Paviours	No hall	No charter		No livery; yet it is a fellowſhip by preſcription, with 3 wardens, and 25 aſſiſtants.					
57 Loriners	London-wall	Q. Anne	1712	69	10	0	0		
58 Apothecaries	Blackfryars	James I.	1617	144	16	0	0		They are exempt from ward and pariſh-offices, and have a ſpacious phyſic-garden at Chelſea; which in 1721 was granted to the company for ever by Sir Hans Sloane, Bart. the lord of the manor, on condition of their paying a quit-rent of 5 l. and continue it always as a phyſic-garden, and of preſenting every year to the Royal Society fifty ſamples of different ſorts of plants, there grown, till they amount to two thouſand.—The latter of theſe conditions hath been long ſince more than completed.
59 Shipwrights	No hall	James I.	1605	No livery; yet they have a maſter, 2 wardens, and 16 aſſiſtants.					
60 Spectacle-makers	No hall	Charles I.		No livery; yet have a maſter, 2 wardens, and 15 aſſiſtants.					
61 Clock-makers	No hall	Charles I.	1632	50	10	0	0		
62 Glovers	No hall	Charles I.	1638	130	5	17	4		
63 Comb-makers	No hall	Charles I.	1636	No livery; yet have a maſter, 2 wardens, and 13 aſſiſtants.					
64 Felt-makers	No hall	James I.	1604	60	5	0	0		
65 Framework-knitters	Red croſs-ſtreet	Charles II.	1663	58	10	0	0		
66 Silk-throwers	No hall	Charles I.	1630	No livery; yet have a maſter, 2 wardens, and 20 aſſiſtants.					
67 Silkmen	No hall	Charles I.	1631	No livery; yet have a governor, and 20 aſſiſtants.					
68 Carmen, have no hall, nor charter, nor livery; but are a fellowſhip by act of common council, with the title of Free Carmen of the city of London, and have a maſter, 2 wardens, and 41 aſſiſtants, under the direction of the lord mayor and aldermen. The carts that belong to this fellowſhip, which are betwixt 4 and 500, are, by an act of common council, ſubjected to the rule of the preſident and governors of Chriſt's Hoſpital; to whom the owners of every cart pay 17 s. 4 d. a year for a licence to work it, and every cart is brought to the hoſpital to have a number in braſs put upon it.									
69 Pin-makers	No hall	Charles I.	1636	No livery; yet have a maſter, 2 wardens, and 18 aſſiſtants.					
70 Needle-makers	No hall	O. Cromwell	1656	110	5	5	0		

	Companies.	Halls.	Incorporated by	A.D.	Livery men.	Livery fines. l. s. d.	Charitable Gifts paid yearly, and Privileges, &c.
71	Gardeners	No hall	James I.	1616			No livery; yet have a maſter, 2 wardens, and 18 aſſiſtants.
72	Soap-makers	No hall	Charles I.	1630			No livery; yet have a maſter, 2 wardens, and 18 aſſiſtants.
73	Tin-plate-workers	No hall	Charles II.	1670	60	10 0 0	
74	Wheelwrights	No hall	Charles II.	1670	100	15 15 0	
75	Diſtillers	No hall	Charles I.	1638	122	13 6 8	
76	Hatband-makers	No hall	Charles I.	1638			Incorporated with the company of Needle-makers.
77	Patten-makers	No hall	Charles II.	1670	46	6 0 0	
78	Glaſs-ſellers and looking-glaſs-makers	No hall	Charles II.	1664	44	5 0 0	
79	Tobacco pipe-makers	No hall	Charles II.	1663			No livery; yet have a maſter, 2 wardens, and 18 aſſiſtants.
80	Coach and harneſs-makers	Noble-ſtreet	Charles II.	1677	104	10 0 0	
81	Gun-ſmiths	No hall	Charles I.	1638	100	10 0 0	
82	Gold and ſilver wire-drawers	No hall	James I.	1623			No livery; yet have a maſter, 2 wardens, and 18 aſſiſtants.
83	Long bow-ſtring-makers	No hall	No charter				No livery; yet a company by preſcription, and have 2 wardens, and 19 aſſiſtants.
84	Card-makers	No hall	Charles I.	1629			No livery; yet have a maſter, 2 wardens, and 18 aſſiſtants.
85	Fan-makers	No hall	Q. Anne	1709			No livery; yet have a maſter, 2 wardens, and 20 aſſiſtants.
86	Woodmongers, were a company incorporated with the carmen by K. James I. 1605, but ſurrendered their charter in 1668; yet by an act of common council in 1694, they obtained a privilege of keeping 120 carts, excluſive of the number kept by the carmen, *extinct*						
87	Starch-makers, *extinct*	No hall	James I.	1622			
88	Fiſhermen, *extinct*	No hall	James II.	1687			
89	Pariſh-clerks	Woodſtreet	Henry III.	1233			By a decree of the Star-chamber court in 1625, they obtained a privilege to keep a preſs in their hall, for printing the weekly bills of mortality, by a perſon appointed by the archbiſhop of Canterbury They are, by their charter, to make a report of all the weekly chriſtenings and burials in their ſeveral pariſhes every Tueſday; and they have a maſter, 2 wardens, and 17 aſſiſtants.

90 Porters, are another fellowſhip, without hall, or livery; conſiſting of tackle and ticket-porters. They were conſtituted a fraternity by act of common council in 1646, with a power of annually chuſing from among themſelves twelve rulers, being ſix of each denomination. However, the court of lord mayor and aldermen, have reſerved to themſelves a power of appointing one of their own body, as the chief judge in all controverſy. One very laudable cuſtom of the maſter tackle-porters is, that ſuch of their brethren as happen to be diſabled from working, receive their ſhare of all profits, as if actually in buſineſs, during life.

91 The watermen, wherrymen, and lightermen of this city and neighbouring places, were by act of K. William III. conſtituted a ſociety, or company, under the direction of the lord mayor and aldermen. They are to furniſh 1000 men for the navy, upon demand by the admiralty. They have a hall at Coal Harbour, near the Thames; and pay to their poor about 800l. a year; chiefly raiſed by ferries over the Thames on Sunday.

N. B. The company of Surgeons, Pariſh-clerks, Porters, and Watermen have not the privilege of making their members freemen of the city of London.

From the foregoing liſt, it appears on the whole, that there are ninety-one *companies*, forty-eight halls, and that the number of liverymen, according to the moſt exact account that could be procured, in 1779, is 8954. The ſums of money yearly diſtributed in charity by only twenty-three of the *companies*, amounts to 23655 l. and if but forty pounds each be annually given by the remaining ſixty-eight *companies* the whole will be no leſs than 26,375 l. *per annum*.

COMPANY, *New-River*. This corporation conſiſts of a governor, deputy-governor, treaſurer, and twenty-ſix directors, who hold a weekly board for appointing officers, granting leaſes, and redreſſing grievances. The projector of this CANAL for bringing water to London, with the aſſiſtance of king James I. and the corporation of London, is ſuppoſed to have expended 50,000 l. upon it; the profits, which are divided into ſeventy-two ſhares, for the firſt thirty years admitted of little more than five pounds to each ſhare: but their value is much increaſed, and now eſtimated at four or five thouſand pounds each. This *company* ſupplies more than thirty thouſand houſes with water.

COMPANY ſeems more peculiarly appropriated to thoſe grand aſſociations, ſet on foot for the commerce of the remote parts of the world; as the Engliſh and Dutch Eaſt India *company*, South Sea *company*, Miſſiſſippi *company*, &c. The riſe and eſtabliſhment whereof, we ſhall here ſet before the reader.

However injurious *companies* with joint ſtock, and incorporated with excluſive privileges, may, at this time be reckoned to the nation in general; it is yet certain that they were the general parent of all our foreign commerce: private traders being diſcouraged from hazarding their fortunes in foreign countries, until the method of traffic had been firſt ſettled by joint-ſtock *companies*. From this principle it is, that we find ſeveral nations that are now endeavouring to improve their trade, and to eſtabliſh or increaſe maritime power, by the means of joint-ſtock *companies*.

But ſince the trade of this kingdom, and the number of traders have increaſed, and the methods of aſſurance of ſhipping and merchandiſe, and the navigation to all parts of the known world have become familiar to us; theſe companies, in the opinions of moſt men, have been looked upon in the light of monopolies: their privileges have therefore been leſſened from time to time, in order to favour a free and general trade; and experience has ſhewn, that the trade of the nation has advanced, in proportion as monopolies have been diſcouraged.

COMPANIES *Engliſh*.—*Eaſt India* COMPANY was formed towards the latter end of the reign of queen Elizabeth; their charter being dated in 1600, and renewed by James I. in 1610.

Their firſt fleet, ſent out in 1600, brought back ſo rich a cargo, that in a few years they numbered twenty ſhips. King James I. to ſhew how much he had its intereſt at heart, ſent ſeveral embaſſies to the great Mogul, the kings of Perſia, Japan, and other princes, to make treaties of commerce in his name, and that of the *company*; ſome of which ſubſiſt ſtill: the king of Perſia, in particular, granted the *company* ſeveral extraordinary favours, in recompence for the ſervice the Engliſh had done him, in aſſiſting him to expel the Portugueſe from Ormus; who, by means of their lodgment there, uſurped the whole commerce of the Perſian gulph.

But its chief favours the *company* received at the hands of king Charles II. who, by a charter granted in 1668, granted them the port and iſland of Bombay, with all the rights thereof as ſurrendered to him by the Portugueſe: only reſerving to himſelf the ſovereignty and homage thereof, with a yearly acknowlegement of ten pounds *per ann.* in gold. Another charter, confirming preceding ones, was granted in 1676. In 1673 he alſo granted them, in like manner, the iſland of St. Helena, belonging to him by right of conqueſt from the Dutch, who had before taken it from the Engliſh. By a fifth charter, purpoſely deſigned againſt interlopers, in 1683, he granted them a power to erect a court of judicature, compoſed of a lawyer, and two merchants, in all their places, ſettlements, factories, &c. to judge of ſeizures, and all marine diſputes; as alſo about bargains, exchanges, &c. and even of all crimes committed on the high ſeas, or in the countries and territories of the *company*, in Aſia, Africa, and America; the whole, however, agreeable to the uſages and cuſtoms of merchants, and the laws of England. In 1671, the ſame prince granted the *company* a charter, which contained a confirmation of the ancient ones of king James I. and queen Elizabeth; or rather, a new charter, granting them abundance of privileges, which they had not before enjoyed: this charter is properly the baſis of the *company*, and that whereon are founded all the rights, and the policy of the *new company*, afterwards eſtabliſhed in 1698.

All theſe five charters of king Charles II. were confirmed by king James II. in 1686, eſpecially the laſt, which was enforced with new ſanctions; particularly, the article of excluſion; which, in the time of king Charles, had been but little regarded, but was now enforced with ſuch rigorous prohibitions, that all interlopers ſeemed for ever excluded.

No perſon may trade thither, until ſufficient ſecurity be given to the commiſſioners of the cuſtoms, that all the goods cauſed by them to be there laden, ſhall be brought, without breaking bulk, to ſome port in England: which ſecurity the Engliſh Eaſt India *company* are to give under their common ſeal, after the rate of 2500*l.* for every hundred tons they are let at, for every ſhip by them ſent out, according to the form preſcribed, 9 and 10 W. III. cap. 44. ſect. 68. 6 Anne, cap. 3. ſect. 1.

The ſhares, or ſubſcriptions of the *company*, were originally only of 50*l.* ſterling: but the directors, having a conſiderable dividend to make in 1676, it was agreed to join the profit to the original, inſtead of withdrawing it; and thus the ſhares were doubled, and became of 100*l.* ſterling.

The firſt capital was only 369,891*l.* ſterling, and 5*s.* which, being thus doubled, amounted to 739,782*l.* ſterling, and 10*s.* to which, if the profits of the *company* to the year 1685, viz. 963,639*l.* ſterling be added, the whole ſtock will be 1,703,422*l.* ſterling.

The *company* had, from time to time, undergone great loſſes; firſt, in 1682, by the loſs of Bantam, out of which they were driven, and had their magazines plundered by the Dutch; under pretence of aſſiſting ſultan Agui againſt ſultan Agom, his father. Secondly, about the ſame time, when the great numbers of interlopers, to whom king Charles II. too eaſily granted permiſſions, lowered their ſhares *cent. per cent.* Thirdly, by the war, which the *company* maintained in the Indies, againſt the great Mogul; wherein it was obliged to abandon the factory of Surat, and to retire to Bombay; on which occaſion king James II. granted them a new charter in 1686, being their ſixth ſince the Reſtoration. But ſtill ſhe repaired her ſtock, and ſupported the reputation of her commerce, till the revolution which happened ſoon after: when the war, and the incredible loſſes the *company* ſuſtained by the French privateers, &c. put it into ſo deſperate a condition, that appearing ſcarce poſſible to be ſupported, a new one was erected.

The charter of the new Eaſt-India *company* was of the year 1698. Its ſtock was ſo conſiderable, and the ſubſcriptions ſo very ready, that, in two years time, the *company* had forty veſſels equipped in its ſervice; which was double of what the old one ever had; and ſent to the Indies (*communibus annis*) at leaſt a million ſterling in ſilver; whereas the former had never ſent above 500,000*l.*

After the two *companies* had ſubſiſted a few years in a ſeparate ſtate, means were contrived to unite them, which was effected by an indenture tripartite, between the queen and the two *companies*, in 1702, and they were perfectly conſolidated in 1708, when a new charter of union was granted them, under the name of the *United Company of Merchants of England trading to the Eaſt-Indies*; their whole capital conſiſting of 3,200,000*l.* which being ſince expired, another charter, with new powers, was granted them in 1726, and their excluſive privileges prolonged for thirty-three years, in 1730, viz. to 1769; and it was continued, in the 17th year of Geo. II. to the year 1780, in which year another million was advanced by this *company* to the public.

The cargo which the *company* ſends to the Eaſt-Indies, is chiefly ſilver, bullion, and pieces of eight; with cloth, either ſcarlet or blue; they alſo ſend ſome iron, and lead.

The returns from the Indies are chiefly ſilks, both raw and manufactured, cottons, callicoes, muſlins, drugs, tea, coffee, china-ware, rice, ſago, red wood, ſalt-petre, pepper, Carmania wool, indigo, &c.

For the œconomy and policy of the *United Company*, all perſons, without exception, are admitted members of it, natives and foreigners, men and women; with this circumſtance, that 1000*l.* in the ſtock of the *company* gives the owner a vote in the general courts; and 2000*l.* qualifies him to be choſen a director.

The directors are twenty-four in number, including the chairman and deputy-chairman, but may be re-elected for four years ſucceſſively. They have a ſalary of 150*l.* *per ann.* and the chairman and deputy-chairman of 200*l.* The meetings, or courts of directors, are to be held, at leaſt, once a week, but are commonly oftener; and they are ſummoned as occaſions require.

Out of the body of directors are choſen divers committees, who have the peculiar inſpection of certain particular branches of the *company's* buſineſs; as, the committee of correſpondence, committee of buying, committee of treaſury, committee of warehouſes, committee of ſhipping, committee of accounts, committee of private trade, committee of houſe, committee of law-ſuits, committee of military fund, and committee to prevent the growth of private trade.

No perſons are allowed to have any private trade, except the *company's* officers, and ſeamen ſent to India on board their ſhips; who are regularly licenſed to carry out, and bring back commodities to a certain value, greater or leſs, according to their rank. But at their return, their cargoes are to be conſigned to the *company*, and ſold by them at their next ſale. The Jews alſo, and others dealing in diamonds, are allowed to trade for themſelves by the *company's* ſhips, on allowing ſo much *per cent.* to the *company* for freight.

The *company* has three principal ſettlements, viz. Fort William in Bengal; Fort St. George, on the coaſt of Coromandel; and the iſland of Bombay; each of which has ſeveral ſubordinate factories.

The factories dependent on Fort William, are Caſſimbuzar, Patna, Dacca, Ballaſore, and Jugdea.—Thoſe on Fort St. George, are Fort Marlborough, Fort St. David, Vizagapatam, Ingeram, and Madipollam.—Thoſe on the iſland of Bombay, are Gombroon, Surat, Anjingo, and Tellicherry.

COMPANY, *Royal African*, eſtabliſhed for the commerce of the coaſts of Guinea, is governed much like that of the Eaſt-Indies. Its privilege is excluſive: it ſends out yearly, ten or a dozen ſhips, of about 150 tons, loaden with old and new draperies, and with iron-works, ſciſſars, knives, muſquets, cottons, and other leſs conſiderable merchandizes.

The returns are in gold-duſt, elephants teeth, wax, and leathers: but the beſt article of its commerce is NEGROES, which it ſends to Jamaica, Barbadoes, and other Engliſh iſles in America; frequently, even to the ports of New Spain. See ASSIENTO, &c.

Though England began to trade to Africa as early as the year 1536, and ſeveral voyages were made to Guinea in 1588, and ſome following years, for the importation of gold and elephants teeth, nothing like a *company* was formed till the year 1588, when queen Elizabeth granted a patent of excluſive privilege to certain perſons for ten years. In 1618, king James I. eſtabliſhed a *company* by charter, which was ſoon diſſolved. Another *company* was erected by charter of Charles I. in 1631, which met with little ſucceſs; but the demand for negroes in the Engliſh American plantations increaſing, a third *company* was eſtabliſhed by a charter granted 1662, in favour of the duke of York; ſecuring to him the commerce of all the country, coaſts, iſlands, &c. belonging to the crown of England, or not poſſeſſed by any other Chriſtian prince; from Cape Blanco in 20° N. lat. to the Cape of Good Hope in 34° 30′ S. lat. The charter was ſoon after returned into the king's hands by the duke, and revoked, by conſent of the parties aſſociated with him in the enterprize; in conſequence of which, the fourth and laſt excluſive *company* was eſtabliſhed and incorporated by letters patent in 1672. A capital was ſoon raiſed of 111,000*l.* and this new *company* improved their trade, and increaſed their forts; but after the Revolution in 1689, this trade was laid open. In 1698, all private traders to Africa were obliged by ſtat. 9 and 10 Will. to pay ten *per cent.* in order to aſſiſt the *company* in maintaining their forts and factories. However, this aſſiſtance proving ineffectual, an annual ſum of 10,000*l.* was granted by the Britiſh parliament in 1730, for this purpoſe. In 1758, parliament eſtabliſhed an African *company* under new regulations; and in 1752, abſolutely, the old *company*, having given them a pecuniary ſatisfaction for their charter, lands, forts, ſlaves, &c. and veſted their forts and factories, &c. in the new *company*, which is impowered to arm and train military forces at their forts, and to puniſh offences, ſo as not to extend to life or limbs, and to erect courts of judicature for mercantile and maritime bargains, &c.

The direction of the affairs of this *company* is referred to a committee of nine perſons, choſen annually by the freemen at London, Briſtol, and Liverpool, who purchaſe their freedom, and right of election, by the payment of 40*s.* and accountable to the board of trade and plantations.

For the incorporation of this *company*, and the regulations concerning it, ſee 23 Geo. II. cap. 31—25 Geo. II. cap. 40.

COMPANY, *Hamburgh*, is the oldeſt trading eſtabliſhment in the kingdom; though not always known by that name, nor reſtrained to thoſe narrow bounds under which it is now confined. It was firſt called, the *Company of Merchants trading to Calais, Holland, Zealand, Brabant, and Flanders:* then it acquired the general title of *Merchant-adventurers of* England; as being compoſed of all the Engliſh merchants who traded to the Low Countries, the Baltic, and the German ocean. Laſtly, it was called the *Company of Merchant-adventurers of England trading to Hamburgh.*

This *company*, as well as ſome others in England, built on its model, is very different from thoſe above mentioned; and differs widely from the ordinary plan and ſyſtem of ſuch ſocieties. In effect, this is not a ſociety of dealers, each furniſhing a part of the ſum to conſtitute the capital ſtock of the *company*; but a mere aſſociation, or body of merchants, who have nothing in common, but the grant and privilege of trading to Hamburgh, and ſome other cities of Germany; each managing his own commerce, and trading on his own foundation: only obſerving a certain diſcipline, and ſome regulations, which none but the *company* can eſtabliſh, or change.

This *company* was firſt incorporated by Edward I. in 1296; and eſtabliſhed again, by charter, in 1406, under the reign of king Henry IV. It was afterwards confirmed, and augmented with divers privileges, by many of his ſucceſſors; among the reſt, by Henry V. in 1413; Henry VI. in 1422; Henry VII. in 1493, 1505, and 1506; Henry VIII. in 1509, 1517, and 1536; Edward VI. in 1547; queen Mary, in 1553; Elizabeth, in 1564, and 1586; James I. in 1605; and Charles II. in 1661. But of all theſe charters, there are, properly, none but thoſe of Henry IV. Henry VII. Elizabeth, James, and Charles, that are of any importance, or that give the *company* any thing new; the reſt being only confirmations. Before the charter of Henry IV. all the Engliſh merchants, who trafficked out of the realm, were left to their own diſcretion, and managed their affairs with foreigners, as might be moſt for their reſpective intereſts; without any regard to the general commerce of the nation.

Henry, obſerving this diſorder, endeavoured to remedy it, by uniting all the merchants in his dominions into one body; wherein, without loſing the liberty of trading each for himſelf, they might be governed by a *company* ſtill ſubſiſting; and be ſubject to regulations, which ſhould ſecure the general intereſt of the national commerce, without prejudice to the intereſt of particulars. With this view, he granted all the merchants of his ſtates, particularly thoſe of Calais, then in his hands, a power of aſſociating themſelves into a body politic, with directors and governors, both in England and abroad; to hold aſſemblies, both for the direction of buſineſs, and the deciding of controverſies among merchants; make laws; puniſh delinquents; and impoſe moderate duties and taxes on merchandizes, and merchants, to be employed in the ſervice of the corporation.

Theſe few articles of the charter of Henry IV. were afterwards much augmented by Henry VII. who firſt gave them the title of *Merchant-adventurers to Calais, Holland,* &c. gave them a power of proclaiming and continuing free fairs at Calais; and ordered, that to be reputed a member of the ſociety, each perſon pay twenty marks ſterling; and that the ſeveral members ſhould attend the general meetings, or courts, appointed by the directors, whether at London, Calais, or elſewhere.

The inexecution of this laſt article, and contempt of ſome of the reſt, occaſioning great inconveniences to the *company's* affairs, another charter was procured; whereby the pain of impriſonment was menaced, for thoſe who ſhould abſent themſelves from the meetings without lawful cauſe, or ſhould diſobey the laws. A petition being made to queen Elizabeth, in 1564, for an explanation of certain articles in the charter of Henry VII. and a confirmation of the reſt granted by other kings; that princeſs, by a charter of the ſame year, declares, that to end all diſputes, they ſhall be incorporated anew, under the title of the *Company of Merchant-adventurers of England*; that all who were members of the former *company* ſhould, if they deſired it, be admitted members of this; that they ſhould have a common ſeal; that they ſhould admit into their ſociety what other perſons, and on what terms, they pleaſed; and expel them again on miſbehaviour; that the city of Hamburgh, and neighbouring cities, ſhould be reputed within their grant, together with thoſe of the Low Countries, &c. in that of the former *company*; that no member ſhould marry out of the kingdom, nor purchaſe lands, &c. in any city beyond ſea; and that thoſe who do, ſhall be, *ipſo facto*, excluded for ever.

Twenty-two years after this firſt charter, queen Elizabeth granted them a ſecond; confirming the former, and further granting them a privilege of excluſion; with a power of erecting in each city within their grant, a ſtanding council.

The woollen manufacture being the principal object of their application, they met with great oppoſition; firſt, from the Hanſe, who forced them frequently to change their mart, or ſtaple; and afterwards under king James I. who having erected a corporation in 1616, in favour of ſome private perſons, who offered to ſet up a manufacture for dying and preſſing cloths, &c. under pretence thereof, the *company* of merchant-adventurers were prohibited dealing therein. But that project not ſucceeding, and the charter being revoked two years afterwards, the merchant-adventurers, whoſe *company* had been diſſolved two years before, were reſtored in 1617, to their ancient privileges, and a new charter was given them, confirming their excluſive rights; and allowing them to have officers in the ſeveral cuſtom-houſes, to have an eye that they were not prejudiced in their woollens, under pretence of the like merchandizes, which others were allowed to ſend to other parts. This charter of king James, is the laſt of thoſe confirmed by Charles II. in the grand charter of 1661.

The revolutions which had happened in the Low Countries towards the end of the ſixteenth century, and which laid the foundation of the republic of Holland, having hindered the *company* from continuing their commerce with their ancient freedom; it was obliged to turn it almoſt wholly to the ſide of Hamburgh, and the cities on the German ocean: from which change, ſome people took occaſion to change its name to that of the *Hamburgh Company*; though the ancient title of *Merchant-adventurers* is ſtill retained in all their writings.

This ſociety was greatly reduced, when its trade was laid open by William III.

Company *of Merchants of the Staple* was incorporated by Edward III. Their factory was at Middleburgh, in Zealand; but the ſtaple being removed in 1389 to Calais, it was ſoon after, viz. in 1390, removed from thence to England.

Company, *Ruſſia*. This was firſt projected towards the end of the reign of king Edward VI. executed in the firſt and ſecond years of Philip and Mary; but had not its perfection, till its charter was confirmed by act of parliament, under queen Elizabeth, in 1566. It had its riſe from certain adventurers, who were ſent in three veſſels on the diſcovery of new countries; and to find out a north-eaſt paſſage to China: theſe, falling into the White Sea, and making up to the port of Archangel, were exceedingly well received by the Muſcovites; and, at their return, ſollicited letters patent to ſecure to themſelves the commerce of Ruſſia, for which they had formed an aſſociation.

The charter was promiſed them by Edward VI. but he dying, was firſt diſpatched by queen Mary, in 1555. By this charter, the aſſociation was declared a body politic, under the name of the *Company of Merchant-adventurers of England, for the diſcovery of lands, territories, iſlands,* &c. *unknown, or unfrequented.* Their privileges were, to have a governor, four conſuls, and twenty-four aſſiſtants, for their commerce; for their policy, to make laws, inflict penalties, ſend out ſhips to make diſcoveries, take poſſeſſion of them in the king's name, ſet up the banner royal of England, plant them; and laſtly, the excluſive privilege of trading to Archangel, and other ports of Muſcovy, not yet frequented by the Engliſh.

This charter, not being ſufficiently guarded, was confirmed by parliament in the eighth year of queen Elizabeth; wherein it was enacted, that in regard the former name was too long, they ſhould now be called *Company of Engliſh Merchants for diſcovering new trades*; under which name, they ſhould be capable of acquiring and holding all kinds of lands, manors, rents, &c. not exceeding a hundred marks *per ann.* and not held of her majeſty; that no part of the continent, iſland, harbour, &c. not known or frequented before the firſt enterprize of the merchants of their *company*, ſituate to the north, or north-weſt, or north-eaſt of London; nor any part of the continent, iſlands, &c. under the obedience of the emperor of Ruſſia, or in the countries of Armenia, Media, Hyrcania, Perſia, or the Caſpian ſea, ſhould be viſited by any ſubjects of England, to exerciſe any commerce, without the conſent of the ſaid *company*, on pain of confiſcation. The ſaid *company* ſhall uſe no ſhips in her new commerce, but thoſe of the nation; nor tranſport any cloths, ſerges, or other woollen ſtuffs, till they have been dyed and preſſed. That in caſe the *company* diſcontinue of itſelf to unload commodities in the road of the abbey of S. Nicolas, in Ruſſia, or ſome other port, on the north coaſts of Ruſſia, for the ſpace of three years, the other ſubjects of England ſhall be allowed to traffick to Narva, while the ſaid *company* diſcontinues its commerce into Ruſſia, only uſing Engliſh veſſels.

This *company* ſubſiſted with reputation almoſt a whole century, till the time of the civil wars. It is ſaid, the czar then reigning, hearing of the murder of king Charles I. ordered all the Engliſh in his ſtates to be expelled; which the Dutch taking the advantage of, ſettled in their room. After the Reſtoration, the remains of the *company* re-eſtabliſhed part of their commerce at Archangel, but never with the ſame ſucceſs as before; the Ruſſians being now well accuſtomed to the Dutch merchants, and merchandize.

This *company* ſubſiſts ſtill, nearly on the foot of that of Hamburgh, and the northern and Turky *companies*; i. e. each member thereof trafficks for himſelf, and on his own foundation; only paying an acknowlegement of 12 or 13*l.* ſterling, beſides ſome other dues impoſed, from time to time, for the occaſions of the *company*, and the commerce in general. It is under the direction of a governor, four conſuls, and aſſiſtants.

Company, *North Sea*, or as ſome, more agreeably to its charter, call it *Eaſtland Company*, is eſtabliſhed on ſimilar ground with that of Hamburgh; from whence it appears to have been diſmembered.

Its charter is dated in the year 1579. By the firſt article the *company* is erected into a body politic, under the title of the *Company of Merchants of the Eaſt*; to conſiſt of Engliſhmen, all real merchants, who have exerciſed the buſineſs thereof, and trafficked through the Sound, before the year 1568, into Norway, Sweden, Poland, Livonia, Pruſſia, Pomerania, &c. as alſo Revel, Coningſberg, Dantzick, Copenhagen, &c. excepting Narva, Muſcovy, and its dependencies. Moſt of the following articles grant them the uſual prerogatives of ſuch *companies*; as a ſeal, governor, courts, laws, &c.

The privileges peculiar to this *company* are, that none ſhall be admitted a member, who is already a member of any other *company*; nor any retail-dealer at all. That no merchant qualified, be admitted without paying ſix pounds thirteen ſhillings and ſix-pence. That a member of another *company*, deſiring to renounce the privileges thereof, and to be received into that of the Eaſt, ſhall be admitted *gratis*; provided he procures the ſame favour for a merchant of the Eaſt, willing to fill his place. That the merchant-adventurers who never dealt in the Eaſt, in the places expreſſed in the charter, may be received as members of the *company* on paying forty marks; that, notwithſtanding this union of the *Adventurers of England* with the *Company of the Eaſt*, each ſhall retain its rights and privileges. That they ſhall export no cloths but what are dyed and preſſed, except a hundred pieces *per annum*, which are allowed them *gratis*.

This charter was confirmed by Charles II. in 1629, with this addition; that no perſon, of what quality ſoever, living in London, ſhould be admitted a member, unleſs he were free of the city.

This *company* was complained of as a monopoly, and firſt curtailed by legal authority in 1672; and ſince the declaration of rights in 1689, exiſt only in name; but ſtill continue to elect their annual officers, who are a governor, a deputy, and twenty-four aſſiſtants.

COMPANY, *Turky*, or *Levant* COMPANY. This *company* is eſtabliſhed on ſimilar ground with that of the *Hamburgh Company*, i. e. there is no common fund, wherein the adventurers depoſit their ſtock to make one ſingle commerce; but the commerce thither is free, each member trafficking for himſelf; but obſerving the rules and orders of the *company*; and all contributing, occaſionally, towards the common expences.

This flouriſhing body had its riſe under queen Elizabeth, in 1581. James I. confirmed its charter in 1605, adding new privileges. During the civil wars, there happened ſome innovations in the government of the *company*; many perſons having been admitted members, not qualified by the charters of queen Elizabeth and king James, or that did not conform to the regulations preſcribed. Charles II. upon his reſtoration, endeavoured to ſet it upon its ancient baſis; to which end, he gave them a charter, containing not only a confirmation of their old one, but alſo ſeveral new articles of reformation.

By this, the *company* is erected into a body politic, capable of making laws, &c. under the title of the *Company of Merchants of England trading to the ſeas of the Levant*. The number of members is not limited, but is ordinarily about three hundred. The principal qualification required is, that the candidate be a freeman of London, and a wholeſale merchant, either by family, or by ſerving an apprenticeſhip of ſeven years. Thoſe under twenty-five years of age pay 25*l.* ſterling at their admiſſion; thoſe above, twice as much. This fine was reduced by act of parliament, in 1753, to 20*l.* and the privilege of admiſſion extended to every Britiſh ſubject. Each makes oath, at his entrance, not to ſend any merchandizes to the Levant, but on his own account; and not to conſign them to any but the *company's* agents or factors. This reſtriction is likewiſe enlarged by the above mentioned ſtatute.

The *company* has a court, or board, at London, which is compoſed of a governor, deputy-governor, and fifteen directors, or aſſiſtants; who are all actually to live in London, or the ſuburbs. They have alſo a deputy-governor in every city, and port, where there are any members of the *company*. The aſſembly at London ſends out the veſſels, regulates the tariff for the price at which the European merchandizes ſent to the Levant are to be ſold; and for the quality of thoſe returned. It raiſes taxes on merchandizes, to defray impoſitions, and the common expences of the *company*; preſents the embaſſador which the king is to keep at the Porte, elects two conſuls for Smyrna and Conſtantinople, &c.

One of the beſt regulations of the *company* is, not to leave the conſuls, or even embaſſador, to fix the impoſition on veſſels for defraying the common expences (a thing fatal to the *companies* of moſt other nations); but to allow a penſion to the ambaſſador, and conſuls, and even to the chief officers; as ſecretary, chaplain, interpreters, and janizaries; that there may not be any pretence for their raiſing any ſum at all on the merchants, or merchandizes.

In extraordinary caſes, the conſuls, and even the ambaſſador, have recourſe to two deputies of the *company*, reſiding in the Levant: or, if the affair be very important, they aſſemble the whole body. Here are regulated the preſents to be given, the voyages to be made, and every thing to be deliberated; and on the reſolutions here taken, the deputies appoint the treaſurer to furniſh the moneys, &c. required.

It is true, the ambaſſador and conſul may act alone on theſe occaſions; but the penſion being allowed them on condition of declining them, they chooſe rather to ſit ſtill.

The ordinary commerce of this *company* employs from twenty to twenty-five veſſels, carrying from twenty-five to thirty pieces of cannon.

The merchandizes exported thither are, cloths of all kinds and colours, pewter, lead, pepper, cochineal, and a great deal of ſilver, which they take up at Cadiz: the returns are in raw ſilk, galls, camlets, wools, cottons, Morocco leather, aſhes for making glaſs and ſoap, and ſeveral gums, and medicinal drugs.

The commerce of this *company* to Smyrna, Conſtantinople, and Scanderoon, is not eſteemed much leſs conſiderable than that of the Eaſt-India *company*; but is, doubtleſs, more advantageous to England; becauſe it takes off much more of the Engliſh manufactures than the other, which is chiefly carried on in money.

The places reſerved for the commerce of this *company* are, all the ſtates of Venice, in the gulph of Venice; the ſtate of Raguſa; all the ſtates of the grand ſeignior, and the ports of the Levant and Mediterranean; excepting Carthagena, Alicant, Barcelona, Valencia, Marſeilles, Toulon, Genoa, Leghorn, Civita Vecchia, Palermo, Meſſina, Malta, Majorca, Minorca, and Corſica; and other places on the coaſts of France, Spain, and Italy.

COMPANY, *South-Sea*. Many take this *company*, eſtabliſhed by ſtat. 9 Anne, 1711, to have been originally intended, rather as a political contrivance for raiſing a fund of money, to ſerve in the preſſing occaſions of the ſtate, than as a real eſtabliſhment for the ſake of commerce. For the nation being exhauſted of money by the long wars with France, it is no wonder the phantom of a new *company* ſhould be raiſed, to bring in the ſubſcriptions of the monied men; as the only expedient to be ſupplied with money, without diſſatisfying the people, already worn out with ſubſidies, &c.

The total capital of this *company* was at firſt 9,177,967*l.* 15*s.* 4*d.* but in 1715 it was enlarged to ten millions, at an intereſt of 6 *per cent.* reduced in 1717 to 5 *per cent.* The capital was increaſed again in 1719 to 11,746,844*l.* 8*s.* 10*d.* And if the plan of 1720 had perfectly ſucceeded, the amount of the capital would have been 43,411,399*l.* 6*s.* 11*d.* ¼. See FUND.

Be this as it will, it is certain, the miniſtry never thought ſeriouſly, during the whole courſe of the war, about making any ſettlement on the coaſts of South America; which was the thing wherewith the people were firſt flattered: beſides, that the fund having been apparently perverted to defray the expences of the war, its value was ſo lowered, that it muſt, in all probability, have ſunk outright, but for the unexpected help it met with in 1713.

By the treaty of Utrecht, the buſineſs of the French Aſſiento *company*, which was to furniſh the Spaniſh Weſt-Indies with negroes, was reſigned to the Engliſh, in favour of the *South-Sea Company*; which, by this turn, relieved itſelf from its languiſhing ſituation, and became in a condition to vie with the moſt flouriſhing *companies* of commerce in England. See ASSIENTO.

The *South-Sea company*, who, without changing their name, took on them the Aſſiento, or farm of negroes, preſerved the ſame eſtabliſhment, until the peace of Aix-la-Chapelle, in 1748; and their veſſels diſembarked their negroes, which they had purchaſed through all the coaſts of Africa within their grant, at Buenos Ayres.

The *company*, it is certain, ſet out with good ſucceſs; and there was room to hope ſtill better; ſince, beſides that the value of their ſtock, the firſt five years, roſe faſter, in proportion, than that of any other *company*; his majeſty, after purchaſing 10,000*l.* ſterling therein, was pleaſed to condeſcend to be their governor, or firſt director. This *company* is under the management of a ſub-governor, deputy-governor, and twenty-one directors, choſen every three years; for which a qualification of 2000*l.* ſtock is ſufficient, and for an elector 500*l.* For what remains of the hiſtory of this *company*, with that fatal train of romantic *companies* it drew after it, ſee BUBBLE.

COMPANY, *Greenland*. See GREENLAND.

COMPANIES, *Weſt-India*, or thoſe of the Engliſh colonies in North America, are of a lower claſs than thoſe above mentioned; and too numerous to be here deſcribed.

Their names are, the *Virginia Company*, *New England*, *New York*, *Penſylvania*, *New Scotland*, *Maſſachuſet*, *Connecticut*, *Bermudas*, *Tobago*, and *Carolina Companies*. To theſe may be added the *Hudſon's Bay Company*, incorporated by charter in 1670. This *company*, by a joint ſtock, carries on a conſiderable trade to the factories eſtabliſhed in Hudſon's Bay and Straits, whither the natives repair with their fine beaver, furs, &c. It is under the direction of a governor, deputy-governor, and ſeven aſſiſtants.

Company, *Scotch Darien*. This was eſtabliſhed with good proſpect at Edinburgh, in 1695, for the commerce of South America. In 1698, they ſent an armament and a colony, which they endeavoured to eſtabliſh in the iſthmus of Darien, which parts North and South America; but the Engliſh miniſtry not thinking proper to avow and ſupport the firſt ſucceſſes of the *company*, which had alarmed Spain, ever jealous of this part of her territories, the Scotch colony was diſperſed by the Spaniards in 1699, and thus vaniſhed the beſt project, that ever was formed, for diſputing with that nation the poſſeſſion of thoſe countries, from which ſhe pretends to exclude all other nations.

Company, *Dutch Eaſt-India*, had its riſe in the midſt of the ſtruggle which that people had for their liberty: for the Spaniards having forbid all commerce with them, and ſhut up all their ports; neceſſity inſpired ſome Zealanders to ſeek a new north-eaſt paſſage to China.

This enterprize proving unſucceſsful to three ſeveral armaments in 1594, 1595, and 1596, a ſecond *company* was formed, under the name of the *Company of remote Parts*; which, in 1595, took the ordinary route of the Portugueze to the Indies, and returned, in two years and a half's time, with little gain, but good hopes.

This *company*, and a new one juſt eſtabliſhed at Amſterdam, being united, equipped other fleets; and theſe occaſioned other *companies* at Amſterdam, Rotterdam, in Zealand, &c. inſomuch that the ſtates ſoon began to apprehend they might be prejudicial to each other. Under this concern, they called all the directors of the ſeveral *companies* together, who all conſented to an union, the treaty whereof was confirmed by the ſtates in 1602, a very remarkable epocha, as being that of the moſt ſolid and celebrated eſtabliſhment of commerce that ever was in the world.

Its firſt capital was ſix millions ſix hundred thouſand guilders. It had ſixty directors, divided into ſeveral chambers; twenty in that of Amſterdam, twelve in that of Zealand, fourteen in that of Delft and Rotterdam, and a like number in thoſe at Sluys and Horn. As each grant expires, the *company* is obliged to procure a new one, which it has already done four times ſince the firſt; viz. one in 1623, for twenty-one years, like the firſt; another for twenty-one years, commencing in 1643; and a third in 1665, for forty years; a fourth in advance, commencing in 1698, to end in 1740. Each grant coſts the *company* a conſiderable ſum: that of 1647, coſt 1,600,000 guilders, and the two following ones more: that of 1698, was confirmed by a placard of the ſtates-general, granting them an excluſive privilege, which was prolonged in 1761 for thirty years more.

Their factories, reſidences, &c. in the Eaſt-Indies, are very numerous; reaching from the Perſian gulph to the coaſt of China: the principal is that of Batavia, the center of their commerce: here reſides their general, with the ſtate and ſplendor of a ſovereign prince; making war and peace with the eaſtern kings and emperors at pleaſure.

The other more conſiderable factories are, Taiouam on the coaſt of China, Nangiſac in Japan, Malacca, Surat, Amboyna, Banda, Siam, Moluccos, &c. ſeveral on the coaſt of Coromandel, and at Iſpahan, Cape of Good Hope, &c. in all, they number forty factories, and twenty-five fortreſſes. They have the whole trade of the ſpicery in their own hands.

Company, *Dutch Weſt-India*, eſtabliſhed in 1621, with an excluſive privilege to trade twenty-four years along the coaſts of Africa, between the tropic of Cancer, and the Cape of Good Hope; and in America, from the ſouth point of Newfoundland, through the ſtraits of Magellan, that of Le Maire, or others, to the ſtraits of Anian, both in the North and South ſea.

The directors are divided into five chambers (as in the Eaſt-India *company*), out of which, nineteen are choſen for the general direction of affairs. In 1647, the *company* renewed its grant for twenty-five years; but it was ſcarce able to hold out the term, on account of its great loſſes and expences in taking the bay of Todos los Santos, Fernambuc, and the greateſt part of Braſil from the Portugueſe. The weakneſs of this *company*, which had ſeveral times in vain attempted to be joined to that of the Eaſt-Indies, occaſioned its diſſolution at the expiration of its grant.

In 1674, a new *company*, compoſed of the ancient proprietors and their creditors, was ſettled in the ſame rights and eſtabliſhment with the former; and ſtill ſubſiſts, though conſiderably decayed. Their firſt capital was about ſix millions of florins. Its principal eſtabliſhments are, one at Cape Verd, another on the Gold Coaſt of Africa, at Tobago, Curaſſao, &c. in America.

Company, *Dutch North*, has no excluſive privilege; the advantage of its patent being of another kind, and very inconſiderable.

There are alſo, in Holland, *companies* for the Baltic ſea, the fiſhery of Nova Zembla, Davis's Straits, and Greenland: yet none of their fiſheries are interdicted to private traders; all the difference between theſe and the *companies* conſiſting in this, that the former may not go aſhore to cut their fiſh in pieces, and melt their lard; but muſt bring their luggage to Holland.

Company, *Dutch Levant*. In ſtrictneſs, there is no Levant *company* in Holland: but the commerce of the private traders is ſo conſiderable, that the ſtate has taken the regulation thereof on itſelf.

To this end, they have eſtabliſhed a chamber of direction at Amſterdam, compoſed of ſix deputies, and a regiſter; who, under the burgomaſters, take care of every thing relating to the commerce of the Mediterranean; eſpecially that of Smyrna and Conſtantinople.

This *company* names the conſuls, appoints the number and ſtrength of convoys, terminates differences among the traders, and has alſo a right, on occaſion, to add new regulations to the old ones; though thoſe be of no force, till confirmed by the ſtates-general.

Company, *French Eaſt-India*, was eſtabliſhed in 1664, with an excluſive privilege, to trade for fifty years in all the ſeas of the Eaſt-Indies and South-ſea; no adventurer to be admitted without a thouſand livres in ſtock; and foreigners, who have twenty thouſand livres in ſtock, to be reputed regnicoles.

The patent grants them the iſland of Madagaſcar; and the king to be at one fifth of the expence of the three firſt armaments, without intereſt; the principal to be refunded in ten years; or, if the *company* find it loſes on the whole, the loſs to fall on the king's ſide.

The capital fund of the *company*, which was moſtly furniſhed by the king, was ſeven or eight millions of livres, but was to have been fifteen millions.

In effect, though no means were wanting to ſupport the *company*, yet it ſtill drooped, and ſtill ſtruggled; till, having ſubſiſted ten years without any change in its form, and being no longer able to diſcharge its engagements, there were new regulations concerted, but to little purpoſe. At length, things not being diſpoſed for a new Eaſt-India *company*, nor much good to be expected from the old one, in 1708, the miniſtry allowed the directors to treat with the rich traders of St. Malo, and reſign to them their privilege, under certain conditions. In the hands of theſe laſt, the *company* began to flouriſh.

Its chief factory is at Pondicherry, on the coaſt of Coromandel: this is the reſidence of the director-general; the other factories are inconſiderable. The merchandizes which the *company* brings into France are, ſilks, cottons, ſpices, coffee, rice, ſalt-petre; ſeveral kinds of gums and drugs, wood, wax, printed callicoes, muſlins, &c.

Company, *French Weſt-India*, was eſtabliſhed in 1664. Their charter gave them the property and ſeigniory of Canada, Acadia, the Antilles iſlands, iſle of Cayenne, and the Terra Firma of America, from the river of the Amazons to that of Oroonoko; with an excluſive privilege for the commerce of thoſe places, as alſo of Senegal, and the coaſts of Guinea, for forty years, only paying half the duties.

The ſtock of the *company* was ſo conſiderable, that, in leſs than ſix months, forty-five veſſels were equipped; wherewith they took poſſeſſion of all the places in their grant, and ſettled a commerce: yet this only ſubſiſted nine years. In 1674, the grant was revoked, and the countries above reunited to the king's dominions, as before; the king reimburſing the actions of the adventurers. This revocation was owing partly to the poverty of the *company*, occaſioned by its loſſes in the wars with England, which had neceſſitated it to borrow above a million; and even to alienate its excluſive privilege for the coaſts of Guinea: but alſo to its having in good meaſure anſwered its end; which was to recover the commerce of the Weſt-Indies from the Dutch, who had torn it from them: for the French merchants, being now accuſtomed to traffic to the Antilles, by permiſſion of the *company*, were ſo attached to it, that it was not doubted they would ſupport the commerce after the diſſolution of the *company*.

Company, *French Miſſiſſippi*, was firſt eſtabliſhed in 1684, in favour of the chevalier De la Salle; who having projected it in 1660, and being appointed governor of the fort of Frontignac, at the mouth of that river, travelled over the country in the year 1683, and returned to France to ſolicit the eſtabliſhment. This obtained, he ſet ſail for his new colony, with four veſſels loaden with inhabitants, &c. but entering the gulph of Mexico, he did not, it ſeems, know the river that had coſt him ſo much fatigue; but ſettled on another river, unknown; where his colony periſhed by degrees; ſo that, in 1685, there were not a hundred perſons remaining. Making ſeveral expeditions to find the Miſſiſſippi, he was killed in one of them by a party who mutinied againſt him; whereupon the colony was diſperſed and loſt. M. Hiberville afterwards ſucceeded better: he found the Miſſiſſippi, built a fort, and ſettled a French colony there; but he being poiſoned, it is ſaid, by the intrigues of the Spaniards, who feared ſuch a neighbour, in 1712, M. Crozat had the whole property of trading to the French territories, called Louiſiana, granted him for fifteen years.

Company *of the Weſt*. In 1717, the ſieur Crozat ſurrendered his grant; and in the ſame year a new *company* was erected, under the title of *Company of the Weſt*: to which, beſides every thing granted to the former *company*, was added the commerce of beaver, enjoyed by the Canada *company* from the year 1706, but expiring in 1717. In this eſtabliſhment, an equal view was had to the finances, and the commerce of the nation; and, accordingly, part of the conditions of its eſtabliſhment regarded the ſettling a colony, a trade, &c. the other the vending part of the bills, called *bills of ſtate*; which could no longer ſubſiſt on their preſent footing. The former are no more than are uſual in ſuch eſtabliſhments: for the latter, the actions are fixed at five hundred livres; each payable in bills of ſtate; the actions to be eſteemed as merchandize, and in that quality to be bought, ſold, and trafficked. The bills of ſtate, which make the fund of the actions, to be converted into yearly revenue. To put the finiſhing hand to the *company*, in 1717, its fund was fixed at an hundred millions of livres; which being filled, the caſh was ſhut up.

Company, *India*. The junction of the former *company* with that of Canada, was immediately followed by its union with that of Senegal; both in the year 1718, by an arret of council, which at the ſame time granted the new *company* the commerce of beavers, and made it miſtreſs of the negro, or Guinea trade, to the French colonies in America.

Nothing was now wanting to its perfection, but an union with the Eaſt-India *company*, and with thoſe of China and St. Domingo, which was effected; with the two firſt in 1719, and with the third in 1720. This union of the Eaſt-India and China *company* with the *company* of the Weſt, occaſioned an alteration of the name; and it was henceforth called the *India company*.

The reaſons of the union were the inability of the two former to carry on their commerce, the immenſe debts they had contracted in the Indies, eſpecially the *Eaſt Company*; complaints whereof had been ſent to court by the Indians, which diſcredited the *company* ſo that they durſt not appear any longer at Surat: laſtly, the little care they took to diſcharge their engagements; and their having transferred their privilege to the private traders of St. Malo, in conſideration of a tenth in the profits of the returns of their ſhips.

The ancient actions of the *company* of the Weſt, which were not at par when this engraftment was projected, before it was completed, were riſen to 300 *per cent.* which unexpected ſucceſs gave occaſion to conclude the new actions of the united *companies* would not bear leſs credit. The concourſe of ſubſcribers was ſo great, that in a month's time there were above fifty millions ſubſcribed for: the firſt twenty-five million actions which were granted to the India *company*, beyond the hundred millions of ſtock allowed the *company* of the Weſt, being filled as ſoon as the books were opened; to ſatiſfy the earneſtneſs of the ſubſcribers, the ſtock was increaſed by ſeveral arrets to three hundred millions. Credit ſtill increaſing, the new actions roſe to 1200 *per cent.* and thoſe of the ancient *company* of the Weſt to 1900 *per cent.* an exorbitant price, to which no other *company* ever roſe.

Its condition was now ſo flouriſhing, that in 1719 it offered the king to take a leaſe of all his farms for nine years, at the rate of three millions five hundred thouſand livres *per ann.* more than had been given before; and alſo to lend his majeſty twelve hundred millions of livres to pay the debts of the ſtate. Theſe offers were accepted; and the king, in conſideration hereof, granted them all the privileges of the ſeveral grants of the *companies* united to that *company*, to the year 1770, on condition, however, of diſcharging all the debts of the old Eaſt-India *company*, without any deduction at all. The loan of twelve hundred millions not being ſufficient for the occaſions of the ſtate, was augmented, three months afterwards, with three hundred millions more; which, with the former loan, and another of one hundred millions before, made ſixteen hundred millions; for which the king was to pay intereſt at the rate of three *per cent.*

The duke of Orleans, in February 1720, did the *company* the honour to preſide in their aſſembly, where he made ſeveral propoſals to them on the part of the king: the principal of theſe was, that they ſhould take on them the charge and adminiſtration of the royal bank. This was accepted of; and Mr. Law, comptroller-general of the finances, was named by the king *Inſpector-General of the India Company and Bank united.*

This union, which, it was propoſed, ſhould have been a mutual help to both thoſe famous eſtabliſhments, proved the fatal point from whence the fall of both commenced: from this time, both the bank-bills and the actions of the *company* began to fall: in effect, the firſt periſhed abſolutely, and the other had been drawn along with it, but for the prudent precautions taken for its ſupport.

The firſt precaution was the revoking the office of inſpector-general, and the obliging Mr. Law to quit the kingdom: the ancient directors were diſcarded, and new ones ſubſtituted; and, to find the bottom of the *company's* affairs, it was ordered, they ſhould give an account of what they had received, and diſburſed, both on the account of the *company*, and of the bank, which they had had the management of near a year. Another precaution to come at the ſtate of the *company*, was by endeavouring to diſtinguiſh the lawful actionaries from the Miſſiſſippi extortioners; whoſe immenſe riches, as well as their criminal addreſs in realizing their actions, either into ſpecies or merchandize, were become ſo fatal to the ſtate; in order, if poſſible, to ſecure the honeſt adventurers in their ſtock. To this end, an inquiſition was made into their books, &c. by perſons appointed by the king; and the new directors, or, as they were called, *regiſſeurs*, began ſeriouſly to look about for their commerce abroad. The French have had ſeveral other *companies*; ſome whereof have fallen of themſelves, the reſt upon the expiration of their grants: as, the

Baſtion **Company** *of France*, which was, at firſt, only a ſimple aſſociation of two merchants of Marſeilles in the fifteenth century, for fiſhing of coral in the gulph of Stora-Courcoury on the coaſt of Barbary, on the frontiers of Algiers and Tunis. Having obtained leave of the ſultan Solyman II. to make an eſtabliſhment, and having likewiſe treated with the Mooriſh princes of the country; in 1561 they built a little fort, called the *Baſtion of France*, whence the *company* took its name.

The firſt undertakers not being ſucceſsful, a new grant was obtained of Mahomet III. in 1604, to new undertakers: in 1628, it began to flouriſh, and the colony conſiſted of eight hundred people: but the death of their governor in 1633, gave them a blow they never recovered.

Several of the *companies* have ſince endeavoured to ſet the fiſhing of coral on its ancient footing, but hitherto in vain.

Company, *Guinea*, was eſtabliſhed in 1685. Its grant expired in 1705; but it continued its trade of negroes, by the king's permiſſion, under the name of Aſſiento *company*, to the year 1713; when, by the treaty of Utrecht, that trade was ſurrendered to the Engliſh South-ſea *company*; which ſee.

Company, *Aſſiento*. See *Guinea* Company, and Assiento.

Company, *Cape Verd*, the ſame with that of Senegal, under another name: it was eſtabliſhed in 1664, before the *company* of the Weſt; but the coaſts of Africa being included in the grant of this laſt, we hear no more of the Cape Verd *company* till the year 1675, when it roſe afreſh under the title of *Company of Senegal*. It was farther confirmed in 1681; but, being unable to pay its debts, was diſſolved in 1696.

Company, *French South-Sea*, is the ſame with the Aſſiento *company*. See Assiento.

Company, *Canada*, eſtabliſhed in 1628, for the commerce of caſtor-ſkins, &c. Its grant expiring in 1717, it was united to the *company* of the Weſt; which ſee.

Company, *Acadia*, eſtabliſhed in 1683. Its grant expiring in 1703, and the war, &c. preventing a new one, the colony was neglected; and was taken by the Engliſh in 1710, and confirmed to them by the treaty of Utrecht.

Company, *French Levant*, eſtabliſhed in 1670; but its privilege revoked in 1684.

Company, *French North*, eſtabliſhed in 1669, and expiring with its grant in 1690.

Company, *St. Domingo*, eſtabliſhed in 1698, for fifty years; carried on with honour to the year 1720, and then united to the India *company*.

Company, *Daniſh North*; was eſtabliſhed at Copenhagen in 1647. Its eſtabliſhments are very conſiderable in Norway; beſides which, it ſends veſſels to Warangar, whence they

they convey their merchandizes by land into the Daniſh Lapland; and by ſledges drawn by rein-deer, into the Muſcovite Lapland. It alſo ſends others for Borandai and Siberia; where its agents take them up, and convey them, in like manner, on ſledges, to Panigorod, the capital of this part of the Muſcovite empire.

The commodities it ſends thither are rixdollars, tobacco, and linens; it returns nothing but furs and ſkins.

Company, *Daniſh Iceland*, eſtabliſhed in the ſame year with the North *company:* its chief factory is Kirkebar, a large town in that iſland.

Company, *Daniſh Eaſt-India*, eſtabliſhed about the year 1617; their chief factory is at Tranquebar, whither they ſend two or three veſſels every year.

Company, *Levant*, *of the Genoeſe*, eſtabliſhed in 1664, and confirmed by the Porte; notwithſtanding the oppoſition of the French.

Its chief commerce was to be in pieces of five ſols, which the Genoeſe had before furniſhed the Turks withal, though in the French name, and under their banner: they were now to do it under their own banner; and accordingly, while the humour of theſe pieces laſted, as they ſerved not only for money, but were likewiſe uſed by the Greek and Turkiſh women of the iſlands, as ornaments in their head-dreſs, at the bottom of their veſts or petticoats, which were covered with them, the *company* ſucceeded well enough: but that money being afterwards decried in 1670, the *company* has languiſhed ever ſince; and can now ſcarce ſupport a miſerable commerce.

For a more particular account of the riſe and progreſs of moſt of the above mentioned *companies*, ſee Anderſon's Hiſt. of Commerce.

Company, in *Sea-Language*, denotes the whole crew of a ſhip, including her officers.

Company *of ſhips*, is uſed for a fleet of merchant-veſſels, who make a kind of charter-party among themſelves; whereby, under ſeveral clauſes and conditions tending to their common ſafety, they engage not to quit one another, but to defend each other reciprocally, during their voyage.

Theſe aſſociates, in the Mediterranean, are called *conſerves*. The chief conditions of the charter-party are, that ſuch and ſuch ſhall be owned admiral, vice-admiral, and rear-admiral; that thoſe which bear no guns, ſhall pay ſo much *per cent.* of their cargo, for the expences of the admiral; that ſuch and ſuch ſignals ſhall be obſerved; that if they be attacked, the damages ſhall be reimburſed by the *company* in general, &c.

Company, *Rule of*, or *Fellowſhip*, in *Arithmetic*, is a rule whereby we diſcover, or aſcertain, the ſhare of the profits, or loſſes, belonging to the ſeveral partners, or aſſociates, in any enterprize, in proportion to the ſtock each contributed thereto, and the time that ſtock was in bank. See Fellowship.

Company, in *War*, denotes a little body of infantry, commanded by a captain.

The French uſe the word indifferently for the horſe, or foot; but the Engliſh appropriate the term troop to a *company* of horſe. See Troop.

Companies of foot on the Britiſh eſtabliſhment commonly uſed to conſiſt of one captain, one lieutenant, one enſign, three ſerjeants, three corporals, two drums, and forty-nine private centinels; in all ſixty. But, of late years, *companies* have been increaſed, by the addition of twenty centinels, to eighty men. Ten, and ſometimes twelve *companies*, make a regiment.

A *company* in the guards is eighty private men. See Regiment, and Guards.

In the French guards the *company* is a hundred and twenty; in the Swiſs guards two hundred.

Companies not embodied into regiments are called *independent companies.*—The French alſo have their *free companies*, who never enter the body of any regiment; and *companies of ordonnance*, who in like manner never enter the body of a regiment, but conſiſt of the gendarmes and light-horſe. They were inſtituted by Charles VII. who choſe out fiſteen captains, under each of whom were to be a hundred lances, or men at arms, each man at arms to receive pay for ſix perſons, himſelf among the number; the reſt to be three archers on horſeback, a cutler, and a ſervant.

Company, *artillery*. See Artillery.

COMPARATES, Comparata, in *Logic*, the terms or ſubjects of a comparison; or the two things compared to each other.

COMPARATIONE—*Punctum ex* Comparatione. See Punctum.

COMPARATIONIS *Homogeneum*. See Homogeneum.

COMPARATIVE *Anatomy*. See Anatomy.

Comparative *Degree*, in *Grammar*, is an inflexion between poſitive and ſuperlative degrees; whoſe effect is, to ſet a thing above or beneath the level of another.

The Latins expreſſed their *comparative degree* by a particular termination of their adjectives, and participles; wherein they are followed by the Engliſh, though by few others of the modern languages.

The French form moſt of their *comparatives*, by adding the participles *plus*, *moins*, and *auſſi*; the Italians, by *più*, *meno*, &c. as the thing is to be raiſed, lowered, or equalled to another.

COMPARISON, the relation of two perſons or things, conſidered as oppoſed, or ſet againſt each other, in order to find wherein they agree or differ; or wherein one has the advantage of the other.

Comparison *of Ideas*, an act of the mind, whereby it *compares* its ideas one with another, in reſpect of extent, degree, time, place, or any other circumſtances.

This operation of the mind is the ground of relations.

Brutes ſeem not to have this faculty in any great degree: they have, probably, ſeveral ideas diſtinct enough; but cannot compare them farther than as to ſome ſenſible circumſtances annexed to the objects themſelves: the power of *comparing* general ideas, which we obſerve in men, they have not, as we may probably conjecture.

Comparison, in *Rhetoric*, is a figure, or rather place, in ſpeech, whereby two things are conſidered with regard to ſome third, which is common to them both.

Thus, Cicer. Topic. *Catoni licuit ſequi bellum civile, igitur & Ciceroni licebit. It was allowed Cato to engage in the civil wars, therefore it may be allowed Cicero:* where, to engage in the civil wars, is common to both.

There are three kinds of *compariſon*; the firſt *à majori*, i. e. from the major to the minor, as that of Cicero againſt Antony, *Quid feceris domi tuæ, cum alienæ tam ſis inſolens?* Or that of Terence, *Quem feret, ſi parentem non fert ſuum?* From the ſame place, Ovid endeavours to appeaſe Cæſar.

> *Cur ego poſſe negem leniri Cæſaris iram,*
> *Cum videam mites hoſtibus eſſe Deos?*

The ſecond, *à minori*, i. e. from the minor to the major: thus Cicero, *Majores noſtri ſæpe mercatoribus, ac naviculatoribus injurioſius tractatis, bella geſſerunt; vos tot civium Romanorum millibus uno nuntio atque uno tempore necatis, quo tandem animo eſſe debetis?*

The third *à pari*; as when we contend, that what obtains in one thing, ought to obtain in another of the ſame kind: thus, *It was a law, that he who killed his father ſhould be ſewed up in a ſack, and thrown into a river; therefore, he who killed his mother deſerves the ſame puniſhment.*

> *Capto tuam, pudet heu, ſed capto, Maxime, cænam:*
> *Tu capis alterius; jam ſumus ergo pares.*
> *Mane ſalutatum venio, tu diceris iſſe,*
> *Ante ſalutatum: jam ſumus ergo pares. &c.*
> Mart. lib. ii.

COMPARTIMENT, or Compartment, a deſign compoſed of ſeveral different figures, diſpoſed with ſymmetry; to adorn a parterre, a ceiling, panel of joinery, or the like.

Compartments, in *Gardening*, are beds, plats, borders, and walks, laid out according to the form of the ground, and depend more on a good fancy, than on any ſet of rules, for their conſtruction. They are alſo ſometimes merely diverſities or knots of flower-gardens or parterres, of which there is an infinite variety, according to the fancy of the deſigner. Plain *compartments*, are pieces of ground divided into equal ſquares and flower-beds, marked out by lines, and made of regularly equal length and breadth. Some allow to theſe ſquares borders of two feet broad, if the plot of ground be ſmall, and, if larger, of three feet, and edge the borders with box, or with upright hardy thyme: the alleys up between are to be laid with ſand or gravel, and kept clean weeded.

A **Compartment** *of tiles*, is an arrangement of white and red tiles varniſhed, for the decoration of the covering of a roof.

The term of *compartiment* is alſo uſed in painting. The Turkiſh and Mooriſh paintings are only *compartiments:* the fine bindings of books are in *compartiments*, &c.

Compartiment, *alley of*. See Alley.

Compartiment, in *Heraldry*. See Quartering.

COMPARTITION, in *Architecture*, the uſeful and graceful diſtribution of the whole ground-plot of an edifice, into rooms of office, and of reception, or entertainment. *Compartition* makes one of the great diviſions of the art of building.

COMPASS. The mariners, or nautical *compaſs*, is an inſtrument uſed by pilots, to direct the courſe of their ſhips.

It conſiſts of a box which includes a magnetical needle, that always turns to the north; allowing for a little declination, which is various in various places, and even, at various times, in the ſame place. See Variation.

In the middle of the box is fixed a perpendicular pivot, which bears a card, or paſteboard, on whoſe upper ſurface are deſcribed ſeveral concentric circles; the outmoſt of which is divided into 360 degrees; the other into 32 points, anſwering to the 32 winds; each point being 11° 15′: the four principal, viz. N. S. E. and W. are called cardinal points, and the names of the others are compounded of theſe.

In the center of this card is fitted a braſs cone, or cap, a little concave, which plays at liberty on the pivot; and along, in the thickneſs of the card, is fitted the needle, which is covered over with a glaſs, that its motions may be obſerved: the whole is incloſed in another box, where it is ſuſtained by braſs hoops, to keep the needle horizontal. See DIP. See it repreſented, *Tab. Navigation, fig.* 1.

The needle is made of a thin plate of ſteel, in form of a lozenge: the middle being cut out, ſo as to leave nothing but the extremities and an axis in the middle, to which the cap is fitted. See NEEDLE.

The *compaſs* has been ſometimes obſerved to be diſturbed by the electricity of its glaſs cover, and this from ſo ſlight an application of the finger as was barely neceſſary to wipe off a little duſt. The ſame glaſs, rubbed a little more with the finger, a bit of muſlin, or of paper, would attract either end of the needle, ſo as to hold it to the glaſs for ſeveral minutes, far out of the due direction, according to that part of the glaſs which was moſt excited. And when the needle, after adhering to the glaſs, has dropt looſe, and made vibrations, thoſe would not be biſected, as uſual, by that point where the needle ſhould reſt, but either be made all on one ſide, or be very unequally divided, by means of ſome remains of electrical virtue in that part of the glaſs which had attracted the needle, until at length, after fifteen minutes or more, all the electricity being diſcharged, the magnetical power took place. Phil. Tranſ. N° 480. p. 243.

The remedy for this inconvenience, is to moiſten the ſurface of the glaſs: a wet finger will do it immediately and effectually. Phil. Tranſ. N° 480. p. 244.

There is reaſon to believe, that glaſs does at times become in ſome degree attractive, without any friction at all, and may poſſibly be excited by great concuſſions in the air; ſuch as thunder, or the diſcharge of great ordnance, and ſo may diſturb the *compaſs*.

The effect of ELECTRICITY and LIGHTENING in giving polarity to *magnetic* NEEDLES, and likewiſe in reverſing them, has been long ſince, and frequently, obſerved by Dr. Franklin, S. Beccaria, and others. See AURORA BOREALIS, MAGNETS, &c.

The mariner's *compaſs*, with a chart, is much leſs dangerouſly moved than the common *compaſs* with a bare needle. And the deeper or farther diſtant the needle hangs below the glaſs, the leſs diſturbance it is likely to receive.

The minute, irregular, reciprocating variations, which have been obſerved in the directions of dipping and horizontal needles, and mentioned in the Philoſophical Tranſactions, may probably have been cauſed by the glaſſes which covered the inſtruments made uſe of. Phil. Tranſ. N° 425. N° 480. p. 245.

The invention of the *compaſs* is uſually aſcribed to Flavio de Melfi, or Flavio Gioia, a Neapolitan, about the year 1302; and hence it is, that the territory of Principato, which makes a part of the kingdom of Naples, where he was born, bears a *compaſs* for its arms.

Others ſay, that Marcus Paulus, a Venetian, making a journey to China, brought back the invention with him in 1260. What confirms this conjecture is, that at firſt they uſed the *compaſs* in the ſame manner as the Chineſe ſtill do; i. e. they let it float on a little piece of cork, inſtead of ſuſpending it on a pivot. It is added, that their emperor Chiningus, a celebrated aſtrologer, had a knowlege of it 1120 years before Chriſt. The Chineſe only divide their *compaſs* into twenty-four points.

Fauchet relates ſome verſes of Guyot de Provence, who lived in France about the year 1200, which ſeem to make mention of the *compaſs* under the name of *marinette*, or *mariner's ſtone*; which ſhews it to have been uſed in France near a hundred years before either the Melphite or Venetian. The French even lay claim to the invention, from the fleur de lys, wherewith all nations ſtill diſtinguiſh the north point of the card.

With as much reaſon Dr. Wallis aſcribes it to the Engliſh, from its name *compaſs*, whereby moſt nations call it; and which he obſerves is uſed in many parts of England to ſignify a circle.

Though the mariner's *compaſs* has been long in uſe, the beſt conſtruction of it was attended with many inconveniences, till the late improvement which it has received from the invention and experiments of Dr. Gowin Knight, and the farther emendation of Mr. Smeaton. This chiefly conſiſts in the ſhape and temper of the NEEDLE; in the diſcovery of proper means for reſtoring the loſs of magnetiſm in a voyage, and of contrivances to hinder the card from being greatly affected by the various motions of the ſhip. However, theſe contrivances have been found too delicate to encounter the ſhocks of a tempeſtuous ſea. See *Tab. Navigation, fig.* 2.

AB repreſents the outer wooden box; C and D are two milled nuts, by means of which the axis of the inner box GH, and ring EF, by which it is ſupported, are lifted up from their edges on which they move, in order to increaſe the friction, and prevent the too great vibrations occaſioned by the motion of the ſhip in a high ſea. I is one of the axes of the inner box, by which it is ſuſpended on the ring EF; KL is the magnet, or needle, of a regular parallelopiped ſhape, and M a ſmall beam of ivory, beſt ſeen in *fig.* 3. that confines the cap to its place. The cap is ivory, ſo turned, as to be capable of receiving a ſmall bit of agate, which is ground concave, and poliſhed on that ſide, where it forms the apex of the hollow cone in the cap: the under part of it is repreſented by C, *fig.* 4. The card, *fig.* 3. is a ſingle varniſhed paper, reaching as far as the outer circle of figures, which is made of thin braſs, with its edge turned down at right angles, as in A and B, *fig.* 4. to the plane of the card, to make it more ſtiff; F and G are two braſs ſcrews that fix the braſs edge, &c. to the needle. This braſs ring is deſigned to ſupport the card, and to throw the weight of it as near the circumference as poſſible, for preventing the effect of the friction at the center; and is divided into degrees and half-degrees; which diviſions are determined by means of a cat-gut line O, *fig.* 2. ſtretched perpendicularly about the inſide of the box, and as near the braſs edge as poſſible. The braſs ring, by being placed below the card, and the needle above it, ſeems to bring the center of gravity low enough to admit of the cap being put under the needle, ſo that a hole in the needle is unneceſſary; and the needle, being above the card, is more eaſily touched with a pair of bars. Underneath the card are two ſmall weights, D and E, *fig.* 4. which repreſents the back ſide of the card, ſliding on two wires, placed at right angles to each other, which by being moved nearer to, or farther from the center, counterbalance the dipping of the card in different latitudes, and ſerve to reſtore the equilibrium of it, when by any other means it happens to be got too much out of level. The pedeſtal, that ſupports the card, is repreſented in *fig.* 5. It contains a ſewing needle fixed in two ſmall grooves to receive it, by means of the collet C; and at D the ſtem of the pedeſtal is filed into an octagon, that it may be the more eaſily unſcrewed. P Q R S, *fig.* 2. repreſents an index, which may be occaſionally added at the top of the inner box, and will ſerve for all altitudes of the object. It conſiſts of a bar, equal in length to the diameter of the inner box, and at each end is furniſhed with a perpendicular ſtyle, having a ſlit parallel to its ſides. One ſlit, to which the eye is applied, is narrow, and the other is wider, with a ſmall cat-gut ſtretched up the middle of it, and continued horizontally from the top of one ſtile to that of the other; and there is alſo a line drawn along the upper ſurface of the bar. This line, the narrow ſlit, the horizontal cat-gut, and the perpendicular one, are in the ſame plane, perpendicular to the horizon, when the inner box is at reſt, and hangs freely. The index does not move round, but is always placed on ſo as to anſwer the ſame ſide of the box. When the index is not wanted for uſe, it may be taken off, and placed in two pieces, T and V, properly notched to receive it. W repreſents the handle of the box. The inſtrument thus conſtructed ſerves the purpoſes of an azimuth and amplitude *compaſs*. If the ſun's azimuth is deſired, turn the wooden box, till the ſhadow of the horizontal thread, or that of the perpendicular thread in one ſtile, or the light through the ſlit in the other, falls upon the line on the index bar, or vibrates to an equal diſtance on each ſide of it; then obſerve the degree for the azimuth, marked on the braſs edge by the cat-gut line, reckoned on the outward circle of figures; and the ſituation of the index bar, with regard to the card and needle, will ſhew on what quarter of the *compaſs* the object is placed. If the rays of the ſun are not ſtrong enough to caſt a ſhadow, place the eye behind the narrow ſlit in one of the ſtyles, and turn the box till ſome part of the horizontal or perpendicular thread appears either to interſect the center of the ſun, or to vibrate to an equal diſtance on each ſide of it, and let the degree cut by the nonius be obſerved. If the ſun's amplitude were to be obſerved, the general proceſs is the ſame; excepting that the degrees are to be numbered on the inner circle of figures on the card, which are the complements of the outer, to 90. Phil. Tranſ. vol. xlvi. art. 18 and 19. p. 505—517.

Knight's *compaſſes* are now generally uſed in the royal navy; and it may be reaſonably expected that they ſhould be provided for merchant ſhips as well as others.

The uſe of the Sea-Compass *is obvious.* For, the courſe a ſhip is to ſail in, being known by the chart; and the *compaſs* ſo placed, as that the two parallel ſides of the ſquare box be diſpoſed according to the length of the ſhip, i. e. parallel to a line drawn from the head to the ſtern; the rudder is to be directed accordingly; v. gr. if the courſe be found on the chart between the ſouth-weſt and ſouth-ſouth-weſt, i. e. ſouth-weſt $\frac{1}{4}$ to the ſouth; turn the ſtern ſo as that a line from the ſouth-weſt, $\frac{1}{4}$ ſouth, exactly anſwer the mark on the middle of the ſide of the box. This is all that is required.

The azimuth Compass differs from the common ſea *compaſs* in this; that there is faſtened, on the round box wherein the card is, a broad circle AB (*Tab. Navigation, fig.* 6.) one half whereof is divided into 90 degrees, and thoſe ſubdivided diagonally into minutes: *bc* is an index moveable on *b*, having a ſight, *ba*, erected thereon, and moving on a hinge. From the upper part of the ſight, to the middle of the index, is faſtened a fine hypothenuſal luteſtring *ae*, to give a ſhadow on a line in the middle of the index. The circle AB is croſſed at right angles with two threads, from the extremities whereof are drawn four lines on the inſide of the round box: there are alſo four lines drawn at right angles to each other on the card. The round box fitted with its card, graduated circle, and index, is hung in the braſs hoops BB, and thoſe hoops faſtened to the ſquare box CC.

Captain Middleton mentions an *azimuth compaſs* of his own contrivance, by which the variation may be determined with greater eaſe and exactneſs than by any others in uſe before the year 1738. He has given no particular deſcription of it, but only ſhews the manner of uſing it. It carries a teleſcope with a vertical hair in it, and may be conveniently uſed for taking the ſun's altitude by reflection. Phil. Tranſ. abr. vol. viii. p. 374.

The uſe of the azimuth Compass is for finding the ſun's magnetical azimuth, or amplitude; and thence the variation of the *compaſs*. If the obſervation be for an amplitude at ſun-riſing, or for an azimuth before noon, apply the center of the index *bc* on the weſt point of the card, within the box; ſo that the four lines on the edge of the card, and thoſe on the inſide of the box, may meet. If the obſervation be for the ſun's amplitude ſetting, or an azimuth in the afternoon, turn the center of the index right againſt the eaſt point of the card, and make the lines within the box concur with thoſe on the card: the inſtrument thus fitted for obſervation, turn the index *bc* towards the ſun, till the ſhadow of the thread *ae* fall directly on the ſlit of the ſight, and on the line that is along the middle of the index: then will the inner edge of the index cut the degree and minute of the ſun's magnetical azimuth from the north or ſouth. But note, that if, when the *compaſs* is thus placed, the azimuth is leſs than 45° from the ſouth, and the index *bc* turned towards the ſun, it will paſs off the diviſions of the limb: the inſtrument, therefore, in this caſe, muſt be turned juſt a quarter of the *compaſs*, i. e. the center of the index muſt be placed on the north or ſouth point of the card, according as the ſun is from you; and then the edge will cut the degree of the magnetic azimuth, or the ſun's azimuth from the north, as before. See Amplitude, and the article Compass, above.

The ſun's magnetical amplitude thus found, the variation of the needle is thus determined.

Being out at ſea the fifteenth of May, 1717, in 45° north latitude, the tables give me the ſun's latitude 19° north, and his eaſt amplitude 27° 25′ north: by the *azimuth compaſs*, I find the ſun's magnetical amplitude at his riſing and ſetting; and find he riſes, v. gr. between the 62d and 63d degree, reckoning from the north towards the eaſt point of the *compaſs*, i. e. between the 27th and 28th degree, reckoning from the eaſt.

The magnetical amplitude, therefore, being here equal to the true one, the needle has no variation: but if the ſun at his riſing ſhould have appeared between the 52d and 53d degree from the north towards the eaſt; his magnetical amplitude would then have been between 37 and 38 degrees, i. e. about 10 degrees greater than the true amplitude: therefore, the needle would vary about 10 degrees north-eaſterly.

If the magnetical eaſt amplitude found by the inſtrument ſhould be leſs than the true amplitude, their difference would ſhew the variation of the needle eaſterly.

If the true eaſt amplitude be ſouthward, as alſo the magnetical amplitude, and this laſt be the greater; the variation of the needle will be north-weſt; and *vice verſa*.

What has been ſaid of north-eaſt amplitudes, holds alſo of ſouth-weſt amplitudes. And what of ſouth-eaſt amplitudes, holds of north-weſt amplitudes.

Laſtly, if amplitudes be found of different denominations, v. gr. if the true amplitude be ſix degrees north, and the magnetical amplitude five degrees ſouth; the variation, which in this caſe is north-weſt, will be equal to the ſum of the magnetical and true amplitudes: underſtand the ſame for weſt amplitudes.

The variation may likewiſe be found from the azimuth: but in that caſe, the ſun's declination, latitude of the place, and his altitude, muſt be given, that his true azimuth may be found.

This inſtrument is alſo uſeful in ſettling the ſhip's wake, in order to find the Lee-*way*; and alſo to find the bearings of head-lands, and other objects.

Compass is alſo an inſtrument of conſiderable uſe in Surveying land, Dialling, &c.

Its ſtructure, in the main, is the ſame with that of the *mariner's compaſs*; conſiſting, like that, of a box and needle: the principal difference conſiſts in this, that inſtead of the needle's being fitted into the card, and playing with it on a pivot, it here plays alone; the card being drawn on the bottom of the box, and a circle divided in 360 degrees on the limb. See *Tab. Surveying, fig.* 5.

This inſtrument is of obvious uſe to travellers, to direct them in their road; and to miners, to ſhew them what way to dig, with other conſiderable uſes.

1. *To take the declination of a wall by the* Compass. Apply that ſide of the *compaſs* whereon the north is marked along the ſide of the wall; the number of degrees over which the north end of the needle fixes, will be the declination of the wall, and on that ſide: v. gr. if the north point of the needle tends towards the north, that wall may be ſhone on by the ſun at noon; if it fix over fifty degrees, counting from the north towards the eaſt, the declination is ſo many degrees from north towards eaſt.

But ſince the needle itſelf declines from the north towards the weſt, with us, 13°; it muſt be noted, that to retrieve the irregularity, 13° are always to be added to the degrees ſhewn by the needle, when the declination of the wall is towards the eaſt: on the contrary, when the declination is towards the weſt, the declination of the needle to be ſubtracted.

2. *To take an angle with the* Compass. Suppoſe the angle required be DAE (*Tab. Surveying, fig.* 4.) apply that ſide of the *compaſs* whereon the north is marked to one of the lines, AD; when the needle reſts, obſerve the degrees at which its north point ſtands, which ſuppoſe 80: ſo many degrees does the line decline from the meridian. In the ſame manner take the declination of the line AE, which ſuppoſe 215°; ſubtract 80° from 215, the remainder is 135; which ſubtracted from 180, there will remain 45°; the quantity of the angle required.

But if the difference between the declination of the two lines exceed 180°; in that caſe, 180° muſt be ſubtracted from that difference: the remainder then is the angle required.

For the method of laying this down on paper, ſee Plotting.

Note, In meaſuring angles by the *compaſs*, there needs not any regard be had to the variation; that being ſuppoſed the ſame in all the lines of the angles.

3. *To take a plot of a field by the* Compass. Suppoſe the field A, B, C, D, E, (*Tab. II. Surveying, fig.* 1.) for the greater accuracy let there be two ſights fitted to the meridian line of the *compaſs*, place it horizontal, and through the ſights look along the ſide AB, or a line parallel to it; applying the eye to the ſight at the ſouth point of the *compaſs*. Draw a rough ſketch of the field by the eye, and on the correſponding line enter down the degree to which the needle points, which ſuppoſe 90; meaſure the length of the ſide, and enter that too, which ſuppoſe 10 chains.

In this manner proceed with all the reſt of the ſides and angles of the field; the ſides, which ſuppoſe 70, 65, 70, 44, 50 fathom; and the angles, which ſuppoſe 30, 100, 130, 240, 300 degrees. To protract the field, ſet down the ſeveral angles obſerved, one after another, and ſubtract the leſſer from the next greater: thus will you have the quantity of the ſeveral angles, and the length of the lines that include them. For the reſt, ſee Plotting, and Protracting.

Note, All the angles of the figure taken together, muſt make twice as many right angles; abating two, if no miſtake have been committed.

Compass *of proportion.* See Sector and Proportion.

Compass *dials* are ſmall dials, fitted in boxes, for the pocket, to ſhew the hour of the day by direction of the needle; which indicates how to place them right by turning the dial about, till the cock or ſtyle ſtand directly over the needle, and point to the northward: but theſe can never be very exact, becauſe of the variation of the needle itſelf. See Dial.

Compass *ſaw.* See Saw.

COMPASSES, or *pair of* Compasses, a mathematical inſtrument, uſed for the deſcribing of circles, meaſuring lines, &c. The common *compaſſes* conſiſt of two branches, or legs, of iron, braſs, or other metal, pointed at bottom; and joined by a rivet, whereon they move, as on a center. Thoſe are reckoned the beſt, part of whoſe joint is ſteel, and where the pin on which the joint turns is a ſteel ſcrew. The points ſhould alſo be made of hardened and poliſhed ſteel. In ſome the points are fixed; in others they may be taken off, and a drawing-pen, pencil, or dotting wheel, ſubſtituted in their room.

The invention of *compaſſes* is aſcribed to Talaus, nephew of Dædalus by his ſiſter, whom, the poets ſay, Dædalus killed out of envy. We have *compaſſes* now of various kinds and contrivances, accommodated to the various uſes they are intended for: as,

COMPASSES *of three legs.* Their ſtructure is like that of the common *compaſſes*, ſetting aſide the exceſs of a leg, which has a motion every way: their uſe is to take three points at once, and ſo to form triangles; to lay down three poſitions of a map to be copied at once, &c.

COMPASSES, *Beam*, conſiſt of a long branch, or beam, carrying two braſs curſors; the one fixed at one end, the other ſliding along the beam, with a ſcrew to faſten it, on occaſion. To the curſors may be ſcrewed points of any kind; whether ſteel, for pencils, or the like. It is uſed to draw large circles, to take great extents, &c.

Bow-COMPASSES, or BOWS, are a ſmall ſort of *compaſſes*, that ſhut up in a hoop, which ſerves for a handle. Their uſe is to deſcribe arcs, or circumferences of circles of very ſmall radius.

COMPASSES, *Caliber.* See CALIBER.

COMPASSES, *Clock-makers*, are very ſubſtantial, ſerving to cut paſtboard, braſs, &c. jointed like the common *compaſſes* with a quadrant, or bow, as the *ſpring compaſſes*, only its uſe different; as ſerving here to keep the inſtrument firm at any opening.

COMPASSES, *cylindrical and ſpherical*, uſed in taking the diameter, thickneſs, or caliber of round, or cylindric bodies; ſuch as canons, pipes, &c. They conſiſt of four branches joined in a center; two of them circular, and two flat, a little bent at the ends.

To uſe them, one of the flat points is put within the cannon, the other without: the two oppoſite points ſhew the thickneſs. See CALIBER *Compaſſes.*

There are alſo *ſpherical compaſſes*, differing in nothing from the common ones, but that their legs are arched; ſerving to take the diameters of round bodies, &c.

COMPASSES, *Elliptic.* Their uſe is to draw ellipſes, or ovals of any kind: they conſiſt of a beam AB (*Tab. Geometry, fig.* 2.) about a foot long, bearing three curſors; to one of which may be ſcrewed points of any kind: to the bottom of the other two are rivetted two ſliding dove-tails, adjuſted in grooves made in the croſs branches of the beam. The dove-tails having a motion every way, by turning about the long branch, go backwards and forwords along the croſs: ſo that when the beam has gone half-way about, one of theſe will have moved the whole length of one of the branches; and when the beam has got quite round, the ſame dove-tail has got back the whole length of the branch. Underſtand the ſame of the other dove-tail.

Note, the diſtance between the two ſliding dove-tails is the diſtance between the two foci of the ellipſis; ſo that by changing that diſtance, the ellipſis will be rounder or ſlenderer. Under the ends of the branches of the croſs are placed four ſteel points to keep it faſt.

The uſe of this *compaſs* is eaſy; by turning round the long branch, the ink, pencil, or other point, will draw the ellipſis required. Its figure ſhews both its uſe and conſtruction.

COMPASSES, *German*, whoſe legs are a little bent outwards towards the top; ſo that, when ſhut, only the points meet.

COMPASSES, *Hair*, ſo contrived within ſide, as to take an extent to a hair's breadth.

COMPASSES, *Lapidary's*, a piece of wood in form of the ſhaft of a plane, cleft a-top, as far as half its length; wherewith they meaſure the angles, &c. of the precious ſtones, as they cut them. In the cleft is a little braſs rule, faſtened there, at one end, by a pin; but ſo that it may be moved in manner of a bevel: with this kind of ſquare they take the angles of the ſtones, laying them on the ſhaft as they cut them.

COMPASSES, *Proportional*, are thoſe whoſe joint lies between the points terminating each leg: they are either *ſimple* or *compound.* In the former ſort the center is fixed, ſo that one pair of theſe ſerves only for one proportion. *Compound proportional compaſſes* conſiſt of two branches (*Tab. Geometry, fig.* 3.) each pointed at either end with ſteel: the length of the branches is cut through, for a curſor to ſlide up and down; in the middle of which curſor is a ſcrew, ſerving to join the branches, and to fix them at any point required.

On the one leg are diviſions, ſerving to divide lines into any number of equal parts, for reducing of figures, &c. On the other are numbers, for inſcribing any regular polygon in a circle propoſed.

The uſe of the firſt is eaſy: Suppoſe, v. gr. a right line required to be divided into three equal parts; puſh the curſor till the ſcrew be juſt on the figure 3; where fixing it, take the length of the given line between the longeſt parts of the legs: the diſtance between the two ſhorteſt will be one third of the given line. In the ſame manner may the line be divided into any other number of parts.

For the uſe of the line of polygons: Suppoſe, v. gr. a pentagon required to be inſcribed in a circle; puſh the curſor till the middle of the ſcrew be againſt 5, the number of ſides in a pentagon; between the ſhorteſt parts of the legs take the ſemidiameter of the circle: the legs thus opened, the diſtance between the points of the longeſt parts will be the ſide of the pentagon to be inſcribed in the circle. And thus for a figure of any other number of ſides.

Proportional COMPASSES *with the ſector lines.* The ſtructure of theſe is ſo like that of the common *proportional compaſſes*, only a little nicer, that it needs no particular deſcription. See *Tab. Geometry, fig.* 4.

The lines on the firſt face are the line of lines, marked *lines:* it is divided into 100 equal parts, every tenth numbered: and the line of chords, which goes to 60°, is marked *chords.*

On the other face are a line of ſines to 90°, and a line of tangents to 45°. On the other ſide are the tangents from 45° to 71° 34′; on the other, ſecants from 0° to 70° 30′.

For the uſe of theſe compaſſes: 1. To divide a line into any number of equal parts, leſs than 100: divide 100 by the number of parts required; ſlip the curſor till the line on the ſliding dove-tail be againſt the quotient on the line of lines: then, the whole line being taken between the points of the *compaſſes* moſt remote from the center; the aperture of the other will ſhew the diviſion required. 2. A right line given, ſuppoſed to be divided into 100 parts, to take any number of thoſe parts: ſlip the line on the ſliding dove-tail to the number of parts required: the whole line being taken between the points fartheſt from the center, the aperture of the other two will include the number of diviſions required. 3. The radius being given, to find the chord of any arch under 60°: ſlip the line on the ſliding dove-tail to the degrees required on the line of chords: the radius being taken between the points fartheſt from the center of the curſor; the aperture of the other line will be the chord required, provided the number of degrees be greater than 29: if it be leſs, the aperture taken from the radius will leave the chord required. 4. If the chord of an arch under 60° be given, and the radius required; ſlip the line on the dove-tail to the degrees given on the line of chords: the given chord being taken between the two points next the curſor, the aperture of the other will be the radius required. 5. The radius being given, to find the ſine of any number of degrees. Slip the line on the dove-tail to the degree on the line of ſines whoſe ſine is required: the radius taken between the points furtheſt from the curſor, the aperture of the other will give the ſine of the angle required. But if the ſine ſought be leſs than 30°, the difference of the apertures of the oppoſite points will be the ſine required. 6. The radius being given, to find the tangent of any number of degrees under 71: if the tangent required be under 26° 30′, then ſlip the line on the dove-tail to the degree propoſed on the tangent line; the radius taken between the points fartheſt from the curſor, the aperture of the others will be the tangent of the degrees required: if the tangent required be above 26° 30′, but under 45°; the line on the curſor muſt be ſlipped to the degrees given on the tangent line: then the radius being taken between the points furtheſt from the curſor; the aperture of the others will be the tangent. If the tangent required be greater than 45°, but leſs than 56° 20′, ſlip the notch on the tangent ſide of the turned cheek to the degree 0 in the tangent line on the ſide of the *compaſs:* the radius taken between the points fartheſt from the curſor; the difference between the aperture of the other, and theſe, added together, will be the tangent required. Thus, for the tangents of other degrees under 71.—After the like manner may the ſecant of any number of degrees under 71 be found.

Mr. Heath, a mathematical inſtrument maker in London, conſtructed a pair of *proportional compaſſes*, in 1746, with a curious and uſeful contrivance for preventing the ſhorter legs from changing their poſition, when theſe *compaſſes* were uſed. It conſiſted of a ſmall beam ſoldered to a ſcrew, and running parallel to the leg of the *compaſſes*, nearly of the length of the groove; in this beam a ſlit was made, which admitted of a ſliding-nut, the other end of which fell into a hole in the bottom of the ſcrew, belonging to the great nut of the *compaſſes*. The ſcrew-pin of the beam paſſed through an adjuſter, by means of which the mark on the ſlider might be brought exactly to any diviſion. But the *proportional compaſſes* have been much out of uſe ſince the invention of the SECTOR.

COMPASSES, *Spring*, or *Dividers*, are made of hardened ſteel, the head arched: which, by its ſpring, opens the *compaſſes*; the opening being directed by a circular ſcrew, faſtened to one leg, and let through the other, worked with a nut.

COMPASSES, *Triangular*. See COMPASSES *of three legs*, and TRIANGULAR.

COMPASSES, *Triſecting*, the invention of M. Tarragon, for the triſection of angles, geometrically.

The inſtrument conſiſts of two central rules, and an arch of a circle of 120 degrees, immoveable, with its radius: the radius is faſtened with one of the central rules, like the two legs of a ſector, that the central rule may be carried through all the points of the circumference of the arch. The radius and rule muſt be as thin as poſſible, and the rule faſtened to the radius hammered cold, to acquire an elaſticity: the breadth of the other central rule muſt be triple the breadth of the radius. In this rule there is a groove, with a dove-tail, to be faſtened on it, for its motion: in the center of each rule muſt likewiſe be a hole. See the Journ. des Sçavans, Sept. 1688.

COMPASSES, *Turn-up*, a late contrivance to ſave the trouble of changing the points: the body is like the common *compaſſes*; towards the bottom of the legs, without-ſide, are added two other points, beſide the uſual ones; the one carrying a drawing pen-point, the other a port-crayon; both adjuſted ſo as to turn round, and ſo be in the way of uſe, or out of it, as occaſion requires.

The points of ſmall *compaſſes* are tempered by a lamp and blow-pipe, heating them red-hot; when cold, they are hard: the larger are tempered by a charcoal-fire and a blow-pipe, heating them to a cherry-colour, then plunging them in water.

See M. Bion's Conſtruction and Uſes of Mathematical Inſtruments, by Stone; and Robertſon's Treatiſe on the ſame ſubject.

COMPASSING, in *Naval Architecture*, a term uſed to denote ſuch pieces of timber as are incurvated into the figure of an arch.

COMPASSING *the king's death*, in *Law*. See TREASON.

COMPASSION, or COMMISERATION, in *Ethics*, a mixed paſſion, compounded of love and ſorrow, and excited by the ſight or recital of diſtreſs. Hobbs makes this a merely ſelfiſh paſſion, and defines it, as being fear for ourſelves; Hutcheſon reſolves it into INSTINCT; but Dr. Butler much more properly conſiders *compaſſion* as an original, diſtinct, particular affection in human nature. Hobbs of Human Nature, cap. ix. ſect. 10. Hutcheſon's Enquiry into Moral Good and Evil. Butler's Sermons, vol. v. and vi.

COMPATIBLE, ſomething that may ſuit, or conſiſt with another. See INCOMPATIBLE.

COMPENDIUM, an abſtract, EPITOME, or reduction of a large matter into a little compaſs.

COMPENSATION, an action whereby any thing is admitted as an equivalent to another.

COMPENSATION, in the *Civil Law*, is a kind of right, whereby a debtor purſued by his creditor, for the payment of a debt, demands that the debt may be *compenſated* with what is owing him by the creditor.—*Compenſation* is equivalent to payment, and anſwers to that which is called SET-*off*, in common law.

COMPERTORIUM, in the *Civil Law*, denotes a judicial inqueſt made by delegates, or commiſſioners, to find out, and relate the truth of a cauſe.

COMPETENCE, or COMPETENCY, in *Law*, the authority, or right, of a judge, for taking cognizance of any matter. See JURISDICTION.

COMPETENT *witneſſes*. See WITNESS.

COMPETENTES, in *Church Hiſtory*, an appellation given to the *catechumens*, when, being ſufficiently inſtructed in the Chriſtian religion, they required BAPTISM.

COMPITA, in *Zoology*, a name by which ſome have called the *colymbus major*, or FISANELLE, the great Venetian *diver*.

COMPITALIA, or COMPITALITIA, feaſts held among the ancients in honour of the *lares*.

The word comes from *compitum*, a *croſs-way*; becauſe the feaſt was held in the meeting of ſeveral roads.

The *compitalia* are more ancient than the building of Rome. Dionyſius Halicarnaſſeus, and Pliny, indeed, ſay, that they were inſtituted by Servius Tullius; but this only ſignifies, that they were then introduced into Rome.

Notwithſtanding what Dion relates, that the *compitalia* were celebrated a little after the Saturnalia, and that the Roman calendar fixes them on the twelfth of January, it appears that they had not fixed any day; at leaſt, not in the time of Varro, as is obſerved by Caſaubon.

The feaſt being thus moveable, the day whereon it was to be obſerved, was proclaimed every year. It was ordinarily held on the fourth of the nones of February, i. e. on the ſecond of that month. Macrobius obſerves, that they were held not only in honour of the *lares*, but alſo of *mania*, *madneſs*. The prieſts who officiated at them were ſlaves and liberti; and the ſacrifice was a ſow. They were re-eſtabliſhed, after a long neglect, by Tarquin the Proud, on occaſion of an anſwer of the oracle, *That they ſhould ſacrifice heads for heads*, i. e. that for the health and proſperity of each family, children were to be ſacrificed: but Brutus, after expelling the kings, in lieu of thoſe barbarous victims, ſubſtituted the heads of garlick and poppy; thus ſatisfying the oracle, which had enjoined *capita*, *heads*, at an eaſier rate.

During the celebration of this feaſt, each family placed at the door of their houſe, the ſtatue of the goddeſs *Mania*: they alſo hung up at their doors figures of wool, repreſenting men and women; accompanying them with ſupplications that the *Lares* and *Mania* would be contented with thoſe figures, and ſpare the people of the houſe.

As for ſlaves, in lieu of the figures of men, they offered balls or fleeces of wool. Servius Tullus ordered, that the ſlaves who aſſiſted at the *compitalia*, ſhould be free during the whole time of the feaſt. Auguſtus ordered the ſtatues of the *Lares*, placed in the croſs-ways, to be adorned with flowers twice a year.

COMPLAINANT, in *Law*, a PLAINTIFF, or one who prefers a *complaint* againſt another, to be relieved by juſtice or equity.

COMPLEMENT, *Arithmetical*. See ARITHMETICAL.

COMPLEMENT, in *Aſtronomy*, is uſed for the diſtance of a ſtar from the zenith; or the arch comprehended between the place of the ſtar above the horizon, and the zenith.

COMPLEMENT *of the courſe*, in *Navigation*, is the number of points the courſe wants of 90 degrees, or eight points; viz. of a quarter of the compaſs.

COMPLEMENT *of the curtin*, in *Fortification*, that part of the anterior ſide of the CURTIN, which makes the DEMI-GORGE.

COMPLEMENT *of the line of defence*, is the remainder of the line of DEFENCE, after you have taken away the ANGLE of the flank.

COMPLEMENT, in *Geometry*, is what remains of a quadrant of a circle, or of ninety degrees, after any certain arch has been retrenched from it.

Thus, if an arch or angle be 30 degrees, we ſay its *complement* is 60 degrees, ſince $60+30=90$.

The arch and its *complement* are relatives; and are only uſed with regard to each other.

The ſine of the *complement* of an arch is called the *co-ſine*; of a tangent, the *co-tangent*, &c.

We ſometimes alſo ſay the *complement of an angle*; meaning ſo much as it wants of a right angle, or of 90 degrees.

COMPLEMENTS *of a parallelogram*, are the two leſſer parallelograms, made by drawing two right lines parallel to each ſide of a parallelogram, through a given point in the diagonal.

Such are the parallelograms C and M (*Tab. Geometry*, *fig.* 1.)—It is demonſtrated, that in every parallelogram, the *complements* C and M are equal: for $Z+C+o=R+M+x$; as making up on each ſide the great triangles, made equal by the diagonal; of which, $Z=R$, and $o=x$ (becauſe the diagonal makes them ſo); whereſore the remaining PARALLELOGRAM $C=M$.

COMPLEMENT *of Life*, in the *Doctrine of Life-Annuities*, is the number of years which a given life wants of 86. Thus 56 is the *complement* of 30, 36 of 50, &c. Mr. De Moivre ſuppoſes an equal decrement of life through all its ſtages till the age of 86, which he conſidered as the utmoſt probable extent of life. Thus, if there be 56 perſons alive at 30 years of age, it is ſuppoſed that one will die every year, till, in 56 years, they will be all dead. The ſame will happen to 46 at 40, in 46 years, and thus for all ages. This hypotheſis is ſo conformable to Dr. Halley's table, formed from his obſervations at Breſlaw, that the value of lives deduced either from the hypotheſis, or the table, need not be diſtinguiſhed; and it very much eaſes the labour of calculating them. De Moivre's Treatiſe on Annuities, annexed to his Doctrine of Chances, p. 265. Price's Obſervations on Reverſionary Payments, p. 2. See LIFE-*Annuities*.

COMPLEMENT *of an interval*, in *Muſic*, is the quantity which it wants of an OCTAVE. See INTERVAL.

COMPLEX, a term ordinarily uſed as ſynonymous with *compound*; though, ſtrictly ſpeaking, there is ſome difference between them.

Complex is properly applied where a thing contains divers others; or conſiſts of divers parts, not really diſtinct from one another; but only imaginarily, or in our conception.

In *Logic*, *complex* is oppoſed to ſimple, and *compound* to ſingle.

COMPLEX *object.* See OBJECT.

COMPLEX *oppoſition.* See OPPOSITION.

COMPLEX *term*, or *idea*, is a TERM or IDEA compounded of ſeveral ſimple, or incomplex ones.

Thus, in the propoſition, *A juſt God cannot leave crimes unpuniſhed*; the ſubject of this propoſition, viz. *a juſt God*, is a *complex term*, or ſtands for a *complex idea*, compoſed of two ſimple, or *incomplex* ones, viz. *God* and *Juſt*.

Mr. Locke obſerves, that though the mind be perfectly paſſive in the formation of ſimple ideas; yet it exerts ſeveral actions of its own about them, when once formed: and that by this means it is, that they become the materials and foundation out of which all our knowlege is framed.

Theſe acts are chiefly three, viz. 1. The combining of ſeveral ſimple ideas into one compound one: and thus it is that all *complex* ideas are made.

2. The bringing two ideas, whether ſimple or *complex*, together; ſetting them by each other, and ſo viewing them, without uniting them into one; by which it gets its ideas of RELATION.

3. The ſeparating ſeveral ideas from all other ideas that accompany them in their real exiſtence: and thus all its general ideas are formed.

As ſimple ideas are obſerved to exiſt in ſeveral combinations united together; ſo the mind may conſider them as united, not only as they are really united in external objects, but as itſelf has joined them: ideas thus made up of ſeveral ſimple ones put together, we call *complex*; as man, beauty, army, gratitude, &c.

Complex ideas, however compounded and decompounded, though their number be infinite, and their variety endleſs, may be all reduced under theſe three heads, viz. *modes*, *ſubſtances*, and *relations*; which ſee under their proper heads, MODE, SUBSTANCE, and RELATION.

Complex ideas are often conſidered as ſingle and diſtinct beings, though made up of ſeveral ſimple ideas; as body, ſpirit, &c.

COMPLEX *propoſition*, in *Logic*, is that in which the ſubject, or predicate, or both, are made up of *complex* terms: and if the term added to the ſubject be eſſential or neceſſary to it, then it is called *explicative*; otherwiſe it is *determinative*, the adjoined term limiting the ſubject to a particular part of its extenſion. Some logical writers aſcribe the *complexion* of a propoſition, in ſome caſes, to the copula, as in modal propoſitions; but this rather pertains to the predicate. See *Compound* and *Modal* PROPOSITION.

COMPLEX *ſyllogiſm*, is that, in which the middle term is not connected with the whole ſubject, or the whole predicate in two diſtinct propoſitions, but is intermingled and compared with them by parts: e. g. The ſun is a ſenſeleſs being, the Perſians worſhipped the ſun, therefore the Perſians worſhipped a ſenſeleſs being.

COMPLEXI *pars*, in *Anatomy*, a name given by Riolanus, and others, to a muſcle called by Albinus *biventer cervicis*, and by ſome the *complexus*.

COMPLEXIO, COMPLEXION, in *Metaphyſics*, the union, or coalition of ſeveral things different from each other; either really, or only in our conception. See COMPLEX.

COMPLEXIO, in *Logics*, is ſometimes applied to the ſecond operation of the mind, viz. the judgment; conſidered as it affirms or denies any thing; ſuch affirmation, &c. neceſſarily importing a combination of ſeveral things.

Complexio is ſometimes alſo uſed by logicians in the ſenſe of dilemma.

COMPLEXIO, in *Rhetoric*, &c. is a figure including a repetition, and a converſation at the ſame time; the ſentence both beginning, and ending, with the ſame word.

Thus Tully: *Quis legem tulit? Rullus. Quis majorem partem populi ſuffragiis privavit? Rullus. Quis comitiis præfuit? Rullus.*

COMPLEXION, in *Phyſics*, is uſed for the temperature, habitude, or natural diſpoſition of the body.

Some philoſophers diſtinguiſh four general and principal *complexions* in man, viz. the *ſanguine complexion*, which, according to them, anſwers to the air; having the qualities thereof, as being hot, and moiſt. It takes its name from *ſanguis*; becauſe the blood is there ſuppoſed to be predominant.

The *phlegmatic complexion* takes its name from the pituita, or phlegm, in which it abounds; and correſponds to water; being cold and moiſt.

The *bilious*, or *choleric complexion*, takes its name from the bile, or choler: it is ſuppoſed of the nature of fire, hot and dry.

Laſtly, the *melancholic complexion* partakes of the nature of earth, being cold and dry. But this ſort of reaſoning is now not much regarded.

COMPLEXUS, or *Par* COMPLEXUM, in *Anatomy*, is a pair of muſcles, ariſing with ſix thin ſmall tendons from the tranſverſe proceſſes of the vertebræ of the neck and thorax, growing fleſhy in its aſcent; again becoming tendinous about the middle; and again fleſhy, where it is inſerted laterally into the poſterior part of the upper tranſverſe line of the *os occipitis*, and the hind part of the *proceſſus maſtoides*. See *Tab. Anat.* (*Myol.*) *fig.* 7. *n.* 5.

The former is called *complexus major*, and the latter *complexus minor*, or *maſtoidæus lateralis*. Winſlow.

This laſt is often miſtaken for a portion of the *longiſſimus dorſi*. Some anatomiſts have reckoned four of theſe muſcles inſtead of two.

When they act together, they pull the head directly backwards; but either of them acting alone, it draws it obliquely back.

COMPLICATION *of diſeaſes*, a mixture, or combination of ſeveral diſeaſes; eſpecially where they have any affinity to one another; as the dropſy, aſthma, and jaundice, happening together.

What much perplexes the phyſicians is, when with a fever there is a *complication* of ſome other diſorder.

COMPLUTENSIAN *Bible*. See *Greek* BIBLES.

COMPONE, or COMPONED, or *Gobony*, in *Heraldry*.—A bordure *compone*, is that formed or compoſed of a row of angular parts, or chequers of two colours. See *Tab. Heraldry*, *fig.* 19.

COMPONED, or COMPOSED, is alſo uſed in general for a bordure, a pale, or a feſs, compoſed of two different colours, or metals, diſpoſed alternately, ſeparated and divided by fillets, excepting at the corners; where the junctures are made in form of a goat's foot.

COMPOS *Mentis*. See NON-COMPOS.

COMPOSED *Baſtion*. See BASTION.

COMPOSITE *Numbers*, thoſe that can be meaſured by ſome number, beſides itſelf, above unity; as 12, by 2, 3, 4, and 6.

Compoſite numbers between themſelves, are the ſame with COMMENSURABLE *numbers*.

COMPOSITE *Order*, in *Architecture*, the laſt of the five orders of columns; ſo called, becauſe its capital is *compoſed* out of thoſe of the other orders. See *Tab. Architecture*, *fig.* 28.

It borrows a quarter-round from the Tuſcan and Doric; a double row of leaves from the Corinthian; and volutes from the Ionic: its cornice has ſingle modillions, or dentils.

The *compoſite* is alſo called the Roman and the Italic order, as having been invented by the Romans; conformably to the reſt, which are denominated from the people among whom they had their riſe.

Moſt authors rank this after the Corinthian; either as being the richeſt, or as the laſt that was invented: Scamozzi alone places it between the IONIC and CORINTHIAN; out of a view to its delicacy and richneſs, which he eſteems inferior to that of the Corinthian; and therefore makes no ſcruple to uſe it under the Corinthian: wherein he is followed by M. le Clerc.

The proportions of this order are not fixed by Vitruvius; he only marks its general character, by obſerving that its CAPITAL is compoſed of ſeveral parts taken from the Doric, Ionic, and Corinthian: he does not ſeem to regard it as a particular order; nor does he vary it at all from the Corinthian, except in its capital. In effect, it was Serlio who firſt added the *compoſite* order to the four of Vitruvius, forming it from the remains of the temple of Bacchus, the arches of Titus, Septimius, and the goldſmiths: till then, this order was eſteemed a ſpecies of the Corinthian, only differing in its capital.

The order being thus left undetermined by the ancients, the moderns have a kind of right to differ about its proportions, &c. Accordingly Scamozzi, and after him M. le Clerc, makes its column nineteen modules and an half; which is leſs by half a module than that of the Corinthian: as, in effect, the order is leſs delicate than the Corinthian. Vignola makes it twenty; which is the ſame with that of his Corinthian: but Serlio, who firſt formed it into an order, by giving it a proper ENTABLATURE and BASE, and after him M. Perrault, raiſe it ſtill higher than the Corinthian.

This laſt does not think different ornaments and characters ſufficient to conſtitute a different order, unleſs it have a different height too: agreeably, therefore, to his rule of augmenting the heights of the ſeveral columns by a ſeries of two modules in each; he makes the *compoſite* twenty modules, and the Corinthian eighteen; which, it ſeems, is a medium between the arches of Titus and the temple of Bacchus.

For the parts of the order, ſee COLUMN, FREEZE, PEDESTAL, &c.

M. Perrault, in his Vitruvius, diſtinguiſhes between *compoſite* and *compoſed* order. The latter, he ſays, denotes any compoſition whoſe parts and ornaments are extraordinary, and unuſual; but have, withal, ſomewhat of beauty; both on account of their novelty, and in reſpect of the matter, or genius of the architect: ſo that a *compoſed* order is an arbitrary, humorous compoſition, whether regular or irregular.

The ſame author adds, that the Corinthian order is the firſt *compoſite* order, as being compoſed of the Doric and Ionic; which is the obſervation of Vitruvius himſelf, lib. iv. cap. 1.

Composite *ſtalk*. See Stalk.

COMPOSITIO *menſurarum*, the title of an ancient ordinance for meaſures, not printed; it is mentioned in the ſtatute of 23 Hen. VIII. cap. 4.

COMPOSITION, in a general ſenſe, is the uniting or joining of ſeveral different things, ſo as to form one whole, called a *compound*.

The ſchoolmen diſtinguiſh two kinds of *compoſition*; the one *entitative*, which is between things of the ſame nature, e. gr. two or more drops of water: the other *eſſential*, when things of different kinds are joined, and thus conſtitute new things, or eſſences, different from any of the parts: and thus, ſay they, from the matter and the form of wood, ariſes wood; whoſe eſſence is very different from either of thoſe ingredients taken ſeparately.

Composition *of bodies*, in *Chemiſtry*. See Combination and Affinity.

Composition, in *Commerce*, a contract between an inſolvent debtor and his creditors; whereby the latter agree to accept of a part of the debt, in compenſation for the whole, and give a general acquittance accordingly.

Composition, in *Grammar*, denotes the joining of two words together; or prefixing a particle to another word, to augment, diminiſh, or change its ſignification. See Word, &c.

Composition *of ideas*, is an operation of the mind, whereby it combines ſeveral of its simple ideas into complex ones.

Under the ſame operation may likewiſe be reckoned that of enlarging; whereby we put ſeveral ideas together of the ſame kind, as ſeveral units to make a dozen.

In this, as in others, brutes come far ſhort of men; for though they take in and retain ſeveral combinations of ſimple ideas; as poſſibly, a dog does the ſhape, ſmell, and voice of his maſter; yet theſe are rather ſo many diſtinct marks whereby he knows him, than one complex idea, made out of thoſe ſimple ones.

Composition, in *Law*. See Modus.

Compoſitions were anciently allowed for crimes and offences, even for murder. By this expedient it was propoſed to reſtrain the violence of private revenge. The cuſtom may be traced back to the ancient Germans, and prevailed in other uncivilized nations. Tavernier relates, that in Perſia a murderer is ſtill delivered to the relations of the perſon whom he has ſlain, who put him to death with their own hands; and if they refuſe a ſum of money as a compenſation, the ſovereign cannot pardon the murderer. Robertſon's Hiſt. vol. i. chap. v. p. 363.

Composition, in *Logic*, is a method of reaſoning, wherein we proceed from ſome general ſelf-evident truth, to other particular and ſingular ones.

The method of *compoſition*, called alſo *ſyntheſis*, is juſt the reverſe of that of *reſolution*, or *analyſis*.

Reſolution is the method whereby we ordinarily ſearch after truth; *compoſition*, that whereby a truth found, is diſcovered and demonſtrated to others: reſolution is the method of inveſtigation; *compoſition*, of demonſtration.

The method of *compoſition* is that uſed by Euclid, and other geometricians; reſolution, that uſed by algebraiſts and philoſophers. The two methods differ, juſt as the methods of ſearching a genealogy; which are either by deſcending from the anceſtors to the poſterity, or by aſcending from the poſterity to their anceſtors: each have this in common, that their progreſſion is from a thing known, to another unknown.

The method of *compoſition* is beſt obſerved by the mathematicians: the rules hereof are, 1. To offer nothing but what is couched in clear expreſs terms; and to that end, to begin with definition. 2. To build only on evident and clear principles; to that end, to proceed from axioms or maxims. 3. To prove demonſtratively all the concluſions that are drawn hence; and to this purpoſe, to make uſe of no arguments or proofs, but definitions already laid down, axioms already granted, and propoſitions already proved; which ſerve as principles to things that follow.

Composition, in *Muſic*, is the art of diſpoſing muſical ſounds into airs, ſongs, &c. either into one, or more parts; to be ſung with the voice, or played on inſtruments.

Zarlini defines *compoſition* to be the art of joining and combining concords together, which are the matter of muſic: but this definition is too ſcanty; becauſe, discords are always uſed with concords in the *compoſition* of parts.

Under *compoſition* are comprehended the rules, 1. of *melody*, or the art of making a ſingle part; i. e. of contriving and diſpoſing the ſimple ſounds, ſo as that their ſucceſſion and progreſs may be agreeable. 2. Of *harmony*, or the art of diſpoſing and concerting ſeveral ſingle parts ſo together, that they make one agreeable whole.

It may be here obſerved, that melody being chiefly the buſineſs of the imagination, the rules of *compoſition* ſerve only to preſcribe certain limits to it; beyond which, the imagination, in ſearching out the variety and beauty of airs, ought not to go: but harmony being the work of judgment, its rules are more certain, extenſive, and more difficult in practice.

In the variety and elegance of the melody, the invention labours a great deal more than the judgment; ſo that method has but little place: but in harmony it is otherwiſe; the invention, here, has nothing to do; and the *compoſition* is conducted from a nice obſervation of the rules of harmony, without any aſſiſtance from the imagination at all,

Composition *of motion*, is an aſſemblage of ſeveral directions of motion, reſulting from powers acting in different, though not oppoſite lines.

If a point move or flow according to one and the ſame direction; whether that motion be equable or not, yet it will ſtill keep the ſame right line; the celerity alone being changed, i. e. increaſed, or diminiſhed, according to the forces with which it is impelled. If the directions be oppoſite, as one, e. gr. directly downward, the other upward, &c. yet ſtill the line of motion will be the ſame.

But if the compounding motions be not according to the ſame line of direction, the compound motion will not be according to the line of direction of any of them, but in a different one from them all; and this either ſtrait or crooked, according as the direction or celerities ſhall require.

If two compounding motions be each of them equable, the line of the compound motion will ſtill be a ſtrait line; and this, though the motions be neither at right angles one to another, nor equally ſwift, nor (each to itſelf) equable; provided that they be but ſimilar; that is, both accelerated and retarded alike.

Thus, if the point *a* (*Tab. Mechanics*, *fig.* 4.) be impelled equally with two forces; viz. upwards, towards *b*, and forwards, towards *d*; it is plain, that when it is gone forwards as far as *a c*, it muſt of neceſſity be gone upwards as far as *c e*; ſo that were the motions both equable, it would always go on in the diagonal *a e c*.

Nay, ſuppoſe the motions unequal as to celerity. ſo, v. gr. as that the body move twice as faſt upwards as forwards, &c. yet ſtill it muſt go on in the diagonal *a c*; becauſe the triangles *a e c*, *a e c*, &c. and *a c d* will ſtill be ſimilar, being as the motions are: and it will have deſcribed the diagonal in the ſame time which it would have required to deſcribe either of the ſides ſingly.

But, if the motions be diſſimilar, then the *compound* motion muſt be a curve.

And, if a body, as *b* (*fig.* 5.) be impelled or drawn by three different forces, in the three different directions *b a*, *b c*, and *b d*, ſo that it yields to none of them, but continues *in æquilibrio*; then will thoſe three powers or forces be to one another, as three right lines drawn parallel to thoſe lines, expreſſing the three different directions, and terminated by their mutual concourſes.

Let *b e* repreſent the force by which the body *b* is impelled from *b* to *a*; then will the ſame right line *b e* repreſent alſo the contrary equal force, by which it is impelled from *b* to *e*: but by what hath been ſaid before, the force *b e* is reſolvable into the two forces acting according to the two directions *b d* and *b c*, to which the other impelling from *b* to *e*, is as *b e* to *b d*, and *b c* or *d e*, reſpectively.

So likewiſe two forces, acting without the directions *b d*, *b c*, and being equipollent to the force acting without the direction *b e*, from *b* to *e*; will be to the force acting according to the direction *b e*, from *b* to *e*, as *b d*, *b c*, to *b e*: and therefore, the forces acting in the directions *b d*, *b c*, and equipollent to the force acting in the direction *b e*, are to the force acting in the direction *b e*, as *b d*, *b c*, or *d e*, to *b e*: that is, if a body be urged by three different equipollent powers in the directions *b a*, *b d*, and *b c*; theſe three forces ſhall be to one another as *b e*, *b d*, and *d e*, reſpectively.

This theorem, with its corollaries, Dr. Keill obſerves, is the foundation of all the new mechanics of M. Varignon: by help hereof, may the force of the muſcles be computed, and moſt of the mechanic theorems in Borelli,

relli, De Motu Animalium, be immediately deduced. See Motion.

Composition *of numbers and quantities.* See Combination.

Composition, in *Oratory*, the order and coherence of the parts of a diſcourſe.

As a part of general ELOCUTION, it regards the turn and harmony of the periods: and therefore to *compoſition* belong, both the artful joining of the words, whereof the ſtyle is formed, and whereby it is rendered ſoft and ſmooth, gentle and flowing, full and ſonorous; or the contrary: and the order, which requires things firſt in nature and dignity, to be put before thoſe of inferior conſideration.

Compoſition conſiſts of four parts; which rhetoricians call PERIOD, ORDER, JUNCTURE, and NUMBER. Ward's Oratory, vol. i. p. 340.

Composition, in *Painting*, includes the invention as well as diſpoſition of the figures, the choice of attitudes, &c. *Compoſition*, therefore, conſiſts of two parts; one of which finds out, by means of hiſtory, proper objects for a picture; and the other diſpoſes them to advantage.

Composition, in Pharmacy, the art, or act, of mixing divers ingredients together into a medicine; ſo that they may aſſiſt each other's virtues, ſupply each other's defects, or correct any ill qualities thereof.

Composition, in Printing, ordinarily called *compoſing*, is the arranging of ſeveral types or letters in the compoſing-ſtick, in order to form a line; and of ſeveral lines ranged in order in the galley, to make a page; and of ſeveral of thoſe to make a form.

The *compoſing-ſtick* is made of iron generally, ſometimes braſs, or wood; of greater or leſs length or depth, according to the page to be compoſed, or the compoſitor's fancy: it hath two ſliding pieces, to be faſtened by means of a nut and ſcrew, which are ſlipped forwards or backwards, at the pleaſure of the compoſitor, and according to the ſpace which the lines, notes, &c. are to take up. See *Tab. Miſcellany, fig.* 5.

The *compoſing-ſtick* ordinarily contains ſeven or eight lines of a middle-ſized letter; theſe, when ſet, are taken out, by help of a thin ſlip of braſs, termed a rule, and diſpoſed in the galley; and others compoſed, till a page be formed. The page being compoſed, is tied up, and ſet by; and the reſt of the pages of the ſheet prepared in the ſame manner: when done, they are carried to the impoſing or correcting-ſtone; there ranged in order, and diſpoſed in a chaſe, or iron-frame, fitted with wooden furniture; then, the quoins being ſtruck in, it is carried to the preſs to be printed.

Composition *of proportion.*—If there be two ratios, wherein the antecedent of the firſt is to its conſequent, as the antecedent of the other is to its conſequent: then, by *compoſition* of proportion; as the ſum of the antecedent and conſequent of the firſt ratio, are to the antecedent, or the conſequent, of the firſt; ſo is the ſum of the antecedent and conſequent of the ſecond ratio, to the antecedent, or the conſequent, of the ſecond.

E. gr. If $A : B :: C : D$; then by *compoſition*, $A + B : A$ or $(B) :: C + D : C$ or (D).

Composition *of ratios*, in *Arithmetic* and *Algebra*, is performed by multiplying the quantities or exponents of two or more ratios together; the produce is then ſaid to be compounded of the ratios whoſe components were multiplied. Thus if the quantities or exponents of the ratios a to b, c to d, e to f, be multiplied, we ſhall have $\frac{a}{b} \times \frac{c}{d} \times \frac{e}{f} = \frac{ace}{bdf}$. And the ratio ace to bdf, is then ſaid to be compounded of the ſeveral ratios a to b, c to d, e to f, &c. Thus alſo the ratio of 10 to 12, is compounded of the ratio 2 to 3, and of 5 to 4; for $\frac{2}{3} \times \frac{5}{4} = \frac{10}{12}$.

This operation is by ſome called *addition* of ratios.

COMPOSSIBLES, Compossibilia, in *Logic*, ſuch things as are COMPATIBLE, or capable of ſubſiſting together.

COMPOST, in *Agriculture* and *Gardening*, a compound, or mixture of earths, dungs, &c. applied, by way of MANURE, for the meliorating and improving of ſoils, and aſſiſting the natural earth in the work of vegetation.

The gardeners have magazines, or layſtalls of *compoſts*, adapted to the different ſorts of SOIL. Light looſe land requires a *compoſt* of a heavy nature; ſuch as the ſcouring of ditches, ponds, &c. mixed with earth, dung, &c. A heavy, clayey, or cloddy land, requires a *compoſt* of a more ſprightly and active kind, to inſinuate into the heavy, lumpy clods; as dungs, ſand, aſhes, and natural mould.

Mr. Bradley preſcribes ſeveral different ſorts of *compoſts*, to forward the growth of trees; viz. a quantity of ſtiff ſoil, broken and mixed with ſharp ſand, and aſhes of burnt furzes, weeds, &c. or ſtiff ſoil with ſand and burnt graſs-turf, and rotten-wood; or ſtiff ſoil with ſand and rape-ſeed, after the oil is preſſed out, with burnt turf; or ſtiff ſoil with ſand and malt-grains; or ſheeps dung, with wood-aſhes and loam, or mother-earth.

The ſame author recommends a mixture or preparation of ſoils anſwering to loam, or mother-earth, as greatly preferable for planting or ſowing foreſt-trees in, to any of theſe richer *compoſts*; which, though they haſten the growth of the tree, will not make the timber near ſo firm and durable.

COMPOUND, the reſult or effect of a compoſition of different things; or that which ariſes from them.

Strictly ſpeaking, every new *compoſition* does not produce a new *compound*; but only that from which a new eſſence ariſes. Thus, when one drop of water is added to another, there does not ariſe a new phyſical *compound*; the eſſence being the ſame now, as before the union.

Compound differs from COMPLEX, and ſtands oppoſed to SIMPLE.

We ſay, the ingredients of a *compound*; apothecaries are great dealers in *compounds*.

Compound *Flower*. See Flower.

Compound *Force, Forms, Foſſils, Fractions, Fracture, Gland, Harmony.* See the ſubſtantives.

Compound *intereſt*, called alſo *intereſt upon intereſt*, is that which is reckoned not only upon the principal, but upon the INTEREST itſelf forborn; which hereby becomes a ſort of ſecondary principal.

Compound *Machine, Maſonry.* See the ſubſtantives.

Compound *motion*, that motion which is effected by ſeveral conſpiring powers.

Powers are ſaid to conſpire, if the direction of the one be not directly oppoſite to that of the other; as when the radius of a circle is conceived to revolve about a center; and at the ſame time a point to move ſtrait along it.

All curvilinear motion is *compound*.

It is a popular theorem, in *Mechanics*, that in an uniform *compound* motion, the velocity produced by the conſpiring powers, is to that of either of the powers ſeparately, as the diagonal of a parallelogram, according to the direction of whoſe ſides they act ſeparately, to either of the ſides.

Compound *numbers.* See Composite.

Compound *pendulum*, in *Mechanics*, that which conſiſts of ſeveral weights conſtantly keeping the ſame diſtance, both from each other, and from the center about which they oſcillate. See Pendulum.

Compound *propoſition.* See Proposition.

Compound *quantities*, in *Algebra*, are ſuch as are connected together by the ſigns + and −: thus, $a + b - c$, and $bb - b$ are *compound* quantities.

Compound *ratio* is that which the product of the antecedents of two or more ratios has to the product of their conſequents.

Thus 6 to 72 is a ratio *compounded* of 2 to 6, and 3 to 12. See Proportion, and Composition *of ratios.*

Compound *Sounds, Surd, Taſte, Ulcer, Words.* See the ſubſtantives.

COMPOUNDED *idea*, in *Logic*, unites ſeveral ideas of a different kind, which are uſually conſidered as diſtinct ſingle beings, whether thoſe united ideas be SIMPLE or COMPLEX. See Collective *idea*.

COMPOUNDING *felony*, in *Law*. See Theft-Bote.

COMPREHENSION, in *Engliſh Church-Hiſtory*, denotes a ſcheme propoſed by Sir Orlando Bridgman in 1667-8, for relaxing the terms of conformity in behalf of proteſtant diſſenters, and admitting them into the communion of the church. A bill for this purpoſe was drawn up by lord chief baron Hale, but diſallowed. The attempt was renewed by Tillotſon and Stillingfleet in 1674, and the terms were ſettled to the ſatisfaction of the non-conformiſts, but the biſhops refuſed their aſſent. This ſcheme was likewiſe revived again immediately after the Revolution; the king and queen expreſſed their deſire of an union: however the deſign failed after two attempts; and the act of TOLERATION was obtained. Birch's Life of Tillotſon, p. 42. 167, &c.

Comprehension, in *Metaphyſics*, is that act of the mind, whereby it apprehends, or knows, any object preſented to it, on all the ſides, whereon it is capable of being apprehended, or known.

To *comprehend* a thing, is defined by the ſchoolmen, *rem aliquam totam & totaliter cognoſcere.* See Apprehension.

Comprehension, in *Rhetoric*, a trope, or figure, whereby the name of a whole is put for a part; or that of a part for a whole: or a definite number of any thing for an indefinite.

COMPRESS, in *Surgery*, a bolſter of linen cloth, folded in ſeveral doubles, and laid under the bandage, to prevent a wound from bleeding or ſwelling; or to retain the medicines applied thereto.

The word comes from *comprimere, to preſs hard.*

Scultetus, in his Arſenal of Chirurgery, obſerves that the

Ancients compoſed their *compreſſes* of carded flax, or of feathers, ſewed between two linens; and called them pillows, or plumages, *pulvini*, or *pulvilli*, &c.

It is frequently the cuſtom among ſurgeons, after the plaſter and other dreſſings are applied, to cover all with a *compreſs*, which is made of the ſofteſt old linen, four, ſix, or eight times doubled. Theſe are of ſervice, not only by preſerving the parts from the injuries of the external air, but alſo for ſecuring and fixing the plaſters, and other dreſſings.

Compreſſes are alſo frequently applied where no plaſter is made uſe of; and that ſometimes dry, ſometimes wetted with certain liquors, which are ſuppoſed to be ſtrengthening, emollient, reſolving, lenient, cooling, &c. They are frequently dipped in the decoctions of certain herbs, into wine, ſpirit of wine, vinegar, or oxycrate, and ſometimes into lime-water, and are adminiſtered either cold or hot, as the nature of the caſe requires.

Compreſſes are of various forms, ſuited to different occaſions.

Compreſſes of all kinds are intended for theſe purpoſes: 1. To preſerve and cheriſh the natural heat of the body. 2. To ſecure the dreſſings that are laid under them. 3. To convey liquid remedies to parts wounded, or otherwiſe diſordered, and to prolong the uſe of them. 4. To fill up any cavities or depreſſions of the parts, that the dreſſings (eſpecially in fractures) may be applied with greater ſecurity: and laſtly to prevent bandages from bringing on a troubleſome itching, or other pain or uneaſineſs on the ſkin. Heiſter.

COMPRESSION, the act of preſſing, or ſqueezing ſomething, ſo as to ſet its parts nearer to each other, and make it poſſeſs leſs ſpace.

Compreſſion properly differs from *condenſation*, in that the latter is performed by the action of cold, the former by ſome external violence: or, more ſtrictly ſpeaking, *compreſſion* is the action of any force on a body, without regarding its effect; whereas *condenſation* denotes the ſtate of a body that is actually reduced into a leſs bulk.

Pumps, which the ancients imagined to act by ſuction, do, in reality, act by *compreſſion*; the *embolus*, or ſucker, in going and returning in the narrow pipe, *compreſſes* the air incloſed, ſo as to enable it by the force of its elaſticity to raiſe the valve, and make its eſcape: upon which, the balance being deſtroyed, the preſſure of the atmoſphere on the ſtagnant ſurface, drives up the water in the pipe thus evacuated of its air. See PUMP.

Water was thought incapable of *compreſſion*: and it was believed till lately, that after the air had been purged out of it, no art or violence is able to bring its parts cloſer, or to make it take up leſs compaſs. In an experiment made by the academy del Cimento, water, when violently ſqueezed, made its way through the infinitely fine pores of a ball of gold, rather than undergo any *compreſſion*.

The ingenious Mr. Canton, F. R. S. attentively conſidering this experiment, found that it was not ſufficiently accurate to juſtify the concluſion, which had been univerſally drawn from it; ſince the Florentine philoſophers had no method of determining that the alteration of figure in their globe of gold, occaſioned ſuch a diminution of its internal ſpace, as was exactly equal to the quantity of water forced into its pores. In order to bring this matter to a more accurate and deciſive trial, he procured a ſmall glaſs tube of about two feet in length, with a ball at one end of an inch and a quarter in diameter. Having filled the ball and part of the tube with mercury, and brought it exactly to the heat of 50° by Fahrenheit's thermometer, he marked the place where the mercury ſtood in the tube, which was about ſix inches and a half above the ball; and then raiſed the mercury by heat to the top of the tube, and ſealed the tube hermetically; and when the mercury was brought to the ſame degree of heat as before, it ſtood in the tube $\frac{32}{100}$ of an inch higher than the mark. The ſame experiment was repeated with water exhauſted of air, inſtead of mercury, and the water ſtood in the tube $\frac{43}{100}$ of an inch above the mark. Since the weight of the atmoſphere on the outſide of the ball, without any counterbalance from within, will compreſs the ball, and equally raiſe both the mercury and water, it appears that the water expands $\frac{11}{100}$ of an inch more than the mercury, by removing the weight of the atmoſphere. Having thus determined that water is really *compreſſible*, he proceeded to eſtimate the degree of *compreſſion* correſponding to any given weight. For this purpoſe he prepared another ball, with a tube joined to it; and finding that the mercury in $\frac{21}{7}$ of an inch of the tube was the hundred-thouſandth part of that contained in the ball, he divided the tube accordingly. He then filled the ball and part of the tube with water exhauſted of air; and leaving the tube open, placed this apparatus under the receiver of an air-pump, and obſerved the degree of expanſion of the water anſwering to any degree of rarefaction of the air: and again by putting it into the glaſs receiver of a condenſing engine, he noted the degree of *compreſſion* of the water correſponding to any degree of condenſation of the air. He thus found, by repeated trials, that, in a temperature of 50°, and when the mercury has been at its mean height in the barometer, the water expands one part in 21740, and is as much *compreſſed* by the weight of an additional atmoſphere, or the *compreſſion* of water by twice the weight of the atmoſphere, is one part in 10870 of its whole bulk. Should it be objected, that the *compreſſibility* of the water was owing to any air which it might be ſuppoſed to contain, he anſwers, that more air would make it more *compreſſible*; he therefore let into the ball a bubble of air, and found that the water was not more *compreſſed* by the ſame weight than before.

In ſome farther experiments of the ſame kind, Mr. Canton found that water is more *compreſſible* in winter than in ſummer; and he obſerved the contrary in ſpirit of wine, and oil of olives.

The following table was formed, when the barometer was at twenty-nine inches and a half, and the thermometer at fifty degrees.

		Millionth parts.	Spec. grav.
Campreſſion of	ſpirit of wine	66	846
	Oil of olives	48	918
	Rain water	46	1000
	Sea-water	40	1028
	Mercury	3	13595

He infers that theſe fluids are not only *compreſſible*, but elaſtic; and that the *compreſſions* of them, by the ſame weight, are not in the inverſe ratio of their denſities, or ſpecific gravities, as might be ſuppoſed. Phil. Tranſ. vol. lii. 1762. art. 103. and vol. liv. 1764. art. 47.

The *compreſſion* of the air, by its own weight, is ſurpriſingly great: but the air may be ſtill further *compreſſed* by art. See *Elaſticity of* AIR.

This immenſe *compreſſion* and dilatation, Sir Iſaac Newton obſerves, cannot be accounted for in any other way, but by a repelling force, wherewith the particles of air are endued; by virtue whereof, when at liberty, they mutually fly each other.

This repelling power, he adds, is ſtronger and more ſenſible in air, than in other bodies; becauſe air is generated out of very fixed bodies, but not without great difficulty, and the help of fermentation: now thoſe particles always recede from each other with the greateſt violence, and are *compreſſed* with the greateſt difficulty, which, when contiguous, cohere the moſt ſtrongly. See AIR, ATTRACTION, COHESION, DILATATION, and REPULSION.

COMPRESSOR *naris*, in *Anatomy*, a name given by Albinus, and ſome others, to one of the muſcles of the face, called by Winſlow the *tranſverſalis naſi*, and *inferior naſi*; and by Cowper, the ELEVATOR *alæ naſi*.

COMPRISE *nient*. See NIENT.

COMPROMISE, a treaty, or contract, whereby two contending parties eſtabliſh one or more arbitrators, to judge of and terminate their differences in an amicable way.

The regular way of appointing a *compromiſe* is by a writing, expreſſing the names of the arbitrators, the power of chooſing an umpire, or ſuper-arbitrator, in caſe of need, a time limited for the arbitrage, and a penalty on the party who does not abide by the deciſion.

By the civil law, a ſlave cannot make a *compromiſe* without the leave of his maſter, nor can a pupil without the authority of his guardian, or a wife without that of her huſband. So a ſlave, a deaf or dumb man, a minor, and the perſon who is a party in the cauſe, are incapable of being choſen arbitrators in a *compromiſe*.

The occaſions on which a *compromiſe* is not allowed of, are reſtitutions, marriage-cauſes, criminal affairs, queſtions of ſtate; and, generally, any thing wherein the public intereſt is more concerned than that of private perſons.

In our law, a *compromiſe* is not of ſo much extent. Weſt defines it the faculty, or power of pronouncing ſentence between perſons at controverſy, given to arbitrators by the parties mutual private conſent, without public authority.

COMPROMISE is alſo uſed in beneficiary matters; where it ſignifies an act, whereby thoſe who have the right of election, transfer it to one or more perſons, to elect a perſon capable of the office or dignity.

We have ſeen members of parliament elected by *compromiſe*; when the electors, not being able to agree among themſelves, give the power of electing, at leaſt of nominating, to two perſons; obliging them by oath, or otherwiſe, to chooſe ſuch as they think the moſt capable, and beſt diſpoſed.

COMPTING, or COUNTING-HOUSE, an office in the king's houſhold, under the direction of the lord ſteward; ſo called, becauſe the accompts for all expences of the king's houſhold are there taken daily by the lord ſteward, comptroller, cofferer, maſter of the houſhold, the clerks of the green-cloth, and the clerks comptrollers. They alſo there make proviſion for the houſhold, and make payments, and orders, for the good government thereof.

In the *compting-houſe* is the board of GREEN-CLOTH.

COMPTROL, or Controle, is, properly, a double REGISTER, kept of acts, iſſues, &c. of the officers or commiſſioners in the revenue, army, &c. in order to perceive the true ſtate thereof, and to certify the truth, and the due keeping of the acts ſubject to that enregiſterment.

COMPTROLLER, an officer eſtabliſhed to *comptrol*, or over-ſee public accounts, and to certify, on occaſion, whether things have been *comptrolled*, and examined, or not. Thus, we have a *comptroller of the king's houſhold*, or of the accounts of the board of green cloth. *Comptroller-general* of the cuſtoms; *comptroller* of the navy; *comptroller* of the mint; *comptroller* of the exciſe; *comptrollers* of the accounts of the army; of the CHAMBER, &c.

Comptroller *of the artillery*, is an officer whoſe duty it is to inſpect the muſters of the artillery, to make the pay-liſt, and take the acconnts and remains of ſtores. He is accountable to the office of ordnance.

Comptroller *of the hanaper*, is an officer in chancery, attending the lord chancellor daily in term and ſeal time. This officer is to take all things ſealed from the clerk of the hanaper, incloſed in bags of leather, and to note the juſt number and effect thereof; to enter them in a book, with all the duties belonging to the king and other officers for the ſame, and ſo charge the clerk of the HANAPER with them.

Comptrollers *of the pells*, are officers of the EXCHEQUER, whereof there are two, viz. two chamberlains clerks, who keep a *comptrol* of the pell of receipts, and goings-out: originally they took notes of other officers accompts, in order to diſcover if they did amiſs.

Comptroller *of the pipe*, an officer of the EXCHEQUER, who writes out ſummons twice a-year, to levy the farms and debts of the PIPE.

He was anciently called *duplex ingroſſator*.

COMPULSOR, an officer under the Roman emperors, diſpatched from court into the provinces, to compel the payment of taxes, &c. not paid within the time preſcribed.

The word is formed of the verb *compellere, to oblige, conſtrain.*

Theſe were charged with ſo many exactions, under colour of their office, that Honorius caſhiered them by a law in 412.

The laws of the Viſigoths mention military *compulſors*; which were officers among the Goths, whoſe buſineſs was to oblige the tardy ſoldiers to go into the fight, or to run to an attack, &c.

Caſſian mentions a kind of monaſtic *compulſors*, whoſe buſineſs was to declare the hours of canonical office, and to take care the monks went to church at thoſe hours.

COMPUNCTION, in *Theology*, an inward grief in the mind for having offended God.

The word comes from *compungere*, of *pungere, to prick.*

The Romaniſts own their confeſſion inſignificant, unleſs attended with *compunction*, or pricking of heart. See Confession.

Among ſpiritualiſts, *compunction* bears a more extenſive ſignification; and implies not only a grief for having offended God, but alſo a pious ſenſation of grief, ſorrow, and diſpleaſure, on other motives. Thus, the miſeries of life, the danger of being loſt in the world, the blindneſs of the wicked, &c. are to pious people motives of *compunction*.

COMPURGATOR, in *Law*, one that by oath juſtifies, or clears, another's innocence. They were introduced in the juriſprudence of the middle ages, and their number varied according to the importance of the ſubject in diſpute, or the nature of the crime with which a perſon was charged. See Oath, and Wager *of Law.*

COMPUTATION, the manner of accounting and eſtimating time, weights, meaſures, and money.

The word is ſometimes alſo uſed among mathematicians in the like ſenſe as CALCULATION.

Computation *of a planet's motion.* See Planet.

Computation is particularly uſed in law in reſpect of the true account, or conſtruction of time, ſo underſtood, as that neither party do wrong to the other, nor the determination of time be left at large, or be taken otherwiſe than according to the judgment and intention of law.

If indentures of demiſe be ingroſſed, bearing date May 11, 1769, to have and to hold the land in S. for three years from henceforth; and the indentures be delivered the 4th of June following: in this caſe, *from henceforth* ſhall be computed from the day of the delivery, and not from the date. And if the indentures be delivered at four of the clock in the afternoon, the ſaid fourth of June, the leaſe ſhall end the third day of June in the third year: the law, in ſuch *computation*, rejecting all fractions or diviſions of the day, on account of that uncertainty which is the mother of contention. In writings, ordered by the ſtat. 27 Hen. VIII. to be inrolled within ſix months; if ſuch writings have date, the ſix months ſhall be accounted from the date, and not from the delivery: if they want date, it ſhall be accounted from the delivery. Coke, lib. 5.

If a deed be ſhewn to a court at Weſtminſter, it ſhall remain in court (by judgment of law) all the term in which it is ſhewn: for all the term is but as one day in law. Coke, ibid.—If a church be void, and the patron does not preſent within ſix months, the biſhop of the dioceſe may collate his chaplain: but theſe ſix months ſhall be computed according to twenty-eight days of the month; and not according to the calendar.

COMPUTO, a writ thus called from its effect, which is to compel a bailiff, chamberlain, or receiver, to yield his accompts. See Account.

The ſame lies for executors of executors; and againſt the guardian in ſocage, for waſte made in the minority of the heir.

Computo *vicecomitis habendo reſpectu.* See Respectu.

COMUS, in *Mythology*, the god of jollity or feſtivity. There is great reaſon to believe he was the Chamos of the Moabites; Beel-Phegor, Baal-Peor, Priapus, and Bacchus. He is repreſented under the appearance of a young man, with an inflamed red countenance, his head inclined, and crowned with flowers; his air drowſy; leaning on a huntſman's ſpear in his left hand, and holding an inverted torch in his right. His ſtatue was placed at the chamber doors of new married perſons; his pedeſtal crowned with flowers.

CONARION, or Conoides, a name for the *pineal gland*; a ſmall gland, about the bigneſs of a pea, placed in the upper part of that hole in the third ventricle of the brain called the *anus*; and tied by ſome fibres to the nates.

It is compoſed of the ſame ſubſtance as the reſt of the brain; and has this peculiar to it, that it is ſingle; whereas all the other parts are double. Hence, Des Cartes takes occaſion to ſuppoſe it the immediate place, or ſeat of the ſoul.

CONATUS, *endeavour*, a term frequently uſed by philoſophical and mathematical writers; nearly equivalent to *niſus*.

Conatus ſeems to be the ſame, with reſpect to motion, that a point is with reſpect to a line; at leaſt, the two have this in common, that as the point is inceptive of the line, or the term from which it commences; ſo is the beginning of all motion called the *conatus*. Add, that as in mathematical demonſtrations, the extenſion of the point is conceived as if it were nothing at all; ſo, in the *conatus* of motion, there is no regard to the time wherein, or the length which, it advances. See *Laws of* Nature.

Hence, ſome define *conatus* to be a quantity of motion not capable of being expreſſed by any time or length. Accordingly, all motion tends preciſely the ſame way wherein the moveable is acted on, or determined by the moving power. See Motion.

CONCAMERATED, among *Builders*, an appellation given to ſuch roofs as are arched in the vaults.

CONCAMERATIO was an arched room in our ancient churches, between the eaſt end of the church, and the high altar; ſo formed, that in proceſſions they might ſurround it.

CONCATENATION, in *Philoſophy*, a connexion of things, in manner of a *chain*.

The *concatenation* of ſecond cauſes is an effect of PROVIDENCE. See Cause.

CONCAVE is applied to the inner ſurface of a hollow body; particularly if it be circular.

Concave is particularly underſtood of mirrors and lenſes: *concave lenſes* are either *concave* on both ſides, called *concavo-concave*; or *concave* on one ſide, and plane on the other, called *plano concave*; or *concave* on one ſide, and convex on the other, called *concavo-convex*, or *convexo-concave*, as the one or the other ſurface is a portion of a leſs ſphere.

The property of all *concave* lenſes is, that the rays of light, in paſſing through them, are deflected, or made to recede from one another; as in convex lenſes they are inflected towards each other; and that the more, as the concavity and convexity pertain to leſs circles.

Hence, parallel rays, as thoſe of the ſun, by paſſing through a *concave* lens, become diverging; diverging rays are made to diverge the more, and converging rays are either made to converge leſs, or become parallel, or go out diverging.

Hence, objects viewed through *concave* lenſes appear diminiſhed; and the more ſo, as they are portions of leſs ſpheres; and this in oblique, as well as in direct rays.

Concave mirrors have the contrary effect to lenſes: they reflect the rays which fall on them, ſo as to make them approach more to, or recede from, each other than before, according to the ſituation of the object; and that the more as the concavity is greater, or the ſpheres whereof they are ſegments, leſs. See MIRROUR.

Hence, *concave* mirrors magnify objects preſented to them; and that in a greater proportion, as they are portions of greater ſpheres.

Hence alſo, *concave* mirrors have the effect of burning objects, when placed in their focus. See BURNING-GLASS.

CONCAVITY. An arch of a curve has its *concavity* turned one way, when the right lines that join any two of its points are all on the ſame ſide of the arch.

Archimedes, intending to include ſuch lines as have rectilinear parts, in his definition, ſays, a line has its *concavity* turned one way, when the right lines that join any two of its points are either all upon one ſide of it, or while ſome fall upon the line itſelf, none fall upon the oppoſite ſide. Archim. de Sphær. and Cyl. Def. 2. Mac Laurin's Fluxions, art. 180.

When two lines, having their *concavity* turned the ſame way, have the ſame terms, and the one includes the other, or has its *concavity* towards it, the perimeter of that which includes, is greater than the perimeter of that which is included. Archim. ib. ax. 2.

CONCEALERS, in *Law*, ſuch as find out concealed lands, i. e. lands kept privily from the king, by common perſons, having nothing to ſhew for their title, or eſtate therein.

They are thus called *per antiphraſin, a concelando*; as *mons* is *a movendo*, &c. Lord Coke calls them *turbidum hominum genus*. See MISPRISION.

CONCENTRATED *parting*, in *Chemiſtry*. See CÆMENTATION.

CONCENTRATION, in general, denotes the retiring, or withdrawing of a thing inwards, towards the center, or middle.

External cold is ſaid to *concentrate* the heat within bodies: after meals, the natural warmth retires, and as it were *concentrates*, to promote the digeſtion.

CONCENTRATION is alſo uſed by Dr. Grew for the higheſt degree of mixture, viz. that wherein two or more atoms or particles touch, by a reception, and intruſion of the one within the other. See MIXTION.

This he takes to be the caſe of all fixed bodies without taſte or ſmell; their conſtitution being ſo firm, that till the particles be detached from each other by ſome extraordinary means, they cannot affect thoſe ſenſes.

CONCENTRATION, in *Chemiſtry*, conſiſts in approximating the proper and integrant parts of a body, by taking away ſome ſubſtance interpoſed between theſe parts, and which is extraneous and ſuperabundant to the body to be *concentrated*. Thus, a ſolution of any ſaline ſubſtance in water may be concentrated by expelling part of the water of the ſolution.

But cuſtom has applied the word *concentration* to the DEPHLEGMATION of acids, and particularly of vitriolic acid, by DISTILLATION, and of vinegar by CONGELLATION.

CONCENTRATION, or *rectification*, of vitriolic acid by *diſtillation*, is performed, in order to purify it from the water, by which it is weakened, or from the inflammable matter, which renders it black and ſulphureous. When the quantity of water with which it is diluted is very conſiderable, a great part of it may be diſcharged in ſtone or glaſs bottles, without diſtillation. The water will exhale, and the acid be to a great degree *concentrated*. But as the quantity of remaining water is diminiſhed, it adheres ſo much the more ſtrongly to the acid, and the heat muſt be increaſed to ſuch a degree as would raiſe the acid with the water, and diſſipate it in open veſſels. And beſides, the acid, when it is become very ſtrong, attracts the moiſture of the air, and combines with it; thus imbibing as much water from the air as it loſes by evaporation. The *concentration*, therefore, muſt be completed by diſtillation. For this purpoſe, a retort of good glaſs, capable of reſiſting acids, muſt be half filled with the acid, and ſet in a ſand-bath entirely covered with ſand. When a receiver has been adapted to it, heat muſt be applied, and very gradually augmented, till drops are diſtilled. The heat muſt be increaſed in proportion to the degree of *concentration*, but not ſo as to make the acid boil, which might be attended with pernicious conſequences. The duration of this proceſs depends on the quality and ſtrength of the acid. The vitriolic acid formerly kept by druggiſts required, that one half of it ſhould be diſtilled, in order to make the remaining part twice as heavy as water. At preſent, it is much ſtronger and cheaper. That which is uſually manufactured for ſale is more or leſs combined with inflammable matter, which may be diſcharged from it by a diſtillation ſimilar to that above deſcribed. When the phlogiſticated vitriolic acid acquires a ſtrong heat, and becomes conſiderably *concentrated*, it acts upon the inflammable matter, diſſipating or burning it: in conſequence of which the liquor becomes perfectly white and tranſparent, which is a ſign that the operation is finiſhed. The retort muſt be left in the ſand-bath till it is cold, and then the acid is to be poured into a clean, dry, cryſtal-glaſs bottle, cloſed by a glaſs ſtopper, and covered with leather. The phlegmatic, or ſulphureous liquor, which paſſed over into the receiver, is called *ſpirit of* VITRIOL. See ACID *vitriolic*, and VITRIOL.

CONCENTRATION *of vinegar by congelation*. This method was firſt employed by Stahl. M. Geoffroy has ſince made many experiments on the ſubject, an account of which is given in the Memoirs of the Academy at Paris for 1739. Acids reſiſt congelation much more than water; but if vinegar be expoſed to a cold marked by 8 or 10 below 0 in Reaumur's THERMOMETER, a conſiderable quantity of ice will be formed. This ice conſiſts chiefly of pure water, and the remaining unfrozen liquor is a much ſtronger vinegar. If this vinegar be again expoſed to a ſtronger degree of cold, a kind of ſnowy ice, containing a quantity of unfrozen acid, will be produced, and the remaining acid will hereby acquire a conſiderable degree of additional ſtrength, which may be again increaſed by repeating the congelation with greater cold. Wines may be well *concentrated* in the ſame way; and they thus acquire a thick conſiſtence, and are preſerved from injury in the viciſſitude of climates and ſeaſons. Cold may be likewiſe ſucceſsfully employed in northern countries to *concentrate* ſea-water, and to approximate the particles of ſalt, by ſeparating the ice, which is little elſe than pure water, as ſoon as it is formed. The mineral acids might probably be *concentrated* by congelation, though in a very low degree. Other methods, beſides that above deſcribed, have been uſed for *concentrating* vinegar: ſuch as ſimple diſtillation; and the combination of this acid with fixed alkalies and metals, and afterwards diſtilling the ſalts reſulting from ſuch combinations, whence a very ſtrong acid of vinegar is obtained, called *radical vinegar*. See Macquer's Dict. Chem. art. CONCENTRATION. See VINEGAR.

CONCENTRATION, in *Diſtillery*. Dr. Shaw, in his Eſſay on the Diſtillery, is for introducing a method of concentrating the fermentable parts of vegetables, from which their ſpirits are to be drawn by diſtillation; which, if it can be brought to be practiſed in the large way, will prove of very great uſe to the Britiſh diſtillery, as it will greatly ſhorten the diſtiller's buſineſs, which at preſent, including the brewing, fermenting, &c. is much too long. He propoſes only to evaporate carefully the wort, or other tinctures or decoctions of vegetables made for the diſtilling of their ſpirits, to the conſiſtence of treacle: in this form they might be ſold to the diſtiller, who might keep them by him as long as he pleaſed, and occaſionally uſe them, by the eaſy method of reducing them into wort, by mixing warm water with them.

CONCENTRATION, in *Medicine*, when by an addition of earthy, dry, and abſorbent ſubſtances, the acid of any liquor is attracted and imbibed, whilſt the aqueous parts are left, and the acid as it were conveyed into another body, this is called *concentration*. The uſe of this ſpecies of *concentration* is obvious, in caſes where acidities are to be ſubdued or corrected: hence abſorbents are called *concentrating* medicines. To this belongs that ſpecies of *concentration*, in which by an acid any body is corroded, and remains combined with it. Thus vinegar firſt combined with, and then diſtilled from, verdegriſe, is much ſtronger than it was before, and for that reaſon is called *concentrated*. There is another ſpecies of *concentration*, which is, when alkaline ſalts are ſaturated with acid ſpirits, which are ſo retained in them, that both in conjunction conſtitute neither an acid nor an alkaline, but a neutral ſalt. The uſe of this ſpecies of *concentration* is obvious, that is, to procure neutral ſalts. Laſtly, *concentration*, in an extenſive ſenſe, denotes an union or combination of a ſpirit, a ſalt, or a ſulphur, with any body: thus, in ſublimate mercury, which is formed of quickſilver, and the acid of ſea-ſalt united together, the ſpirit of ſalt is ſaid to be *concentrated*.

CONCENTRIC, in *Geometry* and *Aſtronomy*, ſomething that has the ſame common center with another.

The word is principally uſed in ſpeaking of round bodies and figures, viz. circular, elliptical ones, &c. but may be likewiſe uſed for polygons, drawn parallel to each other, upon the ſame center.

Concentric ſtands oppoſite to EXCENTRIC.

Nonius's method of graduating inſtruments conſiſts in deſcribing with the ſame quadrant 45 *concentric arches*, dividing the outermoſt into 90 equal parts, the next into 89, &c.

CONCEPTACULUM, among *Botaniſts*, a kind of PERICARPIUM, compoſed of ſoft and leſs rigid valves, and containing one cavity.

CONCEPTION, in *Logic*, the ſimple apprehenſion, or perception, which we have of any thing, without proceeding to affirm, or deny, any thing about it.

Some writers diſtinguiſh between *conception* and perception; making the latter to denote the conſciouſneſs of an object when preſent, or to include the reality of its object; whereas *conception* expreſſes the forming an idea of an object whether preſent or abſent, or without any conviction of its reality. See Lord Kaims's El. Criticiſm, vol. ii. p. 508.

The ſchoolmen uſually make two kinds of *conception*; the one *formal*, the other *objective*.

The *firſt* is defined to be the immediate and actual repreſentation of any thing propoſed to the mind: on which footing, it ſhould be the ſame thing to the underſtanding, that a word or voice is to the ear; whence ſome alſo call it *verbum mentis*.

The *ſecond* is the thing itſelf repreſented by a formal *conception*. But others explode the notion of an *objective conception*, as being, in reality, no *conception* at all; excepting where the mind contemplates its own acts, &c.

Formal, or *proper conceptions*, are ſubdivided into *univocal*, where ſeveral things are diſtinctly repreſented as under ſome common ratio, or in the ſame degree of perfection; *analogous*, where ſeveral things are repreſented as under ſome proportional likeneſs; and *equivocal*, where they are repreſented immediately as ſuch, without regard to any common ratio or likeneſs.

Conception, in *Medicine*, denotes the firſt formation of the embryo, or fœtus, in the womb.

Conception is no other than ſuch a concourſe and commixture of the prolific ſeed of the male with that of the female, in the cavity of the uterus, as immediately produces an EMBRYO.

The ſymptoms of *conception*, or PREGNANCY are, when in a few days after the conjugal act, a ſmall pain is perceived about the navel, and is attended with ſome gentle commotions in the bottom of the abdomen; and within one two, three, or even four months, the menſes ceaſe to flow, or prove in leſs quantity than uſual. Upon the firſt failure of this kind, the woman begins to count the ſeries of her weeks, without taking any notice of the time before elapſed; after this, or between the ſecond or third months, but generally about the third, the motions of the embryo become perceivable to the mother; who hereupon becomes troubled with a nauſea, vomiting, loathing, longing, &c. About this time the breaſts begin to ſwell, grow hard and painful, and contain a little milk; the nipples alſo become larger, firmer, and darker coloured, a livid circle appearing round them: the eyes ſeem ſunk and hollow. During the two firſt months pregnancy, the woman grows thinner, and ſlenderer; the abdomen being alſo depreſſed; though it afterwards diſtends, and grows gradually larger.

The manner wherein *conception* is effected is thus laid down by the modern writers: in the ſuperficies of the ovaries of women, there are found little pellucid ſpherules, conſiſting of two concentric membranes, filled with a lymphatic humour, and connected to the ſurface of the ovaria, underneath the tegument, by a thick calix, contiguous to the extremities of the minute ramifications of the Fallopian tubes.

Theſe ſpherules, by the uſe of venery, grow, ſwell, raiſe, and dilate the membrane of the ovary into the form of papillæ; till, the head propending from the ſtalk, it is at length ſeparated from it; leaving behind it a hollow cicatrix, in the broken membrane of the ovary; which, however, ſoon grows up again.

Now, in theſe ſpherules, while ſtill adhering to the ovary, fœtuſes have been frequently found: whence it appears, that theſe are a kind of ova, or eggs, deriving their ſtructure from the veſſels of the ovary, and their liquor from the humours prepared therein.

Hence, alſo, it appears, that the Fallopian tubes being ſwelled, and ſtiffened by the act of venery, with their muſcular fimbriæ, like fingers, may embrace the ovaries, compreſs them, and by that compreſſion expand their own mouths: and thus the eggs, now mature, and detached as before, may be forced into their cavities; and thence conveyed into the cavity of the uterus; where they may either be cheriſhed and retained, as when they meet with the male ſeed; or, if they want that, again expelled.

Hence the phænomena of falſe *conceptions*, abortions, fœtuſes found in the cavity of the abdomen, the Fallopian tubes, &c. For, in coition, the male ſeed, abounding with living animalcules, agitated with a great force, a briſk heat, and, probably, with a great quantity of animal ſpirits, is violently impelled through the mouth of the uterus, which on this occaſion is opener, and through the valves of the neck of the uterus, which on this occaſion are laxer than ordinary, into the uterus itſelf; which now, in like manner, becomes more active, turgid, hot, inflamed, and moiſtened with the flux of its lymph and ſpirits, by means of the titillation excited in the nervous papillæ by the attrition againſt the rugæ of the vagina.

The ſemen thus diſpoſed in the uterus, is retained, heated, and agitated, by the convulſive conſtriction of the uterus itſelf; till meeting with the ova, the fineſt and moſt animated part enters through the dilated pores of the membranula of the ovum, now become glandulous, is there retained, nouriſhed, dilated, grows to its umbilicus, or navel; ſtifles the other leſs lively animalcules; and thus is *conception* effected.

Hence it appears, that *conception* may happen in any part where the ſemen meets with an ovum: thus, whether it be carried through the Fallopian tube to the ovary, and there caſt upon the ovum; or whether it meet with it in ſome receſs of the tube itſelf; or, laſtly, whether it join it in the cavity of the uterus, it may ſtill have the ſame effect, as it appears from obſervation actually to have. But it is probable, that *conception* is then moſt perfect, when the two, viz. the ſemen and ovum, are carried at the ſame time into the uterus, and there mixed, &c.

Other anatomiſts chooſe to ſuppoſe the male ſeed taken up, before it arrives in the uterus, by the veins which open into the vagina, &c. and thus mixed with the blood; by which, in the courſe of circulation, it is carried, duly prepared, into the ovary, to impregnate the eggs. See GENERATION.

It has been advanced by ſeveral writers, that women may poſſibly *conceive* in their ſleep, and be with child, without any knowlege of the occaſion of it.

As ridiculous and abſurd as this doctrine may appear to the generality of the world, no leſs an author than Genſili has thought it worthy a particular diſſertation. Act. Erud. ann. 1715. p. 122. See PREGNANCY.

Conception, *immaculate*, of the Holy Virgin, is a feaſt eſtabliſhed in honour of the Holy Virgin; particularly with regard to her having been conceived and born *immaculate*; i. e. without original ſin; held in the Romiſh church on the eighth of December.

Allatius, in his Prolegomena on Damaſcenus, endeavours to prove this feaſt to have been celebrated by ſeveral churches in the Eaſt, as early as the eighth century. It was firſt eſtabliſhed in France about the year 1140; but it had been obſerved in England, in conſequence of the zeal of archbiſhop Anſelm, before this period.

The *immaculate conception* is the great ſubject of controverſy between the Scotiſts and Thomiſts; the former maintaining, and the latter impugning it.

The Dominicans eſpouſed the party of St. Thomas, and held out a long time in defence of the Virgin's being conceived in original ſin: they were condemned by pope Clement VII. in 1308, at the proſecution of the univerſity of Paris, and were obliged to retract. The council of Trent, ſeſſ. v. in the decree of *original ſin*, declares it not to be the intention of the council to include the Virgin under it; her *conception* it calls *immaculate*; and appoints the conſtitutions of Sixtus IV. to be obſerved with regard to it.

This controverſy between the Dominicans and Franciſcans was revived in the ſeventeenth century; and a feſtival was appointed by Clement XI. in 1708, to be celebrated throughout the Romiſh church: however, the Dominicans perſiſt in denying the obligation of this law, and in maintaining their ancient doctrines.

In the three Spaniſh military orders of St. James of the Sword, Calatrava, and Alcantara, the knights take a vow, at their admiſſion, to defend the *immaculate conception*. This reſolution was firſt taken in 1652.

Peter d'Alva and Aſtorga have publiſhed forty-eight huge volumes in folio, on the myſteries of the *conception*.

Conception, *religious of the order of*. See THEATINES.

CONCERT, or CONCERTO, a number, or company of muſicians, playing, or ſinging the ſame ſong, or piece of muſic, together.

The deſignation of a full *concert* for violins is two principal, and two ſecond violins, a tenor violin, and a violoncello, with a thorough baſs for the harpſichord.

The word *concert* may be applied where the muſic is only melody, i. e. where the performers are all either in uniſon, or only at the interval of an octave; but it is more properly, as well as more uſually, underſtood of harmony, or where the muſic conſiſts of divers parts, as baſs, tenor, &c.

CONCERTANTE, in *Italian Muſic*, is uſed for the reciting parts of a piece in muſic, to diſtinguiſh them from thoſe which ſing only in the grand chorus. Graſſineau makes *concertante* ſignify thoſe parts that ſing or play throughout the whole piece. Broſſ. Dict. Muſ. in voc. Muſ. Dict. p. 35.

CONCERTATO, in *Italian Muſic*, is uſed for a piece compoſed in ſuch a manner, as that all the parts may have their recitals, be it for two, three, four, or more voices, or inſtruments: thus they ſay *meſſe concertate*, *ſalmi concertati*, a 2, a 3, a 4. *voci*, &c. Broſſ. Dict. Muſ. in voc.

CONCERTO *groſſo*, in *Italian Muſic*, is uſed to denote the grand chorus of a concert, or thoſe places where all the ſeveral parts perform or play together. Broſſ. Dict. Muſ. in voc.

CONCESSI, a term much uſed in conveyances, &c. Its effect is to create a COVENANT, as *dedi* does a warranty.

CONCESSION, in *Rhetoric*, a figure whereby ſomething is granted, or allowed to the adverſary, either to prevent being detained by unneceſſary incidents, or to make ſome advantage of. *I will not conteſt with you the reality of the contract; what I plead for, is relief againſt the injuſtice of it. True, ſhe is fair; but ought ſhe not to ſhew her acknowlegements to heaven for the favour, by making a virtuous uſe of her beauty?*

CONCESSIT, *ſur*, in *Law*, a ſpecies of FINE.

CONCHA, in *Natural Hiſtory*, a genus of bivalve ſhells, the animal inhabiting which is called *tethys*. This is a very comprehenſive genus, compriſing the OYSTER, CHAMA, MUSCLE, HEART-*ſhell*, PECTEN, SOLEN, &c.

Concha, in *Anatomy*, a name given the ſecond, or inward cavity of the auricle, or external EAR; reaching to the entrance of the auditory duct.

The word has its origin from a reſemblance this cavity bears to a *ſea-ſhell*, called in Latin *concha*.

Some alſo give the ſame name to the firſt cavity of the inward ear, which others call the *drum*; and others to the veſtibulum of the labyrinth, which is the ſecond cavity of the internal ear.

Concha, Χόγκη, in *Antiquity*, a liquid meaſure among the Athenians, which contained two *myſtra*, or half an ounce. As much oil as it was capable of holding, weighed five drams one ſcruple and twenty grains, according to Gor. Defin. Pitiſci Lex. & Eiſenchom. Others think that the *concha* contained three ſpoonfuls, ninety-ſix of which filled a pint veſſel (*ſextarius*); a *ſextarius* was therefore equivalent to thirty-two *conchæ*, and ſix *ſextarii* made one *congius*, a meaſure equivalent to our three quarts, according to Salmaſ. Exerc. Plinian. and Bodæus, in Theophraſt. According to Fernelius, the *concha* was equivalent to two *myſtra*, or five ſpoonfuls; which, according to Jacobus Sylvius, are equivalent to ſix drams. According to Galen, in his work De Ponderibus & Menſuris, cap. xi. the *concha magna* contained the ſame quantity with the *acetabulum*, which in liquid meaſure was an ounce and a half, and in weight fifteen drams. The *concha minor* was in liquid meaſure half an ounce, and in weight five drams.

Concha *anatifera*, in the hiſtory of ſhell-fiſh. See ANATIFERA *concha*.

Conchæ *anomiæ*, in *Natural Hiſtory*, the name of a foſſile ſhell-fiſh, found in great abundance, and in a great variety of ſpecies, but not known in any of them living, on the ſhores or in the ſeas of our own or other countries. In Glouceſterſhire, and ſome other of our counties, theſe are found as common as pebbles on the ploughed lands in other places. They are a ſort of bivalve ſhell, the valves of which are of unequal extent, both of them convex, and the head or beak of the longer valve crooked, and falling over the head of the other. See *Tab. of Foſſ. Claſs* 9.

The great general diſtinction of this numerous claſs of bodies, is into thoſe which are of a ſmooth ſurface, and thoſe which are of a ſtriated or rough one.

Others alſo of the ſame claſs, or of one very nearly allied to it, are found in many of our inland counties, ſome very long from the cardo, or hinge, to the margin; and others very ſhort, and very long the contrary way. They are found indifferently in all ſorts of ſtrata, in earth, in ſtone, in ſand, and among gravel.

Concha *fortificata*, in *Natural Hiſtory*, a name given by ſome authors to the genus of ſhells, called by others the MUREX.

Concha *globoſa*, in *Natural Hiſtory*, the name of a large genus of ſhells, called by authors the DOLIUM, and in French the *tonne*.

Conchæ *latitans muſculus*, a name given by Riolanus, and others, to one of the muſcles of the EAR, called by Cowper *internus auris*, and by Albinus, very properly, the *tenſor tympani*.

Conchæ *margaritiferæ*, a name ſometimes uſed for thoſe *mytuli* which produce pearls. See MUSCLE.

Conchæ *narium*, *inferiores*, in *Anatomy*, or inferior ſhells of the noſtrils, are two in number, ſituated in the naſal *foſſa*, under the openings of the maxillary ſinus, and immediately above the lower orifices of the lachrymal ducts. They cover theſe orifices much in the ſame manner as the ſuperior *conchæ* of the ethmoidal bone cover the maxillary openings. They are connected with the *oſſa maxillaria*, *palati*, and *unguis*, and ſometimes with the *os ethmoides*. They complete the bony ſtructure of the noſe, augment its ſurface, and render it proportionable to the extent of the organ of ſmell, and of the pituitary membrane. Winſlow.

Conchæ *proprius muſculus novus*, a name given by Santorini to a muſcle of the EAR, called by Albinus, and the French writers, *aurus alæ anterior*.

Concha *ſpectrorum*, the *ſpectre ſhell*, a name given by authors to a ſpecies of voluta, from ſome odd figures deſcribed on its ſurface, repreſenting rough draughts of terrible phantoms. It is an elegant ſhell, of a middle ſize, and is of a white ground, and the figures are reddiſh; theſe form three large and broad bands, ſurrounding the ſhell at top and bottom, and in the middle; and between theſe there are ſeveral ſeries of ſmall ſpots. It is a ſcarce ſhell, and uſually ſells at a large price.

Concha *Veneris*, in *Natural Hiſtory*, the name by which ſeveral ſpecies of CHAMA are called. The ſhell is univalve, wreathed, and has a ſmall longitudinal and denticulated chink, or aperture, in it. It is alſo called *concha porcellana*, from its aperture in ſome meaſure reſembling the mouth of a hog; and *concha Erythræa*, from its being found in the Red Sea, called *Erythræum*. It is alſo called *concha Cytheriaca*, from Venus, who received the epithet *Cytheræa*, from Cythera, a Grecian iſland. That this fiſh was uſed by the ancients as an aliment, we read in Seneca, Ep. 95. Mundius aſſerts that they prove a ſtimulus to venery, and provoke urine. Rondeletius informs us, that theſe ſhells are an ingredient in the *pillulæ de bdellio*, for removing fluxes, and curing ulcers in the uterus. But inſtead of the *concha venerea*, the apothecaries generally uſe cockles. Excellent dentrifices are prepared from this ſhell, which is alſo uſed for curing ulcers in the canthus of the eye, and the *fiſtula lachrymalis*. It is remarkably drying, without exciting any heat.

The powder of theſe ſhells muſt be owned to poſſeſs an abſorbent drying quality; but that on account of their beauty, or any other circumſtance, their powder is preferable to that of other ſhells, is by no means probable.

CONCHITES *marmor*, a name given by the ancients to a ſpecies of marble dug near Megara, and remarkable for containing a great number of ſea-ſhells, and other marine bodies immerſed in it.

CONCHOID, or **Conchilis**, in *Geometry*, a curve line which always approaches nearer a ſtrait line to which it is inclined, but never meets it.

It is deſcribed thus: draw a right line BD (*Tab. Analyſis*, *fig.* 1.) and another AC, perpendicular to it in E; draw any number of right lines, as CM, CM, cutting BD in Q; make $QM=QN=AE=EF$; the curve wherein the points MM are found, is the *conchilis*, or *conchois prima*; ſo called by its inventor Nicomedes. The other, wherein the points NN are found, is the *conchois ſecunda*; the right line BD the *rule*, the point C the *pole*. The inventor alſo contrived an inſtrument, whereby the firſt *conchois* may be deſcribed mechanically: thus, in the rule AD (*Tab. Analyſis*, *fig.* 2.) is a channel or groove cut, ſo that a ſmooth nail, firmly fixed in the moveable rule CB, in the point F, may ſlide freely within it: into the rule EG is fixed another nail in K, for the moveable rule CB to ſlide upon.

If then the rule BC be ſo moved, as that the nail F paſſes along the canal AD; the ſtyle, or point in C, will deſcribe the firſt *conchoid*.

Now let $AP=x$ (*fig.* 1.); $AE=a$; $PE=MR=a-x$; wherefore, as x increaſes, $a-x$, or MR will decreaſe; and therefore the curve continually approaches nearer to the rule BD.

In the ſame manner it appears, that the right line NO muſt continually decreaſe; and therefore that the ſecond *conchoid*, alſo, muſt continually approach nearer the rule. But inaſmuch as between each *conchoid* and the right line BD, there will be the right line QM or QN, equal to AE; neither of the *conchoids* can concur with the right line BD: conſequently, B is an aſymptote of each *conchoid*. See ASYMPTOTE.

There will be other kinds of *conchoids* produced, if $CE : CQ :: QM : AE$; or indefinitely, if $CE^m : CQ^m :: QM^m : AE^m$: wherefore, if $CE=b$, $EA=a$, $CQ=x$, $QM=y$; then $ab=xy$; and for infinite *conchoids*, $a^m b^m=x^m y^m$.

CONCHYLIA. See SHELL-*fiſh*.

CONCIATOR, in the *Glaſs Art*, is for the cryſtal glaſs what the founder is at the green glaſs-houſes. He is the perſon that weighs and proportions the ſalt on aſhes and ſand, and works them with a ſtrong fire, till they run into lumps, and become white; and if the metal be too hard, and conſequently brittle, he adds ſalt, or aſhes; and if too ſoft, ſand; ſtill mixing them to a fit temper, which is only known by the working.

CONCILIO—*Querela coram rege & Concilio.* See QUERELA.

CONCINNOUS *intervals*, in *Muſic*. See INTERVALS.

CONCLAMATIO, in *Antiquity*, a ſhout raiſed by thoſe preſent at burning the dead, before they ſet fire to the funeral pile. See SHOUT. The word was alſo applied to the ſignal given to the Roman ſoldiers to decamp, whence the expreſſion *conclamare vaſa*; and *conclamari arma*, was a ſignal for battle. It was likewiſe uſed for a practice of calling to a perſon deceaſed three times by his name, and when no reply was returned, they thus expreſſed his deceaſe, *conclamatum eſt*. Whence the ſame term was afterwards applied to the ceſſation of the Roman empire.

CONCLAVE, an aſſembly, or meeting of all the cardinals that are at Rome, ſhut up for the ELECTION of a POPE.

The *conclave* had its riſe in the year 1270, and on this occaſion: Clement IV. being dead at Viterbo, in 1268, the cardinals were two years without being able to agree on the election of a ſucceſſor: in effect, things were carried to ſuch paſs, that they were upon the point of breaking up, without coming to any concluſion at all.

The inhabitants of Viterbo, then, being appriſed of their deſign, by the advice of St. Bonaventure, then at Viterbo, ſhut the gates of their city, and locked up the cardinals in the pontifical palace adjoining to the cathedral, till they were brought to a better underſtanding.

Hence aroſe the cuſtom which has ſince prevailed, of ſhutting up the cardinals in a ſingle palace, till they have elected the pope.

Such was the origin of the *conclave*, as related by Onuph. Panvinius, Ciaconius, and Papebroch.

CONCLAVE is alſo uſed for the place wherein the election of the pope is performed; which is, now, at St. Peter's in the Vatican; though Gregory X. and Clement V. appointed it ſhould always be held in the place where the laſt pope ſhould die.

While the affair is in hand, if it be in winter, the walls and windows are all mured up, excepting only a ſingle pane, to give a little light: in ſummer the windows are not cloſed; but the great door of the hall is ſecured with four locks, and four bolts; an aperture being, however, left, through which to ſupply the impriſoned prelates with victuals.

In the hall, which is very ample, there are cells or ſtalls erected for as many cardinals as are to be preſent at the election; the cells being only ſeparated by deal boards.

The cells are marked with letters of the alphabet, and are diſtributed to the cardinals by lot: each cardinal puts his arms on the cell that falls to his ſhare.

After the aſſembly has continued three days, they are only allowed one diſh for a meal; and after fifteen days more, only bread and water: though this rule is not very ſtrictly regarded.

Each cardinal is allowed two *conclaviſts*, or ſervants to attend him, and to be ſhut up with him.

The election is begun ten days after the pope's deceaſe, and decided by a majority of two parts in three of the cardinals preſent.

Theſe regulations were principally eſtabliſhed by Gregory X. in 1274, and Clement VI. in 1351.

Matthew Paris ſays, the word *conclave* anciently ſignified the pope's wardrobe.

It is a popular proverb in Italy, *chi entra papa, eſce cardinale*; he who enters pope, comes out cardinal; q. d. he who according to common report will be elected pope, ordinarily is not.

CONCLUSION, in *Law*, is where a man by his own act upon record hath charged himſelf with a duty or other thing, or confeſſed any matter whereby he ſhall be *concluded*: as if a ſheriff returns that he hath taken the body upon a *capias*, and hath not the body in court, at the day of the return of the writ; by the return, the ſheriff is concluded from plea of eſcape, &c. *Terms de Ley*, 153, &c. In another ſenſe the word *concluſion* ſignifies the end of any plea, replication, &c. and a plea to the writ, is to *conclude* to the writ; a plea in bar, to *conclude* to the action, &c. *Concluſion* of plea in bar ſhall be, *et hoc paratus eſt verificare*:—of other pleas *et de hoc ponit ſe ſuper patriam.* Kitch. 219, 220.

CONCLUSION, in *Logic*, the laſt part of an argument; or the conſequence drawn from ſomething either aſſumed or proved before.

The *concluſion* of an argument contains two parts: the *conſequent*, which is the matter of it; and the *conſequence*, which is its form, and which, of a ſimple abſolute propoſition, renders the *concluſion* relative to the premiſes whence it is drawn.

The queſtion, and *concluſion*, ſay the ſchoolmen, are the ſame ideas, only conſidered in different views, or relations: in the queſtion they are conſidered as doubtful; in the *concluſion* as void of doubt.

CONCLUSION, in oratory, conſiſts of two parts; the RECAPITULATION, or ENUMERATION, and the PASSIONS.

CONCLUSIVE *Conjunctions*. See CONJUNCTION.

CONCOCTION, in *Medicine*, the change which the food undergoes in the ſtomach, &c. to become chyle.

This change conſiſts in deſtroying the texture and coheſion of the parts of the food; preparing part of it for ſome particular ſervice of the animal frame, and the reſt to be carried off as excrements, by proper emunctories.

The ancients gave the term COCTION, or *concoction*, to what we now ordinarily call *digeſtion*; from a notion of the food's being, as it were, boiled in the ſtomach; and its nutritious juice expreſſed by the heat of the adjacent parts.

They aſſigned two *concoctions*, viz. one in the ſtomach, and a ſecond in the ſmall inteſtines, &c. which latter they attributed to the admixture of the bile and pancreatic juice.

The *concoction* of the aliments in the ſtomach, is their DIGESTION, or reduction to a ſort of emulſion or chyle.

By the *concoction* of the humours, the writers of inſtitutes mean, the reduction of the chyle to blood, which is called the ſecond *concoction*; and alſo the ſeparation of any fluid from the blood, by means of glands deſtined for this uſe, which is called the third *concoction*.

It is commonly ſaid that the faults ariſing from any defect in the firſt *concoction*, are not mended in the ſecond, nor thoſe from the ſecond by the third; that is when the aliment is not ſufficiently comminuted in the organs of digeſtion, the particles of the chyle are not ſmall enough to circulate regularly through the minute veſſels of the lungs, and be converted into good blood: it not being poſſible for the organs of ſanguification to diſſolve farther the particles they receive from the ſtomach. Hence theſe particles being too large to circulate through the capillary arteries, obſtructions and all their conſequences proceed. And the third *concoction*, that is in the glands, is not better adapted to the farther diſſolution of theſe particles, than the ſecond. James's Medical Dict. art. Coction.

The ſeveral *concoctions* in the body, with regard to the propagation of the ſpecies, and the preſervation of the individual, have been ſince reduced to five: thoſe are CHYLOSIS for chyle, CHYMOSIS for chyme, HÆMATOSIS for blood, PNEUMATOSIS for ſpirits, and SPERMATOSIS for ſeed.

CONCOMITANT, in *Theology*, ſomething that accompanies, or goes along with, another.

Concomitant grace, is that which God affords us during the courſe of our actions to enable us to perform them; and as the Roman ſchoolmen ſay, to render them meritorious.

CONCOMITANT *Neceſſity*. See NECESSITY.

CONCORD, *Form of*, in *Eccleſiaſtical Hiſtory*, a ſtandard-book among the Lutherans, compoſed at Torgaw, in 1576, and thence called the Book of Torgaw, and reviewed at Berg, by ſix Lutheran doctors of Germany, the principal of whom was James Andreæ. This book contains in two parts, a ſyſtem of doctrine, the ſubſcription of which was a condition of communion, and a formal and very ſevere condemnation of all who differed from the compilers of it, particularly with reſpect to the majeſty and omnipreſence of Chriſt's body, and the real manducation of his fleſh and blood in the euchariſt. It was firſt impoſed on the Saxons by Auguſtus, and occaſioned great oppoſition and diſturbance, both among the Lutherans and reformed. The diſpute about it was revived in Switzerland in 1718, when the magiſtrates of Bern publiſhed an order for adopting it as the rule of faith; the conſequence of which was a conteſt, that reduced its credit and authority. Moſheim's Eccl. Hiſt. by Dr. Maclaine, vol. iv. p. 53, &c. and vol. v. p. 98.

CONCORD, in *Grammar*, that part of ſyntax, or conſtruction, whereby the words of a ſentence agree among themſelves, i. e. whereby nouns are put in the ſame caſe, number, gender, &c. and verbs in the ſame number and perſon, with nouns and pronouns.

The rules of *concord* are generally the ſame in all languages, as being of the nature of what is in uſe almoſt every-where, for the better diſtinguiſhing of diſcourſe.

Thus, the diſtinction of the two numbers ſingular and plural, obliges us to make the adjective agree with the ſubſtantive in number; that is, to put the one either in this or that number, according as the other is: for the ſubſtantive being the thing confuſedly, though directly, marked by the adjective; if the ſubſtantive word mark ſeveral, there are ſeveral ſubjects of the form marked by the adjective, and of conſequence this ſhould be in the plural; as *homines docti*, &c.

Again, the diſtinction of maſculine, and feminine, renders it neceſſary to put the ſubſtantive and adjective in the ſame degree.

And verbs ſhould have *concord* or agreement with nouns and pronouns in number and perſon.

If any thing occur apparently contrary to thoſe rules, it is by a figure; i. e. ſomething is implied, or the ideas are conſidered more than the words themſelves.

Concord, in *Law*, is the agreement between two parties who intend the levying a fine of lands to one another, how and in what manner it ſhall paſs.

Concord is alſo an agreement made upon any treſpaſs committed (betwixt two, or more); and is divided into *concord executory*, and *concord executed.*

Plowden obſerves, that the firſt binds not, being imperfect; but the latter is perfect, and binds the party.

Others are of opinion, that *concords* executory are perfect, and bind no leſs than thoſe executed.

Concord, in *Muſic*, denotes the relation of two ſounds which are always agreeable to the ear, whether applied in ſucceſſion or conſonance.

If two ſingle ſounds be in ſuch a relation, or have ſuch a difference of tune, as that, being ſounded together, they make a mixture, or compound ſound, which affects the ear with pleaſure; that relation is called *concord:* and whatever two ſounds make an agreeable compound in conſonance, thoſe ſame will always be pleaſing, in ſucceſſion, or will follow each other agreeably.

The reverſe of CONCORD, is what we call a DISCORD; which is a denomination of all the relations or differences of tune that have a diſpleaſing effect.

Concord and harmony are, in effect, the ſame thing; though cuſtom has applied them differently. As *concord* expreſſes the agreeable effect of two ſounds in conſonance: ſo harmony expreſſes the ſame ſort of agreement in a great number of ſounds in conſonance: add, that harmony always implies conſonance; but *concord* is ſometimes applied to ſucceſſion: though never but when the terms will make an agreeable conſonance: whence it is that Dr. Holder, and ſome other writers, uſe the word *conſonance* for what we call *concord.*

Uniſonance, then, being the relation of equality between the tunes of two ſounds, all the uniſons are *concords*, and in the firſt degree: but an interval being a difference of tune, or a relation of inequality between two ſounds, becomes a *concord* or diſcord, according to the circumſtances of that particular relation. Indeed, ſome reſtrain *concord* to intervals, and make a difference of tune eſſential thereto; but that is precarious: and Mr. Malcolm thinks, that as the word implies *agreement*, it is applicable to uniſon in the firſt degree.

It is not eaſy to affirm the reaſon or foundation of *concordance:* the difference of tune, we have elſewhere obſerved, take their riſe from the different proportions of the vibrations of the ſonorous body, i. e of the velocity of thoſe vibrations in their recourſes; the more frequent thoſe recourſes are, the more acute will be the tune, and *vice verſa.*

But the eſſential difference between *concord* and diſcord lies deeper: there does not appear any natural aptitude in the two ſounds of a *concord*, to determine it to give us a pleaſing ſenſation, more than in the two ſounds of a diſcord: theſe different effects are merely arbitrary, and muſt be reſolved into the divine pleaſure.

We know by experience what proportions and relations of tune afford pleaſure, and what do not; and we know alſo how to expreſs the difference of tune by the proportion of numbers; we know what it is pleaſes us, though we do not know why: we know, v. gr. that the ratio of 1 : 2 conſtitutes *concord*, and 6 : 7 diſcord; but on what original grounds agreeable or diſagreeable ideas are connected with thoſe relations, and the proper influence of the one on the other, is above our reach.

By experience we know, that the following ratios of the lengths of chords are all *concord*; viz. 2 : 1, 3 : 2, 4 : 3, 5 : 4, 6 : 5, 5 : 3, 8 : 5; that is, take any chord for a fundamental, which ſhall be repreſented by the number 1, and the following diviſions thereof will be all *concord* with the whole; viz. $\frac{1.2.3.4.5.3.5}{2.3.4.5.6.5.8}$

So that the diſtinguiſhing character between *concords* and diſcords muſt be looked for in theſe numbers, expreſſing the intervals of ſound; not abſtractedly, and in themſelves, but as expreſſing the number of vibrations. Now, uniſons are in the firſt degree of *concord*, or they have the moſt perfect likeneſs or agreement in tune; and therefore have ſomething in them acceſſory to that agreement which is found, leſs or more, in every *concord:* but it is not true, that the nearer two ſounds come to an equality of tune, the more agreement they have; therefore, it is not in the equality or inequality of the numbers that this agreement lies.

Further, if we conſider the number of vibrations made in any given time by two chords of equal tune; on the principle laid down, they are equal: and therefore the vibrations of the two chords coincide, or commence together as frequently as poſſible, i. e. they coincide at every vibration; in the frequency of which coincidence, or united mixture of the motions of the two chords, and of the undulations of the air occaſioned thereby, it is, that the difference of *concord* and diſcord muſt be ſought. Now, the nearer the vibrations of two ſtrings approach to a coincidence as frequent as poſſible, the nearer they ſhould approach that condition, and conſequently the agreement, of uniſons; which is confirmed by experience.

For if we take the natural ſeries 1, 2, 3, 4, 5, 6, and compare each number to the next, as expreſſing the number of vibrations in the ſame time of two chords, whoſe lengths are reciprocally as thoſe numbers; the rule will be found exact, for 1 : 2 is beſt, then 2 : 3; after 6 the conſonance is unſufferable; the coincidences being too rare: though there are other ratios that are agreeable, beſides thoſe found in that continued order, viz. 3 : 5, and 5 : 8, which, with the preceding five, are all the *concording* intervals within, or leſs than an octave, or 1 : 2; that is, whoſe acuteſt term is greater than half the fundamental.

On this principle, 3 : 5 will be preferable to 4 : 5; becauſe thoſe being equal in the number of vibrations of the acuter term, there is an advantage on the ſide of the fundamental in the ratio 3 : 5, where the coincidence is made at every third vibration of the fundamental, and every fifth of the acute term: ſo alſo the ratio 5 : 8 is leſs perfect than 5 : 6; becauſe, though the vibrations of each fundamental that go to one coincidence are equal; yet in the ratio 5 : 6, the coincidence is at every ſixth of the acute term, and only at every eighth in the other caſe.

Thus, we have a rule for judging of the preference of *concords*, from the coincidence of their vibrations: agreeable to which rule, they are diſpoſed into the order of the following table; to which the names of the *concords* in practice, the ratio of their vibrations, the lengths of the chords, and the number of coincidences in the ſame, are expreſſed.

Ratios, or vibrations.

	Grave Term.		Acute Term.	Coincid.
Uniſon	1	:	1	
Octave, 8ve	2	:	1	60
Fifth, 5th	3	:	2	30
Fourth, 4th	4	:	3	20
Sixth, gr.	5	:	3	20
Third, gr.	5	:	4	15
Third, leſſer	6	:	5	12
Sixth, leſſer	8	:	5	12
	Grave		Acute	
	Lengths.			

Though this order be ſettled by reaſon, yet it is confirmed by the ear. On this foundation, *concords* muſt ſtill be the more perfect, as they have the greateſt number of coincidences, with regard to the number of vibrations in both the chords; and where the coincidences are equal, the preference will fall on that interval, whoſe acuteſt term has feweſt vibrations to each coincidence: which rule, however, is in ſome caſes contrary to experience; and yet it is the only rule hitherto diſcovered.

F. Merſenne, indeed, after Kircher, gives us another ſtandard for ſettling the comparative perfection of intervals with regard to the agreement of their extremes in tune: and it is this.

The perception of *concordance*, ſay they, is nothing but the comparing two or more different motions which in the ſame time affect the auditory nerve: now we cannot make a certain judgment of any conſonance, till the air be as oft ſtruck in the ſame time by two chords, as there are units in each member expreſſing the ratio of that *concord*; v. gr. we cannot perceive a fifth, till two vibrations of the one chord, and three of the other, are accompliſhed together; which chords are in length as 3 to 2: the rule then is, that thoſe *concords* are the moſt ſimple and agreeable, which are generated in the leaſt time; and thoſe, on the contrary, the moſt compound and harſh, which are generated in the longeſt time.

For inſtance, let 1, 2, 3, be the lengths of 3 chords, 1 : 2 is an octave; 2 : 3 a fifth; and 1 : 3 an octave and fifth compounded, or a twelfth. The vibrations of chords being reciprocally as their lengths, the chord 2 will neceſſarily vibrate once, while the chord 1 vibrates twice, and then exiſts an octave; but the twelfth does not yet exiſt, becauſe the chord 3 has not vibrated once, nor the chord 1 thrice, which is neceſſary to form a twelfth.

Again, for generating a fifth, the chord 2 muſt vibrate thrice, and the chord 3 twice; in which time, the chord 1 will have vibrated 6 times; and thus the octave will be thrice produced, while the twelfth is only produced twice; the chord 2 uniting its vibrations ſooner with the chord 1, than with the chord 3; and they being ſooner conſonant than the chord 1 or 2 with that 3. Whence, that author obſerves, many of the myſteries of harmony, relating to the performance of harmonious intervals, and their ſucceſſion, are eaſily deduced.

But this rule, upon examining it by other inſtances, Mr. Malcolm has ſhewn defective, as it does not anſwer in all poſitions of the intervals with reſpect to each other; but a certain order, wherein they are to be taken, being required: and there being no rule, with reſpect to the order, that will make this ſtandard anſwer to experience in every caſe: ſo that at laſt we are left to determine the degrees of *concord* by experience and the ear.

Not but that the degrees of *concord* depend much on the more or leſs frequent uniting the vibrations, and the ear's being more or leſs uniformly moved, as above; for that this mixture or union in motion is the true principle, or, at leaſt, the chief ingredient in *concord*, is very evident: but becauſe there ſeems to be ſomething farther in the proportion of the two motions, neceſſary to be known, in order to fix a catholic rule for determining all the degrees of *concord*, agreeable to ſenſe and experience.

The reſult of the whole doctrine is ſummed up in this definition.—*Concord* is the reſult of a frequent union, or coincidence of the vibrations of two ſonorous bodies, and, by conſequence, of the undulating motions of the air, which, being cauſed by theſe vibrations, are like and proportionable to them; which coincidence, the more frequent it is, with regard to the number of vibrations of both bodies, performed in the ſame time, *cæteris paribus*, the more perfect is that *concord*: till the rarity of the coincidence, in reſpect of one or both the motions, produces diſcord. *See ſome of the remarkable phænomena of ſounds accounted for from this theory, under the word* UNISON; ſee alſo INTERVAL, &c.

Mr. Carre, in the Memoirs of the Royal Academy of Sciences, lays down a new general propoſition, to determine the proportion which cylinders are to have, in order to form the *concords* or conſonances of muſic. And it is this—that the ſolid cylinders, whoſe ſounds yield thoſe *concords*, are in a triplicate and inverſe ratio of that of the numbers which expreſs the ſame *concords*.

Suppoſe, e. gr. two cylinders, the diameters of whoſe baſes and lengths are as 3 to 2; it is evident their ſolidities will be in the ratio of 27 to 8, which is the triplicate ratio of 3 to 2: we ſay then, that the ſounds of thoſe two cylinders will produce a fifth, which is expreſſed by thoſe numbers; and that the biggeſt and longeſt will yield the grave ſound, and the ſmalleſt the acute one.—And the like of others.

Concords are divided into *ſimple*, or original, and *compound*.

A *ſimple*, or *original concord*, is that whoſe extremes are at a diſtance leſs than the ſum of any two other *concords*.

On the contrary, a *compound concord* is equal to two or more *concords*.

Other muſical writers ſtate the diviſion thus: an octave 1 : 2 and all the inferior *concords* above expreſſed, are all ſimple and original *concords*: and all greater than an octave, are called *compound concords*; as being compoſed of, and equal to the ſum of one or more octaves, and ſome ſingle *concord* leſs than an octave; and are uſually, in practice, denominated from that ſimple *concord*.

As to the compoſition and relations of the original concords, by applying to them the rules of the addition and ſubtraction of intervals, they will be divided into *ſimple* and *compound*, according to the firſt and more general notion; as in the following table.

Simple *Concords*.	Compound *Concords*			
5 : 6 a 3d leſſ.	5th	3d g. and 3d l.	8ve. compoſed of	5th 4th or 6th g. 3d l. or 3d g. 3d l. 4th.
4 : 5 a 3d gr.	6th l.	4th 3d l.		
3 : 4 a 4th.	6th g.	4th. 3 g		

The octave is not only the firſt *concord* in point of perfection, the agreement of whoſe extremes is greateſt, and the neareſt to uniſon; inſomuch that, when founded together, it is impoſſible to perceive two different ſounds; but it is alſo the greateſt interval of the ſeven original *concords*; and, as ſuch, it contains all the leſſer, which derive their ſweetneſs from it, as they ariſe more or leſs directly out of it; and which decreaſe gradually, from the octave to the leſſer ſixth, which has but a ſmall degree of *concord*.

What is very remarkable, is the manner wherein theſe leſſer *concords* are found in the octave, which ſhews their mutual dependencies.

For, by taking both an harmonical and arithmetical mean between the extremes of the octave, and then both an harmonical and arithmetical mean betwixt each extreme, and the moſt diſtant of the two means laſt found; viz. betwixt the leſſer extreme and the firſt arithmetical mean, and betwixt the greater extreme and the firſt harmonical mean; we have all the leſſer *concords*.

Thus, if betwixt 360 and 180 the extremes of octave, we take an arithmetical mean, it is 270; and an harmonical mean is 240: then, betwixt 360 the greateſt extreme, and 240 the harmonical mean, take an arithmetical mean, it is 300; and an harmonical mean, is 288. Again, betwixt 180 the leſſer extreme of the octave, and 270 the firſt arithmetical mean, it is 225, and an harmonical one 216.

Thus have we a ſeries of all the *concords*, both aſcending towards acuteneſs from a common fundamental, 360; and deſcending towards gravity from a common acute term 180: which ſeries has this property, that taking the two extremes, and any other two at equal diſtances, the four will be in geometrical proportion.

The octave, by immediate diviſion, reſolves itſelf into a fourth and fifth; the fifth, again, by immediate diviſion, produces the two thirds; the two thirds are therefore found by diviſion, though not by immediate diviſion: and the ſame is true of the two ſixths. Thus do all the original *concords* ariſe out of the diviſion of the octave; the fifths and fourths immediately and directly, the thirds and ſixths mediately.

From the perfection of the octave ariſes this remarkable property, that it may be doubled, tripled, &c. and yet ſtill will perſevere a *concord*, i. e. the ſum of two or more octaves are *concord*; though the more compound will be gradually leſs agreeable: but it is not ſo with any other *concord* leſs than octave; the doubles, &c. whereof are all diſcords.

Again, whatever ſound is *concord* to one extreme of the octave is *concord* to the other alſo: and if we add any other ſimple *concord* to an octave, it agrees to both its extremes; to the neareſt extreme it is a ſimple *concord*, and to the fartheſt a compound one.

Another thing obſervable in this ſyſtem of *concords*, is, that the greateſt number of vibrations of the fundamental cannot exceed five; or that there is no *concord* where the fundamental makes more than five vibrations, to one coincidence with the acute term. It may be added, that this progreſs of the *concords* may be carried on to greater degrees of compoſition, even *in infinitum*; but ſtill the more compound, the leſs agreeable.

So a ſingle octave is better than a double one, and that than a triple one; and ſo of fifths, and other *concords*. Three or four octaves is the greateſt length we go in ordinary practice: the old ſcales went but to two; no voice or inſtrument will well go above four. See THIRD, FOURTH, and FIFTH.

CONCORDANCE, a dictionary or index to the Bible, wherein all the leading words, uſed in the courſe of the inſpired writings, are ranged alphabetically; and the various places where they occur referred to; to aſſiſt in finding out paſſages, and comparing the ſeveral ſignifications of the ſame word.

Cardinal Hugo de St. Charo is ſaid to have employed five hundred monks at the ſame time in compiling a Latin *concordance*: beſide which, we have ſeveral other *concordances* in the ſame language; one, in particular, called the *concordance* of England, compiled by J. Darlington, of the order of Predicants; another more accurate one, by the Jeſuit de Zamora.

R. Mordecai Nathan has furniſhed us with a Hebrew *concordance*, firſt printed at Venice in 1523, containing all the Hebrew roots branched into their various ſignifications, and under each ſignification all the places in ſcripture wherein it occurs: but the beſt and moſt uſeful Hebrew *concordance* is that of Buxtorf, printed at Baſil in 1632.

Dr. Taylor, publiſhed in 1754, a Hebrew *concordance* in two volumes folio, adapted to the Engliſh Bible, and diſpoſed after the manner of Buxtorf. See the preface of this work.

The Greek *concordances* are only for the New Teſtament: indeed we have one of Conr. Kircher's on the Old; but this is rather a concordantial dictionary than a *concordance*;

ance; containing all the Hebrew words in an alphabetical order; and underneath, all the interpretations or ſenſes the LXX. give them; and in each interpretation, all the places where they occur in that verſion.

In 1718, Trommius publiſhed his Greek *concordance* for the Septuagint at Amſterdam, in two volumes folio; and Schmidius improving on a ſimilar work of H. Stephen, has given an excellent Greek *concordance* for the New Teſtament, the beſt edition of which is that of Leipſic, an. 1717.

Calaſius, an Italian Cordelier, has given us *concordances* of the Hebrew, Latin, and Greek, in two columns: the firſt, which is Hebrew, is that of R. Mordecai Nathan, word for word, and according to the order of the books and chapters: in the other column is a Latin interpretation of each paſſage of Scripture quoted by R. Mordecai; this interpretation is Calaſius's own; but in the margin he adds that of the LXX. and the Vulgate, when different from his. The work is in four volumes folio, printed at Rome in 1621.

We have ſeveral very copious *concordances* in Engliſh; as Newman's, &c. but the laſt and beſt eſteemed, is that in 4to. by Alex. Cruden.

CONCORDANT *Verſes*, ſuch as have ſeveral words in common; but which, by the addition of other words, convey an oppoſite, at leaſt, a different meaning. Such are thoſe,

$$\textit{Et}\left\{\begin{array}{l}\textit{Canis}\\ \textit{Lupus}\end{array}\right\}\textit{in ſilva}\left\{\begin{array}{l}\textit{venatur}\\ \textit{nutritur}\end{array}\right\}\textit{\& omnia}\left\{\begin{array}{l}\textit{ſervat.}\\ \textit{vaſtat.}\end{array}\right.$$

CONCORDAT, in the *Canon Law*, denotes a covenant, or agreement concerning ſome beneficiary matter, as a reſignation, permutation, promotion, or the like.

The council of Trent, ſeſſ. vi. *de reform.* cap. 4. ſpeaking of *concordats* made without the authority and approbation of the pope, calls them *concordias quæ tantum ſuos obligant auctores, non ſucceſſores*. And the congregation of cardinals, who have explained this decree, declares alſo, that a *concordat* cannot be valid ſo as to bind ſucceſſors, unleſs confirmed by the pope.

Concordat is alſo uſed, abſolutely, among the French, for an agreement concluded at Bologna in 1516, between pope Leo X. and Francis I. of France, for regulating the manner of nominating to benefices.

The *concordat* ſerves in lieu of the Pragmatic *ſanction*, which has been abrogated; or, rather, it is the pragmatic ſanction ſoftened and reformed.

The *concordat* between the pope and the republic of Venice reſembles the former.

There is alſo a German *concordat*, made between the emperor Frederic III. and the princes of Germany, in 1448, relating to beneficiary matters, confirmed by pope Nicholas V.

CONCOU, in *Botany*, a name given by the people of Guinea to an herb which is in great eſteem with them for killing that troubleſome ſort of worm called the Guinea-worm, which breeds in their fleſh. They bruiſe the leaves, and, mixing them with oil, apply them in form of a cataplaſm. The leaves of this ſhrub ſomewhat reſemble thoſe of the caggow, but they are thicker and ſtiffer, and are not ſo full of veins. They are broadeſt within one third of the baſe, and from thence they go tapering to each end. They are placed on long footſtalks of a fine green throughout. Phil. Tranſ. N° 232.

CONCOURSE, or Concurrence, the reciprocal action of divers perſons, or things, co-operating toward the ſame effect, or end.

The ſchoolmen diſtinguiſh two kinds of *concurrence*; viz. *mediate*, which conſiſts in giving a power or faculty to act; and *immediate*, which is a contemporary influence of one cauſe along with another, to produce an effect — Thus, the grandfather *concurs mediately* to the production of a grandſon, as he originally gives the power of generating to the father; but the father *concurs immediately* with the mother to the production of the ſame child.

With reſpect to the agency of God, ſome divines maintain both theſe kinds of concurrence; others deny the latter. See Cause.

Concourse, *Point of.* See Focus.

CONCRETE, in the *School Philoſophy*, an aſſemblage, or compound.

Concrete, *Phyſical*, or a Concrete *body*, may denote any mixed body, or body compoſed of different principles; and conſequently, all ſenſible bodies whatever, as all bodies ariſe from a coalition of divers elements, or at leaſt of divers principles, matter, and form.

But, in ſtrictneſs, *concrete* is only uſed for thoſe compounds wherein the ingredients ſtill retain their diſtinct natures, nor are wholly converted into any new common nature.

Authors diſtinguiſh *natural concretes* and *artificial* ones: antimony is a *natural concrete*, and ſoap a *factitious concrete*.

Concrete *Juices*. See Juices.

Concrete, *Logical*, or a Concrete *word*, called alſo *paronymum*, is that which has a compound ſignification, as denoting both the ſubject, and ſome quality or accident of the ſubject, which gives it its denomination.

Such, e. gr. are *man*, *learned*, *white*; for *man* ſignifies as much as *having human nature*; *learned*, as much as *having learning*, &c. Hence, the word *concrete* is chiefly uſed to expreſs the union of qualities or quantities with the bodies or ſubjects, without any ſeparation, even in idea.

The oppoſite term, whereby things are ſeparated in thought, is *abſtract*.

Concrete properly ſignifies a ſubject accompanied with its form or quality; as *pious*, *hard*, *white*: *abſtract*, on the contrary, expreſſes the form and quality without the ſubject, as *piety*, *hardneſs*, *whiteneſs*.

Concrete *Numbers*, are thoſe which are applied to expreſs or denote any particular ſubject: as, two men, three pounds, two thirds of a ſhilling, &c.

Whereas, if nothing be connected with a number, it is taken abſtractedly or univerſally: thus, three ſignifies only an aggregate of three units; let thoſe units be men, pounds, or what you pleaſe.

CONCRETION, the act whereby ſoft bodies are rendered hard; or, an inſenſible motion of the particles of a fluid or ſoft body, whereby they come to a conſiſtence.

The word is uſed indifferently for *induration*, *condenſation*, *congelation*, and *coagulation*.

Concretion is alſo uſed for the coalition of ſeveral little particles into a ſenſible maſs, called a concrete; by virtue of which union, the body acquires this or that figure, and theſe or thoſe properties.

CONCUBINAGE ſometimes expreſſes a criminal, or prohibited commerce between the two ſexes; in which ſenſe it comprehends *adultery*, *inceſt*, and *ſimple fornication*.

In its more reſtrained ſenſe, *concubinage* is uſed for a man's and a woman's cohabiting together in the way of marriage; without having paſſed the ceremony thereof.

Concubinage was anciently tolerated: the Roman law calls it an allowed cuſtom, *licita conſuetudo*. When this expreſſion occurs in the conſtitutions of the Chriſtian emperors, it ſignifies what we now call a *marriage in conſcience*.

The *concubinage* tolerated among the Romans in the time of the republic, and of the heathen emperors, was that between perſons not capable of contracting marriage together: nor did they even refuſe to let inheritances deſcend to children which ſprung from ſuch a tolerated cohabitance.

Concubinage between ſuch perſons they looked on as a kind of marriage, and even allowed it ſeveral privileges: but then this *concubinage* was confined to a ſingle perſon, and was of perpetual obligation, as much as marriage itſelf.

Hottoman obſerves, that the Roman laws had allowed of *concubinage* long before Julius Cæſar made that law whereby every one was allowed to marry as many wives as he pleaſed. The emperor Valentinian, Socrates tells us, allowed every man two.

Concubinage is alſo uſed for a marriage performed with leſs ſolemnity than the formal marriage; or a marriage with a woman of inferior condition, and to whom the huſband does not convey his rank, or quality.

Cujas obſerves, that the ancient laws allowed a man to eſpouſe, under the title of *concubine*, certain perſons, ſuch as were eſteemed unequal to him, on account of the want of ſome qualities requiſite to ſuſtain the full honour of marriage. He adds, that though *concubinage* was beneath marriage, both as to dignity, and civil effects; yet was *concubine* a reputable title, very different from that of *miſtreſs* among us.

The commerce was eſteemed ſo lawful, that the *concubine* might be accuſed of adultery in the ſame manner as a wife.

This kind of *concubinage* is ſtill in uſe in ſome countries, particularly in Germany, under the title of a *half-marriage*, *morgengabic marriage*, or *marriage with the left-hand*; alluding to the manner of its being contracted, viz. by the man's giving the woman his left-hand inſtead of the right.

This is a real marriage, though without ſolemnity: the parties are both bound for ever; though the woman be thus excluded from the common rights of a wife, for want of quality or fortune.

The children of *concubines* were not reputed either legitimate or baſtards, but natural children, and were capable only of donations.

They were deemed to retain the low rank of the mother; and were on this ground unqualified for inheriting the effects of the father.

Concubinage, in a *Legal Senſe*, is uſed as an exception againſt her that ſueth for dower, alleging thereby, that ſhe was not a wife lawfully married to the party, in whoſe lands ſhe ſeeks to be endowed, but his *concubine.*

CONCUBINE, a woman whom a perſon takes to cohabit with him, in the manner, and under the character, of a wife, without being authorized thereto by a legal marriage.

Concubine is alſo uſed for a real, legitimate, and only wife, diſtinguiſhed by no other circumſtance but a diſparity of birth or condition between her and the huſband. Du Cange obſerves, that one may gather from ſeveral paſſages in the epiſtles of the popes, that they anciently allowed of ſuch *concubines.* The ſeventeenth canon of the firſt council of Toledo declares, that he, who with a faithful wife, keeps a *concubine*, is excommunicated; but that if the *concubine* ſerved him as a wife, ſo that he had only one woman, under the title of *concubine*, he ſhould not be rejected from communion: which ſhews that there were legitimate wives under the title of *concubines.*

In effect, the Roman laws did not allow a man to eſpouſe whom he pleaſed; there was required a kind of parity, or proportion, between the conditions of the contracting parties: but a woman of inferior condition, who could not be eſpouſed as a wife, might be kept as a *concubine*; and the laws allowed of it, provided the man had no other wife.

It is certain the patriarchs had a great number of wives, and that theſe did not all hold the ſame rank; ſome being ſubaltern to the principal wife; which were what we call *concubines*, or half-wives. The Romans prohibited a plurality of *concubines*, and only had regard to the children iſſuing from a ſingle *concubine*, becauſe ſhe might become a legitimate wife. Solomon had 700 wives, and 300 *concubines:* the emperor of China has ſometimes two or three thouſand *concubines* in his palace. Q. Curtius obſerves, that Darius was followed in his army by 365 *concubines*, all in the equipage of queens.

CONCUPISCENCE, among divines, an irregular deſire, appetite, or luſt after carnal things, inherent in human nature.

The dominion or prevalence of *concupiſcence*, according to F. Malebranche, is what we call *original ſin.* See Original *ſin.*

The origin of *concupiſcence* he aſcribes to thoſe impreſſions made on the brain of our firſt parents at their fall; which are ſtill tranſmitted and continued on thoſe of their children: for as animals produce their like, and with like traces in the brain (whence the ſame ſympathies and antipathies in the ſame kind; and whence the ſame conduct on the ſame occaſions); ſo our firſt parents, after their fall, received ſuch deep traces in the brain, by the impreſſion of ſenſible objects, that they might well be ſuppoſed to communicate them to their children.

The ſchoolmen uſe the term *concupiſcible appetite* for the deſire we have of enjoying any good; in oppoſition to *iraſcible appetite*, whereby we eſchew what is evil.

CONCURRENCE. See Concourse.

CONCURRING, or Congruent *Figures*, in *Geometry*, ſuch as, being laid upon one another, do exactly correſpond to, and cover one another, and conſequently muſt be equal among themſelves. Thus, triangles having two ſides and the contained angle equal each to each, appear to be equal to one another in all reſpects. See Congruity.

CONCUSSION *crimen repetundarum*, in *Juriſprudence*, is the abuſe of power by ſome perſon entruſted with a public commiſſion or employment; by extorting money from thoſe under his power or command. This crime is taken notice of in the heads of the Digeſt, or Code—*ad legem Juliam repetundarum*; and it is to be obſerved, that he who gave a bribe contrary to the oath he had taken, might be proſecuted as well as the receiver: and that the judge who was corrupted was deemed guilty of *concuſſion*, as much as he who purchaſed property which was in a courſe of litigation. The magiſtrates were even forbidden to acquire any thing by way of purchaſe, donation, or otherwiſe, in the provinces wherein they reſided, under pain of being guilty of *concuſſion.*

The crime of *concuſſion* was not ranked in the number of public offences, except when committed by a magiſtrate: when committed by a perſon of inferior ſtation, it was only a private crime; but it is not the quality of the perſon which renders the crime public or private, but the nature of the crime itſelf.

CONDALUS, in *Antiquity*, a kind of ring uſually worn by ſlaves.

COND, Con, or Conn, in *Sea Language*, ſignifies to guide or conduct a ſhip in her right courſe.

He that *conds* her, ſtands aloft with a compaſs before him, and gives the word of direction to the man at the helm how he is to ſteer. See Steering.

If the ſhip go before the wind, or, as they call it, betwixt the ſheets, the word is either *ſtarboard*, or *port the helm*; according as the *conder* would have the helm put to the right or left ſide of the ſhip, upon which the ſhip always goes the contrary way.

If he ſays, *helm a mid-ſhip*, he would have the ſhip to go right before the wind, or directly between her two ſheets.

If the ſhip ſail by a wind, or on a quarter wind, the word is, *aloof, keep your luff, fall not off, veer no more, keep her to, touch the wind, have a care of the lee-latch:* all which expreſſions are of the ſame import, and imply that the ſteerſman ſhould keep the ſhip near the wind.

On the contrary, if he would have her ſail more large, or more before the wind, the word is, *eaſe the helm, no near, bear up.*

If he cries *ſteady*, it means, keep her from going in and out, or making yaws (as they call it), howſoever ſhe ſails, whether large, or before a wind: and when he would have her go juſt as ſhe does, he cries, *keep her thus, thus,* &c.

CONDEMNATION, the act of paſſing, or pronouncing SENTENCE, or giving judgment, againſt a man; whereby he is ſubjected to ſome penalty or PUNISHMENT; either in reſpect of fortune, reputation, or life.

Condemnation *to the galleys.* See Galley.

Condemnation *of prizes* taken from the enemy. See Prizes.

CONDENSATION, the act whereby a body is rendered more denſe, compact, and heavy.

Condenſation conſiſts in bringing the parts cloſer to each other, and increaſing their contact: in oppoſition to *rarefaction*; which renders the body lighter and looſer, by ſetting the parts farther aſunder, and diminiſhing their contact, and of conſequence their coheſion.

Wolfius, and ſome of the more accurate writers, reſtrain the uſe of the word *condenſation* to the action of cold: what is done by external *application*, they call *compreſſion.*

Air eaſily *condenſes*, either by cold, or by art: water congeals, but has been ſuppoſed never to *condenſe*; i. e. to be brought into a leſs ſpace; becauſe it has even penetrated the moſt ſolid body, even gold, rather than loſe of its bulk. See Compression. A ſyrup *condenſes* in ebullition.

It was found, in the obſervatory at France, during the great cold of the year 1670, that the hardeſt bodies, even metals, glaſs, and marble itſelf, were ſenſibly *condenſed* by the cold, and became much harſher, and more brittle, than before; till their former ſtate was retrieved by the enſuing thaw.

Water alone ſeems to expand by cold; inaſmuch as when congealed, the ice takes up more ſpace than the water did before. But this muſt be rather owing to the intromiſſion of ſome foreign matter, as the nitrous particles of the ambient air, than to any proper rarefaction of the water by the cold.

The Carteſians, indeed, taking it for granted that there is no vacuum, deny that there can be any ſuch thing as proper *condenſation*, or RAREFACTION. According to them, when a body takes up more ſpace than it did before, its parts are diſtended by the detruſion of a ſubtile matter through its pores: and when its bulk, again, is reduced into leſs ſpace, this is owing to the extruſion or egreſs of that matter through the ſame pores; by virtue whereof, the parts of the body, though not the parts of matter, come nearer each other.

For as extenſion and matter, according to them are the ſame thing; a body can never take up more or leſs place, any otherwiſe than by the acceſſion or diminution of matter: and thus they conclude there is no VACUUM.

Now, that, in the rarefactions of groſs bodies, their parts are diſtended by the acceſſion of air, is frequently manifeſt; but this does not follow from the plenitude of the world, but from the fluid and elaſtic nature of air; or from its gravity and preſſure. That there is ſuch a thing as *condenſation*, without the loſs of any matter, is evident from Galileo's experiment: a cock, being with a female ſcrew fitted to a hollow braſs ball, or cylinder, ſo as that a ſyringe, by means of a male ſcrew, may be applied to it; by working the ſyringe, the air will be forced into the ball, and turning the cock, it will be retained; inſomuch that, upon examining the veſſel by the balance, its weight will be found increaſed. If the cock be returned, the air will burſt out with violence, and the ball will ſink to its former weight.

From the experiment it follows, 1°, That air may be crouded into a leſs volume and bulk than it ordinarily takes up, and is therefore compreſſible.—*For the quantity of its* COMPRESSION, ſee Air.

2°, That from the recovery of its weight, juſt ſo much air is expelled as was injected; and that, therefore, compreſſed air returns to its primitive expanſion, if the compreſſing force be removed; and it has therefore an elaſtic force.

3°, That it is a certain ſign of compreſſion, if, upon opening the orifice of a veſſel, any portion of air be obſerved to fly out.

4°, That ſince the weight of the veſſel is increaſed by injecting air; the aerial maſs muſt have a niſus downwards, in lines perpendicular to the horizon; and is therefore heavy, and preſſes ſubject bodies in lines perpendicular to the horizon, according to the conditions of gravity.

Condenſed air has its effects juſt oppoſite to thoſe of rarefied air; birds, &c. appear briſker and more lively therein than in the common air, &c.

CONDENSER, a pneumatic engine, made of glaſs, in a cylindric or globular figure, or conſiſting of two very ſtrong braſs cups, whoſe brims, covered with wet leather, are preſſed together, and kept down by an iron croſs-bar with pillars and ſcrews, by which, with an *injecting* SYRINGE, an unuſual quantity of AIR may be crouded into a given ſpace. The orifice of the *condenſer* is fitted with a female ſcrew to receive the male ſcrew at the end of the ſyringe: it is alſo furniſhed with a GAGE.

They can by this throw in 2, 3, 4, 5, or 10 atmoſpheres into the *condenſer*, i. e. twice, thrice, four, &c. times as much air as there would be in the ſame compaſs without the engine. See CONDENSATION.

CONDENSING *of wines*. See WINES.

CONDERS, in our *Cuſtoms*. See BALKERS.

CONDIGNITY, *merit of*. See MERIT.

CONDITION, in the *Civil Law*, an article of a treaty, or contract; or a clauſe, charge, or obligation, ſtipulated in a contract, or added in a donation, legacy, teſtament, &c.

The donee does not loſe his donative, if it be charged with any diſhoneſt or impoſſible *conditions*. Lawyers diſtinguiſh three kinds of *conditions*, under which a legacy or donation may be made: theſe are the *caſual*, which depends merely on chance; the *poteſtative*, which is abſolutely in our power; and the *mixed condition*, which is both caſual and poteſtative together.

CONDITION, in *Common Law*, is a manner, quality, or reſtriction, annexed to an act; qualifying or ſuſpending the ſame; and making it precarious and uncertain, whether or no it ſhall take effect.

In a leaſe there may be two ſorts of *conditions*; *condition collateral*, and *condition annexed to the rent*.

CONDITION, *collateral*, is that annexed to a collateral or foreign act; as, v. gr. that the leſſee ſhall not go to Paris.

Condition is alſo divided into *condition in deed*, and *condition implied*.

CONDITION *in deed*, or *expreſſed*, is annexed by expreſs words to the feoffment, leaſe, or grant, either in writing, or without. As, if I infeoff a man in lands, reſerving a rent to be paid at ſuch a feaſt; *upon condition*, if the feoffee fail of payment, it ſhall be lawful for me to reenter.

CONDITION *implied*, called alſo *condition in law*, is when a man grants to another the office of a ſteward, bailiff, keeper of a park, &c. for life: though there be no *condition* expreſſed in the grant, yet the law makes one covertly; which is, that if the grantee do not juſtly execute all things belonging to the office, it ſhall be lawful for the granter to diſcharge him.

CONDITION *precedent*, is when a leaſe or eſtate is granted to a perſon for life, upon *condition* of the payment of a certain ſum by the leſſee to the leſſor at a certain day, when he ſhall have fee-ſimple: in this caſe the *condition* precedes the eſtate in fee, and on performance gains the fee-ſimple.

CONDITION *ſubſequent*, is when a man grants to another his manor in fee, upon *condition* that the grantee ſhall pay to him a certain ſum on ſuch a day, or that his eſtate ſhall ceaſe: ſo that here the *condition* follows the eſtate, and the performance preſerves it.

CONDITION *without which*, *ſine qua non*, is uſed in *Philoſophy*, in ſpeaking of ſome accident or circumſtance, which is not eſſential to the thing, but is yet neceſſary to its production. Thus, light is a *condition without which* a man cannot ſee objects, though he have good eyes; and thus fire, though conſidered in itſelf, may burn without wood; yet is its preſence a *condition without which* the wood cannot be burnt.

CONDITIONAL, ſomething not abſolute, but ſubject to limitation. See CONDITION.

Conditional legacies are not due till the conditions are accompliſhed.

The Arminian divines maintain, that all the decrees of God, relating to the ſalvation and damnation of man, are truly *conditional*; and the Calviniſts, that they are all abſolute. See ARMINIAN, &c.

CONDITIONAL *conjunctions*, in *Grammar*, are thoſe which ſerve to make propoſitions conditional. As, *if*, *unleſs*, *provided that*, *in caſe of*, &c.

CONDITIONAL *propoſitions*, in *Logic*, are ſuch as conſiſt of two parts, connected together by a conditional particle. Of theſe, the firſt, wherein the condition lies, is called the *antecedent*, and the other the *conſequent*.

Thus, If the ſoul be ſpiritual, it is immortal; is a *conditional propoſition*, wherein, *if the ſoul*, &c. is the antecedent, and *is immortal* the conſequent.

The truth of theſe propoſitions depends on the truth of the connection of them, and they may be properly denied or contradicted when the negation affects their conjunctive particles.

CONDITIONAL *ſyllogiſm*, is that whoſe major or minor, or both, are *conditional* propoſitions: e. gr. If there be a God, the world is governed by Providence; but there is a God, therefore the world is governed by Providence.

CONDITIONAL *eſtate*, and *reſignations*. See the ſubſtantives.

CONDITIONALS, *ſcience of*, i. e. of *conditional truths*, imports that knowlege which God has of things, conſidered, not according to their eſſence, their nature, or their real exiſtence; but under a certain ſuppoſition, which imports a condition never to be accompliſhed.

Some of the ſchoolmen deny, that God has the knowlege of *conditionals*: the Thomiſts maintain, that God's knowlege of *conditionals* depends on a predeterminating decree; others deny it.

F. Daniel obſerves, that the truths which compoſe the knowlege of *conditionals*, being very different from thoſe which compoſe the knowlege of intuition, and that of underſtanding; a third claſs muſt be added, and the knowlege of God be divided into *intuitive*, *intellective*, and *conditional*. See KNOWLEGE.

CONDORE, in *Ornithology*, the name of the largeſt of all birds in South America; and, perhaps, by the deſcription of it, in the world. It is frequently met with on the Andes. It is of the carnivorous kind, and ſo very ſtrong, fierce, and voracious, that it often ſeizes lambs from the flock; and Don Ulloa informs us, that he actually ſaw one of them riſing with a lamb in its talons. The Indians have various ways of catching them: beſides traps and ſnares laid for them near any carrion, they kill a cow or other animal, and moiſten its fleſh with the juice of ſome ſtrong intoxicating herbs, and then bury the body till it putrefies. In this ſtate they take it up and lay it on the ground; and when the *condores* come near to devour it, they are intoxicated and rendered motionleſs, when the Indians fall upon and kill them.

CONDORMIENTES, religious ſectaries, whereof there have been two kinds. The firſt aroſe in Germany, in the thirteenth century; their leader was a native of Toledo. They held their meetings near Cologne; where they are ſaid to have worſhipped an image of Lucifer, and to have received anſwers and oracles from him: the legend adds, that an eccleſiaſtic having brought the euchariſt to it, the idol broke into a thouſand pieces; which put an end to the worſhip. They had their name from their *lying all together*, men and women, young and old.

The other ſpecies of *Condormientes* were a branch of Anabaptiſts in the ſixteenth century; ſo called, becauſe they lay, ſeveral of both ſexes, in the ſame chamber; on pretence of evangelical charity.

CONDUCT, *ſafe*. See SAFE-*conduct*.

CONDUCTOR, the name of a ſurgeon's inſtrument, uſed when a ſinus is laid open, and being put up into the bladder, ſerves to guide or conduct the knife, in the operation of cutting for the ſtone. See LITHOTOMY.

CONDUCTOR, in *Surgery*, likewiſe denotes an inſtrument, not long ſince contrived by Mr. Wathen, for ſecuring a fractured limb in the conveyance of the patient from the place where the accident occurred, to the place where the cure is to be completed. It conſiſts of two tin CANULÆ, with grooves and ſliders: theſe *canulæ* with their ſliders incloſed are, like SPLINTS of the ſame length, to be placed one on each ſide of the fractured leg, and ſecured on the knee and ancle joints by a tin band, which is jointed and cuſhioned. The ſlide may be drawn out at pleaſure, and the degree of extenſion thus procured is continued by a key-check, which faſtens on the teeth of the ſlider. The *conductor* may be ſhortened by preſſing the key, and letting the ſlider return into the *canula*.

CONDUCTORS, in *Electricity*, a term firſt introduced into this ſcience by Dr. Deſaguliers, and uſed to denote thoſe ſubſtances, which are capable of receiving and tranſmitting the electric virtue, in oppoſition to ELECTRICS, in which the ſame virtue may be excited and accumulated. The former are alſo called *non-electrics*, and the latter *non-conductors*. All bodies are ranked under one or other of theſe two claſſes; though none of them are *perfect electrics*, or *perfect conductors*, ſo as wholly to retain, or freely and without reſiſtance to tranſmit the electric fluid. Electricians, in the infancy of this ſcience, apprehended, that ſome ſubſtances contained the electric matter, and that others were wholly deſtitute of it; and they were hence led to call the former *electrics per ſe*, and the latter *non-electrics:* but ſubſequent experiments proved, that the electric fluid was really drawn from thoſe bodies, which at firſt were thought to have none in them; and that it was diffuſed through *all the matter* of the terraqueous globe; and, therefore, the terms *conductor* and *non-conductor* were adopted, as leſs exceptionable, and more agreeable to phenomena. Metals and ſemi-metals, ores, and all fluids (excepting air and oils), together with the ſubſtances containing them, the effluvia of flaming bodies, ice, unleſs froze very hard, and ſnow, moſt ſaline and ſtony ſubſtances, charcoals, of which the beſt are thoſe that have been expoſed to the greateſt heat, ſmoke, and the vapour of hot water, belong to the claſs of *conductors*. We may obſerve here, that the electric fluid paſſes through the ſubſtance, and not merely over the ſurfaces of metallic *conductors:* becauſe if a wire of any kind of metal be covered with ſome electric ſubſtance, as reſin, ſealing-wax, &c. and a jar be diſcharged through it, the charge will be conducted as well with as without the electric coating.

It has likewiſe been alleged, that electricity will pervade a vacuum, and will be tranſmitted through it almoſt as freely as through the ſubſtance of the beſt *conductor:* but Mr. Walſh found, that the electric ſpark or ſhock would no more paſs through a perfect vacuum, made by the aſſiſtance of M. De Luc, than through a ſtick of ſolid glaſs. In other inſtances, when the vacuum hath been made with all poſſible care, the experiment has not ſucceeded. We may alſo obſerve, that many of the forementioned ſubſtances are capable of being electrified, and that their *conducting* power may be deſtroyed and recovered by different proceſſes: e. g. green wood is a *conductor*; but baked, it becomes a *non-conductor:* its *conducting* power is reſtored by charring it; and again deſtroyed by reducing it to aſhes. And again, many electric ſubſtances, as glaſs, reſin, air, &c. become *conductors*, by being made very hot: air heated by glaſs muſt be excepted. The difference between theſe two kinds of ſubſtances, in conſequence of which ſome retain, and others convey the electric matter, has been among the *deſiderata* in this ſcience. Dr. Franklin, in a letter dated 1751, obſerves, that the perfect *conductors* of electric matter are only metals and water; and that other bodies *conduct* only as they contain a mixture of theſe; without more or leſs of which they will not *conduct* at all. But this ingenious philoſopher found reaſon afterwards to retract this opinion; ſince ſeveral ſubſtances have been diſcovered to act as good *conductors*, as, particularly, hot air and charcoal, which contain no water or metal, at leaſt in ſuch a quantity as to induce a change in their nature; and S. Beccaria has proved, that water itſelf is an imperfect *conductor*.

Dr. Prieſtley has lately advanced another hypotheſis, no leſs probable than ingenious. He conſiders the characteriſtic diſtinction between *conducting* and *non-conducting* ſubſtances to conſiſt in this, that the former contain PHLOGISTON intimately united with ſome baſe; and that the latter, if they contain it at all (glaſs being ſuppoſed to contain none), retain it more looſely. He was led to this diſcovery by his experiments on the *conducting* power of CHARCOAL, which he found exactly to agree with metals in this particular, that while they have the phlogiſton, they *conduct*, and, when deprived of it, they will not *conduct*. Dr. Prieſtley was afterwards confirmed in his hypotheſis, upon obſerving the affinity between phlogiſton and water, which gave him occaſion to conclude, that water, in its natural ſtate, contains ſome portion of phlogiſton; in proof of which concluſion he has ſince found, that long agitation in the pureſt water injures air, ſo that a candle will not burn in it, which is preciſely the effect of all phlogiſtic proceſſes. Is not (ſays S. Beccaria) the inflammability of reſins, ſulphurs, and other oiled ſubſtances, the cauſe why ſuch bodies are diſpoſed to be electrified by deficiency, ſince in conſequence of ſuch inflammability they receive, when rubbed, a greater degree of heat? And may not the great quantity of phlogiſton with which metallic ſubſtances abound, as well as the great eaſe with which common fire moves within them, be the reaſon why metallic ſubſtances quickly contract by friction a conſiderable degree of heat, and are thus diſpoſed to give (or part with) their electric fire in the higheſt degree? We may obſerve, that when metallic bodies are melted by lightning, the bodies contiguous to them are very liable to be burnt by the phlogiſton which is then ſet free from them. We may add to the above conjectures, that glaſs, when unpoliſhed, alſo contracts heat more eaſily on account of the ſeparation between the parts which compoſe its ſurface, and of their ſmallneſs; in the ſame manner as inflammable bodies are the more eaſily kindled, as their ſurface has a greater ratio to their maſs. Mr. Henly, in a very long courſe of experiments, obſerved, that thoſe bodies that were moſt replete with phlogiſton, became the moſt eaſily, and the moſt powerfully electrified *negatively* by friction: he alſo obſerves, that a thick ſcum from the ſurface of ſome linſeed oil, perfectly dried, became a very ſtrong negative electric. See on this ſubject Prieſtley's Hiſt. of Electricity, vol. i. Obſervations on Air, vol. i. p. 283, &c. vol. ii. p. 254. Cavallo's Complete Treat. of Elect. chap. ii. Franklin's Letters, &c. p. 96, & 262. ed. 1769. Henly's Exp. and Obſ. in Elect. Phil. Tranſ. vol. lxvii. part i. p. 122, &c.

CONDUCTOR, *prime*, in *Electricity*, is an inſulated *conductor* ſo connected with the ELECTRICAL *machine*, as to receive the electricity immediately from the excited electric. The firſt metallic *conductors*, that were applied to this purpoſe, were thoſe of Mr. Grey in 1734: he ſuſpended ſeveral pieces of metal on ſilken lines, and charged them with electricity. Mr. Du Fay faſtened to the end of an iron bar, which he uſed as his *prime conductor*, a bundle of linen threads, to which he applied the excited tube; but theſe were afterwards changed for ſmall wires ſuſpended from a common gun-barrel, or other metalline rod. In the preſent advanced ſtate of the ſcience, this part of the electrical apparatus has been conſiderably improved. The *prime conductor* is made of hollow braſs, and generally of a cylindric form (ſee *Tab. Electricity, fig.* 4.); and care ſhould be taken, that it is perfectly ſmooth and round, without points and ſharp edges; if holes are made in it for the purpoſes of different experiments, the ſame caution ſhould be obſerved. The ends of the *conductor* are ſpherical; and it is neceſſary, that the part moſt remote from the electric ſhould be made much larger and rounder than the reſt, in order to reſiſt the effort of the electric matter to eſcape, which is always the greateſt at the greateſt diſtance from the electric: and the other end ſhould be furniſhed with ſeveral pointed wires or needles, either ſuſpended from, or fixed to an open metallic ring, and pointing to the globe or cylinder, in order to collect the fire. The *prime conductor*, inſtead of hanging on ſilken ſtrings, which are liable to continual motion, ſhould be ſupported by pillars of ſolid glaſs covered with ſealing-wax or good varniſh. The electrician ſhould be provided with ſeveral metallic *conductors* of different ſizes, which may be uſed as occaſion requires. *Prime conductors* of a larger ſize are uſually made of paſte-board, covered with tin-foil or gilt paper: and theſe are uſeful for throwing off a longer and denſer ſpark than thoſe of a ſmaller ſize: they ſhould terminate in a ſmaller knob or obtuſe edge, at which the ſparks ſhould be ſolicited. Mr. Nairne prepared a *conductor* ſix feet in length, and twelve inches in diameter, from which he drew electrical ſparks at the diſtance of ſixteen, ſeventeen, or eighteen inches. But there is a *maximum*, which the ſize of the *prime conductor* ſhould not exceed; for it may be ſo large, that the diſſipation of the electricity from its ſurface may be greater than that which the electric is capable of ſupplying.

Dr. Prieſtley recommends a *prime conductor* of poliſhed copper, in the form of a pear (ſee *fig.* 6. *k.*), ſupported by a pillar and a firm baſis of baked wood: this receives its fire by a long arched wire of ſoft braſs (*l*), which may be eaſily bent, and raiſed or lowered to the globe: it is terminated by an open ring (*m*), in which are hung ſome ſharp-pointed wires. In the body of this *conductor* are holes for the inſertion of metalline rods. This, he ſays, collects the fire perfectly well, and retains it equally every where. Phil. Tranſ. vol. lxiv. part i. art. 7. Hiſt. Elect. vol. ii. § 2.

Mr. Henly has contrived a new kind of *prime conductor*, which, from its uſe, is denominated the *luminous conductor* (ſee *fig.* 8.) It conſiſts of a glaſs tube, E F, eighteen inches long, and about two inches in diameter The tube is furniſhed at both ends with braſs caps and ferules about two inches long, as F D and E B, cemented and made air-tight, and terminated by braſs balls D and B. In one of theſe caps, as F, a ſmall hole is drilled, which is covered by a ſtrong valve, and which ſerves for exhauſting the tube of its air; and the ball D is made to ſcrew on the cap F. Within the tube at each end there is a knobbed wire, projecting to the diſtance of two inches and a half from the braſs caps, and terminating as repreſented at H and I. To the ball D is annexed a fine-pointed wire for receiving and collecting the electricity, and at the other end B there is a wire with a knob or ball for diſcharging it. The *conductor*, thus prepared, is ſupported on pillars of ſealing-wax or glaſs. Beſides the common purpoſes of a *prime conductor* to exhibit and aſcertain the direction of the electric matter in its paſſage through it: for, when the point C is brought near the excited globe or cylinder of a machine, it will appear illuminated with a ſtar, and a weak light will occupy the inner part of the tube; a lucid pencil will iſſue from the ball H, and the oppoſite ball I will be illuminated with a ſtar. But if the point C be connected with the inſulated rubber of a machine, the appearances will be reverſed; the ſtar will appear at H, and the pencil at I; for in the former caſe H diſcharged, and in this caſe it receives the electric fire, as in *fig.* 9. If the knob of an uncharged bottle be nearly in contact with the braſs ball B, or a chain be ſuſpended from it to the table, and the experiment be repeated as above deſcribed, the ball I, when C is preſented to the excited glaſs, will be enveloped with a denſe white atmoſphere of electricity; and when C is preſented to the inſulated rubber, the atmoſphere will appear upon the ball H; and the ſame will happen on the application, firſt, of a bottle poſitively charged, and then of a bottle negatively charged, as in *fig.* 10 and 11. From an experiment ſimilar to this, S. Beccaria inferred, that electricity conſiſts of one uniform homogeneous fluid, and not of two, viz. the vitreous and reſinous, as ſome have ſuppoſed: for, if this were the caſe, both balls ſhould have been encompaſſed with their proper atmoſpheres at the ſame time. If inſtead of balls, the wires in the tube terminate in points, the appearance will be the ſame. Phil. Tranſ. vol. lxiv. part ii. p. 403.

Conductors, *pointed metallic*, were propoſed by Dr. Franklin for preſerving buildings, &c. ſoon after the identity of electricity and lightning was aſcertained; and they exhibit a very important and uſeful application of modern diſcoveries in this ſcience. This ingenious philoſopher, having found that pointed bodies are better fitted for receiving and throwing off the electric fire than thoſe that were terminated by blunt ends or flat ſurfaces, and that metals were the readieſt and beſt *conductors*, ſoon diſcovered that lightning and electricity reſembled one another in this and other diſtinguiſhing properties: he accordingly recommended a pointed metalline rod to be raiſed ſome feet above the higheſt part of a building, and to be continued down into the ground or the neareſt water. The lightning, ſhould it ever come within a certain diſtance of this rod or wire, would be attracted by it, and paſs through it preferably to any other part of the building, and be conveyed into the earth or water, and there diſſipated, without doing any damage to the building. Many facts have occurred to evince the utility of this ſimple and ſeemingly trifling apparatus. However, ſome electricians, of whom Mr. Wilſon is the principal, have objected to the pointed termination of this *conductor*; preferring rather a blunt end: becauſe, they ſay, a point invites the electricity from the clouds, and attracts it at a greater diſtance than a blunt *conductor*. Phil. Tranſ. vol. liv. p. 234. vol. lxiii. part ii. p. 49.

This ſubject has been very accurately examined and diſcuſſed; and pointed *conductors* are almoſt univerſally, and for the moſt ſufficient reaſons, recommended as the moſt eligible and proper. A ſharp-pointed *conductor*, as it attracts the electric fire of a cloud at a greater diſtance than the other, draws it off by degrees; and by conveying it away gently and in a continued ſtream, prevents a ſtroke; whereas a *conductor* with a blunt termination receives the whole diſcharge of a cloud at once, and is much more likely to be exploded, whenever a cloud comes within the ſtriking diſtance. To which we may add, that buildings guarded by either natural or artificial *conductors* terminating in a point, have ſeldom or ever been ſtruck by lightning; but others, having flat or blunt terminations, have been often ſtruck and damaged by it. For a farther account of the nature and efficacy of points in electricity, ſee Points.

The beſt *conductor* for this purpoſe is a rod of iron, or rather of copper, as being a better *conductor* of electricity, and not ſo liable to ruſt, about three quarters of an inch thick, which is either to be faſtened to the walls of a building by wooden cramps, or ſupported by wooden poſts at the diſtance of one or two feet from the wall: the upper end of it ſhould terminate in a pyramidal form with a ſharp point and edges; and if it is made of iron, be gilt or painted near the top; and be elevated above the higheſt part of the building, e. g. the ſtack of chimnies to which it may be faſtened, at leaſt five or ſix feet. The lower end ſhould be driven five or ſix feet into the ground, and directed away from the foundations of the building, or continued till it communicates with the neareſt water. If this part be made of lead, it will be more ſecure from decay. When the *conductor* is formed of different pieces of metal, care ſhould be taken that they are well joined: and Mr. Henly adviſes, that a communication be made from the *conductor* by plates of lead, eight or ten inches broad, with the lead on the ridges and gutters, and with the pipes that carry down the rain water, which ſhould be continued to the bottom of the building, and made to communicate either with moiſt earth or water, or with the main pipe which ſerves the houſe with water. Phil. Tranſ. vol. lxiv. part ii. p. 403. If the building be large, two, three, or more *conductors* ſhould be applied to different parts of it, in proportion to its extent.

Chains have been uſed for the preſervation of ſhips; but as the electric matter does not paſs readily through the links of it, copper wires, a little thicker than a gooſe quill, have been preferred, and are now generally uſed. They ſhould reach two or three feet above the higheſt maſt, and be continued down in any convenient direction, ſo as always to touch the ſea-water. Theſe were firſt recommended to Lord Anſon by Dr. Watſon in 1762. Phil. Tranſ. vol. lii. part i. p. 633. See Franklin's Letters, &c. ed. 1769. p. 65, 124, 479, &c. and Cavallo's Elect. chap. ix.

The *conductor* or machine for drawing electricity from the clouds is thus conſtructed: A pole, *a*, of a manageable length is erected on the top of a building (the higher the better), having on the upper end a ſolid piece of glaſs or baked wood, a foot long (ſee *fig.* 12.). This is covered with a tin or copper veſſel, *b*, in the ſhape of a funnel, in order to prevent its being wetted. Above this there riſes a long ſlender rod, *c*, terminating in a pointed wire, having a ſmall wire twiſted round it, to conduct the electricity the better to the funnel. From the funnel a wire, as *d*, deſcends along the building, and is conveyed through the window into the room, where the experiments are made. This wire is connected with an inſulated *conductor*, which will be electrified whenever there is a conſiderable quantity of electricity in the air; and notice will be given, when it is properly charged, either by Mr. Canton's balls (ſee Electrometer), or by a ſet of bells, deſcribed under that article. For the ſafety of theſe experiments, the electrified wire ſhould be brought within a few inches of a *conducting* rod which ſerves to guard the houſe, that the redundant electricity may paſs off in that way, without ſtriking any perſon who may happen to ſtand near it.

Experiments on the electricity of the atmoſphere may be made with greater exactneſs, by raiſing a kite, by means of a ſtring in which a ſmall wire is twiſted. The beſt ſtring for this purpoſe may be formed by twiſting a copper thread, ſuch as is uſed for trimmings, &c. or, if expence be diſregarded, a ſilver or gold thread, with two very ſmall threads of twine. Mr. Nairne uſes a ſtring ſoaked in a ſtrong ſolution of ſalt, which becomes a good *conductor*, by imbibing the moiſture of the air. The extremity of this line muſt be ſilk, and the wire muſt terminate in a metallic *conductor* of any convenient form. But the following apparatus will ſerve for ſtill greater ſecurity in a thunder-ſtorm. Let the ſtring of the kite (*Tab. Electricity, fig.* 13.) be wound upon a reel, *b*, and paſs through a ſlit in a flat board, faſtened at the top of it, by which more or leſs of the ſtring may be let out at pleaſure. Let the reel be fixed to the top of ſuch a funnel, *c*, as was above deſcribed; and from the funnel let a metallic rod, *d*, with a large knob be projected, to ſerve for a *conductor*. The funnel and reel muſt be ſupported by a ſtaff, *e*, the upper end of which, at leaſt, ſhould be well baked; and the lower end may be made ſharp to thruſt into the ground, when the kite is well raiſed. The ſafety of this apparatus depends upon the chain, *f*, faſtened to the ſtaff, by a hook a little below the funnel, and dragging on the ground: for the redundant lightning will ſtrike from the funnel to the chain, and thus be conducted as far as any one chuſes, without touching the perſon who holds the ſtaff. Sparks may be taken from the *conductor* belonging to this apparatus with all ſafety, by means of a ſmall rod of baked wood, *a*, furniſhed with a ſmall funnel, *b*, and a braſs rod, *c*, and a chain connected with it; for the lightning, which ſtrikes the rod, will paſs by the funnel and chain, without touching the perſon who holds the rod. Hiſt. of Elect. vol. ii. p. 103, &c. 8vo. ed. 1775.

Conductors, in the *Military Art*, are aſſiſtants given to the commiſſary of the ſtores, to receive or deliver out ſtores to the army; to attend at the magazines by turns, when in garriſon; and to look after the ammunition-waggons in the field. They bring their account every night to the commiſſary, and are immediately under his command.

CONDUCTOS *ad proficiſcendum.* See Capias.

CONDUIT, a canal, or pipe, for the conveyance of water, or other fluid matter.

In the earth are ſeveral ſubterraneous *conduits*, through which the waters paſs that form ſome springs; and through which alſo paſs the vapours, which form metals and minerals.

Artificial conduits for water are made of lead, ſtone, caſt iron, potters earth, &c. See Plumbery.

In the province of New Mexico, there is ſaid to be a ſubterraneous *conduit*, in form of a grotto, extending ſix hundred miles in length. See Duct, Tube, &c.

CONDYLOMA, in *Anatomy*. See Condylus.

Condyloma, in *Medicine*, is a ſoft, painleſs tumour, of the œdematous kind, ariſing on the internal coat of the anus, and the muſcles of that part, or in the neck of the matrix.

The word comes from κονδυλος; becauſe the *condyloma* has uſually *rugæ*, or wrinkles, like the joints of the body.

The *condyloma*, by long continuance, grows fleſhy, and, ſhooting out as from a ſtalk, takes the denomination *ficus*. See Ficus.

Condylomata are frequently the effect of venereal ailments, and, if neglected, ſometimes prove cancerous: their cure depends on mercurial unctions, and proper eſcharotics to conſume them; though extirpation either by ligature or inciſion, if the nature of the part will admit, is the moſt expeditious. A ſalivation is often neceſſary, in order to facilitate and complete the cure.

CONDYLUS, Κονδυλος, a name which *Anatomiſts* give to a little round eminence, or protuberance at the extremity of a bone. See *Tab. Anatomy (Oſteol.) fig.* 2. *lit. n.*

Such is that of the lower jaw, received within the cavity of the *os petroſum.*

When this eminence is large, it is called the head of the bone.

CONE, in *Geometry*, a ſolid body, having a circle for its baſis, and terminated at the top in a point, or vertex. See *Tab. Conics, fig.* 2.

The *cone* is generated by the motion of a right line, KM, round an immoveable point K, called its *vertex*, along the circumference of a plane, called its *baſe*, MN: or it may be conceived as generated by the revolution of the triangle KLM, about the right line KL, which is called the axis of the *cone*, and KM its *latus*, or ſide.

If the axis be perpendicular to the baſe, it is ſaid to be a *right cone:* and if inclined, or oblique, a *ſcalenous cone.* *Scalenous cones* are again divided into *obtuſe-angled*, and *acute-angled.*

Euclid defines a *cone* a ſolid figure, whoſe baſe is a circle, as CD (*fig.* 3.), and is produced by the entire revolution of the plane of a right-angled triangle CAB, about the perpendicular leg AB.

If this leg, or axis, be greater than CB, half the baſe; the ſolid produced is an *acute-angled cone*; if leſs, it is an *obtuſe-angled cone*; and, if equal, a *right-angled cone.*

But Euclid's definition only extends to a *right cone:* that is, to a *cone* whoſe axis is at right angles to the baſe; and not to oblique ones, whoſe axis is not at right angles to the baſe.

For a more general and comprehenſive deſcription of a *cone*, which may take in both right and oblique ones, ſuppoſe an immoveable point A (*fig.* 4.) without the plane of the circle BDEC; and ſuppoſe a right line AE, drawn through that point, and produced infinitely both ways, to be moved quite about the circumference of the circle; the two ſuperficies that will ariſe from this motion, are each called *conic ſuperficies*; but, taken conjunctly, they are called *ſuperficies vertically oppoſite*, or only *oppoſite ſuperficies.*—The immoveable point A, common to both the ſuperficies, is called the *vertex*; the circle BDEC, the *baſe*; the right line AC, drawn through the vertex A and C, the *center of the baſe*; and if infinitely produced, the *axis*; and the ſolid comprehended under the conical ſuperficies and the baſe, is a *cone.*

Properties of the Cone.—1. *The area or ſurface of every right* cone, *excluſive of its baſe, is equal to a triangle whoſe baſe is the periphery, and its height the ſide of the* cone.

Or, the curve ſuperficies of a right *cone* is, to the area of its circular baſe, as AC (*fig.* 3.), the length of the hypothenuſe of the right-angled triangle deſcribing it, is to CB, the baſe of the ſame triangle: that is, as the ſlant height of the *cone*, to the ſemidiameter of the baſe.

Hence, the ſurface of a right *cone* is equal to a ſector of a circle deſcribed on the ſide of the *cone*, as a radius, whoſe arch is equal to the periphery of the *cone*; and has therefore the ſame proportion to its periphery, which the diameter of the baſe has to twice the ſide of the *cone.* *Hence we have a method of deſcribing a rete or cage that ſhall juſt cover a* cone.—Thus, with the diameter of the baſe AB (*Tab. Conics, fig.* 6.) deſcribe a circle, and produce the diameter to C, till AC be equal to the ſide of the *cone.* To 2 AC and AB, determined in numbers, and 360°, find a fourth proportional; and with the radius CA, on the center C, deſcribe an arch DE equal to the number of degrees found: the ſector CDE with the circle AB will be a rete for the right *cone.*

If, then, the ſide of a truncated *cone* be ſet off from A to F, and an arch GH be deſcribed with the radius CF; by finding a fourth proportional to 360°, to the number of degrees of the arch GH, and to FC; and thence determining the diameter of the circle IF, we ſhall have a net or cover of the truncated *cone.*

For CDBAE is a net for the entire *cone*; CGFIH for the *cone* cut off; therefore, DBEHIG for the truncated *cone.*

2. *Cones and pyramids, having the ſame baſes and altitudes, are equal to each other.*

Now, it is ſhewn, that every triangular priſm may be divided into three equal pyramids; and therefore, that a triangular pyramid is one third of a priſm, ſtanding on the ſame baſe, and having the ſame altitude.

Hence, ſince every multangular body may be reſolved into triangular ones, and every pyramid is a third part of a priſm having the ſame baſe and altitude; ſince a *cone* may be eſteemed an infinite-angular pyramid, and a cylinder an infinite-angular priſm; a *cone* is a third part of a cylinder, which has the ſame baſe and altitude.

Hence we have a method of meaſuring the ſurface and ſolidity of a cone.—Thus, *for the ſolidity:* find the ſolidity of a priſm, or cylinder, having the ſame baſe with the *cone*, or pyramid. Which found, divide by 3: the quotient will be the ſolidity of a *cone*, or a pyramid. Thus, v. gr. if the ſolidity of a cylinder be 605592960, the ſolidity of the *cone* will be found 201864320.

For the ſurface; that of a right *cone* is had by multiplying the ſemi-periphery of the baſe into the ſide, and adding the product to the baſe.

Suppoſe, e. gr. the diameter of the *cone* NM (*fig.* 2.) 56, the periphery will be 175,9296, and the baſe 2463,0144. Suppoſe the altitude or axis KL, 246; ſince $LM = \frac{1}{2} NM = 28$, and $KM^2 = KL^2 + LM^2 = 60516 + 784 = 61300$, $KM = 247,5$ &c. Conſequently the ſuperficies of the *cone*, excluſive of the baſe, is 21771,288; and the whole together 24234,3024.

The *ſolidity* of an oblique *cone* is obtained in the ſame manner with that of the right *cone:* but it is much more difficult to find its ſurface, ſince it cannot be reduced to the meaſure of a ſector of a circle, becauſe all the lines drawn from the vertex to the baſe are not equal. See a Memoir on this ſubject, by M. Euler, in the Nouv. Mem. de Peterſburgh, tom. i. Dr. Barrow has demonſtrated, in his Lectiones Geometricæ, that the ſolidity of a *cone* with an elliptic baſe, forming part of a right *cone*, is equal to the product of its ſurface by a third of one of the perpendiculars drawn from the point in which the axis of the right *cone* interſects the ellipſe; and that it is alſo equal to one third of the height of the *cone* multiplied by the elliptic baſe: and therefore that the perpendicular is to the height of the *cone*, as the elliptic baſe to the ſurface.

As to the meaſure of the ſurface, and ſolidity, of a truncated cone, ABCD (*fig.* 7.). Its altitude CH, and the diameters of its baſes AB and CD, being given, find their circumferences: to the ſquare of the altitude CH, add the ſquare of the ſemi-difference of the radii AH, and from the aggregate extract the ſquare root, which will give the ſide AC: the ſemi-ſum of the peripheries, multiplied by that ſide, gives the ſuperficies of the *truncated cone.*

To find the ſolidity: As the difference of the ſemidiameters AH is to the altitude of the truncated *cone* CH, ſo is the greater ſemidiameter AF to the altitude of the entire *cone* FE. This being found, ſubtract the altitude of the truncated *cone* GF, which will leave that of the *cone* taken off, EG.

Find the ſolidity of the *cone* CED and AEB; ſubtract the other from this; the remainder will be the ſolidity of the truncated *cone* ACDB.

For the ſections of the Cone, ſee Conic *ſection.*—*For the ratio of* Cones *and Cylinders*, ſee Cylinder.—*For the centers of gravity and of oſcillation of a* Cone, ſee Center.

Cones *of the higher kinds*, are thoſe whoſe baſes are circles of the higher kinds; and are generated by ſuppoſing a right line fixed in a point, on high, though conceived capable of being extended more or leſs, on occaſion; and moved or carried round a circle.

Cone *of rays*, in *Optics*, includes all the ſeveral rays which fall from any point of a radiant, on the ſurface of a glaſs.

Cone, *double*, or *ſpindle*, in *Mechanics*, is a ſolid formed of two equal *cones* joined at their baſes. If this be laid on the lower part of two rulers making an angle with one another, and elevated above the horizontal plane, it will move towards the raiſed ends, and ſeem to aſcend, though it really deſcends. Let ABD (*Tab. Mechanics, fig.* 11.) be the common baſe of the two *cones*, its center C will be the center of gravity of the whole ſolid; therefore if DF repreſents one of the rulers elevated to an angle FDG, whoſe ſine FG is leſs than the ſemidiameter of the *cone* CD, it is plain that the center of gravity C at the poſition of the *cone* in D, is more diſtant from the center of the earth, to which all heavy bodies tend, than in its poſition between the legs of the ruler at F; and therefore it will deſcend, as on an inclined plane CFE, from C to F, where it will ſtop, being ſupported on the raiſed ends of the rulers.

Cone, in *Aſſaying*. See Melting-*cone*.

Cone, in *Botany*, a hard dry ſeed-veſſel of a conical figure, conſiſting of ſeveral woody parts; and is, for the moſt part, ſcaly, adhering cloſely together, and ſeparating when ripe.

Cone-*ſtone*, in *Natural Hiſtory*, the name given by many to a ſpecies of TUBULUS *marinus*, not known to us in its recent ſtate, but frequently found foſſile in the Swediſh ſtones uſed in pavements.

Cone *and key*. Bracton, lib. ii. cap. 37. num. 3. ſays, *Fæmina in tali ætate* (*i. e.* 14. *et.* 15. *annorum*) *poteſt diſponere domui ſuæ, et habere* cone *et* key.

The words come from the Saxon *colne*, i. e. *calculus*, and *key, clavis*; ſo that a woman was then held to be of competent years when ſhe was able to keep the accounts and keys of the houſe: and Glan. lib. vii. cap. 9. has ſomewhat to the ſame purpoſe.

CONEPATL, in *Zoology*, the name of an American animal, very much like the rackoon in ſhape, but variegated with two long ſtreaks of white, one on each ſide of the ridge of the back, which run even into the tail. It is a tame and harmleſs animal, but of a ſtinking ſmell; and when purſued, or provoked, will diſcharge its excrements at the perſon who offends it, to ſix or eight feet diſtance; theſe have a very bad ſmell, and ſpoil people's cloaths, by leaving indelible yellow ſpots on them. Ray. See Yzquiepatl.

CONESSI, or Conesti, in the *Materia Medica*, a bark brought from the Eaſt Indies. It is frequent in Ceylon, and Malabar, where the natives take it in diarrhœas, lienteries, and dyſenteries. We uſe it in powder for the ſame purpoſes, the doſe being from half a dram to a dram. It is proper to give a doſe of ipecacuanha before taking it.

This tree grows alſo on the Coromandel coaſt, in the Eaſt Indies, and is not unlike the *cadagopala* of the *hortus Malabaricus*. The bark ſhould be freſh powdered, and the electary prepared with ſyrup of oranges every day or every other day. Med. Eſſ. vol. iii. art. 4.

CONFARREATION, a ceremony among the ancient Romans, uſed in the marriage of perſons whoſe children were deſtined for the honour of the prieſthood.

Confarreation was the moſt ſacred of the three modes of contracting marriage among that people; and conſiſted, according to Servius, in this, that the *pontifex maximus* and *flamen dialis* joined and contracted the man and woman, by making them eat of the ſame cake of ſalted bread: whence the term, *far* ſignifying *meal* or *flour*.

Ulpian ſays, it conſiſted in the offering up of ſome pure wheaten bread; rehearſing, withal, a certain formula, in preſence of ten witneſſes. Dionyſius Halicarnaſſeus adds, that the huſband and wife did eat of the ſame wheaten bread, and threw part on the victims.

CONFECTION, in *Pharmacy*, a kind of compound remedy of the conſiſtence of a ſoft electary.

There are ſeveral electaries, which bear the name of *confections*; ſome of which, in the medical language, are *corroborative*, and others *purgative*.

Of the number of the corroborative *confections* are thoſe of *alkermes*, of *hyacinth*, and the *anacardine*: a purgative one is the *confection Hamech*. The *confection of alkermes* has its name from the principal ingredient therein; which is the *kermes*, or *alkermes*, or ſcarlet-grain. The other ingredients are, pearls, muſk, cinnamon, ambergris, leaf-gold, juice of pippins, and roſe water. It is ranked among the beſt cardiacs, and is frequently uſed for the palpitation of the heart, or ſyncope; and ſometimes in the ſmall-pox and meaſles.

The *confection of hyacinth* has nearly the ſame virtues with that of *alkermes*; but, beſides, it is frequently uſed as an aſtringent. It conſiſts of near triple the number of drugs; whereof the precious ſtone, called the *hyacinth*, is eſteemed the principal; the chief of the reſt are, red coral, bole armoniac, terra ſigillata, myrrh, the ſantals, burnt hartſhorn, camphire, ſapphire, emerald, topaz, and moſt of the ingredients of the *confection* of alkermes.

The *anacardine confection*, now diſuſed in England, is compoſed chiefly of ANACARDIUMS; whence the name. The other drugs are, long pepper, black pepper, moſt kinds of myrobalans, caſtoreum, &c. It is uſed to purge the blood, and is proper in cold diſeaſes.

The *confection Hamech* takes its name from that of its inventor, an Arabian phyſician. Its ingredients are, polypody, myrobalans, agaric, ſenna, tamarinds, red roſes, manna, colocynth, &c. It is applied as a draſtic for the purging of the groſſer humours and viſcidities; it is alſo of ſome reputation in vertigoes and cancers.

Confectio *cardiaca*, a name given in the late London Diſpenſatory to the ſo much eſteemed medicine, commonly known by the name of the *confectio Raleighana*. The compoſition is alſo altered, as well as the name, and is ordered now to be made in the following manner: take freſh tops of roſemary, and juniper berries, of each a pound; the leſſer cardamum ſeeds, freed from their huſks, zedoary, and ſaffron, of each half a pound. Draw a tincture from theſe, with a gallon and half of proof ſpirit; reduce this tincture, when filtered, to the weight of about two pounds and a half, by a gentle evaporation; then finiſh the electary by adding the following ſpecies finely powdered: viz. of compound powder of crabs claws, ſixteen ounces; cinnamon and nutmeg, of each two ounces; cloves, an ounce; double refined ſugar, two pounds. Pemberton's London Diſpenſatory, p. 338.

Confectio *Damocratis*. See Mithridate.

Confectio *Fracaſtorii*. See Diascordium.

Confectio *Japonica*, is prepared of Japan earth, three ounces; tormentil root, nutmeg, and olibanum, of each two ounces; opium, diſſolved in Liſbon wine, a dram and a half; ſimple ſyrup and conſerve of roſes, of each fourteen ounces. An electary of theſe ingredients ſupplies the place of *diaſcordium*; and the doſe is from a ſcruple to a dram.

Confectio *Paulina*, a name given in the late London Diſpenſatory to the compoſition which uſed to be called *confectio archigenis*. It is now ordered to be made in the following manner: take coſtus or zedoary, cinnamon, long pepper, black pepper, ſtrained ſtorax, galbanum, opium, and Ruſſia caſtor, of each two ounces; of ſimple ſyrup, boiled to the conſiſtence of honey, an equal weight to thrice the ſpecies. Pemberton's London Pharm. p. 339.

CONFECTOR, among the *Ancient Romans*, a ſort of GLADIATOR, hired to fight in the amphitheatre againſt beaſts; thence alſo denominated *beſtiarius*.

The *confectores* were thus called *à conficiendis beſtiis*, from their diſpatching and killing beaſts.

The Greeks called them *ϖαραϐολοι*, q. d. *daring, raſh, deſperate*; whence the Latins borrowed the appellations PARABOLANI, and *parabolarii*. The Chriſtians were ſometimes condemned to this ſort of combat.

CONFECTS, or Confits, a denomination given to fruits, flowers, herbs, roots, and juices, when boiled and prepared with ſugar, or honey, to diſpoſe them to keep, or render them more agreeable to the taſte.

The ancients only *confited* with honey; at preſent, ſugar is more frequently uſed. *Confects half-ſugared*, are thoſe only covered with a little ſugar, to leave more of the natural taſte of the fruit.

Confects are reduced to eight kinds; viz. *liquid confects*, *marmalades*, *jellies*, *paſtes*, *dry confects*, *conſerves*, *candies*, and *dragees*, or *ſugar-plums*.

Liquid confects are thoſe whoſe fruits, either whole, in pieces, in ſeeds, or in cluſters, are *confited* in a fluid tranſparent ſyrup, which takes its colour from that of the fruits boiled in it. There is a good deal of art in preparing theſe well; if they be too little ſugared, they turn; and if too much, they candy. The moſt eſteemed of the liquid *confects* are plums, eſpecially thoſe called mirabels, barberries, quinces, apricots, cherries, orange flowers, little green citrons from Madeira, green caſſia from the Levant, myrobalans, ginger, cloves, &c.

Marmalades are a kind of paſtes almoſt liquid, made of the pulp of fruits, or flowers, that have ſome conſiſtence; ſuch as apricots, apples, pears, plums, quinces, oranges, and ginger. Marmalade of ginger is brought from the Indies by way of Holland: it is eſteemed good to revive the natural heat in old men. See Marmalade.

Jellies are juices of ſeveral fruits, wherein ſugar has been diſſolved, and the whole, by boiling, reduced into a pretty thick conſiſtence; ſo as, upon cooling, to reſemble a kind of thin tranſparent glue, or ſize. *Jellies* are made of various kinds of fruits, eſpecially gooſberries, currants, apples, and quinces: there are other jellies made of fleſh, fiſh, hartſhorn, &c. but they are not to be kept, being very ſubject to corrupt.

Paſtes are a kind of marmalades, thickened to that degree by a proper boiling, as to aſſume any form, when put into little molds, and dried in the oven. The moſt in uſe are thoſe of gooſberries, quinces, apples, apricots, and orange flowers: thoſe of piſtachoes are much eſteemed; thoſe of ginger are brought from the Indies.

Dry confects are thoſe whoſe fruits, after having been boiled in the ſyrup, are taken out again, drained, and put to dry in an oven. Theſe are made of ſo many kind of fruits, that it would be hard to explain them all: the moſt conſiderable are citron and orange-peel, plums, pears, cherries, apricots, &c.

Conſerves are a kind of dry *confects*, made with ſugar, and paſtes of flowers or fruits, &c. The moſt uſual among theſe are thoſe of roſes, mallows, roſemary; of heps, of orange flowers, violets, jeſſamin, piſtachoes, citrons, and ſloes.

Note. The apothecaries, under the title of *conſerves*, comprehend all kind of *confects*, both dry and liquid; whether of flowers, fruits, ſeeds, roots, barks, or leaves, prepared with ſugar or honey, to preſerve, &c.

Candies are ordinarily entire fruits, candied over with ſugar, after having been boiled in the ſyrup; which renders them like little rocks, cryſtalliſed; of various figures and colours, according to the fruits encloſed within them. The beſt candies are brought from Italy. See CANDY.

Sugar-plums are a kind of little dry *confects*, made of ſmall fruits, or ſeeds, little pieces of bark, or odoriferous and aromatic roots, &c. incruſtated and covered over with a very hard ſugar, ordinarily very white. Of theſe there are various kinds, diſtinguiſhed by various names: ſome made of raſberries, others of berberries, melon-ſeeds, piſtachoes, filberds, almonds, cinnamon, orange-peel, corianders, aniſeed, caraways, &c.

CONFEDERACY, an alliance or league between divers princes and ſtates.

Confederacy, in *Law*, is when two or more perſons combine to do any damage to another, or to commit any unlawful act.

Confederacy is puniſhable, though nothing be put in execution: but then it muſt have theſe four incidents; 1. That it be declared by ſome matter of proſecution; as by making of bonds or promiſes to one another: 2. That it be malicious; as for unjuſt revenge: 3. That it be falſe; i.e. againſt the innocent: and, laſtly, That it be out of court, voluntarily.

CONFERTA *folia*, among *Botaniſts*. See LEAF.

CONFERVA, in *Botany*. See HAIR-*weed*.

We find many of our pools and rivers in the ſummer months thick covered with the green confervæ; they are alſo frequently driven by the winds againſt the ſhores of our rivers, and cover the whole ſurface with a green mantle. This, with us, has never been found to be of any ill conſequence to animals; but there is a peculiar ſpecies of it in ſome parts of the world, that is undiſtinguiſhable from ours in appearance, but is poiſonous. Phil. Tranſ. Nº 13.

CONFESS *and avoid*, in *Law*, a ſpecies of REPLICATION, in which the plaintiff introduces ſome new matter or diſtinction, conſiſtent with his former declaration: as in an action of treſpaſs upon land of which the plaintiff is ſeiſed; if the defendant ſhews a title to the land by deſcent, the plaintiff may either deny the fact, or *confeſs and avoid* it, by replying, that ſuch deſcent happened, but that the defendant hath ſince demiſed the lands to the plaintiff for the term of life. Blackſt. Com. vol. iii. p. 310.

CONFESSION, *confeſſio*, in *Rhetoric*, the ſame with what is otherwiſe called PARHOMOLOGY.

Confession, in a *Civil Senſe*, a declaration, or acknowlegement of ſome truth, though it be againſt the intereſt of the party who makes it; whether it be in a court of juſtice, or out of it. It is a maxim, that in civil matters, the *confeſſion* is never to be divided, but always taken entire; and that a criminal is never condemned on his ſimple *confeſſion*, without other collateral proofs; nor is a voluntary extra-judicial *confeſſion* admitted as any proof. A perſon is not admitted to accuſe himſelf, according to that rule in law, *non auditur perire volens*.

Confession *of action*, in *Law*, is a ſpecies of PLEA to the ACTION, in which the merits of the complaint are anſwered, by confeſſing either wholly, or, which is moſt common, in part.

Confession *of indictment*, is a priſoner's acknowlegement of the offence, when he is brought to the bar to be arraigned: upon a ſimple and plain confeſſion, which the court is backward in receiving and recording, nothing remains but to award judgment. This *confeſſion* is made before the judge; in conſequence of which, the priſoner ſubmits to the legal penalty annexed to his crime: or the priſoner by *confeſſion* becomes an APPROVER, or accuſer of others.

Confession, in *Theology*, denotes the verbal acknowlegement which a penitent makes of his ſins to God: in a more partial and reſtricted ſenſe, it is a declaration of a perſon's ſins, made to a prieſt, in order to obtain abſolution for the ſame. The Romiſh church makes *confeſſion* a part of the ſacrament of penance.

Confeſſion was anciently public and general, in the face of the church; though the Romaniſts have ſince altered it, and made it private and auricular.

Confeſſions are to be buried in eternal ſilence, under pain of the greateſt puniſhment to the prieſt who reveals them. Bellarmin, Valentia, and ſome other Romiſh controverſial writers, endeavour to trace up AURICULAR *confeſſion* to the earlieſt ages; and thus contend for a point given up by the reſt. M. Fleury owns, that the firſt inſtance of auricular *confeſſion* he can meet with, is that of St. Eloi, who being grown old, made a *confeſſion* to a prieſt of all his ſins from his youth upwards.

The Indians, according to Tavernier, have a kind of *confeſſion*; and the ſame may be ſaid of the Jews: theſe laſt have formulas for thoſe who are not capable of making a detail of all their ſins: the ordinary form is in alphabetical order, each letter containing a capital ſin. This they uſually rehearſe on Mondays and Thurſdays, and on faſt-days, and other occaſions; ſome every night and morning. When any of them find themſelves near death, they ſend for ten perſons, more or leſs, one of them a rabbin; and in their preſence recite the *confeſſion*. See Leo de Modena.

Confession *of faith*, denotes a liſt, or enumeration and declaration of the ſeveral ARTICLES of belief, in a church.

The *Augſburg* or AUGUSTAN *confeſſion* is that of the Lutherans; it was preſented to Charles V. in 1530.

In the council of Rimini, the catholic biſhops found fault with dates in a *confeſſion of faith*, and obſerved that the church never uſed to date them.

CONFESSIONAL, or **Confessionary**, in *Church Hiſtory*, a place in churches, uſually under the main altar, wherein were depoſited the bodies of deceaſed ſaints, martyrs, and confeſſors.

Confessional is alſo uſed in the Romiſh church for a little box, or deſk in the church, where the confeſſor takes the confeſſions of the penitent.

CONFESSO, *Pro*-Confesso. See Pro-Confesso.

CONFESSOR, a Chriſtian who has made a ſolemn, and reſolute profeſſion of the faith, and has endured torments in its defence. A mere ſaint is called a *confeſſor*, to diſtinguiſh him from the roll of dignified ſaints; ſuch as *apoſtles*, *martyrs*, &c.

In eccleſiaſtical hiſtory, we frequently find the word *confeſſors* uſed for martyrs: in after-times, it was confined to thoſe, who after having been tormented by the tyrants, were permitted to live and die in peace. And at laſt it was alſo uſed for thoſe, who after having lived a good life, died under an opinion of ſanctity. According to St. Cyprian, he who preſented himſelf to torture, or even to martyrdom, without being called to it, was not called a *confeſſor*, but a *profeſſor*: and if any out of a want of courage abandoned his country, and became a voluntary exile for the ſake of the faith, he was called *exterris*.

Confessor is alſo a prieſt, in the Romiſh church, who has a power to hear ſinners in the ſacrament of penance, and to give them abſolution.

The church calls him in Latin *confeſſarius*, to diſtinguiſh him from *confeſſor*, which is a name conſecrated to ſaints. The *confeſſors* of the kings of France, from the time of Henry IV. have been conſtantly Jeſuits: before him the Dominicans and Cordeliers ſhared the office between them. The *confeſſors* of the houſe of Auſtria have alſo, ordinarily, been Dominicans and Cordeliers; but the latter emperors have all taken Jeſuits.

Confessor *to his Majeſty*. See CLERK *of the cloſet*.

CONFIGURATION, the exterior ſurface, that bounds bodies, and gives them their particular figure.

That which makes the ſpecific difference between bodies, is the different *configuration*, and the different ſituation of their parts. A ſhort, or a long ſight, depend on the different *configuration* of the cryſtalline.

Configuration *of the planets*, in *Aſtrology*, is a certain diſtance or ſituation of the planets in the zodiac, whereby they are ſuppoſed to aid, or oppoſe each other. See ASPECT.

Configurations *of ſalts*, a term uſed by ſome to expreſs the combinations of the particles of the ſalts of plants, and other ſubſtances, into certain figures, on evaporating the water in which they had been diſſolved, ſo haſtily as not to admit of their ſhooting into their own regular cryſtals.

CONFIRMATION, the act of ratifying or rendering a title, claim, pretenſion, report, or the like, more ſure and indiſputable.

Confirmation, in *Law*, denotes the conveyance of an eſtate, or right *in eſſe* from one man to another, whereby a voidable eſtate is made ſure and unavoidable, or a particular eſtate is increaſed, or poſſeſſion made perfect: and it is particularly uſed for the ſtrengthening or homologating an eſtate of one already in poſſeſſion of it by a voidable title.

Thus, if a biſhop grant his chancellorſhip by patent, for term of the patentee's life; this is no void grant: yet it is voidable by the biſhop's death, except it be ſtrengthened alſo by the dean and chapter's *confirmation*.

Confirmation, in *Rhetoric*, is the third part of an oration, wherein the orator undertakes to prove, by laws, reaſons, authorities, and other arguments, the truth of the propoſitions advanced in his narration. Cicero, De Invent. lib. i. cap. 24.

Confirmation is either *direct*, or *indirect:* the firſt confirms what the orator has to urge for ſtrengthening his own cauſe: the ſecond, properly called CONFUTATION, refels the oppoſite arguing of the adverſaries. The two parts together are ſometimes placed under the head or title of CONTENTION.

The *confirmation* is, as it were, the life and ſoul of the oration: in this the main ſtreſs of the argumentation lies. Whence Ariſtotle, properly enough, calls it πιςις, *fides.*

CONFIRMATION, in *Theology*, the ceremony of laying on of hands, for the conveyance of the Holy Ghoſt.

Among the ancients it was conferred immediately after baptiſm; and was eſteemed, in ſome meaſure, to be a part thereof: whence the fathers call it the *accompliſhment* of baptiſm. The ground of the practice was an opinion of the imperfection of baptiſm, which in their apprehenſion only prepared perſons for the reception of the graces of the Holy Spirit, which were actually conferred in *confirmation.* Tertull. de Bapt. p. 599, &c. and Lord King's Hiſt. of the Prim. Church, chap. v. p. 80, &c.

Among the Greeks, and throughout the Eaſt, it ſtill accompanies baptiſm; but the Romaniſts make it a diſtinct independent ſacrament.

It appears that *confirmation* has all along been ordinarily conferred by the biſhop: St. Cyprian, and moſt of the fathers, ſpeak of it in ſuch terms as to imply it to have been confined to the biſhop alone; and Fleury and moſt of the moderns, from them, lay it down as a diſtinguiſhing character between the offices of a prieſt or deacon, and that of a biſhop, that the former might baptize, but the latter alone might anoint and *confirm*; by virtue of their ſucceſſion to the apoſtles, to whom it originally belonged. But from ſome paſſages in St. Gregory, &c. others gather, that the prieſts, on occaſion, had likewiſe the power of *confirming*.

It has been alleged, that, as *confirmation* always ſucceeded baptiſm, and made a neceſſary part of it, and ſeveral of the primitive Chriſtians eſteemed both neceſſary to ſalvation, it muſt have been performed by preſbyters as well as by biſhops; becauſe the biſhop of a church might be abſent for a very conſiderable time, as was the caſe with Cyprian, or the ſee might be vacant: and as preſbyters baptized, it is reaſonable to conclude that they alſo *confirmed.* Lord King has ſhewn that *confirmation* and abſolution were the ſame thing; and that preſbyters, ſometimes with the biſhop, and ſometimes without the biſhop, did abſolve by impoſition of hands: and he has cited ſeveral ancient authorities in order to prove, that *confirmation* was frequently repeated with reſpect to the ſame perſons. Hiſt. Prim. Church, p. 91, &c.

It is certain, among the Greeks, the prieſt who baptizes, alſo *confirms:* which practice, Lucas Holſtenius ſhews, is of ſo old a ſtanding among them, that it is now generally looked on as belonging properly, and of right, to the prieſt: though ſome will have it to have been borrowed by them from the biſhops. Hence, ſome of the Latin divines acknowlege, that though the biſhop be the ordinary miniſter of *confirmation*, yet, that the prieſt, in his abſence, may alſo confer it, in quality of miniſter extraordinary.

The council of Rouen, held in 1072, decrees, that *confirmation* muſt be conferred faſting, both on the ſide of the giver, and that of the receiver.

It has been urged, however, that this ceremony, with reſpect to the real importance and utility of it, was peculiar to the days of the apoſtles: though it is retained among Proteſtants, it is doubted whether it be a neceſſary inſtrument of grace. The order of *confirmation* in the church of England, does not determine the preciſe age of the perſon to be *confirmed.*

CONFISCATE, in *Law*, is applied to goods forfeited to the exchequer, or public treaſury.

The word is derived from *fiſcus*, *a hamper*, *panier*, or *baſket*, wherein the emperor's money uſed to be kept.

The title to goods which are not claimed by any other, is given by law to the king. If a man, indicted for ſtealing the goods of another, in which caſe they become, in effect, the proper goods of him indicted, be aſked about them in court, and diſclaim them; he thereby loſes the goods, though he be afterwards acquitted of the theft, and the king ſhall have them as *confiſcate:* but otherwiſe, had he not diſclaimed them.

CONFISCATION, a legal adjudication of goods or effects to the fiſc, or treaſury.

Thus, the bodies and effects of criminals, traitors, &c. and merchandizes that are contraband, prohibited, or brought aboard or aſhore without paying the duties, when ſeized, are *confiſcated.*

It is an axiom in law, that he who *confiſcates* the body, *confiſcates* alſo the effects, to the profit of the king, or the lord of the fee; i. e. he who is condemned to loſe his life, muſt alſo loſe his goods: yet the widows of criminals do not loſe their dowries, nor their ſhare in the goods of the community, by the forfeiture of their huſbands.

CONFLAGRATION, a general burning of a city, or other conſiderable place. In which ſenſe, Nero is ſaid to have procured the Chriſtians to be accuſed of the *conflagration* of Rome, which was done by his own order.

But the word is more ordinarily reſtrained to that grand period, or cataſtrophe, of our world, wherein the face of nature is expected to be changed by a deluge of fire, as it was anciently by that of water. The ancient Pythagoreans, Platoniſts, Epicureans, and Stoics, appear to have had a notion of the *conflagration*; though whence they ſhould derive it, unleſs from the ſacred books, is difficult to conceive; except, perhaps, from the Phœnicians, who themſelves had it from the Jews.

Seneca ſays expreſsly, *Tempus advenerit quo ſidera ſideribus incurrent, & omni flagrante materia uno igne, quicquid nunc ex depoſito lucet, ardebit.* This general diſſolution the Stoics call εκπυρωσις, *ecpyroſis.* Mention of the *conflagration* is alſo ſeveral times made in the books of the Sibyls, Sophocles, Hyſtaſpes, Ovid, Lucan, &c.

Dr. Burnet, after F. Tachard, and others, relates, that the Siameſe believe, that the earth will at laſt be parched up with heat; the mountains melted down; and the earth's whole ſurface reduced to a level, and then conſumed with fire. And the Bramins of Siam do not only hold, that the world ſhall be deſtroyed by fire; but, alſo, that a new earth ſhall be made out of the cinders of the old. Various are the ſentiments of authors on the ſubject of the *conflagration*; the cauſe whence it is to ariſe, and the effects it is to produce. Divines ordinarily account for it metaphyſically; and will have it take its riſe from a miracle, as a fire from heaven. Philoſophers contend for its being produced from natural cauſes; and will have it effected according to the laws of mechanics: ſome think an eruption of a central fire ſufficient for the purpoſe; and add, that this may be occaſioned ſeveral ways; viz. either by having its intention increaſed; which, again, may be effected either by being driven into leſs ſpace by the encroachments of the ſuperficial cold, or by an increaſe of the inflammability of the fewel whereon it is fed: or by having the reſiſtance of impriſoning earth weakened; which may happen, either from the diminution of its matter, by the conſumption of its central parts; or by weakening the coheſion of the conſtituent parts of the maſs, by the exceſs or the defect of moiſture.

Others look for the cauſe of the *conflagration* in the atmoſphere; and ſuppoſe, that ſome of the meteors there engendered in unuſual quantities, and exploded with unuſual vehemence, from the concurrency of various circumſtances, may be made to effect it, without ſeeking any further.

The aſtrologers account for it from a conjunction of all the planets in the ſign Cancer; as the deluge, ſay they, was occaſioned by their conjunction in Capricorn.

Laſtly; Others have recourſe to a ſtill more effectual and flaming machine; and conclude the world is to undergo its *conflagration* from the near approach of a COMET, in its return from the ſun. Thoſe wandering bodies do indeed ſeem to menace us a little; being able, both by their tranſverſe motion acroſs the earth's way, by the hugeneſs of their ſize, and the intenſe fire wherewith they glow in their receſs from the perihelion, to produce the moſt ſignal changes and revolutions in the ſyſtem of things.

Mr. Whiſton has ſhewn, that they are extremely well fitted to produce the phenomena of the deluge; and has gone a good way towards proving, that the comet of 1680, was the very body to which that event was owing; as being then in its approach toward the ſun, and its atmoſphere crouded with the watery vapours it had gathered in thoſe inconceivably cold regions, into which it had fled off in its aphelion.

This ſame comet, Sir Iſaac Newton has calculated, when in its perihelion, December the 8th, was heated, by the vicinity of the ſun, to a degree two thouſand times more hot than red-hot iron: he ſhews, likewiſe, that it would ſcarce be cool again in fifty thouſand years.

This ſame comet, Dr. Halley obſerved November the 11th, was not above a ſemidiameter of the earth from the earth's way: ſo that had the earth, at that time, been in that part of its orbit, ſomething very extraordinary might have been apprehended; but whether in the way of fire, or water, may, perhaps, to ſome, leave room to doubt. But it is ſcarcely conceivable, that the comet ſhould bring any vehement degree of heat, out of thoſe regions it comes from, whatever heat it might carry thither.

CONFLUENCE, **Conflux**, the place where two RIVERS join, and mix their waters.

CONFLUENT, in *Medicine*, an epithet given to that ſpecies of *ſmall*-POX wherein the puſtules run into one another.

CONFORMATION, the particular texture and conſiſtence of the parts of any body, and their diſpoſition to make a whole.

We ſay, light of different colours is reflected from bodies according to their different *conformation*; in oppoſition to the Carteſians, who pretend, that reflected light becomes of different colours, according to the different *conformation* of the bodies that reflect it. The *conformation* of the members of an embryo is not perfect enough to allow of diſſection.

Conformation, in *Medicine*, is uſed to expreſs that make and conſtruction of the human body, which is peculiar to every individual.

Hence, a *mala conformatio* ſignifies ſome fault in the firſt rudiments; whereby a perſon comes into the world crooked, or with ſome of the *viſcera*, or cavities, unduly framed, or proportioned. Many are ſubject to incurable aſthmas, from a too ſmall capacity of the *thorax*, and the like original vicious *conformations*.

CONFORMITY, in the *Schools*, is the CONGRUENCY, or relation of agreement between one thing and another: as between the meaſure, and the thing meaſured; the object, and the underſtanding; the thing, and the conception; the thing, and the diviſion thereof, &c.

Conformity, *occaſional*. See OCCASIONAL *conformity*.

CONFRERES, from *con*, and *frere*, *brother*; denote brethren in a religious houſe, or the fellows of one and the ſame ſociety. 32 Hen. VIII. c. 24.

CONFRONTATION, the act of bringing two perſons, in preſence of each other, to diſcover the truth of ſome fact, which they relate differently.

The word is chiefly uſed in criminal matters; where the witneſſes are *confronted* with the accuſed; the accuſed with one another, or the witneſſes with one another.

CONFUSED *notion*. See NOTION.

Confused *viſion*. See VISION.

CONFUSION, in a general ſenſe, is oppoſed to ORDER; in a perturbation whereof, *confuſion* conſiſts: e. gr. when things prior in nature do not precede; or poſterior do not follow, &c.

In a logical ſenſe, *confuſion* is oppoſed to *diſtinctneſs*, or *perſpicuity*; and may happen, either in words, as when miſconſtrued or miſapplied; or in ideas, as when the idea of any thing preſents ſomething along with it, which does not properly belong to that thing.

In a phyſical ſenſe, *confuſion* is a ſort of UNION, or MIXTURE by mere contiguity. Such is that between fluids of contrary natures; as oil and vinegar, &c.

Confusion, *property by*, in *Law*, denotes the intermixture of the goods of two perſons in ſuch a manner, that their reſpective portions cannot be aſcertained. If this be by conſent, they have a common intereſt in proportion to their ſhares; but the law allows no remedy to the perſon who mixes his property with that of another, without his knowlege and approbation. Blackſtone's Comm. vol. ii. p. 405.

Confusion *of tongues*, in the *Hiſtory of the World*, is a memorable event, which happened in the one hundred and firſt year, according to the Hebrew chronology, and the four hundred and firſt year by the Samaritan, after the flood, at the overthrow of Babel; and which was providentially brought about, in order to facilitate the diſperſion of mankind, and the population of the earth. Until this period there had been one common language, which formed a bond of union, that prevented the ſeparation of mankind into diſtinct nations; and ſome have ſuppoſed, that the tower of Babel was erected as a kind of fortreſs, by which the people intended to defend themſelves againſt that ſeparation, which Noah had projected. Uſher ad A. M. 1757.

There has been a conſiderable difference of opinion, as to the nature of this *confuſion*, and the manner in which it was effected. Some learned men, prepoſſeſſed with the notion that all the different idioms now in the world did at firſt ariſe from one original language, to which they may be reduced, and that the variety among them is no more than muſt naturally have happened in a long courſe of time by the mere ſeparation of the builders of Babel, have maintained, that there were no new languages formed at the *confuſion*; but that this event was accompliſhed by creating a miſunderſtanding and variance among the builders, without any immediate influence on their language. But this opinion, advanced by Le Clerc, &c. ſeems to be directly contrary to the obvious meaning of the word שׂפה, *ſhapha*, *lip*, uſed by the ſacred hiſtorian. Others have imagined, that this was brought about by a temporary *confuſion* of their ſpeech, or rather of their apprehenſions, cauſing them, whilſt they continued together and ſpoke the ſame language, to underſtand the words differently: Scaliger is of this opinion. Others again account for this event, by the privation of all language, and by ſuppoſing that mankind were under a neceſſity of aſſociating together, and of impoſing new names on things by common conſent. Another opinion aſcribes the *confuſion* to ſuch an indiſtinct remembrance of the original language which they ſpoke before, as made them ſpeak it very differently; ſo that by the various inflections, terminations, and pronunciations of divers dialects, they could no more underſtand one another, than they who underſtand Latin can underſtand thoſe who ſpeak French, Italian, or Spaniſh, though all theſe languages ariſe out of it. This opinion is adopted by Cauſabon, and by biſhop Patrick in his Commentary in loc. and is certainly much more probable than either of the former: and Mr. Shuckford maintains, that the *confuſion* aroſe from ſmall beginnings, by the invention of new words in either of the three families of Shem, Ham, and Japhet, which might contribute to ſeparate them from one another; and that in each family new differences of ſpeech might gradually ariſe, ſo that each of theſe families went on to divide and ſubdivide among themſelves. Others again, as Mr. Joſ. Mede and Dr. Wotton, &c. not ſatisfied with either of the foregoing methods of accounting for the diverſity of languages among mankind, have recourſe to an extraordinary interpoſition of divine power, by which new languages were framed and communicated to different families by a ſupernatural infuſion or inſpiration; which languages have been the roots and originals from which the ſeveral dialects that are, or have been, or will be ſpoken, as long as this earth ſhall laſt, have ariſen, and to which they may with eaſe be reduced. As to the number of languages thus introduced, many opinions have been adopted. If there were no more than there were nations or heads of nations, then the number would be ſeven for Japhet, four for Ham, and five for Shem; but if there were as many as there were families, which is the more probable opinion, their number cannot be certainly aſſigned. However, the Hebrews fancy they were ſeventy, becauſe the deſcendents from the ſons of Noah, enumerated Geneſis x. were juſt ſo many. Allowing then the languages of the chief families to have been fundamently different from each other, the ſub-languages and dialects within each branch would probably have had a mutual affinity, greater or leſs, as they ſettled nearer or farther from each other. But whichſoever of theſe hypotheſes is adopted, the primary object of the *confuſion* at Babel was the ſeparation and DISPERSION *of mankind*. Cleric. Comm. in Gen. x. 1. Scaliger Exerc. in Cardan. § 1. Caſaubon. Diatrib. de Ling. Heb. Mede's Works, vol. i. p. 276. Wotton's Diſc. and Brett's Eſſ. on the *Confuſion* of Languages. Univerſ. Hiſt. vol. i. part i. chap. 2. § 5. Shuckſ. Conn. vol. i. p. 146.

The ingenious and learned Dr. Bryant has lately, in the third volume of his Analyſis of Ancient Mythology, advanced a new and ſingular hypotheſis, both with reſpect to the *confuſion* of tongues and the diſperſion. He ſuppoſes that the *confuſion* of language was local and partial, and limited to Babel only. By כָּל־הָאָרֶץ, Gen. xi. 1 and 8. which our tranſlators render *the whole earth*, he underſtands *every region:* and by the ſame words in ver. 9. the *whole region* or province. This *confuſion* was occaſioned, as he ſuppoſes, by a labial failure; ſo that the people could not articulate. Thus their ſpeech was confounded, but not altered; for, as ſoon as they ſeparated, they recovered their true tenor of pronunciation, and the language of the earth continued for ſome ages nearly the ſame. The interviews between the Hebrews and other nations, recorded in Scripture, were conducted without an interpreter; and he farther obſerves, that the various languages which ſubſiſt at this day retain ſufficient relation to ſhew, that they were once dialects from the ſame matrix, and that their variety was the effect of time. See DISPERSION.

CONFUTATION, in *Rhetoric*, &c. a part of an oration, wherein the orator ſeconds his own arguments, and ſtrengthens his cauſe, by refelling and deſtroying the oppoſite arguments of the antagoniſt. This is done by denying what is apparently falſe, by detecting ſome flaw in the reaſoning of the adverſe party, by granting their argument, and ſhewing its invalidity, or retorting it upon the adverſary.

Confutation makes a branch of what we call CONFIRMATION. The confirmation and *confutation* are ſometimes called CONTENTION.

CONGE, in the *French Law*, a licence, or permiſſion, granted by a ſuperior to an inferior, which gives him a diſpenſation from ſome duty to which he was before obliged.

The word is French: Menage derives it from the Latin *commiatus*, uſed for *commeatus*, and *commeare*, often ſeen among ancient writers: the Italians ſay, *congedo*.

A monk cannot go out of his convent, without the *conge* of his ſuperiors.

CONGE *d'accorder*, i.e. *leave to accord*, or *agree*, is uſed in the ſtatute of fines, anno 18 Edw. I. to the following purpoſe. *When the original is delivered, in preſence of the parties before juſtices, a pleader ſhall ſay this: Sir, juſtice,* conge d'accorder; *and the juſtice ſhall ſay to him, What ſaith Sir R, and ſhall name one of the parties, &c.*

CONGE *d'elire*, is the king's permiſſion royal to a dean and CHAPTER, in time of a vacancy, to chooſe a biſhop. See CANON, and COLLATION.

Gwyn obſerves, that the king of England, as ſovereign patron of all biſhopricks and other benefices, had anciently the free appointment of all eccleſiaſtical dignities; inveſting, firſt, *per baculum & annulum*; and afterwards by letters patent: but that, in proceſs of time, he made the election over to others, under certain forms and conditions; as, that they ſhould at every vacancy, before they choſe, demand of the king *congé d'elire*, i. e. leave to proceed to election; and after election to crave his royal aſſent, &c. He adds, that king John was the firſt who granted this; which was afterwards confirmed by ſtat. Weſtm. 3 Edw. I. cap. 1. and again in the Articuli Cleri, 25 Edw. III. cap. 1.

CONGE, in *Architecture*, denotes a moulding either in form of a quarter-round, or of a cavetto; which ſerves to ſeparate two members from one another. See *Tab. Archit. fig.* 6.

Such is that which joins the ſhaft of the column to the cincture, called alſo *apophyge*; which, in Greek, ſignifies *eſcape*; the column ſeeming to ſpring hence: by the Latins it is called *ſcapus, the ſhaft of the column.*

The *conge*, originally, was a ring or ferril, fixed on the extremities of wooden pillars, to keep them from ſplitting; this, afterwards, came to be imitated in ſtone-work.

CONGEABLE, from the French *congè* (i. e. *leave, licence,* or *permiſſion)*, ſignifies as much as lawful, or lawfully done, or done with leave and permiſſion; as, *then entry of the diſſeiſee is* congeable.

CONGELATION, FREEZING; the act of fixing the fluidity of any liquid, by COLD, or the application of cold bodies: in which it differs from *coagulation*, which is produced by other cauſes. See CONCENTRATION.

Salt-petre *congeals* water in ſummer. See ICE. Metals and minerals are ſaid to be juices *congealed*, in the veins of the earth, by their mixing with one another, or with other heterogeneous bodies; or by the conſumption and evaporation of their fineſt parts.

Rock CRYSTAL was by the ancients held to be nothing but water *congealed* in the mountains.

CONGELATIONS *by artificial cold*. See *Artificial* FREEZING.

CONGELATION *of wines*. See WINES.

CONGENERES *muſculi*, in *Anatomy*, are ſuch muſcles in an animal body, as ſerve together to produce the ſame motion; and they are ſo called becauſe they aſſiſt one another in their action.

CONGER, in *Zoology*, a ſpecies of the MURÆNA; the name of the *ſea*-EEL, a very voracious and extremely large fiſh of the eel kind.

The name is derived from γογγρος, which is formed of a duplication of the adjective γρωος, or γρος, *voracious*, from γρω, *I devour.*

It grows to an enormous ſize, four or five cubits being a common length with it, and its thickneſs that of a man's thigh. It is of a pale grey on the back, and a fine milk white on the belly, and has on each ſide a ſtrait white line, ſomewhat broad, made as it were of a double, ſometimes ſingle row of dots, and running from the head to the tail; the top of its back fin is black all the way; and in the end of its upper jaw, juſt at the noſe, it has two ſhort tubular horns, out of which a mucous liquor may be ſqueezed. Their fleſh is very agreeable, but is not eaſy of digeſtion. Willughby.

Theſe fiſhes form a conſiderable article of commerce in Cornwall; whence they are exported to Spain and Portugal, particularly to Barcelona. They are ſometimes caught by a ſingle hook and line; but chiefly by BULTERS. They are afterwards cured, by ſlitting and hanging them on a frame to dry, that the fat may exude. The dried *congers* are ground into a powder, and uſed by the Portugueſe and Spaniards to thicken and give a reliſh to their ſoups. Pennant's Zoology, vol. iii. p. 149.

CONGERIES, a Latin word, ſometimes uſed in our language for a collection or heap of ſeveral particles, or bodies, united into one maſs, or aggregate.

CONGERIES, in *Rhetoric*. See SYNATHROISMUS.

CONGESTION, in *Medicine*, a maſs, or collection of humours, crouded together, and hardened, in any part of the body; and there forming a preternatural tumour.

Congeſtion is effected by little and little; in which it differs from *defluxion*, which is more ſudden.

CONGESTIONES, in *Medicine*. See STUFFINGS.

CONGIARIUM, CONGIARY, among *Medaliſts*, a gift, or donative, repreſented on a medal.

The word comes from the Latin CONGIUS; becauſe the firſt preſents made to the people of Rome conſiſted in wine and oil, which were meaſured out to them in *congii*.

The *congiary* was properly a preſent made by the emperors to the people of Rome. Thoſe made to the ſoldiers were not called *congiaries*, but *donatives*.

The legend on medals repreſenting *congiaries* is, *congiarium*, or *liberalitas*.

Tiberius gave a *congiary* of three hundred pieces of money to each citizen: Caligula twice gave three hundred SESTERCES a head: Nero, whoſe *congiaries* are the firſt that we find repreſented on medals, gave four hundred.

CONGITELLA, in *Antiquity*, half a CONGIUS.

CONGIUS, an ancient Roman meaſure for things liquid; containing ſix ſextaries, or ten Roman pounds; equal to ſeven pints Engliſh wine meaſure.

From the original ſtandard of Veſpaſian extant at Rome, Greaves deduced the value of the Roman pound to be 5256 Troy grains. See DENARIUS. But Mr. Raper, in an excellent paper on this ſubject, has ſuggeſted ſeveral objections againſt the accuracy of this concluſion. Phil. Tranſ. vol. lxi. part ii. p. 496.

The *congius* has alſo been uſed in England, as appears by a charter of king Edmund in 946.

CONGLOBATE *glands*, in *Anatomy*, thoſe glands whoſe ſubſtance is not divided, but firm, entire, and continued; and their ſurface ſmooth and uniform.

They are thus called, in oppoſition to *conglomerate* glands.

Conglobate glands have each of them an artery which brings them blood, a vein which carries it back again, after the proper juice has been filtrated, and ſeveral excretory ducts.

Some of them have a cavity in the middle, with LYMPHATIC veſſels, which diſcharge themſelves into a common reſervoir, or canal.

CONGLOBATE *flowers*, are thoſe with globular heads.

CONGLOMERATE *glands*, are thoſe which are compoſed of ſeveral little ones; or they are ſeveral glandulous bodies joined together under the ſame common membrane. See GLAND.

Such are the ſalival glands, lachrymal glands, the pancreas, &c. which ſee under their proper articles.

The *conglomerate* glands, beſides their arteries, veins, and nerves, are alſo furniſhed with an excretory veſſel, ramified throughout their own ſubſtance; by means whereof they diſcharge the liquors they have filtrated into reſervoirs.

CONGLOMERATE *flowers*, are thoſe which are irregularly crouded together.

CONGLUTINATION, the act of gluing, or faſtening, two bodies together, by the intervention of ſome third, whoſe parts are unctuous and tenacious, in the nature of a glue, *gluten*; from whence the word is formed.

In the animal œconomy, the parts of the body are ſaid to be *conglutinated* by means of their natural moiſture; by the help of bandages, as in ſeveral caſes of ſurgery; or by the ſupply of viſcid particles. In which laſt acceptation, *conglutination* differs little from *accretion*, or *nutrition*.

CONGO *money*, or Guinea money, a name given to a peculiar ſpecies of *concha veneris*, or porcelain-ſhell, which paſſes by way of money among the natives of thoſe places. It is diſtinguiſhed from the other porcelains by having a dentated mouth, and ſix gibbous protuberances on its ſurface.

CONGREGATION, an aſſemby of ſeveral eccleſiaſtics, united ſo as to conſtitute a body.

The term is principally uſed for aſſemblies of CARDINALS, appointed by the pope, and diſtributed into ſeveral chambers, for the diſcharge of certain functions and juriſdictions, after the manner of our offices and courts.

The firſt is the *congregation* of the holy office, or the INQUISITION: the ſecond, that of juriſdiction over biſhops, and regulars: the third, that of councils; this has power to interpret the council of Trent: the fourth, that of cuſtoms, ceremonies, precedences, canonizations, called the *congregation* of *rites:* the fifth, that of St. Peter's fabric, which takes cognizance of all cauſes relating to piety and charity, part whereof is due to the church of St. Peter: the ſixth, that of waters, rivers, roads: the ſeventh, of fountains and ſtreets: the eighth, that of the INDEX, which examines the books to be printed, or corrected: the ninth, that of the council of ſtate, for the management of the territories belonging to the pope and church; ſee CAMERLINGO: the tenth, *de bono regimine*; of which two laſt, the cardinal-nephew is chief: the eleventh, that of money: the twelfth, that of biſhops; wherein thoſe who are to be promoted to biſhopricks in Italy are examined; this is held before the pope: the thirteenth, that of conſiſtorial matters; the chief whereof is the cardinal dean: the fourteenth, a *congregation* for propagating the faith; ſee COLLEGE: and the fifteenth, that of eccleſiaſtical immunity, for ſetting ſuits againſt churchmen. There is alſo a *congregation* of alms, which takes care of every thing that relates to the ſubſiſtence of Rome, and the ſtate of the church.

CONGREGATION is alſo uſed for a company or ſociety of religious, cantoned out of this or that order; and making, as it were, an inferior order, or a ſubdiviſion of the order itſelf.

Such are the *congregations* of the oratory, and thoſe of CLUNY, &c. among the BENEDICTINS.

The word is alſo uſed for aſſemblies of pious perſons, in manner of fraternities; frequent among the Jeſuits, in honour of the Virgin, &c.

CONGREGATION *of* AIDS, *of* IMMACULATE *conception*, *of the* LATERAN, *of* MISSION, *of* PENITENCE, *of Holy* SACRAMENT, *of Holy* TRINITY; ſee AIDS, IMMACULATE, &c.

CONGREGATION, in *Phyſics*, is uſed by Dr. Grew for the leaſt and loweſt degree of mixtion; or that wherein the parts of the mixt do not conſiſt with, or adhere to, each other, but only touch in one point.

That author declares himſelf of opinion, that the particles of all FLUIDS only touch in this manner; or that their COHESION only amounts to a *congregation*.

CONGREGATIONALISTS. See INDEPENDENTS.

CONGRESS, CONGRESSUS, is uſed for an aſſembly of commiſſioners, deputies, envoys, &c. from ſeveral courts or provinces, meeting to concert matters for their common good.

The *congreſs* at the Hague, which held during the courſe of the war terminated in 1697, by the treaty of Ryſwick, was compoſed of the envoys of all the princes in the confederacy againſt France.

CONGRESS is alſo uſed for an eſſay, or trial, made by appointment of a lay, or ſpiritual judge, in the preſence of ſurgeons and matrons, to prove, whether or no a man be or be not impotent; in order to the diſſolution of a marriage. See IMPOTENCE.

Neither the civil nor canon law make any mention of this trial of virility by *congreſs*: it had its origin in France, from the boldneſs of a young fellow, who, in open court, being hard preſſed by his wife, demanded the *congreſs*. The judge, ſurpriſed with the novelty of the demand, found it could not be denied; as being the ſureſt evidence the caſe could admit of.

In time it became a branch in the French juriſprudence, and was authoriſed by decrees and arrets: it obtained for about the ſpace of one hundred and twenty years, and was annulled by an arret of parliament in 1677, as being found precarious; ſome having failed under the experiment out of mere modeſty and ſhame, which is found to have the ſame effect with actual impotency.

CONGRUITY, or CONGRUENCY, in the *Schools*, a ſuitableneſs or relation of agreement between things; whereby we come at the knowlege of what may be expected from them.

The ſyſtem of *congruity* in matters of grace conſiſts in this; that God, who knows perfectly the nature of grace, and the diſpoſitions of the will in all the circumſtances that ſhall befal a man, gives graces, wherewith, by virtue of their *congruity* with the will of man, conſidered in thoſe circumſtances, man will always infallibly, but not neceſſarily, do, what God would have him do: becauſe the will, in the language of the *congruiſts*, does always infallibly, though voluntarily, chooſe what appears beſt.

CONGRUITY, *merit of*. See MERIT.

CONGRUITY, in *Geometry*, is applied to figures, lines, &c. which exactly correſpond when laid over one another; as having the ſame terms, or bounds.

Thoſe things between which there is a *congruity*, are equal, and ſimilar.

Euclid, and, by his example, moſt other geometricians, demonſtrate all their elements from the ſole principle of *congruity*: M. Leibnitz, and after him Wolfius, ſubſtitute the notion of SIMILITUDE in lieu of that of *congruency*.

CONGRUITY, in a lax ſenſe, is uſed to expreſs an aptitude, in ſome bodies, to unite, or incorporate; by reaſon of ſome ſimilitude or fitneſs of their figures: as *incongruity* denotes an unfitneſs of their ſurfaces for joining together. Thus, quickſilver will unite with gold, and many other metals, but will roll off from wood, ſtone, glaſs, &c. and water, which will wet ſalt, and diſſolve it, will ſlip off from tallow without adhering to it; as alſo from a duſty ſurface, and from the feathers of water-fowl. Two drops of water, or of mercury, will, on contact, immediately join and coaleſce; but oil of tartar, poured upon quickſilver, and ſpirit of wine and oil of turpentine on that, and air over all, will remain in the ſame veſſel without any manner of union, or mixture with each other. And the cauſe hereof is, that the figures of ſome bodies will not admit other bodies near enough to be within their ſpheres of ATTRACTION, whence they cannot join, and cohere; but where their fitneſs of figure will let them approach near enough to feel each other's attractive power, then they cloſe, and hold together. See COHESION.

CONIC *Section*, a curve line ariſing from the ſection of a *cone* by a plane.

The *conic ſections* are three, viz. the *ellipſis*, *hyperbola*, and *parabola*; beſide the *circle* and the *triangle*, which, though they ariſe from the ſection of a *cone*, are not uſually conſidered in that capacity.

That the triangle is a *conic ſection*, as well as the other four, is ſhewn by Apollon. in Con. lib. i. p. 3. As to the circle; it ariſes either from the ſection of a *cone* by a plane parallel to the baſis, or from the ſubcontrary ſection of the ſcalene *cone*. Vid. Apoll. Con. lib. i. prop. 5.

Though the equations, geneſis, and many of the properties, with the ratios, dimenſions, &c. of each of the *conic ſections*, be ſeparately given under their reſpective articles in this work, ELLIPSIS, HYPERBOLA, and PARABOLA; yet, to make the doctrine of *conics*, which is ſo conſiderable a part of the higher geometry, and of ſuch frequent uſe in the new aſtronomy, the motion of projectiles, &c. more complete, we ſhall here put the whole in a new light, and bring it together into one contracted view.

The common interſection, then, of any plane with a *conic* ſuperficies, we obſerve, is called a *conic ſection*: and this ſection varies, and acquires a different name, according to the different inclinations of the cutting plane. For,

1. If a cone be any way cut by a plane, through the vertex; and again by another plane parallel to the former plane: then the ſection, made in the ſuperficies thereof, is called an *hyperbola*; the plane of which, being produced to meet the oppoſite ſuperficies, will make another ſection, which is likewiſe called an *hyperbola*: and both of theſe, conjunctly, are called *oppoſite ſections*.

2. If through the vertex of a cone a plane paſſes without the ſuperficies thereof, that is, neither cutting nor touching it; and the cone be again cut by another plane parallel to the former; the ſection made in the ſuperficies thereof, is called an *ellipſis*.

3. If a plane touch the ſuperficies of a cone, and the cone be cut by a plane parallel to it, the ſection is a *parabola*.

The more ancient mathematicians, before the time of Apollonius Pergæus, admitted only the right cone into their geometry, and they ſuppoſed the ſection of it to be made by a plane perpendicular to one of its ſides; and as the vertical angle of a right cone may be right, acute, or obtuſe, the ſame method of cutting theſe ſeveral cones, viz. by a plane perpendicular to one ſide, produced the *conic ſections*. The parabola was called the ſection of a right-angled cone; the ellipſe, the ſection of the acute-angled cone; and the hyperbola, the ſection of the obtuſe-angled cone. But Apollonius, who, on account of his writings on this ſubject, obtained the appellation of *Magnus Geometra*, obſerved, that theſe three ſections might be obtained in every cone, both ſcalene and right, and that they depended on the different inclination of the plane of the ſection to the cone itſelf. Apollon. Con. Ed. Hall. lib. i. p. 9.

But, inſtead of conſidering theſe curves as ariſing by ſection of the cone itſelf, their deſcription, nature, and properties, are found more eaſy of conception, when conſidered as drawn on a plane: for which reaſon, after Des Cartes, and moſt of the later writers, we ſhall rather chooſe to lay them down in this ſecond manner.

Geneſis or conſtruction of the ellipſis.—To conceive the production and nature of an ellipſis, let H and I (*Tab. Conics*, *fig.* 13.) be two points, nails, or little pegs, about which put a thread BHI; then putting your finger to the thread, and keeping the ſame always in an equal tenſion, move the finger round from the point B, till you return to the ſame point B again.

By this revolution of the point B, will be deſcribed the curve line called the *ellipſis*, which differs from the delineation of a circle only in this, that a circle hath only one center, but the ellipſis two: though if the points H and I ſhould come together, into one, the elliptic curve would become perfectly circular.

But by how much greater the diſtance is betwixt thoſe points, the ſame length of the thread ſtill remaining; by ſo much the farther is this figure removed from the circular: ſo that, according to the different proportion of the diſtance H I to the ſum of the parts BH, BI of the thread, or to the line D K, which is equal to that ſum, diverſe ſpecies of ellipſes will be deſcribed.

But then, if the length of the thread be increaſed or diminiſhed, in the ſame proportion as the diſtance of the points H and I is increaſed or diminiſhed, there will indeed be deſcribed divers ellipſes, but all of the ſame ſpecies: whence it appears, that ellipſes are not only innumerable in magnitude, but in ſpecies alſo; and reach from a circle to a right line: for, as when the points H and I meet together, the ellipſis becomes a circle; ſo, when they are removed from each other half the length of the thread, it becomes a right line, both ſides meeting together.

Whence alſo it appears, that every ſpecies of ellipſes is no leſs different from any other, than the extremes of them are different on this ſide from a circle, and on that from a right line. It alſo appears from this delineation, that if from a point taken at pleaſure in the elliptic periphery, as the point B, you draw two lines to the two central points; theſe two lines B H and B I, taken together, will be equal to the greateſt diameter D K; and conſequently, that the ſum of them is always given.

In the ellipſis DFKR (*fig.* 14.) the point C is called the *center*; the points H and I, the *foci*; D K, the *greater axis*, or *tranſverſe axis*, or the *principal diameter*, or *latus tranſverſum*; and F R, the *leſſer axis:* all the right lines paſſing through the center C, are *diameters*; and all right lines terminated at the periphery, and divided into two equal parts by any diameter, are called *ordinates.* That part of every diameter intercepted betwixt the vertex thereof, and the ordinate, as $M\mu$, is called the *abſciſs* thereof. A line drawn from the vertex of the diameter, parallel to the ordinates thereof, as $\eta\theta$, is a *tangent* to the ellipſis in that vertex. A diameter parallel to the ordinates of another diameter, is termed a *conjugate diameter*; and the ordinate to the greater axis, which paſſes through either of the foci, as M A (*fig.* 13.), is termed the *principal latus rectum*, or the *parameter* of the greater axis. See AXIS, CENTER, DIAMETER, FOCUS, ORDINATE, PARAMETER, &c.

Properties of the ellipſis.—1. The ordinates of every diameter are demonſtrated to be parallel to each other.

2. The ordinates of the principal diameters or axes are perpendicular to the axes themſelves; but the ordinates of the reſt of the diameters are oblique to their diameters; and, in ellipſes of divers ſpecies, are ſo much the more oblique, at equal diſtance from the axis, by how much the proportion of the greater axis to the leſſer is the greater; but in the ſame ellipſis, ſo much the more oblique, by how much the more remote the diameters are from the axes.

3. There are only two conjugate diameters, which are equal to each other; viz. thoſe whoſe vertices are at equal diſtances from the vertices of the axes: thus, the diameter V T (*fig.* 14.) is conjugate, and equal to that other G M; where V F is equal to M F, and V D equal to M K.

4. The obtuſe angle V C M of theſe two diameters, which are conjugate and equal, is greater, and the acute angle V C G is leſs, than every other angle contained under the reſt of the diameters that are conjugate to each other.

5. If the lines μP and νB be ſemiordinates to any diameter, as M G, the ſquare of the ſemiordinate μP is to the ſquare of the ſemiordinate νB, as is the rectangle $M\mu \times \mu G$, to the rectangle $M\nu \times \nu G$; that is, $\mu P q$ is to the rectangle comprehended under the two parts, into which the diameter is divided by the ordinate K P, as $\nu B q$ is to the rectangle under the parts of the diameter made by the ordinate A B.

6. The parameter, or *latus rectum* of any diameter, is a third proportional to that diameter, and its conjugate: that is (in *fig.* 13.), if the diameter D K is to its conjugate diameter E F, as E F is to Y; then Y is the parameter or *latus rectum* of the diameter D K: whence A M, an ordinate to the axis through the focus, is, as above, equal to the principal parameter, and is a third proportional to the greater and leſſer axis.

7. The ſquare of every ſemiordinate, as M I, is always leſs than the rectangle made of any abſciſs whatever, as I K drawn into the *latus rectum* of its own diameter, or than I K × Y. And in *fig.* 14. $P\mu q$ is leſs than the rectangle made of the abſciſs $M\mu$, and the *latus rectum* of M G: from which defect, or ελλειψις, this ſection hath its name.

8. If from any point, as B, in *fig.* 13. you draw the right lines BH and BI to the foci, the ſum of them will be equal to the greater axis, as was ſhewn above: and if the angle I B H, comprehended by thoſe lines, be biſected by the right line ba, the line ba is perpendicular to the tangent V B in the point B; that is, to the curve in the point of contact.

9. The diſtance of a body turned round in an ellipſis, about the focus H, from the ſame focus, is the greateſt of all in the point K; leaſt of all in the point D; and mean in the points E and F; and that mean diſtance H F is equal to the greater half-axis D C or C K; as is maniſeſt from the production of the ellipſis.

10. The vaniſhing ſubtenſe of the angle of contact, parallel to the diſtance from the focus, at an equal perpendicular interval from that diſtance, always remains given and unvaried in the ſame ellipſis, yea, and in the ſame parabola and hyperbola too. Thus, if dZ be always given, gd alſo will always remain given in a diſtance infinitely ſmall.

11. The area of the ellipſis is to the area of the circle circumſcribed, as the leſſer axis is to the greater; and ſo are all correſpondent parts whatſoever among themſelves, as M I K, m I K: and the ordinates to the greater axis, as M I, are divided by the elliptic periphery always in the ſame proportion, ſo that M I is to m I always in the ſame proportion; to wit, that of the leſſer axis to the greater. And we are to reaſon in the ſame manner concerning a circle inſcribed in an ellipſis. See QUADRATURE.

12. All parallelograms deſcribed about the conjugate diameters of the ellipſis, and comprehending the ellipſis, are equal. Thus, the parallelogram $\alpha\beta\varphi\delta$, *fig.* 14. is equal to the other parallelogram $\epsilon\zeta\eta\theta$: and thus it is every where.

13. If a right line always paſſing through one of the foci be ſo moved, that the elliptic area, deſcribed by the ſame, is proportional to the time; the angular motion of a right line drawn from the other focus to the former line, will be almoſt equable: thus, in *fig.* 13. if the angular motion of the line H B be ſo tempered, that the ſame, being according to the reciprocal proportion of the diſtance accelerated or retarded, deſcribes the area D H B, proportional to the time; the angular motion K I B about the other focus I, will be almoſt proportional to the time, and conſequently without any notable acceleration or retardation, and nearly equable; that is to ſay, where the ellipſis does not differ much from a circle.

Geneſis of the parabola.—Let D I be an infinite right line, and I L another perpendicular to it (*fig.* 15.); then, taking in the line D I, any point, F, let the line F I be biſected in the point T; and let there be taken two threads joined together in the point T, one T I, the other T F: and let a pin fixed to the threads in the point T be moved to the right and left, in ſuch a manner, that when the pin is in any other poſition, as in P, the thread T I, which here becomes P L, be always perpendicular to I L; or, which is the ſame thing, parallel to D I, but equal to the thread T F; which in this caſe becomes P F, ever paſſing through the point F.

The curve thus generated by the pin, infinitely produced both ways, is a parabola: in which $gPiTsRo$, is called the *periphery*; I D, the *axis*, or *principal diameter*; I L, the *directrix*; F, the *focus*; the point T, the *principal vertex.*

An ordinate to the axis through the focus is equal to the principal *latus rectum:* all right lines, as ni, &c. parallel to the axis, are diameters, as dividing the lines kT, &c. which are parallel to the tangents at their vertices, into two equal parts; and they are called diameters belonging to the vertices in which they terminate, as i, and R.

Properties of the parabola.—1. Every diameter, or right line parallel to the axis, biſects all the lines within the figure, which are parallel to the tangent of the vertical point: and theſe biſected lines are called *ordinates.*

2. The ordinates of the axis are perpendicular to it; but the ordinates of the reſt of the diameters are oblique to their diameters; and ſo much the more oblique, by how much the vertex of the diameter is further removed from the principal vertex of the parabola.

3. The *latus rectum*, or parameter to every diameter, is a third geometrical proportional to any abſciſs, and its ſemiordinate; that is, if the *latus rectum* of the diameter in, or that of the vertex i, be y; then, as the abſciſs iq is to the ſemiordinate qk, ſo is that ſemiordinate qk to y.

4. The principal *latus rectum*, or that belonging to the axis, is equal to the ordinate hi paſſing through the focus; and quadruple of F T, the leaſt diſtance of the focus from the principal vertex. See FOCUS.

5. The *latus rectum*, belonging to any vertex or diameter, is alſo quadruple of the diſtance of that vertex from the focus: thus, the *latus rectum* of the vertex s is quadruple Fs, and ſo it is every where: and therefore the parameter of the axis is the leaſt of all parameters.

6. The diſtance of any vertex or point in the parabola whatever, from the focus, is equal to the leaſt diſtance of the ſame from the line L I, which is perpendicular

to the axis; and is diſtant from the principal vertex, by a quarter of the principal *latus rectum.*

7. The ſquare of every ſemiordinate, as *q k*, is equal to a rectangle made of the *latus rectum*, of the ſame vertex as *y*, and *i q* the abſciſs of the diameter of the vertex. And from the equality of the ϖαραϐολη, or compariſon in the figure, betwixt the rectangle and the ſquare of the ſemiordinate, without any exceſs or defect, the name of the ſection is derived.

8. Since therefore the *latus rectum* in any diameter is given, the abſciſſes will be as the ſquares, or in the duplicate ratio of the ſemiordinates. Thus, T F is to T G as *i* F *q* is to *g* G *q*, and ſo likewiſe is *i q* to *i r*, as the ſquare of *q* T is to the ſquare of *r l:* and thus every where. From whence, alſo, when the abſciſs of the axis is equal to the principal *latus rectum*, or fourfold of the diſtance from the vertex, it will be equal to its ſemiordinate.

9. The angle, comprehended by any tangent whatever, and a line from the focus, is equal to an angle comprehended by the ſame tangent, and any diameter, or the axis. Thus, the angles I *i* F, and *p i n*, are equal: whence, by the way, all the rays of light which fall on the concave part of the ſurface, produced by the convolution of the parabola about the axis, which fall, we ſay, on the ſame, parallel to the axis, will be reflected from a concave paraboloid figure to the focus F, and there beget a moſt vehement burning: from which property, the point F has the name *focus*, and has communicated the ſame to the like points in the hyperbola and ellipſis.

10. A parabola, like an hyperbola, does not incloſe a ſpace, but ſtretches out *in infinitum.*

11. A parabolic curve always tends more and more, *in infinitum*, to a paralleliſm with its diameters; but can never arrive thereat.

12. If two parabolas be deſcribed, with the ſame axis and vertex; the ordinates to the common axis will be cut off by the parabola in a given proportion; and the areas comprehended by the ſame axis and ordinate, and the reſpective curves, will be in the ſame given proportion to one another.

13. Every parabolic ſpace comprehended betwixt the curve and the ordinate, is to the parallelogram made of the ſame baſe and altitude, in a ſubſequialteral proportion, that is, as 2 is to 3; and to the external ſpace in a duplicate proportion, or as 2 is to 1: ſo *q i* T is to *q i* I, as 2 is to 3; and to *i* I T as 2 is to 1. From whence it becomes eaſy to ſquare the parabola. See QUADRATURE.

14. The diſtance between the vertex of the axis, and the point where any tangent interſects it, as I, is equal to the abſciſs of the axis which belongs to the ordinate applied from the point of contact: ſo T I is equal to T F; and thus it is every where.

15. All parabolas are like, or of the ſame ſpecies; as are alſo all circles.

16. If a diameter be continued through the point of concourſe of two tangents; this diameter will biſect the line that joins the contacts: which property of the parabola may likewiſe be underſtood of the ellipſis, and hyperbola.

Geneſis of the hyperbola.—Suppoſe a ſtaff or rule of a ſufficient length, as I B (*fig.* 16.): let I and H be two central points, anſwering to the foci of an ellipſis, in which let nails be faſtened; then, there being tied to one end of the ſtick a rope or thread as long again as the ſtick, let the other end thereof be bored through, and ſo fixed upon the nail I; and fix the other end of the rope, by a knot, upon the other nail H: which done, laying your finger on the point B, where the rope and ſtaff are tied together, let your finger deſcend ſo long, till you have thereby applied, and joined the whole rope to the ſtaff, or rule; the ſtaff having been in the mean while, as it needs muſt, wheeled about the center I. Thus, with the point B, the vertex of the angle H B I you will have deſcribed a curve line X B D, which is part of an hyperbola; the whole conſiſting of that curve which will reſult from the curve X B D, which hath added to it the curve Y D, the produce of the rule and work, as turned to the other ſide.

Further, transferring the hole, or knot of the rope to the nail I, and faſtening the end of the ſtaff on the nail H, you will deſcribe another hyperbola, vertically oppoſite to the former, which will be altogether like and equal thereto. But if, without changing any thing in the rule and nails, you only apply a longer rope; you will have an hyperbola of a different ſpecies from the former: and if you ſtill lengthen the rope, you will have ſtill other ſorts of hyperbolas; till at length, making the rope double the length of the rule, you will have the hyperbola changed into a right line.

But if you alter the diſtance of the nails, in the very ſame proportion in which you change the difference betwixt the length of the rope, and that of the ſtick; in this caſe you will have hyperbolas marked out, which are altogether of the ſame ſpecies, but have their ſimilar parts differing in magnitude.

Laſtly, If the length of the rope and rule be equally increaſed, their difference in the mean while, and the intervals of the nails, remaining the ſame; not a different hyperbola, either as to ſpecies or magnitude, will be deſcribed, nor any other than a greater part of the ſame hyperbola.

It muſt be owned, however, that many properties of an hyperbola are better known from another manner of generating the figure, which is as follows: let L L and M M (*fig.* 17.) be infinite right lines interſecting each other at any angle whatever, in the point C: from any point whatever, as D or *e*, let D *c*, D *d* be drawn parallel to the firſt lines; or *e c*, *e d*; which, with the lines firſt drawn, make the parallelograms, as D *c* C *d*, or *e c* C *d*. Now, conceive two ſides of the parallelogram, as D *c*, D *d*, or *e c*, *e d*, to be ſo moved, this way and that way, that they always keep the ſame paralleliſm; and that at the ſame time the areas always remain equal; that is to ſay, that D *c* and *e c* remain always parallel to M M; and D *d* or *e d* always parallel to L L; and that the area of every parallelogram be equal to every other, one ſide being increaſed in the ſame proportion wherein the other is diminiſhed: by this means, the point D or *e* will deſcribe a curve line within the angle comprehended by the firſt lines; which is altogether the ſame as that deſcribed above. So alſo in the angle vertically oppoſite will be deſcribed a like and equal hyperbola; if the parallelogram C *c* K *d*, equal to the former, be ſuppoſed to be moved, in the ſame manner as before: which hyperbolas are, as was ſaid before, called *oppoſite ſections*, or *oppoſite hyperbolas.*

In each figure, D K is the *tranſverſe axis*, or *tranſverſe diameter of the hyperbola*, or the *oppoſite ſections*; the point C, the *center*; H and I, the *foci*. In the latter figure, all the lines paſſing through the center C, as *i h*, are *diameters:* but if hyperbolas be deſcribed in the following angles, as L C M, M C L, thoſe ſections will be called *following ſections:* and if the diſtance of the primary vertex of thoſe hyperbolas from the common center C, as C β, or C γ, be equal to the ſemitangent K *u* or K ω, at the primary vertex of theſe, thoſe ſections are called *conjugate ſections:* and all the figures together form the *hyperbolic ſyſtem.*

Further, *i b* the ordinate to the axis through the focus, is equal to the principal *latus rectum*, or the parameter of the axis; and an indeterminate diameter, which is parallel to the ordinates of any determinate diameter, is called the *conjugate diameter* of the ſame.

Properties of the hyperbola.—1. Any diameter, or right line, paſſing through the center, biſects all its ordinates; that is, all the right lines which are terminated on both ſides by the hyperbolic periphery.

2. The ordinates of the axis are perpendicular to the ſame; but the ordinates of the reſt of the diameters are oblique to their diameters: and ſo much the more in divers ſpecies, at equal diſtances from the axis, by how much the difference of the angles including the hyperbolas is the greater: and in the ſame hyperbola, ſo much the more oblique, by how much the diameters are farther removed from the axis.

3. If any lines, as H *b* and Q *s*, be ſemiordinates to any diameter whatever, as K D; the ſquare of the ſemiordinate H *b* is to the ſquare of the ſemiordinate Q *s*, as the rectangle K H × D H is to the rectangle K Q × D Q: and ſo bn^2 is to dK^2, as the rectangle *i b* × *h b* is to the rectangle *i d* × *h d:* and thus every where.

4. The *latus rectum*, or parameter of every diameter, is a third geometrical proportional to the diameter, and the conjugate thereof (or its tangent, which is equal to it): that is, if the *latus rectum* of any diameter, as D K, be *y*; then, as the diameter D K is to its conjugate β γ, or its equal ω *u*; ſo is that conjugate β γ, or that tangent ω *u*, to *y*. And as the ordinate to the axis through the focus is the principal *latus rectum*, ſo it is more than double of the leaſt diſtance of the focus from the vertex.

5. The ſquare of any ſemiordinate, as Q *s*, is greater than a rectangle made of the abſciſs D Q, drawn into the *latus rectum* of its own diameter, as *y:* and, in like manner, the ſquare of the ſemiordinate *b n* is greater than the rectangle of the abſciſs *i b*, into the *latus rectum* of the diameter *h i*. From which ὑπερϐολη, or exceſs, this ſection hath its name.

6. If from any point of the hyperbola, as B (*fig.* 16.), there be drawn right lines to both the foci, as B H, B I, the difference of theſe lines will always be equal to the axis D K; as will eaſily appear from the delineation itſelf.

7. If the angle H B I, comprehended by lines drawn to

the foci, be biſected by the right line E B, that right line will be a tangent to the hyperbola in the point B.

8. The right lines L L and M M (*fig.* 17.), which incloſe the hyperbolas, are aſymptotes of the hyperbolas; that is, they are ſuch, to which, on both ſides, the curve approaches nearer and nearer, but is never able to touch or coincide therewith.

9. The ſpecies of hyperbolas are various, according to the different magnitude of the angle L C M, comprehended by the aſymptotes; but that angle remaining the ſame, the ſpecies of the hyperbola remains unchanged: yet, according to the different magnitudes of the parallelograms, by which hyperbolas are deſcribed, hyperbolas of divers magnitudes do ariſe: if the angle contained by the aſymptotes be a right angle, the hyperbola is called *equilateral*, or *rectangular*; and the *latus rectum* of all the diameters will (as in a circle) be equal to the diameters.

Laſtly, If hyperbolas be deſcribed about the ſame axis in divers angles of the aſymptotes, the right lines perpendicular to the axis will be cut off in a given proportion by them all; and the ſpaces likewiſe incloſed by the right lines, or ordinates, the produced axis, and the curves, will be in the ſame given proportion.

10. If the diſtances from the center of the hyperbola, be taken in a geometrical proportion in one of the aſymptotes, ſo that CI, CII, CIII, CIV, CV, CVI, be in continued geometrical proportion; and if from thoſe points there be drawn parallel to the other aſymptote the lines I 1, II 2, III 3, IV 4, V 5, VI 6; the ſpaces I 2, II 3, III 4, IV 5, V 6, will be equal among themſelves. And conſequently, if that aſymptote C M be ſuppoſed to be divided, according to the proportion of numbers exceeding one another in a natural ſeries, thoſe ſpaces will be proportional to the logarithms of all thoſe numbers.

Common properties of all the Conic *ſections.*—From the whole it may be gathered, 1. That the *conic ſections* are in themſelves a ſyſtem of regular curves, naturally allied to each other; and that one is changed into another perpetually, when it is either increaſed, or diminiſhed, *in infinitum.* Thus, the circle, the curvature thereof being ever ſo little increaſed or diminiſhed, paſſes into an ellipſis; and the ellipſis, its center going away infinitely, and the curvature being by that means diminiſhed, is turned into a parabola; and when the curvature of the parabola is ever ſo little changed, there ariſeth the firſt of the hyperbolas; the ſpecies whereof, which are innumerable, will all of them ariſe orderly by a gradual diminution of the curvature; till the curvature vaniſhing away, the laſt hyperbola ends in a right line perpendicular to the axis. From whence it is manifeſt, that every regular curvature, like to that of a circle, from the circle itſelf to a right line, is a conical curvature, and is diſtinguiſhed with its peculiar name, according to the divers degrees of that curvature.

2. That the *latus rectum* of a circle is double to the diſtance from the vertex: that all the *latera recta* of ellipſes are in all proportions to that diſtance betwixt the double and quadruple, according to their different ſpecies: that the *latus rectum* of the parabola is juſt quadruple of that diſtance: and, laſtly, that the *latera recta* of hyperbolas are in all proportions beyond the quadruple, according to their various kinds.

3. That all diameters in a circle and ellipſis interſect one another in the center of the figure within the ſection: that in the parabola they are all parallel amongſt themſelves, and to the axis; but that in the hyperbola they interſect one another, but this without the ſection, in the common center of the oppoſite ſections.

4. That the curvature, with reſpect to the focus, in all theſe figures, is increaſed or diminiſhed proportionably.

The doctrine of the *conic ſections* is of great uſe in phyſical and geometrical aſtronomy, and the phyſico-mathematical ſciences. This doctrine has been much cultivated by geometers ancient and modern; and we have many good treatiſes on the ſubject; but that publiſhed by Mr. Simpſon, profeſſor of mathematics at Glaſgow, deſerves to be particularly mentioned not only for its elegance, but for its geometrical accuracy, which, as he juſtly remarks in his preface, has not always been ſo well obſerved in treatiſes of this kind, as it ought to be. See alſo Gregorii a St. Vincenti Opus de Quadratura Circuli, & Sectionum Coni; Mydorgius de Sectionibus Conicis; De la Hire de Sectionibus Conicis; Trevigar Elem. Section. Con.; Hamilton's Tract. Geom. de Section. Con.; De l'Hoſpital's Anal. Treat. of Conic Sections; Muller's Treatiſe, &c.; and Halley's Edition of Apollonius, &c. Oxon. 1710. fol.

To the properties of the *conic ſections* mentioned above, it may be proper to add the properties of their oſculatory circles, or circles of *curvature.* See Curvature.

Conic *ſections, ſimilar.* See Similar.

CONICS, that part of the higher geometry, or *geometry of* curves, which conſiders the cone, and the ſeveral curve lines ariſing from the ſections thereof.

CONICTHYODONTES, or *Plectronitæ*, in *Natural Hiſtory*, one of the three names by which the foſſil teeth of fiſh are known: ſo called, from their ſuppoſed reſemblance to the ſpur of a fighting-cock.

Though authors aſſure us that theſe are the teeth of a fiſh, the jaws having been found with theſe bodies in them; yet they do not pretend to know to what fiſh they belong. They are generally of an oblong conic figure, broad at the baſe, and narrower at the point, where they are uſually a little crooked: they are hollowed at the root, and are from the tenth of an inch to two inches long, commonly of a cheſnut colour, and are found in the ſtrata of clay, but moſt uſually in thoſe of ſtone; and are ſeen more frequently in England, than in any other part of the world. Hill's Foſſils, p. 645.

CONIFERA *ſalicis facie*, in *Botany*. See *Silver* Pine-*tree*.

Conifera *alpyi folia*, in *Botany*. See *Spurge-leaved* Pine.

CONIFEROUS, a term applied to ſuch trees, ſhrubs, or herbs, as bear a ſquammous or ſcaly fruit, of a woody ſubſtance, and a figure approaching to that of a cone; in which there are uſually many ſeeds; and, when they are ripe, the ſeveral cells or partitions in the cone gape or open, and the ſeeds drop out. Of this kind are the fir, the pine, beech, and the like.

CONJOINT, or Conjunct, is applied in *Ancient Muſic*, in the ſame ſenſe as *conſonant*, to two or more ſounds heard at the ſame time. See Consonance.

Conjoint *degrees*, two notes which immediately follow each other in the order of the ſcale; as *ut* and *re*.

Conjoint *tetrachords*, are two tetrachords, where the ſame chord is the higheſt of the one, and the loweſt of the other.

CONIRA, in *Botany*, a name uſed by ſome authors for the *myrrhis*. Ger. Emac. Ind. 2.

CONISALUS, in *Mythology*, a god of the Athenians mentioned by Strabo, and ſuppoſed to be the ſame with Priapus.

CONISOR. See Cognisor.

CONISSALÆ, in *Natural Hiſtory*, the name of a claſs of foſſile bodies: the word is derived from κονισσαλος, *powder*; all the ſpecies of bodies of this claſs being found like common ſand, in form of powder, have been uſually confounded together, under the common name of sands.

The *coniſſalæ* are defined to be ſtones of a differently debaſed, cryſtalline, or ſparry matter, but always found in form of ſmall and diſunited particles, great numbers of which being amaſſed together, form a kind of powder.

Of this claſs of bodies there are two diſtinct and large genera. 1. The sands properly ſo called, which are compoſed of particles all appearing to have a tendency to the ſame regular figures, tranſparent, vitrifiable by a ſtrong fire, and not ſoluble in, or effervеſcing with acids. 2. The saburræ, or grit of ſtone found looſe; theſe are found in form of powder, the particles of which, in general, have no tendency to any particular figure, but appear to be rudely broken fragments of larger maſſes. Hill's Hiſt. of Foſſ. p. 543. See Arenæ.

CONISTERIUM, in *Antiquity*, that part of the *gymnaſium* where the duſt was kept, with which thoſe who had been anointed were ſprinkled. It was alſo called *coniſtra*. Potter Arch.

CONJUGATE *diameter*, or axis, in *Conics*, is a right line biſecting the tranſverſe diameter. See Conic *ſection*.

Conjugate *axis*, of an *Ellipſis*, is the ſhorteſt diameter, or axis, biſecting the longer, or tranſverſe axis. Such is E F, *Tab. Conics*, *fig*. 31.

It is demonſtrated, 1. That in an ellipſis, the *conjugate* axis is a mean proportional between the tranſverſe axis and the parameter. 2. The ſquare of the *conjugate* axis is to that of the tranſverſe, as the ſquare of the ſemiordinate is to the rectangle of the ſegments of the axis. 3. That a right line drawn from the focus to the extremity of the ſemi-*conjugate* axis, is equal to the tranſverſe ſemi-axis.

Hence, the *conjugate* axes being given, the focus is eaſily determined; and the ellipſis thence eaſily deſcribed.

Conjugate *axis*, in an *Hyperbola*, is a mean proportional between the tranſverſe axis and the parameter.

It is thus called, becauſe the *conjugate* axis of an ellipſis has the ſame ratio. In an hyperbola, the ſquare of the *conjugate* axis is to the ſquare of the tranſverſe, as the parameter to the tranſverſe axis.

Conjugate *point*, in *Geometry*. See Point.

Conjugate *hyperbola*. See Hyperbola.

Conjugates, in *Rhetoric*, denote words deduced from the ſame origin with that of the ſubject: e. g. *He who does juſtly, is juſt.*

CONJUGATION, in *Grammar*, an orderly diſtribution of the ſeveral parts or inflexions of verbs, in their different MOODS and TENSES, to diſtinguiſh them from each other.

The Latins have four *conjugations* diſtinguiſhed by the terminations of the infinitive, *are*, *ēre*, *ĕre*, *ire*; and moſt of the French grammarians reduce the *conjugations* of their language to the ſame number, ending in *er*, *re*, *ir*, and *oir*. Some have added a fifth Latin *conjugation* called the *mixt*, becauſe it is compoſed of the third and fourth, as *accipere*, *accipio*.

The Greeks have three kinds of verbs; the firſt called *barytons*, becauſe the laſt ſyllable is pronounced with a grave accent; ſee BARYTONUM: ſuch are τεινω, *tendo*, and τυπτω, *verbero*: the ſecond are circumflex verbs, which admit a contraction in their termination, and are then marked with a circumflex accent; ſuch is αγαπαω, αγαπω, *amo*: the third kind comprehends the verbs in μι, as ειμι, *ſum*. Of the firſt ſort there are ſix *conjugations*; of the ſecond, three; and of the third, four. But Meſſrs. de Port Royal reduce theſe thirteen *conjugations* to two: viz. one in ω, comprehending the barytons and circumflex verbs; and the other, thoſe in μι.

In the Hebrew language there are four *conjugations*; viz. *kal* with its paſſive *niphal*, *pihel* with its paſſive *pyhal*, to which alſo may be referred *pohel*, *hiphil* with its paſſive *hophal*, and *hithpahel*. The third perſon ſingular maſculine of the firſt *conjugation* is the præterite of the theme; the ſecond *conjugation* has a *dageſh forte* in the ſecond radical; the third has the prefix letter ה; and the fourth, the ſyllable הִתְ.

In Engliſh, where the verbs have ſcarce any natural inflexions, but derive all their variations from additional particles, pronouns, &c. we have hardly any ſuch thing as ſtrict *conjugations*.

Some grammarians, however, diſtribute Engliſh verbs into three *conjugations*, or claſſes, diſtinguiſhed from one another by a peculiar formation in ſome principal part belonging to each: and they obſerve that the three different terminations of the participles, *d*, *t*, *n*, may be conſidered as the characteriſtics of the *conjugations*. Lowth's Introd. to Engliſh Grammar, p. 104. 1772.

Others again diſtinguiſh them by the different inflection of the firſt tenſe in each root, and thus make four *conjugations* in the active voice: the firſt has three radicals alike; as *I do read*; *I read*, i. e. yeſterday; *I have read*, i. e. juſt now. The ſecond has the firſt and third radical alike; as *I run*, *I ran*, *I have run*. The third *conjugation* has the ſecond and third radical alike; as *I eſteem*, *I eſteemed*, *I have eſteemed*. The fourth has the three radicals different; as *I write*, *I wrote*, *I have written* or *writ*. The paſſive voice, being made up of the third radical and the auxiliary verb *am*, admits of no difference of *conjugations*. Ward's Eſſays on the Engliſh Language, p. 87.

CONJUGATION, in *Anatomy*, is underſtood of a pair of nerves; or two nerves, ariſing together, and ſerving for the ſame operation, ſenſation, or motion; there being ſcarce any NERVE in the body without its fellow.

The ancient phyſicians only knew of ſeven pairs, or *conjugations* of nerves; the moderns have diſcovered thirty new ones.

CONIUM. See HEMLOCK.

CONJUNCT. See CONJOINT PAIR.

CONJUNCT *of an arch*. See SUPPLEMENT.

CONJUNCT *ſentence*. See SENTENCE.

CONJUNCTION, in *Aſtronomy*, the meeting of two ſtars, or planets, in the ſame optical point of the heavens, i. e. in the ſame degree of the zodiac; and is either *true* or *apparent*.

If the two bodies meet both in the ſame degree of longitude and latitude, a right line drawn from the center of the earth through the center of one of them, paſſes through that of the other; and the *conjunction* is ſaid to be *true* and *central*: and if the lower hides the upper, the *conjunction* is ſaid to be *corporal*.

If the line paſs wide of the center of the earth, the *conjunction* is ſaid to be *partile*.

If the bodies do not meet preciſely in the ſame degree, but are joined with ſome latitude, the *conjunction* is ſaid to be *apparent*. Thus, when a right line, ſuppoſed to be drawn through the centers of two planets, does not paſs through the center of the earth, but through the eye of the ſpectator; it is ſaid to be an *apparent conjunction*.

Conjunctions are alſo divided into *great* and *greateſt*: *great conjunctions* are thoſe which only happen at conſiderable diſtances of time from each other; as that of Saturn and Jupiter, which happens every twenty years.

Greateſt conjunctions are thoſe which happen in times very remote; as the *conjunction* of the three ſuperior planets, Mars, Jupiter, and Saturn, which only return once in five hundred years. But this diviſion has little place in aſtronomy; being founded on the notion of the particular influences, &c. of the heavenly bodies in ſuch and ſuch aſpects.

Aſtrologers maintain, that the deluge was owing to a *conjunction* of all the planets in Capricorn; and that the conflagration will be occaſioned by their *conjunction* in Cancer: whence they pretend to foretel the end of the world.

The *conjunction* is the firſt, or the principal, of all the aſpects; and that whence the other aſpects commence; as oppoſition is the laſt, where they terminate. See CHARACTER.

The MOON is in *conjunction* with the ſun every MONTH. Her *conjunctions* and oppoſitions are called by a general name, *ſyzygies*.

Eclipſes of the ſun never happen, but when there is a *conjunction* of the ſun and moon in or near the nodes of the ecliptic.

CONJUNCTION, in *Grammar*, a particle which expreſſes a relation or dependence between words, and phraſes; thus called, becauſe ſerving to join or connect the parts or members of a diſcourſe: or, as Mr. Harris defines it, a *conjunction* is a part of ſpeech, void of ſignification itſelf, but ſo formed as to help ſignification, by making *two* or more ſignificant ſentences to be *one* ſignificant ſentence: and he diſtributes them into ſuch as connect ſentences and their meaning, and ſuch as conjoin the ſentences whilſt they disjoin the ſenſe. The former are *conjunctive*, and are either COPULATIVE or CONTINUATIVE; and the latter *disjunctive*, ſome of which are ſimple, as, *either* it is day *or* it is night, and ADVERSATIVE, as, it is not day *but* it is night. Hermes, p. 240, &c.

The *conjunction* is the ſixth of the eight vulgar parts of ſpeech.

Conjunctions render the diſcourſe more ſmooth and fluent; and ſerve very good purpoſes in the argumentative, and narrative ſtyle; but they muſt ever be omitted where a perſon ſpeaks with emotion, as only ſerving to weaken and enervate it. Boileau obſerves, that nothing gives more warmth and life to a diſcourſe, than to drop the *conjunctions* or copulatives: a paſſion, adds he, embarraſſed with *conjunctions*, and uſeleſs particles, loſes all the fire and vehemence it would acquire in its progreſs.

Conjunctions are of various kinds.

CONJUNCTIONS *copulative*, or *conjunctive*, are thoſe which expreſs a relation of union or compariſon between things: as, *and*, *only*, *as much as*, *in the ſame manner as*, *neither more nor leſs*, *inaſmuch as*, *not only*, *but alſo*.

CONJUNCTIONS *adverſative*, thoſe which expreſs a reſtriction, or contrariety: as, *but*, *nevertheleſs*, *although*, *far from*.

CONJUNCTIONS *cauſal*, thoſe which ſhew, that the reaſon of ſomething is brought: as, *for*, *becauſe*, *ſeeing*, *the rather ſince*, *inaſmuch as*.

CONJUNCTIONS *concluſive*, thoſe which denote a conſequence drawn: as, *for which reaſon*, *but then*, *of conſequence*, *ſo that*, &c.

CONJUNCTIONS *conditional*, are thoſe which import a condition: as, *if*, *if not*, *on condition that*, *provided that*, *in caſe of*.

CONJUNCTIONS *continuative*, thoſe which expreſs a ſucceſſion, or continuation of the diſcourſe: as, *in effect*, *even*, *whatever it be*.

CONJUNCTIONS *disjunctive*, thoſe which expreſs a relation of ſeparation or diviſion: as, *neither*, *whether*, *or*.

CONJUNCTIONS *dubitative*, thoſe which expreſs ſome doubt, or ſuſpenſion of opinion: as, *if*, *that is to ſay*, &c.

CONJUNCTIONS *exceptive*, are, *if it be not*, *unleſs that*, &c.

CONJUNCTIVA, *tunica*, *adnata*, or *albuginea*, in *Anatomy*. See ADNATA.

CONJURATI *fratres*. See FRATRES.

CONJURATION, ſignifies a plot or confederacy, made by perſons combining together by oath or promiſe, to do ſome public harm.

But it was more particularly uſed, formerly, for having a perſonal conference with the devil, or ſome evil ſpirit, to know any ſecret, or to effect any purpoſe. Anno 5 Eliz. c. 16.

It is ſaid in ſome of our law books, that the difference between *conjuration* and *witchcraft* is, that the former endeavours by prayers and invocation of God's powerful name, to compel the devil to ſay or to do what the offender commands him; the latter deals rather by friendly and voluntary conference or agreement with the devil or familiar, to have the offender's deſires ſerved, in lieu of blood, or other gift offered to the devil, eſpecially of the offender's ſoul. And both theſe differ from *inchantment* or *ſorceries*; becauſe thoſe are perſonal conferences with the devil, and theſe are but medicines and ceremonious forms of words (commonly called *charms*) without apparition. Cowel.

The ſtatute of king James I. againſt *conjuration* and witchcraft, is repealed; and no proſecution ſhall be commenced on the ſame: but where perſons pretend to exerciſe any kind of witchcraft or *conjuration*, &c. or undertake to tell fortunes, or, from their ſkill in any crafty ſcience, to diſcover where goods ſtolen or loſt may be found; upon conviction they ſhall be impriſoned a year, and ſtand in the pillory once in every quarter, in ſome market-town, and may be ordered to give ſecurity for their good behaviour, by ſtat. 9 Geo. II. c. 5.

CONN, in *Sea-Language*. See COND.

CONNA, in *Botany*, a name uſed by ſome authors for the tree which produces the *caſſia fiſtula* uſed in medicine. Hort. Manut. vol. i. p. 37.

CONNARUS, in the *Materia Medica*, a name given by ſome authors to a large ſpecies of jujube. Ger. Emac. Ind. 2.

CONNATA *folia*, among *Botaniſts*. See LEAF.

CONNECTING *oil*. See OIL.

CONNECTION, or CONNEXION, a relation whereby one thing adheres to, or depends on another.

Euclid's propoſitions have ſuch a *connection* among themſelves, that the latter cannot ſubſiſt without the former.

CONNECTION, or *continuity*, in the *Drama*, conſiſts in the joining of the ſeveral ſcenes together.

When the ſcenes of an act ſucceed one another immediately, and are ſo joined as that the ſtage is never left empty, the *connection* is ſaid to be obſerved.

CONNECTIVES, in *Grammar*, one of the four ſpecies under which, according to Mr. Harris, all WORDS may be included. They are of two kinds, and as they connect ſentences or words, are called by the different names of CONJUNCTIONS and PREPOSITIONS. Hermes, p. 31, and 237.

CONNER. ALE-CONNER. See ALE-CONNER.

CONNIVENTES *valvulæ*, in *Anatomy*, wrinkles, or corrugations in the inner coat, or membrane, of the two large inteſtines, the *jejunum* and *ileum*.

They are formed as the *rugæ* of the ſtomach, viz. by the inner coat's being larger than the outer.

Theſe folds, or corrugations, ſome anatomiſts imagine in ſome meaſure to do the office of valves; by ſtreightening the paſſages, and conſequently impeding the motion of their contents: by which means, the LACTEALS have the more time to imbibe the CHYLE. See DIGESTION.

CONNOISSEUR, a French term, of late uſed in Engliſh: it literally denotes a perſon well verſed in any thing; being formed of the verb *connoitre, to know, underſtand*. Hence it comes to be uſed in our language for a critic, or perſon who is a thorough judge, or maſter in any way; particularly in matters of painting and ſculpture.

CONNAUGHT *worm*. See WORM.

CONOCARPODENDRON. See PINE-*tree*.

CONOCARPUS, in *Botany*. See BUTTON-*tree*.

CONOID, CONOIDES, in *Geometry*, a ſolid body, reſembling a cone, except in this, that, inſtead of a perfect circle for its baſe, it has an ellipſis, or ſome other curve approaching thereto.

The *conoid* is produced by the entire circumvolution of a conic ſection around its axis; and according to the denomination of the ſection from whence it is generated, it is differently denominated: if, v. gr. the ſolid be produced by the motion of a parabola, it is called a *parabolic conoid*; if by that of an hyperbola, an *hyperbolic conoid*; and an *elliptic conoid*, or a *ſpheroid*, when produced by the rotation of an ellipſis round one of its axes.

The famous ſolid of the leaſt reſiſtance, Sir Iſaac Newton, M. Fatio, and the Marquis De l'Hôpital, have demonſtrated to be a *conoid*.

CONOIDES, or CONARIUM, is a name given by *Anatomiſts* to a gland found in the third ventricle of the brain, reſembling a pine-apple; whence M. Des Cartes called it *pinealis*; and has fixed there the ſeat of the rational ſoul. See PINEAL *gland*.

CONONITES, in *Eccleſiaſtical Hiſtory*, the followers of Conon of Alexandria in the ſixth century, reſembling in their opinions the SEVERIANS, THEODOSIANS, and TRITHEISTS.

CONOPEUM, in *Antiquity*, a ſort of net-work, made to keep away flies; it comes from κωνωψ, *a fly*.

CONQUASSATION, in *Pharmacy*, a ſpecies of comminution, or a particular operation, by which moiſt concreted ſubſtances, ſuch as recent vegetables, their fruits, lacteſcent ſeeds, and the ſofter parts of animals, are contuſed and agitated in a mortar, until partly by their proper ſucculence, or the affuſion of ſome liquor, they are reduced to a ſoft pulp. Metalline inſtruments are not to be uſed for this purpoſe; becauſe not only the manifeſt, but alſo the latent ſalts of the ſubſtances, ſubjected to this operation, acting on the inſtruments, may derive an adventitious virulent quality from them, which will not only render ſuch ſubſtances unfit for the intended purpoſes, but alſo nauſeous and hurtful when exhibited as medicines. James.

CONQUEST, in *Civil Juriſprudence*, is the acquiſition of property in common by a number of perſons.

In ſome countries they confound acquiſition with *conqueſt*; but, according to the moſt general acceptation, acquiſition is the gaining of unappropriated goods before the eſtabliſhment of a community: whereas by the term *conqueſt*, is ordinarily intended whatever is acquired by a number of perſons in community; or by ſome one for all the others.

As it is more eſpecially in the union of perſons by marriage, that a community of property takes place; it is in reference to them that we frequently uſe the word *conqueſt*. There are nevertheleſs *conqueſts* alſo among other perſons who are in a tacit community or ſociety; ſuch as obtain by particular local cuſtoms. Encycl.

According to this ſenſe of the word, it has been contended by ſeveral, that William I. claimed this kingdom; that is, not by right of arms, but by right of *conqueſt* or acqueſt; under promiſe of ſucceſſion made by Edward the Confeſſor, and a contract entered into by Harold to ſupport his pretenſions to that ſucceſſion: and by old writers, *conqueſtus*, *acquiſitio*, and *perquiſitio*, are frequently uſed as ſynonymous terms. Blackſt. Comm. vol. i. p. 199. and vol. ii. p. 243.

CONQUEST, in the *Law of Nations*, is the acquiſition of ſovereignty by force of arms, by ſome foreign prince; who reduces the vanquiſhed under his empire. The right of *conqueſt* is derived from the laws of war; and when a people is ſubjected, the conduct of the conqueror is regulated by four kinds of law. Firſt, the law of nature, which dictates whatever tends to ſelf-preſervation; ſecondly, our reaſon, which teaches us to uſe others, as we would be treated ourſelves; thirdly, the laws of political ſociety, to which nature has not aſſigned any preciſe boundary; laſtly, the law which is derived from the particular circumſtances attending the *conqueſt*.

Thus, a ſtate conquered by another will be treated in one of the four methods following. Either the conqueror will continue it under its own laws, and will only claim the exerciſe of civil and eccleſiaſtical ſovereignty; or he will impoſe a new form of government; or he will deſtroy the frame of their ſociety, and incorporate the inhabitants with others; or he will exterminate them. Encycl.

CONSANGUINITY, the relation of kinſhip, between perſons of the ſame blood, or ſprung from the ſame root. It is either *lineal*, when it ſubſiſts between perſons, of whom one is deſcended in a direct line from the other; or *collateral*, when relations deſcend from the ſame anceſtor, but do not deſcend from each other. It is eaſy to compute, by the rules of progreſſion, how many lineal anceſtors any man has within a certain number of degrees. Thus, it would appear that a perſon, at the 20th degree, or the diſtance of 20 generations, hath above a million of anceſtors: and if a ſimilar calculation be made of collateral kindred at the diſtance of 20 degrees forward, on the ſuppoſition that each couple of anceſtors leave, one with another, two children, the number will be 274877906944: as in the following tables.

Lineal Degrees.	Number of Anceſtors.
1	2
2	4
3	8
4	16
5	32
6	64
7	128
8	256
9	512
10	1024
11	2048
12	4096
13	8192
14	16384
15	32768
16	65536
17	131072
18	262144
19	524288
20	1048576

Collateral Degrees.	Number of Kindred.
1	1
2	4
3	16
4	64
5	256
6	1024
7	4096
8	16384
9	65536
10	262144
11	1048576
12	4194304
13	16777216
14	67108864
15	268435456
16	1073741824
17	4294967296
18	17179869184
19	274877906944

Blackſtone's Commentaries, vol. ii. p. 204, 206.

Marriage is prohibited by the church to the fourth DEGREE of *conſanguinity*, incluſive; but, by the law of nature, *conſanguinity* is no obſtacle to marriage, except it be in the direct line.

Conſanguinity terminates in the ſixth and ſeventh degree, excepting in the ſucceſſion to the crown; in which caſe, *conſanguinity* is continued to infinity.

The civilians call *fratres conſanguinei*, thoſe born of the ſame father; in oppoſition to *fratres uterini*, who are only born of the ſame mother.

According to the common opinion, thoſe were not allowed to complain of an inofficious teſtament, i. e. of being diſinherited without cauſe; excepting from the turpitude of the perſon appointed heir in their place. But Van Water endeavours to ſhew the contrary; and urges, that the *conſanguinei* might plead inofficioſity, even where the teſtament was not made in favour of a perſon incapable. See KINDRED.

CONSCIENCE, Consciousness, in *Ethics*, a ſecret teſtimony or judgment of the ſoul, whereby it gives its approbation to things it does that are naturally good; and reproaches itſelf for thoſe that are evil.

Or, *conſcience* is a dictate of the underſtanding power, concerning moral actions; conſidered as it has the knowlege of laws; and conſequently as conſcious of what is to be done, or not done, with regard to the legiſlator.

In the more popular ſenſe of the word, *conſcience* is a judgment, either true or falſe, whereby we pronounce a thing good or evil. This makes what we call the inner *forum*, or tribunal.

Some divines maintain, that *conſcience* is infallible; and hold it to be that immutable law whereby God will judge men: they deny that the underſtanding can be the ſource of errors, and lay them all at the door of the will. A man, ſay they, may ſecure himſelf from error, by forbearing to judge of things till he have a clear and diſtinct perception of them.

Some of the ſchoolmen diſtinguiſh between the *conſcience* antecedent to an action, and that conſequent to it: the firſt, called *antecedent conſcience*, determines what is good, and what evil; and conſequently preſcribes what is to be done, and what avoided.

Conſequent conſcience is a kind of ſecondary or reflex judgment, with regard to the goodneſs, &c. of things already done or committed.

The *rule of conſcience* is the will of God, ſo far as it is made known to us, either by the light of nature, or by that of revelation.

With reſpect to the knowlege of this rule, *conſcience* is ſaid to be *rightly informed*, or *miſtaken*; *firm*, or *wavering*, or *ſcrupulous*, &c. With reſpect to the conformity of our actions to this rule when known, *conſcience* is ſaid to be *good*, or *evil*, &c.

Philoſophers, in lieu of the word *conſcience*, which ſeems appropriated to theological matters, ordinarily uſe that of *conſciouſneſs*; whereby they mean an inner ſentiment of a thing, whereof one may have a clear and diſtinct notion. In this ſenſe, they ſay, that we do not know our own ſoul, nor are aſſured of the exiſtence of our own thoughts, otherwiſe than by *ſelf-conſciouſneſs*.

Conscience, *court of*. See Court.

CONSCRIPT, Conscriptus, a popular term in the *Roman Hiſtory*, uſed in ſpeaking of ſenators, who were called *conſcript* fathers, *patres conſcripti*; becauſe their names were written in the regiſter, or catalogue of the ſenate.

Livy, lib. i. cap. 1. tells us, that when Brutus filled up the places of the ſenators cut off by Tarquin, with others choſen out of the equeſtrian order, thoſe new ſenators only had the appellation given them of *patres conſcripti*. But it is certain, that, in after-times, all the ſenators were called *patres conſcripti* without any diſtinction.

CONSECRATION, the act of converting, or ſetting apart, any profane, or common thing, to a pious purpoſe; with certain ceremonies, prayers, benedictions, &c. appropriate thereto.

Conſecration is the reverſe of ſacrilege and profanation, which conſiſt in perverting a thing ſet apart for a pious purpoſe, to a profane and popular one.

The biſhop *conſecrates* a church, or a chalice; the pope *conſecrates* medals, agnus dei's, &c. and grants indulgences to thoſe who bear them about them with devotion.

The *conſecration* or dedication of a church is an epiſcopal ceremony, conſiſting in a great number of benedictions, with aſperſions and unctions of chriſm, &c. on the walls, both withinſide and without. The form for *conſecrating* churches, chapels, and church-yards, or places of burials in England, may be ſeen in Wilkins's Concilia Magnæ Britanniæ, &c. vol. iv. p. 668. It directs that the biſhop and clergy, of whom there are to be at leaſt two, ſhall enter the church or chapel in their ſeveral habits, and, as they walk up from the weſt to the eaſt end, repeat alternately the 24th Pſalm; the biſhop beginning, "The earth is the Lord's," &c. with the "Gloria patri." When they are come to the Lord's table, the biſhop ſitting in his chair ſhall have the inſtrument of dedication, donation, and endowment of the church or chapel, church-yard, or burial-place, preſented to him by the founder, or ſome proper perſon, which he ſhall cauſe to be read by his regiſter, or other officer; and then the inſtrument ſhall be laid on the table, and he ſhall ſtand on the north ſide of it, and turning to the congregation, deliver an addreſs to them, which is followed by ſuitable prayers. One of the prieſts then reads the ſervice of the day, introducing proper pſalms and leſſons: after which, the biſhop proceeds to the communion ſervice, and inſtead of the collect of the day, uſes one proper to the occaſion. When the Epiſtle and Goſpel are read, they are ſucceeded by the Nicene creed and the ſermon; and then the biſhop is to proceed with the ſervice of the communion. When the ſervice in the church is finiſhed, the biſhop and clergy with the people ſhall go into the church-yard, and make uſe of a prayer for the occaſion. See ubi ſupra.

The cuſtom of *conſecrating* perſons, temples, altars, veſtments, utenſils, &c. is very ancient; and all the ceremonies thereof are preſcribed under the old law. When thoſe *conſecrations* relate to men, they are properly called *ordinations*; excepting thoſe performed to BISHOPS and KINGS, which ſtill retain the name of *conſecration*. Thoſe which only conſiſt in a ceremony inſtituted by the church, are more properly called *benedictions*. When they regard churches, altars, veſſels, &c. they are properly called *dedications*.

Consecration is particularly uſed for the benediction of the elements in the euchariſt.

The Romaniſts define it, the converſion of the bread and wine into the real body and blood of Jeſus Chriſt: and that this is the ſentiment of their church, is evident from the prieſt's elevating the hoſt immediately after *conſecration*, for the people to adore it. See Elevation, &c.

There is a great controverſy between the Latin and Greek churches, touching the words of *conſecration*: the common opinion among the Romaniſts, agreeable to St. Thomas and the ſchoolmen, is, that the *conſecration* of the bread and wine conſiſts in theſe words, *This is my body*; *this is my blood*. The Greeks, on the contrary, attribute the change of the elements to a certain prayer, which they call the *invocation of the Holy Ghoſt*, rehearſed after the words *This is my body*; *this is my blood*; which the Greeks maintain are only neceſſary in the proceſs of the *conſecration*, as they contain the hiſtory of the inſtitution; not as they contribute any thing to the change.

Consecration, among *Medaliſts*, is the ceremony of the APOTHEOSIS of an emperor; or his tranſlation into heaven, and reception among the gods.

On medals, the *conſecration* is thus repreſented: on one ſide is the emperor's head, crowned with laurel, ſometimes veiled; and the inſcription gives him the title of *divus*: on the reverſe is a temple, a buſtum, an altar, or an eagle taking its flight towards heaven, either from off the altar, or from a cippus: at other times the emperor is ſeen in the air, borne up by the eagle; the inſcription always, CONSECRATIO.

Theſe are the uſual ſymbols: yet on the reverſe of that of Antoninus, is the Antonine column. In the apotheoſis of empreſſes, inſtead of an eagle there is a peacock. As to the honours rendered theſe princes after death, they were explained by the words *conſecratio*, *pater*, *divus*, and *deus*. Sometimes around the temple or altar are put, *memoria felix*, or *memoriæ æternæ*: for princeſſes, *æternitas*,

æternitas, and *ſideribus recepta*; on the ſide of the head, *dea*, or Θεα.

CONSECTARY, a propoſition that follows, or is deduced, from ſome preceding definition, lemmata, axioms, concluſions, or the like. Some rather chooſe to call it a *conſequence*; and others a *corollary*, &c.

CONSECUTIVELY, **Conſecutive**, in the *School Philoſophy*, is ſometimes uſed in oppoſition to *antecedently*, and ſometimes to *effectively*, or *cauſally*.

Thus, ſay the ſchoolmen, the corruption of one thing is the generation of another, not *effectively*, but *conſecutively*: that is, ſince matter cannot be without form, it is neceſſary, that the generation of one thing follow upon the corruption of another.

CONSENT *of parts*, in the *Animal Oeconomy*, a certain agreement, or ſympathy, by means whereof, when one part is immediately affected, another, at a diſtance, becomes affected in like manner.

This mutual accord, or *conſent*, is doubtleſs effected by the commerce of the nerves, and their artful diſtribution and ramification throughout the body.

The effect is ſo ſenſible, as even to come under the phyſician's cognizance: thus, the ſtone in the bladder, by vellicating the fibres there, will pain and draw them ſo much into ſpaſms, as to affect the coats of the bowels in the ſame manner, by the intermediation of nervous threads, and make a colic there; and alſo extend their twitches ſometimes as far as the ſtomach, and occaſion grievous vomitings: the remedy, therefore, in ſuch caſes, is to regard the part originally affected, how remote and grievous ſoever may be the conſequences and ſymptoms in other places.

The fifth conjugation of nerves branched to the parts of the eye, the ear, thoſe of the mouth, cheeks, præcordia, and parts adjacent, &c. is ſuppoſed by naturaliſts to be the inſtrument of that particular and extraordinary *conſent* between thoſe parts. Hence it is, that a ſavoury thing ſeen or ſmelt excites the appetite, and affects the glands and parts of the mouth; that a ſhameful thing ſeen or heard affects the cheeks with bluſhes; on the contrary, if it pleaſe, it affects the præcordia, and excites the muſcles of the mouth and face to laughter; if it grieve, it affects the glands of the eyes, ſo as to occaſion tears, and the muſcles of the face, putting them into an aſpect of crying.

Dr. Willis, quoted by Mr. Derham, imputes the pleaſure of kiſſing, and its effects, to this pair of nerves; which being branched both to the lips and the genital parts, when the former are affected, an irritation is occaſioned in the latter. See Sympathy.

CONSENTES, in *Mythology*, derived from the old Latin *conſo*, *to counſel*, denotes twelve ſuperior deities among the Romans, who were apprehended to belong to the council of Jupiter. Theſe were Jupiter, Neptune, Mars, Apollo, Mercury, Vulcan; and Juno, Veſta, Minerva, Diana, Ceres, and Venus. Varro mentions twelve other deities under the ſame denomination, who ſuperintended agriculture. Lib. i. De Re Ruſtica.

Theſe *conſentes* had a temple at Piſa in Italy.

CONSENTIA were feaſts inſtituted in honour of theſe deities.

CONSEQUENCE, in *Logic*, the concluſion of a reaſoning, or argument.

The two premiſes of a ſyllogiſm being granted, the *conſequence* muſt alſo be granted.

In a more reſtrained ſignification, *conſequence* is uſed for the relation or connexion between two propoſitions, whereof one follows, or is inferred, from the other.—Thus: *It is an animal, and therefore feels.*

CONSEQUENT, the laſt propoſition of an argument; being ſomething deduced or gathered from a preceding argumentation. An enthymeme only contains two propoſitions, the *antecedent* and *conſequent*: if the *antecedent* be abſurd, the *conſequent* muſt be ſo too.

Conſequent, in a more preciſe ſenſe, is uſed for the propoſition which contains the concluſion, conſidered in itſelf, and without any regard to the *antecedent*: in which ſenſe, the *conſequent* may be true, though the *conſequence* be falſe.

Conſequent *of a ratio*, in *Arithmetic*, the latter of the two terms of a ratio; or that to which the antecedent is referred. See Proportion.

Thus, in *a* : *b*, or *a* to *b*, *b* is the *conſequent*, *a* the antecedent.

Conſequents, in *Rhetoric*, are alſo uſed to ſignify ſuch things, as being allowed, neceſſarily, or very probably, infer their antecedents. Thus with reſpect to a ſubſtance, it is corruptible, and therefore material.

CONSEQUENTE, Conſequenza, or *in* Conſequenza, in the *Italian Muſic*. A part of a *fugue*, or *canon*, is ſaid to be *in conſequenza*, when it follows the firſt part called the *guide*, imitating its motions, notes, and figures. Broſſ. Dict. Muſ. in voc.

CONSEQUENTIA, in *Aſtronomy*, is oppoſed to Antecedentia; and a motion *in conſequentia* is a motion in the order of the ſigns of the zodiac.

CONSERVATIVE *ſuture*. See Suture.

CONSERVATOR, an officer eſtabliſhed for the ſecurity and preſervation of the privileges granted ſome cities and communities; or, a perſon who has a commiſſion to judge of, and decide, the differences ariſing among them.

In moſt catholic univerſities, there are two *conſervators*; the *conſervator* of royal privileges, or thoſe granted by kings; and the *conſervator* of apoſtolical privileges, or thoſe granted by the pope.

The firſt takes cognizance of perſonal and mixed cauſes between the regents, ſtudents, &c. and the latter of ſpiritual matters between eccleſiaſtics.

Anciently there were appointed *conſervators* of treaties of peace between princes; which *conſervators* became judges of the infractions made on a treaty, and were charged with procuring ſatisfaction to be made. Theſe were uſually the feudatories of the ſeveral powers.

In lieu of *conſervators*, princes now have recourſe to other indifferent princes to guarantee their treaties. See Guarantee.

Conſervator *of the peace*, in our *Ancient Cuſtoms*, was a perſon who had an eſpecial charge, by virtue of his office, to ſee the king's peace kept.

Till the erection of justices of the peace by king Edward III. there were ſeveral perſons who by common law were intereſted in keeping the ſame: ſome having that charge as incident to other offices; and others ſimply, or of itſelf, called *cuſtodes*, or *conſervators of the peace*.

The chamberlain of Cheſter is ſtill a *conſervator* in that county; and petty conſtables are, by the common law, *conſervators*, &c. in the firſt ſenſe, within their own juriſdiction: ſo are alſo the coroner and the ſheriff within their own county. The king is the principal *conſervator* of the peace within all his dominions: the lord chancellor, lord treaſurer, lord high ſteward, lord marſhal, lord high conſtable, all the juſtices of the court of king's bench, by their office, and the maſter of the rolls, by preſcription, are general *conſervators* of the peace through the whole kingdom, and may commit breakers of the peace, and bind them in recogniſances to keep it.

Conſervator *of the truce, and ſafe conducts*; *conſervator induciarum, & ſalvorum regis conductuum*, was an officer appointed in every ſea-port, under the king's letters patent. His charge was to enquire of all offences committed againſt the king's truce, and ſafe conducts upon the main ſea, out of the franchiſes of the cinque-ports, as the admirals were wont to do, and ſuch other things as are declared anno 3 Hen. V. cap. 6. See alſo ſtat. 4. Hen. V. cap. 7.

CONSERVATORIOS are muſical ſchools eſtabliſhed for the inſtruction of children in the profeſſion of muſic. There are four of theſe at Venice, deſigned for the education of girls, and three at Naples, for the education of boys. It has been ſuggeſted that the operation of caſtration was performed in the *conſervatorios*; but the practice is abſolutely prohibited; and the young caſtrati are brought from Lucia in Puglia: but before the operation is performed, their voices are tried in a *conſervatorio*. The ſcholars of the Venetian *conſervatorios* have been chiefly celebrated for taſte, and neatneſs of execution; and thoſe of Naples have had the reputation of being the firſt *contrapuntiſts*, or compoſers, in Europe.

CONSERVATORY is ſometimes uſed for a place to preſerve snow and ice. See Phil. Tranſ. N° 8. p. 140. See Ice-*Houſe*.

CONSERVE, in *Pharmacy*, a dry confect, or form of medicine, or food, contrived to preſerve the flowers, leaves, roots, peels, or fruits of ſeveral ſimples, as near as poſſible to what they were when freſh-gathered; and to give them an agreeable taſte.

Phyſicians, under the name of *conſerves*, commonly comprehend all kinds of confects of flowers, fruits, roots, ſeeds, barks, &c. both liquid and dry.

Conſerves are made by beating up the thing to be preſerved with ſugar; viz. a triple quantity thereof to thoſe which are moſt moiſt and corruptible, and a double quantity to ſuch as are leaſt ſo.

Thus, e. gr. to make *conſerve* of roſes, roſemary-flowers, ſage-flowers, or the like; they pound them in a ſtone mortar, and when pounded, put to them fine ſugar, and beat the whole well together. For fruits, as currants, &c. they ſet them on the fire to make them yield their juice, then drain and ſtrain them, and thicken what comes from them over the fire, and add to it the ſugar.

This laſt ſort of *conſerve* is particularly called a jelly.

CONSIDERATIO *curiæ*, in *Law*, denotes the judgment of the court.

CONSIDERATION, in *Law*, the material cauſe, or *quid pro quo* of any contract, and without which no contract is obligatory or binding.

This *conſideration* is either *expreſſed*; as if a man bargain to give ten guineas for a horſe: or *implied*, when the law itſelf enforces a *conſideration*; as if a man coming into an inn, take meat, drink, and lodging for himſelf and horſe, the law preſumes he intends to pay for them, though there be no expreſs contract between him and his hoſt; and if he diſcharge not the houſe, the hoſt may ſtop his horſe.

There is alſo a *conſideration* of nature and blood; and valuable *conſideration* in deeds and conveyances.

Conſiderations of natural love, affection, marriage, &c. are good to raiſe uſes to a man's family; if the uſes are limited to a ſtranger, then it muſt be for valuable *conſideration*, not for love, affection, &c. 1 Inſt. 271. 1 Rep. 176.

CONSIGNMENT, or **Consignation**, the depoſiting any ſum of money, bills, papers, or commodities, in ſure hands; either by order of a court of juſtice, in order to their being delivered to the perſons to whom they are adjudged; or voluntarily, in order to their being remitted to the perſons they belong to, or ſent to the places they are deſtined for.

Consignment *of goods*, is the delivering, or making them over to another.—Thus, goods are ſaid to be *conſigned* to a FACTOR, when they are ſent to him to be ſold, &c. or when a factor ſends back goods to his principal, they are ſaid to be *conſigned* to him.

CONSILIUM, *dies conſilii*, in *Law*, was a time allowed for one accuſed to make his defence, and to anſwer the charge of the accuſer. It is now uſed for a ſpeedy day appointed to argue a demurrer; which the court grants after a demurrer joined on reading the record of the cauſe. See EMPARLANCE.

CONSIMILI *Caſu*. See CASU.

CONSISTENCE, a ſtate of reſt, wherein things capable of growth, or decreaſe, continue for ſome time at a ſtand, without either.

This term is particularly uſed with regard to trees, for the time, or age, beyond which they do not grow, and yet at which they do not decline.

Thus we diſtinguiſh three ſtates or ſtages of a tree; its growth, *conſiſtence*, and return: and theſe are common to all trees, even fruit trees.

The *conſiſtence* of an oak is from fifty to a hundred and ſixty years: ſome, however, hold, that their *conſiſtence* only commences from a hundred years; aſſerting that they grow till that time, and that they continue in that ſtate of perfection to two hundred years of age.

Consistence, in *Phyſics*, is that ſtate of a body wherein its component particles are ſo connected, or entangled among themſelves, as not to ſeparate or recede from each other.

Conſiſtence only differs from *continuity* in this, that *conſiſtence* implies a regard to motion or reſt, which continuity does not; it being ſufficient to denominate a thing *continuous*, that its parts are contiguous to each other.

When uſed relative to a diſeaſe, it imports the *criſis* or *acme* thereof: when applied to the humours, excrements, or excretions, it imports their ſtate as to thickneſs or thinneſs.

Consistence is particularly uſed with regard to bodies conſidered as they are more ſoft, or more hard, more liquid, or more dry.

Forms of medicines, as electaries, lambatives, boluſes, ſyrups, unguents, &c. differ chiefly in *conſiſtence*.

Not only the gratefulneſs, but alſo the operation of medicines, depend in ſome meaſure on their *conſiſtence*; for medicines of a thick *conſiſtence* are taken into the ſtomach, and penetrate into the body with greater difficulty, than ſuch as are thin and liquid; and it requires more trouble to ſwallow a thick than a thin medicine: for this reaſon thick medicines are generally nauſeous and ungrateful; and this is the reaſon why cathartic boluſſes are often diſſolved in ſome agreeable liquor, ſince in this form they are more grateful than in any other: for this reaſon alſo apozems are generally clarified by whites of eggs, or a ſtrainer.

On the contrary, a thick *conſiſtence* is on ſome occaſions more to be deſired; in ulcers of the aſpera arteria, and œſophagus, for inſtance, where we muſt give medicines made up with gum tragacanth, or other ſubſtances of a like nature, which by their viſcidity fix the medicines, as it were, longer to the part affected.

CONSISTENT *Bodies*, is a term much uſed by Mr. Boyle for ſuch as we ordinarily call *firm*, or *fixt bodies*; in oppoſition to *fluid* ones.

That author has a particular eſſay of the *atmoſphere of conſiſtent bodies*; wherein he ſhews, that all, even ſolid, hard, ponderous, and fixed bodies, do exhale or emit effluvia to a certain ſpace all around them.

CONSISTENTES, in *Church Hiſtory*, a kind of penitents who were allowed to aſſiſt at prayers, but could not be admitted to receive the ſacrament.

CONSISTORIAL *Advocate*. See ADVOCATE.

CONSISTORY, or *Roman* **Consistory**, denotes the college of CARDINALS; or the pope's ſenate, and council, before whom judiciary cauſes are pleaded.

Du-Cange derives the word from *conſiſtorium*; i. e. *locus ubi conſiſtitur*; uſed chiefly for a veſtible, gallery, or antechamber, where the courtiers wait for admiſſion; and called *à conſiſtente multitudine*.

The *conſiſtory* is the firſt court, or tribunal of Rome: it never meets but when the pope pleaſes to convoke it: the pope preſides in it in perſon, mounted on a magnificent throne, and habited in his *pontificalia*; on the right are the cardinal-biſhops and prieſts, and on the left the cardinal deacons.

The place where it is held, is a large hall in the apoſtolical palace, where princes and ambaſſadors of kings are received. The other prelates, prothonotaries, auditors of the rota, and other officers, are ſeated on the ſteps of the throne; the courtiers ſit on the ground; ambaſſadors on the right, and *conſiſtorial* and fiſcal advocates behind the cardinals.

Beſides the public *conſiſtory*, there is alſo a private one, held in a retired chamber, called the chamber of *papegay*; the pope's throne here being only raiſed two ſteps high.

Nobody is here admitted but the cardinals, whoſe opinions are collected, and called *ſentences*. Here are firſt propoſed and paſſed all bulls for biſhopricks, abbeys, &c. Hence biſhopricks, and abbeys, are ſaid to be *conſiſtorial benefices*; in regard, they muſt be propoſed in the *conſiſtory*, the annates be paid to the pope, and his bulls taken.

Anciently they were elective; but by the concordat, which aboliſhes elections, they are appointed to be collated by the pope alone, on the nomination of the prince.

Consistory was alſo the name of a COURT under Conſtantine, where he ſat in perſon, and heard cauſes: the members of this court were called *comites*.

Consistory is alſo uſed among the reformed, for a council or aſſembly of miniſters and elders, to regulate their affairs, diſcipline, &c.

Consistory, or *Court Chriſtian*, in the *Engliſh Laws*, is a council of eccleſiaſtical perſons, or the place of juſtice in an eccleſiaſtical or ſpiritual court.

Every archbiſhop and biſhop has a *conſiſtory-court*, held before his chancellor or commiſſary, either in his cathedral, in ſome chapel, aiſle, or portico, belonging thereto; or in ſome other convenient place of his dioceſe, for eccleſiaſtical cauſes. The ſpiritual court was anciently, in the time of the Saxons, joined with the county or hundred court; and the original of the *conſiſtory* court, as divided from thoſe courts, is found in a law of the Conqueror, quoted by lord Coke.

From this court there lies an appeal to the archbiſhop of each province reſpectively.

CONSOLATION, one of the places in *Rhetoric*, wherein the orator endeavours to abate and moderate the grief or concern of another.

In *conſolation*, a principal regard is to be had to the circumſtances and relations of the parties. Scaliger conſiders this exceeding well, De Arte Poetica. "The *conſolator*, ſays he, is either a ſuperior, an inferior, or an equal; with regard, either to preferment, honour, wealth, wiſdom, or age. Livia is therefore to comfort Ovid, in a manner very different from that wherein Ovid comforts Livia. Thus, as to authority, a father and ſon, Cicero and Pompey, are to conduct their *conſolations* very differently: ſo in wealth; as if a client ſhould undertake to comfort Craſſus: in wiſdom; as when Seneca comforts Polybius and his mother: as to age, there need no examples.

"A ſuperior may interpoſe his authority, and may even chide; a wiſe man may even diſpute; ſentences will become him. An inferior is to ſhew reſpect and affection, and own he had this from ſome wiſe or learned perſon: an equal to appeal to their common friendſhip."

CONSOLE, in *Architecture*, a part or member projecting in manner of a bracket, or ſhoulder-piece; ſerving to ſupport a corniche, buſt, baſe, beam, little vault, or the like. See *Tab. Architecture, fig.* 32.

The word is derived from the French *conſolider*, *to reunite, join*, &c. agreeable to the office of this member.

Conſoles are alſo, upon occaſion, called *mutules*, *modillions*, &c. according to their form.

Some of them are ſtriated or fluted; others in form of cartouches; others have drops, in the manner of triglyphs.

Vitruvius calls all thoſe of gates *prothyrides*; of *thyra*, gate. See PROTHYRIS.—Thoſe made of the end of a plank of wood, cut triangular-wiſe, are called *ancones*. See ANCON.

Conſoles are frequently uſed as keys of arches, projecting out, to ſupport a vaſe, or other ornament.

CONSOLIDA, in *Botany*. See **Bugle**.

Consolida *major*. See **Comfry**.

CONSOLIDATION, in *Law*, the combining and uniting two benefices into one. Stat. 37 Hen. VIII. cap. 21. which union is to be by the aſſent of the ordinary, patron, incumbent, &c. and to be of ſmall churches lying near together.

The term is borrowed from the civil law; where it properly ſignifies an union of the poſſeſſion, or occupation, with the property. Thus, if a man hath by legacy *uſumfructum fundi*, and afterwards buys the property, or fee-ſimple, of the heir; this is called a *conſolidation*.

Consolidation, in *Medicine*, expreſſes the action of uniting broken bones, or the lips of wounds, by means of *conſolidating remedies*, as they are called; which, cleanſing with a moderate heat and force, taking corruption out of the wounds, and preſerving the temperature of the parts. cauſe the nouriſhment to be fitly applied to the part affected. See **Wound**, and **Fracture**.

CONSONANCE, in *Muſic*, is ordinarily uſed in the ſame ſenſe with *concord*, viz. for the union or agreement of two ſounds produced at the ſame time, the one grave, the other acute; which, mingling in the air, in a certain proportion, occaſion an accord agreeable to the ear.

Consonance is ſometimes uſed to ſignify a ſound ariſing from ſeveral others ſounding together, whether agreeable, or diſagreeable to the ear.

In this ſenſe *conſonance* may be divided into CONCORD and DISCORD.

Dr. Holder, on this principle, defines *conſonancy*, "A "paſſage of ſeveral tunable ſounds through the medium, "frequently mixing and uniting in their undulated mo"tions, cauſed by the well-proportioned commenſurate "vibrations of the ſonorous bodies, and conſequently "arriving ſmooth and ſweet, and pleaſant to the ear; as, "on the contrary, *diſſonancy* he maintains to ariſe from "diſproportionate motions of ſounds, not mixing, but "jarring and claſhing as they paſs, and arriving in the "ear grating and offenſive."

Which notion of a *conſonance* exactly quadrates with that we have already laid down for a *concord*. Accordingly, moſt authors confound the two together; though ſome of the more accurate diſtinguiſh them; making *conſonance* to be what the word implies, a mere *ſounding of two or more notes together*, or *in the ſame time*; in contradiſtinction to the motion of thoſe ſounds *in ſucceſſion*, or one after the other.

In effect, the two notions coincide; for two notes, thus played in *conſonance*, conſtitute a concord; and two notes that pleaſe the ear in *conſonance*, will likewiſe pleaſe it in ſucceſſion. Notes in *conſonance* conſtitute harmony, as notes in ſucceſſion conſtitute *melody*.

In the popular ſenſe, *conſonances* are either *ſimple* or *compound*, &c. The moſt perfect *conſonance* is uniſon; though many, both among the ancients and moderns, diſcard it from the number of *conſonances*; as conceiving *conſonance* an agreeable mixture of different ſounds, grave and acute; not a repetition of the ſame ſound.

The ſecond *conſonance* is the octave; then the fifth, the fourth, the thirds, and the ſixths: the reſt are multiples, or repetitions of theſe.

Consonance, in *Grammar*, denotes a like cadence, or cloſe of words, periods, &c.

Conſonances are ordinarily faults in diſcourſe, eſpecially in Engliſh proſe: though the ancients make a figure of them, which they call ὁμοιοτελευτον. Too great a *conſonancy* in the rhymes has always an ill effect.

CONSONANT, a letter which produces no ſound alone, or without ſome other letter, either vowel or *conſonant*, joined along with it.

And hence the name *con-ſonant*, q. d. *quæ ſonant cum alia*.

A *conſonant*, conſidering it philoſophically, is nothing elſe but the modification of a ſound, produced by means of the organs of the voice, not a production of ſound itſelf: thus, v. gr. the ſounds ſignified by the characters *a*, *e*, *i*, *o*, *u*, &c. are differently modified when we ſay *ab*, than when we ſay *ac* or *ca*, *ad* or *da*; and thoſe modifications are called *conſonants*.

The letters of the alphabet are divided into *vowels* and *conſonants*. *Conſonants*, again, are divided into *ſingle*, as *b*, *h*, *m*, *q*, &c. and *double*, as *x* in *axillary*, correſponding to the ξ of the Greeks.

Conſonants, again, are divided into *liquid*, as *l*, *r*, *m*, *n*; and *mute*, as *b*, *d*, and the reſt.

But the moſt natural diviſion of *conſonants* is that of the Hebrew grammarians; who have been imitated therein by the grammarians of other oriental languages: theſe divide the *conſonants* into five claſſes, with regard to the five principal orders of the voice; which all contribute, it is true, but one more notably than the reſt, to certain modifications, which make five general kinds of *conſonants*. Each kind, or claſs, comprehends ſeveral *conſonants*, which reſult from the different degrees of the ſame modification, or from the different motions of the ſame organs.

Theſe organs are the *throat*, *palate*, *tongue*, *teeth*, and *lips*; whence the five claſſes of *conſonants* are denominated *guttural*, *palatal*, *lingual*, *dental*, and *labial*.

We account ſixteen *conſonants* in the Engliſh alphabet, viz. *b*, *c*, *d*, *f*, *g*, *k*, *l*, *m*, *n*, *p*, *q*, *r*, *ſ*, *t*, *x*, *z*; to which there are three others to be added, viz. the *h*, and *j conſonants*, and *v conſonant*, which makes the whole number of *conſonants* nineteen: one whereof is guttural, viz. the aſpirate *h*; five *palatal*, viz. *c*, as when pronounced before *a*, *o*, and *u*, as in *cavern*, *corn*, *curioſity*; *g*, as in *Geneva*; *j conſonant* in *julep*; *k* in *kernel*; and *q* in *query*.

The four *lingual conſonants* are *d*, *l*, *n*, *t*; the four *dental*, are *r*, *s*, *x*, *z*, the three laſt whereof are hiſſers: and five *labial*, *b*, *f*, *m*, *p*, and *v conſonant*.

With regard to which diviſion, it may be obſerved, that though the *g* be modified in three different manners, as it comes before an *a*, an *o*, or an *u*; yet it is ſtill a *conſonant* of the palate; that the *j conſonant* differs in nothing but its figure from the *g* before *e* or *i*; that *k* has the ſame pronunciation with the *c*; that *x* comprehends the ſound of two letters in its ſound, viz. *c* or *k*, and *ſ* or another *c*, as in *Alexander*, and *Alexis*, which we pronounce as if wrote *Alecſander*, and *Aleccis*, or *Alecſis*; and that the *c* before an *e* or *i*, is no *conſonant* of the palate, becauſe in that caſe it loſes its proper ſound, and aſſumes the hiſſing ſound of the *ſ*.

The abbot Dangeau thinks the nature of the diviſion of the Hebrew grammarians to be very reaſonable; but he does not acquieſce in the diſtribution they have made of them: to find a natural and juſt diviſion of the *conſonants*, he obſerves, no regard muſt be had to the characters that repreſent them; nor any thing be conſidered but their ſound, or the modification they give the ſound.

On this principle, the ſame author finds in the French five *labial conſonants*, *b*, *p*, *v*, *f*, and *m*; five *palatal* ones, *d*, *ſ*, *g*, *k*, *n*; four *hiſſers*, *s*, *z*, *j*, *ch*; two *liquids*, *l* and *r*; two that run into and mix with each other, as *ll*, and *gn*; which laſt, however, is peculiar to the French language; and the *h* aſpirate.

He adds, 1. That *m* and *n* are properly two naſal *conſonants*; the *m*, a *b* paſſed through the noſe, and the *n* a *d*, in like manner, pronounced through the noſe; and, in effect, people in a cold pronounce *barket* for *market*, *deed* for *need*, &c.

2. That among the *conſonants*, ſome are weak, others *ſtrong*; their difference conſiſting in this, that the former are preceded with a ſmall emiſſion of the voice, which ſoftens them; which the latter have not. The weak are *b*, *c*, *d*, *g*, *z*, *j*; the ſtrong, *p*, *f*, *t*, *k*, *ſ*, *ch*.

It may be here obſerved, that when we ſpeak of a perſon's talking *through the noſe*, it muſt be underſtood in a ſenſe quite different from what the word ſeems naturally to import: ſince the noſe in this caſe concurs leſs to the pronunciation than when we do not ſpeak through the noſe; in regard the air, not being able to make its way through the noſe, is returned into the mouth, where it forms a dull obtuſe ſound, called *naſal*.

From the whole we may conclude, that the exceſs of *conſonants* in one language above another only conſiſts in this, that there are more modifications of ſound received and eſtabliſhed in the one than in the other: for all men, having the ſame organs, may form the ſame modifications; ſo that it is entirely owing to cuſtom, nothing to nature, that the Engliſh have not the ϑ of the Greeks, the *ain* and *heth* of the Hebrews, the *ch* of the Germans, the *gn* of the French, the *gl* of the Italians, the *ll* of the Welſh, &c.

Alſo, that the Chineſe have no *r*, the Iroquois no labial *conſonants*, the Hurons have abundance of aſpirates, and the Arabs and Georgians abundance of double *conſonants*: which laſt is owing to this, that they make ſeveral organs concur ſtrongly and equally to the modification of a ſound; whereas, in the reſt, only one organ is moved very ſtrongly and ſenſibly, and the reſt weakly.

It is hence alſo viſible, that in all languages the ASPIRATES, or guttural letters, are real *conſonants*; ſince the throat modifies the ſound as much as the palate, tongue, or lips.

Laſtly, to find all the *conſonants* that may be formed in any language, there needs nothing but to obſerve all the modifications that the ſounds of ſpeech will admit of, by which we ſhall have all the *conſonants* practicable.

CONSONANTE, in the *Italian Muſic*, is uſed to ſignify concords, or thoſe intervals which afford pleaſure, be they either perfect, as the fifth and eighth, or imperfect, as the third, ſixth, &c. See **Octave**, &c.

CONSORT. See **Queen**.

CONSOUND, a name given to ſeveral different plants: thus *ſymphytum* is called the great *conſound*, *bugula* the middle *conſound*, *bellis* the leaſt *conſound*, and *ſolidago* the Saracens *conſound*.

CONSPIRACY, in *Law*, is taken for a combination or CONFEDERACY to do ſomething evil, or illegal: though in the original ſenſe of the word, and in its uſe in other languages, it ſignifies merely an agreement, whether for good, bad, or matters indifferent.

In our ſtatutes and law-books, *conſpiracy*, in a general ſenſe, is frequently confounded with *maintenance*, and *champarty*.

CONSPIRACY, in its ſpecial ſignification, is uſed for a confederacy of two, at leaſt, falſly to indict one, or procure one to be indicted of felony.

The puniſhment of this *conſpiracy*, at the king's ſuit, anciently was, that the party attainted loſe his frank-law; to the end that he may not be impanelled on juries, and the like; that his lands, goods, and chattels, be eſtreated; his trees raſed, and his body committed to priſon.

Even *conſpiracies*, or combinations in caſes of leſs moment, as thoſe of victuallers, touching ſelling of victual, ſhall be grievouſly puniſhed. 37 Hen. VIII.

CONSPIRATIONE, in *Law*, a writ that lies againſt *conſpirators*.

CONSPIRATORS, according to the ſtatute, are thoſe that do confederate, or bind themſelves by oath, covenant, or other alliance, that every of them ſhall aid, and bear the other, falſly and maliciouſly, to indite, or cauſe to indite, or falſly to move, or maintain pleas; and all ſuch as cauſe children, within age, to appeal men of felony, whereby they are impriſoned, and ſore grieved: and ſuch as retain men in the country, with liveries or fees, to maintain their malicious enterprizes: and this extendeth as well to the takers, as the givers: and ſtewards, and bailiffs, of great lords, which, by their ſeigniory, office, or power, undertake to bear, or maintain quarrels, pleas, or debates, that concern other parties than ſuch as touch the eſtate of their lords, or themſelves. Anno 33 Edw. I. ſtat. 2. 2 Inſt. fol. 384 and 562.

CONSPIRING *powers*, in *Mechanics*, are all ſuch as act in directions not oppoſite to one another. See POWER, and MOTION.

CONSTABLE. *Lord High* CONSTABLE, is an ancient officer of the crown, now diſuſed in England, except on ſolemn occaſions, as the king's coronation, and the like; and alſo ſuppreſſed in France by Louis XIII. in 1627; though the office has been exerciſed in the command of the MARSHALS, by the firſt officer in the army.

Some derive the word from the Saxon, and make it originally ſignify the *ſtay*, or hold, of the *koning*, or *king*: others, with more probability, derive it from *comes ſtabuli*, the maſter of the ſtables, or perhaps of the horſe; and ſuppoſe that the dignity, which at firſt was civil, in time became military, and the maſter of the ſtables was made general of the army.

The function of the *conſtable* of England conſiſted in the care of the common peace of the land, in deeds of arms, and matters of war. To the court of the *conſtable*, and that of the marſhals, belonged the cognizance of contracts, deeds of arms without the realm, and combats, blaſonry of arms, &c. within it.

The firſt *conſtable* of England was created by the Conqueror: the office continued hereditary till the thirteenth of Hen. VIII. when it was laid aſide, as being ſo powerful as to become troubleſome to the king. Since that time, the *conſtable* is only created occaſionally.

From thoſe mighty magiſtrates, the *conſtables* of England, are derived thoſe inferior ones, ſince called the *conſtables* of *hundreds and franchiſes*: theſe were firſt ordained in the thirteenth year of Edward I. by the ſtatute of Wincheſter; which, for the conſervation of the peace, and view of armour, appointed that two *conſtables* ſhould be choſen in every hundred and franchiſe. They are generally choſen and ſworn by the juſtices of peace in their ſeſſions.

Theſe are what we now call *conſtabularii capitales*, or *high conſtables*; becauſe continuance of time, and increaſe of people, &c. have occaſioned others of like nature, but inferior authority, in every town, called *petty-conſtables*, or *ſub-conſtabularii*, firſt inſtituted about the reign of Edward III. But they are now uſually choſen by the jury at the court-leet; and if no court-leet be held, appointed by two juſtices of the peace; though they are uſually choſen by the pariſhioners, and ſworn by a juſtice of peace. If the perſon elected refuſes to ſerve, a writ of mandamus may be had to compel him to do it; or they may be bound over to the ſeſſions, indicted, fined, and impriſoned. Phyſicians, apothecaries, ſurgeons, &c. attornies, officers of the courts at Weſtminſter, barriſters at law, &c. qualified diſſenting teachers, and proſecutors of a felon to conviction, are excuſed from ſerving this office. Diſſenters, ſcrupling the oaths, may execute the office by deputy. 1 W. and M. cap. 18. Theſe are under the direction of the high *conſtable*, and their charge is very extenſive.

Beſides theſe, we have *conſtables* denominated from particular places, as *conſtable* of the Tower, of Dover-caſtle, of Windſor-caſtle, of the caſtle of Caernarvon, and many other of the caſtles of Wales; whoſe office is the ſame with that of the caſtellani, or governors of caſtles.

CONSTABLES *of London*. The city of London is divided into twenty-ſix wards, and the wards into precincts, in each whereof is a *conſtable*. They are nominated by the inhabitants of each precinct on St. Thomas's day, and confirmed, or otherwiſe, at the court of wardmote. After confirmation, they are ſworn into their offices at a court of aldermen, on the next Monday after Twelfth day.

Such as are choſen into the office, are obliged to place the king's arms, and the arms of the city, over their doors; and if they reſide in alleys, at the ends of ſuch alleys toward the ſtreets, to ſignify that a *conſtable* lives there, and that they may be the more eaſily found when wanted.

CONSTABLE, *provoſt of the*. See PROVOST.

CONSTANT *winds*. See WIND.

CONSTANT *quantity*, in *Geometry*, that which remains the ſame, while others increaſe or decreaſe. Thus the ſemidiameter of a circle is a *conſtant quantity*; for while the abſciſs and ſemi-ordinates increaſe, it remains the ſame.

CONSTAT, in *Law*, the name of a certificate, which the clerk of the pipe, and auditors of the exchequer, make at the requeſt of any perſon, who intends to plead or move in that court for the diſcharge of any thing; and the effect of it is, the certifying what does *conſtare* upon record, touching the matter in queſtion. 3 and 4 Edw. VI. cap. 4. and 13 Eliz. cap. 6.

A *conſtat* is held to be ſuperior to a *certificate*; becauſe this may err or fail in its contents, that cannot, as certifying nothing but what is evident upon record. Alſo the exemplification under the great ſeal of the inrolment of any letters patent, is called a *conſtat*. Coke on Littl. fol. 225. b. The difference between a *conſtat*, *inſpeximus*, and *vidimus*, is treated of at large in Page's caſe, Coke's fifth report.

CONSTELLATION, in *Aſtronomy*, an aſſemblage or ſyſtem of ſeveral ſtars, expreſſed and repreſented under the name and figure of ſome animal, or other thing: this aſſemblage is by ſome called alſo an *aſteriſm*.

The ancients portioned out the firmament into ſeveral parts, or *conſtellations*; reducing a certain number of ſtars under the repreſentation of certain images, in order to aid the imagination, and the memory, to conceive and retain their number, diſpoſition, and even to diſtinguiſh the virtues which they attributed to them: in which ſenſe a man is ſaid to be born *under a happy conſtellation*, i. e. under a happy configuration of the heavenly bodies.

The diviſion of the heavens into *conſtellations* is very ancient; and, probably, as old as aſtronomy itſelf; at leaſt, it was known to the moſt ancient authors extant, whether ſacred or profane. In the book of Job, mention is made of the names of ſome of them; witneſs that ſublime expoſtulation, *Canſt thou reſtrain the ſweet influence of the* Pleiades, *or looſen the bands of* Orion? And the ſame may be obſerved of the oldeſt among the heathen writers, Homer and Heſiod.

The diviſion of the ancients only took in the viſible firmament, or ſo much as came under their notice: this they diſtributed into forty-eight *conſtellations*; twelve whereof took up the zodiac: the names they gave them are, *Aries*, *Taurus*, *Gemini*, *Cancer*, *Leo*, *Virgo*, *Libra*, *Scorpio*, *Sagittarius*, *Capricornus*, *Aquarius*, *Piſces*: from whence the ſigns of the ecliptic and zodiac take their names; though now no longer contiguous to the *conſtellations* which denominate them. See SIGN.

The other ſtars, on the northern ſide of the zodiac, were diſpoſed into twenty-one *conſtellations*; viz. *Urſa major* and *minor*, *Draco*, *Cepheus*, *Bootes*, *Corona Septentrionalis*, *Hercules*, *Lyra*, *Cygnus*, *Caſſiopeia*, *Perſeus*, *Andromeda*, *Triangulum*, *Auriga*, *Pegaſus*, *Equuleus*, *Delphinus*, *Sagitta*, *Aquila*, *Ophiuchus*, or *Serpentarius*, and *Serpens*: to which have been ſince added *Antinous*, and *Coma Berenicis*.

The ſtars on the ſouthern ſide of the zodiac were diſtributed into fifteen conſtellations: their names are, *Cetus*, *Eridanus fluvius*, *Lepus*, *Orion*, *Canis major* and *minor*, *Argo*, *Hydra*, *Crater*, *Corvus*, *Centaurus*, *Lupus*, *Ara*, *Corona meridionalis*, and *Piſcis auſtralis*: to which have been ſince added fourteen others; viz. *Phœnix*, *Grus*, *Indus*, *Pavo*, *Apus*, or *Avis Indica*, *Apis Muſca*, *Chamæleon*, *Triangulum auſtrale*, *Piſcis volans*, *Toucan*, *Hydrus*, *Xiphias*, or *Dorado*, *Columba Noachi*, and *Robur Carolinum*. See each *conſtellation*, and the ſtars contained in it, under its proper head, ARIES, TAURUS, &c.

Of theſe *conſtellations*, the eighteen laſt, with the greateſt part of *Argo navis*, *Centaurus*, and *Lupus*, are not viſible in our horizon.

The other ſtars, not comprehended under theſe *conſtellations*, yet viſible to the naked eye, the ancients called *informes*, or *ſporades*, ſome whereof the modern aſtronomers have ſince reduced into new figures, or *conſtellations*. See INFORMES, and SPORADES.

Thus, Hevelius, v. gr. between *Leo* and *Urſa major*, makes *Leo minor*; and between *Urſa minor*, and *Auriga*, over *Gemini*, makes *Lynx*; under the tail of *Urſa major*, *Canes venatici*, *Cerberus*, *Vulpecula*, and *Anſer*, *Scutum Sobieſki*, *Lacerta*, *Camelopardalus*, *Monoceros*, and *Sextans*.

In theſe *conſtellations*, the ſtars are ordinarily diſtinguiſhed by that part of the image wherein they are found. Bayer diſtinguiſhes them farther by the letters of the Greek alphabet: and many of them, again, have their peculiar names, as *Arcturus*, between the knees of *Bootes*; *Gemina*, or *Lucida*, in the *Corona ſeptentrionalis*; *Palilitium*, or *Aldebaran*, in the *Bull's* eye, *Pleiades* in the neck, and *Hyades* in the forehead of the *Bull*; *Caſtor* and *Pollux* in the heads of *Gemini*; *Capella*, with the *Hœdi*, in the ſhoulder of *Auriga*; *Regulus*, or *Cor Leonis*; *Spica Virginis* in the hand, and *Vindemiatrix* in the ſhoulder of *Virgo*; *Antares*, or *Cor Scorpionis*; *Fomahaut*, in the mouth of *Piſcis auſtralis*; *Regel*, in the foot of *Orion*; *Sirius*, in the mouth of *Canis major*; *Procyon*, in the back of *Canis minor*; and the *Pole-ſtar*, the laſt in the tail of *Urſa minor*.

The Greek and Roman poets, from the ancient theology, give us wild and romantic fables about the origin of the *conſtellations*, probably derived from the hieroglyphics of the Egyptians, and tranſmitted, with ſome alterations, from them to the Greeks; which may be ſeen in Hyginus's Poeticon Aſtron. and Ricciolus's Almageſt. lib. vi. cap. 3, 4, 5; and Sherburne's Notes upon Manilius. Hence, ſome out of a vain zeal, rather than any love for the ſcience, have been moved to alter either the figures of the *conſtellations*, or at leaſt their names.

Thus, venerable Bede, inſtead of the profane names and figures of the twelve *conſtellations* of the zodiac, ſubſtituted thoſe of the twelve apoſtles; whoſe example being followed by Julius Schillerius, in 1627, he completed the reformation, and gave ſcripture names to all the *conſtellations* in the heavens.

Thus, *Aries*, or the Ram, became converted into St. Peter; *Taurus*, or the Bull, into St. Andrew; *Andromeda* into the ſepulchre of Chriſt; *Lyra* into the manger of Chriſt; *Hercules* into the Magi coming from the Eaſt; *Canis major* into David, &c. Weigelius, profeſſor of mathematics in the univerſity of Jena, made a new order of *conſtellations*; converting the firmament into a *cœlum heraldicum*; and introducing the arms of all the princes in Europe, by way of *conſtellations*.

Thus, *Urſa major*, he transformed into the elephant of the kingdom of Denmark; the *Swan* into the Ruta with ſwords of the houſe of Saxony; *Ophiuchus* into the croſs of Cologne; the *Triangle* into the compaſſes, which he calls the *ſymbol of artificers*; and the *Pleiades* into the *Abacus Pythagoricus*, which he calls that of merchants, &c.

But the more knowing among aſtronomers never approved of innovations; as ſerving no purpoſe but to introduce confuſion into aſtronomy. The old *conſtellations*, therefore, are ſtill retained; both becauſe better could not be ſubſtituted, and likewiſe to keep up the greater correſpondence and uniformity between the old aſtronomy and the new. See CATALOGUE.

CONSTERNATION is defined by ethical writers to be an exceſs of HORROR, owing to the ill government of our *admiration* and *fear*: or ſuch an immoderate degree of *fear* as confounds the faculties, and incapacitates a perſon for conſultation and execution.

CONSTIPATION, in *Medicine*, a hardneſs of the *alvus*, or belly, with a difficulty of diſcharging the ſame; otherwiſe called *coſtiveneſs*.

Riding poſt, eating of medlars, or quinces, ſeveral preparations of milk, hard-roaſted eggs, &c. *conſtipate* the belly.

A *conſtipation* of the belly, if it continue long, ſometimes degenerates into the iliac paſſion, or twiſting of the guts. Moſt perſons of a hot and dry conſtitution are afflicted with a coſtiveneſs, or *conſtipation*; but this is ſeldom attended with any ill conſequences.

The proper remedy for a *conſtipation* is a clyſter; if this fail, lenient cathartics; and when they alſo fail, others muſt be exhibited of a more draſtic or powerful nature.

A *conſtipation*, or obſtinate coſtiveneſs, is thought by Dr. Stevenſon to be firſt or laſt owing to, or attended with, a kind of palſy of the inteſtines, and may ſometimes be cured by fomenting the belly with wine, in which aromatics have been boiled, and drinking a little of the ſame when the pulſe is ſlow, and the body cool. This diſorder, though of long continuance, and come to a dangerous height, has been cured by a cold *pediluvium*, and by placing the patient with his bare ſoles on a cold floor, and daſhing his feet, legs, and thighs, with cold water. See Medic. Eſſ. Edinb. abr. vol. i. p. 249, ſeq.

CONSTITUENT *parts*, in *Chemiſtry*. The *conſtituent parts* of bodies are their diſſimilar parts, or principles, into which they may be reſolved, by the rules of that art. They are thus called in diſtinction from the INTEGRANT parts of bodies, which are parts of the ſame nature and properties with the bodies themſelves. Thus quickſilver, diſſolved by aqua fortis, may be ſeparated from the diluted menſtruum, by means of a copper plate, in its own form; this therefore was only divided into its integrant parts; but cinnabar reſolved by chemiſtry into ſulphur and mercury, is divided into its *conſtituent* parts, neither of theſe, nor any particle of them, being cinnabar, or having its properties. Shaw's Lectures, p. 15.

CONSTITUTION, an eſtabliſhment, ordinance, deciſion, regulation, or law, made by authority of a prince, or other ſuperior, eccleſiaſtical or civil.

The *conſtitutions* of the Roman emperors make a part of the *civil* LAW. The *conſtitutions* of the church make a part of the CANON *law*. Some of the papal *conſtitutions* are in form of bulls, others of briefs.

CONSTITUTIONS, *Legatine*, were eccleſiaſtical laws enacted in national ſynods, held under the cardinals Otho and Othobon, legates from pope Gregory IX. and pope Clement IV. in the reign of Henry III. about the years 1220, and 1268.

CONSTITUTIONS, *Provincial*, are principally the decrees of provincial ſynods, held under ſeveral archbiſhops of Canterbury, from Stephen Langton, in the reign of Henry III. to Henry Chicheley, in the reign of Henry V. and adopted alſo by the province of York in 1463, under Henry VI.

CONSTITUTIONS *of* 1603. See CANON *Law*.

CONSTITUTIONS, *Apoſtolical*, denote a collection of regulations attributed to the apoſtles, and ſuppoſed to have been collected by S. Clement, whoſe name they likewiſe bear.

Theſe are divided into eight books; conſiſting of a great number of rules and precepts, relating to the duties of Chriſtians, and particularly to the ceremonies and diſcipline of the church.

Authors are divided about their genuineneſs: the generality hold them ſpurious, and endeavour to prove them poſterior to the apoſtolic age; maintaining they were unknown till the fourth century: which, if ſo, ſhews St. Clement had no hand in them. It is certain, that no ſuch book is quoted as Scripture by any Chriſtian writer of the three firſt centuries. The firſt who cites it is Epiphanius, and yet he ſpeaks of it as of doubtful authority; and ſome modern writers are of opinion, that the *Conſtitutions* quoted by Epiphanius were different from the preſent *Conſtitutions*; and that the eight books, as we have them, were not compoſed and finiſhed till after his time, towards the middle, or before the end of the fifth century. They evidently bear many internal characters of ſpuriouſneſs. See Lardner's Cred. vol. x. p. 320, &c.

Mr. Whiſton has ventured to oppoſe the general opinion; and with ſome reaſon, much learning, and more warmth, aſſerted the *Apoſtolical Conſtitutions* to be one of the ſacred writings, dictated by the apoſtles in their meetings, written down from their mouths by S. Clement, and intended as a ſupplement to the New Teſtament; or, rather, as a ſcheme and ſyſtem of Chriſtian faith and polity. See his Eſſay on the *Apoſtolical Conſtitutions*, and his hiſtorical preface; wherein the ſeveral ſteps he made in his fancied diſcovery are traced.

What makes the *Conſtitutions* more ſuſpected by the orthodox, is, that they ſeem to favour of Arianiſm.

CONSTITUTIONS *of Clarendon*. See CLARENDON.

CONSTITUTION is alſo uſed, in a phyſical ſenſe, for the temperament of the body, or for that diſpoſition of the whole which ariſes from the quality and proportion of its parts.

Phyſicians conſider the *conſtitution*, as depending chiefly on the humours or juices of the body; and hence, as this or that humour is ſuppoſed to predominate, the bile, e. g. or the blood, phlegm, choler, or ſpirit; the perſon uſed to be denominated of a *bilious*, *ſanguine*, *phlegmatic*, *choleric*, or *mercurial conſtitution*.

CONSTRICTION, the act of binding, or drawing the parts of a thing cloſe together.

The word is compounded of *con*, *together*; and *ſtringere*, *to tie* or *cloſe up*.

CONSTRICTOR, in *Anatomy*, a name given by Spigelius, and ſome others, to a muſcle now very well known by the name of the *ſphincter ani*.

CONSTRICTOR *cunni*, in *Anatomy*, the name given by Albinus to a muſcle called by others the SPHINCTER *vaginæ*; by ſome the *orbicularis pudendi*, and the *inferior clitoridis muſculus*.

CONSTRICTOR *labiorum*, or *orbicularis*, a muſcle proper to the lips. See *Tab. Anat.* (*Myol.*) *fig.* 1. *n.* 8. See **Lip.** Its fibres make a kind of (*orbis*) ring about the mouth (whence it is alſo called *orbicularis*); and ſerve to conſtringe, and draw up the lips, as in kiſſing, &c. whence ſome call it *baſiator*, and *oſculatorius*.

This Verheyen will not have to be one muſcle, but a pair, whoſe fibres meet and join at both corners of the mouth; each acting on one lip only, though concurrently.

Other authors are unanimous in calling it one muſcle; and will have it of the ſphincter kind; though Dr. Drake thinks improperly: in regard, it is not like the other ſphincters in conſtant action, but at the command of the will; the diſtinguiſhing mark between a **sphincter** and another muſcle.

Constrictor *palpebrarum.* See **Orbicularis.**

Constrictores *naſi*, a pair of muſcles common to the *alæ* of the noſe, and the upper lip.

They ariſe fleſhy from the forepart of the fourth bone of the upper-jaw; and after a ſtrait aſcent, are inſerted into the roots of the *alæ naſi*, and ſuperior parts of the upper lip.

Their uſe is to draw the *alæ* downwards, nearer each other: and at the ſame time draw the upper lip alſo downwards; an action which we uſe in taking of ſnuff, or in ſmelling at any thing.

CONSTRUCTION, in *Geometry*, the art or manner of drawing, or deſcribing a figure, ſcheme, the lines of a problem, or the like. The equality of the lines of ſuch a triangle, &c. is demonſtrated from their *conſtruction*.

Construction *of equations*, is the method of reducing a known **equation** into lines and figures; whereby the truth of the rule, canon, or equation, may be demonſtrated geometrically.

The method of *conſtructing* equations is different, according to the diverſity of equations.

To conſtruct a ſimple equation: The whole myſtery conſiſts in this, that the fractions, to which the unknown quantity is equal, be reſolved into proportional terms: the method of which will be better ſhewn by examples than it can be taught by many rules.

1. Suppoſe $x = \frac{ab}{c}$; then will $c : a :: b : x$, to be determined by the method of finding a fourth proportional.

2. Suppoſe $x = \frac{abc}{de}$; let $d : a :: b : \frac{ab}{d}$. This fourth proportional found, being called g; $x = \frac{gc}{e}$, which is therefore found as in the former caſe.

3. Suppoſe $x = \frac{aa - bb}{c}$. Since $aa - bb = (a+b) \times (a-b)$; $c : a+b :: a-b : x$.

4. Suppoſe $x = \frac{a^2b - bcc}{ad}$. By the firſt caſe we find $g = \frac{ab}{d} = \frac{a^2b}{ad}$, and $h = \frac{bc}{d}$. Again, by caſe 1. $i = \frac{hc}{a}$, and $x = g - i$, the difference of the lines g and i.

5. Suppoſe $x = \frac{ab}{c} + \frac{adc}{bc}$. Find, as in the preceding caſe, $g = \frac{ab}{c}$, and $f = \frac{adc}{bc}$. Then will $x = g + f$ be the ſum of the lines g and f.

6. Suppoſe $x = \frac{a^2b + bcd}{af + cg}$. Seek $\frac{cg}{a}$, and let $f + \frac{cg}{a} = h$; then will $af + cg = ah$; conſequently, $x = \frac{a^2b + bcd}{ah}$. Thus is the preſent caſe brought to the preceding one.

7. Suppoſe $x = \frac{a^2 - bad}{af + bc}$. Find $\frac{af}{b}$, and make $\frac{af}{b} + c = h$; then will $af + bc = bh$. Hence, $x = \frac{a^2b - bad}{bh} = \frac{a^2 - ad}{h}$. Conſequently, $h : a :: a - d : x$.

8. Suppoſe $x = \frac{a^2 + b^2}{c}$. Conſtruct the triangle ABC (*Tab. Algebra*, *fig.* 1.) whoſe ſide $AB = a$, $BC = b$; then will $AC = \sqrt{a^2 + b^2}$. Let $AC = m$; then will $a^2 + b^2 = m^2$. And therefore $x = \frac{m^2}{c}$; conſequently, $c : m :: m : x$.

9. Suppoſe $x = \frac{a^2 - b^2}{c}$. On AB (*fig.* 2.) $= a$ deſcribe a ſemicircle, and therein ſet off $AC = b$. Since the triangle ACB is rectangular; $CB = \sqrt{a^2 - b^2}$. Let $CB = m$: then will $x = \frac{m^2}{c}$; conſequently, $c : m :: m : x$.

0. Suppoſe $x = \frac{a^2b + bcd}{af + bc}$. Say, $b : a :: f : \frac{fa}{b}$; and let $\frac{fa}{b} + c = h$; then will $bc + af = bh$. Hence, $x = \frac{a^2b + bcd}{bh} = \frac{a^2 + cd}{h}$. Find betwixt $AC = c$ (*fig.* 3.) and $CB = d$, a mean proportional $CD = \sqrt{cd}$. Let $CE = a$; then will $DE = \sqrt{a^2 + cd}$. Call this m; then will $x = \frac{m^2}{b}$; conſequently, $h : m :: m : x$.

To conſtruct a quadratic equation geometrically. Since quadratic equations may be reduced to ſimple ones, thoſe may likewiſe be *conſtructed* from the methods already laid down: for if the equation be pure, $x^2 = ab$; then will $a : x :: x : b$; wherefore we ſhall find $x = \sqrt{ab}$; if between $AC = a$, and $BC = b$, we find a mean proportional DC. If the equation be adfected, $x^2 + ax = b^2$; then will $x = \frac{1}{2}a \sqrt{\frac{1}{4}a^2 + b^2}$; that is, either $x = \frac{1}{2}a + \sqrt{\frac{1}{4}a^2 + b^2}$; or, $x = \sqrt{\frac{1}{4}a^2 + b^2} - \frac{1}{2}a$, or, $x = \frac{1}{2}a + \sqrt{\frac{1}{4}a^2 - b^2}$, or $x = \frac{1}{2}a - \sqrt{\frac{1}{4}a^2 - b^2}$.

The whole myſtery, therefore, of *conſtructing* quadratics comes to this: that the value of $\sqrt{\frac{1}{4}a^2 + b^2}$, and alſo the value of $\sqrt{\frac{1}{4}a^2 - b^2}$, be found; both of which are ſhewn in the preceding article. For, if in the rectangular triangle (*fig.* 1.) $AB = \frac{1}{2}a$, and $BC = b$; then will $AC = \sqrt{\frac{1}{4}a^2 + b^2}$. But if on $AB = \frac{1}{2}a$ (*fig.* 2.) be deſcribed a ſemicircle; and therein applied $AC = b$; $CB = \sqrt{\frac{1}{4}a^2 - b^2}$, as was ſhewn in the article preceding. See **Curve.** See Maclaurin's Algebra, part iii. cap. 2. and Simpſon's Alg. p. 269.

To conſtruct cubic and biquadratic equations. The roots of any equation may be determined by the interſections of a ſtrait line with a curve of the ſame dimenſions as the equation; or by the interſections of any two curves whoſe indices multiplied by each other give a product equal to the index of the propoſed equation.

Thus, the roots of a biquadratic equation may be determined by the interſections of two conic ſections; for the equation by which the ordinates from the four points in which theſe conic ſections may cut one another can be determined will ariſe to four dimenſions; and the conic ſections may be aſſumed in ſuch a manner, as to make this equation coincide with any propoſed biquadratic: ſo that the ordinates from theſe four interſections will be equal to the roots of the propoſed biquadratic.

If one of the interſections of the conic ſection falls upon the axis, then one of the ordinates vaniſhes, and the equation by which theſe ordinates are determined will then be of three dimenſions only, or a cubic; to which any propoſed cubic equation may be accommodated. So that the three remaining ordinates will be the three roots of that propoſed cubic. The conic ſections for this purpoſe ſhould be ſuch as are moſt eaſily deſcribed. The circle may be one, and the parabola is uſually aſſumed for the other.

Let APE (*Tab.* II. *Analyſis*, *fig.* 40). be the common Apollonian parabola. Take on its axis the line AB = half of its parameter. Let C be any point in the plane of the parabola, and from it as a center deſcribe, with any radius CP, a circle meeting the parabola in P. Let PM, CD, be perpendiculars on the axis in M and D, and let CN, parallel to the axis, meet PM in N.

Then will always $CPq = CNq + NPq$ (47 E. 1.)

Put $CP = a$, the parameter of the parabola $= b$, $AD = c$, $DC = d$, $AM = x$, $PM = y$.

Then $CNq = \overline{x \overset{\backsim}{+} c}|^2$, $NPq = \overline{y \overset{\backsim}{+} d}|^2$; and $\overline{x \overset{\backsim}{+} c}|^2 + \overline{y \overset{\backsim}{+} a}|^2 = a^2$. ($x \backsim c$ is the difference of x and c indefinitely, which ever of the two is greateſt.) That is, $x^2 \pm 2cx + c^2 + y^2 \pm 2dy + d^2 = a^2$. But, from the nature of the parabola, $y^2 = bx$, and $x^2 = \frac{y^4}{b^2}$; ſubſtituting therefore theſe values for x^2 and x, it will be, $\frac{y^4}{b^2} \pm \frac{2cy^2}{b} + y^2 \pm 2dy + c^2 + d^2 - a^2 = 0$. Or, multiplying by b^2, $y^4 \pm \overline{2bc + b^2} \times y^2 \pm 2db^2 \times y + \overline{c^2 + d^2 - a^2} \times b^2 = 0$. Which may repreſent any biquadratic equation that wants the ſecond term; ſince ſuch values may be found for a, b, c, and d, by comparing this with any propoſed biquadratic, as to make them coincide. And then the ordinates from the points P, P, P, P, on the axis will be equal to the roots of that propoſed biquadratic. And this may be done, though the parameter of the parabola (viz. b) be given: that is, if you have a parabola already made or given, by it alone you may reſolve all biquadratic equations, and you will only need to vary the center of your circle and its radius.

If the circle deſcribed from the center C paſs through the vertex A, (*fig.* 41.) then $CPq = CAq = CDq + ADq$, that is, $a^2 = d^2 + c^2$; and the laſt term of the biquadratic $(c^2 + a^2 - a^2)$ will vaniſh; therefore, dividing the reſt by *y*, there ariſes the cubic, $y^{3*}\pm\overline{2bc+b^2}\times y\pm 2db^2=0$. Let the cubic equation propoſed to be reſolved be $y^{3*}\pm py\pm r=0$. Compare the terms of theſe two equations, and you will have $\pm 2bc+b^2=\pm p$, and $\pm 2db^2=\pm r$, or, $\mp c=\frac{b}{2}\mp\frac{p}{2b}$, and $d=\pm\frac{r}{2b^2}$. From which you have this conſtruction of the cubic $y^{3*}\pm py\pm r=0$, by means of any given parabola APE.

From the point B *take in the axis (forward if the equation has* $-p$*, but backwards, if* p *is poſitive) the line* BD $=\frac{p}{2b}$*; then raiſe the perpendicular* DC $=\frac{r}{2b^2}$*, and from* C*, deſcribe a circle paſſing through the vertex* A*, meeting the parabola in* P*, ſo ſhall the ordinate* PM *be one of the roots of the cubic* $y^{3*}\pm py\pm r=0$.

The ordinates that ſtand on the ſame ſide of the axis with the center C are negative or affirmative, according as the laſt term *r* is *negative* or *affirmative*; and thoſe ordinates have always *contrary* ſigns that ſtand on *different* ſides of the *axis*. The roots are found of the ſame value, only they have contrary ſigns, when *r* is poſitive as when it is negative; the ſecond term of the equation being wanting.

For a farther account of the *conſtruction* of ſuch equations, ſee Maclaurin's Algebra, part iii. chap. 3. De la Hire's Conſtructions des Equations Analytiques, Marquis de l'Hoſpital Sect. Con lib. ix. However, the intent of theſe geometrical *conſtructions* is more readily anſwered by the method of extracting roots by APPROXIMATION.

CONSTRUCTION, in *Grammar*, *ſyntax*; or the arranging and connecting the words of a ſentence, according to the rules of the language.

The *conſtruction* is generally more ſimple, eaſy, and direct, in the modern tongues than in the ancient: we have very few of thoſe inverſions which occaſion ſo much embarraſſment and obſcurity in the Latin; our thoughts are uſually delivered in the ſame order wherein the imagination conceives them: the nominative caſe, for inſtance, always precedes the verb, and the verb goes before the oblique caſes it governs.

The Greeks and Latins, M. St. Evremont obſerves, uſually end their periods, where, in good ſenſe and reaſon, they ſhould have begun them; and the elegance of their language conſiſts, in ſome meaſure, in this capricious arrangement, or rather in this tranſpoſal and diſorder of the words.

Conſtruction is either *ſimple* or *figurative*.—*Simple*, is that wherein all the terms, or parts of the diſcourſe, are placed in their natural order.

Figurative conſtruction, is that wherein we recede from this ſimplicity, and uſe certain expreſſions, ſhorter, and more elegant, than nature affords.

The ſyntax, or *conſtruction* of words, is diſtinguiſhed into two parts, CONCORD, and GOVERNMENT OF REGIMEN.

CONSTRUCTIVE *treaſon* was defined by 25 Edw. III. cap. 2. See TREASON.

CONSUALES *ludi*, among the Romans, the ſame with CIRCENSES *ludi*. See alſo CIRCUS.

CONSUALIA, in *Antiquity*, feaſts which were held among the ancients, in honour of the god Conſus, i. e. Neptune; different from thoſe other feaſts of the ſame deity called Neptunalia.

They were introduced with a magnificent cavalcade, or proceſſion on horſeback; becauſe Neptune was reputed to have firſt taught men the uſe of horſes; whence his ſurname of Ἱππιος, *Equeſtris*.

Evander is ſaid to have firſt inſtituted this feaſt: it was re-eſtabliſhed by Romulus, under the name of *Conſus*; becauſe it was ſome god under the denomination of Conſus, that ſuggeſted to him the rape of the Sabines.

It is ſaid, that it was with a view to this rape, that he made that eſtabliſhment. This, however, is certain, that it was to this feaſt all his neighbours were invited; when, taking advantage of the ſolemnities and ſacrifices, he ſeized the women. To draw the greater concourſe of people, he gave out, that he had found an altar hid under-ground, which he intended to conſecrate, with ſacrifices to the god to whom it had been originally erected.

Thoſe who take upon them to explain the myſteries of the heathen theology, ſay, that the altar hid under ground, is a ſymbol of the ſecret deſign of Romulus to ſeize his neighbours wives.

The *conſualia* were of the number of feaſts called *ſacred*; as being conſecrated to a divinity.—Originally they were not diſtinguiſhed from thoſe of the Circus: whence it is, that Valerius Maximus ſays, that the rape of the Sabines was effected at the games of the Circus.

Plutarch obſerves, that during the days of this ſolemnity, horſes and aſſes were left at reſt, and were dreſſed up with crowns, &c. on account of its being the feaſt of Neptunus Equeſtris.—Feſtus ſays, the cavalcade was performed with mules; it being an opinion, that this was the firſt animal uſed to draw the car.

Servius gives us to underſtand, that the *conſualia* fell on the thirteenth of Auguſt; Plutarch, in the life of Romulus, places them on the eighteenth, and the old Roman calendar on the twenty-firſt of that month.

CONSUBSTANTIAL, in *Theology*, a term of like import with *co-eſſential*; denoting ſomething of the ſame ſubſtance with another.

The orthodox believe the Son of God to be *conſubſtantial* with the Father.

The term ὁμοουσιος, *conſubſtantial*, was firſt adopted by the fathers of the councils of Antioch and Nice, to expreſs the orthodox doctrine the more preciſely, and to ſerve as a barrier and precaution againſt the errors and ſubtilties of the Arians; who owned every thing excepting the *conſubſtantiality*.

The Arians declared, that the word was God, as having been made God; but they denied that he was the ſame God, and of the ſame ſubſtance, with the Father: accordingly, they exerted themſelves to the utmoſt to aboliſh the uſe of the word. The emperor Conſtantine uſed all his authority with the biſhops to have it expunged out of the ſymbols; but it ſtill maintained itſelf, and is at this day, as it was then, the diſtinguiſhing criterion between an Athanafian and an Arian.

Sandius will have it, that the word *conſubſtantial* was unknown till the time of the council of Nice; but it is certain it had been before propoſed to the council of Antioch, wherein Paulus Samoſatenus had been condemned; though it had there the fortune to be rejected. Curcellæus, on the other hand, maintains, that it was an innovation in doctrine in the council of Nice, to admit an expreſſion, the uſe whereof had been aboliſhed by the council of Antioch.

According to St. Athanaſius, the word *conſubſtantial* was only condemned in the council of Antioch, inaſmuch as it implied the idea of a pre-exiſtent matter, prior to the things formed thereof: now, in this ſenſe, it is certain, the Father and the Son are not *conſubſtantial*, there having been no pre-exiſtent matter.

CONSUBSTANTIATION, a tenet of the Lutheran church, with regard to the manner of the change made in the bread and wine in the euchariſt; though the term *conſubſtantiation* was ſubſtituted in the room of tranſubſtantiation, at the cloſe of the thirteenth century, by John, ſurnamed Pungens Aſinus, a doctor of the univerſity of Paris.

The divines of that profeſſion maintain, that, after conſecration, the body and blood of our Saviour are ſubſtantially preſent, together with the ſubſtance of the bread and wine; which is called *conſubſtantiation*, or IMPANATION. See alſo TRANSUBSTANTIATION, and LUTHERANISM.

CONSUETUDINIBUS *& ſervitiis*, in *Law*, a writ of right, which lies againſt the tenant that deforceth his lord of the rent, or ſervice, due to him.

CONSUL, the chief magiſtrate of the Roman commonwealth.

After the Romans had expelled their kings, they were governed by two *conſuls*, eſtabliſhed in the year of Rome 245, having their name *à conſulendo*. Brutus and Collatinus were the firſt, elected by an aſſembly of the people: their office was to hold a year; and if either of them died in the courſe of the year of their *conſulate*, a new one was to be elected.

The *conſuls* were the head of the ſenate; they commanded the armies of the republic, and were ſupreme judges of the differences between the citizens. In regard, however, that they had made ſome abuſe of this power, it was allowed, by the Valerian law, for the party aggrieved to appeal from their tribunal to the people; eſpecially in caſes where the life of a Roman citizen was concerned.

In progreſs of time, the *conſuls* being too much taken up with the grand affairs of ſtate, or at the heads of armies, there were other magiſtrates created for the diſtribution of juſtice to the people, in lieu of the *conſuls*.

The right of convoking the ſenate in ancient Rome, on all occaſions, belonged of courſe to the *conſuls*, as the ſupreme magiſtrates of the city, which, in their abſence, devolved regularly to the next magiſtrates in dignity, the prætors, and the TRIBUNES.

To be elected *conſul*, it was regularly required, that the candidate ſhould be at leaſt forty-three years old; though we meet with ſome few exceptions from this rule. The election was held in the month of January, in the Campus Martius; and afterwards in the Capitol.

Conſuls were even continued under the emperors, after the republic was deſtroyed: but *conſul* was here little more than an honourable title; which, however, the people were fond of keeping up; as eſteeming it ſome remain of their ancient liberty. It dwindled for a long time; and, at laſt, became abſolutely extinct in the time of Juſtinian: after whom, no emperor either created any *conſul*, or aſſumed the dignity himſelf.

Baſil is the laſt in the conſular liſt, for the year 541. By this time, the dignity was depreciated to that degree, that it was conferred on the meaneſt perſons: indeed, Juſtinian endeavoured to retrieve it twenty-five years after, and created himſelf *conſul*, but without effect.

From the eſtabliſhment of the republic, and the *conſulate* under L. Jun. Brutus, and L. Tarq. Collatinus, to the *conſulate* of Baſil, i. e. from the year of Rome 244, or 245, 509 years before Jeſus Chriſt, to the year of Rome 1294, the ſpace of 1049 years, the years were accounted by the *conſuls*: but from the time of Baſil, in the year of Chriſt 541, we find no mention made of *conſuls*, or *conſulates*; but the time was then computed by the years of the emperors reigns, and the indictions.

Indeed, for ſome time after the *conſulate* of Baſil, the years are marked thus; *poſt conſulatum Baſilii*, 1, 2, 3, &c. See the Faſti Conſulares of M. D'Almeloveen. That author reckons 1060 pairs of *conſuls*, beſide the ſubſtitute *conſuls*, *ſuffecti*, elected to ſupply vacancies by death; and yet there were but 1049 years, and conſequently only ſo many *conſulates*.

The perpetual *conſulates* of the eaſtern emperors, which compoſe the faſti Bizantini, commenced in the year of Chriſt 567, and ended in 668, in the laſt year of Conſtans.

Conſtantine Pogonatus would have the *conſulate* inſeparable from the empire; which it continued to be till the time of Conſtantine Porphyrogenetus.

In this form of government, the empire and *conſulate* were ſo cloſely united, that the empreſs Irene would needs aſſume the *conſulate* when ſhe was only regent of the empire.

But the French kings, thoſe of Italy, and the Saracen princes who commanded in Spain, taking on them the title of *conſuls*, as well as emperors of Conſtantinople; theſe laſt deſpiſed it, and laid it aſide: ſo that the name was only continued to the magiſtrates of ſome cities, and certain other officers, as is ſhewn by F. Pagi.

Under the emperors there were *ordinary conſuls*, *honorary conſuls*, and *ſuffecti*; which laſt were alſo on foot in the time of the republic.

In the middle age, we find the word *conſul* uſed for *comes*, COUNT, and proconſul, for VISCOUNT; as is obſerved by Spelman, and De Marca.

And thus *conſul*, in our LAW-books, ſignifies an *earl*. Bract. lib. i. cap. 8. tells us, that as *comes* is derived from *comitatu*, ſo *conſul* is derived from *conſulendo*: and in the laws of Edward the Confeſſor, mention is made of *vicecomites*, and *viceconſules*.

CONSUL, at preſent, is uſed for an officer eſtabliſhed by virtue of a commiſſion from the king, and other princes, in the ports and factories of the Levant, on the coaſts of Africa, Barbary, Spain, and other foreign countries of any conſiderable trade; to facilitate and diſpatch buſineſs, and protect the merchants of the nation.

Theſe commiſſions are never granted to perſons, as *conſuls* of the French nation, under the age of thirty years. When the *conſulate* is vacant, the moſt ancient of the deputies of the nation are to diſcharge the function thereof, till the vacancy be filled up by the king.

The *conſuls* are to keep up a correſpondence with the miniſters of England reſiding in the courts whereon their *conſulates* depend. Their buſineſs is, to ſupport the commerce and the intereſt of the nation; to diſpoſe of the ſums given, and the preſents made, to the lords and principals of places; to obtain their protection, and prevent the inſults of the natives on the merchants of the nation. There are alſo *conſuls* of other nations eſtabliſhed in the Levant, eſpecially French and Dutch.

CONSULS alſo denote judges elected among merchants and dealers, in ports and trading towns, chiefly in France; to terminate, *gratis*, and on the ſpot, without any proceſs, ſuch differences and demands as may ariſe relating to their merchandizes, bills of exchange, and other articles of commerce.

The firſt juriſdiction of *conſuls* eſtabliſhed in France, is that of Tholouſe; the edict of whoſe eſtabliſhment bears date 1549, under the reign of king Henry II. that of Paris followed fourteen years afterwards. By degrees, they were eſtabliſhed in moſt of the conſiderable trading towns in that kingdom.

CONSULAR *comitia*, and *medals*. See the ſubſtantives.

CONSULTATION, in *Law*, a writ whereby a cauſe, formerly removed by prohibition from the eccleſiaſtical court to the king's court, is returned thither again.

If the judges of the king's court, upon comparing the libel with the ſuggeſtion of the party, find the ſuggeſtion falſe, or not proved; and therefore the cauſe to be wrongfully called from the court-chriſtian; then, upon ſuch deliberation, or *conſultation*, they decree it to be returned again, and the writ obtained hereon is called a *conſultation*.

CONSUMMATION, the end, period, or completion, of any work.—Thus, we ſay, the *conſummation* of all things; meaning the end of the world. By the incarnation, all the prophecies are ſaid to be *conſummated*.

Conſummation of marriage denotes the laſt act of marriage, which makes its accompliſhment.

CONSUMPTION, *Tabes*, in *Medicine*, a diſeaſe ariſing from a defect of nouriſhment; or a preternatural decay of the body, by a gradual waſte of muſcular fleſh. See ATROPHY.

It is frequently attended with an hectic fever; and is divided by phyſicians into ſeveral kinds, according to the variety of its cauſes: as *univerſal* or *ſcorbutic conſumption*, where it ariſes from a cacochymia, or ſcorbutic habit; and *pulmonic conſumption*, or *conſumption of the lungs*, where it ariſes from ſome cauſe in the lungs, properly called a PHTHISIS. See SCORBUTUS, &c.

A *conſumption* may either be *accidental*, *natural*, or *hereditary*.—*Accidental conſumptions* may ariſe, 1. From ulcers, chalky ſtones, or polypuſes in the lungs, cauſed by ſomething that obſtructs the circulation in the pulmonary veſſels, or renders the blood viſcid, as a ſuppreſſion of any natural evacuation. 2. From intemperance, occaſioning either a cacochymia, or plethora. 3. From peripneumonies, pleuriſies, aſthmas, coughs, catarrhs, diarrhœas, venereal diſorders, and exceſs of venery. 4. From grief, hard ſtudy, &c.

Natural conſumptions may ariſe from the ſtraitneſs of the thorax, or an ill conformation of the parts.

An *hereditary conſumption* may be communicated from the parents, without any other viſible cauſe.

A *conſumption* uſually begins with flying pains and ſtitches; a troubleſome pain at the pit of the ſtomach, or in the diaphragm; frequent ſpitting, loſs of appetite, a quick pulſe, a ſweetneſs or ſaltneſs in the ſaliva, heat and fluſhings in the face and palms of the hands after meals, an hectic fever towards the evening, heavineſs, faintneſs, night-ſweats; and, where the lungs are firſt diſordered, a cough, catarrh, or aſthma, uſually precede it. When theſe ſymptoms are violent, it is confirmed; and then comes on an expectoration of purulent or bloody matter, and the vomica pulmonum; at length, the feet ſwell, the expectoration ſtops, a diarrhœa comes on; and then the facies Hippocratica, and death. The cure of an *univerſal*, or *muſcular conſumption*, depends principally upon removal into a proper air, exerciſe, and the uſing of a regular nouriſhing diet, particularly vegetables and milk; the appetite is to be excited by proper bitters, and other ſtomachics.

In a *pulmonary conſumption*, or *phthiſis*, balſamics and oleaginous medicines, are uſually added

Dr. Wainwright, indeed, takes the particles of oily medicines to be too groſs and viſcid to enter the ſmall orifices of the lacteals; and thinks, that their operation or effect being confined to the firſt paſſages, they are not only of no ſervice in the cure, but are apt to pall the appetite, occaſion obſtructions in the mouths of the lacteals, and diarrhœas.

But this ſeems contrary to common experience: that their particles are ſmall enough to enter the lacteals, is evident, from the ſudden relief nephritic perſons find in violent paroxyſms of the ſtone by the paſſages being relaxed ſoon after their exhibition. That diarrhœas, and blunting the appetite in ſome conſtitutions, will be the conſequence of their continuance, or exhibition in too great quantities, muſt be allowed; but then this is either accidental to ſome kinds of conſtitutions, or ariſes from ſome error in uſing them.

As to the lacteals being obſtructed by their uſe, it ſeems a mere notion, and as much unſupported by experience as that other hypotheſis, which a late author, Dr. Quincy, has been fond of aſſerting; viz. that the uſe of butter is apt to foul the glands.

A *conſumption* is frequently the conſequence of a neglected COLD.

Beſides repeated ſmall bleedings, which is the beſt of all remedies for diminiſhing the hectic fits, the ſaline draughts and a cool diet are to be uſed. Colliquative ſweats may be checked by drinking about a pint of limewater, ſoftened with a little new milk.

In the advanced ſtate of a *conſumption*, we may diſtinguiſh two kinds of coughs, one cauſed by the ulcers of the lungs, and the other by a thin rheum falling upon the *fauces* and *trachea*. For the firſt of theſe, about ten drops of balſam of Peru or Copaiba may be given twice a day in a bolus of conſerve of roſes; and for the latter, incraſſants, as conſerve of roſes and opium; which laſt ought to be given with caution, as being apt to heat the body. See Balsams.

Consumption, in *Farriery*, is alſo a diſeaſe incident to horſes, conſiſting in a waſte of muſcular fleſh, attended with a ſlow fever. In this diſorder bleeding in ſmall quantities is recommended: mercurial purges, and a powder of native cinnabar, gum guaiacum and nitre, of each one pound, in the quantity of an ounce twice a day; ſpring graſs, and ſalt marſhes, are alſo of great ſervice, when there is any proſpect of a recovery.

CONSUS. See Consualia.

CONTACT, the relative ſtate of two things that touch each other, or whoſe ſurfaces join to each other without any interſtice. The *contact* of two ſpherical bodies is only in one point; and the ſame holds of a tangent and the circumference of a circle.—Hence, becauſe very few ſurfaces are capable of touching in all points, and the coheſion of bodies is in proportion to their *contacts*; thoſe bodies will ſtick faſteſt together, which are capable of the greateſt *contact*.

Contact, *angle of*, is the angle HLM (*Tab. Geometry, fig.* 10.) formed by the arch of a circle ML, with the tangent HL, at the place of the *contact*.

Euclid demonſtrates, that the right line HL, ſtanding perpendicular on the radius CL, touches the circle only in one point: nor can there be any other right line drawn between the tangent and the circle.

Hence, the angle of *contact* is leſs than any rectilinear one; and the angle of the ſemicircle between the radius CL, and the arch ML, is greater than any rectilinear acute angle.

This paradox of Euclid has exerciſed the wits of mathematicians: it was the ſubject of a long controverſy between Peletarius and Clavius; the firſt of whom maintained the angle of *contact* heterogeneous to a rectilinear one; as a line is heterogeneous to a ſurface: the latter maintained the contrary.

Dr. Wallis has a formal treatiſe on the *angle of contact*, and of the ſemicircle; where, with other great mathematicians, he approves of the opinion of Peletarius.

CONTAGION, *infection*, or the communicating, or transferring, a diſeaſe from one body to another.

Contagion, in ſome diſeaſes, is only effected by an immediate contact, or touch: as the madneſs of a dog, which is communicated by biting; and the poiſon of the pox, which is tranſmitted from the infected perſon in the act of copulation. In others it is conveyed by infected clothes; as the itch.—In others the *contagion* is tranſmitted through the air to a great diſtance, by means of ſteams, or effluvia, expiring from the ſick; as in the plague, and other peſtilential diſtempers: in which caſe, the air is even ſaid to be *contagious*, i. e. full of *contagious* particles.

In times of peſtilential *contagion*, the phyſician, and others who attend upon the ſick, are in the moſt imminent danger of falling into the ſame condition; nor have any of the ſo much boaſted preſervatives againſt this been found of any conſequence; on the contrary, the very remedies, many of them at leaſt, which have been contrived on this occaſion, are very dangerous when lodged in imprudent hands, as well as uſeleſs and improper in all. The beſt methods of ſafety are firſt never to viſit a patient in any infectious diſorder when one is faſting, but ſome generous wine ought always to be drank firſt. Some are of opinion that it is proper to eat firſt a piece of bread and butter, ſoaked in vinegar, either ſimple, or with rue firſt ſtamped in it. When one is in the patient's apartment, great care is to be taken never to eat or drink there, nor to ſwallow one's ſpittle; and it is no idle cuſtom in thoſe who are continually in the infected room to chew zedoary, myrrh, angelica, cinnamon, or the like warm and aromatic drugs; for all theſe things promote a plentiful diſcharge of ſaliva from the mouth, which it is certain, when ſwallowed, cannot but often carry peſtilential particles down with it into the ſtomach, whence they will eaſily find their way into the blood. It may be added as a good rule, that we never ſtay too long in an infected room; for a conſtitution that could have reſiſted the *contagion* for a ſmall time, may eaſily be overpowered by too long a continuance in the way of it.

After one is returned home from a viſit of this kind, it is always proper to waſh one's hands and mouth with vinegar and water; to change clothes, hanging the former in the air, and then to drink ſome warm liquor, as tea of ſcordium, ſage, or other herbs of that kind, or, in their place, coffee; for this opens the pores; and if any ſmall quantity of the peſtilential virus ſhould have mixed itſelf with the blood, expels it by a gentle perſpiration. It may be alſo of great aſſiſtance to all about the ſick, for preventing them from being infected, to hold frequently ſpunges dipt in vinegar to their noſes, and frequently to ſprinkle vinegar on a red-hot iron, in the room, to correct and mend the air, and to ſmoke tobacco. Heiſter's Surgery, p. 201. See Epidemical.

CONTARA, in *Botany*, a name given by ſome authors to the plant which produces the *faba ſancti Ignatii*, or St. Ignatius's bean.

CONTARII, in *Antiquity*, a kind of horſemen, whoſe chief armour was the *contus*, a kind of long ſpear.

CONTEMPLATION, an act of the mind, whereby it applies itſelf to conſider, reflect on, and admire, the wonderful works of God, nature, &c.

Contemplation is the height of perfection of the myſtic divines. See Mystic.

CONTEMPORARY, or **Cotemporary**, a perſon, or thing, of the ſame time, or that exiſted in the ſame age, with another. Socrates, Plato, and Ariſtophanes, were *contemporaries*: the beſt hiſtories are thoſe of *contemporary* authors.

CONTEMPT, in *Law*, is diſobedience to the rules and orders of a court, which hath power to puniſh ſuch offence; and a man may be impriſoned for a *contempt* done in court, but not for a *contempt* out of court, or for private abuſe. Cro. Eliz. 689.

Attachment alſo lies for contempt to the court, to bring in the offender to anſwer to interrogatories, &c. and if he cannot acquit himſelf, he ſhall be fined. 1 Lill. 305.

As the degrees of this crime vary, the puniſhment is leſs or greater; ſometimes a mere fine, and ſometimes impriſonment.

CONTENEMENT, a word, in our *Ancient* law-*books*, about whoſe ſignification authors are not rightly agreed. According to ſome, it ſhould ſignify the countenance, credit, or reputation, a perſon has, from and by reaſon of his freehold. In which ſenſe it is uſed in the ſtat. 1 Edw. III. &c. where it ſtands as ſynonymous with *countenance*.

Others will have it ſignify what is neceſſary for the ſupport and maintenance of men, according to their ſeveral qualities, conditions, or ſtates of life. Thus, Spelman, *Contenementum eſt æſtimatio, & conditionis forma, qua quis in republica ſubſiſtit.* And in this ſenſe it occurs in Magna Charta, cap. 14.

CONTENT, in *Mathematics*, a term frequently uſed for the capacity of a veſſel, or the area of ſpace; or the quantity of any matter, or ſpace, included in certain bounds. The *content* of a tun of round timber is 43 ſolid feet. A load of hewn timber contains 50 cubic feet: in a foot of timber are contained 1728 cubic or ſquare inches, and as often as 1728 inches are contained in a piece of timber, be it round, or ſquare; ſo many feet of timber are contained in the piece.

In gauging, the gallon for beer and ale is allowed to contain 282 cubic inches, and the wine gallon 231; the gallon of dry meaſure 272.

Hence, as oft as 282 cubic inches are contained in any veſſel, round or ſquare; ſo many gallons of ale or beer it holds; and the like may be obſerved of the other meaſures.

Multiply, therefore, one ſide of a ſquare, or oblong, into the other; and divide by one of thoſe numbers, according to the quality of the liquor; the quotient gives the area in gallons, upon an inch deep.

Though the work may be conſiderably ſhortened by only multiplying the ſides of ſquares, or the diameters of rounds, into themſelves; the product is the number of gallons, and parts, the veſſel contains, upon an inch in depth: and when that receives an augmentation, by being two, three, or four inches deep, it then commences a ſolid body, and contains as many gallons, and parts, as it is inches and parts deep.

A cubic foot contains ſix gallons and almoſt a pint of ale and beer; and ſeven gallons two quarts, of wine. A cubic foot of dry meaſure contains ſix gallons and a half, and ſomething more. A buſhel of ſalt contains 56 pounds averdupoiſe. See Gauging.

CONTENTIOUS *juriſdiction*, in *Law*, denotes a court, or aſſembly, which has a power to judge and determine differences between contending parties.

The lords chief juſtices, judges, &c. have a *contentious juriſdiction*; but the lords of the treaſury, the commiſſioners of cuſtoms, &c. have none; being merely judges of accompts and tranſactions.

CONTESTATIO *Litis*, among *Civilians*, denotes a general aſſertion that the plaintiff hath no ground of action, which aſſertion is afterwards extended and maintained in his plea.

CONTEXT, among *Divines* and *Critics*, that part of Scripture, or other writing, which lies about the text, before or after it, or both.

To take the full and genuine ſenſe of the *text*, the *context* ſhould be regarded.

CONTEXTURE, a word frequently uſed in ſpeaking both of the works of nature and art; and denoting the diſpoſition and union of the conſtituent parts with reſpect to one another.

CONTIGNATION, in *Architecture*, the art or act of FLOORING, by laying *tigna*, RAFTERS, together.

CONTIGUITY, the relation of bodies touching one another. See Continuity.

CONTIGUOUS, a relative term, underſtood of things diſpoſed ſo near each other, that they join their ſurfaces, or touch.

The houſes in ancient Rome were not *contiguous*, as ours are, but all inſulated.

Contiguous *angles*, in *Geometry*, are ſuch as have one leg common to each angle; otherwiſe called *adjoining angles*. In contradiſtinction to thoſe produced by continuing their legs through the point of contact, which are called *oppoſite* or *vertical* ANGLES.

CONTINENCE, in *Ethics*, a moral virtue, by which we reſiſt concupiſcence. It ſhould ſeem that there is this diſtinction between *chaſtity* and *continence*, in that it requires no effort to be chaſte, which reſults from conſtitution; whereas *continence* appears to be the conſequence of a victory gained over ourſelves. The verb *continere*, in the Latin, ſignifies *to reſtrain*.

CONTINENT, in *Geography*, a terra firma, main-land, or a large extent of country, not interrupted by ſeas: ſo called, in oppoſition to *iſland*, *peninſula*, &c. See Earth, Ocean, &c.

Sicily is ſaid to have been anciently torn from the *continent* of Italy; and it is an old tradition, which ſome of our antiquaries have ſtill a regard to, that Britain was formerly a part of the *continent* of France.

The world is ordinarily divided into two grand *continents*; the old and the new: the old comprehends Europe, Aſia, and Africa; the new the two Americas, north and ſouth.

Continent *cauſe* of a diſtemper is that whereon the diſeaſe depends ſo immediately, that it continues ſo long as that remains, and no longer.

Thus a ſtone in the bladder may be the *continent cauſe* of a ſuppreſſion of urine.

Continent *fevers*, a term uſed by medical writers to expreſs ſuch fevers as continue through their whole courſe exactly in the ſame tenor in which they begun, without the leaſt viſible intermiſſion. They are thus called in oppoſition to the *continuous* fevers, which, though they never regularly go off ſo as to have *intermiſſions*, yet have frequent *remiſſions*. Of the number of *continent fevers* are the *ephemera*, whether it be ſtrictly diary, or continues more days; alſo the *ſynocha*, which is called the *continent fever*, by way of eminence. Junker's Conſp. Med. p. 252. See Fever.

CONTINGENCY *of blood*, in the writers of the laws of Scotland, is uſed for proximity of blood. Bayne, Crim. Law. p 48.

CONTINGENT, ſomething caſual, uncertain, or dependent upon CHANCE.

Contingent, *future*, in *Logic*, denotes a conditional event which may, or may not, happen, according as circumſtances fall out.

Contingent is alſo a term of relation for the quota that falls to any perſon upon a diviſion.

Each prince of Germany, in time of war, is to furniſh ſo many men, ſo much money and munition, for his *contingent*. By the new treaty of Hanover it is ſtipulated, that in caſe of a rupture with the emperor, the kings of Great Britain and Pruſſia may furniſh their *contingents*, as ſiefs of the empire, at the ſame time they are at war therewith.

Contingent *uſe*, in *Law*, is an uſe limited in a conveyance of land, which may, or may not, happen to veſt, according to the *contingency* expreſſed in the limitation of ſuch uſe.

Contingent *legacy*, is a legacy depending on the life of the legatee; if it be left to any perſon, *when* or *if* he attains the age of twenty-one, and he dies before that time, it is a lapſed legacy; but if it is left *to be paid* when he attains that age, it is a veſted legacy; and if the legatee dies, his repreſentatives ſhall receive it out of the teſtator's eſtate at the time when it would have become payable, had the legatee lived. Blackſt. Com. vol. ii. p. 513.

Contingent *remainder*, in *Law*, is where an eſtate is limited to take place *in futuro*, upon an uncertain event; as where a particular eſtate, which doth ſupport a remainder, may or may not determine before the remainder may commence. 10 Rep. 85. See Remainder.

Contingent *line*, or *Line of* Contingency, in Dialling, is a line that croſſes the SUBSTILE at right angles.

Contingents are ſometimes alſo uſed by mathematicians in the ſame ſenſe as TANGENTS.

CONTINUAL *claim*. See Claim *continual*.

Continual *proportionals*. When in a ſeries of quantities, the firſt is to the ſecond as the ſecond to the third, and the third to the fourth, and the fourth to the fifth, &c. they are called *continual proportionals*.

CONTINUANCE, in *Law*, is much the ſame as PROROGATION among the civilians. See Discontinuance.

Continuance *of a writ*, or *action*, is its holding in force from one term to another, in a caſe where the ſheriff has not returned, or executed, a former writ iſſued out in the ſame action.

Continuance *of aſſiſe*. If a record in the treaſury be alleged by one party, and denied by the other, a certiorari ſhall be ſued to the treaſury and chamberlain of the exchequer: who, if they certify not that the ſaid record is there, or likely to be in the Tower; the king ſhall then ſend to the juſtices, repeating the certificate, and will them to *continue the aſſiſe*.

CONTINUANDA *aſſiſa*. See Assisa.

CONTINUANDO, in *Law*, a term uſed where a plaintiff would recover damages for ſeveral treſpaſſes in the ſame action.

To avoid multiplicity of ſuits, a man may in one action of treſpaſs recover damages for forty, or more, treſpaſſes; laying the firſt to be done with a *continuance* to the whole time wherein the reſt of the treſpaſſes were done; which is done in this form: *continuando tranſgreſſionem prædictam, &c. à prædicto die, &c. uſque, &c.*

Continuando *proceſſum*. See Processum.

CONTINUANS *punctum*. See Punctum.

CONTINUATION *of motion*. See Motion, and Projectile.

CONTINUATIVE *conjunctions*. See Conjunction.

CONTINUATO, in the *Italian Muſic*, is uſed to direct a ſinger, or player, to continue or hold on a ſound, in equal ſtrength or manner; or to continue a movement in an equal degree of time all the way.

CONTINUED, or Continual *fever*, is ſuch a FEVER as ſometimes remits, but never intermits, or goes entirely off, till its period. They are thus called to diſtinguiſh them from the CONTINENT fevers.

A *continual* fever may be defined to be the continuance of an increaſed velocity in the CIRCULATION of the BLOOD, beyond what is natural to the conſtitution.

If this velocity often decreaſes and riſes again to the ſame height, it is called a *continual periodical fever*.

And if it entirely ceaſe in the ſpace of a day, or two, it is called an *ephemeris*.

A *continual* fever, then, may remit, or abate, and increaſe again, alternately; but not intermit, which would conſtitute it an intermitting fever, or ague.

Continued *Quantity*. } See Continuum, Continuity,
Continued *Body*, &c. } and Quantity.

Continued, or *thorough baſs*, in *Muſic*, is that which continues to play conſtantly both during the recitatives, and to ſuſtain the choir, or chorus.

Continued *proportion*, in *Arithmetic*, is that wherein the conſequent of the firſt ratio is the ſame with the antecedent of the ſecond—as 3 : 6 : : 6 : 12. See Proportion.

On the contrary, if the conſequent of the firſt ratio be different from the antecedent of the ſecond, the proportion is ſaid to be *diſcrete*: as, 3 : 6 : : 4 : 8. See Discrete.

Continued *zocle*, or *ſocle*, in *Architecture*. See Socle.

Continued *Attic*, *Community*, *Pedeſtal*. See the ſubſtantives.

CONTINUI *ſolutio*. See Solutio.

CONTINUITY is uſually defined, among *Schoolmen*, the immediate coheſion of parts in the ſame *quantum*. Others define it, a mode of body, whereby its extremes become one: and others, a ſtate of body reſulting from the mutual implication of its parts.

Continuation relates to *duration*, and *continuity* to *extenſion*. We ſay, the *continuation* of a work, or an action; and the *continuity* of ſpace or ſize; *continuation* of the ſame conduct; and *continuity* of the ſame building.

There are two kinds of *continuity*; *mathematical*, and *phyſical*. The firſt is merely imaginary, and fictitious; ſince it ſuppoſes real or phyſical parts where there are none.

Phyſical continuity is ſtrictly, that ſtate of two or more parts, or particles, wherein they appear to adhere, or conſtitute one uninterrupted quantity, or *continuum*; or between which we perceive no intermediate ſpace.

The ſchoolmen diſtinguiſh two other ſorts of *continuity*; viz. *homogeneous*, and *heterogeneous*. The firſt, where our ſenſes do not perceive the bounds, or extremes, of the parts; and this agrees even to air, water, &c. The ſecond, where our ſenſes do indeed perceive the extremes of certain parts, yet at the ſame time obſerve the ſame parts cloſely linked to each other; either in virtue of their ſituation or figure, &c. and this is chiefly attributed to the bodies of animals and plants.

The *continuity* of bodies is a ſtate merely relative to our ſight and touch: e. gr. if the diſtance of two ſeparate objects be ſuch, as that the viſual angle they ſubtend is inſenſible to the eye, which it will be if leſs than ſixteen ſeconds, the two ſeparate bodies will then appear *contiguous*. Now, the reſult of ſeveral *contiguous* objects is a *continuity*: ſo that any number of viſible objects, being placed ſo as that the diſtances ſubtend angles of leſs than ſixteen ſeconds, they will appear to form one *continuum*.

And hence, as we can determine the diſtance at which any given magnitude becomes inviſible; it is eaſy to find at what diſtance any two bodies, however remote from each other, will appear as contiguous; and ſeveral, as forming one *continuum*. For the phyſical cauſe of *continuity*, ſee Cohesion.

Leibnitz, an eminent mathematician, has ſuppoſed what he calls a law of *continuity* to obtain in the univerſe, by which law every thing that is executed or done in nature, is done by infinitely ſmall degrees. He urges, that good ſenſe dictates this truth, *natura non operatur per ſaltum*, or that nothing can paſs from one extreme to another, without paſſing through all the intermediate degrees. Bernouilli Opera, tom. iii. p. 9. ſeq.

This law ſeems ſubject to difficulties; rigorouſly taken, it ſuppoſes actual, and yet infinitely ſmall changes, which ſome philoſophers cannot reliſh; and if we ſuppoſe changes only imperceptible to our ſenſes, but finite, the law of *continuity* is no leſs violated, than if the univerſe were to be ſuddenly deſtroyed, as M. Maupertuis juſtly obſerves. Mem. de l'Acad. de Berlin. tom. ii. p. 284.

This law of *continuity* led Mr. Bernouilli to reject all HARD *bodies* as chimeras, and naturally impoſſible.

CONTINUO, in the *Italian Muſic*, is ſometimes applied to *baſſo*, to ſignify the thorough baſs. Thut *baſſo continuo*, is the continual, or thorough baſs. It is ſometimes marked in muſic books by the letters B, C.

Continuo is alſo uſed for a ſpecies of harmony mentioned by Julius Pollux, and which, ſays Zarlino, anſwers to the perpetual burden of our bag-pipes, which now and them muſt be harmonious.

CONTINUOUS *fevers*. See Continued *fever*.

CONTINUUM, or Continued *quantity*, in *Phyſics*, denotes a quantity, or co-extenſion, whoſe parts are not divided, but joined and connected together; ſo as to leave no room to determine where one begins, and another ends.

It is controverted, among philoſophers, whether a *continuum* be infinitely diviſible, i. e. diviſible into infinite proportionable parts?

The ancients attributed the riſe of water, in pumps, to the love of CONTINUITY, and the abhorrence of a VACUUM; becauſe the weight and preſſure of the air was not then known.

Mathematicians divide QUANTITY into *continued*, and *diſcrete*.

Continued quantity is that expreſſed by lines, and makes the ſubject of *geometry*.

Diſcrete quantities are thoſe expreſſed by numbers, which make the ſubject of *arithmetic*.

In medicine and chirurgery, wounds, ulcers, fractures, &c. are expreſſed by the phraſe SOLUTIO *continui*, or *ſolution of continuity*.

In a critical ſenſe, we ſay, there ought to be a *continuity*, i. e. a connexion between the parts of a diſcourſe.

In the epic poem, particularly, the action ſhould have a *continuity* in the narration, though the events, or incidents, be not continued. As ſoon as ever the poet has opened his ſubject, and brought his perſons on the ſtage, the action is to be *continued* to the end; every character muſt be at work, and no ſuch thing as an idle perſon to be ſeen.

F. Boſſu obſerves, that, by retrenching dull languiſhing incidents, and intervals void of action, which break the *continuity*, the poem acquires a *continued* force, which makes it run equally throughout.

CONTOBABDITES, a ſect in the ſixth century. Their firſt leader was Severus of Antioch, who was ſucceeded by John the grammarian, ſurnamed Philoponus, and one Theodoſius; whoſe followers were alſo called Theodoſians.

Part of them, who were willing to receive a book compoſed by Theodoſius on the Trinity, made a ſeparate body, and were called *Contobabdites*, from I know not what place, which Nicephorus does not mention, but which muſt apparently have been the place where they held their aſſemblies.

The *Contobabdites* allowed of no biſhops; which is the only circumſtance given us concerning them.

CONTOPÆCTÆ, of *κοντος*, *pole*, and *ϖηκτος*, *compact*, in *Antiquity*, a ſort of artiſts who ſupported a pole on their foreheads ſo firmly, that boys could play, dance, and wreſtle together on it.

CONTOR, or Cuntor, a bird of Peru, ſaid to be the largeſt in the world. With its wings expanded, it meaſures ſixteen feet from the tip of the one to the other; a ſingle feather of it is four feet two inches long; its beak is ſtrong enough to tear off the hide, and rip up the bowels of an ox. Two of them will deſtroy a bull. Phil. Tranſ. N° 208. p. 61. See Condore.

CONTORSION, the action of twiſting, or wreſting, a member of the body out of its natural ſituation.

Rope-dancers accuſtom themſelves to *contorſions* of their limbs from their youth, to render the fibres of their articulations lax, and ſupple, for all kinds of poſtures.

Contorsion, in *Medicine*, has many ſignifications. Firſt, the *iliac paſſion* is thus called; ſecondly, an *incomplete diſlocation* is thus named, when a bone is partly forced from its articulation; thirdly, a diſlocation of the vertebræ of the back ſideways, or crookedneſs of theſe vertebræ, are called *contorſions* of them; fourthly, a diſorder of the head is thus called, in which it is drawn toward one ſide, either by a ſpaſmodic contraction of the muſcles on the ſame ſide, or a palſy of their antagoniſt muſcles on the other. James's Med. Dict.

The *contorſion* of the neck is uſually occaſioned, according to Nucke, by a relaxation, or *paralyſis*, of one of the maſtoidal muſcles: for hence it happens, that its antagoniſt, whoſe power is now no longer balanced, contracting with its proper force, draws the head towards that ſide.

He adds, that this diſorder cannot be remedied too ſpeedily; and preſcribes, from the beginning, liniments capable of relaxing and ſoftening the fibres, to be uſed, not only to the muſcle in contraction, but alſo, and principally, to the paralytic muſcle, which is the ſeat of the diſorder.

CONTOUR, *outline*; that which terminates and defines a figure.

A great part of the ſkill of the painter conſiſts in managing the *contours*.

The *contour* of a figure makes what we call the *draught*, or *deſign*. The *contour* of a face, the Italian painters ordinarily call the *lineaments* of it.

CONTOURNE, in *Heraldry*, is uſed when beaſts are repreſented ſtanding, or running, with their faces to the ſiniſter-ſide of the eſcutcheon; they being always ſuppoſed to look to the dexter-ſide, unleſs it be otherwiſe expreſſed.

CONTOURNIATED, a term applied, among *Antiquaries*, to a kind of medallions which have a broad riſing rim on each ſide; and figures that have ſcarce any relievo, in compariſon with the true medallions.

They have their name from their edges; which appear as if turned in the lathe. All we have remaining of theſe *contourniated* medals, ſeem to have been ſtruck about the ſame time. F. Hardouin conjectures them not to be earlier than the thirteenth century; other antiquaries go back as far as the fifth; and others find inſtances of them as ancient as the time of Nero.

This ſort of work ſeems to have had its origin in Greece, and to have been appropriated to honour the memories of great men; principally, thoſe who had borne away the prize at the ſolemn games; ſuch are thoſe remaining of Homer, Solon, Euclid, Pythagoras, Socrates, Apollonius Tyaneus, and ſeveral athletæ, whoſe victories are expreſſed on them by palms and chariots, either bigæ, or quadrigæ.

CONTRA, or Counter, in *Compoſition*. See Counter.

Contra *apertura*, in *Surgery*, a counter opening. This is ſometimes very neceſſary in wounds made by puncture or a bullet, in order to diſcharge whatever is contained in the wound, and prevent its growing fiſtulous. James's Med. Dict.

Contra *formam collationis*, is a writ that lies where a man has given lands, in perpetual alms, to a religious houſe, hoſpital, ſchool, or the like, and the governor, or managers, have alienated the lands, contrary to the intention of the donor.

This was founded on the ſtatute of Weſtm. 2. cap. 41.

Contra *formam feoffamenti*, is a writ for a tenant, who is infeoffed by the lord's charter, to make certain ſuit and ſervice to his court; and is afterwards diſtrained for more than is contained therein. Reg. of Writs, fol. 176. Old Nut. B. ii. fol. 162.

Contra *formam ſtatuti*, is the uſual concluſion of every indictment, &c. laid on an offence created by ſtatute.

CONTRABAND, in *Commerce*, a prohibited commodity; or, a merchandize bought or ſold, imported or exported, in prejudice, and contrary, to the laws and ordinances of a ſtate, or the public prohibitions of the ſovereign.

The word comes from the Italian *contrabando*, of *contra* and *bando*, q. d. contrary to edict, or publication of prohibition.

Contraband goods are not only liable to confiſcations themſelves;

ſelves; but do alſo ſubject all other allowed merchandizes found with them in the ſame box, parcel, or bale, together with the horſes, waggons, &c. which conduct them to the ſame.

There are *contraband* goods, which, beſides confiſcation, are prohibited on pain of death; as, v. gr. in France, India, and China ſtuffs, linens, &c.

In England there are two principal *contrabands* for exportation, wools and live ſheep, which all ſtrangers are prohibited from carrying out, on pain of having the right hand cut off; the other, that of ſheep-ſkins and calf-ſkins, which all foreigners are in like manner prohibited from exporting, on pain alſo of having the right hand cut off; yet the ſubjects of England are allowed to tranſport the ſame from France to England.

Other *contrabands* for exportation are raw horns, white aſhes, ſtocking-looms, or any part thereof, fullers earth, and all raw hides, or ſkins.

Of goods *contraband* as to the import, there are above fifty in the liſts made in 1662, and yet there are twenty-five of them which now ſtand in the tariff; the non-execution of the acts of parliament, whereby they were impoſed, ſeeming to have reſtored them to the freedom of importation.

The chief of thoſe ſtill *contrabanded*, and not tariffed, are woollen caps, woollen cloths, ſaddles, and harneſs, dice, billiards, all ſorts of tanned, or dreſſed hides, dreſſed furs, all ſorts of ſhoemakers ware, locks, and divers ſorts of cutlers ware; all painted goods, except paper; wires, buckles, gold and ſilver leaf, and horns for lanterns.

Since the year 1662, ſeveral other commodities have been made *contraband*; particularly, ſilk and galloons, laces, embroidery, fringes, buttons, and other ſilk and thread manufactures; black taffaties, called *alamodes*, or lute-ſtring.

In 1719 and 1720, an attempt was made in parliament to paſs a bill for putting gold and ſilver, whether in coined ſpecies, or otherwiſe, among the number of *contraband* goods for exportation; but in vain, by reaſon of the ſtrong oppoſition made by thoſe who enrich themſelves by the export of theſe metals; which, by the laws of the kingdom, are allowed to be ſent away, upon entering them, paying the duty of the export, and making oath of their being foreign, i. e. of their not being the coin, or the plate of the kingdom, melted down.

CONTRACT, a mutual conſent of two, or more, parties, who promiſe and oblige themſelves voluntarily, to do ſomething, pay a certain ſum, or the like.

SALES, EXCHANGES, DONATIONS, LEASES, &c. are ſo many different ſpecies of *contracts*.

CONTRACT is particularly uſed, in *Common Law*, for an agreement or covenant between two, with a lawful conſideration, or cauſe.

As, if I ſell my horſe for money; or covenant, in conſideration of 20*l.* to make you a leaſe of a farm; theſe are good *contracts*, becauſe there is *quid pro quo*.

CONTRACT *Nude*, and *Quaſi*. See the adjectives.

CONTRACT, *uſurious*, is a *contract* to pay more intereſt for money than the laws allow.

It is a devaſtavit in executors to pay a debt upon an uſurious *contract*.

CONTRACT. In marriage, the Romaniſts diſtinguiſh the civil *contract*, which is the conſent of the parties, from the *ſacrament*, which is the benediction of the prieſt.

Thoſe *contracts* are ſaid to be *null*, which the law prohibits: ſuch are all *contracts* between perſons incapable of *contracting*, as minors, religious, lunatics, wives without conſent of their huſbands, &c.

CONTRACT is alſo uſed for the inſtrument in writing, which ſerves as a proof of the conſent granted, and the obligation paſſed between the parties.

Among the ancient Romans, *contracts*, and all voluntary acts, were written, either by the parties themſelves, or by one of the witneſſes, or by a domeſtic ſecretary of one of the parties, whom they call a *notary*; but who was no public perſon, as among us.

The *contract*, when finiſhed, was carried to the magiſtrate, who gave it a public authority by receiving it *inter acta* into the number of the ACTS under his juriſdiction; giving each of the parties a copy thereof, and ſealed with his ſeal. Which practice paſſed into France, where it obtained a long time.

CONTRACTILE *force*, that property, or power, inherent in certain bodies, whereby, when extended, they are enabled to draw themſelves up again to their former dimenſions.

For the cauſe of this property, which is of the utmoſt conſequence to a right underſtanding of the animal œconomy, ſee FIBRE.

CONTRACTION, in *Logic*, a ſpecies of reduction, wherein the thing that reduces does alſo abridge, or bring the thing reduced into a leſſer compaſs.

The deſign of *contraction* is to bring things, which before were too lax and diffuſive, nearer together; that ſo their mutual relation may appear the more clearly, and they may better ſtrengthen and ſupport each other.

To this head are referred the arguments, as they are called, of poems and orations; the titles and ſummaries of chapters, &c.

CONTRACTION, in *Phyſics*, denotes a diminiſhing of the extent, or dimenſions, of a body; or a bringing of its parts cloſer to each other; upon which it becomes heavier, harder, &c. See CONDENSATION.

Contraction, in this ſenſe, ſtands oppoſed to *dilatation*.

All bodies *contract* by COLD, and dilate, or rarefy, by HEAT. See RAREFACTION.

CONTRACTION is frequently uſed, by anatomical writers, to expreſs the ſhrinking up of a fibre, or an aſſemblage of fibres, when extended.

Convulſions and ſpaſms proceed from a preternatural *contraction* of the fibres of the muſcles of the part convulſed.

On the contrary, paralytic diſorders generally proceed from a too great laxneſs of the fibres of the parts affected; or from the want of that degree of *contraction* neceſſary to perform the natural motion or action of the part.

In the firſt, therefore, the animal ſpirits are ſuppoſed to flow, either in too great a quantity, or irregularly; and, in the laſt, the animal ſpirits are either denied a free paſſage into the part affected, or the tenſion of the fibrillæ is ſuppoſed inſufficient to promote the circulation.

Contraction evidently appears to be the true natural ſtate of all the muſcles; for, if a muſcle be at any time freed from the power of its antagoniſt, it is immediately found to *contract*; and is not, by any action of the will, or the ſpirits, to be reduced to a ſtate of dilatation.

CONTRACTION *of the heart, arteries, lungs, &c.* See SYSTOLE, HEART, ARTERY, PULSE, &c.

CONTRACTION, in *Grammar*, the reduction of two vowels, or ſyllables, into one; as, *may'nt*, for *may not*; *ſhouldſt*, for *ſhouldeſt*, &c.

The Greeks abound with *contractions*, both in their verbs, and their nouns.

CONTRADICENTE. See NEMINE *contradicente*.

CONTRADICTION, a ſpecies of direct oppoſition, wherein one thing is found diametrically oppoſite to another.

The ſchoolmen uſually define it, *oppoſitio inter ens, & non-ens, medio carens*: where, by *ens*, and *non-ens*, are underſtood any two extremes, whereof one affirms, and the other denies; and it is ſaid to be *medio carens*, to diſtinguiſh it from the other ſpecies of compoſition; the extremes, here, neither agreeing in ſubject, as is the caſe in PRIVATION; nor in eſſence and kind, as in CONTRARIETY.

CONTRADICTION, *freedom of*. See FREEDOM.

CONTRADICTION, *imply a*. See IMPLY.

CONTRADICTOR, in a legal ſenſe, a perſon who has a right or title to contradict, or gainſay.

An inventory of the effects of a minor ought to be made in preſence of his guardian, or truſtee, who is the legal *contradictor*: a decree againſt a farmer has no effect on the landlord, the firſt not being the legitimate *contradictor*.

CONTRADICTORY *propoſitions*, are oppoſites, one of which imports a mere, and naked, denial of the other.

Of theſe, therefore, one muſt be poſitive, and the other negative; as *ſitting*, and *not ſitting*; *white*, and *not white*. *Contradictory* propoſitions mutually deſtroy each other.

To have two propoſitions truly *contradictory*, they muſt be oppoſite, both in quantity and quality, i. e. one muſt be univerſal, and the other particular, which makes the oppoſition of quantity; and the one affirmative, and the other negative, which makes the oppoſition in quality. Thus, v. gr. *All uſe of wine and ſilver is evil*; falſe: *Some uſe of wine and ſilver is not evil*; true. To this it is neceſſary, that the one deny, and the other affirm, the ſame thing, of the ſame ſubject, conſidered in the ſame circumſtances: unleſs the queſtion be about an eſſential attribute, in which caſe, no regard is had to circumſtances; every thing having always its own eſſence. This the logicians expreſs by *affirmare & negare idem, de eodem, ſecundum idem*.

There may likewiſe be *contradictory* propoſitions on a particular ſubject; e. gr. an individual. Theſe are called *ſingle contradictory propoſitions*; as, *Peter is innocent*, *Peter is not innocent*, or *is a criminal*. Now, to have theſe propoſitions *contradictory*, Peter muſt be conſidered at the ſame time, without which they may be both true: ſince there may be a time wherein Peter was innocent, and another wherein he was a criminal.

CONTRA-FISSURE, in *Medicine*, a term applied to that ſpecies of fracture, or fiſſure, in the ſkull, where the ſide, oppoſite to that where the blow was received, is cracked.

This ſpecies of fracture is taken notice of by Celſus, lib. viii. cap. 4. yet Ægineta denies the poſſibility of it; and is herein followed by Gorræus, and many of the moderns. Their chief argument is, that the ſkull is not one uniform continuous bone, but is divided by ſeveral ſutures, which prevent the effects of a ſtroke from being communicated to the oppoſite part, and confine the miſchief to the part ſtruck. Here, ſay they, if a ſkull be found cracked on the oppoſite ſide, or any where but in the place where the blow is immediately received, this muſt proceed from a ſecond or third blow, which, perhaps, the patient, being ſtunned, does not remember. But there are ſo many cogent inſtances on the other ſide of the queſtion, that the reality of *contra-fiſſures* is now generally allowed.

The uſual ſymptoms attending a *contra-fiſſure*, are a delirium, ſometimes a bleeding at the noſe and mouth, ſtupidity, and involuntary paſſing of the urine and excrements, and convulſions. If theſe happen, and after ſearch made in the part where the injury was received, no fracture, or depreſſion of the ſkull be found, there is a ſuſpicion of a *contra-fiſſure*; eſpecially if the patient be apt to point to that part.

If the ſymptoms be by intervals, and not to a great degree, or there be reaſon to believe the fiſſure to have reached only through one of the tables, it is ſufficient to bare the bone, and uſe a raſpatory; then to fill the rima, or crack, with proper powders, as of iris, gum, myrrh, powder of diapente, &c. and above all apply a pledget, dipped in the tincture of euphorbium, or of equal parts of ſpirit of wine, and honey of roſes. If theſe fail, the trepan muſt be had recourſe to.

CONTRA-HARMONICAL *proportion*, that relation of three terms, wherein the difference of the firſt and ſecond is to the difference of the ſecond and third, as the third is to the firſt.

Thus, e. gr. 3, 5, and 6, are numbers *contra-harmonically* proportional; for 2 : 1 :: 6 : 3.

To find a mean contra-harmonically proportional to two given quantities: the rule is, divide the ſum of the two ſquared numbers by the ſum of the roots; the quotient is a *contra-harmonically* mean proportional between the roots.

CONTRA-INDICATION, is an INDICATION which forbids that to be done which the main ſcope of a diſeaſe points out.

Suppoſe, e. gr. in the cure of a diſeaſe a vomit were judged proper; if the patient be ſubject to a vomiting of blood, it is a ſufficient *contra-indication* as to its exhibition.

CONTRALTO, in *Muſic*. See COUNTER-*Tenor*.

CONTRAMANDATIO *Placiti*, in LAW-*Books*, ſignifies a reſpiting, or giving the defendant further time to anſwer; or, an imparlance, or countermanding of what was formerly ordered. See COUNTERMAND.

CONTRAMANDATUM, a lawful excuſe, which the defendant, by his attorney, allegeth for himſelf, to ſhew that the plaintiff has no cauſe to complain, *ſi dies placiti ſit contramandatus*. 11 Hen. I. See the article COUNTERMAND.

CONTRAMURE, in *Fortification*, an outwall, built about the main WALL of a city. See RAMPART.

CONTRAMURE, in *Civil Architecture*. See COUNTERMURE.

CONTRA-*Points*, in *Muſic*. See the article COUNTERPOINT.

CONTRAPOSITION, in *Logic*. See the article CONVERSION.

CONTRARIENTUM *Rotulus*. See the article ROTULUS.

CONTRARIETY, that which denominates two things *contrary* to each other.

Contrariety conſiſts in this, that one of the terms imports a negation of the other, either mediately or immediately; ſo that *contrariety* may be ſaid to be the contraſt, or oppoſition of two things, one of which implies the abſence of the other.

CONTRARIETY, *freedom of*. See FREEDOM.

CONTRARIES, are poſitive OPPOSITES; which being of the ſame kind, or ſame common nature, and ſubſiſting by turns in the ſame ſubject, are as remote from each other as poſſible, and mutually expel each other. Such are whiteneſs and blackneſs, cold and heat, &c.

Hence, properly ſpeaking, only qualities can be *contraries: contrariety*, in effect, only agrees to qualities *per ſe*; to other things it agrees *per accidens*, or *in ordine ad qualitatem*.

CONTRARY, however, is often uſed in a more extenſive ſignification, viz. for any inconſiſtence or difference between the nature and qualities of things. It is a popular maxim in philoſophy, that *contraria juxta ſe poſita magis eluceſcunt*; *contraries* ſet off one another. In this ſenſe is the word *contrary* uſed in the ſchools; and hence an argument *à contrario*.

This method of improving things *è contrario*, is much uſed, and with good ſucceſs, by F. Bourdaloue in his Sermons.

CONTRARY, in *Rhetoric*. F. de Colonia lays down three kinds of *contraries* in rhetoric; viz. *adverſatives*, *privatives*, and *contradictories*.

Adverſatives are thoſe that differ much in the ſame thing, as virtue and vice, war and peace: thus Tully, *Si ſtultitiam fugimus, ſapientiam ſequamur*; *& bonitatem, ſi malitiam*. And Quintilian, *malorum cauſa bellum eſt, erit emendatio pax*. Drances argues thus in Virgil:

> *Nulla ſalus bello: pacem te poſcimus omnes.*

Privatives are habits, and their privations. *Contradictories* are thoſe, one whereof affirms, and the other denies, the ſame thing, of the ſame ſubject.

CONTRARY *propoſitions*, in *Logic*, univerſal propoſitions, one of which affirms, and the other denies, the ſame predicate of the ſame ſubject; as *every ſquare is a parallelogram*, and *no ſquare is a parallelogram*. Theſe propoſitions differ in quality, but not in quantity, and therefore are diſtinguiſhed from CONTRADICTORY propoſitions, which differ in quantity and quality.

Contrary propoſitions cannot be both true, but may both be falſe: whereas, in *contradictory* propoſitions, one is neceſſarily true, and the other falſe.

CONTRARY *point of flexure*. See POINT.

CONTRAST, in *Painting* and *Sculpture*, expreſſes an oppoſition, or difference of poſition, attitude, &c. of two or more figures; contrived to make a variety in a painting, &c.

The word comes from the Italian *contraſtare, to oppoſe*, or *thwart*; and that, according to M. Huet, from the Latin *contra ſtatio*.

Thus, when in a group of three figures, one appears in front, another ſhews his hind-parts, and a third is placed ſideways, there is ſaid to be a *contraſt*.

M. de Piles defines *contraſt* an oppoſition between the lines which form the objects; by means whereof they tend to ſet off one another.

A *contraſt*, well managed, is one of the greateſt beauties of a painting. The *contraſt* is not only to be obſerved in the poſition of ſeveral figures, but alſo in that of the ſeveral members of the ſame figure: thus, if the right arm advance the fartheſt, the right leg is to be hindmoſt; if the right eye be directed one way, the right arm is to go the contrary way, &c. The *contraſt* muſt be purſued, even into the drapery.

To **CONTRAST**, in *Architecture*, is to avoid the repetition of the ſame thing, in order to pleaſe by variety: as is done in the great gallery of the Louvre, where the pediments are, alternately, arched and angular.

CONTRAST-*wheel*, in *Clock-work*. See WHEEL, CLOCK, and WATCH.

CONTRAVALLATION, *line of*, in *Fortification*, is a trench, guarded with a parapet; made by the beſiegers, betwixt them and the place beſieged, to ſecure themſelves on that ſide, and ſtop the ſallies of the garriſon.

It is without muſquet-ſhot of the town, and ſometimes goes quite round it, ſometimes not, according as the general finds occaſion. The army, forming a ſiege, lies between the lines of CIRCUMVALLATION and *contravallation*. It is now ſeldom uſed.

CONTRAVENTION, a man's failure of performing or diſcharging his word, obligation, or duty, or the laws and cuſtoms of the place. The penalties impoſed in caſes of *contravention*, only paſs for comminatory.

In a more limited ſenſe, *contravention* implies the non-execution of an ordinance, or edict.

Contravention is ſuppoſed to be a degree below PREVARICATION; and to be only the effect of negligence or ignorance.

CONTRAYERVA, *Dorſtenia*, in *Botany*, a genus of the *tetrandria monogynia* claſs. Its characters are theſe: it hath one common involucrum, ſituated vertically, upon which ſit ſo many ſmall flowers, which have no petals, but four ſhort ſtamina. In the center is ſituated a roundiſh germen, which afterward becomes a ſingle ſeed, incloſed in the common fleſhy receptacle. There are three ſpecies, which are natives of Spaniſh America.

Theſe plants are at preſent very rare in Europe; nor was it known what the plant was whoſe roots were imported, and had long been uſed in medicine in England, until the late Dr. Houſton informed us: for although F. Plumier had diſcovered one ſpecies of this plant, and had given the name of *Dorſtenia* to the genus, yet he ſeems not to have known that the *contrayerva* was the root of that plant. Miller's Gard. Dict.

The *contrayerva* root was firſt brought into Europe by Sir

Francis Drake, about the year 1581, and from him called *Drakena*. It is eſteemed a very great alexiterial, and a ſovereign antidote againſt poiſon.

Its juice is a violent poiſon, ſaid to be uſed by the Peruvians to poiſon their arrows. *Contrayerva* ſignifies *counter-poiſon*, becauſe the root of it is ſaid to be an antidote againſt the poiſon of its juice.

The root is ſmaller than that of the iris, reddiſh without, and white within, knotty and fibrous. To be good, it muſt be new, heavy, and of a duſky red colour. In ſmell it reſembles fig-leaves; its taſte is aromatic, accompanied with ſomewhat of acrimony. It is diaphoretic and antiſeptic, and is uſed in low nervous fevers, and in thoſe of the malignant kind.

There is an officinal compoſition, which takes its name from this root, prepared with it, mixed with the teſtaceous powders, called *lapis contrayerva*. The London college directs it to be made of the compound powder of crab's claws one pound and a half, and of *contrayerva* root five ounces, mixed and powdered. Both the root and lapis are of great efficacy in the ſmall-pox, meaſles, fevers, and in all caſes where either a diaphoreſis or perſpiration is required; its ſucceſs being much more to be depended on than the Gaſcoign's powder; which, among the more knowing, is now very much deſpiſed.

It is agreed on by the generality of writers, that the *contrayerva* root is one of the beſt anti-epidemics yet known. Dr. Hodges, in his treatiſe of the laſt London PLAGUE, has a recipe, which he ſays was attended with great ſucceſs, and of which this root was one of the chief ingredients.

There is another kind of *contrayerva* brought from Virginia, more ordinarily called SERPENTARIA: this is very aromatic; it is but ſeldom preſcribed ſingly, though ſaid to have the ſame ſucceſs againſt poiſons and venoms with the *contrayerva* of Peru. This is an excellent ſubſtitute for the *contrayerva*. See Lewis's Mat. Med. and Neumann's Chem. Works.

CONTRE-BEND, in *Heraldry*. The bar is called a *contre-bend*, or *counter-band*, becauſe it cuts the ſhield contrary, and oppoſite ways.

They alſo ſay, *contre-chevron*, *contre-pal*, &c. when there are two ordinaries of the ſame nature oppoſite to each other; ſo as colour be oppoſed to metal, and metal to colour. And the coat is ſaid to be *contre* or *counter-paled*, *counter-bended*, *counter-feſſed*, *counter-componed*, or *counter-barred*, when ſo divided.

Counter-quartered, is when one of the quarters is quartered again: hence alſo *counter-flowered*, *counter-coloured*, &c.— Animals are ſaid to be *counter-paſſant*, when one paſſes on one ſide, and another on another. See COUNTER-COMPONED, COUNTER-CHANGED, COUNTER-CHEVRONED, ERMINE, COUNTER-QUARTERED, &c.

CONTRE-*Queue d'Hironde*, in *Fortification*. See QUEUE, &c.

CONTRIBUTION, the payment of each perſon's quota, or the part he is to bear in ſome impoſition, or common expence.

Contributions are either *involuntary*, as thoſe of taxes and impoſts; or *voluntary*, as thoſe of expences for carrying on ſome undertaking for the intereſt of the community.

CONTRIBUTIONS, in a military ſenſe, are impoſitions paid by frontier countries to ſecure themſelves from being plundered, and ruined by the enemy's army.

The peaſants till their ground under the faith of *contributions*, as ſecurely as in time of profound peace.

CONTRIBUTIONE *facienda*, a writ which lies where ſeveral perſons are jointly bound to the ſame thing, and one or more of them refuſe to *contribute* their ſhare.

If tenants in common, or joint, hold a mill *pro indiviſo*, and equally ſhare the profits thereof; the mill falling to decay, and one or more of them refuſing to *contribute* to its reparation, the reſt ſhall have the writ *de contributione facienda* to compel them. And if there be three coparceners of land that owe ſuit to the lord's court, and the eldeſt performs the whole; then may ſhe have this writ to compel the refuſers to a *contribution*.

CONTRITION, in *Theology*, expreſſes a real ſorrow, reſulting from the thought of having offended God; from the ſole conſideration of his goodneſs; without any regard to the puniſhment the ſin is entitled to.

Some of the Romiſh doctors avow, notwithſtanding the practice of their church, that *contrition* is valid, and carries with it every thing neceſſary to obtain pardon, without the ceremony, or, as they call it, the *ſacrament* of confeſſion and abſolution.

And in this they make the difference between *contrition* and ATTRITION to conſiſt. This doctrine was lately maintained by F. Seguenot upon St. Auguſtine; but it was cenſured by the faculty of Paris.

CONTROL. See COMPTROL.

CONTROLLER. See COMPTROLLER.

CONTROVER, in *Law*, he who of his own head deviſes or invents falſe, or feigned news.

CONTROVERSIAL *divinity*. See POLEMICAL *divinity*.

CONTUMACY, in *Law*, a refuſal to appear in court when legally ſummoned; or a diſobedience to the rules and orders of a court having power to puniſh ſuch offence.

The word is uſed in civil, as well as criminal matters; but more rarely in the firſt, wherein the words *default*, and *contempt*, ordinarily ſupply its place: the refunding of the charges of a contempt, judged at the hearing, is alſo the penalty of *contumacy*. In a criminal ſenſe, the *contumacious* is condemned, not becauſe the crime is proved on him, but becauſe he is abſent.

By the Roman laws, there was no proceſs in caſe of *contumacy*, during the firſt year of abſence: they only took an inventory of the goods of the fugitive, and, if he died in the year, he died *integri ſtatus*; but, after the year was expired, he was deemed culpable.

In England, *contumacy* is to be proſecuted to outlawry.— In France, all *contumacies* are annulled, if the accuſed make his appearance in five years: if he die in that time, his relations are permitted to purge his memory.

CONTUS, κοντος, in *Antiquity*, a long ſpear, chiefly uſed by the horſe.

CONTUSION, *bruiſe*, in *Medicine*, a ſolution of continuity, either in fleſh or bone, occaſioned by a fall, a blow, or a violent preſſure, whereby the fleſh is damaged, but without any external rupture, or any manifeſt loſs of ſubſtance; and an effuſion of blood enſues, from ſeveral little broken veſſels, ſo as to diſcolour the ſkin, though it doth not make its way through the pores.

Or, *contuſions* may be defined a particular ſort of tumours, attended with a ſtagnation of the blood in the part affected; and generally, with an inflammation, diſcolouration, and pain.

Contuſions are either *internal*, or *external*. When from any external injury, there proceeds an internal diſorder, e. gr. an aſthma, ſpitting of blood, or the like, the *contuſion* is ſaid to be *internal*. If only external ſymptoms appear, as a tumor, blackneſs, &c. it is termed *external*.

When the ſmall veſſels and fibres have been broken by a *contuſion*, the fluids that were contained in them will be forced out, and hence will proceed obſtructions, corruptions, inflammation, and ulcers, or even a gangrene, in proportion to the violence of the cauſe, and the nature of the affected part. When a bony part is the ſubject of a *contuſion*, the ſame miſchiefs will enſue from the injury inflicted on the perioſteum, as happen to the pericranium in wounds of the head; and when the medullary juice of the bones is affected, very violent diſorders are to be expected, though the bone is not fractured. When *contuſions* happen on the joints, they uſually bring on violent pains and inflammations, convulſions, gangrenes, ſphacelus, rigidity of the limbs, and caries; and the ſame miſchiefs will indeed ſometimes happen from *contuſions* of the muſcular parts. When the internal parts are *contuſed* great miſchiefs uſually enſue; but theſe entirely depend upon the nature of the injured part: theſe are ſometimes inflammations, ruptures of the veſſels, varixes, aneuriſms, hæmorrhages, ſtagnation of the fluids, corruptions, gangrene, and ſuppuration, and very often death is the neceſſary attendant on theſe ſymptoms. When the head receives a conſiderable *contuſion*, the ſenſes are taken away, the limbs become either convulſed, or rigid, and death preſently follows. In *contuſions* of the thorax, a difficulty of breathing follows, with ſpitting of blood, fainting fits, inflammation, and ulcers of the lungs, and death. After *contuſions* of the abdomen we may expect vomitings of blood, inflammations, ſuppurations, or gangrenes of the viſcera, and at length death; but if any large internal veſſel is burſt by the blow, it is no wonder if the patient dies upon the ſpot, even though there be no mark of violence left upon the external parts. Laſtly, if the eye is *contuſed*, tumor and inflammation will ſucceed, and frequently loſs of ſight.

Theſe are the effects of violent *contuſions* on the different parts. In the cure of ſlight *contuſions* the principal care is to divide the inſpiſſated fluids, and prevent the parts from ſuppurating, or being affected by the gangrenes: this may be done by hot wine, ſpirit of wine, ſpirit of wine with camphor, or Hungary water; or by applying cold water, or vinegar mixed with ſalt, to the part; or by clapping a broad piece of money, or a plate of lead, upon the tumor, and faſtening it on with a very tight bandage: or linen rags dipped in freſh warm urine ſhould be applied to the part. Theſe different methods ſucceed very well in tumors of the foreheads of children from falls, or any other ſlight *contuſion* in perſons of a tender make.

Larger *contuſions* are to be fomented with decoctions of the warm herbs, as ſcordium, ſavin, ſouthernwood, and ſuch like, either alone, or mixed with wine, or with ſalt water; great benefit alſo ariſes from applying to the parts a ſpunge dipped in a decoction of Venice ſoap made in freſh urine, or warm applications of lime-water, ſpirit of wine camphorated, vinegar with litharge, and vinegar with carraway ſeeds boiled in it. But when the *contuſion* is ſo violent, that it is apparently impoſſible to divide the ſtagnating fluids, and return them into circulation, and the parts are tending towards a gangrene, they muſt be ſcarified without delay, and by this means the ſtagnating fluids will be let out, and all danger of ſuppuration and gangrene prevented. After ſcarification warm fomentations are to be uſed, and the tumor ſhould be well rubbed with warm cloths before it is fomented, which will keep the blood in its fluid ſtate; or, if it is already concreted, will divide it, and make it fit to return to the veſſels, or, at leaſt, to eſcape through the pores of the ſkin. Into all theſe fomentations it is very proper to put wine, or ſpirit of wine, or elſe ſome other ſpirituous liquor; but if theſe are not to be had, ſalt water is to be uſed, which, if you are not near the ſea, may be had by adding a handful of ſalt to a quart of water; attenuating decoctions muſt alſo be taken inwardly; and bleeding, eſpecially in plethoric habits, is extremely neceſſary.

It ſometimes happens, when the *contuſed* parts lie very deep, or when the ſurgeon does not uſe the proper means, or the patient refuſes to ſubmit to proper treatment, that the ſtagnating fluids will corrupt and ſuppurate. When a ſuppuration on theſe occaſions is once begun, it muſt be carried on and forwarded by emollient cataplaſms, made of mallow, marſhmallow, and white lily roots, linſeed, fenugreek ſeed, pellitory, mercury, and other herbs of that kind, with crumbs of bread, and the emollient oils of lilies, chamomile, &c. Theſe muſt be laid on the part as hot as they can be borne; and ſometimes it is neceſſary to add the warm herbs, ſuch as onions, &c. and the gums, as galbanum, ammoniacum, and the others of that kind. Sometimes, in ſmall *contuſions*, a plaſter of diachylon with the gums, without any other application, will anſwer the purpoſe.

When the whiteneſs and ſoftneſs of the tumor evidently ſhew that the matter is formed, and fit to be diſcharged, the part is to be laid open with a knife, and, after the diſcharge of the matter, muſt be healed in the common way. Large *contuſions* are frequently attended with violent inflammations and gangrenes: in this caſe numerous and deep inciſions muſt be made on the part, and the wounds dreſſed with Venice treacle, ſoftened with ſpirit of wine with camphor, applying at the ſame time externally the warm fomentations. And when the parts are, from very large and deſperate *contuſions*, abſolutely ſphacelated, the limb muſt be taken off in time.

In caſe of inward *contuſions*, bleeding the patient is always neceſſary, and balſamics muſt be given internally: ſuch are ſpermaceti, powder of rhubarb, Iriſh ſlate, oleaginous, and pectoral medicines, &c. Externals proper for *contuſions* are liniments, or ointments of marſhmallows, oil of ſweet almonds, ſpirit of wine, with camphor; proper fomentations, and ſtrengthening emplaſters, as that of oxycroceum, &c. according as the nature of the *contuſion*, and part *contuſed*, requires.

CONTUSIONS *of the cranium.* When the cranium is violently *contuſed*, it will be diſcovered by the tumor and ſoftneſs of the part, by the ſeparation of the integuments from the cranium, and by the collection of ſtagnating blood which appears to be confined under the ſkin. In this caſe you are to endeavour to divide the confined fluids, by attenuating medicines externally applied, or to diſcharge them by making an opening with a knife; or, laſtly, to bring them to ſuppuration. When the extravaſation of fluids is very conſiderable, it is beſt to diſcharge the greateſt part of them inſtantly by inciſions, and what remains will then eaſily be diſperſed, by applying fomentations, and medicated bags of the warm herbs, rue, wormwood, ſavine, ſcordium, &c. quilted into bags, and boiled in wine, or in water, with a mixture of ſpirit of wine, or malt or melaſſes ſpirit. But where it is found impracticable to divide and attenuate the ſtagnating fluids, the ſuppuration of them muſt be attempted; and if the *contuſion* hath been but ſmall, after the ſuppuration is formed, and the matter diſcharged, the wound will eaſily heal, by the application of a vulnerary balſam.

In violent *contuſions*, when there is no opening, or but a very ſmall one, the wound muſt be enlarged with the knife, to prevent the neighbouring parts from being corroded; and by this means the wound will be eaſily cleaned, and the cure performed by the method before laid down. When the pericranium is wounded, but not in ſo great a degree as to lay the cranium bare, the wound is to be dreſſed with warm balſamic medicines. But where the cranium is expoſed and laid bare, its external lamella being robbed of its nouriſhment, by the deſtruction of the veſſels by which it was conſtantly ſupplied, it will loſe its natural colour, and become yellow, livid, black, and, by degrees, ſeparate from the neighbouring parts, and exfoliate, which will greatly protract the cure of the wound. To haſten this exfoliation, the ſurgeon ought to bore ſeveral holes through the denudated part, as deep as the diploe, with an awl, or ſuch like inſtrument. This operation not only forwards the exfoliation of the part, but makes way alſo for the ſprouting up of new veſſels. The dreſſing, which ought to be repeated each time with great expedition, is to be applied in the following manner: when the wound is well cleaned, pledgits thoroughly ſaturated with the mild balſamics, with the addition of a ſmall quantity of honey of roſes, are to be laid upon the injured part of the cranium; over theſe a ſticking plaſter is to be applied; and over that the proper bolſter and bandage. Theſe applications ſhould be continued till the cranium appears ſound, and the wound in a condition to heal. Heiſter's Surg. p. 84.

CONTUSIONS *of the eye.* See EYE.

CONVALESCENCE, in *Medicine*, the inſenſible recovery of health; or that ſtate in which after the cure of a diſorder, the body which has been reduced, has not yet regained its vigour, but begins to reſume its powers. Proper aliments conduce to the re-eſtabliſhment of the languid faculties; but as the tone of the bowels is weakened, the digeſtive faculty is not equal to its office, which is ſhewn by light ſweats over the whole body; and the ſmalleſt exceſs in this reſpect, is oftentimes the occaſion of dangerous relapſes. A perſon in this ſtate is like a taper relumined, which the leaſt degree of wind is ſufficient to extinguiſh. Encycl.

CONVALLARIA, in *Botany*. See LILY *of the Valley*.

CONVENT, a MONASTERY of religious, of either ſex. The word comes from the Latin *conventus*, *meeting*, of *convenire*, *to come together*.

CONVENTA *pacta*. See PACTA.

CONVENTICLE, a diminutive of *convent*; denoting, properly, a cabal, or ſecret aſſembly, of a part of the monks of a *convent*, to make a brigue or party in the election of an abbot.

From the ill uſe of theſe aſſemblies, the word is come into diſrepute; and now ſtands for any miſchievous, ſeditious, or irregular aſſembly. F. Doucine obſerves, the occidentals always eſteemed the fifth general COUNCIL an unlawful *conventicle*. The term *conventicle* is ſaid, by ſome, to have been firſt applied in England to the ſchools of Wickliff, and has been ſince uſed to ſignify the religious aſſemblies of all in this country who do not conform to the eſtabliſhed doctrines and worſhip of the church of England.

By 22 Car. II. cap. 1. it is enacted, that if any perſons of the age of ſixteen years, ſubjects of this kingdom, ſhall be preſent at any *conventicle*, where there are five or more aſſembled, they ſhall be fined 5*s.* for the firſt offence, and 10*s.* for the ſecond; and perſons preaching incur a penalty of 20*l.* Alſo ſuffering a meeting to be held in a houſe, &c. is liable to 20*l.* penalty. Juſtices of peace have power to enter ſuch houſes, and ſeize perſons aſſembled, &c. And if they neglect their duty, they ſhall forfeit 100*l.* And if any conſtable, &c. know of ſuch meetings, and do not inform a juſtice of peace, or chief magiſtrate, &c. he ſhall forfeit 5*l.* But the 1ſt W. and M. cap. 18. ordains, that proteſtant diſſenters ſhall be exempted from penalties: though if they meet in a houſe with the doors locked, barred, or bolted, ſuch diſſenters ſhall have no benefit from 1 W. and M. Officers of the government, &c. preſent at any *conventicle*, at which there ſhall be ten perſons, if the royal family be not prayed for in expreſs words, ſhall forfeit 40*l.* and be diſabled. Stat. 10 Anne, cap. 2.

CONVENTION, in our LAW-*Books*, is uſed when a parliament is called, which ſits and is diſſolved without any act paſſed, or judgment given. It is then ſaid not to be a *ſeſſion* of parliament, but a *convention*.

CONVENTION *of Rouen*, the ſame with BURSE of Rouen.

CONVENTION, a treaty, CONTRACT, or agreement, between two or more parties.

Every *convention* between men, provided it be not contrary to honeſty, and good manners, produces a natural obligation, and makes the performance a point of conſcience. Every *convention* has either a name, and a cauſe or CONSIDERATION, or it has none: in the firſt caſe, it obliges civilly and naturally; in the latter only naturally.

CONVENTION is much uſed both in ancient and modern pleadings for an agreement, or covenant.

In the book of rolls of the manor of Hatfield in Yorkſhire, we have a record of a pleaſant *convention*, anno 11 Edw. III. between Robert de Roderham and John de Ithen; the latter of whom ſold the devil in a ſtring for three-pence halfpenny to the former, to be delivered on the fourth day after the *convention*: when, the purchaſer making his demand, the ſeller refuſed to give him livery; to the great loſs (as the record repreſents it) of forty ſhillings to the purchaſer, &c. But it appearing to the court, that ſuch a plea does not lie among Chriſtians, the parties were adjourned to hell for judgment.

Convention is alſo the name given to an extraordinary aſſembly of parliament, or of the ſtates of the realm, held without the king's writ. Of this kind was the *convention* parliament which reſtored Charles II. This parliament met above a month before his return, and ſat full ſeven months after his reſtoration, and enacted ſeveral laws ſtill in force, which were confirmed by ſtat. 13 Car. II. c. 7. and c. 14.

The *convention* of eſtates, in 1688, after the retreat of king James II. upon mature deliberation, came to a concluſion, that king James, by his practices here, and his flight hence, had abdicated the kingdom; and that the throne was vacant; and therefore devolved to king William and queen Mary. Upon this, their aſſembly expired as a *convention*, and was converted into a parliament. It is declared by ſtat. 1 W. and M. c. 1. that this *convention* formed the two houſes of parliament, notwithſtanding the want of writs and other defects of form. See Abdication.

There was a *convention* of the like kind in Scotland, and with the like effect.

CONVENTIONAL *ſubrogation*. See Subrogation.

CONVENTIONE *facienda*, in *Law*, is a writ which lies for the breach of any covenant in writing. Fitzherbert calls it a writ of *covenant*.

CONVENTUAL, ſomething belonging to a convent. See Cœnobite.

Conventual is particularly uſed, ſince the year 1250, for a religious who actually reſides in a convent; in contradiſtinction to thoſe who are only gueſts, or are entertained there, or are in poſſeſſion of benefices depending on the houſe.

Conventual likewiſe denotes a claſs of the order of Franciſcans, who adopted the relaxation introduced into that order by pope Innocent IV. which allowed of property and poſſeſſions in their community. They were ſo called in oppoſition to the *Brethren of the Obſervance*. This diviſion took place in the year 1368.

Conventual *prior*, differs from a *clauſtral prior*, in that the former has the full right and authority of an abbot; the only difference between them being in the name: whereas the clauſtral prior is a dependent of the abbot, and derives all his authority from him.

The *conventual* prior is obliged to take prieſts orders in a year, or at moſt in two years, from the day of his admiſſion: in default whereof, the benefice becomes vacant.

Some priories are actually *conventual*, i. e. they are ſtocked with religious; others are only *conventual in habitu*, v. gr. where there have been no religious during the ſpace of forty years: the continuance of one ſingle religious, keeps the priory *conventual actu*; for, in default of one, the priory becomes ſimple. See Prior.

By a declaration of the king of France, in 1680, it is decided, that a *conventuality* never degenerates, or ceaſes, while there are regular places ſubſiſting in it for twelve religious, with revenues for their ſupport.

Conventual *auditors*. See Auditor.

CONVERGING *curves*. See Curve.

Converging, or Convergent *lines*, in *Geometry*, are thoſe which continually approximate, or whoſe diſtance becomes continually leſs and leſs: in oppoſition to *divergent* lines, whoſe diſtance becomes continually greater.

Lines that *converge* one way, diverge the other.

Converging *rays*, in *Dioptrics*, are thoſe rays which in their paſſage out of one medium, into another of a different denſity, are refracted towards one another; ſo that, if far enough continued, they will meet in a point, or focus.

All convex lenſes make the rays *converge*, and concave ones diverge, i. e. the one inflects them towards a center, and the other deflects them from it; and the more, as ſuch lenſes are portions of ſmaller ſpheres. On which properties, all the effects of lenſes, microſcopes, teleſcopes, &c. depend.

Rays coming *converging* out of a denſer medium into a rarer, become more *convergent*, and concur ſooner, than if they were to continue their motion through the firſt.

Rays coming *converging* out of a rarer into a denſer medium, *converge* leſs, and concur later, than if they had continued their motion through the firſt medium.

Parallel rays, paſſing from a denſer into a rarer medium, v. gr. from glaſs into air, the ſurface of the glaſs being towards the air, will become *convergent*, and concur in a focus.

Diverging rays, or rays coming from a point, under the ſame circumſtances, become *converging*, and meet in a focus; and as the radiant point comes nearer, the focus recedes farther off: if the radiant be near, the focus will be infinitely diſtant; i. e. the rays will be parallel: and if the point be brought nearer ſtill, the rays will diverge.

Converging *ſeries*, in *Mathematics*. See Series.

CONVERSATION, Discourse, theſe two words intend an interlocution between two, or among more perſons: with this diſtinction, that *converſation* is uſed for any general intercourſe of ſentiments whatever; whereas a *diſcourſe* means a *converſation* limited to ſome particular ſubject. Thus we ſay, a *converſable* man; meaning a man able to *converſe* on variety of ſubjects, or a man of general knowlege: but we do not ſay, a *diſcourſable* man. The word *diſcourſe* is generally uſed when we mention a ſuperior talking to an inferior.

CONVERSE, in *Geometry*, &c. A propoſition is ſaid to be the *converſe* of another, when, after drawing a concluſion from ſomething firſt ſuppoſed, we proceed to ſuppoſe what had been before concluded, and to draw from it what had been ſuppoſed. Thus, it is demonſtrated in geometry, that if the two ſides of a triangle be equal, the two angles oppoſite to thoſe ſides are equal alſo: the *converſe* of the propoſition is, that if the two angles of a triangle be equal, the two ſides oppoſite to thoſe angles are equal alſo.

Converse *direction*, in *Aſtrology*, is uſed in oppoſition to *direct* direction; i. e. by the latter, the promoter is carried to the ſignificator, according to the order of the ſigns: by the former it is carried from eaſt to weſt, contrary to the order of the ſigns.

CONVERSION, in a *Moral Senſe*, a return from evil to good; reſulting from a ſenſe, either of the natural deformity of the one, and amiableneſs of the other; or of the advantages and diſadvantages that ſpring from the one, and the other, reſpectively.

Or, it is a change of the heart, with regard to the morals, paſſions, deſires, and purſuits; and of the mind, with regard to the ſentiments, &c. See Regeneration.

Conversion, in *Law*, is where a perſon having the goods of another in his poſſeſſion, converts them to his own uſe, without conſent of the owner; for which the proprietor may maintain an action of trover and *converſion* againſt him.

Conversion, *Converſio*, in *Logic*, a circumſtance or affection of propoſitions, wherein the order of the terms, or extremes, is changed; ſo that the ſubject comes into the place of the predicate, and the predicate into that of the ſubject; without any alteration in the quality of either.

As, *No virtue is vice*; *No vice is virtue*: in which we ſee the ſubject of the former, made the predicate of the latter, and the predicate the ſubject; yet both true.

Converſion is uſually defined a due change of the order of the extremes, i. e. under ſuch a habitude and coherence with reſpect to each other, that the one is rightly inferred from the other.

Hence, in every legitimate *converſion* two things are required: 1. A communication, or reciprocation of terms; not in reſpect of words, but of order. 2. The inference of one propoſition from the other.

Ariſtotle makes two kinds of *converſion*; the one *ſimple*, by others called *univerſal*; wherein nothing is changed beſide the order of extremes, i e. the terms are tranſpoſed, without altering either the quality or quantity thereof: as, *No mind is body*; *No body is mind*.

The ſecond, *per accidens*, called alſo *particular*; wherein, beſide changing the places of the terms, there is a change of an univerſal ſign into a particular one: as, *Every good man ſtudies the welfare of his country*; *Some man that ſtudies the welfare of his country is good*.

To theſe, ſome of Ariſtotle's followers add a third kind of *converſion*, called *by contrapoſition*: as, *Every man is an animal*; *Every no-animal is no-man*.

Conversion, in *Rhetoric*, &c. is underſtood of arguments which are returned, retorted, and ſhewn on oppoſite ſides, by changing the ſubject into the attribute, and the attribute into the ſubject.

There are *converſions* of arguments, from one figure to another, and alſo from general propoſitions to particular ones. Thus Cicero againſt Antony: *Doletis tres exercitus P. R. interfectos? Interfecit Antonius. Deſideratis clariſſimos cives? Eoſque vobis eripuit Antonius. Auctoritas hujus ordinis afflicta eſt? Afflixit Antonius.*

Conversion, in *War*, is when the ſoldiers are ordered to preſent their arms to the enemy who attack them in flank, whereas they were before ſuppoſed to be in front: the evolution neceſſary thereto is called *converſion*, or quarter-wheeling.

Conversion *of equations*, in *Algebra*, is when the quantity ſought, or any part thereof, being in fractions, the whole is reduced to one common denomination; and then, omitting the denominators, the equation is continued in the numerators only.

Thus, ſuppoſe $a-b=\frac{aa+cc}{d}+b+b$; multiply all by d, and it will ſtand thus, $da-db=aa+cc+db+db$.

In *Arithmetic*, we uſe the term *proportion by converſion of ratio*, for a compariſon of the antecedent, and conſequent, in two equal ratios.

Thus, as there is the ſame ratio between two and three, as between eight and twelve; it is concluded there is the ſame ratio between two and one, as between eight and four.

CONVERSION, *center of*, in *Mechanics*. See CENTER.

CONVERSOS. See CONVERT.

CONVERT, a perſon who has undergone a CONVERSION.

CONVERT is chiefly uſed in reſpect of changes from one religion, or religious ſect, to another.

Converts with relation to the religion turned to, are denominated *apoſtates* with regard to that they have relinquiſhed.

The Jews formerly converted to Chriſtianity in England, were called *converſos*. Henry III. built them a houſe in London, and allowed them a competent ſubſiſtence for their lives; which houſe was called *domus converſorum*. But the number afterwards increaſing, they grew a burden to the crown; upon which they were diſtributed among the monaſteries: and after the expulſion of the Jews under Edward III. the *domus converſorum* was given for keeping of the rolls.

CONVERTS, in a *Monaſtic Senſe*, are lay-friars, or brothers, admitted for the ſervice of the houſe; without orders, and not allowed to ſing in the choir.

Till the eleventh century, the word was uſed for perſons who embraced the monkiſh life at the age of diſcretion; by which they were diſtinguiſhed from thoſe devoted in their childhood by their parents, called *oblati*.

But in the eleventh century, when they began to receive into monaſteries illiterate perſons, incapable of being clerks, and only deſtined for bodily labour; the ſignification of the word was neceſſarily changed. F. Mabillon obſerves, that it was John firſt abbot of Vallombroſa, who firſt introduced theſe *brother-converts*, diſtinguiſhed by their ſtate from the monks of the choir, who were then either clerks, or capable of becoming ſo.

CONVERTIBILITY *of ſpirits* into one another. See SPIRITS.

CONVERTIBILITY *of elements* into one another. See ELEMENTS.

CONVEX, bending down on every ſide, as the outſide of a globular body.

CONVEX *freeze, lens, mirrour, ſuperficies*. See FREEZE, LENS, MIRROUR, SUPERFICIES.

CONVEXITY, the exterior ſurface of a *convex*, i. e. gibbous and globular thing; in oppoſition to *concavity*, or the inner ſurface, when hollow or depreſſed.

The word is of particular import in catoptrics, and dioptrics; where it is applied to mirrors and lenſes.

A *convex* MIRROR repreſents its images ſmaller than the objects; as a concave one repreſents them larger: a *convex* mirrour reflects the rays from it, diverging; and therefore diſperſes and weakens their effect: as a concave one reflects them converging, ſo as they concur in a point, and have their effect increaſed: and by how much the mirrour is a portion of a ſmaller ſphere, by ſo much does it diminiſh the objects, and diſperſe the rays, the more.

A *convex* LENS is either *convex* on both ſides, called a *convexo-convex*; or it is plain on one ſide, and *convex* on the other, called a *plano-convex*: or concave on one ſide, and *convex* on the other, called a *convexo-concave*, or *concavo-convex*, as the one or the other ſurface prevails; i. e. as this or that is a portion of a ſmaller ſphere. See REFRACTION.

CONVEYANCE, in *Law*, a DEED, or inſtrument, by which lands, &c. are *conveyed*, or transferred by the proprietor, or owner thereof, to ſome other perſon.

A *conveyance* cannot be fraudulent in part, and good as to the reſt: for if it be fraudulent and void in part, it is void in all; and it cannot be divided. 1 Lill. Abr. 311.

Fraudulent *conveyances* to deceive creditors, defraud purchaſers, &c. are void, by ſtat. 50 Edw. III. c. 6. 13 Eliz. c. 5. 27 Eliz. c. 4.

Conveyances are ſuch either at common law, or by virtue of the ſtatute of uſes. Of the former ſort ſome are original or primary, which are thoſe by means whereof the benefit or eſtate is created or firſt ariſes: others are ſecondary, or DERIVATIVE. Original *conveyances* are thoſe by *feoffment*, *grant*, *leaſe*, *exchange*, and *partition*.

CONVICT, in *Common Law*, one who is found guilty of an offence, by the verdict of a jury.

According to Crompton, a perſon is alſo a *convict*, or ſaid to be *convicted*, when, after having been outlawed, he appears and confeſſes. *Conviction* and ATTAINDER are frequently confounded.

Perſons *convicted* of felony by verdict, &c. are not to be admitted to bail, unleſs there be ſome ſpecial motive for granting it; as where a man is not the ſame perſon, &c. for bail ought to be before trial, when it ſtands indifferent whether the party be guilty or not. 2 Hawk. 99. 114. *Conviction* of felony, and other crimes, diſables a man to be a juror, witneſs, &c.

CONVICT *recuſant*, he who has been legally preſented, indicted, and *convicted*, for refuſing to come to church to hear the common prayer, according to the ſtatutes 35 Eliz. and 3 Jac. I.

This is commonly underſtood to be a popiſh recuſant; though any others who refuſe coming to church on the ſame account are as properly denominated RECUSANTS.

CONVICTION, in *Theology*, expreſſes the firſt degree of repentance; wherein the ſinner becomes ſenſible of his guilt, of the evil nature of ſin, and of the danger of his own ways

CONVICTION, in *Law*. See CONVICT.

CONVICTION, *ſummary*, is ſuch as is directed by ſeveral acts of parliament for inflicting certain penalties created by thoſe acts, without the intervention of a jury: the party accuſed being acquitted or condemned by the ſuffrage of ſuch perſon only, as the ſtatute has appointed to be his judge. Of this kind are all trials of offences contrary to the laws of exciſe, and other branches of the revenue, proceedings before juſtices of the peace, and the method uſed by ſuperior courts of juſtice for puniſhing contempt by ATTACHMENT.

CONVIVIUM, *banquet*, in our *Ancient Cuſtoms*, and *Law Books*, ſignifies the ſame thing among the laity as PROCURATION among the clergy; viz. when the tenant was obliged, in virtue of his tenure, to provide meat and drink for his lord once, or oftener, in the year.

CONULUS, in *Natural Hiſtory*, the name of a genus of the *echinodermata*, of the general claſs of the *fibulæ*. Theſe are raiſed from a circular baſe into a taller and more pointed or a ſhorter and more obtuſe cone. The *echinitæ* of this genus have been called by authors *ſcolopendritæ*, *pileæ*, and by ſome *bufonitæ*; and are generally known in Engliſh by the name of cap-ſtones. Of theſe there are four ſpecies: 1. The *albogalerus*, or white-hat ſtone, found foſſile in our chalk-pits. 2. The *gibbulus*. 3. The *nodus*, the ſeries of the lines of which are flexuous, and make the ſuperficies ſomewhat gibboſe. 4. The *bulla*, the orders of lines in which are ſtrait, and reſemble a button. Klein's Echinod.

CONVOCATION, a general aſſembly of the clergy of a province, ſummoned by the king's writ to conſult of the more weighty affairs of the church, as oft as a parliament is convoked to conſult of thoſe of the ſtate.

The king's writ is directed to the archbiſhop of each province, requiring him to ſummon all biſhops, deans, archdeacons, cathedral and collegiate churches, &c.

Upon which, the archbiſhop directs his mandate to his dean provincial, firſt citing him peremptorily; then willing him, in like manner, to cite all the biſhops, deans, &c. and all the clergy of his province; but directing, withal, that one proctor ſent for each cathedral and collegiate church, and two for the body of the inferior clergy of each dioceſe, may ſuffice: which the dean accordingly does.

The place where the *convocation* of the province of Canterbury has been uſually held, is St. Paul's church; whence, of late, they have been prorogued to St. Peter's in Weſtminſter, in the chapel of Henry VII. or the Jeruſalem Chamber, where there is an upper and lower houſe. Chamberlayne.

The *upper* houſe, in the province of Canterbury, conſiſts of twenty-two biſhops, whereof the archbiſhop is always preſident. All, at the opening of a *convocation*, are in their ſcarlet robes and hoods.

The *lower* houſe conſiſts of twenty-two deans, twenty-four prebendaries, fifty-four archdeacons, and forty-four clerks, repreſenting the dioceſan clergy.

Each houſe hath a prolocutor choſen from among themſelves; and that of the lower houſe is preſented to the biſhops. Things are firſt uſually propoſed in the upper houſe; then communicated to the lower. All the members of both houſes have the ſame privileges for themſelves, and menial ſervants, as the members of parliament have.

The *convocation* exerciſes juriſdiction in making canons with the king's aſſent; and appeal lies from their proceedings to the king in chancery, or to his delegates.

The archbiſhop of York, at the ſame time, holds a *convocation* of the clergy of his province, after the like manner, at York; and, by conſtant correſpondence, debates and concludes of the ſame matters as are debated by that of Canterbury. Not that the northern province is obliged to follow what the ſouthern one does.

The Engliſh clergy, anciently, had their repreſentatives in the lower houſe of parliament; as appears by the record much prized by lord Coke.

CONVOLVULUS, *bindweed*, in *Botany*; a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower hath one large bell-ſhaped petal, which ſpreads open. It hath five ſhort ſtamina, and a roundiſh germen. The empalement afterward becomes a roundiſh capſule, with one, two, or three valves, containing ſeveral ſeeds, which are convex on their outſides, but on their inſides angular. There are thirty-two ſpecies, natives of various parts of the world. Miller. See *Tab.* III. *of Botany, Claſs* 1.

To this genus belong ſcammony, mechoacan, jalap, and turbith.

As to the bindweeds properly ſo called, they are cathartic, and ſaid to be good in preventing abortion; a decoction of them is recommended as a mild evacuant of bile.

Convolvulus, *ſcarlet*; *quamoclit*, or *ipomœa*; in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower hath a ſmall permanent empalement, cut into five parts at the top. The petal is funnel-ſhaped, having a long cylindrical tube, whoſe brim is five-pointed, ſpreading open flat. It hath five awl-ſhaped ſtamina. In the bottom of the tube is ſituated a round germen, which afterward becomes a roundiſh capſule with three cells, incloſing three oblong ſeeds. There are eight ſpecies. Miller.

CONVOLUTION, a winding or turning motion, proper to the trunks of ſome plants; as the *convolvulæ*, or bindweeds, and the claſpers of vines, and briony.

Dr. Grew thinks, that all thoſe plants whoſe roots are twiſted, have ſuch a *convolution*: and he aſſigns two great efficient cauſes of this winding motion, the ſun and the moon. It is very eaſy to try whether there be any ſuch *convolution* or not in the trunks of plants; which may be done, as he hints, by tying a little bit of paper to any of the branches which are exactly north, ſouth, &c. and then ſeeing whether it will change its poſition, or not, in reſpect of the point of the compaſs.

CONVOY, from the French *convoyer*, *to conduct*; *eſcort*; a ſea term, ſignifying one or more veſſels of war, entruſted with the conducting of a fleet of merchants; ſerving as a watch, and a ſhelter from the inſults of the enemies of the ſtate, or of pirates.

Convoy is alſo uſed in ſpeaking of military affairs by land; where it ſignifies a body of forces ſent to guard a ſupply of proviſions, arms, or ammunition, going to a camp, or the like.

CONUSANCE. See Cognisance.

CONUSOR. See Cognisor.

CONVULSION, from *convello*, *to draw together*; *ſpaſmus*; in *Medicine*, a continued involuntary contraction of ſome parts of the body, otherwiſe accuſtomed to move according to the direction of the will.

It owes its origin to a contraction of the muſcles of the part, occaſioned by a too copious and violent influx of the nervous juice: of which there may be infinite cauſes in the blood, arteries, meninges, brain, nerves, muſcles, cranium, &c.

If the *convulſion* be univerſal, attended with violent motions, foaming at the mouth, and periodical; it is uſually called an epilepsy.

The uſual evacuations and medicines proper for the cure of *convulſions*, are phlebotomy, emetics, cathartics, epiſpaſtics, and proper cephalics; as *ſal volat. oleoſ.* ſpirit of lavender, ſpirit of hartſhorn, tincture of caſtor, cinnabar of antimony, caſſumanar root, valerian root, volatile ſalt of amber, &c. given in different forms. In periodical univerſal *convulſions*, a ſalivation ſometimes anſwers, after other courſes have failed. Women and children are particularly liable to *convulſions*: women after delivery; as upon a ſtoppage of the *lochia*, or a violent extraction of the *placenta*. See Infants, and Spasm.

CONVULSIVE, in *Medicine*, is applied to thoſe motions, which, naturally, ſhould depend on the will; but which, by ſome external cauſe, become involuntary.

A *convulſive* motion is a contraction made by fits and intervals; wherein it differs from a *convulſion*, which is a continued contraction.

Convulſive motions ariſe from a diſorder in the origin of the nerves. A *convulſive* tenſion of the ſolids is one of the principal cauſes which deſtroy the equilibrium that ſhould obtain between the ſolids and the fluids.

Convulsive is alſo uſed for any thing that occaſions a *convulſion*, or *convulſive motion*.

Wounds of nerves are ſaid to be *convulſive*; white hellebore is *convulſive*. Children are very liable to *convulſive* diſorders from various cauſes; as repletion, curdling of the blood in the ſtomach or inteſtines, worms, dentition, &c. The cramp is a *convulſive* contraction of ſome muſcular part of the body.

Convulsive *aſthma*. See Asthma.

CONYZA, in *Botany*. See Fleabane.

COOK, in *Ichthyology*, a ſpecies of fiſh, which is ſometimes taken in great plenty on the coaſts of Cornwall. It is a ſcaly fiſh, and does not grow to any great ſize: the back is purple, the belly yellow, and the tail rounded.

Cook-room, in a *Ship*, is where the cook and his mate dreſs and deliver out the meat, &c. See *Tab. Shipping*, *fig.* 2. *n.* 32.

COOLER, among *Brewers*, *Diſtillers*, *&c.* a large veſſel, uſually of ſmall depth and large ſurface, in which liquors are cooled, after having been boiled.

Coolers, in *Medicine*, remedies ſo called: which may be conſidered under theſe two diviſions: 1. Thoſe which produce an immediate ſenſe of cold; which are ſuch as have their parts in leſs motion than thoſe of the organs of feeling. 2. Such as by a particular viſcidity, or groſſneſs of parts, give a greater conſiſtency to the animal fluids than they had before; whereby they are diſabled from moving ſo faſt, and will therefore have leſs of that inteſtine force on which their heat depends.

Of the former kind are fruits, and all acid liquors. To the latter belong cucumbers, and all ſubſtances producing viſcidity.

COOLNESS, in *Painting*, is a quality of colours relating only to their teint or hue: it is uſually applied to yellow and blue, and denotes a tendency to green, in either colour, by a ſlight admixture of the other. See Warmth.

COOM, a term for ſoot that gathers over an oven's mouth: alſo for that black greaſy ſubſtance which works out of the wheels of carriages.

Coom, or ſoot, is ſometimes uſed in medicine, infuſed in wine with other ingredients, as an anti-hyſteric, and againſt palpitations of the heart, &c. The ſpirit of ſoot is alſo uſed for the ſame intentions, and in cephalic caſes.

COOMB, or Comb *of corn*. See Comb.

COOMINGS, in *Naval Architecture*. See Coamings.

COOP, in *Huſbandry*, a tumbrel or cart encloſed with boards, and uſed to carry dung, grains, &c.

Coop is alſo the name of a pen, or encloſed place, where lambs, poultry, &c. are ſhut up in order to be fed.

COOPER, on board a *Ship*, the perſon that looks to the caſks, and all other veſſels, for beer, water, or any other liquor. He has a mate under him.

CO-OPERATOR, derived from *con*, and *opera*, *labour*, denotes any cauſe, natural or ſupernatural, which concurs with another to the production of an effect. Thus, nature and medicine *co-operate* in the cure of diſorders: and the will of man concurs with the grace of God in the performance of good works.

CO-OPERIRE *pallio*. See Pallio.

CO-OPTATION, derived from *co-opto*, *I chooſe*; ſignifies the admiſſion of members into any college or ſociety. Thus it was anciently applied to the choice of the augurs and pontiffs; and in modern times, to an extraordinary nomination and election of perſons of diſtinguiſhed merit into a learned ſociety.

CO-ORDINATE, ſomething of equal order, rank, or degree, with another.

CO-ORDINATION, in reſpect of cauſes, denotes an order of cauſes, wherein ſeveral of the ſame kind, order, and tendency, concur to the production of the ſame effect.

COOT, *fulica*, in *Zoology*, the name of a diſtinct genus of birds of the order of the *grallæ*, the diſtinguiſhing character of which is, that the beak is convex, the thighs are half naked, the noſtrils oblong, and the forehead wholly naked.

The *fulica* is a water-fowl diſtinguiſhed from the moorhen kind, by having its toes widened by a membrane, though not joined together by it, or webbed like the ducks. Of this there are ſeveral ſpecies; thoſe moſt known with us are, the common *coot*, and a larger kind called *macroule*, or *diable de mer*, the ſea-devil.

The common *coot* is a conſiderably large bird, weighing uſually a pound and half; its beak is of a bluiſh white, and is a finger's breadth and half long, ſomewhat flatted and ſharp at the point; its legs are of a yellowiſh green, and above the knee there is a yellow ſpot; it has ſemicircular membranes at the joints of its toes: but what is its moſt obvious diſtinction is, that it has from the beak to the crown of the head, a fleſhy excreſcence, which is roundiſh, ſoft, and ſmooth, and is always naked or deſtitute of feathers; and hence the bird is commonly called with us, the bald *coot*. It is all over black above, but of a deeper black about the head than in any other part, and its breaſt and belly are of a ſort of lead-colour; its wing-feathers have a brownneſs, mixed among the black, and ſome of them are tipped with white.

The other ſpecies, or *macroule*, called by Bellonius, the *fulica major*, is larger and of a finer black than this, and has a larger white excreſcence on its head.

The common *coot* is ſo plentiful about Peterborough in Northamptonſhire, that in the ſeaſon of its laying, whole hampers full of its eggs are there brought to market, and ſold at an inconſiderable price; the people boil them, and the ſhell is ſo thin, that they often eat them without taking it off. Ray.

COPAIBA, Copaifera, in *Botany*, the balſam of capivi-tree, a genus of the *decandria monogynia* claſs. Its characters are theſe: it hath a flower conſiſting of five leaves, which expands in form of a roſe, and has five ſhort ſtamina. The germen is fixed in the center of the flower, which afterward becomes a pod containing one or two ſeeds, which are ſurrounded with a pulp of a yellow colour. We know but one ſort of this tree; which grows near a village called Ayapel, in the province of Antiochi, in the Spaniſh Weſt Indies, about ten days journey from Carthagena. There are great numbers of theſe trees in the woods about this village, which grow to the height of fifty or ſixty feet. Some of theſe trees do not yield any of the balſam; thoſe which do, are diſtinguiſhed by a ridge which runs along their trunks. Theſe trees are wounded in their center, and they place calabaſh ſhells, or ſome other veſſels to the wounded part to receive the balſam, which will all flow out in a ſhort time. One of theſe trees will yield five or ſix gallons of balſam: but though they will thrive well after being tapped, yet they never afford any more balſam. Miller.

COPAL, in *Natural Hiſtory*, a ſhining, tranſparent, citron-coloured ſubſtance, of an agreeable ſmell, reſembling that of frankincenſe. It is brought from New Spain, where it ouſes out from inciſions made in the bark of a large tree; much after the manner in which the vine yields its ſap, when cut in the ſpring.

Copal is accounted a cephalic, and good for the palſy, and other weakneſſes of the nerves; but is not much uſed. What we in England call *gum copal*, is called *gum anime* in foreign parts; and on the contrary, what is there called *gum anime*, we call *copal*.

The Indians uſe it to burn on their altars: among the Europeans, it is uſed againſt diſorders of the breaſt, having a warming, reſolving, and humectating power. It is very rare; when good, it is of a fine tranſparent yellow; and melts eaſily, either in the mouth, or on the fire.

In defect of this is brought another kind from the Antilles, which is almoſt the only one known among the druggiſts; and its chief conſumption is in the making of varniſh. By digeſtion in linſeed oil, with a heat very little leſs than ſufficient to boil or decompoſe the oil, it may be diſſolved; and this ſolution, diluted with ſpirit of turpentine, forms a beautiful tranſparent VARNISH, which, when well applied and ſlowly dried, becomes very hard and durable. This varniſh is uſed for ſnuff-boxes, tea-boards, and other utenſils. It preſerves and gives luſtre to paintings, and reſtores the decayed colours of old pictures, by filling up the cracks, and rendering the ſurfaces capable of reflecting light more uniformly. It is improperly called *gum copal*, being a hard concrete juice of an American tree, which has neither the ſolubility in water common to GUMS, nor the ſolubility of ſpirit of wine common to RESINS, at leaſt in any conſiderable degree; by its properties it reſembles AMBER.

COPARCENARY, the ſhare, or quota of a COPARCENER.

COPARCENERS, from *con.* and *particens*, *partner*; or Parceners; ſuch as have equal portions in the inheritance of their anceſtor.

Coparceners are ſo either by *law*, or *cuſtom*. *Coparceners by law*, are the iſſue female; which, in default of a male heir, come equally to the lands of their anceſtor.

Coparceners by cuſtom, are thoſe who, by ſome peculiar cuſtom of the country, challenge equal parts in ſuch lands; as in Kent, by the cuſtom of gavelkind. The crown of England is not ſubject to *coparcenary*.

COPE, an eccleſiaſtical ornament, uſually worn by chantors and ſub-chantors, when they officiate in the church-ſolemnity. It is alſo worn by the Romiſh biſhops, and other ordinaries: it reaches from the ſhoulders to the feet. The ancients called it *pluviale*.

Cope, *St. Martin's*, was a relic formerly in great eſteem among the French kings; and was often carried with them to war as their ſtandard.

Cope, among *Miners*, is a duty of ſix pence for every load of ore, nine diſhes making one load.

COPEC, a Muſcovite coin. See Coin.

COPERNICAN *ſphere*. See Sphere.

Copernican *ſyſtem*, is that ſyſtem of the world, wherein the ſun is ſuppoſed at reſt in the center; and the planets with the earth, to move in ellipſes round him.

The heavens and ſtars are here ſuppoſed at reſt; and that diurnal motion which they appear to have from eaſt to weſt, is imputed to the earth's motion from weſt to eaſt.

This ſyſtem was aſſerted by many of the ancients; and particularly Ecphantus, Seleucus, Ariſtarchus, Philolaus, Cleanthes Samius, Nicetas, Heraclides Ponticus, Plato, and Pythagoras; from the laſt of whom it was anciently denominated the *Pythagoric ſyſtem*.

It was alſo held by Archimedes, in his book De Granorum Arenæ Numero; but after him it became neglected, and even forgotten, for many ages; till about three hundred years ago, when Copernicus revived it; from whom it took the new name of the *Copernican ſyſtem*.

Nic. Copernicus, now a name ſo popular, was born at Thorn, in Poliſh Pruſſia, in the year 1472, according to Junctinus, or 1473, according to Mœſtlinus. After the uſual domeſtic education, he was ſent to the univerſity of Cracow; where he applied himſelf to philoſophy and phyſic, and at length commenced doctor in medicine. In the mean time, having a ſtrong propenſity to mathematics, he diligently attended the lectures of Albert Brudzevius, and even learnt of him at home. After he had here attained to the uſe of the aſtrolabe, and was entering upon aſtronomy, he took Regiomontanus for his guide: though he ran through all the mathematics of the age, yet he ſeemed moſt taken with perſpective; on occaſion whereof he learned painting, in which he is ſaid to have excelled. When twenty-three years of age, being at Bologna, he became acquainted with that eminent mathematician Dom. Maria Ferrarienſis; and was admitted to ſhare with him in making aſtronomical obſervations. Here, in the year 1497, Copernicus firſt obſerved an occultation of Palilitium by the moon. Going on to Rome, he taught publicly, and made ſome conſiderable obſervations; and at his return to Cracow, he was made canon of the church of Wermelant, or Ermeland, and at length vicar-general.

The courſe he took in proſecuting aſtronomy, which has rendered his name immortal, was as follows. Obſerving how the aſtronomers of thoſe times were perplexed to make the planets move equably in circular orbits, viz. to ſuppoſe them to move, not about their own center, but that of the equant; and that they could no way make out a tolerably regular ſyſtem, out of all their hypotheſes; he reſolved to try what he could do. With this view he peruſed the writings of all the philoſophers and aſtronomers extant; and ſelected out of each what appeared probable and elegant. In this review he was chiefly taken with two almoſt ſimilar opinions (the one attributed to Martianus Capella, the other to Apollonius Pergæus): which give a very good account of the motions of Venus and Mercury; and explain the cauſe of their directions, ſtations, and retrogradations, very happily: the latter anſwering the ſame purpoſe with reſpect to the three ſuperior planets. But then, in both theſe hypotheſes, the earth is ſuppoſed the center: Copernicus choſe rather to adopt the opinion of the Pythagoreans; to remove the earth out of the center of the world; and to give it, not only a diurnal motion round its own axis, but alſo an annual one round the ſun.

On this footing he began to obſerve, calculate, compare, &c. and at length, after a long, ſolicitous diſquiſition, found himſelf in a condition to account for the phenomena and motions of all the planets; and to make an orderly arrangement, or diſpoſition of the whole heavens; wherein nothing could be altered, or diſplaced, without bringing the utmoſt confuſion into the whole.

Theſe things he began to write down about the year 1507. He then proceeded to furniſh himſelf with ſome new apparatus; particularly a parallactic inſtrument, and ſome Ptolemaic rulers, wherewith to obſerve the altitude of the ſtars, and determine the periods of the ſun and moon: and without other means, compoſed his ſix books De Orbium Cœleſtium Revolutionibus; containing the whole of aſtronomy, delivered after the example of Ptolemy, in a geometrical method. We have already obſerved, that he began it in 1507; he finiſhed it in 1530. Five years after, he poliſhed and improved it. He died of a dyſentery, and a palſy on his right ſide, in the year 1543; having juſt lived to ſee a copy of his book, which was juſt printed, a few hours before his death. See the order and diſpoſition of the heavenly bodies, as laid down by him, compared with thoſe in the other ſyſtems, under the head System.

This ſyſtem has been eſtabliſhed by new arguments advanced, by Kepler, Galileo, and Newton, in every ſucceeding age; and notwithſtanding the oppoſition it met with, from the prejudices of ſenſe againſt the earth's motion, the authority of Ariſtotle in the ſchools, the threats of ignorant bigots, and the terror of the inquiſition, it has generally prevailed. Galileo, after having demonſtrated the motion of the earth, was obliged, by the rancour of the Jeſuits, to go to Rome, and there ſolemnly renounce it. Beſides which cruel treatment, he was condemned to a year's impriſonment in the inquiſition, and the penance of repeating daily ſome penitential pſalms. As a ſpecimen of the authority of the Romiſh church in oppoſition to this ſyſtem, we ſhall only tranſcribe the declaration of the excellent commentators, Le Seur and Jacquier, on the Principia, prefixed to the third volume. *Newtonus in hoc tertio libro telluris motæ hypotheſim aſſumit. Autoris propoſitiones aliter explicari non poterant, niſi eâdem quoque factâ hypotheſi. Hinc alienam coacti ſumus gerere perſonam. Cæterum latis a ſummis pontificibus contra telluris motum decretis nos obſequi profitemur.*

COPERNICUS, is the name of an aſtronomical inſtrument, contrived, by Mr. Whiſton, for the calculation and exhibition of eclipſes, and of the motions of the planets, both the primary and ſecondary ones, &c.

It was ſo called by the inventor, as being built on the Copernican ſyſtem; or as repreſenting the heavenly bodies agreeable thereto. It conſiſts of ſeveral concentrical circles of wood; upon which are inſcribed numbers, transferred hither from the aſtronomical tables: by the various diſpoſitions of theſe circles, which are made ſo as to ſlide within each other, queſtions are ſolved; and thus long calculations are ſaved, and the work of many hours brought into a few minutes.

For the exhibition of eclipſes, there is a peculiar apparatus, conſiſting of a terreſtrial globe, ſo diſpoſed, as that, being turned round its axis, the light of the ſun, or a candle, is projected through a glaſs plane, marked out into concentric circles, expreſſing digits of the eclipſe: and thus is the path of the eclipſe, with its degree or quantity in any part of its path, agreeably and accurately repreſented.

The inſtrument not being very common, a particular deſcription would be ſuperfluous. The author of it has written a book to explain it.

COPHOSIS, in *Medical Writers*, is uſed for deafneſs, whether beginning, or perfect, or from what cauſe ſoever.

The word is derived from κοφεω, *I am deaf*.

COPHTI, Cophts, or Copti, a name given to the Chriſtians of Egypt; who are of the ſect of Jacobites.

The critics are extremely divided about the origin and orthography of the word: ſome write it *Gophti*, others *Cophtites*, *Cophtitæ*, *Copts*, &c. Scaliger derives the name from *Coptos*, an anciently celebrated town of Egypt, the metropolis of the Thebaid. Kircher refutes this opinion, and maintains, that the word originally ſignifies *cut*, and *circumſcribed*; and was given theſe people by the Mahometans, by way of reproach, becauſe of their practice of circumciſing: but P. Sollier, another Jeſuit, refutes this opinion. Scaliger afterwards changed his opinion, and derived the word from Αιγυπτος, the ancient name of Egypt, by retrenching the firſt ſyllable: but this opinion, too, P. Sollier diſputes. John de Leo and others ſay, that the Egyptians anciently called their country *Elchibith*, or *Cibth*, from Cibth their firſt king, whence *Cophtite*, &c. others ſay from Cobtim ſecond king of Egypt. Vanſleb derives the word *Copht* from Copt ſon of Miſraim, grandſon of Noah. All theſe etymologies P. Sollier rejects, on this principle, that were they true, the Egyptians ought all equally to be called *Cophti*; whereas, in effect, none but the Chriſtians, and among thoſe none but the Jacobites, bear the name; the Melchites not being comprehended under it. Hence he chooſes to derive the word from the name *Jacobite*, by retrenching the firſt ſyllable; whence *Cobite*, *Cobea*, *Copta*, and *Cophta*.

The *Cophts* have a patriarch, who reſides at Cairo, but he takes his title from Alexandria: he has no archbiſhop under him, but eleven or twelve biſhops. The reſt of the clergy, whether ſecular or regular, is compoſed of the orders of St. Antony, St. Paul, and St. Macarius, who have each their monaſteries.

Beſides the orders of prieſts, deacons, and ſubdeacons, the *Cophts* have likewiſe archimandrites, the dignity whereof they confer with all the prayers and ceremonies of a ſtrict ordination. This makes a conſiderable difference among the prieſts; and beſides the rank and authority it gives them with regard to the religious, it comprehends the degree and functions of archprieſts. By a cuſtom of ſix hundred years ſtanding, if a prieſt elected biſhop be not already archimandrite, that dignity muſt be conferred on him before epiſcopal ordination.

The ſecond perſon among the clergy, after the patriarch, is the titular patriarch of Jeruſalem, who alſo reſides at Cairo, becauſe of the few *Cophts* at Jeruſalem; he is, in effect, little more than the biſhop of Cairo: only he goes to Jeruſalem every Eaſter, and viſits ſome other places in Paleſtine near Egypt, which own his juriſdiction. To him belongs the government of the *Cophtic* church, during the vacancy of the patriarchal ſee.

To be elected patriarch, it is neceſſary the perſon have lived all his life in continence: it is he confers the biſhopricks. To be elected biſhop, the perſon muſt be in the celibate; or, if he have been married, it muſt not be above once.

The prieſts and inferior miniſters are allowed to be married before ordination; but are not obliged to it, as Ludolphus erroneouſly obſerves. They have a great number of deacons, and even confer the dignity frequently on children. None but the loweſt rank among the people commence eccleſiaſtics; whence ariſes that exceſſive ignorance found among them: yet the reſpect of the laity towards the clergy is very extraordinary. Their office is longer than the Roman office, and never changes in any thing: they have three liturgies, which they vary occaſionally.

The monaſtic life is in great eſteem among the *Cophts*: to be admitted into it, there is always required the conſent of the biſhop. The religious *Cophts* make a vow of perpetual chaſtity; renounce the world, and live with great auſterity in deſerts: they are obliged to ſleep in their cloaths and their girdle, on a mat ſtretched on the ground; and to proſtrate themſelves every evening a hundred and fifty times, with their face and breaſt on the ground. They are all, both men and women, of the loweſt claſs of the people; and live on alms. The nunneries are properly hoſpitals; and few enter but widows reduced to beggary.

F. Roderic reduces the errors and opinions of the *Cophts* to the following heads: 1. That they put away their wives, and eſpouſe others while the firſt are living. 2. That they have ſeven ſacraments; viz. baptiſm, the euchariſt, confirmation, ordination, faith, faſting, and prayer. 3. That they deny the Holy Spirit to proceed from the Son. 4. That they only allow of three œcumenical councils; that of Nice, Conſtantinople, and Epheſus. 5. That they only allow of one nature, will, and operation, in Jeſus Chriſt, after the union of the humanity with the divinity. For their errors in diſcipline, they may be reduced, 1. To the practice of circumciſing their children before baptiſm, which has obtained among them from the twelfth century. 2. To their ordaining deacons at five years of age. 3. To their allowing of marriage in the ſecond degree. 4. To their forbearing to eat blood: to which ſome add their belief of a baptiſm by fire, which they confer by applying a hot iron to their forehead or cheeks.

Others palliate theſe errors, and ſhew that many of them are rather abuſes of particular perſons, than doctrines of the ſect. This ſeems to be the caſe with regard to their polygamy, eating of blood, marrying in the ſecond degree, and the baptiſm of fire: for circumciſion, it is not practiſed as a ceremony of religion; nor as of any divine appointment, but merely as a cuſtom which they derive from the Iſhmaelites; and which, perhaps, may have had its origin from a view to health and decency in thoſe hot countries.

The *Cophts*, at different times, have made ſeveral reunions with the Latins; but always in appearance only, and under ſome neceſſity of their affairs. In the time of pope Paul IV. a Syrian was diſpatched to Rome from the patriarch of Alexandria, with letters to that pope; wherein he acknowleged his authority, and promiſed obedience; deſiring a perſon might be diſpatched to Alexandria, to treat about a re-union of his church to that of Rome: purſuant to which, Pius IV. ſucceſſor to Paul, choſe F. Roderic, a Jeſuit, whom he diſpatched in 1561, in quality of apoſtolical nuntio.

But the Jeſuit, upon a conference with two *Cophts* deputed for that purpoſe by the patriarch, was made to know, that the titles of *father of fathers*, *paſtor of paſtors*, and *maſter of all churches*, which the patriarch had beſtowed on the pope in his letters, were no more than mere matters of civility and compliment; and that it was in this manner the patriarch uſed to write to his friends: they added, that ſince the council of Chalcedon, and the eſtabliſhment of ſeveral patriarchs independent of one another, each was chief and maſter of his own church. This was the anſwer the patriarch gave the pope, after he had received a ſum of money remitted to him from Rome, by the hands of the Venetian conſul.

COPHTIC, or Coptic, the language of the Cophts, the ancient language of the Egyptians, mixed with a great deal of Greek; the characters it is written in being all Greek. It has a form and conſtruction peculiar to itſelf: it has no inflections of the nouns or verbs; but expreſſes number, caſe, gender, perſon, mood, tenſe, and poſſeſſive pronouns, by letters and particles prefixed.

F. Kircher is the firſt who publiſhed a grammar, and vocabularly of the *Cophtic*. There is not known any book extant in the *Cophtic*, except tranſlations of the Holy Scriptures, or of eccleſiaſtical offices; or others that have relation thereto, as dictionaries, &c.

The ancient *Cophtic* is now no longer found but in books; the language now uſed throughout the country is Arabic.

The old *Cophtic*, which Kircher maintains to be a mother-tongue, and independent of all others, had been much altered by the Greek: for beſides that it has borrowed all its characters from the Greek, with a very little variation, a great number of the words are pure Greek.

Voſſius, indeed, aſſerts, that there was no *Cophtic* language till after Egypt became ſubject to the Arabs. The language, according to him, is a mixture of Greek and Arabic: the very name thereof not being in the world till after the Arabs were maſters of the country. But this, M. Simon obſerves, proves nothing; except that what was anciently called *Egyptian*, has ſince by the Arabs been called *Cophtic*, by a corruption of ſpeech. There are, it is true, Arabic words in the *Cophtic*; yet this by no means proves but that there was a language before that time, either *Cophtic* or Egyptian. Pietro de la Valle obſerves, that the Cophts have entirely loſt their ancient tongue; that it is now no longer underſtood among them; that they have nothing extant therein but ſome ſacred books; and that they ſtill ſay maſs in it.

All their other books have been tranſlated into Arabic, which is their vulgar tongue; and this has occaſioned the originals to be loſt: it is added, that they rehearſe the epiſtles and goſpels in the maſs, twice; once in Arabic, and once in *Cophtic*.

Indeed, if we believe F. Vanſleb, the Cophts ſay the maſs in Arabic, all but the epiſtles and goſpels, which they rehearſe both in that and *Cophtic*.

Cophtic *Bible*. See Bible.

Cophtic *Liturgies* are three; one attributed to Baſil, another to St. Gregory, and the third to Cyril: they are tranſlated into Arabic for the uſe of the prieſts and people.

COPIA *libelli deliberanda*, a writ which lies in caſe where a man cannot get the copy of a libel at the hands of the eccleſiaſtical judge.

Copia, *Cornu*. See Cornucopia.

COPIATA, under the *Weſtern Empire*, a *grave-digger*. In the firſt ages of the church, there were clerks deſtined for this employment. In the year 357, Conſtantine made a law in favour of the prieſts *copiatæ*, i. e. of thoſe who had the care of interments; whereby he exempts them from the luſtral contribution which all other traders paid.

It was under him alſo that they firſt began to be called *copiatæ*, q. d. clerks deſtined for bodily labour, from κοπος, of κοπτω, *ſcindo*, *cædo*, *ferio*, *I cut*, *beat*, &c. Before that time they were called *decani* and *lecticarii*; perhaps, becauſe they were divided by decads or tens, each whereof had a bier or litter for the carriage of the dead bodies. Their place among the clerks was the next in order before the chantors.

COPING *of a wall*, the top or cover of a wall, made ſloping to carry off the water.

Coping *over*, in *Carpentry*, a ſort of hanging over, not ſquare to its upright, but bevelling on its under ſide till it end in an edge.

COPIST, in Diplomatic *Science*, ſignifies a tranſcriber or copier of deeds, books, &c.

COPOS, from κοπος, *labour*; in *Medical Writers*, is uſed for a wearineſs of the body, when the muſcles, or their fibres rather, are loaded and obſtructed with viſcous humours, ſo as to render them unfit for motion.

COPPA, in *Law*, a cop or cock of graſs, hay, or corn, divided into titheable portions; as the tenth cock, &c. This word in ſtrictneſs denotes the gathering or laying up the corn in copes or heaps, as the method is for barley or oats, &c. not bound up, that it may be the more fairly and juſtly tithed: and in Kent they ſtill retain the word, a *cop* or *cap* of hay, ſtraw, &c.

COPPEL, Copel, or Cuppel, a veſſel uſed by *Chemiſts*, *Refiners*, and *Aſſayers*, to try, and purify their metals. See *Tab. Chemical Furnaces*, &c. *fig.* 24.

The *coppel of aſſay*, is a little flat veſſel, made of vegetable aſhes, and bones of ſheep's feet, calcined and lixiviated, to ſeparate the ſalts, which would otherwiſe make it crack, and the inflammable principle, which might revivify the ſcorified metals, and occaſion an ebullition.

At the bottom of the veſſel is a little cavity filled with a kind of white varniſh, compoſed of hartſhorn, or pike bones, calcined and diluted in water: the uſe of this liquor is, that the gold or ſilver to be aſſayed may be more conveniently lodged, and that the button of the aſſay may be ſeparated the more eaſily.

The hollow of the *coppels*, which is to contain the metal, muſt be a ſpherical ſegment, and not very deep: firſt, that the ſurface of the melted maſs, be it ever ſo ſmall, be diſtinctly viſible to the artificer's eye; and, ſecondly, that the metal left in that cavity, may melt together into one globule. But the outſides of the *coppel* muſt be only a ſmall matter convergent towards the baſis, like a truncated cone, that it may ſtand firmly on its baſe: and that this figure may be regularly given to theſe veſſels, it is convenient to have copper or braſs moulds for the making them.

The *coppel* is uſually formed in a braſs ring from three quarters of an inch to two inches in diameter, and not quite ſo deep, placed on ſome ſmooth ſupport. When the ring is filled with the moiſtened powder, a round-faced peſtle, called the *monk*, is ſtruck down into it, with a few blows of a mallet, by which the maſs is made to cohere, and rendered ſufficiently compact, and a ſhallow cavity formed in the middle: this cavity is made the ſmoother, by ſprinkling a little of the ſame kind of aſhes, levigated into an impalpable powder, through a ſmall fine ſieve, and the monk is again ſtruck down upon it.

Though metals may be tried otherwiſe than by *coppelling*; and though the touchſtone, graver, &c. are of ſome ſervice to the goldſmith in judging of their purity; yet, without the *coppel*, it is difficult, not to ſay impoſſible, to know their preciſe degree of purity.

The *refiner's coppel*, is a large freeſtone veſſel, lined withinſide with a kind of plaſter made of aſhes well lixiviated, cleanſed, dried, beaten, and ſifted.

In this kind of *coppel* it is that they purify their gold and ſilver, by adding lead to it, and expoſing the whole to a violent fire.

There is ſcarcely any other ſubſtance, which ſo ſtrongly reſiſts vehement fire, which ſo readily imbibes metallic ſcoriæ, and which is ſo little diſpoſed to be vitrified by them, as the aſhes of animal bones. The calcination of theſe bones is to be made in an open fire, for a few hours, according to their ſize; and ſuch ſhould be choſen as have leaſt fat about them. The calcination is known to be perfect, when there is not a black ſpot remaining, either on the outſide of the bone, or within it, when broken. When the bones are perfectly calcined, they muſt be reduced to a very fine powder, either by grinding on a porphyry, or ſifting through a fine ſieve, after beating. This powder muſt be alſo carefully waſhed in warm water; for during the calcination, the bones become almoſt always impregnated with the ſalt of the aſhes of the fewel.

This powder is called by ſome *clar*, and is an excellent ſubſtance for *coppels*. The bones of fiſhes, when ſmall, are yet more eaſily calcined than thoſe of other animals: this may be done with eaſe in an open earthen veſſel, and the powder of theſe is preferable even to the former. Parget, or plaiſter of Paris, made of various kind of ſpar, though all kinds will not do for this purpoſe, is alſo excellent: but as there are ſome ſorts of ſpar which will not afford a proper plaiſter, it is proper to try in a ſmall quantity firſt. The calcination is to be made in an earthen veſſel, covered with a tile, in an open fire. The ſpar crackles a little with the heat; and when this noiſe is over, the calcination is perfect.

As the preparation of bone aſhes for this uſe, however, is tedious, and the proper ſort of ſpar is not always or every where to be had, the want of them may be ſupplied with the aſhes of vegetables, properly prepared. When a proper powder is obtained, it is moiſtened with juſt ſo much water as is ſufficient to make it hold together, when ſtrongly preſſed between the fingers. Some give a greater tenacity to the powder by mixing it with glutinous liquids, as whites of eggs, or gum water, or with fine waſhed clay; but theſe ſhould be uſed very ſparingly, and with great caution. The calcined ſpar muſt be prepared with a ſolution of vitriol.

Coppels had better be too compact than too looſe in their texture, ſince the latter is always a miſchievous accident, whereas the former, by abſorbing the glaſs more ſlowly, is of no other hurt than the retarding the operation a little.

Coppels made of bone aſhes, or of calcined ſpar, are more valuable than thoſe of wood aſhes, as they require not ſo much caution and regularity in the management of the fire; but if wood aſhes enter the compoſition, the *coppel* muſt be made pretty hot before the metal is put into it, otherwiſe the aqueous vapours, forcing their way out, will cauſe the metal to be thrown out in drops; for *coppels* of this kind can never be perfectly dried by the air alone, there being always ſomething of an alkaline ſalt yet remaining in wood aſhes, which makes them attract the water out of the air, as the dark colour of theſe aſhes, and the ſolution of *ſal ammoniac* poured on them, alſo ſhew: for this reaſon, theſe aſhes are alſo more diſpoſed to vitrification than thoſe of bones, the latter approaching much nearer to the nature of the incombuſtible ſtones.

COPPELLING, in *Aſſaying* and *Chemiſtry.* Silver may be precipitated out of its ore by *coppelling* alone, in the following manner: roaſt a centner of the ſilver ore in the common way; when roaſted, powder and ſift it very fine, and if it melts with difficulty, mix with it one centner of litharge: when it is an ore that melts eaſily, this may be omitted. Divide the powder into five or ſix parts, and wrap up every one of them ſeparately in pieces of paper. Put a large coppel under a MUFFLE in the furnace; heat it thoroughly; then put into it ſixteen centners of lead. When the lead begins to ſmoke and boil, put upon it one of the ſmall parcels of powdered ore, in its paper; then diminiſh the fire a little. The paper will be immediately conſumed, and the ore caſt to the inſide of the coppel, in form of ſcoriæ. When this is done, increaſe the fire again, and add a ſecond parcel of the ore; and continue this method till all the ore is put in; after which, ſcorify the lead in a ſtronger fire. The ſilver contained in the ore, with that contained in the lead, will now be found in form of a bead in the coppel; and ſubtracting the known quantity yielded by the lead, the remainder of the weight gives the quantity of ſilver in that centner of ore.

Silver is not the only ore that can be thus worked; many others may be aſſayed in the ſame manner, by *coppelling* alone: thoſe are indeed to be excepted from this proceſs, which ſplit, or which corrode the coppels. Cramer. See alſo Lewis's Com. Phil. Tech. p. 129, &c.

COPPER, a hard, heavy, ductile, imperfect metal; found in mines, in ſeveral parts of Europe, but moſt abundantly in Sweden.

Copper is of all metals the moſt ductile and malleable after gold and ſilver; and it abounds very much in vitriol and ſulphur. It may be drawn into wire as fine as hair, or beaten into leaves as thin as thoſe of ſilver. Its tenacity is very conſiderable, as a wire of it one tenth of an inch in diameter, is capable of ſupporting a weight of 299¼ pounds without breaking. It has a very ſingular diſagreeable taſte and ſmell. In a great fire, with free acceſs of air, it ſmokes, loſes part of its weight, and gives beautiful green and blue colours to flame.

The chemiſts call it *Venus*; as ſuppoſing it to have ſome more immediate relation to that planet. By an analyſis it appears compoſed of a ſulphur ill digeſted, a yellowiſh mercury, and a red ſalt.

Copper is found in glebes or ſtones of various forms and colours; which are firſt beaten ſmall and waſhed, to ſeparate them from the earthy, &c. parts wherewith they are mixed.

After waſhing they are ſmelted, and the melted matter run into a kind of moulds, to form large blocks, by ſome called *ſalmons*, and by others *cakes of copper*. This is the ordinary *copper*.

To render it more pure and beautiful, they melt it again once or twice; ſome of its coarſe earthy parts being left behind at each fuſion, and a quantity of tin and antimony added in each. In this ſtate it is called *roſe copper*, in Latin ÆS *peloſum*.

Copper is ſometimes alſo found native and pure in the mines, either in form of threads, or in flakes, plates, grains, or other maſſes and lumps. This is called *virgin copper*.

The method of procuring the metal from the ore is this: mix one or two centners of the ore for an aſſay, beaten to a very fine powder, with ſix centners of the black flux; put the powder into a crucible, and cover it half an inch high with common ſalt; preſs the whole down with the finger, but let the capacity of the veſſel be ſuch, that it may be only half full; ſhut the veſſel cloſe with a lute, and put it into the furnace. Increaſe the fire ſlowly, till the common ſalt crackles; then increaſe it ſo far, that the veſſel may preſently be made red-hot, and after about a quarter of an hour's ſtanding in this heat, the metal will be ſeparated: then take out the veſſel, and ſetting it on the floor, ſtrike with a few blows of a hammer near where it ſtands, to make the metal get together at the bottom. Break the veſſel, when grown cold, in two, from top to bottom, as nearly as you can, and you will find a ſolid and malleable regulus at the bottom. Cramer's Art of Aſſaying, p. 301.

Copper, when hid, as it frequently is, in an ore full of the matter of the pyrites, may be diſcovered by a ſolution and liquid precipitation, in the following manner: make a ſolution of vitriol out of the ore, by a ſlight roaſting in an open fire, and by expoſing it afterwards to an air ſomewhat moiſt, and pouring warm water upon it. Put into this ſolution ſmall iron plates, perfectly clean, and free from greaſe; if there is any ſmall quantity of *copper* in the pyrites, it will now ſtick to the iron plates, in form of a ſubtle powder, of a deep yellow colour, and all of it will be thus fetched out of the ſolution, if there be time enough, and a moderate warmth.

This property which iron has of ſeparating *copper* from acids, ſerves alſo to extract the *copper* from the blue vitriol with which water in mines of this metal is impregnated. A conſiderable quantity of *copper* is obtained by means of iron bars laid in the ſtreams iſſuing from the *copper* ſprings of Wicklow in Ireland. Theſe bars are laid in oblong pits, into which the impregnated water paſſes; and the *copper*, attracted and fixed by the iron, ſubſides to the bottom of the pit. When the iron is diſſolved, the ſtream is turned from the pits, the reddiſh mud collected, and laid in a heap to dry; and the reddiſh duſt melted into *copper*. One ton of iron in bars produces a ton and nineteen hundred and a half of the *copper* mud or duſt; and each ton of the mud yields, when ſmelted, ſixteen hundred weight of the pureſt *copper*. Phil. Tranſ. vol. xlvii. p. 502. vol. xlviii. p. 94 and 101, &c.

When ſilver is contained in *copper*, it may be ſeparated in the following manner: reduce the *copper* into filings; put one centner of this by for the operation; then put the double and ſextuple quantity of granulated lead into a large, well-baked coppel; make the fire ſtrong, and continue it ſo till the lead begins to ſmoke and boil; then add the *copper* wrapped up in a paper, ſo that it may be immerſed together into the middle of the boiling lead. When all the *copper* is diſſolved, ſuppreſs the fire till there is a ſmoke ſeen wandering over the ſurface, and the maſs is not raiſed up very high in the middle, and the coppel looks brown as far as it has been penetrated by the litharge: take care, however, that the boiling of the lead does not entirely ceaſe. When the greateſt part of the metal is conſumed, increaſe the fire gradually, and make it very ſtrong toward the end. When the operation is finiſhed, the ſilver will be found pure in the center of the coppel, ſurrounded with yellow ſcoriæ in form of cryſtals. Cramer.

Copper put into the fire with iron promotes its fuſion, but it becomes more rigid and more pale by the mixture. It is often neceſſary, to render this fuſion the eaſier, to add as much tartar and common glaſs, as will cover the ſurface of the whole maſs.

As to the other metals, *copper* is well known to mix readily with ſilver and gold, and to give them a rigidity which renders them much more fit for the uſes of life, than they would be in their natural ſoft ſtate.

Copper melted with GOLD promotes the fuſion of the gold; it produces a gold colour with tin; ſtones are ſtained by ſolutions of it; it is always incompact after melting; gold is precipitated by it; it is diſſolved by vitriol of iron; glaſs coloured with it, on being baked with white earth, gave a red tinge to the earth; it is hardened and made leſs diſpoſed to tarniſh, by being melted with platina in different proportions. See Lewis's Com. Phil. Tech.

Copper reſiſts the fire more than any other *imperfect* METAL before it undergoes any great alteration; but being an imperfect metal, it may be burnt, deſtroyed, and calcined by the united action of fire and air: ſo that its quantity is always diminiſhed by melting it without covering its ſurface. The ſurface of clean poliſhed *copper*, when gradually heated, is covered with all the colours of the rainbow, produced by a more or leſs perfect CALCINATION of the ſurface of the metal expoſed to the fire.

The *ſpecific* GRAVITY of European *copper* is to that of water as 8843, and of Japoneſe *copper* as 9000 to 1000.

Copper is eaſily ſoluble by all ACIDS, and its ſolutions are green, or blue; it is alſo acted upon by almoſt all ſaline and metallic ſubſtances, and diſſolved by fixed and volatile alkalies. Macquer.

Copper, becauſe of its great ductility, and ſhining colour, is greatly employed in domeſtic uſes; but it is never uſed inwardly as a medicine, unleſs in tincture; becauſe this metal, and eſpecially its ruſt, are reckoned poiſons: and any kind of food, or even water, that has ſtood long in *copper* veſſels, is pernicious. The ſymptoms produced by this poiſon, are pains in the ſtomach and inteſtines, exceſſive vomitings, irritations to ſtool, ulcers in the inteſtines, ſometimes difficulty of breathing, and ſpaſmodic contractions of the limbs, and laſtly death itſelf; if the quantity of the poiſon be great. See a letter of Mr. Travis, endeavouring to ſhew that the uſe of *copper* veſſels in the navy is one principal cauſe of the ſea ſcurvy. Med. Obſerv. &c. vol. ii. p. 1. See alſo a letter on the ſame ſubject of *copper* veſſels. Ibidem, p. 146.

The remedies proper in ſuch caſes are, firſt, to take a great quantity of milk, oil, or melted freſh butter, then to drink warm water until the patient vomits plentifully. Clyſters made with oil, butter, or fat broths, are likewiſe proper; laſtly, ſtrengthening cordials and a milk diet. James.

The water iſſuing from the *copper* ſprings diſcovered in Penſylvania, Dr. Rutty obſerves, though poiſonous in its native ſtrength, is frequently uſed, when lowered with common water, for purging and vomiting the country people; and is uſeful in curing ulcers, and cutaneous diſorders, and particularly for ſore eyes. Phil. Tranſ. vol. xlix. p. 651.

The preparations of *copper* are, 1. *Flos æris*, or flowers of *copper*. 2. *Ærugo æris*, or verdigriſe. 3. *Æs uſtum*, or burnt *copper*. 4. *Squamma æris*, or the flake of *copper*. 5. The *ens Veneris* of Mr. Boyle. 6. *Aqua ſapphirina*, a famous eye-water, of a blue colour. See GRENAILLE, &c.

Of a mixture of *copper* and LAPIS CALAMINARIS, is formed BRASS, which the French call *cuivre jaune*, yellow *copper*, in contradiſtinction to natural *copper*, which they call *cuivre rouge*, red *copper*.

Copper melted together with twenty-two or twenty-three pounds of fine tin *per* quintal, makes BELL-*metal*.

Copper and braſs melted in equal quantities, make what the French call BRONZE, uſed for figures, ſtatues, &c.

Copper turns white by an unction of ſpirit of wine and orpiment. Pliny ſays there is a *copper* naturally white, found underneath the ſilver mines.

Chemiſts give the denomination *ſaffron of copper*, or *crocus Veneris*, to a preparation of *copper* plates ſtratified with decrepitated ſalt, in a crucible; after having extinguiſhed them in water, and ſcraped them with iron inſtruments. It is very red, and is uſed in emplaſters to cleanſe wounds, and ulcers.

Some chemiſts have pretended, that the ſpirit of *copper* is real ALKAHEST, capable of diſſolving wholly pearls, corals, crabs eyes, &c. without any diminution of its force; but experience has ſhewn the contrary.

Æs uſtum, i. e. burnt *copper*, ſometimes alſo called *ſaffron of Venus*, is nothing but *copper* calcined in a violent fire, and reduced to ſcales no longer poſſeſſed of brilliancy, ductility, or other metallic properties. If theſe ſcales are mixed with ſome matter capable of reſtoring phlogiſton to them, and expoſed to a great fire, a quantity of malleable *copper* is obtained nearly equal to that of the ſcales. Macquer. See ÆS.

VERDIGREASE is a ruſt of *copper*. Becher obſerves, that the drinking of acid liquors, even out of common ſilver plate, is very unwholeſome, becauſe of the mixture of *copper* therein; much more is it ſo out of veſſels of *copper*.

COPPER, *white*, a kind of metal white as ſilver, frequently brought from China, and ſuppoſed by many to be natural. But it is only an allay of *copper*, zinc, and arſenic, in certain proportions. It is made with difficulty, becauſe of the volatility of the two ſemi-metals; and, as its quality is noxious, it is not much uſed.

COPPER, *affinity of*. See AFFINITY.

COPPER, *engraving in*. See ENGRAVING.

COPPER, *granulation of*. See GRANULATION.

COPPER, *refining*. See REFINING.

COPPER-*plates*, for engraving, ſhould be choſen of the beſt red *copper*, as being generally the tougheſt and the moſt ductile; and therefore moſt capable of being extended with the hammer, or rolled out to the niceſt and ſmalleſt pieces. They ſhould be free from any veins, ſpecks, or diſſimilar parts, and throughout of an uniform texture. Their thickneſs may be in the proportion of a line to a foot by nine inches in breadth. They ſhould be well forged and planiſhed whilſt cold, becauſe the ſubſtance of the *copper* will thus be rendered leſs porous. The poliſhing of theſe plates is performed by laying them obliquely on a board, and rubbing them firſt with a piece of grind-ſtone, dipped in water, lengthways and breadthways, till the flaws and inequalities in the ſurface are removed; and then with a piece of good pumice-ſtone to take away the marks and ſcratches made by the grind-ſtone: when this is done, let them be waſhed clean, and rubbed with a piece of oil-ſtone, to remove the ſcorings of the pumice-ſtone, and again waſhed till they are perfectly clean. For the laſt operation, three or four large coals of ſallow wood, ſound and without clefts, ſhould be placed in a fire on a hearth, and covered with other burning coals and a quantity of red-hot aſhes; and left in this ſtate for about an hour and a half; but the time ſhould be proportioned to the ſize of the coals, that the fire may penetrate into their inmoſt ſubſtance, and expel all the ſmoke that can be driven out: the coals ſhould then be thrown into a veſſel of water, and there left to cool. With one of theſe coals, let the plate be rubbed, and the operation be continued till all the flaws left by the oil-ſtone are removed; and if the coal itſelf be too hard, and leave traces, a ſofter one muſt be uſed to remedy the defects of the former, ſo that the ſurface of the plate may be perfectly clear and even. This is the method recommended by Le Boſſe: but the end may be more expeditiouſly obtained, by rubbing out the marks of the planiſhing hammer with emery finely ground, and after waſhing the plate clean, bruſhing it over with the refiner's *aqua fortis*: let this lie on till the ebullition produced by it begins to decreaſe, and then waſhed off by immerſing the plate in water. The plate muſt be finiſhed by hard rubbing with a ſteel BURNISHER, ſo that every part of it may appear as bright as looking-glaſs.

Thoſe plates that are deſigned for etching, ſhould, after theſe operations, be well waſhed with clean water, dried by the fire, wiped with a linen cloth, and rubbed over with crumbs of very ſtale bread; and then rubbed well with the ſcrapings of very ſoft chalk. The perfection of the poliſh may be tried by rubbing the plate with printing ink, and pulling off a proof as if it had been engraved; if no impreſſion is made on the paper, the poliſhing is complete; but if any lines appear to be printed, the plate is faulty, and it muſt be repoliſhed. Encyclopedie, art. *Gravure*; and Handmaid to the Arts, vol. ii. p. 48, &c. See ENGRAVING, and ETCHING.

COPPER-*plate Printing*. See *Rolling-preſs* PRINTING.

COPPERAS, a name given to *green* VITRIOL, particularly to vitriol of iron. See CABRUSI.

Copperas is purified and prepared in the ſame manner as alum and ſaltpetre, by paſſing through ſeveral lixiviums, till it be wholly reduced to cryſtal.

Some make *copperas* to be the *chalcitis* of the ancients. But the more common opinion is, that their *chalcitis* was a ſtone, not a pure ſalt.

There is *copperas* of England, of Piſa, Germany, Cyprus, Hungary, and Italy, which differ from each other in colour, richneſs, and perfection.

White copperas, is a vitriol of iron, with a mixture of ſome other mineral, brought from Germany in cakes of forty or fifty pounds each: ſuch are thoſe brought from Goſlar in Saxony.

The Engliſh *copperas* is of a fine green; that of Cyprus and Hungary is of a ſky blue, and has copper for its baſis. It is in pieces cut like the point of a diamond. That of Piſa and Italy is likewiſe green; and the laſt as tranſparent as glaſs.

The Engliſh green *copperas* is of conſiderable uſe in many preparations; but eſpecially in dyeing. The hatters alſo uſe it in their dye; and this and galls are ingredients in writing ink.

The ordinary Engliſh *copperas* is made of a kind of ſtones found on the ſea-ſhore in Eſſex, Hampſhire, and ſo weſtward, ordinarily called *gold ſtones*, from their colour, or *pyritæ*: they abound much in iron.

To prepare the *copperas* from them, they are expoſed to the weather in beds above-ground, and receive the rains and dews, which in time break and diſſolve the ſtones: the liquor that runs off is pumped into boilers, in which is firſt put old iron, which in boiling diſſolves. When the boiling is finiſhed, the liquor is drawn off into coolers, where it ſhoots into cryſtals. See VITRIOL.

The works at Deptford for making it are known to moſt people. Many chemiſts diſſolve this, and ſhoot it again, to ſell it for the common ſalt of ſteel.

The alum workers in Yorkſhire have an opinion that if their liquor ſtands beyond the uſual time in the pans, it will turn to *copperas*. The maſters of the works have inculcated this ſtory to make them diligent, and it is as firmly believed among them as if it were a real truth.

COPPERAS *ſtone*. See PYRITES.

COPPICE, or COPSE, a little wood, conſiſting of underwoods; and ſuch as may be raiſed either by ſowing, or planting. See WOOD.

COPROCRITICA, from κοπρος, *excrement*, and κρινω, *ſeparate*; medicines which purge away the excrements in the guts.

COPROPHAGOS, from κοπρος, and φαγω, *I eat*; the *dung-fly*, in *Natural Hiſtory*, the name given by many authors to the common yellowiſh fly found on human excrements. There are ſeveral other ſpecies found on the excrements of various animals, and thence called *merdivoræ*.

COPULA, in *Logic*, a verb that connects any two terms in a propoſition, either negative or affirmative: as, *A roſe is ſweet*; where *is* is the *copula*.

COPULATION. See COITION, CONGRESS, and CONSUMMATION.

COPULATIVE *Propoſitions*, are thoſe which include ſeveral ſubjects, or ſeveral attributes joined together by an affirmative or negative conjunction.

Thus, v. gr. *Power and riches do not make a man happy.* Where *and* is the conjunction that couples *power* and *riches*.

COPULATIVE *Conjunction*. See CONJUNCTION.

COPY, in *Law*, a tranſcript of a writing or inſtrument, made for the uſe and ſatisfaction of ſome of the parties concerned; or in order to preſerve the memory thereof. See COPIA.

The *copy* of an inrolled deed is admitted in evidence; but not the *copy* of a will of lands nor the probates, nor of a common deed where the original may be procured. Few ancient documents do now ſubſiſt otherwiſe than in *copies*.

Copy is alſo uſed for an imitation of any original work; particularly a painting, draught, figure, &c.

Copy, among *Printers*, denotes the manuſcript, or original of a book given to print from.

To caſt off a copy, is to make a computation of the number of ſheets a manuſcript will make in print.

In the bookſeller's ſtyle, a *good copy* is that which produces a ſaleable book.

Tenant by Copy *of court-roll*. See Tenant.

COPY-HOLD, is a TENURE for which the tenant has nothing to ſhew but the *copy* of the roll made by the ſteward of the lord's court.

The ſteward of the court is, among other things, to inroll and keep a regiſter of all ſuch tenants as are admitted to any parcel of land, or tenement, belonging to the manor; and the tranſcript is called the *copy of the court-roll*, which the tenant keeps as his own evidence.

This tenure is called a *baſe tenure*, becauſe the tenant holds, in ſome ſort, at the will of the lord. Fitzherbert ſays, it was formerly called *tenure in villenage*; and that *copy-hold* is but a modern name.

This is the land which the Saxons called *folk-land*, as being held *ſine ſcripto*, in contradiſtinction to *bock-land*, or CHARTER-*land*, *terra ex ſcripto*, and now *free-land*, or FREE-HOLD.

However, it is not ſimply at the lord's will, but according to the cuſtom of the manor; ſo that if the *copy-holder* doth not break that cuſtom, and forfeit his tenure, he ſeems not to ſtand at the lord's courteſy. Theſe cuſtoms are infinite; varying in one point or other almoſt in every manor.

Copy-holders, upon admittance, pay a fine to the lord; which fines are in ſome manors certain, in others not; but yet, if the lord exceeds two years value, the court of chancery, king's bench, &c. have, in their ſeveral juriſdictions, power to reduce the FINE. See alſo Heriot and Relief.

In many places, the *copy-holds* are a kind of inheritance, and termed *cuſtomary*, becauſe the tenant dying, and the hold becoming void, the next of blood paying the cuſtomary fine, as two ſhillings an acre, or the like, may not be denied his admiſſion. Some *copy-holders* have by cuſtom the wood growing upon their own land; ſome, again, hold by the verge in ancient demeſne, ſo that though they hold by *copy*, they are yet accounted a kind of freeholders: laſtly, ſome others hold by common tenure, called *mere copy-hold*; whoſe land, upon felony committed, eſcheats to the lord of the manor.

Copy-hold land cannot be made at this day; for the foundation of a *copy-hold* is, that it hath been demiſed time out of mind, by copy of court-roll; and that the tenements are parcel of, or within the manor. 1 Inſt. 58. 4 Rep. 24. They are demiſable only by copy; and within the acts againſt bankruptcy and the ſtatutes of limitation.

Copy-holders are not allowed to vote for knights of the ſhire. 31 Geo. II. c. 14.

COPY-HOLDER, is defined by Weſt, a perſon admitted tenant of any lands, or tenements, within a manor, which, time out of mind, by the uſe and cuſtom thereof, have been deviſable to ſuch as will take the ſame by copy of court-roll, according to the cuſtom of the ſaid manor.

COQ. *ad med. conſumpt.* an abbreviature among *Phyſicians*, ſignifying that the thing is to be boiled till half of it be conſumed.—*Coq. in S. Q. Aq.* implies it to be boiled in a ſufficient quantity of common water.

COR, in *Anatomy*. See Heart.

Cor *Caroli*, in *Aſtronomy*, an extra-conſtellated ſtar of the ſecond magnitude in the northern hemiſphere, ſituated between the Coma Berenices and Urſa Major; ſo called by Sir Charles Scarborough, in honour of king Charles I.

Cor *Hydræ*, in *Aſtronomy*, a ſtar of the ſecond magnitude, in the heart of the conſtellation Hydra.

Cor *Leonis*, or *Regulus*, a fixed ſtar of the firſt magnitude, in the conſtellation Leo.

Cor *Scorpii*. See Antares.

Cor *Marinum*, in *Natural Hiſtory*, the name of one of the claſſes of the *echini marini*, the characters of which are, that the anus is placed in the ſide of that point of the ſhell which appears as if cut off; and the mouth has two lips, and is placed in the third region of the axis of the baſe. Klein's Echin. p. 34.

Cor *Veneris*, *Venus's heart*, a name given by authors who treat of ſhells, to a very elegant kind of the *cordiformis*, or HEART-*ſhell*, which has more of the ſhape of a real heart than the *bucardium*, or any other ſhell of this genus. There are only three known ſpecies of the *cor Veneris*. 1. A denticulated one, with very elegant, roſe-coloured ſpots. 2. The white boat-ſhell, furrowed on the inſide. And, 3. The little, roſe-coloured kind. Theſe are all very elegant ſhells.

CORAAGE, *coraagium*, in our *Old Cuſtoms*, a kind of impoſition extraordinary, growing upon ſome unuſual occaſion; and it ſeems to be of certain meaſures of corn: for *corus tritici* is a meaſure of wheat. Bracton, lib. ii. cap. 116. num. 6. who in the ſame chapter, num. 8. has theſe words: *Sunt etiam quædam communes præſtationes, quæ ſervitia non dicuntur, nec de conſuetudine veniunt, niſi cum neceſſitas intervenerit, vel cum rex venerit; ſicut ſunt hidagia, coraagia, & carvagia, et alia plura de neceſſitate et ex conſenſu communi totius regni introducta, &c.*

CORACIAS, in *Natural Hiſtory*, a name given by many writers to the BELEMNITES, called by others *lapis Lyncurius*, and *dactylus Idæus*.

Coracias, in *Zoology*, a name uſed by Linnæus for the *pica* or *pye*. This bird makes, in that author's ſyſtem, a diſtinct genus; the characters of which are, that the inner tail-feathers grow gradually one longer than another. See *Tab. of Birds*, N° 8.

This bird is called by ſome the *pyrrhocorax*, and in Engliſh the *Corniſh chough*. It is of the ſhape of the jackdaw, but of the ſize of the common crow. Its beak is red, long, and ſomewhat hooked at the end. It frequents rocks, and ruined buildings about the ſea-ſhores; and is found about the high cliffs, all along the weſtern ſhore of England. Its voice is much like that of the jackdaw, but is more hoarſe and rough. Ray's Ornithol. p. 86.

CORACINUS, in *Zoology*, the name of a ſea-fiſh caught in the Mediterranean, and called by ſome authors *ſkiæna*, and by Aldrovand and Salvian *umbra*. It is of the colour of the common tench, but in figure more approaches to the pearch: its ſcales are ſmall; its mouth not very large, but well furniſhed with teeth; and its tail is not forked, but, when extended, ſeems of a roundiſh figure; the ends of the rays or nerves of the tail-fin are black, and the other fins are all black, and ſeem as if dyed with ink.

CORACOBRACHIALIS, a muſcle which ariſes from the *proceſſus coracoides* of the *ſcapula*, by a tendinous beginning; and paſſing over the articulation of the *humerus*, is inſerted into the middle and internal part of that bone, and with the *deltoides* and *ſupra-ſpinatus*, lifts the arm upwards; and alone, obliquely outwards. See *Tab. Anat.* (*Myol.*) *fig.* 1. *n.* 23.

It is fixed above to the point of the *coracoide* apophyſis, between the inſertions of the *biceps*, and the *pectoralis minor*, by a tendon, which as it deſcends, adheres a good way to the tendons of theſe two muſcles; afterwards it becomes fleſhy, and is inſerted by a broad thin extremity, with a ſmall mixture of tendinous fibres in the middle part of the *os humeri*, cloſe by the ligamentary *frænum* of the *latiſſimus dorſi*, and *teres major*. Its inſertion is continued down below the *frænum*, near the internal intermuſcular ligament, to which it likewiſe adheres a little. This muſcle paſſes behind the tendon of the *pectoralis major*; and as it is perforated in the middle to give paſſage to a nerve, it has by ſome been termed *perforatus Caſſerii*, that author being the firſt who gave a particular figure of it. Its other name is taken from its inſertions. Winſlow's Anatomy, p. 184.

CORACOHYOIDEUS, in *Anatomy*, a muſcle which has its origin from the *proceſſus coracoides* of the *omoplate*; or rather, according to Keil, from the upper edge of the *ſcapula*, near its neck; whence aſcending obliquely under the *maſtoidæus*, it is inſerted into the *os* HYOIDES; which it ſerves to pull obliquely downwards. See *Tab. Anat.* (*Myol.*) *fig.* 2. *lit.* o. *fig.* 1. *n.* 17.

The word is formed from *coracoides* and *hyoides*, the two parts.

It is alſo called *digraſticus*, as having two bellies at its two extremities, and a tendon in the middle to give room for the paſſage of the carotid and inner jugular artery.

CORACOIDES, in *Anatomy*, a ſmall, ſharp PROCESS of the SCAPULA; ſo called from its reſembling a crow's bill. See *Tab. Anat.* (*Oſteol.*) *fig.* 3. *n.* 5. 5.

The word comes from κοραξ, *corvus*, and ειδος, *imago*.

The *coracoides* is placed in the upper part of the neck, and projects over the head of the bone of the arm. It ſerves to ſtrengthen the articulation of the ſhoulder; and gives origin to one of the muſcles of the arm.

CORACOMANTES, from κοραξ, *crew*, and μαντεια, *divination*; in *Antiquity*, a kind of diviners, who made their predictions by obſerving the crows.

CORACORADIALIS, in *Anatomy*, a name given by ſome authors to a muſcle generally known by the name of the BICEPS; the *peſcetto* of the Italian authors; and the *primus flectentium cubitum* of Veſalius, and others of his time.

CORAL, *Corallium*, in *Natural Hiſtory*, a production of the ſea, formerly ranked among the number of marine plants, but now claſſed in the animal kingdom; ſince modern naturaliſts have diſcovered, that it is the ſtructure and habitation of certain ſea animals, and deſigned for their protection and ſupport. See *Tab*. V. *Botany*, *Claſs* 17. and *Tab*. II. *Foſſil*., *Claſs* 7.

Some have derived the term from the Greek κορειν, *to adorn*, and αλος, *the ſea*; becauſe there is no other production of equal beauty.

The nature and origin of *coral* has been as much diſputed as any ſubject in natural knowlege. Some, and particularly Dr. Woodward, conſidered this and the other harder productions of the ſea, as ſtones; and they thought themſelves juſtified in the opinion, from their exceſſive hardneſs, and their ſpecific gravity; and likewiſe from obſerving, that, when theſe bodies were calcined, they were converted into lime. Guiſonæus maintains, that *coral* is a real mineral, compoſed of much ſalt and a ſmall quantity of earth; and that it derives its form from precipitation much in the ſame manner with the ARBOR *Dianæ* of the chemiſts. Others, as Dioſcorides, Pliny, Cæſalpinus, Boccone, Ray, Tournefort, and Geoffroy, thought *coral* to be a plant. P. Kircher ſuppoſes, that there are entire foreſts of it at the bottom of the ſea: Tournefort maintains, that it is multiplied by ſeed like other plants, and enumerates fourteen different ſpecies of it. Boccone confirmed this opinion by obſerving a milky juice (firſt indeed taken notice of by Cæſalpinus) at the top and in the cells of *coral*: and Count de Marſigli, in 1706, diſcovered ſome parts in it, which, he conjectured, were its flowers. Agreeably to this notion, they deſcribed it as having roots, which are faſtened to the rocks or ſtones on which it grows, as thoſe of trees are to the earth: theſe roots, they ſay, are covered with a bark, often beſet with ſtarry pores which traverſe them from top to bottom: above the roots they obſerve the ligneous part of the plant, which rather ſeems to reſemble ſtone than wood. This trunk is divided into branches, having white ſtreaks, repreſenting a kind of fibre. The extremities are rounded with little bowls, ordinarily divided into ſix cells, filled with a fluid ſomewhat like milk, fat, ſharp, and aſtringent: and theſe bowls are eſteemed a kind of pods or capſulæ, containing the ſeed of the *coral*. It is even ſaid, that in what place or on what matter ſoever this juice is ſhed, it carries fecundity with it, and produces a plant of *coral*. Marſigli obſerves, that *coral* grows chiefly in caverns, whoſe aperture is towards the ſouth, and their concave arch nearly parallel to the ſurface of the earth; and that it vegetates, in a calm ſea, in a direction contrary to all other plants; its foot adhering to the top of the cavern, and its branches ſhooting downwards: the foot takes the exact form of the ſolid to which it grows, and covers it, like a plate, to a certain extent; which, he thinks, is a proof, that its ſubſtance was originally fluid: and he adds to the ſame purpoſe, that it ſometimes lines the inſide of a ſhell. Marſigli, from examining the ſeveral parts of *coral*, concludes, that all its organiſm, with regard to vegetation, conſiſts in its rind; that the tubules of this rind filtrate juice which fills the cellules, and runs along the canals as far as the extremities of the branches; and that this juice being petrified, both in the cells encompaſſing the coralline ſubſtance, and in thoſe of the extremities of the branches whoſe ſubſtance is not yet formed, makes the plant grow both in height and bulk. M. de Reaumur conſiders the coarſe viſible rind, which is different from that which is properly called *coral*, and alſo another much finer rind, which is not always diſtinguiſhed from the coralline ſubſtance covered by it, as the organized vegetating plant; and all the reſt, that is, almoſt the whole coralline ſubſtance, he conſiders as a mere ſtone without any organization, formed by the plant which inveſts it for its ſupport.

It has been long the received opinion, that *coral* was ſoft in the ſea, and that it was hardened by the air, upon taking it out of the water. Mr. Boyle was of this opinion; but Boccone examined *coral* in the water, before it was taken up into the air, and invariably found it hard, except at its extremities, whence, by preſſing it, flowed a ſmall quantity of milky fluid, already taken notice of. We may therefore infer, that there is more of imagination than of truth in the name *gorgonium*, which the ancients gave to *coral*, and deſigned to ſhew that Meduſa's head did not convert objects into ſtone, more ſurely than *coral* became petrified, as ſoon as it appeared in the air.

M. de Peyſſonnel of Marſeilles, has, in conſequence of a ſeries of experiments and obſervations from about the year 1720 to 1750, introduced a new ſyſtem, with reſpect to the nature and production of *coral*, and ſimilar marine ſubſtances. Thoſe bodies, which the Count de Marſigli imagined to be flowers, this ingenious naturaliſt diſcovered to be inſects inhabiting the *coral*; for, upon taking branches of it out of the water, the flowers, which proceeded from a number of white points anſwering to the holes that pierced the bark, and the radiation of which reſembled the flower of the olive-tree, entered into the bark and diſappeared; but, upon being again reſtored to the water, they were ſome hours after perceptible. Theſe flowers ſpread on white paper loſt their tranſparency, and became red as they dried. The holes in the bark correſpond to ſmall cavities upon the ſubſtance of the *coral*; and when the bark is removed, there may be ſeen an infinite quantity of little tubes connecting the bark with the inner ſubſtance, beſides a great number of ſmall glands adhering to them; and from theſe tubes and glands the milky juice of *coral* iſſues forth: the holes in the bark are the openings through which the inſects, that form theſe ſubſtances for their habitation, come forth; and thoſe cavities which are partly in the bark and partly in the ſubſtance, are the cells which they inhabit. The organs of the animal are contained in the tubes, and the glandules are the extremities of his feet, and the milky liquor is the blood and juice of the animal, which are more or leſs abundant in proportion to its health and vigour. When the inſects are dead, they corrupt and communicate to the water the ſmell of putrid fiſh. This juice or liquor runs along the furrows perceived upon the proper ſubſtance or body of *coral*, and ſtopping by little and little becomes fixed and hard, and is changed into ſtone; and being ſtopped in the bark, cauſes the *coral* to increaſe proportionably and in every direction. In forming *coral*, and other marine productions of this claſs, the animal labours like thoſe of the teſtaceous kind, each according to his ſpecies; and their productions vary according to their ſeveral forms, magnitudes, and colours.

The *coral* inſect, or POLYPE, M. Peyſſonnel obſerves, expands itſelf in water, and contracts itſelf in air, or when it is touched with the hand in water, or acid liquors are poured upon it: and he actually ſaw theſe inſects move their claws or legs, and expand themſelves, when the ſea-water containing *coral* was placed near the fire, and keep them in their expanded ſtate when ſeparated from the *coral* in boiling water. Broken branches of *coral* have been obſerved to faſten themſelves to other branches, and have continued to grow; and this is the caſe, when they are connected with detached pieces of rock and other ſubſtances, from which no nouriſhment could be derived. The *coral* inſects in their cells, not having been injured, continue their operations; and as they draw no nouriſhment from the ſtone of the *coral*, they are able to increaſe, in a detached and ſeparate ſtate. *Coral* was found to be equally red in the ſea as out of it; and it was more ſhining, when juſt taken out of the water, than even when it is poliſhed; and the bark by being dried becomes ſomewhat pale. M. Peyſſonnel found, that it grows in different directions, ſometimes perpendicularly downwards, ſometimes horizontally, and ſometimes upwards; and in the caverns of the ſea, open to every expoſure.

The principles obtained from *coral*, by a chemical analyſis, appeared to reſemble thoſe drawn from the human ſcull, hartſhorn, and other parts of animals. See an account of a manuſcript treatiſe, entitled Traité du Corail, preſented to the Royal Society by Sieur de Peyſſonnel in 1751. Phil. Tranſ. vol. xlvii. p. 445, &c.

This ſyſtem was little regarded, though firſt communicated to the Academy of Sciences at Paris in 1727, till Mr. Trembley's diſcovery of the freſh-water POLYPE; but ſince that time, it has been confirmed by the obſervations of M. Bernard de Juſſieu on the ſea-coaſts of Normandy, and thoſe of M. de Reaumur near Rochelle. M. Donati of Turin has alſo adopted the ſame hypotheſis, viz. that *coral* is a maſs of animals of the polype kind; and inſtead of repreſenting the polype-beds and cells which they contain as the work of polypes, he thinks it more juſt to ſay, that *coral* and other coralline bodies have the ſame relation to the polypes united to them, that there is between the ſhell of a ſnail and the ſnail itſelf; or the bones of an animal and the animal itſelf. Phil. Tranſ. vol. l. p. 58.

The ſame ſyſtem has alſo been excellently illuſtrated and eſtabliſhed by Mr. Ellis, in anſwer to the objections of Dr. Baſter of Zealand, and Dr. Pallas of Berlin, who ſtill refer *corallines* to the vegetable kingdom. Phil. Tranſ. vol. l. p. 280, &c. vol. lii. p. 111. vol lvii. p. 404, &c. See alſo his excellent Eſſay towards the Natural Hiſtory of the Corallines, and other Marine Productions of the like Kind, &c. 4to. 1775.

There are, properly, but three kinds of *coral*; *red*, *white*, and *black*: the black is the rareſt, and moſt eſteemed; but it is the red that is ordinarily uſed in medicine. It muſt be choſen thick, ſmooth, and ſhining, and of a beautiful red, not covered with any tartareous matter.

Coral, *black*, a ſpecies of the GORGONIA in the Linnæan ſyſtem. See Antipathes.

Coral, *red*, a ſpecies of the *iſis* under the claſs of *zoophytes* in the Linnæan ſyſtem. This appears to be formed of a ſucceſſion of ſmall tubes, many of which riſe together, and branch out in different directions. The tubuli, being compoſed of a cretaceous matter, mixed with a viſcid animal ſubſtance, ſhrink in and become ſolid as their inhabitant deſerts them. The effects of vegetable diſtilled oils on *coral*, by the help of a long digeſtion, are ſuch as could not have been imagined, till the experiments of Dr. Langelot ſhewed that they were a ſort of ſolvent for that refractory ſubſtance.

The common *red coral* yields, by diſtillation in a retort, a volatile vitreous ſpirit, in no inconſiderable quantity; this turns ſyrup of violets green, and makes an efferveſcence with acids, and renders a ſolution of corroſive ſublimate white and milky. And the fixed ſalt drawn from the reſiduum produces a white coagulum in the ſame ſolution; from which it is evident that it is not a mere alkali, but a *ſal ſalſum*, in ſome degree.

Red coral calcined, even in a very gentle fire, becomes white; the ſame change alſo happens to it when infuſed a long time in ſome oily ſubſtances, as the oils of aniſe, fennel, or in white wax kept in fuſion. The menſtrua in this caſe acquire a red colour in proportion as the *coral* loſes it. It appears from theſe, and ſeveral other experiments, that *coral* is not, as ſome ſuppoſe, a mere terreſtrial abſorbent, but that it contains a volatile urinous ſalt, and a bituminous oil combined with its earthy matter; and on theſe its virtues in medicine principally depend. The red colour of *coral* is evidently owing to its bituminous oil, which it is found not difficult to ſeparate, and wholly diveſt it of. It is obſerved, that *coral* newly taken up out of the ſea, contains both the ſalt and oil in greater abundance than that which has been long kept; and it is ſuſpected by many, that its external or cortical ſubſtance contains more of it than the interior, harder, and more ſtony matter.

The ancients uſed *coral* in many external medicines for diſtemperatures of the eyes; and internally as an aſtringent, and refrigerating medicine. We uſe it only internally, and that principally in diarrhœas, and bleedings, in too great evacuations of the menſes, and in the *fluor albus*. The vulgar attribute to it, beſide theſe virtues, many others; for which we have no ſufficient warrant. Geoffroy, Mat. Med. vol. ii. p. 254.

Coral, *white*. There is no part of the world where *white coral* is produced in ſuch abundance as on the ſhores of the iſland of Ceylon, and other of the neighbouring Indian coaſts. The lime uſed in that part of the world, for building houſes, fortifications, &c. is all made by burning this *coral*. It lies in vaſt banks which are uncovered at low water, and it is ſpungy and porous. While young, it grows erect, in form of little ſhrubs, and is then firm and ſolid, and ſmooth on the ſurface; but the branches continually ſhoot out more, and theſe other new ones, till the whole is one confuſed buſh. Theſe branches are all covered with a white viſcous matter, which, in time, hardens upon them, and becomes *coral*; and this filling up all the interſtices between the branches, when they become ſo numerous, and hardening between and over them, the whole becomes one coarſe rock, and the adjoining maſſes of this kind uniting to one another, form at laſt a continued bank, which has the appearance of a great white rock. Phil. Tranſ. N° 282. p. 1277. See Madrepora.

Coral, *foſſile*. It has been matter of ſurprize to naturaliſts, that as red *coral* is ſo common in the ſea, and is a ſubſtance of ſo firm and durable a nature, it is not frequently found among other remains of the ſea productions in the foſſile ſtate. This had long puzzled the naturaliſts, when Agoſtino Scilla attempted to account for it by ſome ſpecimens in his own cuſtody. This gentleman, living at Meſſina, had an opportunity of ſearching the quarries in the neighbourhood of thoſe ſeas, where red *coral* grows in abundance, and whither it might moſt eaſily be carried by any inundation. Accordingly he found, among a vaſt quantity of white *coral*, ſome ſpecimens, which doubtleſs had once been red; and theſe, though they had in a great meaſure loſt their colour on the outſide, yet they retained ſo much of it within, as plainly ſhewed that they had once been red; and the whole truth ſeems to conſiſt in this, that though the ſubſtance of the *coral* is permanent, the colour is not ſo.

Beſide the great variety of *corals* found in their natural ſtate, in the ſea, we find great numbers buried in the earth, and immerſed even in the bodies of ſolid ſtones, and marble; of theſe many are the ſame with the ſpecies now known to us at ſea, and many differ from all the known recent ones. The foſſile *corals* are found ſometimes nearly in their own natural ſtate; but much more frequently they have their pores filled up with ſtony particles, ſo as to ſeem mere ſtones. Thoſe which are not reducible to any of the known recent ſpecies, are probably the produce of ſeas and ſhores yet unſearched. Some naturaliſts talk of blue, green, and yellow *corals*; and we are apt to deſpiſe ſuch accounts, as knowing that all the *corals* preſerved in the cabinets, and found in the works of artiſts in all nations, are either white or red. Thoſe, indeed, which grow in deep water, are often covered completely over with a coat of a tough, gelatinous matter, reſembling glue. This is frequently coloured with thoſe elegant tinges which dye the bottom of the ſea in deep water; and they in this ſtate appear, as taken up out of the water, to be blue, green, purple, and the like. But this colour being only in the jelly that covers the plant, is not to be preſerved, but if this is rubbed off, the ſurface goes with it, and leaves the plant of its natural colour; and if the whole be attempted to be dried together, the colour vaniſhes as the moiſture evaporates, and the plant, when dried, is found only covered with a dirty yellowiſh cruſt. Marſigli, Hiſt. Phyſ. de la Mer.

Coral gives title to an officinal compoſition, called *ſyrup of coral*, ſometimes preſcribed by phyſicians; as is likewiſe the powder of *coral* finely ground, and afterwards levigated on a marble, and made up into a proper form. But there are few, except thoſe who are fond of medicines with gems in them, that make uſe of it. By means of its exceeding hardneſs, it is ſuſpected to take away with it a great deal of the levigating ſtone.

Diſpenſary writers have given us receipts for a great many preparations of *coral*, as magiſteries, tinctures, ſalts, &c. none of which enter the preſent practice.

Coral and *coralline* being the ſhells of marine animals of the POLYPE kind, poſſeſs the ſame chemical properties as the freſh ſhells of oyſters and other ſhell-fiſh, i. e. they are *calcareous* EARTHS impregnated with ſome animal principles.

Coral, *artificial*, is made of cinnabar well beaten; a layer whereof is applied on a piece of wood well dried, and poliſhed, firſt moiſtened with ſize: the whole is then again poliſhed; and for varniſh, rubbed over with the white of an egg. See Grotto.

Coral *fiſhery*. The time for fiſhing *coral* is from April to July: the places are the Perſian Gulf, Red Sea, coaſts of Africa towards the Baſtion of France, the iſles of Majorca and Corſica, and the coaſts of Provence and Catalonia.

The method of fiſhing is nearly the ſame in all places: that uſed at the Baſtion of France, where there is an eſtabliſhed fiſhery, under the direction of a company at Marſeilles, is as follows.

Seven or eight men go in a boat, commanded by the patron or proprietor; the caſter throws his net, if we may ſo call the machine wherewith he uſes to tear up the *coral* from the bottom of the ſea; and the other ſix manage the boat. The net is compoſed of two beams tied acroſs, with a leaden weight to preſs them down; to the beams is faſtened a great quantity of hemp looſely twiſted round, among which they mix ſome ſtrong nets. In this condition the machine is let down into the ſea; and when the *coral* is pretty ſtrongly embarraſſed in the hemp and the nets, they draw it out by a rope; which they unwind according to the depth, and which ſometimes requires half a dozen boats to draw. If the rope happen to break, the fiſhermen are in great danger of drowning. They have two machines, one for fiſhing up the *coral* where the bottom is ſmooth; and the other, called in the Provençal language the *ſalabre*, ſo conſtructed as to be employed where the bottom of the ſea is rocky and unequal.

Before the fiſhermen go out, they agree on the price of the *coral*, which is ordinarily at the rate of 4*ſ*. 6*d*. *per* pound.

When the fiſhery is over, which in a ſeaſon uſually amounts to twenty-five quintals of *coral* each boat, it is divided into thirteen parts; the patron whereof, or maſter *coraller*, has four, the caſter two, and each of the ſix companions one: the thirteenth being reſerved for the company, &c.

CORALLINES, *Corallina*, in *Natural Hiſtory*, were formerly reckoned a genus of plants, and Mr. Tournefort enumerates thirty-ſix ſpecies of them; but in the Linnæan ſyſtem they belong to the claſs of zoophytes, and are defined by modern naturaliſts to be ſubmarine plant-like bodies, that conſiſt of many ſlender finely divided and jointed branches, reſembling ſome ſpecies of moſs; or, animals growing in the form of plants, having their ſtems fixed to other bodies; theſe ſtems are compoſed of capillary tubes, whoſe extremities paſs through a calcareous cruſt, and open into pores on the ſurface. The branches are often jointed, and always ſubdivided into ſmaller branches, which are either looſe and unconnected, or joined as if they were glued together. They are diſtinguiſhed from plants by their texture and hardneſs: they alſo yield in diſtillation a conſiderable quantity of volatile ſalt, and their ſmell, in burning, reſembles that of burnt horns and other animal ſubſtances. Many of the *corallines* ſeem to conſiſt of a ſingle tube, containing a ſingle parent animal. Every branch emitted contains an offspring of this parent dependent upon it, and yet capable of producing its like in the emiſſion of a new branch. Others conſiſt of many ſuch tubes united, riſing up together, and encircling the deſerted tubes of their progenitors, whoſe exuviæ become the ſubſtratum of a riſing generation. Mr Ellis diſtributes *corallines* into the *veſiculated*, *tubular*, *celliferous*, and *articulated* kinds.

Veſiculated corallines are diſtinguiſhed by their horny hollow ramifications; moſt of them are furniſhed with little denticles on their branches, like leaves on moſſes; and at certain ſeaſons of the year they are furniſhed with ſmall bodies like bladders, proceeding from their ſtems and branches, and differing in form according to the different ſpecies. Their colour, when dry, is of a yellowiſh or pale brown, and their nature is elaſtic. They are found adhering to rocks, ſhells, and fucuſes, by ſmall root-like tubes: they recover their form in water, after having been dried; and when put into vinegar, they cauſe no effervefcence. See *Tab. of Corallines*, *fig.* 1. *a* which repreſents the ſea-tamariſk in its natural ſize, and A in which the denticles are magnified; *fig.* 2. *b*, B is the ſea-cypreſs; *fig.* 3. C *d*, C D the ſmall climbing *coralline* with well-ſhaped cups.

Tubular corallines are compoſed of a number of ſimple tubes, growing up nearly together; or of ſuch branched ones as have neither denticles nor veſicles. Theſe are horny and elaſtic like the former, and recover their original form in water. Some of them appear wrinkled like the wind-pipe, and others like the inteſtines of ſmall animals. See *fig.* 4. E.

Celliferous corallines are thoſe which appear, when magnified, to be fine thin cells, the habitations of ſmall animals connected together, and diſpoſed in a variety of elegant forms like branches. Theſe effervefce with acids. See *fig.* 5. *f* and F.

Articulated corallines conſiſt of ſhort pieces of a ſtony or cretaceous brittle matter, whoſe ſurface is covered with pores or cells, which are joined by a tough, membranous, flexile ſubſtance, compoſed of many ſmall tubes of the like nature, compacted together. The ſtony part is ſoluble in vinegar, and the other part remains entire. See *Tab.* II. *of Corallines*, *fig.* 1.

See the deſcription and drawings of a great variety of ſpecies belonging to each claſs, in Ellis's Nat. Hiſt. above cited. Beſides theſe, he enumerates other genera of marine productions; as the KERATOPHYTA, ESCHARA, SPONGES, and ALCYONIUM; all which are the neſts or matrices of ſea animals. See POLYPE. The laſt claſs of marine bodies is formed like funguſes of various figures, and with different ſorts of covering; ſome having a gritty, and ſome a callous ſkin, with a ſpongy ſubſtance in the inſide: other ſpecies are of a fleſhy ſubſtance.

Mr. Ellis intimates, that the more compact bodies, ſuch as ſtar-ſtones, brain-ſtones, petrified fungi, and the like, may be produced in the ſame manner with the ſubſtances above deſcribed: in favour of which conjecture he obſerves, that all the warmer latitudes near the ſhores abound ſo much with animal life, that no inanimate body can long remain unoccupied by ſome ſpecies.

The ancients have ſaid great things of the virtues of the common *coralline*. Dioſcorides preſcribes it for mitigating the pain of the gout, and for preventing ſtagnations of the humours in any part; he ſays nothing of its virtues againſt worms, which are what we alone eſteem it for. We give it in powder from ten grains to a ſcruple or half a dram twice a day in theſe caſes, and that with conſiderable good effect. Geoffroy, Mat. Med. vol. ii. p. 238.

CORALLINUM *arcanum*. See ARCANUM.

CORALLO-ACHATES, in the *Natural Hiſtory of the Ancients*, the name of a very beautiful ſpecies of agate, found at this time in the Eaſt Indies, but not in any plenty. It is very hard, and capable of a fine poliſh; and, when wrought, is an extremely elegant ſtone.

CORALLODENDRON, *erythrina*, *coral-wood*, in *Botany*, the name of a genus of trees, of the *diadelphia decandria* claſs; the characters of which are theſe: the flower is of the butterfly kind, compoſed of five petals; the ſtandard is ſpear-ſhaped, long, and riſes upward; the two wings are ſcarce longer than the empalement. The keel is compoſed of two petals, which are no longer than the wings. It hath ten ſtamina, which are joined below, and unequal in their length; with an awl-ſhaped germen, which afterward becomes a long ſwelling pod ending in an acute point, having one cell filled with kidney-ſhaped ſeeds. There are ſix ſpecies, natives of the warm parts of America.

Theſe plants, when they produce their flowers, are ſome of the greateſt ornaments of the ſtove; for their flowers are produced in large ſpikes, and are of a beautiful ſcarlet; but they do not often flower in the northern parts of Europe. Miller.

The inhabitants of Malabar make ſheaths of the wood, for ſwords and knives. They uſe the ſame, together with the bark, in waſhing a ſort of garments which they call ſaraſſas; and make of the flowers, the confection caryl. The leaves pulveriſed and boiled with the mature *nux Indica*, or cocoa-nut, conſume venereal buboes, and eaſe pains in the bones; bruiſed and applied to the temples, they cure the cephalea, and ulcers: mixed with the ſugar called jagra, they mitigate pains in the belly, eſpecially in women; and the ſame effect follows from the uſe of the bark levigated with vinegar, or ſwallowing the kernel ſtripped of its red pellicle. The juice of the leaves taken with oil ſergelim, mitigates venereal pains; drank with an infuſion of rice, it ſtops fluxes; made into a cataplaſm with the leaves of beteleira, it deſtroys worms in old ulcers; and worked with oil, it cures the pſora and itching. Ray.

CORALLOFUNGUS, in *Botany*, the name by which Vaillant has called the CLAVARIA, a genus of fungus, growing erect, and having every where one even and uniform ſubſtance. This is called *fungoides* by others.

CORALLOIDE *marble*. See *Coralloide* MARBLE.

CORALLOIDES, in *Botany*, a term uſed by Mr. Tournefort to expreſs a genus of muſhrooms; the diſtinguiſhing characters of which are, that they are of a fleſhy fungoſe texture, and are branched in the manner of coral.

The ſpecies of *coralloides* enumerated by Mr. Tournefort, are nineteen. Tourn. Inſt. p. 564. See CLAVARIA.

Their virtues in medicine are not much celebrated; they are ſaid, however, to be ſtrengthening and aſtringent.

CORALLOIDES is alſo uſed in a different ſenſe. Bauhine and Chabræus have made it the name of the great *dentaria heptaphyllos*; and Dillenius, that of a whole genus of the dry leafleſs moſſes. It is the *lichen* of Linnæus. See LIVER-*wort*.

It is alſo a name given by many authors to the *foſſile* CORALS. See KERATOPHYTA.

CORALLORHIZA, in *Botany*, a name given by Ruppius to the plant called by Linnæus *neottia*, and by others *nidus avis*.

CORALLUM, in *Mineralogy*, a name given by ſome of the writers on theſe ſubjects to the common PYRITES.

CORAM *non Judice*, in *Law*, is when a cauſe is brought into a court whereof the judges have no juriſdiction.

CORANA, or *Nai* CORANA, the name of a peculiar ſort of *phaſeolus*, or kidney-bean, the down of the pod of which is the couhage, or, as it is commonly called, cowitch.

CORANTO, *courant*, French; *corrente*, Italian; and *currens ſaltatio*, Latin; is a melody or air conſiſting of three crotchets in a bar, but moving by quavers, in the meaſure of $\frac{3}{4}$, with two ſtrains, each beginning with an odd quaver. The number of bars is no otherwiſe determinate than that it is a multiple of 8. Of dance tunes this is the moſt ſolemn.

CORAX *piſcis*, the *crow-fiſh*, in *Zoology*, the name of a fiſh of the *cuculus* kind, and much approaching to the ſwallow-fiſh in ſhape and figure. The bones which cover the gills in this fiſh, all terminate in ſharp thorns. See FLYING-*fiſh*.

CORBAN, a Scripture term, ſignifying an oblation, or offering, to God on the altar.

CORBAN alſo denotes a ceremony in uſe among the Mahometans, yearly performed at the foot of mount Ararat in Arabia, near Mecca. It conſiſts in flaying a great number of ſheep, and diſtributing them among the poor.

CORBEIL, in *Natural Hiſtory*, the name of a curious ſpecies of CHAMA. It is of the larger kind, and is deeply ſtriated, both longitudinally and tranſverſely; ſo that it has a ſort of reticulated ſurface, like baſket-work.

CORBEILS, in *Fortification*, little baſkets, about a foot and a half high, eight inches wide at the bottom, and twelve at the top; which, being filled with earth, are frequently ſet one againſt another upon the parapet, or elſewhere; leaving certain port-holes, from whence to fire upon the enemy under covert, without being ſeen by them.

CORBEL, in *Architecture*, the repreſentation of a baſket, ſometimes ſeen on the heads of caryatides.

The word is alſo uſed for the vaſe, or tambour, of the Corinthian column; ſo called from its reſemblance of a baſket, or becauſe it was firſt formed on the model of a baſket.

CORBEL, or CORBIL, is alſo uſed, in *Building*, for a ſhort piece of timber placed in a wall, with its end ſticking out ſix or eight inches, as occaſion ſerves, in manner of a ſhouldering-piece. The under-part of the end, thus ſticking out, is ſometimes cut into the form of a boultin; ſometimes of an ogee, and ſometimes of a face, &c. according to the workman's fancy; the upper-ſide being plain and flat. See *Tab. Architecture*, *fig.* 19.

Theſe *corbels* are uſually placed for ſtrength immediately under the ſemi-girders of a platform, and ſometimes under the ends of chamber-beams: in which latter caſe, they are commonly placed a foot or two below the beam, and have a piece of timber ſtanding upright cloſe to the wall from the *corbel* to the beam.

Corbel is alſo uſed by ſome architects for a niche, or hollow, left in walls for images, figures, or ſtatues to ſtand in.

CORBETT, in *Architecture*, is uſed by ſome, as Harris, in his Lexicon, for corbel.

CORCELET, in *Natural Hiſtory*, that part of the fly claſs which is analogous in its ſituation to the breaſt in other animals. Many have called it the breaſt in theſe alſo, but improperly; becauſe the breaſt of other animals is the place of the lungs and *trachea*; but theſe organs are in the fly claſs diſtributed through the whole body. The wings are affixed to this part of the fly claſs: and there are ſome diſtinctions of great conſequence, in regard to the arrangement and diſtribution of thoſe animals into genera. Reaumur's Hiſt. Inſect. tom. iv. p. 126.

CORCHORUS, in *Botany*. See *Jew's* Mallow.

CORCULUS, the *little heart*, in *Natural Hiſtory*, a name given by authors to a ſmall ſpecies of *cordiformis*, or heart-*ſhell*, of a roſe colour.

CORD, or Chord, an aſſemblage of ſeveral threads of hemp, cabled or twiſted together by means of a wheel.

The word comes from χορδὴ, which properly ſignifies an inteſtine, or gut, whereof *cords* may be made.

Cord *of St. Francis*, a kind of rope adorned with knots, wore by the brothers of the fraternity inſtituted in honour of that ſaint.

Some, as the Cordeliers, Capuchins, Minorites, and Recolets, wear it white; others, as the Pique-puces, black. Its deſign is to commemorate the bonds wherewith Jeſus Chriſt was bound.

Cord, *the ſociety of the*, includes a great number of people beſides religious. To obtain indulgences, they are only obliged to ſay five Paters, five Ave Maries and Gloria Patri's, and to wear this rope, which muſt have been firſt bleſſed by the ſuperiors of the order.

Cord *of wood*, a certain quantity of wood for burning; ſo called, becauſe formerly meaſured with a *cord*.

It is now meaſured between two ſtakes of wood, four feet high, and eight feet apart; and is to be four feet broad, or deep.

Cord-*wood* is properly new wood; and ſuch as, when brought by water, comes aboard a veſſel; in oppoſition to that which is floated. All burning wood, not exceeding eighteen inches circumference, is deemed *cord-wood*.

Cord, in *Geometry*, *Muſic*, &c. See Chord, and String.

Cord, *magical*, an inſtrument in great uſe among the Laplanders, and ſuppoſed to be of great virtues among them. It is a *cord* or rope, with three knots tied in it. They uſe many magical rites and ceremonies in the preparing and tying this *cord*; and when thus prepared, it is ſuppoſed to have power over the winds; and they will ſell, by means of it, a good wind, or at leaſt a promiſe of one, to a ſhip. If they untie only one of theſe knots, a moderate gale is to ſucceed; if two, it is to be much ſtronger; and if three, there is to be a ſtorm.

Cord, *umbilical*. See Umbilicalis *funiculus*.

CORDAGE, in the *Sea Language*, is uſed in general for all the ropes and cords, big and ſmall, uſed in the rigging and fitting out of a veſſel. See Cable.

The word is alſo uſed for the art of preparing and manufacturing the ropes, &c.

The *cordage* is ſaid to be *baked*, when, having paſſed a ſtove, or other hot place, it is drained of all its moiſture. *White cordage* is that not yet pitched. *Cordage pitched in the ſtove*, is that which is paſſed through hot pitch as it comes out of the ſtove. Each quintal of *cordage* may take up about twenty pounds of pitch. The *cordage* is ſometimes pitched in the thread.

When a rope is ſaid to be of *ſix inches*, it is underſtood of ſix inches around, or in circumference.

The number of ropes required in fitting out a veſſel, is almoſt inconceivable; each has its particular name and uſe.

The commerce of *cordage* is very conſiderable at Amſterdam: that made of Coningſberg hemp is valued at 20 *per cent.* more than that of Muſcovy hemp. They are ſold by weight.

The Spaniards make a kind of ſhoes of *cordage*, which they call *alpargates*, whereof they uſe great quantities at home, and yet drive a very conſiderable commerce to the Indies; ſo as to ſend away whole ſhip-loads thereof.

The Indians make their *cordage* of the bark of cocoas, maguay, and other trees.

As to the ſtrength of ropes, or *cordage*, M. Reaumur takes occaſion, in the Memoirs of the Royal Academy, to conſider the queſtion, whether a rope compoſed of ſeveral twiſts, or ſtrands, interwoven, v. gr. ten, have more ſtrength to ſuſtain a weight, than the ten twiſts would have ſeparately, placed parallel over one another; or, which is the ſame thing, whether, if each twiſt be capable of ſuſtaining the weight of a pound, the whole *cord* be able to ſuſtain more than ten?

On the one hand, 1. By virtue of the twiſting, the diameter of the rope is made larger than are thoſe of the ten twiſts together; but it is apparently by its thickneſs that a rope ſuſtains a weight, or reſiſts a fracture. 2. Twiſted ſtrands have not all, as when parallel, a vertical direction with regard to the weight: ſeveral of them, and even the greateſt part, have oblique directions, and of conſequence do not bear all the ſhare of the burden they would otherwiſe bear. In effect, they are inclined planes that are only preſſed with a part of the load.

Hence it would follow, that the ſurplus of the ſtrength of the twiſts might be employed in raiſing a larger weight.

On the other hand, it is true, that, in twiſting the ſtrands, ſome are ſtretched, and others left more looſe; and the new tenſion given the former, ſerves to weaken them, and has of itſelf the effect of a weight: thus they become leſs able to ſuſtain one ſo large. Thoſe more lax, on the contrary, evade, in ſome meaſure, the action of weight: for the action is diſtributed equally on the ten ſuppoſedly equal twiſts; and if ſome, by reaſon of their particular diſpoſition, receive leſs than their quota, the weight will act more forcibly on the reſt, and will break them firſt, as being more tenſe; after which, it will eaſily diſpatch the reſt, as not being in ſufficient number to oppoſe it.

This is the ſum of what can be urged for and againſt the twiſting: to decide between them, M. Reaumur had recourſe to experiment. The reſult was, that, contrary to all expectation, he ſtill found the twiſting diminiſhed the ſtrength of the rope: whence it is eaſily inferred, that it diminiſhes it the more, as the rope is the thicker. For inaſmuch as the twiſting diminiſhes; the more twiſting, the more diminution.

The reſiſtance or friction of *cordage* is very conſiderable; and by all means to be conſidered in calculating the power of machines. M. Amontons obſerves, in the Memoirs of the Royal Academy, that a rope is ſo much the more difficult to bend, 1. As it is ſtiffer, and more ſtretched by the weight it draws. 2. As it is thicker; and, 3. As it is to be more bent; i. e. as it is to be coiled, for inſtance, into a ſmaller ring.

The ſame author has thought of ways to prove, in what proportion theſe different reſiſtances increaſe: that ariſing from the ſtiffneſs or rigidity occaſioned by the weight which draws the rope, increaſes in proportion to the weight; and that ariſing from its thickneſs, in proportion to the diameter. Laſtly, That ariſing from the ſmallneſs of the gyres, or pulleys, about which it is to be wound, is indeed greater for ſmaller circumferences than large ones, but does not increaſe ſo much as in the proportion of thoſe circumferences.

On this footing, the loſs a machine ſuſtains by the *cordage*, being eſtimated in pounds, becomes, as it were, a new weight, to be added to that which the machine is to raiſe. This augmentation of weight will render the *cords* ſtill the more ſtiff; which exceſs is to be computed as before.

Thus we ſhall have ſeveral ſums ſtill decreaſing; which are to be added together, as in the article of friction: and it will be ſurpriſing to ſee what a ſum they will amount to. See Friction.

Where ropes are uſed in a machine, all the reſiſtance reſulting from their ſtiffneſs is to be put together; and all that occaſioned by the friction; which will make ſo conſiderable an augmentation to the difficulty of the motion, that a power which to raiſe a weight of 3000 pounds, by means of a fixed and moveable pully, needed only 1500 pounds, muſt, according to M. Amontons, have 3942 pounds, on account of the frictions, and the reſiſtance of the *cordage*.

CORDATED *leaf*, among *Botaniſts*. See Leaf.

CORDAX, in *Antiquity*, a gay ſort of dance.

CORDED, in *Heraldry*. *A croſs* Corded, ſome take for a croſs wound or wrenched about with *cords*: though others, with more probability, take it for a croſs made of two pieces of *cord*.

CORDELIER, a Franciſcan, or religious of the order of St. Francis.

The *Cordeliers* are clothed in thick grey cloth, with a little cowl, a chaperon, and cloak, of the ſame; having a girdle of rope, or cord, tied with three knots: whence the name.

The *Cordeliers* are otherwiſe called *Minor Friars*, their original name. The denomination *Cordelier* is ſaid to have been firſt given them in the war of St. Louis againſt the Infidels; wherein the *Friars Minor* having repulſed the Barbarians, and that king having enquired their name, it was anſwered, they were people *cordeliez, tied with ropes*. The *Cordeliers* are, to a man, profeſſed SCOTISTS.

CORDIA, in *Botany*, the name by which Linnæus and Plumier have called a genus of plants of the *pentandria monogynia* claſs, called *ſebeſtena* by Dillenius in his Hortus Elthamenſis. The characters are theſe: the flower hath one funnel-ſhaped petal, whoſe tube is the length of the empalement; the top is divided into four, five, or ſix parts. It hath five ſtamina, and in the center a roundiſh pointed germen, which afterward becomes a dry berry, which is globular and pointed, faſtened to the empalement, encloſing a furrowed nut with two cells. There are three ſpecies; which being natives of warm countries, are too tender to live through the winter in England, unleſs preſerved in a ſtove. A ſmall piece of the wood of the tree, being put on a pan of lighted coals, will ſend forth a moſt agreeable odour, which will perfume a whole houſe. Miller's Gard. Dict.

The fruit is accounted cooling and moiſtening; uſeful againſt ſharp thin defluxions upon the lungs, helping coughs and catarrhs, and taking off the heat of urine. Miller.

As in figure, ſo in virtue, they reſemble damſons.

CORDIAL, *Cardiac*, in *Medicine*. a comforting, or refreſhing remedy, that gives a ſudden ſtrength, and chearfulneſs, by raiſing the ſpirits when depreſſed by too much exerciſe, ſome diſeaſe, or the like cauſe.

Cordials act by giving a ſpringineſs and force to the fibres, and by ſome of their fine particles directly entering the tubuli, or pores, of the nerves and minute veſſels, and ſo mixing immediately with the fluids.

Thus, ſome of the particles of the ſpirit of lavender, when dropped into ſugar, and taken, are ſuppoſed to enter the nerves of the palate directly. Spirituous liquors, as brandy, cinnamon-water, &c. are ſuppoſed alſo to act immediately on the palate; but eſpecially on the nervous coat of the ſtomach, and not by the common current of the circulation: by which means they often prove an immediate *cordial*.

In faintings, where the circulation of the blood is languid, ſal volatile oleoſum, or ſpirit of hartſhorn dropt in cold water, and drank immediately, occaſion a contraction of the fibrillæ, the laſt by its coldneſs, and the firſt by entering the ſmall veſſels; and thus they inſtantly augment the circulation, or, in other words, prove *cordial*. In officinal compoſitions, the four *cordial* flowers are, burrage, bugloſs, roſes, and violets. The four *cordial* waters are, thoſe of burrage, bugloſs, endive, and chicory; ſome add, thoſe of *carduus benedictus* and ſcorzonera, ſcabioſa, ſorrel, &c. See CARDIAC.

CORDIAL *waters*. See *Compound* WATERS.

CORDIFORMES *conchæ*. See HEART-*ſhells*.

CORDIS *Capſula, Fovea, Mucro, Septum*. See CAPSULA, FOVEA, MUCRO, SEPTUM.

CORDON, in *Fortification*, a row of ſtones jutting out between the rampart and the baſis of the parapet, like the tore of a column. The *cordon* ranges round the whole fortreſs, and ſerves to join the rampart, which is aſlope, and the parapet, which is perpendicular, more agreeably together.

In fortifications raiſed of earth, this ſpace is filled up with pointed ſtakes, inſtead of a *cordon*.

CORDWAINERS, or CORDINERS, the term whereby the ſtatutes denominate *ſhoe-makers*.

The word is formed from the French *cordonnier*, which Menage derives from *cordouan*, a kind of leather brought from *Cordoua*, whereof they formerly made the upper-leathers of their ſhoes. Others derive it from *corde*, *rope*, becauſe anciently ſhoes were made of cords; as they ſtill are in ſome parts of Spain, under the name of *alpargates*. See CORDAGE. But the former etymology is better warranted: for, in effect, the French workmen who prepare the *cordouas* are ſtill called *cordouanniers*.

In Paris they have two pious ſocieties, under the titles of *Freres Cordonniers, Brothers Shoemakers*; eſtabliſhed by authority towards the middle of the ſeventeenth century; the one under the protection of St. Criſpin, the other of St. Criſpianus, two ſaints who had formerly honoured the profeſſion. They live in community, and under fixed ſtatutes and officers; by which they are directed both in their ſpiritual and ſecular concerns. The produce of their ſhoes goes into a common ſtock, to furniſh neceſſaries for their ſupport; the reſt to be diſtributed among the poor.

By ſtat. 1 Jac. I. c. 22. the maſters and wardens of the *cordwainers* company in London, are to appoint ſearchers and triers of leather; and leather is not to be ſold before it is ſearched and ſealed.

CORDYLA, or CORDYLUS, in *Zoology*, a name by which ſome authors call the *thynnus* or TUNNY-*fiſh*, whilſe young and ſmall. Willughby.

CORDYLUS, in *Zoology*, the name of a ſpecies of lizard, called alſo *uromaſtyx* and *caudiverba*. It is larger than the green lizard. Its tail is rounded, and is divided into a number of circles covered with ſcales, which coat them over, and cover the whole tail like the tiling of the roof of a houſe. Ray.

CORE, a diſorder incident to ſheep, occaſioned by worms in their liver, reſembling a plaiſe or flounder.

CORED *herrings*. See HERRINGS.

COREGONUS, in *Ichthyology*, the name of a genus of fiſhes of the malacopterygious, or ſoft-finned kind; the characters of which are theſe: the branchioſtege membrane on each ſide contains ſeven, eight, nine, or ten bones. The *pinna dorſi* is placed nearer the ſnout than the ventral fins are. The teeth are ſo ſmall, that in ſeveral of the ſpecies they are ſcarce diſcernible.

The ſpecies of this genus, enumerated by Artedi, are four.

The name *coregonus* is formed of κορη, *the pupil of the eye*, and γωνια, *an angle* or *corner*; and is given it from the ſingular ſtructure of this part of the eye, the pupil in this fiſh running out into an acute angular corner in the anterior part, and this regularly in all the ſpecies.

COREIA, in *Antiquity*, a feſtival in honour of Proſerpine, named *Core*, Κορη, which in the Moloſſian dialect ſignifies a beautiful woman.

COREOPSIS, in *Botany*, *tickſeed*; a genus of the *ſyngeneſia polygamia fruſtranea* claſs. Its characters are theſe: the common empalement of the flower is double; the diſk is compoſed of many hermaphrodite florets, which are tubular; theſe have each five hairy ſtamina: in their center is ſituated a compreſſed germen with two horns, which afterward becomes a ſingle orbicular ſeed. The border or rays is compoſed of eight female florets, which are tongue-ſhaped, indented in five parts; theſe have no ſtamina, but a germen like the other, and are abortive. There are five ſpecies, natives of North America. Miller.

CORETT, in *Zoology*, the name of a large Eaſt Indian fiſh, of the TUNNY kind, and ſuſpected to be no other than the common tunny. It grows to ſix or ſeven feet long. Its eyes are large, and their iriſes yellow: its tail is broad and forked, and in colour of a yellowiſh green: its belly-fins are yellowiſh, and its belly of a fine bright gloſſy blue, with a ſilvery caſt. It is generally caught with hooks, and is a very fine taſted fiſh. Ray.

CORIANDER, in *Botany*, a genus of the *pentandria digynia* claſs. Its characters are theſe: it is a plant with an umbellated flower, the proper empalement of which is divided into five parts; the rays of the principal umbel are difform. The hermaphrodite flowers which form the diſk, have five equal heart-ſhaped petals, and have each five ſtamina. The germen which is ſituated under the flower, afterward becomes a ſpherical fruit divided into two parts, each having a hemiſpherical concave ſeed. There are two ſpecies; the firſt of which is the common kind, which is cultivated in the European gardens and fields for the ſeed, which is uſed in medicine: the ſecond is ſeldom found but in botanic gardens in theſe parts of Europe. They both grow naturally in the ſouthern parts of Europe.

This plant, while green, has a nauſeous diſagreeable ſmell, like bugs; but the ſeed, when dry, ſmells gratefully. It is reckoned ſtrengthening to the ſtomach, and carminative; and therefore frequently uſed with purging medicines. Matthiolus ſays it is antiſeptic. *Coriander* ſeeds have alſo a great acrimony, when freſh gathered, which they loſe with time.

It is much uſed by the brewers, both in England and Holland, to give a flavour to their ſtrongeſt beer. The ancients had a notion, that the juice of *coriander* would deprive people of their ſenſes, and even of life.

CORIARA, in *Botany*. See *Myrtle-leaved* SUMACH.

CORICEUM, in *Antiquity*, the undreſſing-room belonging to the GYMNASIUM.

CORIDOR, or CORRIDOR, in *Fortification*, a road, or way, along the edge of the ditch, without-ſide; encompaſſing the whole fortification.

The word comes from the Italian *coridore*, or the Spaniſh *coridor*.

It is alſo called the COVERT-*way*; becauſe covered with a glacis, or eſplanade, ſerving it as a parapet. The *coridor* is about twenty yards broad.

CORIDOR is alſo uſed, in *Architecture*, for a gallery, or long iſle, around a building, leading to ſeveral chambers at a diſtance from each other, ſometimes wholly incloſed, and ſometimes open on one ſide.

CORINDUM, or CARDIOSPERMUM, in *Botany*. See *Heart*-PEA.

CORINTHIAN *order*, the fourth, or, as Scamozzi and M. Le Clerc make it, the fifth, and laſt, of the orders of ARCHITECTURE. See *Tab. Archit. fig*. 27.

The invention of this order moſt of the moderns, after Vitruvius, aſcribe to Callimachus, a Corinthian ſculptor. See ACANTHUS, and COLUMN.

Villalpandus will have the Corinthian capital to have taken its origin from an order in Solomon's Temple, the leaves whereof were thoſe of the palm-tree.

The *Corinthian* order has ſeveral characters, whereby it is diſtinguiſhed from the reſt: its capital is adorned with two rows of leaves, between which riſe little ſtalks, or caulicoles, whereof the volutes are formed which ſupport the ABACUS, and which are in number ſixteen.

It has no ovolo, nor even abacus, properly ſpeaking; for the member which goes by that name, is quite different from the abacus in the other orders; being cut with a ſweep, in the middle of which is carved a roſe, or other ornament.

Vitruvius obſerves, that the *Corinthian* order has no particular ordonnance for its cornice, or any of the other ornaments of its entablature; nor does he give it any other proportions than thoſe of the Ionic order: ſo that if it appears higher than the Ionic, it is purely owing to the exceſs of the height of its capital.

He alſo makes the reſt of the entablature the ſame; and the Attic baſe he uſes indifferently for the one and the other.

But Vitruvius differs widely, in this order, from all the examples now remaining of antiquity; the moſt beautiful whereof have a particular baſe, and the whole order twenty modules in height; whereas the Ionic has but eighteen. Again, its capital is higher than that of Vitruvius by one third of a module; and its entablature, which has modillions, and ſometimes dentils together with modillions, is very different from the Ionic entablature.

Moſt of the modern architects ſet aſide Vitruvius's Corinthian ordonnance, and follow that of the ancient buildings; ſelecting from them according to their ſeveral taſtes: ſo that the modern *Corinthian* is a kind of compoſite; differing from any of the ancient buildings, and much more from Vitruvius's rules.

Vignola and M. Le Clerc make the *Corinthian* order 20 modules high; yet Serlio only makes it 18, and M. Perrault $18\frac{2}{3}$; retrenching ſomething from the 19 of Vitruvius.

The height of the ſhaft M. Perrault makes leſs than that of the Ionic, by reaſon of the exceſs of its capital.

CORINTHIAN *braſs*. See Æs *Corinthian*.

CORION, in *Botany*, a name given by ſome authors to the plant which produces the coriander ſeeds, uſed in the ſhops.

CORIS, in *Botany*, *Heathlow Pine*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower hath one ringent petal, whoſe tube is the length of the empalement; it is ſpread open at the top, where it is divided into five oblong ſegments, and hath five briſtly ſtamina. In the center is ſituated a round germen; the empalement afterward becomes a globular capſule, having five valves, encloſing ſeveral ſmall oval ſeeds. We have but one ſpecies, which grows in the ſouth of France. Other botaniſts have given the name of *coris* to the baſtard St. John's wort.

CORIS is alſo uſed in the Eaſt-Indies for a kind of ſhells which paſs for money. See BIA.

CORISPERMUM, in *Botany*, a genus of the *monandria digynia* claſs. This plant, as well as *coreopſis*, is by Millet called tickſeed. Its characters are theſe: the flower hath no empalement, but two compreſſed incurved petals; it hath one, two, or three ſtamina, and a compreſſed pointed germen, which afterward becomes one oval compreſſed ſeed, with an acute border. There are two ſpecies.

CORIZIOLA, in the *Materia Medica*, is a name given by ſome authors, particularly by Rhaſis, to the SCAMMONY.

CORK, the bark of a tree of the ſame name, a ſpecies of the *holm* OAK.

Its leaves are green above, and white underneath; and its fruit a real acorn, which ſeeds much more than that of the oak. It is found in great abundance in Spain, Italy, France, &c.

To take off the bark they make an inciſion from the top to the bottom of the tree, and at each extremity another round the tree, perpendicular to the firſt. When ſtripped from the tree, which does not therefore die, the bark is piled up in a pond, or ditch, and loaden with heavy ſtones to flatten it, and reduce it into tables: hence it is taken to be dried; and when ſufficiently dry, put in bales for carriage. If care be not taken to ſtrip the bark, it ſplits and peels off itſelf; being puſhed up by another bark formed underneath.

The bark of *cork*, as well as the acorn, are of ſome uſe in medicine; being both reputed aſtringents, after being burnt and powdered when uſed externally; but the chief employ of the former is, to put in ſhoes, ſlippers, &c. and to ſtop bottles. The Spaniards burn it to make that kind of light black we call *Spaniſh black*, uſed by painters. Cups made of *cork*, are ſaid by ſome to be good for hectical perſons to drink out of. The Egyptians made coffins of *cork*; which being lined with a reſinous compoſition, preſerved dead bodies uncorrupted. The Spaniards line ſtone-walls with it, which not only renders them very warm, but corrects the moiſture of the air. The wood of the *cork-tree* is not only good for firing, but applicable to ſeveral other uſes.

Beſides the bark of a tree of the OAK kind, which grows in the ſouthern parts of Europe, commonly called *cork*, there is what naturaliſts call *foſſil* CORK, or *ſaber montanum*. This is a ſort of ſtone of the AMIANTHUS kind, the lighteſt of all ſtones. It is fuſible by fire, and forms a black glaſs.

CORK, or CORKING *of a ſaddle*, are pieces of wood upon which the BOLSTERS are made faſt.

This part of the ſaddle was formerly made of *cork*, whence it ſtill retains the name.

COR-MASS, the name of a grand proceſſion, ſaid to have been eſtabliſhed at Dunkirk during the dominion of Charles V. and renewed on St. John's day, the twenty-fourth of June. After the celebration of high maſs, the proceſſion, conſiſting of the ſeveral tradeſmen of the town, begins. Each perſon has a burning taper of wax in his hand; and after each company comes a pageant, followed by the patron-ſaint, uſually of ſolid ſilver, richly wrought and adorned. The companies are followed by muſic; and after the muſicians, the friars, in the habits of their order, the ſecular prieſts, and then the abbot magnificently adorned, and preceded by the hoſt. Machines likewiſe of various fantaſtical forms and devices, and as variouſly accoutred, form a part of the ſhew on this occaſion; which is deſcribed as one of the moſt ſuperb and magnificent in the world, by an eye-witneſs, in 1755. Gent. Mag. vol. xxix. p. 263.

CORMORANT, in *Zoology*, a large ſea-bird, of the order of the *anſeres*, or gooſe kind, called by authors CORVUS *aquaticus*, or the *ſea*-RAVEN. Our SHAGG is a true ſpecies of this bird.

CORN, a genus of plants, which produce a grain in an ear fit for bread, the ordinary food of man.

CORN is alſo uſed for the grain, or ſeed, of that plant, ſeparated from the ſpica, or ear.

In the commerce of grain, they diſtinguiſh three kinds; viz. *corn* properly ſo called, or WHEAT; RYE, which is a ſpecies very different, and of a quality far inferior; and a third kind reſulting from a mixture of the two, and called *maſlin*.

The farmers, indeed, rank among the number of *corns* ſeveral other grains; as barley, oats, and even pulſe; as peas, vetches, &c. which, however, they ſometimes diſtinguiſh by the denomination, *ſmaller corn*. Maiſe and ſarraſin are numbered among the *corns*; the firſt called *Turkey* and *Indian corn*, the ſecond *French*, or *black corn*. See *Buck*-WHEAT.

Europe, in every part of it; Egypt, and ſome other cantons of Africa, particularly the coaſts of Barbary; and ſome parts of America cultivated by the Europeans, particularly New England, New France, and Acadia, are the places which produce *corn*. Other countries have maiſe and rice, in lieu of it; and ſome parts of America, both in the iſlands and continents, ſimple roots; ſuch as potatoes, and manioc.

Egypt was anciently the moſt fertile of all other countries in *corn*; as appears both from ſacred and profane hiſtory. It furniſhed a good part of the people ſubject to the Roman empire, and was called the dry nurſe of Rome and Italy. England, France, and Poland, ſeem now in the place of Egypt, and with their ſuperfluities ſupport a good part of Europe.

For the firſt diſcovery and culture of *corn*, authors are much divided: the common opinion is, that in the firſt ages men lived on the ſpontaneous fruits of the earth; as acorns, and the nut, or maſt, produced by the beech; which, they ſay, took its name, *fagus*, from the Greek φαγω, *I eat*. It is added, that they had not either the uſe of *corn*, nor the art of preparing, or making it eatable. See BAKING.

Ceres has the credit of being the firſt that ſhewed the uſe of *corn*, on which account ſhe was placed among the gods; others give the honour to Triptolemus; others ſhare it between the two, making Ceres the firſt diſcoverer, and Triptolemus the firſt planter and cultivator of *corn*.

Diodorus Siculus aſcribes the whole to Iſis; in which Polydore Virgil obſerves, he does not differ from the reſt; Iſis and Ceres being, in reality, the ſame. The Athenians pretend, it was among them the art began; and the Cretans, or Candiots, Sicilians, and Egyptians, lay claim to the ſame. Some think the title of the Sicilians beſt ſupported, that being the country of Ceres: and authors add, ſhe did not teach the ſecret to the Athenians, till ſhe had firſt inſtructed her own countrymen. Others ſay, Ceres paſſed firſt into Attica, thence into Crete, and, laſt of all, into Sicily: many of the learned, however, maintain, it was in Egypt the art of cultivating *corn* firſt began; and it is certain, there was *corn* in Egypt and the Eaſt, long before the time of Ceres.

The great buſineſs of the farmer is to produce the largeſt crops he can, and, at the ſame time, to injure his land the leaſt. The common way of ſowing exhauſts the whole land, without giving half the nouriſhment that it might give the corn. Inſtead of the ſcattering way of ſowing corn by the hand, if it be let in with the drill, in ſingle, double, treble, or quadruple rows, and an interval of five feet of naked ground be left between theſe ſeries of rows, the uſe of horſe-hoeing in theſe intervals will be found to give all that the farmer requires: the crop will be larger, through ſo great a quantity of ground is left vacant, than if all were ſown over, as the plants will ſtand vaſtly thicker in the rows, and will have twenty or thirty ſtalks a-piece; and the more the ſucceſſive *crops* are planted, and the oftener the ground is hoed in this manner, the better will the plants be maintained, and every crop will be larger and larger from the ſame ground, without dunging, or without changing the ſort of plant, as is uſually neceſſary in other caſes. See HUSBANDRY, and INTERVAL.

This is very evident in ſeveral parts of the ſame field, where this ſort of huſbandry has been entered upon at different times, and ſome have a firſt crop, others a ſecond, and others a third, all growing up at the ſame time, the older worked land always invariably ſhewing the beſt crop. Dunging and fallowing are both neceſſary to recover the land to its virtue, in the common way, after a few crops. Theſe are both of them expences to the farmer; but the horſe-hoeing, when the *corn* is ſown in rows, anſwers all the intent of them, and is much leſs expenſive. It has, in ſhort, every year, the good effect of a ſummer fallow, though it every year produces a good crop, and no time, or uſe of it, is loſt to the farmer.

For the preſervation of corn: it muſt be well dried and cleaned; the granary muſt have its openings to the north or eaſt, and vent-holes a-top: for the firſt ſix months it muſt be well ſtirred every fifteen days; afterwards it will be ſufficient to ſift it once *per* month: after two years, it heats no more; nor is there any thing to fear, but from the air and foreign moiſture.

A little time after the ſiege of Metz, under Henry II. of France, in the year 1578, the duke d'Eſpernon laid up vaſt ſtores of *corn* in the citadel; which was preſerved in good plight to the year 1707, when the French king and his retinue, paſſing that way, ate bread baked thereof.

The chief thing that contributes to the preſervation of *corn* is, a cruſt which forms on its ſurface, by the germination of the grain next underneath, to the thickneſs of an inch and a half. On that at Metz people walked, without its giving the leaſt way. At Sedan was a granary cut in a rock, wherein a heap of *corn* was preſerved a hundred and ten years: it was covered with a cruſt a foot thick. At Chalons they have granaries where they ſtill keep *corn* thirty or forty years: over the heap they ſtrew quicklime, in fine duſt, to the thickneſs of three inches, and ſprinkle this over with water; whence ariſes a cruſt. The grain near the ſurface ſprouts to the height of a foot and a half: theſe the winter kills; and the heap is left untouched, till neceſſity obliges them to it. See GRANARY.

No *corn* was formerly to be tranſported, without the king's licence, except for the victualling of ſhips, and in ſome ſpecial caſes, from ſome ports only: and none may buy *corn* to ſell again, without licence from juſtices, &c. Stat. 5 Eliz. cap. 12. But now *corn*, as wheat, barley, oats, &c. may be tranſported to ſtates in amity, when they exceed not certain prices; viz. wheat, 40*s.* the quarter; barley, 24*s.* oats, 16*s.* &c. by many ſtatutes; and the exporters of it ſhall pay no duty or cuſtom, but be entitled to bounty money, or a certain allowance for exportation; viz. 5*s.* for every quarter of wheat, 2*s.* 6*d.* for barley, &c. 3 Car. I.—12, 15, and 22 Car. II.—2 W. and M. &c. The tranſportation of *corn* to foreign parts was prohibited by 8 Anne, cap. 2. See ſtat. 2. Geo. II. cap. 18. A cuſtom duty is granted on foreign *corn* imported, to be paid according to the price of Engliſh *corn*; and no foreign *corn* ſhall be tranſported from one port of Great Britain to another, on pain of forfeiture, and 20*s.* a buſhel. Stat. 5 Geo. II. cap. 12. See alſo 11 Geo. II. cap. 22.

CORN-*butterfly*. See PAPILIO.

CORN-*flag*, in *Botany*. See FLAG.

CORN, *Indian*. See MAIZE.

CORN-*meaſure*. See MEASURE.

CORN-*mill*. See MILL.

CORN-*rents*, in *Law*, denote thoſe third parts of the old rents on college leaſes, which were to be reſerved by the leſſees. Stat. 18 Eliz. cap. 6. Theſe were the invention of lord-treaſurer Burleigh, &c. for upholding the revenues of colleges.

CORN, *ſharping*. See SHARPING.

CORN, *trug*. See TRUG-*corn*.

CORN, *wood*. See WOOD-*corn*.

CORN-*bottle*, or BLUE-*bottle*, in *Botany*. See CENTAURY.

CORN-*marygold*. See *Corn*-MARYGOLD.

CORN-*parſley*. See SKIRRET.

CORN-*rocket*. See BUNIAS.

CORN-*ſallad*, a ſpecies of the valerian. See VALERIAN.

CORN-*violet*. See CAMPANULA.

CORN, in *Medicine* and *Surgery*. See CLAVUS.

CORNACHINE *powder*, a purging powder, called alſo *Earl of Warwick's powder*, and *pulvis de tribus*.

It is compoſed of equal parts of *antimonium diaphoreticum*, *diagrydium*, and cream of tartar.

CORNAGE, an ancient TENURE, the SERVICE whereof was to blow a horn, when any invaſion of the Scots was perceived.

This tenure was very frequent in the northern counties, near the Picts and the Roman walls; but by ſtat. 12 Car. II. all tenures are converted into free, and common ſocage.

An old rental calls *cornage*, *newtgeldt*, q. d. *neat-geld*. Lord Coke ſays, in old books, it is called HORNGELD.

CORNARISTS, in *Eccleſiaſtical Hiſtory*, the diſciples of Theodore Cornhert, an enthuſiaſtic ſecretary of the ſtates of Holland. He writ at the ſame time againſt the Catholics, Lutherans, and Calviniſts. He maintained that every religious communion needed reformation; but he added, that no perſon had a right to engage in accompliſhing it, without a miſſion ſupported by miracles. He was alſo of opinion, that a perſon might be a good Chriſtian, without being a member of any viſible church. Encyclop.

CORNEA *tunica*, in *Anatomy*, the ſecond coat of the EYE; ſo called from its ſubſtance reſembling the horn of a lantern, in Latin *cornu*.

It is ſituated in the fore-part; and is ſurrounded by the SCLEROTICA. It has a greater convexity than the reſt of the globe of the eye, forming, according to M. Petit, a portion of a ſphere, whoſe diameter is uſually 7, $7\frac{1}{4}$, or $7\frac{1}{2}$ lines; its chord 5, $5\frac{1}{4}$, or $5\frac{1}{2}$ lines, and its thickneſs $\frac{2}{12}$, or $\frac{3}{12}$ of a line. Others have given it the figure of the vertical part of a parabolic, or hyperbolic ſpheroid. It is compoſed of ſeveral parallel laminæ, which are nouriſhed by many blood-veſſels, ſo fine, as not to hinder even the ſmalleſt rays of light from entering the eye. It has a moſt exquiſite ſenſe, to the end that, upon the leaſt pain, the tears may be ſqueezed out of the lachrymal gland, to waſh off any filth, which, by ſticking to the *cornea*, might render it cloudy, or dim.

It is ſometimes neceſſary to make inciſions through this tunic, in order to diſcharge not only matter, but even blood, when extravaſated by external injuries, if it will not give way to the common methods of diſperſion, to prevent the ſtagnant blood from ſuppurating and deſtroying the eye. There have been inſtances when this has been done with great ſucceſs, and without any deforming cicatrix, the ſight having been alſo perfectly reſtored by it. Heiſter's Surgery, p. 427.

CORNELIAN, or CARNELIAN, CARNEOLUS, a precious ſtone, ordinarily red, bordering on orange; called alſo *ſardius*, or the ſardian ſtone.

The *cornelian* is otherwiſe called *carneola* and *corneola*: the Italians call it *corniolos*; it is ſaid, from *corno*, *horn*; on account of the reſemblance it bears to horn in its tranſparence.

The characters are, that they are ſemi-pellucid ſtones, compoſed of cryſtal with a ſmall admixture of earth, of a plain uniform ſtructure, not tubulated nor cruſtated, and uſually of one ſimple colour.

Of this genus there are three ſpecies. 1. The *red cornelian*, which is a very common ſtone among our jewellers, and is of all the degrees of red from a deep blood-colour, to that of the water in which raw fleſh has been ſoaked; and this laſt, if any can be called ſo, is its proper colour. It is uſually found in a roundiſh, or pebble-like form, and its moſt frequent ſize is between half an inch and two inches in diameter, and is found in the Eaſt and Weſt Indies, and in many parts of Europe. Our jewellers value none but the oriental, but there are very fine ones found in Sileſia and Bohemia, and on the ſhores of the Rhine. The ſecond ſpecies is the *yellow cornelian*.

cornelian. This is a ſtone, in the opinion of many, of greater value than the former, when in its moſt pure and perfect ſtate. We have it principally from the Eaſt Indies; there are ſome ſpecimens of it found in Germany, but they are neither very good nor very frequent; and in England we ſometimes meet with large maſſes of it, but they are never thoroughly coloured. The third ſpecies is the *white cornelian.* This, though leſs beautiful than either of the others, is, however, a very beautiful ſtone. It is found in the Eaſt Indies, and in many parts of Europe; France has afforded very fine pieces of it, and Germany produces it in great abundance; but the beſt next the oriental is that of New Spain.

It cuts eaſily; and we find moſt of the fine gravings of antiquity, whether in relievo, or indented, are on this ſtone.

To give theſe ſtones the greater luſtre, in ſetting them they uſually lay a piece of ſilver-leaf underneath.

The principal uſe made of *cornelians* is in ſeals; by reaſon they grave well, and take a fine poliſh.

Mr. du Fay, of the Academy of Sciences at Paris, accidentally hit upon a very fine way of turning any part of a red *cornelian* white, ſo as to form veins or clouds of that colour at pleaſure in it, by filling up the lines with white enamel in powder, then putting it over the fire to melt the enamel. Mem. Acad. Par. 1732.

The powder of the *cornelian* is preſcribed to be drank in all manner of hæmorrhages.

CORNER-*ſtones*, among *Builders*, the name of the two ſtones which ſtand one in each jaumb of a chimney. Their faces are hollowed in breadth, being a certain ſweep of a circle. The breadth of each ſtone is equal to that of the jaumb, and their height reaches from the hearth to the mantle-tree.

Corner-ſtones are commonly made of Ryegate or fire-ſtone.

Corner-*teeth*, are thoſe which appear in a horſe when he is coming five years old. See Age.

CORNET, Cornu, a horn, or muſical inſtrument, uſed by the ancients in their wars.

Vegetius informs us, that the legions had trumpets, *cornets*, and buccinæ; that when the *cornets* ſounded, only the enſigns regarded; none of the ſoldiers: that when the enſigns were to march alone without the ſoldiers, the *cornet* alone was ſounded: as, on the contrary, when the ſoldiers were to move without the enſigns, the trumpets alone were ſounded: that the *cornets* and buccinæ ſounded the charge and retreat; and the *cornets* and trumpets during the courſe of the battle.

This inſtrument was alſo uſed in eccleſiaſtical harmony to ſupply the acuter ſounds. See *Tab. Muſic, fig.* 2. The baſs of this is the serpent.

Cornet is alſo the name of one of the compound ſtops of an organ, in which five pipes are made to ſpeak at the touch of a ſingle key.

Cornet, in *Conchyliology*, a name given by ſome French writers to a genus of ſhells, called by others *cuculli*, and by the generality of writers volutæ.

Cornet, in *Farriery*, an inſtrument uſed in bleeding horſes.

Cornet, or Coronet, is ſometimes uſed to denote the loweſt part of the paſtern of a horſe round the coffin.

Cornet, in *Modern War*, denotes an officer in the cavalry, who bears the enſign, or colours, of a troop.

The *cornet* is the third officer in the company, and commands in the abſence of the captain and lieutenant. He takes his title from his enſign, which is ſquare, and is ſuppoſed to be called by that name, from *cornu*; becauſe placed on the wings, which form a kind of points, or horns, of the army.

Others derive the name from *coronet*; alleging, that it was the ancient cuſtom for theſe officers to wear coronets, or garlands, on their heads.

CORNICABRA, in *Botany*, a name by which the Spaniards call the turpentine-tree. The name is founded on the ſingular production of this tree, in form of a horn or pod. This is not the fruit of the turpentine-tree, as has been ſuppoſed by ſome; but it is a mere excreſcence, of the nature of the galls on the leaves and ſtalks of other trees and plants, and is inhabited by ſmall inſects of the puceron kind.

CORNICHE, Cornish, or Cornice, in *Architecture*, the uppermoſt member of the entablature of a column; or that which crowns and finiſhes the order.

The word is formed from the Latin *coronis*, *a crowning*.

The *corniche* is the third grand diviſion of the trabeation, commencing with the freeze, and ending with the cymatium.

The *corniche* is different in the different orders: in the Tuſcan order it is the moſt plain. Vignola makes it to conſiſt of an ovum, or quarter-round; an aſtragal, or baguette; a reglet, or fillet; a larmier, and a talon.—See *Tab. Archit. fig.* 24.

In the Doric, he uſes capitals to the triglyphs of the freeze with their bandelettes, a talon, mutules, or dentils; a larmier, with its guttæ underneath, a talon, fillet, cavetto, and reglet. See *Tab. Archit. fig.* 25.

In the Ionic, the members are in moſt reſpects the ſame as in the Doric; except that they are frequently enriched with carving, and there are always dentils. See *Tab. Archit. fig.* 26.

In the Compoſite there are dentils; its mouldings are carved, and there are channels under the foſſit. See *Tab. Archit. fig.* 28.

The Corinthian *corniche* is the richeſt; and is diſtinguiſhed by having both modillions and dentils: contrary to the opinion of Vitruvius, who looks on thoſe two ornaments as incompatible; and of M. Le Clerc, who regards the dentils as peculiar to the Ionic. See *Tab. Archit. fig.* 27.

For the heights and projectures of the corniches in the ſeveral orders. Goldman makes the height of the Tuſcan $1\frac{1}{7}$, and its projecture $2\frac{2}{5}$, modules; the height of the Doric $1\frac{1}{3}$, its projecture $2\frac{2}{5}$; height of the Ionic $1\frac{3}{5}$, its projecture $2\frac{2}{5}$; height of the Compoſite $1\frac{3}{5}$, projecture $2\frac{13}{30}$; height of the Corinthian $1\frac{2}{5}$, projecture $2\frac{13}{30}$. See a table of the meaſures of the ſeveral parts of the *corniche* in the different orders, under Column.

Corniche, *architrave*, is that immediately contiguous to the architrave; the freeze being retrenched.

Corniche, *mutilated*, is that whoſe projecture is omitted, or elſe interrupted, right to the larmier, or reduced into a plat-band with a cimatium.

Corniche, *cantaliver*, a term uſed, by the workmen, for a *corniche* that has cantalivers underneath it. See Cantaliver.

Corniche, *modillion*, a *corniche* with modillions under it. See Modillion.

Corniche, *coving*, a *corniche* which has a great caſement, or hollow, in it; ordinarily lathed and plaſtered upon compaſs, ſprokets, or brackets.

Corniche is alſo uſed, in the general, for any little projecture, either of maſonry, or joinery; even where there are no columns. Thus, we ſay, the *corniche* of a chimney, a buffet, &c.

Corniche is alſo applied to the crownings of pedeſtals. See *Tab. Archit. fig.* 24. 27. 25. 28. and 26.

This *corniche* is different in the different orders: in the Tuſcan, according to M. Perrault, it has a platband, which ſerves as a corona, and a cavetto with its fillet; in the Doric, it has a cavetto with a fillet, which bears a drip crowned with a ſquare; in the Ionic, a cavetto with its fillet above, and a drip or pendent ſquare crowned with an ogee and its fillet; in the Corinthian, an ogee with its fillet, a cymatium under the corona, which it hollows to make a drip, a corona, and an ogee, with its fillet: laſtly, in the Composite, a fillet with a ſweep over the dye, an astragal, cyma with its fillet, corona, and ogee with its fillet.

Corniche, *glacis of the.* See Glacis.

Corniche *ring* of a piece of ordnance, is that which lies next the trunnion ring; or the next ring from the muzzle backwards.

CORNICULA, an inſtrument made of horn, almoſt in form of a cupping-glaſs, except that at the more ſlender extremity there is a ſmall perforation. The wide end is laid upon emaciated parts, and a perſon applying his mouth to the perforation at the ſmall extremity, by ſuction draws out the air. In conſequence of this the part covered riſes into the hollow of the inſtrument; and by this means the nutritious juices are thought to be invited to the emaciated part. Hildanus, cent. 1. obſ. 80. relates a cure performed by this means, and gives a figure of the inſtrument. Tulpius, lib. iii. obſ. 49. gives another inſtance of a cure performed by this means.

This inſtrument was by the ancients eſteemed a ſpecies of cupping-glaſs.

CORNICULARIS *proceſſus*, the proceſs, or knob, of the ſhoulder-bone; thus called, as reſembling the figure of a crow's beak.

CORNICULARIUS, in *Antiquity*, an officer in the Roman army, whoſe buſineſs was to aid and aſſiſt the military tribune in quality of lieutenant.

The *cornicularii* went the rounds in lieu of the tribune, viſited the watch, and were nearly what the aids major are in the French army.

The denomination *cornicularius* was given them from a little horn, called *corniculum*, which they uſed in giving orders to the ſoldiers: though Salmaſius derives it from *corniculum*, the creſt of an head-piece; it being an obſervation of Pliny, that they wore iron or braſs horns on their helmets; and that theſe were called *cornicula*. In the *Notitia Imperii* we find a kind of ſecretary, or regiſter, of the ſame name. His buſineſs was to attend the judge, and enter down his ſentences and deciſions.

The critics derive the word, in this ſenſe, from *corniculum*, a little horn to put ink in.

CORNICULATE *flowers*. See FLOWER.

CORNICULATE *plants* are ſuch as, after they have blown into flower, produce many diſtinct and horned pods, or ſeed-veſſels, called *ſiliquæ*; for which reaſon, the plants are alſo, by ſome, denominated *ſiliquous plants*.

Such are, the *ſedum*, or *ſempervivum*, *telephium*, *juncus floridus*, *helleborus niger*, *pæonia*, *caltha paluſtris*, *althæa lutea*, &c.

CORNISH. See CORNICHE.

CORNISH *chough*, in *Zoology*. See CORACIAS.

CORNISH *diamond*, a name given by many people to the CRYSTALS found in digging the mines of tin in Cornwall. Theſe cryſtals are of the nature of the Kerry-ſtone of Ireland, but ſomewhat inferior to it: they are uſually bright and clear, except toward the root, where they are coarſe and foul, or whitiſh. They are uſually found in the common form of an hexangular column, terminated at each end by an hexangular pyramid.

CORNISH *ring*, or *aſtragal of a gun*, is the ſmall ring near the muzzle.

CORNISH, or *Britiſh Language*. Some remains of this language were met with in Cornwall, ſo lately as the year 1768. See Archæol. vol. iii.

CORNISH *hug*. See HUG.

CORNIX, in *Ornithology*. See CORVUS and CROW.

CORNU *Ammonis*, in *Natural Hiſtory*, an extraordinary kind of ſtone, ſome of which in vinegar, juice of lemons, &c. have a motion like that of an animal.

It is rough, knotty, of an aſh-colour, and twiſted in manner of a ram's horn; ſuch as thoſe wherewith the ancients repreſented Jupiter Ammon; whence its name.

It is diſputed, among naturaliſts, whether it be a native foſſil, a *nautilus*, or a rock-plant? Camerarius maintains the firſt; urging, that it is frequently dug out of the tops of mountains; and that it is ſeldom found near the ſea-ſhore.

Dr. Woodward aſſerts it a ſhell, and of the number of the nautili, formed in the ſea, and carried thence, by the waters of the deluge, into the countries whence it is dug. He argues, that, if it be rarely found on the ſea-coaſts, it is becauſe ſhells and other bodies lying in the bottom of the ſea, as moſt kinds of the *cornua Ammonis* muſt do, are only to be torn thence, and driven aſhore by tempeſts: but the moſt violent tempeſts never move the bottom of the ſea, as the divers have put paſt doubt; ſo that it is no wonder if none of theſe *cornua* be thrown up: but in the overturning of the earth by the deluge, theſe, with a thouſand more productions of the ſea, might be thrown from the bottom of the waters to the places where they are now found.

The *cornua Ammonis* are of different thickneſſes and lengths; ſome of them weigh twenty pounds. They are found in ſeveral places in Germany, and elſewhere. From ſome experiments that have been made, ſome of them are found to contain a little quantity of gold, which ſinks to the bottom upon pounding them ſmall, and ſtirring them in a running water, till all the earthy parts be carried off. Mr. Beaumont's account of them is to be ſeen in the Phil. Tranſ. N° 129. See SNAKE-*ſtones*.

CORNU *cervi*, *hartſhorn*, in *Medicine*, makes one of the TESTACEOUS powders. See *Hart's* HORN.

Among chemiſts, the ſame name is uſed for the mouth of an alembic.

CORNUA *uteri*. See UTERUS, and WOMB.

CORNUCOPIA, among the *Ancient Poets*, a horn, out of which proceeded plenty of all things; by a particular privilege which Jupiter granted his nurſe, ſuppoſed to be the goat Amalthea.

The real ſenſe of the fable is this: that in Lybia there is a little territory ſhaped not unlike a bullock's horn, exceeding fertile, given by king Ammon to his daughter Amalthea, whom the poets feign to have been Jupiter's nurſe.

In *Architecture*, and *Sculpture*, the *cornucopia*, or horn of plenty, is repreſented under the figure of a large horn, out of which iſſue fruits, flowers, &c. On medals, F. Joubert obſerves, the *cornucopia* is given to all deities, genii, and heroes.

CORNUCOPIÆ, in *Botany*, the name of one of the ſpecies of the graſs kind, which, in the Linnæan *Syſtem of Botany*, makes a diſtinct genus of plants, of the *triandria digynia* claſs: the characters of which are, that the cup is a common perianthum of one leaf, very large, and made in the faſhion of a funnel, indented at the edge, and obtuſe, and ſomewhat erect, and ſpread open. The glume has two valves, and contains only one flower: the valves are oblong, obtuſely pointed, and equal in ſize. The flower is compoſed of a ſingle valve, in figure and ſituation much reſembling the valves of the cup. The ſtamina are three capillary filaments, and the antheræ are oblong. The germen of the piſtil is of a turbinated form: the ſtyles are two in number, and very ſlender: the ſtigmata are fibroſe. The flower contains the ſeed, which is ſingle, of a turbinated form, and convex on one ſide, and plain on the other.

CORNUS, in *Botany*. See *Cornelian* CHERRY.

CORNUTA, in *Ichthyology*, a name given by Geſner and others to the fiſh called alſo *lyra*, and *lyra altera* by others. It is of the *trigla* kind, and is diſtinguiſhed by Artedi by the name of the *trigla*, with many *cirri*, and with an octagonal body.

CORNUTIA, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Its characters are theſe: the flower has one petal, with a cylindrical tube, which is divided into four parts at the top. It hath four ſtamina, two of which are longer than the tube, and the other ſhorter. In the center is ſituated a roundiſh germen, which afterward becomes a globular berry, ſitting upon the empalement, and encloſing ſeveral kidney-ſhaped ſeeds. There is but one ſpecies, a native of the Weſt Indies.

CORNUTUM *argumentum*. See DILEMMA.

CORNUTUS *piſcis*, in *Zoology*, a name given by Mr. Ray to the fiſh commonly called by the Dutch in the Eaſt-Indies, where it is very common, *hoorn viſch*. It has a horn of a very ſingular kind in the back part of its head, or beginning of its back, and two others on the belly: theſe are crooked, and very brittle. They ſeem much of the nature of the ſpines, which ſeveral fiſh have placed before their back and belly fins; and it is dangerous to be wounded by them, the wound being generally very difficult of cure, eſpecially if any part of the horn or ſpine is left in it, which, from the brittleneſs of thoſe ſubſtances, is generally the caſe. See *Tab. of Fiſh*, N° 66.

COROCORO, in *Zoology*, the name of a Braſilian fiſh, ſomewhat reſembling the CORACINUS of the Mediterranean. It has a ſinus in the back, in which, at pleaſure, it can bury the fins. Marggrave's Hiſt. Braſil.

CORODIO *habendo*, a writ, whereby to exact a *corody* of an abbey or religious houſe.

CORODY, CORRODY, or CORREDY, in *Law*, (*corrodium*, from *corrodo*, alſo *conredium* and *corredium*) a ſum of money, or allowance of meat, drink, and cloathing, due to the king from an abbey, or other houſe of religion, whereof he is the founder, towards the reaſonable ſubſiſtence of any ſervant he thinks fit to beſtow it on.

The difference between a *corody* and penſion is ſaid to be, that a *corody* is allowed towards the maintainance of any of the king's ſervants in an abbey; but a penſion is given to one of the king's chaplains, for his better maintenance, till he may be provided with a benefice. See Fitzherb. Nat. Br. fol. 250. who ſets down all the *corodies* and penſions certain, that abbeys, when they ſtood, were bound to perform to the king.

COROLLA, among *Botaniſts*, is the moſt conſpicuous part of a flower. It expreſſes the coloured, tender part, which ſurrounds the organs of generation. The parts it is compoſed of are called *petals*; if it conſiſt only of one piece, it is called *monopetalous*; if of more, it is ſaid to be *dipetalous*, *tripetalous*, *tetrapetalous*, and ſo on, as it conſiſts of two, three, four, or more parts. See PETAL, &c.

COROLLARY, or CONSECTARY, in *Mathematics*, is uſed for a conſequence drawn from ſome propoſition already advanced or demonſtrated: as if from this theorem, *That a triangle which has two equal ſides, has alſo two equal angles*, this conſequence ſhould be drawn, *that a triangle, which hath the three ſides equal, has alſo its three angles equal.*

COROLLISTÆ, among *Botanical Authors*. See BOTANY.

COROLLULA, among *Botaniſts*, a term uſed to expreſs thoſe little partial flowers, which together conſtitute the whole compound ones. They are of two kinds, the tubulated, and ligulated; the former are always furniſhed with a campanulated limb, divided into four or five ſegments: the latter, or ligulated *corollulæ*, have a flat linear limb, terminated by a ſingle point, or by a broader extremity, divided into three or five ſegments.

CORON, a Jewiſh liquid meaſure, ſuppoſed to be the ſame with the HOMER.

CORONA, in *Anatomy*, is that edge of the *glans* of the *penis* where the *preputium* begins.

CORONA, *crown*, or *crowning*, in *Architecture*, a large, flat, maſſive member of the corniche; ſo called, becauſe it crowns not only the corniche, but the entablature, and the whole order. See *Tab. Archit. fig.* 9.

The French call it *larmier*, our workmen the *drip*, as ſerving, by its great projecture, to ſcreen the reſt of the building from the rain.

Some Latin authors call it *ſupercilium*; but that, as it ſhould ſeem, by miſtake for *ſtillicidium*. Certain French writers call it *mouchette*; and certain Latin ones, *mentum*, *chin*; from its keeping off the weather from the parts underneath.

Some call it abſolutely the *corniche*, as being the principal member thereof. Vitruvius frequently uſes the word *corona* for the whole corniche.

The *corona* is itſelf crowned, or finiſhed with a reglet, or fillet. There are ſometimes two *coronas* in a corniche; as in the Corinthian of the Rotundo.

Corona, in *Optics*, ſignifies a luminous circle, generally coloured, round the ſun, moon, or largeſt planets. See Halo.

Corona *Borealis*, or *Septentrionalis*, *Northern Crown*, or *Garland*, in *Aſtronomy*, a conſtellation of the northern hemiſphere; whoſe ſtars in Ptolemy's Catalogue, in Tycho's and in Hevelius's, are 8; in the Britannic Catalogue 21. Their order, names, longitudes, latitudes, magnitudes, &c. are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
	ο	♏	2	5	16	45	57	52	6
That preced. the *corona*, without ſide	η		2	44	45	46	49	30	5
That next the Lucida, towards the N.	β		4	45	53	46	4	40	4
Another following this, and more N.	θ		5	5	20	48	34	50	4.5
Lucida of the *corona*	α		7	55	56	44	21	17	2.3
5.									
1ſt of the informes over the crown	μ		0	58	43	55	48	50	5
Second	ζ		3	58	22	53	59	31	4
That following the Lucida to the ſouth	γ		10	31	50	44	32	18	4
N. in the circum. of the *corona*	π		7	50	41	50	30	3	5
S. in the circum. of the *corona*	δ		12	38	14	44	53	5	4
10.									
3d of the informes over the crown	κ		8	17	34	53	59	43	5
5th over the *corona*	λ		8	18	21	56	25	32	5
3d of thoſe following the Lucida ſouth	ε		14	46	15	46	6	27	4.5
Laſt of all in the *corona*	ι		14	39	38	49	11	21	5.6
6th over the *corona*	ς		12	48	24	52	30	42	6
15.									
N. of thoſe following the *corona*	τ		13	42	51	55	57	45	6
Preced. of the middle	σ		17	4	43	53	52	41	6
S. of thoſe following the *corona*	υ		19	51	15	49	28	4	6
Poſterior of the middle ones	ξ		20	54	10	51	27	0	5
Another following them all	1. ν		19	40	56	54	16	30	5
20.									
	2. ν		29	43	33	55	30	26	5

Corona *Auſtralis*, or *Meridionalis*, *Southern Crown*, a conſtellation of the ſouthern hemiſphere, whoſe ſtars in Ptolemy's Catalogue are 13; in the Britiſh Catalogue 12. Their order, names, longitudes, latitudes, magnitudes, &c. are as follow:

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
Preceding thoſe to the ſouth	α	♑	1	18	13	22	36	23	4
Next in the *crown*	ε		5	31	37	20	34	[illegible]	6
Following this	ζ		8	27	49	19	16	12	6
	η		9	41	31	17	48	8	6
Middle of 3 before the knee of Sagittarius	γ		10	14	14	15	15	57	5
5.									
South	θ		10	10	16	16	42	12	5
North	δ		9	42	59	14	20	8	5
2d of the 2 in the N. circumference of the *crown*	μ		8	9	38	14	13	8	6
Firſt	ν		7	41	38	14	24	16	6
Moſt north. of the *crown*	ι		5	17	24	12	28	18	6
10.									
More ſoutherly	κ		2	51	2	15	23	15	6
More ſouth. than laſt	λ		2	39	46	18	59	50	6

Corona, among *Botaniſts*, expreſſes any thing growing on the head of the ſeed. The *coronæ* of ſeeds are of various kinds; ſometimes ſimple, conſiſting only of a dentated membrane; ſometimes pappoſe, conſiſting of downy matter, which in ſome caſes is immediately fixed to the ſeeds; in others it has a pedicle growing from it. Sometimes the *coronæ* are compoſed of ſimple filaments, and ſometimes they are ramoſe.

Corona *clericalis*. See Crown, and Coif.

Corona *Æthiopica*, in *Natural Hiſtory*, the name of a ſea-ſhell of the dolium, or *concha globoſa* kind.

Corona *imperialis*, in *Botany*. See Crown *imperial*.

Corona *imperialis*, in *Conchyliology*, a name given by authors to a kind of voluta, differing from the other ſhells of that family, by having its head ornamented with a number of points, forming a ſort of crown.

There are four ſpecies of this ſhell found in the cabinets of the curious.

Coronæ, *Lucida*. See Lucida, and Corona *Borealis*.

Coronæ *jus*. See Jus.

Coronæ *placitorum cuſtos*. See Custos.

Corona *ſolis*, in *Botany*. See Sun-*flower*.

Corona *ſolis Americana*, the name of a marine inſect. See American, &c.

CORONALE *os*, in *Anatomy*, the bone of the forehead; called alſo *os* frontis, *os oppis*, and *verecundum*.

CORONALIS, denotes the firſt suture of the cranium, or ſkull.

The *coronal* ſuture reaches tranſverſly from one temple to the other; and joins the *os frontis*, with the *oſſa parietalia*. See *Tab. Anat.* (*Oſteol.*) *fig.* 1. *lit. g.* and *fig.* 2. *lit. h.*

It is open, the breadth of a finger or two, in the middle, in young children, but grows cloſer with age; though ſometimes by convulſion fits, or a bad conformation, it not only cloſes in children, but the edges ſhoot over one another; which is what the women call *head-mould-ſhot*; after which they ſeldom live long.

CORONARIA *vaſa*, Coronary *veſſels*, the arteries and veins which ſurround the heart to nouriſh and ſupply it with blood, &c. See *Tab. Anat.* (*Splanch.*) *fig.* 12. *lit. cc.*

Coronary *arteries*, are two arteries ſpringing out of the *aorta*, before it leaves the *pericardium*; and ſerving to carry the blood into the ſubſtance of the heart.

They are called *coronary*, becauſe of their ſpreading into branches, and encompaſſing the baſis of the heart, in manner of a crown, or garland. In their progreſs they ſend out ſeveral branches lengthwiſe of the heart; and, as Ruyſch obſerves, to the auricles, and into the very ſubſtance of the heart: after encompaſſing the baſis, and meeting again, they inoſculate with each other.

Coronary *ligament* unites the radius with the cubitus.

Coronary *vein*, is a vein diffuſed over the exterior ſurface of the heart. It is formed of ſeveral branches ariſing from all parts of the viſcus, and terminates in the vena cava, whither it conveys the remains of the blood brought by the *coronary* arteries.

At its riſe out of the heart, there is a valve to hinder the reflux of the blood; firſt diſcovered by B. Euſtachio, a native of San Severino.

Coronary, *ſtomachic*, is a vein inſerted into the trunk of the ſplenic vein; which, by uniting with the meſenteric, forms the *vena* porta.

CORONATION. See Crown, King, and Oath.

CORONATORE *eligendo*, in *Law*, a writ, which, after the death or diſcharge of any *coroner*, is directed to the ſheriff, out of the chancery, to call together the freeholders of the county, for the choice of a new *coroner*, to certify into chancery both the election, and the name of the party elected, and to give him his oath, &c.

Coronatore *exonerando*, in *Law*, is a writ for the diſcharge of a coroner, for negligence or inſufficiency in the execution of his duty: and where coroners are ſo far engaged in any other public buſineſs, that they cannot attend the office; or if they are diſabled by old age, or diſeaſe, to execute it; or have not ſufficient lands, &c. they may be diſcharged by this writ.

CORONE, in *Anatomy*, a ſharp-pointed eminence, or proceſs of a bone. See *Tab. Anat.* (*Oſteol.*) *fig.* 2. *lit. m.* See alſo Bone.

Of theſe there are ſeveral in the body, diſtinguiſhed, according to their figures, by different names; e. gr. one of the *os petroſum*, called *ſtyloides*, as being ſloped like a bodkin: another called *maſtoides*, from its reſembling a nipple; another of the *omoplata*, called *coracoides*, as being of the figure of a crow's bill: laſtly, another of the *os ſphenoides*, called *pterygoides*, from its ſhape, which reſembles the wings of a bat.

CORONEOLA, in *Botany*, a name given by ſome authors to the *lyſimachia*, or purple willow-herb, vulgarly called with us codlins and cream.

CORONER, an ancient officer in this kingdom, ſo called, becauſe he hath principally to do with pleas of the *crown*.

There are uſually four, ſometimes ſix, and ſometimes fewer, in each county. They are choſen by the freeholders of the county, by virtue of a writ out of chancery; and the choice is for life, unleſs they become ſheriffs or verderors, or are diſcharged by the writ *de coronatore exonerando*, or by ſtat. 25 Geo. II. cap. 29. for extortion, neglect, or miſbehaviour.

This officer, by the ſtatute of Weſtminſter, ought to be a knight; and there is a writ in the regiſter, now obſolete, called *niſi ſit miles*, whereby it appears to be a ſufficient cauſe for removal of a *coroner* choſen, if he were not a knight, and had not a hundred ſhillings *per ann.* freehold,

freehold. This qualification, however, is now diſregarded; and perſons are choſen into this office merely for the ſake of the fees annexed to it by 3 Hen. VII. cap. 1. and 25 Geo. II. cap. 29.

Mention is made of this officer as early as the time of king Athelſtan, anno 925.

Their authority is judicial and miniſterial; judicial, where a perſon comes to a violent death, and to take and enter appeals of murder, pronounce judgment upon outlawries, &c. and to enquire of lands and goods, and eſcapes of murderers, treaſure trove, wreck of the ſea, deodands, &c. The miniſterial power is where the *coroners* execute the king's writs, on exception to the ſheriff, as being party to a ſuit, kin to either of the parties, on default of the ſheriff, &c. In their former capacity the act of one has the ſame force as if they had all joined; in the latter, their acts are void, unleſs they join. 4 Inſt. 271. 1 Plowd. 73. And the authority of *coroners* does not determine by the demiſe of the king; as that of judges, &c. doth, who act by the king's commiſſion. 2 Inſt. 174.

The lord chief juſtice of the king's bench is the ſovereign *coroner* of the whole realm, or whereſoever he abides.

There are alſo certain *ſpecial coroners* within divers liberties, as well as the ordinary officers in every county; and ſome colleges and corporations are impowered by their charters, to appoint the *coroner* within their own precincts.

Coroner *of the king's houſhold*, hath an exempt juriſdiction within the verge, and the *coroner* of the county cannot intermeddle within it; as the *coroner of the king's houſe* may not intermeddle in the county, out of the verge. 2 Hawk. 45. If an inquiſition be found before the *coroner* of the county, and the *coroner* of the verge, where the homicide was committed in the county, and ſo it is entered and certified, it will be error. 4 Rep. 45. But if a murder be committed within the verge, and the king removes before any indictment be taken by the *coroner of the king's houſhold*; the *coroner* of the county, and the *coroner of the king's houſe*, ſhall enquire of the ſame: and according to Sir Edward Coke, the *coroner* of the county might enquire thereof at the common law. 2 Hawk. 45. 2 Inſt. 550. If the ſame perſon be *coroner* of the county, and alſo *of the king's houſe*, an indictment of death taken before him as *coroner*, both *of the king's houſe*, and of the county, is good. 4 Rep. 46. 3 Inſt. 134. See ſtat. 33 Hen. VIII. 12 Parl. 1 & 3.

Coroner *of London*, is eligible by the mayor and commonalty of the city, and no other *coroner* has any power there.

Coroner, *court of*. See Court.

CORONET, in *Farriery*. See Cornet.

Coronet, in *Heraldry*. See Crown.

CORONILLA, in *Botany*, *jointed podded colutea*, a genus of the *diadelphia decandria* claſs. Its characters are theſe: it hath a butterfly-flower, with nine ſtamina, which are united, and one ſtanding ſingle, terminated by ſmall ſummits: in the center is ſituated an oblong taper germen, which afterward becomes a taper jointed pod, encloſing oblong ſeeds. There are ſeven ſpecies.

There have been pieces of amber found, with the pinnated leaves of *coronilla* included in them, and as elegantly expanded as the moſt curious botaniſt could have expected it, for preſerving them in his hortus ſiccus Breynius gives us an account of one of thoſe pieces of amber, in which the middle part of one of theſe leaves was thus elegantly preſerved; he examined the ſpecimen with the greateſt accuracy, but could not find the leaſt mark of fraud or deceit in it, and is very particular in the deſcription of the piece, and in the diſpoſition of the leaf in it. To this it is to be added, that the *coronilla* is a ſhrub commonly wild in Pruſſia, where amber is produced. Phil. Tranſ. Nº 396.

CORONOPUS, in *Botany*. See Plantain.

COROPITÆ. See Agonistici.

CORPORA *cavernoſa*, in *Anatomy*, two ſpongious bodies, called alſo *corpora nervoſa*, and *corpora ſpongioſa*. See Cavernosa *corpora*, &c.

Corpora *olivaria*. See Olivaria *corpora*.

Corpora *pyramidalia*, are two protuberances of the underpart of the cerebellum, about an inch long; ſo called from their reſemblance to a pyramid.

Corpora *ſtriata*, two protuberances of the *crura* of the medulla *oblongata*.

Corpora *habeas*, in *Law*. See Habeas.

CORPORAL, an inferior officer in a company of foot, who has charge over one of the diviſions: he places and relieves centinels, and keeps good order in the *corps de garde*; receiving, withal, the word of the inferior rounds that paſs by his *corps de garde*. There are uſually three *corporals* in each company.

The word comes from the Italian *caporale*, which ſignifies the ſame thing; and that from *caput*, *head*, *chief*; the *corporal* being the firſt of the company.

Corporal *of a ſhip*, is an officer who hath the charge of ſetting the watch and centries, and relieving them; and who ſees that all the ſoldiers and ſailors keep their arms neat and clean: he alſo teaches them how to uſe their arms, and hath a mate under him.

Corporal *oath*. See Oath.

Corporal, **Corporale**, is alſo an ancient church-term, ſignifying the ſacred linen ſpread under the chalice in the euchariſt and maſs, to receive the fragments of the bread, if any chance to fall. Some ſay, it was pope Euſebius who firſt enjoined the uſe of the *corporal*; others aſcribe it to St. Silveſter. It was the cuſtom to carry *corporals*, with ſome ſolemnity, to fires, and to heave them againſt the flames, in order to extinguiſh them. Philip de Comines ſays, the pope made Louis XI. a preſent of the *corporale*, whereon my lord St. Peter ſung maſs.

CORPORATE *county*. See County *corporate*.

CORPORATION, a body politic, or incorporate; ſo called, becauſe the ſeveral members thereof are formed into one body; and are qualified to take, purchaſe, grant, have a common ſeal, ſue and be ſued, &c. in their joint capacity.

Theſe political conſtitutions were firſt invented and introduced, according to Plutarch, among the Romans by Numa, in order to break the force of the two rival factions of Sabines and Romans; by inſtituting ſeparate ſocieties of every manual trade and profeſſion.

A *corporation* may be eſtabliſhed three ways, viz. by preſcription, by letters patent, and by act of parliament.

Corporations are either *eccleſiaſtical*, or *lay*. *Eccleſiaſtical* are either *regular*, as abbeys, priories, chapters, &c. or *ſecular*, as biſhopricks, deanries, archdeaconries, parſonages, &c. to which add, univerſities, colleges, hoſpitals, &c. ſee Hospital, &c.

Lay corporations are again ſubdivided into *civil* and *eleemoſynary*. Of the former ſort are ſuch as are eſtabliſhed for a variety of temporal purpoſes; as thoſe of cities, towns, mayoralties, bailiwicks, companies, or communities of commerce; and for the improvement of ſcience, churchwardens, and the two univerſities. Thus the king is made a corporation, to prevent an interregnum; for on his demiſe, his ſucceſſor is in full poſſeſſion of the regal rights and dignity.

Eleemoſynary corporations are ſuch as are eſtabliſhed for the diſtribution of the free alms of the founder, as hoſpitals and colleges.

Again, a *corporation* is either ſole, when conſiſting of a ſingle perſon, as the king, a biſhop, dean, &c. or an aggregate of many; as the mayor and commonalty, dean and chapter, &c. which laſt is what the civilians call a *college*. See College, Community, City, and Charters *of community*.

Corporation *courts* are ſuch as are held in *corporations*, by preſcription, charter, or act of parliament. See Court *of Huſtings*, and *Mayor's* Courts.

Corporation *act*, is that which prevents any perſon from being legally elected to any office relating to the government of any city or *corporation*, unleſs, within a twelvemonth before, he has received the ſacrament of the Lord's ſupper, according to the rites of the church of England; and which enjoins him to take the oaths of allegiance and supremacy when he takes the oath of office; otherwiſe his election is void. Stat. 13 Car. II. ſtat. 2. cap. 1.

CORPOREAL. See Incorporeal.

Corporeal *inheritance*. See Inheritance.

Corporeal *qualities*. See Quality.

CORPOREITY, the quality of that which is *corporeal*, or has body; or that which conſtitutes or denominates it ſuch.

The *corporeity* of God was the capital error of the Anthropomorphites. Some authors reproach Tertullian with admitting a *corporeity* in the Deity; but it is manifeſt, by *body* he means no more than *ſubſtance*.

The Mahometans reproach the Samaritans at this day, with a belief of the *corporeity* of God. Many of the ancients believed the *corporeity* of angels.

Corporeity, *form of*. See Form.

CORPORIFICATION, in *Chemiſtry*, the operation of recovering ſpirits into the ſame body, or at leaſt into a body nearly the ſame with that which they had before their ſpiritualization.

CORPS, in *Architecture*, is a term borrowed from the French, ſignifying any part that projects or advances beyond the naked of a wall; and which ſerves as a ground for ſome decoration, or the like.

Corps *de bataille* is the main body of an army, drawn up for battle. See Line, and Guard.

Corps *de garde*, a poſt in an army, ſometimes under covert,

vert, ſometimes in the open air, to receive a body of ſoldiery, who are relieved from time to time, and are to watch in their turns, for the ſecurity of a quarter, a camp, ſtation, &c.

The word is alſo uſed for the men who watch therein.

It is uſual to have, beſide the *great*, a *little corps de garde*, at a good diſtance before the lines; to be the more readily advertiſed of the approach of the enemy.

CORPSE, *ſtealing of*, is not felony, but puniſhable as a miſdemeanour by indictment at common law; but if a perſon in taking up a dead body ſteals the ſhroud, or other apparel, it is felony.

CORPULENCY, in *Medicine*, the ſtate of a perſon too much loaded with fleſh and fat.

Corpulency amounts to the ſame with what phyſicians call *obeſitas*, and we popularly *fatneſs*.

Etmuller defines it to be ſuch an increaſe both of the venter and limbs, as impede the actions of the body, eſpecially motion and reſpiration.

Corpulency, or *obeſity*, Boerhaave obſerves, does not conſiſt in the ſolids of the body being increaſed, but in their being diſtended to a greater pitch by the abundance of humours collected in them.

Corpulency, or *fatneſs*, ariſes from a laudable, copious, oily, ſoft blood, containing leſs than its ſhare of ſalt.

Such a conſtitution of blood occaſioning but a feeble fermentation, there is leſs conſumed, than is made; the lymph, which ſeems to be the matter of nutrition, preſerves its viſcid conſiſtence longer; and by that means adheres the more plentifully to the divers parts of the body. Add, that there is more fat ſeparated from the blood, than can well be depoſited in the adipoſe cells. Hence the body grows very conſiderably, and the parts ſometimes diſtend to a monſtrous bulk.

Corpulency is promoted by any thing that tempers and ſoftens the blood, and renders it leſs ſharp and ſaline; ſuch is want of exerciſe and motion, an indolent life, too much ſleep, nouriſhing foods, &c. It is prevented, or removed, by the contrary cauſes; and particularly by the uſe of ſaline and acid meats, and drinks.

Corpulency is the occaſion of divers diſeaſes, and particularly the apoplexy. It was held infamous among the ancient Lacedæmonians.

Etmuller affirms, that there is no better remedy againſt exceſſive fatneſs, than *acetum ſcilliticum*. Borelli recommends the chewing of tobacco; which Etmuller however diſſuades, leſt it induce a conſumption.

Sennertus mentions a man that weighed ſix hundred pounds; and a maid, thirty-ſix years of age, who weighed four hundred and fifty. Bright of Malden, who died at the age of twenty-nine years, in 1750, weighed ſix hundred and ſixteen pounds. Chiapin Vitelli, marquis of Cerona, a noted Spaniſh general in his time, from an exceſſive *corpulency*, is ſaid to have reduced himſelf, by drinking of vinegar, to ſuch a degree of leanneſs, that he could fold his ſkin ſeveral times round him.

Caſtile ſoap, in the form of a bolus, an electary, pills, or diſſolved in a gill or more of ſoft water, from one to four drachms, taken at bed-time, is ſtrongly recommended with a view of reducing *corpulency*, in a diſcourſe on its nature, cauſes, and cure, by Malcolm Flemyng, M. D. Lond. 1760. See ABSTEMIOUS.

CORPUS, *body*, in *Anatomy*, is applied to ſeveral parts in the animal ſtructure; as *corpus calloſum*, *corpus glanduloſum*, *corpus reticulare*, &c.

CORPUS *calloſum*, is the upper part, or covering, of the two lateral ventricles of the BRAIN, appearing immediately under the proceſs of the dura-mater, below the depth of all the circumvolutions; being formed by the union of the medullary fibres on each ſide.

CORPUS *cavernoſum urethræ*. See CAVERNOSUM.

CORPUS *glanduloſum*. See PROSTATÆ.

CORPUS *pampiniforme*. See PAMPINIFORME.

CORPUS *pyramidale*. See PYRAMIDALE.

CORPUS *reticulare*. See RETICULAR *body*.

CORPUS is alſo uſed in matters of learning, for ſeveral works of the ſame nature, collected, and bound together.

Gratian made a collection of the canons of the church, called *Corpus Canonum*. The *Corpus* of the civil law is compoſed of the Digeſt, Code, and Inſtitutes. See alſo CODE, and DIGEST.

We have alſo a *corpus* of the Greek poets; and another of the Latin poets. See BODY.

CORPUS-*Chriſti day*, a feaſt held always on the next Thurſday after Trinity Sunday. It was inſtituted in the year 1264, in honour of the bleſſed ſacrament, to which alſo a college in Oxford is dedicated. We find it mentioned in 32 Hen. VIII. cap. 21. By which ſtatute Trinity-term is appointed for ever to begin the morrow after this feaſt.

CORPUS *cum cauſa*, in *Law*, a writ iſſuing out of chancery, to remove both the body, and record, touching the cauſe of any man lying in execution upon a judgment for debt, into the king's bench, &c. there to lie till he has ſatisfied the judgment.

CORPUS *cepi*. See CEPI.

CORPUS *habeas*. See HABEAS.

CORPUSCLE, in *Phyſics*, a diminutive of *corpus*, uſed to expreſs the minute parts, or particles, that conſtitute natural bodies.

Corpuſcles amount to much the ſame with what the ancients called *atoms*; and differ both from the elementary and hypoſtatical principles of the chemiſts, and the materia ſubtilis of the Carteſians.

Sir Iſaac Newton ſhews a method of determining the ſizes of the *corpuſcles*, whereof the particles that compoſe natural bodies conſiſt, from their colours.

CORPUSCULAR *philoſophy*, that ſcheme or ſyſtem of phyſics, wherein the phænomena of bodies are accounted for, from the motion, reſt, poſition, arrangement, &c. of the minute *corpuſcles*, or atoms, whereof bodies are compoſed.

The *corpuſcular philoſophy*, which now flouriſhes under the title of the *mechanical philoſophy*, is exceedingly ancient. Leucippus and Democritus were the firſt who taught it in Greece; from them Epicurus received it, and improved it, inſomuch that it came at length to be denominated from him, and was called the *Epicurean philoſophy*.

Leucippus, again, is ſaid to have received it from Mochus, a Phœnician phyſiologiſt, before the time of the Trojan war, and the firſt who philoſophized about atoms: though Gale, who borrows all profane philoſophy from the ſacred philoſophy in the books of Moſes, is of opinion that he might take the hint from the Moſaic hiſtory of the formation of man out of the duſt of the earth.

Indeed, Caſaubon takes Μοκος, or Μοχος, to be the name of a Tyrian, who among his own countrymen was called מוֹח, *Moſche*, or according to the method of writing which then obtained, Moſes: whence it is conjectured that the *Moſche*, or *Moſchus* of the Tyrians, was, in effect, the Moſes of the Hebrews.

This appears to be the ſentiment of Selden, Arcerius, &c. But the opinion of Bochart is more probable, who from Poſidonius and others, takes Mochus for an inhabitant of Sidon, and his philoſophy to be nothing elſe but a phyſiological or natural hiſtory of the creation.

After Epicurus, the *corpuſcular philoſophy* gave way to the peripatetic, which became the popular ſyſtem.

Thus, in lieu of atoms, were introduced ſpecific and ſubſtantial forms, qualities, ſympathies, &c. which amuſed the world, till Gaſſendus, Charleton, Des Cartes, Boyle, Newton, and others, retrieved the old *corpuſcularian* hypotheſis; which is now become the baſis of the mechanical, and experimental philoſophy.

Mr. Boyle reduces the principles of the *corpuſcular philoſophy* to the four following heads.

1. That there is but one catholic, or univerſal matter, which is an extended, impenetrable, and diviſible ſubſtance, common to all bodies, and capable of all forms.

This Sir Iſaac Newton finely improves on: "All things "conſidered, ſays that great author, it appears probable "to me, that God, in the beginning, created matter in "ſolid, hard, impenetrable, moveable particles; of ſuch "ſizes and figures, and with ſuch other properties, as "moſt conduced to the end for which he formed them: "and that theſe primitive particles, being ſolids, are in"comparably harder than any of the ſenſible porous bo"dies compounded of them; even ſo hard as never to "wear, or break in pieces: no other power being able "to divide what God made one in the firſt creation. "While theſe *corpuſcles* remain entire, they may com"poſe bodies of one and the ſame nature and texture in "all ages: but ſhould they wear away, or break in "pieces, the nature of things depending on them would "be changed: water and earth, compoſed of old worn "particles, and fragments of particles, would not be of "the ſame nature and texture now, with water and "earth compoſed of entire particles at the beginning. "And therefore, that nature may be laſting, the changes "of corporeal things are to be placed only in the various "ſeparations, and new aſſociations, of theſe permanent "*corpuſcles*."

2. That this matter, in order to form the vaſt variety of natural bodies, muſt have motion in ſome, or all its aſſignable parts; and that this motion was given to matter by God, the creator of all things; and has all manner of directions and tendencies.

"Theſe *corpuſcles*, ſays Sir Iſaac Newton, have not only "a vis inertiæ, accompanied with ſuch paſſive laws of "motion as naturally reſult from that force; but alſo "are moved by certain active principles; ſuch as that

" of gravity, and that which cauſes fermentation, and " the coheſion of bodies."

3. That matter muſt alſo be actually divided into parts; and each of theſe primitive particles, fragments, or atoms of matter, muſt have its proper magnitude, figure, and ſhape.

4. That theſe differently ſized and ſhaped particles have different orders, poſitions, ſituations, and poſtures, from whence all the variety of compound bodies ariſes.

CORRECTED *calendar.* See CALENDAR.

CORRECTION, in the *Manege*, is uſed for aids given with ſeverity. See CHASTISEMENTS.

CORRECTION, in *Printing*, the act of retrenching the faults in a work; or the reading, which the corrector gives the firſt proofs, to point out and amend the faults, to be rectified by the compoſitor.

The *corrections* are placed on the margin of each page, right againſt the line where the faults are found. There are different characters uſed to expreſs different *corrections*, as D or ₰, *dele*, for any thing to be effaced, or left out. When any thing is to be inſerted, the place is marked in the line with a caret ʌ, and the inſertion added in the margin. When a word, ſyllable, &c. is to be altered, it is eraſed out of the prof, and that to be put in its room written in the margin; always obſerving, if there be ſeveral miſtakes in the ſame line, that the *corrections* in the margin be ſeparated by little bars, or ſtrokes, | . If a ſpace be omitted, its place is marked with a caret, and the margin with #. If a ſpace be wrong placed, as in the middle of a word, the two parts are connected with a cu ‿ rve, and the ſame character put in the margin. If a letter be inverted, it is expreſſed on the margin with Ɔ. If any thing be tranſpoſed, it is marked thus: *The ſhorteſt* |*are the*| *follies*| *beſt*; for *the ſhorteſt follies are the beſt*; and in the margin is added *tr.* in a circle. If Roman characters are to be changed for Italic, or *vice verſa*, a line is drawn under them thus, and *Roman* or *Italic* added in the margin; if to capitals, a double line. If a word, or ſentence, is entirely omitted, the place is marked with a *caret*, and in the margin is inſerted the word *out*. If the letters of a word ſtand too far aſunder, a line is drawn under them, and in the margin is put a crooked line, or hook, thus ‿.

CORRECTION, in *Rhetoric.* See EPANORTHOSIS.

CORRECTION, in *Pharmacy.* This word has ſeveral peculiar ſenſes: and firſt, draſtic medicines, or ſuch as operate with violence, are ſaid to be corrected, when in their compoſition ſome ingredient is added, which proves a kind of check to the operation, or prevents thoſe misfortunes which they generally bring, without ſuch correcting ingredient. Thus, for inſtance, ſome carminatives, as the ſeeds of fennel or aniſe, are added to ſena leaves, which, when exhibited alone, generally excite flatulencies and gripes. The ſubſtances or ingredients thus added, with an intention to render the medicines more ſafe, are called *corrigentia*, or *correctoria*, *caſtigentia*, or *infringentia.* Secondly, medicines which operate in a ſlow and languid manner, are ſaid to be corrected, when they are ſo prepared as to accelerate or augment their operation: when, for inſtance, ſalts are mixed with evacuating medicines of a gummous or reſinous nature, that by means of being more reſolved or attenuated, they may operate more powerfully. With this intention ſalt of tartar, or *ſal polychreſtus*, are added to infuſions of ſena. Ingredients added with this view are called *adjuvantia*; and when more draſtic ſubſtances of the ſame virtues are added, in order to augment the operation of the compoſitions, theſe are called *acuentia.* Thirdly, nauſeous and ungrateful medicines are ſaid to be corrected, when they are prepared in ſuch manner as to be more agreeable and acceptable to the palate. James.

CORRECTOR *of the ſtaple*, an officer, or clerk, belonging to the ſtaple, who makes and records the bargains of merchants there made, anno 27 Edw. III. ſtat. 2. cap. 22, 23. The Romans called them *menſarii.*

CORRECTORS, in *Medicine*, ſuch ingredients in a compoſition as guard againſt, or abate, the force, or dangerous qualities, of others. See CORRECTION.

CORREGIDOR, the name of an officer of juſtice in Spain, and countries ſubject to the Spaniſh government. He is the chief judge of a town or province.

CORRELATIVE, ſomething oppoſed to another in any certain relation.

Thus, father and ſon are *correlatives*; *pater & filius ſibi mutuo reſpondent.* Light and darkneſs, motion and reſt, are *correlative* and oppoſite terms.

CORRESPONDENCE, and *Correſpondency*, denotes the relation and reciprocal adaptation of one thing to another; and alſo intercourſe and friendſhip.

CORRIDOR. See CORIDOR.

CORRIGIOLA, in *Botany*, a genus of the *pentandria trigynia* claſs, with a five-leaved calyx, five petals, and a ſingle ſeed, of a triquetrous, or three-ſided form.

CORRIVAL, a relative term, ſignifying, originally, a perſon who derived water from the ſame ſource, or ſpring, with another; by means of ſome common canal, which carried it to both their lands; and which proved the occaſion of frequent diſputes. Hence the word came to be uſed for thoſe who have the ſame pretenſions; whether to glory, to love, or the like:-but uſe has abridged the word; and we now both write and pronounce, *rival.*

CORROBORANTS. See STRENGTHENERS.

CORROBORATIVE, in *Medicine*, any thing that increaſes ſtrength, or gives new force.

The word is likewiſe frequently applied to ſuch medicines as are of uſe in particular weakneſſes; as the fluor albus, gonorrhœas, &c. Such are terebinths, &c. All cardiacs are *corroborative.*

CORRODENTIA, or CORROSIVA, in *Medicine*, corroſives, or corroding medicines.

Theſe are medicines of much uſe in ſurgery, which *corrode* whatever part of the body they are applied to.

Corroſives act by their acrimony, by which they deſtroy not only foreign ſubſtances adhering to animal bodies, but alſo the ſolids themſelves, provided they meet with any moiſture when applied to them; and particularly when confined upon the part by any adheſive plaſter, ſo as to have their action excited by the heat of the body. In the two firſt caſes they are called catharetics, in the laſt potential cauſtics. See CAUSTICS.

Corroſives are uſed for opening abſceſſes, for making iſſues, or artificial ulcers, for conſuming tubercles, and callous excreſcences; for ſeparating and extirpating corrupted parts, and cleanſing ſordid ulcers; ſometimes for ſtopping hæmorrhages. James's.

CORROSION, the act of *corroding*, or gnawing away, by little and little, the continuity of the parts of bodies.

Acids *corrode* moſt natural bodies; and arſenic only kills, becauſe it *corrodes* the bowels with its ſharp-pointed particles.

CORROSION is uſed both in *Chemiſtry*, *Medicine*, and *Natural Hiſtory*; where it ſtands for a particular ſpecies of DISSOLUTION, by an acid, or ſaline menſtruum.

What *corroſion* has peculiar to it, is, that it is moſtly deſigned for the reſolution of bodies the moſt ſtrongly compacted, as bones and metals; ſo that the menſtruums employed require an uncommon moment, or force.

Now *corroſive* liquors, whether acid or urinous, are nothing but ſalts diſſolved in a little phlegm: therefore theſe being ſolid, and conſequently containing a conſiderable quantity of matter, do both attract one another the more, and are alſo more attracted by the particles of the body which is to be diſſolved. And as their attractions at equal diſtances are proportional to their bulks, *cæteris paribus*; ſo when the more ſolid bodies are put into ſaline menſtruums, the attraction is ſtronger than in other ſolutions; and the motion, which is always proportional to the attraction, is more violent.

Hence we eaſily conceive, how they ſhould drive thoſe ſalts, like ſo many darts, into the pores of the bodies, and open and looſen the coheſion of them, though ever ſo firm. See ACID.

Again, we know, the more minute the particles of the menſtruum are, the ſooner they penetrate, and with the greater force; the motion produced by attraction being always greateſt in the leaſt corpuſcles, and next to nothing in the large ones. Add to this another advantage gained by this minuteneſs of the particles; viz. that they approach nearer the body to be diſſolved, without which the attractive force would be inſenſible. Hence, thoſe very ſalts, which, diſſolved in water, will hardly touch metals, if once turned into acid ſpirits, eaſily penetrate them: for in diſtillation, not only a greater quantity of water remains, but the ſaline bodies are ſo minutely broken and divided by the fire, as to make them more readily capable of being moved by an attractive force; and therefore ſuch a diſtilled menſtruum is much more efficacious than any ſolution of ſalt made with water.

Corroſion is performed either by immerſion or CEMENTATION, ſprinkling, trituration, or mere contact with a proper MENSTRUUM.

CORROSIVE *ſublimate of mercury.* See MERCURY.

CORRUGATOR, or CORRUGENS *ſupercilii*, a muſcle ariſing from the great canthus of the orbit of the eye, and terminating in the ſkin about the middle of the eyebrows. See EYE.

Its name declares its uſe; being formed of *con*, *together*; and *ruga*, *wrinkle.*

Some reckon this muſcle only a prolongation of the *frontales.*

CORRUGATOR *coiteri*, or *muſculus frontalis verus*, in *Anatomy.* This muſcle ariſes fleſhy from the proceſs of the *os frontis*, next to the inner or great angle of the orbit, above the joining of the *os naſi*, and ſuperior proceſs of the *os maxillare* with this bone; from thence running obliquely outward and upward, it is inſerted in the fleſhy part of the *occipito-frontalis*; ſome of its fibrillæ paſſing through into the ſkin, a little higher than the middle region of the eyebrows.

Its uſe is to ſmooth the ſkin of the forehead, by pulling it down after the action of the *occipito-frontalis*; and when it acts more forcibly, it ſerves to wrinkle the ſkin of the front between the ſupercilia; as it happens when we frown, or knit the brows.

CORRUGATORIS *ordo exterior*, in *Anatomy*, a name given by Santorini to certain *faſciculi* of the great zygomatic muſcle, running under the fleſhy part of the lower lip. See LABIUM *attollens*, and ZYGOMATICUS *major*.

CORRUGATORIS *inferior ordo*, in *Anatomy*, a name given by Santorini, and ſome others, to that muſcle of the mouth called by Albinus *orbicularis oris*; by Cowper *conſtrictor labiorum*; and by Douglas *ſphincter labiorum*.

CORRUGENT *muſcle*, the ſame as *corrugator ſupercilii*.

CORRUPTIBLE. See INCORRUPTIBLE.

CORRUPTICOLÆ, a ſect who roſe out of the Monophyſites in Egypt about the year 519, under their chief, Severus, the pretended patriarch of Alexandria.

Their diſtinguiſhing doctrine, whence they derived their name, was, that the body of Jeſus Chriſt was *corruptible*; that the fathers had owned it; and that to deny it, was to deny the truth of our Saviour's paſſion.

On the other hand, Julian of Halicarnaſſus, another Eutychian, a refugee as well as Severus, in Alexandria, maintained that the body of Jeſus Chriſt had been always incorruptible; that to ſay it was corruptible, was to make a diſtinction between Jeſus Chriſt and the Word, and by conſequence to make two natures in Jeſus Chriſt.

The people of Alexandria were divided between the two opinions; and the partiſans of Severus were called *corrupticolæ*, q. d. worſhippers of ſomething *corruptible*: ſometimes they were denominated *corruptibiles*; and the adherents of Julian *incorruptibiles*, or *phantaſiaſtæ*. The clergy and ſecular powers favoured the firſt; the monks and the people the latter.

CORRUPTION, the extinction of any thing; or the act whereby it ceaſes to be what it was.

It is an axiom in philoſophy, that *the corruption of one thing is the generation of another*.

Corruption differs from *generation*, as two contraries differ from each other.

It differs from *alteration* as a leſs from a greater, or a part from the whole: a thing being ſaid to be *altered*, when it is not ſo far changed but it may be known, and ſtill keeps its old name; both which it loſes by *corruption*.

But, as in generation, no matter is produced that did not before exiſt; ſo in *corruption*, nothing is loſt, but that particular modification which conſtituted its form, and made it to be of ſuch a ſpecies.

Dr. Drake accounts for *corruption* in animal and vegetable bodies thus: "The principle of *corruption* is, perhaps, " the ſame which in a ſtate of circulation is the princi- " ple of life, viz. the air, which is found mixed in con- " ſiderable quantities with all ſorts of fluids; as neceſ- " ſary to vegetable, as to animal life. Now this air has " two motions, viz. an expanſive one, from its natural " elaſticity, by means whereof it communicates that in- " teſtine motion which all juices have, and by which " the containing parts are gradually extended and grow; " and a circulatory or progreſſive motion, which is not " eſſential to it, but is occaſioned by the reſiſtance of the " ſolid parts of thoſe bodies, which obliges it to take " that courſe which is moſt free and open, which is " through the veſſels of animals and plants.

" Now, this courſe being ſtopped, the expanſive motion " ſtill remains, and continues to act, till, by degrees, it " has ſo far overcome the including bodies, as to bring " itſelf to an equal degree of expanſion with the exter- " nal air; which it cannot do, without deſtroying the " texture and continuity, or ſpecific degree of coheſion, " of thoſe ſolids: which is that we call a *ſtate of cor-* " *ruption*.

" This expanſive or deſtructive quality of the air in bo- " dies, may be promoted two ways; and, therefore, *cor-* " *ruption* may be accelerated in as many, viz. either by " weakening the tone or coheſion of the including parts, " and ſo facilitating the work of the air; as is the caſe " when fruit is bruiſed, which is found to corrupt much " ſooner there than in any other part: or, by extending " the expanſive force of the air itſelf, by heat, or ſome " other co-operating circumſtance; and ſo helping it to " overcome the reſiſtance the ſooner." See PUTREFACTION.

CORRUPTION *of blood*, in *Law*, an infection accruing to a man's ſtate, attainted of felony, or treaſon, and to his iſſue.

For, as he loſes all to the prince, or other lord of the fee, ſo his heirs cannot be iſſue to him, or to any other anceſtor by him; and if he were noble, or a gentleman, he, and his heirs, are thereby ignobled and degraded. See ESCHEAT.

The king's pardon cleanſes the *corruption* of blood in thoſe children born after the pardon, not in thoſe born before it; theſe latter continuing ſtill incapable of inheriting the land of their father, purchaſed before the time of the pardon

But note, there are ſeveral offences now made treaſon by act of parliament, which do not *corrupt* the blood; nor ſhall the criminal forfeit any thing thereby, beſide what he has for life. See ATTAINDER.

CORSA, in *Architecture*, the ſame with plat-band. See PLAT-*band*.

CORSAIR, a pirate, or perſon who ſcours the ſeas, eſpecially the Mediterranean, with a veſſel armed for war, without commiſſion from any prince, or power; to plunder merchant-veſſels.

The word comes from the Italian *corſare*, of *corſo*, or *à curſibus*, by reaſon of their courſes, or excurſions.

The name is commonly given to the piratical cruiſers of Barbary, who had their riſe about the beginning of the ſixteenth century. See PIRATES.

A *corſair* is diſtinguiſhed from a *privateer* in this, that the latter does it under a commiſſion, and only attacks the veſſels of thoſe at war with the ſtate whence his commiſſion is derived. The puniſhment of a *corſair* is to be hanged, without remiſſion; whereas privateers are to be treated as priſoners of war. All *corſair* veſſels are good prizes. See PRIZE.

CORSELET, a little CUIRASSE, according to ſome; and, according to others, a coat, or cover for the whole trunk, anciently worn by the pikemen, commonly placed in the front and flanks of the battle, for the better reſiſtance of the enemies aſſaults, and the ſurer guard of the ſoldiers placed behind, or within them. Vaugelas obſerves, that the ſeamen were anciently armed with *corſelets*.

CORSEPRESENT, in *Ancient Authors*, denotes a *mortuary*.

The word is formed of the French, *corps preſent*; and the reaſon of the denomination is probably this: that where a mortuary, after a man's death, became due, the beſt, or ſecond beſt beaſt was offered, or *preſented* to the prieſt, and carried along with the *corpſe*.

CORSNED *bread*, *panis conjuratus*, or *curſed bread*, a ſuperſtitious manner of trial, uſed among our Saxon anceſtors, by a piece of barley-bread, firſt execrated by the prieſt, then offered the ſuſpected criminal to be ſwallowed, by way of purgation; from an opinion that a guilty perſon could not ſwallow a piece of bread ſo accurſed, or if he did, that it would choke him.

The ceremony was accompanied with a prayer, beſeeching God, "That the criminal's jaws might be ſhut, his " throat ſo narrow, that he might not ſwallow, and that " he might caſt it out of his mouth." Du-Cange.

CORSOIDES, in *Natural Hiſtory*, a name given by ſome authors to a ſpecies of agate of a greyiſh white, full of ſlender veins of a clearer white, reſembling hairs. It is one of the German agates, and ſometimes ſeen among our jewellers, cut into tops of ſnuff-boxes, and other toys, but is not much eſteemed.

CORTES, a term purely Spaniſh, properly ſignifying the *courts*, i. e. the ſtates, or aſſembly of the ſtates, at Madrid.

CORTEX, a Latin name, denoting the BARK, or outer coat of a tree, or ſhrub.

CORTEX *aurantiorum*, the powder of *cortex aurantiorum*, ſometimes cures quartan agues. Commerc. Norinb. 1735. Hebd. 11. § 3.

CORTEX *Peruvianus*, called alſo *quinquina*, *kinkinna*, *quinaquina*, *pulvis patrum*, and popularly the *Jeſuit's bark*, is the bark of a tree, growing in the Weſt Indies, called by the Spaniards *palo de calenturas*, q. d. *fever-wood*; by reaſon of its extraordinary virtue in removing all kinds of intermitting FEVERS and agues. See CINCHONA.

The Indians commonly call it the *fuddling tree*, from the property it has of intoxicating fiſhes, when either its wood or bark is beaten, and ſteeped in the water where they are.

The tree that yields this noble ſpecific, is only found in Peru; in the province of San Franceſco de Quitto, or Quinto, near the city of Loxa; though ſome ſay it is alſo found in that of Potoſi; and F. Labat, in the iſland of Guadeloupa. The bark, while on the tree, is ſtreaked, of a whitiſh yellow without ſide, and a pale tan colour within.

The Spaniards diſtinguiſh four ſorts of this precious bark, viz. the *caſcarilla colorada*, or reddiſh bark; *amarylla*, or yellowiſh; *creſpilla*, or curling; and *blanca*, or whitiſh. The *colorada* and *amarylla* are reckoned the beſt: the *creſpilla* is the produce of the ſame ſort of tree, only growing in a cold, froſty climate, which impairs the quality of the bark, and renders it whitiſh on the outſide, and cinnamon coloured within, and unfit for medicinal uſe.

As to the *blanca*, it is procured from another ſpecies of the tree of a much larger trunk, the leaves of a lighter green colour, and the bark of a very thick ſpongious ſubſtance, whitiſh on the outſide; being withal ſo tough, as to require the force of an ax to ſlice it from the tree. When firſt cut down it is as bitter as the beſt ſort, and has then the ſame virtue in the cure of intermitting fevers; but when dry and kept any length of time it grows inſipid, and good for nothing. In reality, both ſorts are found to have much ſurer and quicker effects when green, than when dry; ſo that the Europeans only come in for the ſecond rate virtues: what is worſe, the bad ſort is in great plenty, and the good is very ſcarce, and hard to come at: for which reaſon, with a little of the fine bark ſent yearly to Panama for Europe, large quantities of the worſe ſort are uſually mixed.

The *amarylla*, or ſmall bark, which curls up like ſticks of cinnamon, and which in England is much eſteemed as being ſuppoſed to be taken from the branches of the tree, and therefore more efficacious in the cure of fevers, is only the bark of the younger trees; which being very thin curls in this manner. For the bark of the branches is never gathered: it would not compenſate the charge of cutting.

The ſeaſon for cutting the bark is in Auguſt, the only ſettled dry time in the country. After a tree has been barked, it requires eighteen or twenty years for a good bark to grow again.

Mr. Arrot, a Scots ſurgeon, who had gathered the bark in the place where it grows, and from whom we received this account, by means of Mr. Gray, at Carthagena, is of opinion, that the gathering the better ſort of bark will ſoon be at an end, or at leaſt very much reduced, partly by reaſon of its diſtance from any inhabited place, and the impenetrability of the woods where it grows, and partly by the want of Indians to cut it, whoſe race, through the cruelties of the Spaniards, is like to be totally extinct.

The moſt accurate account we have ever received of the tree which produces the *quinquina*, or Peruvian bark, is from M. de la Condamine, who, in travelling through ſome parts of America, choſe the route of Loxa, where the fineſt bark is gathered, and where the greateſt number of the trees are found; and taking inſtructions from M. de Juſſieu, as to what inquiries were moſt neceſſary to be made, informed himſelf very much at large about it. The *quinquina-tree* never grows in the plains; it is a conſtant inhabitant of the mountains, and is eaſily known from the trees among which it grows by its erect growth, and its height when of any conſiderable age, as it always carries its head above the reſt. Theſe trees are never found in clumps or cluſters together, but always ſeparate and ſingle among other kinds. They grow to a very conſiderable ſize, when ſuffered to remain long enough; ſome are as thick as a man's body, but the more uſual about nine inches in diameter.

It is very rare, however, to find any large ones at this time on the mountain where the bark is gathered, the great demand for it having made them bark all the trees, and theſe having all periſhed by it; for the old trees never recover the barking, though the young ones frequently do.

There was once an opinion, that there were certain ſeaſons to be obſerved for the gathering the bark, and that it ought always to be done in the decreaſe of the moon; but experience has ſhewed theſe to be idle opinions, and it is now gathered at all times, if the weather be dry. When the bark is taken off, it is laid in the ſun till it is perfectly dry; the omitting this circumſtance, and packing up the bark while moiſt, has occaſioned it often to become mouldy, and ſpoil; and the merchants have attributed this to the taking it off in a wrong time of the moon, when it was wholly owing to its being put into the ſkins while too moiſt.

The leaves of the *quinquina-tree* ſtand on pedicles of about half an inch long: they are very ſmooth and gloſſy, and of a beautiful green; but ſomewhat paler on the under ſide than the upper. They are perfectly ſmooth at the edges, and are of an oblong figure, pointed at the end, and rounded at that part which joins to the ſtalk. They are from two and an half to three inches in length, and from an inch and an half to two inches in breadth. The middle rib of the leaf is rounded on the upper ſide, and is uſually of a reddiſh colour, eſpecially towards the pedicle; and the whole leaf often becomes red, when perfectly mature. All the ſmall branches towards the top of the tree terminate in one or more cluſters of flowers, which, before they are open, reſemble in their ſhape, and their bluiſh grey colour, thoſe of the common lavende Mem. Acad. Scienc. Par. 1738.

When theſe open, they change their colour: each ſtalk that ſuſtains one of theſe cluſters of flowers ariſes from the ala of one of the leaves, and divides into a great number of ſmall branches, each of which is terminated by a cup divided into five parts, which ſuſtains a flower reſembling that of the hyacinth. It is compoſed of a pipe of three quarters of an inch long, which at the end is divided into five, and ſometimes into ſix ſegments. Theſe are of a beautiful deep red within, and are ſerrated round the edges in a very elegant manner. From the bottom of the tube of the flower there ariſes a white piſtil, terminated by a long green head; this ariſes above the level of the ſegments of the flower, and is ſurrounded by five ſtamina, which ſuſtains apices of a pale yellow colour: theſe remain hid within the flowers. The tube is of a dirty red, and is covered with a ſort of whitiſh down. When the flower is fallen, the cup ſwells in the middle into the form of an olive, which by degrees grows into a fruit divided into two cells, which in drying become ſhorter, and the whole fruit rounder than in its natural condition.

This fruit finally opens longitudinally into two capſules, ſeparated by a membranaceous ſeptum, and coated by a thin yellowiſh ſkin; the ſeeds are of a reddiſh colour, and in ſhape are flattiſh, and, as it were, foliaceous; they are not more than a twentieth part of an inch in diameter, and are thickeſt in the middle, becoming thinner at each ſide. The plantula ſeminalis lies in the very center of the ſeed, between two pellicles: theſe ſeeds, which reſemble in ſome degree thoſe of the aſh in miniature, are faſtened in the manner of ſo many ſcales to a placenta of an oblong figure, pointed at the two extremities, ſo as ſomewhat to reſemble a ſeed of the common oat, but that it is longer and flatter. This is joined to the ſeptum, and has on that part a longitudinal furrow; but on the other ſide is convex, and ſomewhat rough all over. Mem. Acad. Scienc. Par. 1738.

By this deſcription it appears, that they were very ignorant of the nature and characters of this tree, who, when it was firſt introduced among us, called it a ſpecies of *ſebeſten*.

The uſe of this febrifuge ſeems to have been very long known to the natives, probably as early as 1500, and their manner of taking it was by pounding the bark, and laying it to infuſe in water, and drinking the infuſion; their hatred to the Spaniards, their conquerors, made them keep it a long time a ſecret from them; and when the thing became known among the inhabitants of Loxa, it ſtill remained a ſecret to the reſt of the world, and its great value was never generally known till the year 1633; when the lady of the viceroy of Peru, the counteſs de Chinchon, being long ill of an intermittent fever, which would give way to none of the known remedies, the corregidor of Loxa ſent to the viceroy a quantity of the *quinquina* bark, which he aſſured him would cure the lady, though all other means had failed. Upon this the corregidor was ſent for to Lima, and after having given the medicine to many other perſons with ſafety and ſucceſs, the lady at length took it, and was cured. She immediately on this ſent for a large quantity of the bark, had it powdered, and herſelf diſperſed it to thoſe who had occaſion for it; whence it obtained the name of the *counteſs's powder*: but this lady being ſoon tired of the office, gave it in charge to the Jeſuits; and they continuing to give it to the ſick with the ſame ſucceſs, it then was called the *Jeſuits powder*. Theſe reverend fathers ſoon found means to ſend a quantity of it to cardinal Lugo, who diſperſed it with the ſame ſucceſs at Rome; and after him the apothecary to the college gave it gratis to the poor with the ſame good effects, and under the name of the *Jeſuits*, or the *cardinal's powder*: afterwards the better ſort were made to pay its weight in ſilver for it, to defray the expences of its importation, while the poor ſtill had it gratis. Lewis XIV. at that time dauphin of France, was cured by it of a fever, which had not given way to other medicines.

In the year 1640, the count and counteſs of Chinchon being returned to Spain, their phyſician, Juan de Vega, who brought a great quantity of it over with him, ſold it at a conſiderable price; and ſoon after this, large quantities were ſent over by the galleons; but the great demands from Europe cauſing the inhabitants of Loxa to adulterate it with other barks, it had like to have loſt part of its juſt praiſe. The *quinquina-trees* are found at this time on all that chain of mountains adjoining to Cajanuma, and in many other parts of America.

When firſt introduced, it is ſaid to have been ſold for about eight ſhillings ſterling the doſe; which great price, with the little effects found from it, by reaſon of their ignorance of the manner of preparing and preſcribing it, occaſioned its being diſuſed, till about the year 1679, that Mr. Talbor, an Engliſh practitioner in phyſic, brought it into vogue again, by the great number of cures wrought about the court and city of Paris with this powder, prepared after his manner: the ſecret whereof was ſoon after made public by the munificence of Louis XIV. who rewarded Talbor for the communication with five thouſand crowns.

The *quinquina* is ſold either in bark, or in powder: thoſe who buy it in the bark, muſt chooſe it very dry and compact; ſuch as has never been moiſtened, and which will break cloſe and ſmooth, is friable between the teeth, is eaſily pulverized, and yields a powder of a pale cinnamon colour. It has a muſty kind of ſmell, and yet ſo much of the aromatic, as not to be diſagreeable. The inferior kinds, when broken, appear woody, and in chewing ſeparate into fibres. The female bark is conſiderably thicker, whiter on the outſide, redder within, and weaker in ſmell and taſte than the former, and much inferior in medical virtue. The ſmall, fine, quilled barks, ſhagreened without, and reddiſh within, of a bitter muſty taſte, are the moſt eſteemed. For the powder, it muſt be well ſifted, and care be taken it be bought of perſons that may be truſted; it being very eaſy to ſophiſticate it, and difficult to find it out.

The *cortex* is a bitter, abſorbent, and aſtringent, or ſtyptic: from its bitterneſs, M. Reneaume obſerves it becomes fit to ſoften ſour acrimonious juices; for a ſour and a bitter make a ſweet. Again, as an abſorbent, it blunts the points of acids, and prevents their action; and, of conſequence, preſerves the fluidity of the juices, which acids would coagulate. As a ſtyptic, it muſt have earthy parts to abſorb ſeroſities, by which the parts before moiſtened, and relaxed, will contract themſelves; and, by this means, the *cortex* augments the ſpring and tenſion of the fibres. As a bitter, it warms; and it facilitates perſpiration, by warming and augmenting the fluidity of the juices. Its primary operation is that of ſtrengthening the ſolids. On theſe properties it is that its medicinal uſes are aſcertained.

Its chief uſe is in curing of agues, and intermitting fevers; for which purpoſe it is applied in all ages, and moſt conſtitutions.

Dr. Cockburn ſays, it produces this effect better than any other medicine of the ſame intention, in the ratio of 365 to 1. It is uſual to give a gentle emetic of ipecacuanha before the exhibition of the *cortex*: by thus preparing the paſſages, the *cortex* has not only more ſucceſs, but alſo is not ſubject to cauſe thoſe indiſpoſitions, viz. ſwelling in the belly, nauſeas, &c. which often ariſe when ſuch preparation is neglected.

The *cortex* muſt never be exhibited in the paroxyſm of an ague, or intermitting fever; but given in ſuch a quantity, at times, between the paroxyſms, as to prevent a return of the fit.

The *cortex*, exhibited in continual fevers, is held dangerous; and care muſt be taken, that the remiſſion of a continual fever be not miſtaken for its intermiſſion: when there is a remiſſion, it uſually happens indifferently at any time; whereas an intermiſſion happens at particular, or ſtated times.

The *cortex* is given ſeveral ways, viz. in powder, in form of electary, extract, bolus, infuſion, tincture, &c. When the ſtomach will bear it, the preparation in very fine powder is the moſt uſeful and agreeable. The arcanum Talborianum is about two ounces of the *cortex* in powder, digeſted in a ſand-heat, with about a quart of red wine: after digeſtion, the wine muſt be poured off, and two or three ounces given every three or four hours between the paroxyſms, till the intention is anſwered.

If the bark take downward, Venice treacle, diaſcordium, conſerve of roſes, terra Japonica, doſes of laudanum, &c. muſt be added to its preparations. When there happens to be an obſtruction of the menſes from the exhibition of the *cortex*, or to prevent it, it is adviſeable to add to its preparations the black hellebore, æthiops mineral, cinnabar, &c. The *cortex* is often uſed for young children in agues, by way of clyſter; and alſo applied to the wriſts, and ſoles of the feet, wrought up into a ſtiff maſs, with turpentine, Venice treacle, &c. which uſually anſwers the purpoſe.

Dr. Helvetius, phyſician to the king of France, above twenty years ago, wrote a book entirely upon the ſubject of curing agues by giving the *cortex* clyſter-wiſe; in which he pretends, that this is more ſafe, and no leſs certain, than the *cortex* given by the mouth.

Dr. Cockburn, in his Treatiſe of Sea Diſeaſes, aſſerts the contrary: he alleges, that the *cortex* given inwardly is as ſafe, and much more certain and expeditious; and notes, that we know how to remedy all the inconveniencies the *cortex* may occaſion.

Dr. Sydenham, and after him M. Reneaume, and others, have preſcribed the *cortex*, with ſucceſs, in melancholic and hyſteric affections, commonly called *vapours*.

The virtues of this medicine are at this time ſufficiently known; but the largeneſs of its doſe in the common forms of powder, or infuſion in wine or in water, are great diſadvantages; and our common method of giving it in the extract or reſin, as we prepare them, not certain, and have their inconveniency.

Mr. Geoffroy has attempted a method of giving the bark in all its efficacy, without its ill taſte, and in one third of the uſual doſe, by means of his dry extract; twenty-four grains of which, it is very certain, contains the whole efficacy of a dram of the choiceſt bark in powder. Hence it appears very evident, that when we take the bark in ſubſtance, it is only about a third part of what we are forced to ſwallow that can be of any uſe to us; and that the ſame portion is all we can expect in the virtues of any decoction or infuſion of it. Mem. Acad. Sci. Par. 1758.

The reſin of the bark is of ſuch a nature, that it is capable of being penetrated by, and ſuſpended in boiling water, poured on the ſubſtance of fine powder; and ſo long as this water retains a certain degree of heat, it remains ſuſpended and inviſible in it, and the water is of a clear browniſh colour; but when the liquor becomes cooler, the reſin can be no longer ſuſpended, the whole becomes milky, and the reſin precipitates itſelf.

Wine, which is a liquor partly aqueous, partly ſaline, and partly ſpirituous, is a menſtruum much properer to extract the virtues of the bark than mere water, as it is much more able to diſſolve the juices or ſap condenſed and inſpiſſated in the bark of the tree; and for this reaſon a ſtrong infuſion of bark in this menſtruum remains clear, and keeps the reſin ſuſpended when cold. Thus it is the fire alone which can ſuſpend the reſin in a watery infuſion of the bark; and in a vinous one, the ſpirituous and inflammable part of the liquor does the ſame thing: and as the reſin of the bark, which there is great reaſon to believe poſſeſſes all the virtues of that medicine, is wholly precipitated from watery infuſions when cold, it is plain that there can be very little dependence placed on the common clear infuſions in this menſtruum: the remaining taſte in theſe infuſions is only a faint bitterneſs, which ariſes from the gummoſe and ſaline parts of the dried juices of the bark; the whole concrete, which alone poſſeſſes the virtue of the medicine, being of the nature of thoſe bodies properly called *gum reſins*; which are but very imperfectly ſoluble in water, and of which wine is the proper diſſolvent.

Peruvian bark has been found very effectual in preventing colds. The method in which it was uſed, in a caſe mentioned in the Philoſophical Tranſactions, was, after due preparation, by bleeding or purging, to take two ounces of it every ſpring and fall. By this method, an habitual taking of cold, and a conſequent ſore throat, was cured. Phil. Tranſ. Nº 478. p. 3.

The antiſeptic power of the bark hath been abundantly evinced, and we have many accounts of its great effects in the cure of gangrenes and mortifications. See Med. Eſſ. Edinb. vol. iii. art. 5. or its Abridgment, vol. i. p. 175, ſeq. We have alſo ſeveral accounts of the good effects of this medicine in ulcers and the ſmall-pox. See Med. Eſſ. vol. v. art. 10. or Abridgment, vol. i. p 187.

The bark probably in caſes of this kind throws off by fermentation a quantity of ſubtile vapour, or *fixed* AIR, which is ſufficient to ſaturate the acrimonious matter; and even when the putrefaction has made farther advances, larger quantities of this medicine will diſcharge more of the antiſeptic vapour, which, reaching the blood, will reſtore its conſiſtence, and correct its ſharpneſs. Macbride's Eſſays, edit. 3. p. 140, &c.

Many inſtances are recorded by medical writers of the jaundice, dropſy, aſthma, and all the train of nervous diſorders, brought on in a ſurpriſingly ſhort time after an injudicious adminiſtration of the bark: among others, the curious may conſult the Med. Eſſ. Edinb. vol. iv. art. 24.

The Peruvian bark is diſcovered to be effectual in the cure of mortifications from an internal cauſe. The hiſtory of this diſcovery is: in 1715, Mr. Ruſhworth, ſurgeon in Northampton, gave it to a patient labouring under a mortification; and having afterwards other proofs of its good effects in this diſeaſe, communicated his diſcovery in 1731. Mr. Amyand ſoon tried it in ſuch caſes, and found it ſucceſsful in ſeven. Mr. John Douglas confirmed this by the hiſtory of a patient of his, which he publiſhed in 1732; and Mr. Shipton ſoon after related his ſucceſs by this medicine, to the Royal Society. Mr. Ruſhworth and Mr. Amyand confined its uſe to mortifications from an internal cauſe; the former thinks it is not proper in all caſes of that kind, particularly where there is no intermiſſion of the fever. Mr. Douglas ſeems to think it will ſucceed in all mortifications. All theſe three gentlemen gave half a dram for a doſe every fourth hour. Mr. Shipton increaſed the doſe to two ſcruples, and gave it while the fever continued. He propoſed to have it tried in nomæ, phagedenæ, herpes, or other chironion ulcers.

Some call the gentian-root the European *quinquina*, becauſe good againſt intermitting fevers.

Cortex *Winteranus*, or *Winteri*, the bark of a tree brought from the Straits of Magellan, by captain Winter, in his voyage with Sir Francis Drake, in 1567. Cluſius calls the tree, *Magellanica aromatica arbor*.

The bark is aromatic, and found of good uſe at ſea againſt the ſcurvy: half a dram of it, boiled with ſome carminative ſeeds, ſweats, and relieves ſcorbutic patients. It has alſo proved an antidote againſt a poiſonous ſort of ſeal, called a *ſea lion*, frequent in thoſe parts.

The bark ſold in the ſhops under the name of *cortex Winteranus*, or wild cinnamon, Dr. Sloane obſerves, is not the true *cortex Winteranus*; they grow on different trees, and in different countries, and their appearance is very different: yet are they ſo like in taſte, that he thinks they may be uſed as ſuccedaneums to each other. The botanical characters of this latter are theſe: the trunk is about the thickneſs of one's thigh, riſing to about twenty or thirty foot high, having many branches and twigs hanging downwards, making a very comely top. The bark conſiſts of two parts, viz. outward and inward. The outward bark is as thin as a milled ſhilling, of a whitiſh aſh or grey colour, with ſome white ſpots here and there on it, and ſeveral ſhallow furrows of a darker colour, running variouſly through it, and making it rough; its taſte is aromatic. The inward bark is much thicker than cinnamon, being equal in thickneſs to a milled crown-piece, ſmooth, of a whiter colour than the outward, of a much more biting and aromatic taſte, ſomething like that of cloves, and not glutinous like cinnamon, but dry and crumbling between the teeth. The leaves come out near the ends of the twigs, without any order, ſtanding on inch-long foot-ſtalks; they are each of them two inches long, and one inch broad near the end where broadeſt, and roundiſh, being narrow at the beginning, and thence increaſing in breadth to near its end, of a yellowiſh green colour, ſhining and ſmooth, without any inciſſures about its edges, and ſomewhat reſembling the leaves of bay or *lauroceraſus*. The ends of the twigs are branched into bunches of flowers, ſtanding ſomething like umbels, each of which has a foot-ſtalk, on the top of which is a calyx made up of ſome foliola, within which ſtand five ſcarlet or purple petala, and within them is a large ſtylus. To theſe follow ſo many cauliculated berries, of the bigneſs of a large pea, roundiſh, green, and containing within a mucilaginous pale green thin pulp, four black ſhining ſeeds, or acini, of an irregular figure.

All the parts of this tree, when freſh, are very hot, aromatic, and biting to the taſte, which is ſo troubleſome as ſometimes to need a remedy from fair water. It grows in the low-land, or ſavanna-woods, in Jamaica, Antigua, and the other Caribbee iſlands.

The bark of this tree is what is chiefly in uſe, both in the plantations of the Engliſh between the tropics, in the Weſt Indies, and in Europe, and is, without any difficulty, cured by only cutting off the bark, and letting it dry in the ſhade.

The people of the Weſt Indies uſe it inſtead of all other ſpices, being thought very good to conſume the immoderate humidities of the ſtomach, help digeſtion, expel wind, &c.

It is likewiſe, as well there as in Europe, thought a very good remedy againſt the ſcurvy, and to cleanſe and invigorate the blood, being, among the apothecaries and druggiſts of London, uſed for thoſe purpoſes under this name, though differing from the true *cortex Winteranus*, as before obſerved.

Cortex *capparis*. See CAPER.

Cortex *cerebri*, the *cortical*, or cineritious ſubſtance of the BRAIN. This is the exterior part of the brain and cerebellum; or that part immediately under the pia mater; ſo called, becauſe of its inveſting the inner or medullary part, as a bark does a tree.

The ſame is alſo called the *cineritious ſubſtance*, from its greyiſh or aſh-colour.

Archangelo Piccolomini, a Ferrareſe, firſt introduced this diviſion of the brain into *cortical* or cineritious, and medullary or fibrous ſubſtance, in the year 1526.

The *cortical* ſubſtance is more ſoft and moiſt than the medullary; and follows or attends it through all its prominences and ſinuſes. It is formed from the minute branches of the carotid arteries, interwoven in the meninges, and thence continued hither in infinitely fine ramifications.

Moſt anatomiſts, after Malpighi, agree in its being glandulous, and that the medullary parts are only a continuation thereof; Ruyſch alone excepted; who, from his admirable ſkill in injections, and the diſcoveries he has made thereby, maintains that it has nothing glandular in it; and others have ſince adopted his opinion.

CORTIN, in *Fortification*. See CURTIN.

CORTUSA, in *Botany*. See *Bear's Ear* SANICLE.

CORU, in *Botany*, *arbuto vel malo aureæ ſimilis I. B. Luſitanis herba Malabarica*. This is a dwarf-tree like the quince-tree, with leaves like it, and a yellow flower, having little or no ſmell; but Garcias makes it have leaves like thoſe of the peach-tree, and a white flower ſmelling like the *periclymenum*. The bark of the root is of a watery green, light and thin, and if broken or wounded, diſtils a copious milky juice; more ropy and viſcid than what flows from the macer; inſipid, if not a little bitteriſh, cold and drying, but more drying than cold.

The inhabitants of Malabar, both pagans and Chriſtians, make much uſe of the liquor of the green bark, though it be very ungrateful to the taſte, on account of its ſurpriſing effects in all kinds of fluxes, as in the lientery, diarrhœa, and dyſentery, from whatever cauſe they proceed. The doſe is ſeven ounces in the morning, and as many in the evening, if neceſſity require it; but becauſe the juice is bitter and unſavoury, they waſh their mouths with whey, after taking it. James.

CORVET, or CURVET, from the Italian *corbetto*, a *crow*, in the *Manege*, an AIR, reſembling the hops of a crow, in which the horſe's legs are raiſed higher than in the demi-volt; being a kind of leap up and a little forwards, wherein the horſe raiſes both his fore-legs at once, equally advanced (when he is going ſtrait forward, and not in a circle); and as his forelegs are falling, he immediately raiſes his hind-legs, equally advanced, and not one before the other: ſo that all his four legs are in the air at once; and as he ſets them down, he marks but twice with them.

This air is performed, in equal time and meaſure, by keeping the horſe in, and with a good and juſt appuy; the rider keeping himſelf ſtrait, and well ſtretched down in the ſaddle, and lifting his hand about three fingers breadth above the pommel of the ſaddle, with his body a little forward, and putting no ſtreſs on his legs.

There are three actions to be uſed in making *curvets*; theſe are to raiſe the horſe, by the action of the hand, to ſupport him while he is in the air, and to make him go forward, while he is off the ground.

Horſes that are very dull, or very fiery, are improper for *corvets*; this being the moſt difficult AIR they can make, and requiring a great deal of judgment in the rider, as well as patience in the horſe, to perform it. See Berenger's Art of Horſemanſhip, vol. ii. p. 117, &c.

Some derive the term from the Spaniſh *corvo*, ſignifying the *hock* at the hinder leg, becauſe the horſe bends his hocks, and throws his weight upon them.

CORVINA, in *Zoology*. See GUATUCUSA.

CORVINDUM *nella*. See NELLA *corvindum*.

CORVINUS *lapis*, in *Natural Hiſtory*, a name given by ſome to the *belemnites*; but by others to a very different body of a whitiſh colour, and oval figure, convex on one ſide, and concave on the other, and in the middle of the concave ſide there ariſes a tubercle: this is ſaid to be taken out of the head of a fiſh; and it is very poſſible that the authors may mean by this no other than our crab's eyes.

CORVIPETA *avis*, in *Zoology*. See GUITGUIT.

CORVO, in *Zoology*, a name by which many call the UMBRA, or *chromis* of authors, a large ſea-fiſh, common in the Mediterranean, and, while young, brought to the markets of Italy.

CORUS, OMER, HOMER, or CHOMER, in the *Jewiſh Antiquities*, a meaſure containing ten baths, or ſeventy-five gallons, and five pints, as a meaſure of things liquid, and thirty-two pecks and one pint, as a meaſure for things dry. The *corus*, or *omer*, was moſt commonly a meaſure for things dry, and the greateſt that was uſed among the Jews. It contained, according to the rabbins, ten ephahs, or thirty ſata or ſeahs. *Corus* is the moſt uſual term in the hiſtorical writers, and *omer* or *chomer* among the prophets.

Corus is alſo uſed in ſome of our old writers for eight buſhels, or a quarter; *decem* coros *tritici, ſive decem quarteria*.

CORUSCATION, glittering, or flaſhing, a gleam of light emitted from any thing.

The term is chiefly uſed for a flaſh of lightning nimbly darting down from the clouds, in time of THUNDER.

There is a method of producing *artificial coruſcations*, or ſparkling fiery meteors, which will be viſible not only in the dark, but at noon day, and that from two liquors actually cold. The method is this: fifteen grains of the ſolid phoſphorus are to be melted in about a dram of water;

ter; when this is cold pour upon it two ounces of oil of vitriol; let theſe be ſhaken together, and they will at firſt heat, and afterwards they will throw up fiery balls in great numbers, which will adhere like ſo many ſtars to the ſides of the glaſs, and continue burning a conſiderable time; after this, if a ſmall quantity of oil of turpentine be poured in without ſhaking the phial, the mixture will of itſelf take fire, and burn very furiouſly. The veſſel ſhould be large, and open at the top. Phil. Tranſ. Nº 150. See INFLAMMABILITY.

Artificial *coruſcations* may alſo be produced by means of oil of vitriol and iron, in the following manner. Take a glaſs body, capable of holding three quarts; put into this three ounces of oil of vitriol, and twelve ounces of common water; then warming the mixture a little, throw in, at ſeveral times, two ounces or more of clean iron filings; upon this an ebullition, and white vapours, will ariſe: then preſent a lighted candle to the mouth of the veſſel, and the vapour will take fire, and afford a bright fulmination, or flaſh, like lightning. Applying the candle in this manner ſeveral times, the effect will always be the ſame; and ſometimes the fire will fill the whole body of the glaſs, and even circulate to the bottom of the liquor, and at others it will only reach a little way down its neck. The great caution to be uſed in this experiment is the making the matter of a proper heat; for, if too cold, few vapours will ariſe, and if made too hot, they will aſcend too faſt, and will only take fire in the neck of the glaſs, without any remarkable *coruſcation*.

CORUSCATULA, in *Natural Hiſtory*, a name given by Mr. Lhuyd to a ſpecies of *foſſile* PLANT of the fern-kind, which that gentleman happened to find covered with a ſhining or gloſſy coat.

CORVUS, in *Ornithology*, the *crow*, or *raven*. In the Linnæan ſyſtem of *Zoology*, this makes a diſtinct genus of birds of the order of the *picæ*, the diſtinguiſhing character of which are, that the bill is convex and ſharp, the noſtrils covered with recumbent briſtles, the tongue cartilaginous and bifid, and the feet formed for walking. Of this genus are the CROW, RAVEN, JACK-DAW, &c.

CORVUS, in *Ichthyology*, a name given by Paulus Jovius to the *faber*, or DOREE.

CORVUS, in *Antiquity*, a machine invented by the Romans at the time of their wars in Sicily, when they firſt engaged the Carthaginian fleet. According to Polybius, the *corvus* was framed after this manner.

On the prow of their ſhips they erected a round piece of timber about a foot and a half in diameter, and twelve feet in length, on the top of which was a block, or pulley; round this piece of timber was a platform of boards four feet in length, which was about eighteen feet long, and well framed and faſtened with iron; the entrance was longways, and it was moveable round the aforeſaid upright piece of timber, and could alſo be hoiſted up and down within ſix feet of the top: about this frame was a ſort of parapet, knee high, which was defended with upright bars of iron, ſharp at the ends, and towards the top there was a ring, by the help of which, and a pulley, or tackle, it was hoiſted and lowered at pleaſure; with this moveable gallery, they boarded the enemies ſhips (when they did not lie ſide by ſide) ſometimes on their bow, and ſometimes in the after-part of the ſhip; the ſoldiers keeping the boſs of their bucklers level with the top of the parapet, &c. and by the means of this new engine got a victory over the Carthaginians in their firſt ſea-fight with them, though the enemy were long before well ſkilled in naval affairs, and the Romans raw and ignorant.

CORVUS, *Raven*, in *Aſtronomy*, a conſtellation of the ſouthern hemiſphere; whoſe ſtars in Ptolemy's Catalogue are 7; in Tycho's as many; in the Britannic Catalogue 9. The order, names, longitudes, latitudes, magnitudes, &c. whereof, are as follow.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.			Latitude			Magnitude
			°	′	″	°	′	″	
That in the beak	α	♎	7	55	35	21	44	26	4
In the neck nigh the head	ε		7	21	58	19	39	41	4
Small one following theſe			8	0	25	20	27	45	6
In the preceding wing	γ		6	25	58	14	29	0	3
In the breaſt	ζ		9	29	58	18	16	40	5
5.			11	16	15	20	23	42	6
Preced. of two in the hind wing	δ		9	9	12	12	9	47	3
Subſeq.	η		9	31	7	11	39	55	5
In the foot, common with *Hydra*	β	♎	13	3	25	18	1	40	3

CORVUS *aquaticus*, *Pelecanus carbo* of Linnæus, in *Zoology*, the name given by authors to the bird commonly known by the name of the *cormorant*, or *corvorant*, on account of its voraciouſneſs, which is owing to a great quantity of ſmall worms filling its inteſtines, and cauſing a very ſudden digeſtion. This bird has a rank ſmell, diſagreeable form, and hoarſe, croaking voice. It is of the ſize of a gooſe, and is of a very deep duſky brown on the back, with ſome admixture of a greeniſh gloſs, and white on the belly and breaſt. It builds not only among rocks, but often alſo on trees. Theſe birds have been trained to fiſh, and are uſed by the Chineſe for this purpoſe. *Tab. of Birds*, Nº 9.

CORVUS *aquaticus*, the *water-raven*, is alſo a name given by ſome authors to the *acacalotl*, a very beautiful Mexican water bird, of a ſhining, greeniſh, blackiſh, and purpliſh hue. It feeds on fiſh, and is eaten, but is of a coarſe and fiſhy taſte.

CORVUS *aquaticus minor*, in *Zoology*, a name by which Mr. Ray has very properly called a bird common on our northern coaſts, and called there the SHAGGE, and in ſome places the *crane*, it being a genuine ſpecies of *cormorant*.

CORVUS *cornutus*, in *Zoology*, a name by which ſome have called the Indian raven, with the horned beak, more uſually called the RHINOCEROS-*bird*.

CORVUS *fluviatilis*, the *river-raven*, a name given by ſome writers to a very remarkable bird of the Philippine iſlands, reſembling the common raven, but being of the amphibious kind. It is called in the language of the place *caſſili*, or COLOCOLO.

CORVUS *Indicus*, in *Zoology*, the name of a bird of the raven kind, very common in the Molucca iſlands, very large, and armed with a very ſtrong beak and claws; it does not feed on carrion, as our raven, but eats the nutmegs, and does vaſt damage, in deſtroying that fruit. Its fleſh is very delicate, and has plainly the aromatic flavour of its food. Ray's Ornithol. p. 86.

CORVUS *ſylvaticus*, the *wood-raven*, in *Zoology*, the name of a bird deſcribed by Geſner, and ſuppoſed by Mr. Willughby to be no other than the *coracias*, or *pyrrhocorax*; but, if rightly deſcribed, it differs eſſentially from that bird in ſize, and in having a creſt on its head. Geſner ſays, it is of the ſize of the common hen; it appears at a diſtance of a deep black, but, when viewed nearer, and in the ſunſhine, it appears of a fine gloſſy green; its tail is ſhort; its toes very long, and not webbed; and it has a creſt on its head. It feeds on frogs, fiſh, and other ſmall animals, and builds in the ruins of old buildings, and lays two or three eggs. They fly very high; the young ones are accounted a very well taſted food. Ray's Ornithol. p. 566.

CORVUS *piſcis*, the *crow-fiſh*, a river-fiſh of the CHUB-*kind*, common in Italy, and in ſome parts of Germany, and called by Geſner, *capito fluviatilis rapax*, and by the common people *roppe*. It ſeldom grows to more than ſix or ſeven pounds weight; it is an extremely rapacious fiſh, not leſs ſo than the pike, and very frequently chaces its prey ſo hard as to drive them out upon the bank, and, in that caſe, he uſually follows them alſo, and both are frequently taken, ſtranded together. It is caught at all ſeaſons of the year, but never in any great abundance; it is eſteemed a very delicate fiſh. Geſner de Piſc. p. 1267.

CORYBANTES, in *Antiquity*, prieſts of Cybele, who danced and capered to the ſound of flutes and drums. See CROTALUM. Horace, lib. i. ode 16. ver. 8.

Catullus, in his poem called Atys, gives a beautiful deſcription of them; repreſenting them as madmen. Accordingly Maximus Tyrius ſays, that thoſe poſſeſſed with the ſpirit of *Corybantes*, as ſoon as they heard the ſound of a flute, were ſeized with an enthuſiaſm, and loſt the uſe of their reaſon. And hence, the Greeks uſe the word κορυϐαντειν, *to corybantize*, to ſignify a perſon's being tranſported, or poſſeſſed with a devil. See ENTHUSIASM.

Some ſay, that the *Corybantes* were all eunuchs; and that it is on this account Catullus, in his Atys, always uſes feminine epithets and relatives in ſpeaking of them.

Diodorus Siculus remarks, that Corybas, ſon of Jaſon and Cybele, paſſing into Phrygia with his uncle Dardanus, there inſtituted the worſhip of the mother of the gods, and gave his own name to the prieſts. Strabo relates it as the opinion of ſome, that the *Corybantes* were children of Jupiter and Calliope, and the ſame with the *Cabiri*. Others ſay, the word had its origin from this, that the *Corybantes* always walked dancing (if the expreſſion may be allowed) or toſſing the head, κορυπτοντες βαινοειν.

CORYBANTICA, a feſtival held in Crete, in memory of the *Corybantes*, who educated Jupiter when he was concealed in that iſland, from his father Saturn, who would have devoured him.

CORYCEUM, in *Antiquity*, that part of the *gymnaſium*, where people undreſſed. It was otherwiſe called APODYTERION.

CORYCUS, whence CORYCOMACHIA, among the Greeks, a kind of exerciſe with the hand-ball. The ſize of the ball, and the materials of which it was prepared, were adapted to the age and ſtrength of thoſe who uſed it. It was ſuſpended from the cieling, and thrown off with different degrees of force, ſo that on its return it might act with proportionable violence. It was recommended by the phyſicians as a ſalutary exerciſe. Hoffman.

CORYDALEPODIUM, in *Botany*, a name given by ſome authors to the *delphinium*, or *larkſpur*.

CORYDALES, in *Botany*, an order of plants in the *fragmenta methodi naturalis* of Linnæus.

CORYDALIUM, or CORYDALIS, a name uſed by ſome authors for the *fumaria*, or *fumitory*, a red-flowered little plant, improperly called by ſome *mayweed*.

CORYLUS. See HAZLE.

CORYMBIFEROUS *plants*; theſe are diſtinguiſhed into ſuch as have a *radiate* flower: as, the flos ſolis, calendula, &c. and ſuch as have a *naked* flower: as, the abrotaneum fœmina, eupatorium, and artemiſia; to which are added the *corymbiferis affines*, or thoſe akin hereunto; ſuch as ſcabious, dipaſcus, carduus, and the like.

CORYMBIUM, in *Antiquity*, an ornament of hair worn by the women. Its form was that of a CORYMBUS.

CORYMBIUM, in *Botany*, a genus of plants of the *ſyngeneſia monogamia* claſs: the calyx is priſmatic, conſiſting of two leaves, and a ſingle flower; the corolla is regular, and monopetalous. It contains one ſeed, crowned with wool-like down.

CORYMBUS, in the general, ſignifies the top or ſummit of any thing; but among the ancient botaniſts it was particularly uſed to expreſs the bunches or cluſters of ivy-berries, &c.

Some alſo call the top of the ſtalk of a plant, when ſo ſubdivided, and adorned with flowers or fruits, as to make a round ſpherical figure, by this name; as the tops of leeks, onions, and the like: others confound the word with *umbella*, which expreſſes the flowery tops of ſuch plants as have their branches and flowers ſpread round, into the form of what the women now call an *umbrella*.

But among the modern botaniſts, *corymbus* is chiefly uſed for a compound diſcous flower, whoſe ſeeds are not pappous, or winged with down: ſuch are the flowers of daiſies, common marigold, &c.

Mr. Ray, therefore, makes a diſtinct genus of plants of ſuch as have a compound diſcous flower, but without any downy wings to carry off their ſeeds.

CORYPHA, in *Botany*, a name by which Linnæus calls a genus of plants, of the claſs of *palmæ*, called *codda panna* in the Hortus Malabaricus, the characters of which are theſe: the cup of the flower is the whole compound *ſpatha*; the flower is divided into three obtuſe, oval ſegments, which ſtand in an expanded form; the ſtamina are ſix pointed filaments, which are longer than the flower, with antheræ growing to them; the germen of the piſtil is roundiſh; the ſtyle is ſubulated and ſhort; the ſtigma ſimple; the fruit is a large unilocular berry, containing a large hard ſeed.

CORYPHÆNA, in *Ichthyology*, the name of a genus of fiſh of the *malacopterygious* kind, of the *thoracic* order in the Linnæan ſyſtem, the characters of which are theſe: the branchioſtege membrane contains on each ſide five bones, beſides two others which lie under the bony coverings of the gills, and cannot be ſeen. The fins are ſeven in number, one upon the back, reaching from the top of the head to the tail; the head is very obtuſe at the end, or, as it were, perpendicularly declivious from the vertex to the mouth; the head and body are both ſomewhat compreſſed.

There are three ſpecies of this genus enumerated by Artedi, and twelve by Linnæus.

CORYPHÆUS, in the *Ancient Tragedy*, was the chief or leader of the company that compoſed the chorus.

The word is formed from κορυφη, *tip of the head*.

The *coryphæus* ſpoke for all the reſt, whenever the chorus took part in the action, in quality of a perſon of the drama, during the courſe of the acts.

Hence, *coryphæus* has paſſed into a general name for the chief or principal of any company, corporation, ſect, opinion, &c.

Thus, Euſtatius of Antioch is called the *coryphæus* of the council of Nice; and Cicero calls Zeno the *coryphæus* of the Stoics.

CORYPHE, in *Medical Writers*, is uſed for the crown of the head; as alſo for the interior extremity of the fingers next the nails.

CORYZA, in *Medicine*, a running at the noſe; or a defluxion of ſharp ſerous humours from the glands of the head; ariſing from a diminution of perſpiration, or catching of cold.

Signs of a coryza. This diſeaſe is generally preceded by an itching, and by ſneezing; ſometimes by what is called a *gravedo*, a congeſtion of matter without excretion; this is followed by the excretion of a ſerous and viſcous matter by the noſtrils and mouth, and ſometimes by the eyes; the more thin and acrid this matter is, the more ſeverely it affects the part through which it is evacuated, ſo that ſometimes it is attended with a ſenſation of pain, and ſoreneſs in them.

Cauſes. The general cauſes of theſe defluxions, are the obſtruction or ſuppreſſion of natural or cuſtomary evacuations, the cold and moiſt temperature of the air, or a ſudden chilling of the body in a hot and moiſt place: the leaving off a copious uſe of tobacco, and the abuſe of ſnuff, or other ſternutatory powders. To theſe are to be added, every thing that impedes natural perſpiration, and ſometimes ſuppreſſions of urine.

Prognoſtics. The ſimple *coryza* and *gravedo* are attended with no great danger, not even when they are of long ſtanding, provided that the conſtitution be ſtrong and healthy in other reſpects. But this is not the caſe in old and weak people; for in theſe, this continual defluxion upon the head too often brings on vertiginous complaints, and ſometimes paralytic, and even apoplectic diſorders, or elſe aſthmas, and ſuffocative catarrhs, are the conſequence: and if this matter, ſo copiouſly ſecreted from the blood, be thrown upon the lungs, it may occaſion exulcerations, and even a true phthiſis.

Method of cure. This is a diſeaſe which few people trouble a phyſician about, being uſually left to nature; but it is, however, in the power of medicine to do great ſervice, and, uſually, wholly to remove the complaint; which, even where it is not attended with danger, is ſo far troubleſome, as that any one would wiſh to be rid of it.

Proper evacuations, as bleeding, epiſpaſtics, ſternutatories, &c. are uſual in caſes of *coryzas*.

When the defluxion is very violent, Stahl recommends the uſe of gentle diaphoretics, and of a powder compoſed of cinnabar, and a gentle opiate. In caſes where the matter of a *coryza* is very acrid, and there is a violent pain in the head, the external uſe of camphor is of great ſervice; it is in this caſe to be applied to the temples; and the patient ſhould at the ſame time take internally powders compoſed of nitre and the common abſorbents, and diaphoretic antimony, and afterwards ſhould take ſome gentle purges, and frequently bathe the feet in warm water. See INFANT.

COS, in *Medicine*. See WHETSTONE.

COS, *whetſtone*, in *Natural Hiſtory*, a genus of ſand-ſtones, conſiſting of fragments of an indeterminate figure, ſubopake, and granulated. There are ſeveral ſpecies of this genus, which are uſed for MILL-ſtones, &c.

COSCINOMANCY, the art of divination, by means of a ſieve.

The word comes from κοσκινον, *cribrum*, a *ſieve*; and μαντεια, *divination*.

The ſieve being ſuſpended, after rehearſing a formula of words, it is taken between two fingers only; and the names of the parties ſuſpected, repeated: he at whoſe name the ſieve turns, trembles or ſhakes, is reputed guilty of the evil in queſtion.

This muſt be a very ancient practice: Theocritus, in his third Idyllion, mentions a woman very ſkilful in it. It was ſometimes alſo practiſed by ſuſpending the ſieve by a thread, or fixing it to the points of a pair of ſheers, giving it room to turn, and naming, as before, the parties ſuſpected: in which laſt manner, *coſcinomancy* is ſtill practiſed in ſome parts of England. It appears from Theocritus, that it was not only uſed to find out perſons unknown, but alſo to diſcover the ſecrets of thoſe that were known.

COSCYLIUM, in *Natural Hiſtory*, a name given by ſome of the old writers to the *kermes*, the true nature of which they did not know, but ſuppoſed it to be a ſort of ſcabrous excreſcence, formed of the abundant juices of the tree, and of the nature of the galls on the oak, and other trees.

CO-SECANT, in *Geometry*, the SECANT of an arch, which arch is the COMPLEMENT of another arch to 90 degrees.

COSENAGE, in *Law*, a writ that lies where the treſail, that is, the tritavus, the father of the beſail, or great grandfather, being ſeized in fee at his death of certain lands, or tenements, dies; a ſtranger enters, and abates; then ſhall his heir have this writ of *coſenage*; the form of which ſee in Fitzh. Nat. Br. fol. 221.

COSENING, in *Law*, an offence whereby any thing is done deceitfully, in, or out of, contracts, which cannot be fitly termed by any eſpecial name. In the civil law, it is called *ſtellionatus*. See STELLIONATE.

COSHERING, in the *Feudal Cuſtoms*, a kind of right of the lords to lie, and feaſt themſelves, and their followers, at their tenants houſes.

We find this term in Harris's Lexicon Technicum, and in Jacobs's Law Dictionary, which laſt quotes Spelman of parliaments MSS. for it. The word *coſhering* may perhaps be derived from the old Engliſh *coſhe*, a *cot*, or *cottage*.

CO-SINE, is the right SINE of an arch, which is the complement of another to 90 degrees.

COSMETIC, from κοσμειν, *to adorn*, a term in *Phyſic*, uſed for any medicine, preparation, or means, employed to beautify and embelliſh the face, and preſerve or improve the complexion; as ceruſs, and the whole tribe of fucuſes, waſhes, cold creams, lip-ſalves, &c. See WATER.

The Indians uſe the water of green CACAO-nuts as a grand *coſmetic*, which wonderfully improves their complexion.

COSMICAL, ſomething that refers, or has a relation to the world; in Greek κοσμος.

COSMICAL *aſpect*, among *Aſtrologers*, is the ASPECT of a planet with reſpect to our earth.

COSMICAL *qualities* are uſed by Mr. Boyle in the ſame ſenſe with ſyſtematical ones.

Though, in conſidering the qualities of natural bodies, we uſually only take in the powers any particular one has of acting on, or its capacity of ſuffering from the action of, another, wherewith it is obſerved to have ſome manifeſt commerce, by a communication of impreſſions; yet there may be ſeveral alterations to which it may be liable, not barely on account of thoſe qualities preſumed to be evidently inherent in it, nor of the reſpects it bears to thoſe other particular bodies, whereto it ſeems manifeſtly related; there may be many unheeded agents, which by unperceived means have great operations on the body we conſider, and work ſuch changes in it, as are not otherwiſe to be accounted for. And theſe are what Mr. Boyle calls *coſmical*, or *ſyſtematical qualities*.

To account for theſe *coſmical* qualities, the ſame author propoſes ſome *coſmical* ſuſpicions, as to ſome unobſerved laws and orders of nature; and refers them principally to the action of certain effluvia hitherto unobſerved.

COSMICAL is alſo uſed, in *Aſtronomy*, to expreſs one of the poetical riſings of a ſtar.

A ſtar is ſaid to riſe *coſmically*, when it riſes together with the ſun; or with that degree of the ecliptic wherein the ſun then abides.

Coſmical ſetting is, when a ſtar ſets and goes down in the weſt, at the ſame time the ſun riſes in the eaſt.

But, according to Kepler, to riſe or ſet *coſmically*, is only to aſcend above, or deſcend below, the horizon.

COSMOGONY, in *Phyſics*, ſignifies the ſcience of the formation of the univerſe. It is formed of κοσμος, the *world*, and γινομαι, *I am born*. It differs from *coſmography*, which is the ſcience of the parts of the univerſe, ſuppoſing it formed, and in the ſtate in which we behold it; and from *coſmology*, which reaſons on the actual and permanent ſtate of the world formed as it now is; whereas *coſmogony* reaſons on the variable ſtate of the world at the time of its formation. In our conjectures about the formation of the world there are two principles which we ought never to loſe ſight of. 1. That of *creation*; for certainly matter could not give itſelf exiſtence, it muſt have received it. 2. That of a *ſupreme* intelligence directing this *creation*, and the arrangement of the parts of matter, in conſequence of which this WORLD was formed.

COSMOGRAPHY, the deſcription of the world; or the art which teaches the conſtruction, figure, diſpoſition, and relation of all the parts of the world, with the manner of repreſenting them on a plane.

The word comes from κοσμος, *world*, and γραφω, *I deſcribe*.

Coſmography conſiſts chiefly of two parts. ASTRONOMY, which ſhews the ſtructure of the heavens, and the diſpoſition of the ſtars; and GEOGRAPHY, which ſhews thoſe of the earth.

COSMOLABE, from κοσμος, *world*, and λαμβανω, *I take*, an ancient mathematical inſtrument, ſerving to meaſure diſtances, both in the heavens, and on earth.

The *coſmolabe* is in great meaſure the ſame with the aſtrolabe. It is alſo called *pentacoſm*, or the *univerſal inſtrument*, by L. Morgard, in a treatiſe written expreſly upon it, printed in 1612.

COSMOLOGY, from κοσμος, *world*, and λογος, *diſcourſe*, the ſcience of the world in general. This Wolfius calls *general*, or *tranſcendental coſmology*, and has written a treatiſe on the ſubject, wherein he endeavours to explain how the world ariſes from ſimple ſubſtances; and treats of the general principles of the modifications of material things, of the elements of bodies, of the laws of motion, of the perfection of the world, and of the order and courſe of nature. Wolf. Coſmologia Generalis, Francfort. & Leipſic. 1731. 4to.

COSMOPOLITE, or COSMOPOLITAN, a term ſometimes uſed to ſignify a perſon who has no fixed living, or place of abode; or a man who is a ſtranger no-where.

The word comes from κοσμος, *mundus*, and πολις, *city*. One of the ancient philoſophers being interrogated what countryman he was, anſwered he was a *coſmopolite*, i. e. *an inhabitant or citizen of the world*. "I prefer, ſays another philoſopher, my family to myſelf, my country to my family, and the human kind to my country."

COSSART, or *Coſſet Lamb*, in *Huſbandry*, is a lamb left by its dam's dying, before it is capable of ſhifting for itſelf: or a lamb taken from an ewe that brings ſeveral at a yeaning. The term is alſo applied to a colt, calf, &c.

COSSE *de geniſte*, an order of knighthood inſtituted in 1234, by Lewis IX. at his marriage with Margaret of Provence. The motto on the collar of this order was, *exaltat humilis*.

COSTA *canina*, in *Botany*, a name given by ſome authors to the *plantago quinquenervia*, or narrow-leaved plantain, commonly called *ribwort*.

COSTÆ, in *Anatomy*. See RIBS.

COSTAL, in *Anatomy*. There are eight VERTEBRÆ diſtinguiſhed by the name of *coſtales*, or *pleurites*; becauſe ſerving to articulate the *coſtæ*, or ribs, which are lined with the *pleura*.

Theſe *vertebræ* are the eight which follow the ſecond, called the *axillary*; and are therefore the third, fourth, fifth, and to the tenth incluſive.

COSTARUM *depreſſores proprii*, in *Anatomy*, a name given by Douglas, from Cowper, to what Albinus affirms to be only that part of the internal INTERCOSTAL muſcles which lie neareſt the ribs.

COSTARUM *levatores*, a name given by Steno, Morgagni, and others, to the muſcles of the ribs, called by Albinus the *levatores breviores coſtarum*, and by others the *ſupracoſtales*, the *ſur coſtaux* of the French.

COSTS, in *Law*, are *expenſæ litis*, recovered by the plaintiff in a ſuit, together with his damages: and if the plaintiff be nonſuited or overthrown by lawful trial in any action, the defendant ſhall have *coſts*. 4 Jac. I. cap. 3. Alſo putting off trials, inſufficient pleas, &c. on their amendment, are liable to *coſts*.

Coſts are allowed in chancery, for failing to make anſwer to a bill exhibited; or making an inſufficient anſwer: and if a firſt anſwer be certified by a maſter to be inſufficient, the defendant is to pay 40*s*. coſts; 3*l*. for a ſecond inſufficient anſwer; 4*l*. for a third, &c. But if the anſwer be reported good, the plaintiff ſhall pay the defendant 40*s*. *coſts*. An anſwer is not to be filed (until when it is not reputed an anſwer) until *coſts* for contempt in not anſwering, are paid. Pract Attorn. 1 ed. p. 210. 212. If a plaintiff in chancery diſmiſſes his bill, or the defendant; or if a decree be obtained for the defendant, *coſts* are allowed, by ſtat. 4 and 5 Anne, c. 16.

COSTIVENESS, *obſtructio alvi*, in *Medicine*, a preternatural detention of the excrements, with an unuſual hardneſs and dryneſs thereof; and, thence, a difficulty of diſcharging them.

This is the oppoſite to a diarrhœa, or looſeneſs.

An *obſtructio alvi* is ſometimes idiopathic, where there is no other diſeaſe concurring to it; ſometimes it is ſymptomatic, and depends entirely on other diſeaſes, as on fevers, congeſtions, and the like.

COSTIVENESS, *ſigns of*. The firſt, and moſt obvious, of theſe is, the not going to ſtool in the ſpace of twenty-four-hours; this is uſually ſucceeded by a dizzineſs, and vertiginous diſorder of the head, painful congeſtions of blood about the head, flatulencies, oppreſſion of the ſtomach, and ſtraitneſs and anxiety about the præcordia. Junker's Conſp. Med. p. 590.

COSTIVENESS, *perſons ſubject to*. Men of ſedentary, and idle lives, are more ſubject than others to this complaint, eſpecially when ſubject to commotions of the blood, and of a dry choleric temperament, and ſuch as are ſubject to hypochondriac affections, and to the gout, or to nephritic complaints, and to acute fevers.

COSTIVENESS, *cauſes of*. Theſe are obſerved by writers to be of two kinds, the active, and the paſſive. The active cauſe is a certain ſtricture which comes on in the rectum in many different diſorders; as in the ſtone, in nephritic complaints, and, in general, in all the congeſtions of blood towards the upper parts of the body. What is called the paſſive cauſe of *coſtiveneſs*, is that occaſioned by a ſort of ſluggiſhneſs in nature, which leaves the periſtaltic motion of the guts too languid, on occaſion of which the fæces are eaſily indurated in the bowels. The occaſional and accidental cauſes which contribute to this induration of the fæces are the following: a neglecting the uſual time of going to ſtool, and checking the natural tendencies and motions toward it; an extraordinary heat of the body, and copious ſweats; a larger quantity of ſolid food taken into the ſtomach than is proper for the quantity of fluids ſwallowed, and a common uſe of ſuch food as is dry and hard of digeſtion.

Costiveness, *prognoſtics in* It is the origin of a great many diſorders; and, in particular caſes, is often attended with imminent danger. In choleric habits, in which perſons are ſubject to large quantities of bilious matter being lodged in the *primæ viæ*, *coſtiveneſs* is uſually attended with colics, and violent heats. The indurated excrements alſo, when they preſs upon the veins in the guts, very often prevent the circulation, and, by that means, bring on dangerous inflammations in the parts; and, in general, whatever diſeaſe is attended with *coſtiveneſs*, is rendered worſe, and more violent by it.

Costiveness, *method of treatment in.* An idiopathic *coſtiveneſs*, when grown into a habit by long ſufferance, is beſt cured by means of drinking more liquids than uſual, and giving the body a greater ſhare of motion; but this motion muſt, by no means, be violent, for that always increaſes the diſeaſe, but when placid and eaſy, it tends greatly to the reſtoring the periſtaltic motion of the bowels to its proper ſtate. To this it is to be added, that many people have reſtored themſelves from this diſtemperature to a good ſtate, only by going to the cloſe-ſtool every day, at a certain hour, and endeavouring for ſome time, but without great violence, to force a ſtool; the conſequence of a continual practice of this, for ſome weeks together, has brought nature to expect it, and, in fine, to be prepared for it, and always to have fæces at the time ready to be diſcharged. The eating a ſmall piece of bread with a large quantity of butter ſpread over it every day before dinner and ſupper is alſo a good cuſtom; and purges taken every ſpring and autumn are a method of bringing nature into a proper courſe. When the caſe is violent, and calls for the aſſiſtance of medicine, there is always more benefit obtained from clyſters, than from purging medicines given internally. Theſe laſt, when given, muſt never be violent.

In a ſymptomatic *coſtiveneſs*, the primary diſeaſe is always to be firſt regarded, and this is, generally, not a little relieved by a proper removal of the *coſtiveneſs*. In chronic caſes, the ſame rules are to be obſerved as in the cure of the idiopathic *coſtiveneſs*; but, in acute caſes, recourſe is to be had to clyſters, and large draughts of warm, and weak fluids, ſuch as barley-water, and the like.

When *coſtiveneſs* is attended with no other complaint, but people enjoy their perfect health with it, there is no occaſion for medicines, nature being in ſome conſtitutions habituated to it, and doing well with it. There are many perſons who, in general, do not go to ſtool oftener than once in three days; ſome once in a week; and there have been inſtances of people, who, while they have enjoyed a perfect health, and eat very heartily, have not gone above once in three or four weeks. When habitual *coſtiveneſs* is to be cured by motion, and drinking more fluids, theſe muſt be always uſed together; for otherwiſe drink alone more relaxes the bowels, and motion alone diſſipates the already too little humidity. Thus either of them alone muſt add to the diſeaſe, which, when given together, they cure. The common method of attempting to cure *coſtiveneſs* by repeated doſes of purges, brings on a great many inconveniencies, particularly they always leave the bowels more bound than before, and by that means add to the complaint they were meant to relieve; and even the gentleſt purging medicines have this effect. Junker's Conſp. Med. p. 391.

In caſes of this kind, Dr. Huxham recommends a medicine prepared with ſalt of hartſhorn, ſaturated with ſpirit of vinegar, which not only takes away the fœtid ſmell of the oil of the ſalt, but changes it into an agreeable aromatic. Obſ. de Aere, et Morb. epid.

Costiveness, in infants. See Infant.

Costiveness, in *Farriery*, is alſo a diſeaſe to which horſes are ſubject, from violent exerciſe, or the want of exerciſe, and long feeding on hard meat. An opening diet, and lenitive mild purges, as of Glauber's ſalts, with lenitive electary, four ounces of each diſſolved in warm ale or water, repeated every other day, and ſcalded bran, are recommended. But a natural or habitual *coſtiveneſs*, which is not uncommon, is not ſo eaſily removed. In this caſe the following purge is recommended; viz. ſuccotrine aloes ſix drams, ſpermaceti half an ounce, fenugreek ſeed in powder two ounces; the whole is to be made into two balls, with a ſufficient quantity of honey or treacle, and given to the horſe in a morning faſting. Scalded barley ſhould alſo be uſed inſtead of bran, and the liquor given milk-warm for his drink. The above purge ſhould be repeated once in four days, till he has taken ſix doſes. Gibſon's Farriery, vol. ii. p. 134.

COSTMARY, in *Botany*. See Tanzy.

COSTOHYOIDES, in *Anatomy*, a name given by Santorini to one of the muſcles of the mouth now generally called the *coracohyoidæus*.

COSTRANGULA, in *Botany*, a name uſed by ſome for the *ſcrophularia*, or *figwort*.

COSTUME. To obſerve the *coſtume*, among *Painters*, is to make every perſon and thing ſuſtain the proper character, by not only obſerving the ſtory, but the circumſtances, the ſcene of action, the country or place, habit, manners, &c.

The word is Italian, ſignifying *cuſtom*.

COSTUS, in *Botany*, a genus of the *monandria monogynia* claſs. Its characters are theſe: it hath a ſimple ſpadix and ſpatha, with a ſmall empalement, divided into three parts, ſitting on the germen: the flower hath three concave petals, which are erect and equal, with a large oblong nectarium of one leaf, having two lips; the upper is ſhorter, and turns to a ſtamen, which is faſtened to the upper-lip of the nectarium. The germen is ſituated within the receptacle of the flower, and afterward becomes a roundiſh capſule with three cells, containing ſeveral triangular ſeeds. We know but one ſort of this plant, which is the Arabian *coſtus*. This has a fleſhy jointed root like that of ginger, and propagates under the ſurface as that doth.

The roots of this plant were formerly imported from India, and were much uſed in medicine; but of late years they have not been regarded, the roots of ginger being generally ſubſtituted for them.

Coſtus Arabicus is an attenuant, and ſudorific; it is given in obſtructions of the menſes, and chronic caſes, ariſing from infarctions of the viſcera. Its doſe is from ten grains to half a dram, but is ſeldom preſcribed ſingly. Its chief uſe in medicine is as an ingredient in Venice treacle.

The beſt is heavy, of a cineritious colour withoutſide, a reddiſh one within, difficult to break, of a ſtrong ſmell, and an aromatic taſte.

This root was formerly called *coſtus verus*, and was divided into two kinds, the *ſweet* and the *bitter coſtus*: both of which are now uncommon. M. Charas, and others, are of opinion, there is but one kind of *coſtus*, which proves more or leſs ſweet or bitter, according to the ſoil where it is produced, and the time in which it has been kept.

The root always contracts a bitterneſs, and grows darker coloured in keeping, though freſh it was pale and ſweet; and hence the ſuppoſed difference, the deſcriptions of authors agreeing alike to each in all but theſe accidents.

Mr. Geoffroy has obſerved that this root ſeems to be a ſpecies of elecampane; and that our common elecampane, when plump, well fed, and carefully dried, after it has been kept a long time, aſſumes exactly the ſmell of the *coſtus*, and wholly differs from the common elecampane roots ſold and uſed in the ſhops. Mem. Acad. Scienc. Par. 1740.

Costus *Indicus*, an American bark, called alſo *coſtus corticoſus*, *coſtus corticus*, or *Winter's bark*. The iſlands of Madagaſcar in Africa, of Domingo and Guadaloupe in America, are the places where the moſt and beſt is found.

CO-TANGENT, is the tangent of an arch, which is the complement of another arch to 90 degrees.

COTATUA, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a ſpecies of parrot, called alſo *calangay*. It is all over white, and has a creſt of feathers on the head. It is of the bigneſs of a common pigeon.

Cotatua *major*, in *Zoology*, is a very beautiful ſpecies of parrot, common in the woods of the Philippine iſlands. This is of the ſize of a common hen. It is all over white, except that its beak and legs are black; its tongue alſo is black. This is the moſt eaſily taught to talk of any of the parrot-kind, and when taught, ſpeaks the moſt diſtinctly of all the kinds.

COTE, a term uſed in courſing, to expreſs the advantage one greyhound has over another, when he runs by the ſide of it, and, putting before it, gives the hare a turn. See Coursing.

Cote-*gare*, a kind of refuſe wool, ſo clung or clotted together, that it cannot be pulled aſunder. By 13 Rich. II. ſtat. 1. c. 9. it is provided, that neither denizen or foreigner make any other refuſe of wools but *cote-gare* and *villein*. So the printed ſtatute has it: but in the parliament-roll of that year, it is *cod-land* and *villein*. *Cot*, or *cote*, ſignifies as much as cottage in many places, and was ſo uſed by the Saxons, according to Verſtegan.

COTERELLUS, *Cotarius*, and *Coterellus*, according to Spelman and Du Freſne, are ſervile tenants: but in Domeſday, and other ancient MSS. there appears a diſtinction, as well in their tenure and quality, as in their name. For the *cotarius* hath a free ſocage tenure, and paid a ſtated firm or rent in proviſions or money, with ſome occaſional cuſtomary ſervices: whereas the *coterellus* ſeems to have held in mere villenage, and his perſon, iſſue, and goods, were diſpoſable at the pleaſure of the lord.

COTERIE, a term adopted from the French trading aſſociations or partnerſhips, where each perſon advances his quota of ſtock, and receives his proportion of gain; and which retains its original meaning, when applied to little aſſemblies or companies aſſociated for mirth and good humour; where each one furniſhes his quota of pleaſantry. Here they coin new words not underſtood elſewhere, but which it becomes faſhionable for others to uſe; and they are thought ridiculous who are ignorant of them. It has been uſed of late to ſignify a club of ladies.

COTESIAN *theorem*, in *Geometry*, an appellation uſed for an elegant property of the circle diſcovered by Mr. Cotes. The theorem is:

If the factors of the binomial $a^\lambda \pm x^\lambda$ be required, the index λ being any integer: let the circumference ABCD, (*Tab* II. *Analyſis*, *fig.* 42 and 43.) the center of which is O, be divided into as many equal parts as there are units in 2λ; and from all the diviſions let there be drawn to any point P in the radius OA, produced if neceſſary, the right lines AP, BP, CP, DP, EP, FP, &c. then ſuppoſing $OA = a$, $OP = x$, the product of all the lines AP, CP, EP, &c. taken from the alternate diviſions throughout the whole circumference, will be equal to $a^\lambda - x^\lambda$, or $x^\lambda - a^\lambda$, according as the point P is within or without the circle; and the product of the reſt of the lines BP, DP, FP, in the remaining alternate places will be equal to $a^\lambda + x^\lambda$.

For inſtance, if $\lambda = 5$, let the circumference be divided into 10 equal parts, and the point P be within the circle, then will $AP \times CP \times EP \times GP \times IP$ be equal to $\overline{OA}^5 - \overline{OP}^5$, and $BP \times DP \times FP \times HP \times KP = \overline{OA}^5 + \overline{OP}^5$. In like manner if λ be $= 6$, having divided the circumference into twelve equal parts, $AP \times CP \times EP \times GP \times IP \times LP$ will be equal to $\overline{OA}^6 - \overline{OP}^6$, and $BP \times DP \times FP \times HP \times KP \times MP = \overline{OA}^6 + \overline{OP}^6$.

The demonſtration of this theorem may be ſeen in Dr. Pemberton's Epiſt. de Coteſii inventis.

By means of this theorem the acute and elegant author was enabled to make a farther progreſs in the inverſe method of fluxions, than had been done before. But in the application of his diſcovery there ſtill remained a limitation, which was removed by Mr. De Moivre. See Dr. Smith's Theoremata Logometrica & Trigonometrica, added to Cotes's Harmonia Menſurarum, p. 114, 115. De Moivre, Miſcel. Analyt. p. 17.

COTESWOLD, ſeveral ſheep-cotes, and ſheep feeding on hills. It comes from the Saxon *cote*, i. e. *caſa*, a *cottage*, and *wold*, a place where there is no wood.

COTHURNUS, *buſkin*, a very high ſhoe, or patten, raiſed on ſoals of cork; worn by the ancient actors in tragedy, to make them appear taller, and more like the heroes they repreſented; moſt of whom were ſuppoſed to be giants. See BUSKIN.

COTICE', or COTISE', in *Heraldry*, is the fourth part of the bend; which, with us, is ſeldom or ever borne but in couples, with a bend between them: whence, probably, the name; from the French *coté*, *ſide*; they being borne, as it were, a-ſide of the BEND.

A bend thus bordered is ſaid to be *cotiſed*, *coticé*.—He bears ſable on a bend *cotiſed* argent three cinquefoils. See *Tab.* II. *Herald. fig.* 61.

COTICULA, in the *Natural Hiſtory of the Ancients*, the word by which the Romans expreſſed the ακονη of the Greeks; a ſtone of very great hardneſs, brought from Armenia, and uſed on many occaſions; one of which was the working on ſuch of the harder ſtones as iron inſtruments would not touch.

Many of the ancient Greeks, who had this ſtone from the iſland of Cyprus, called it, from its hardneſs, by the ſame name with the diamond, as they ſometimes did iron alſo; which manner of writing has much miſled thoſe who have copied too careleſly from them; and even Pliny, who after having in one part of his book given a right account of this ſtone, and called it *cos*, in another gives a different hiſtory of it, miſtaking it for a diamond.

This *coticula* was long in great eſteem with the ancient artificers on gems, and ſerved not only to work upon ſuch of the gems as iron could not touch, but was uſed to bore holes through ſuch as they ſtrung on threads, and hung in rows in their ornaments of the bracelet-kind. And Pliny's account of the other gems being bored with Cyprian diamonds, means no more, than that they were worked with this *coticula*, which was anciently had from the iſland of Cyprus, and afterwards from Armenia, and was called by ſome, in a metaphorical ſenſe, *adamas*, from its great hardneſs.

COTICULA is alſo a name given by many to the touchſtone; not from its being of the nature of the *coticula* of the Romans, but from its being, for the convenience of carriage and uſe, frequently found in the ſhape of a whetſtone.

COTILLON, the name of a well-known briſk-dance, in which eight perſons are employed. The term is French, and ſignifies an *under-petticoat*.

COTINUS was uſed by the ancients for the olive-tree, eſpecially the *olea ſylveſtris*, or wild olive, which is called κωτίνος by the Greeks. To diſtinguiſh this from the ſhrub uſed in dyeing, and called by the ſame name, the Latins have added the epithet *coriaria* to this laſt: but as this is often omitted, ſome confuſion has been occaſioned by that omiſſion. The *cotinus* of the Latins, or *cotinus coriaria*, is at preſent called by the Italians *ſcotano*, and is ſuppoſed by ſome to be the ſame with the SCYTHICUM *lignum*, but improperly.

COTONASTER, in *Botany*, a name given by ſeveral authors to a ſpecies of the *cratægus*, called by Mr. Tournefort the CRATÆGUS with oblong ſerrated leaves, green on both ſides.

COTT, in *Sea Language*, a ſort of bed-frame, ſuſpended from the beams of a ſhip, in which the officers ſleep between the decks. It is about ſix feet long, one foot deep, and between two and three feet wide. See HAMMOCK.

COTTAGE, *cottagium*, is properly a little houſe for habitation, without lands belonging to it. Stat. 4. Edw. I. But by a later ſtatute, 31 Eliz. c. 7. no man may build a *cottage*, unleſs he lay four acres of land thereto; except it be in market-towns or cities, or within a mile of the ſea, or for the habitation of labourers in mines, ſailors, foreſters, ſhepherds, &c. and *cottages* erected by order of juſtices of peace; for poor impotent people are excepted out of the ſtatute. The four acres of land to make it a *cottage* within the law, are to be freehold, and land of inheritance; and four acres holden by copy, or for life or lives, or for any number of years, will not be ſufficient to make a lawful *cottage*.

COTTON, *Goſſypium*, in *Botany*, a genus of the *monadelphia polyandria* claſs. Its characters are theſe: the flower has a double empalement, with five plain heart-ſhaped petals, which join at their baſe, and a great number of ſtamina joined at bottom in a column, and inſerted into the petals. It hath a round germen, ſupporting four ſtyles, joined in the column; the germen afterward becomes a roundiſh capſule, ending in a point, having four cells, which are filled with oval ſeeds wrapped up in down.

There are ſeveral varieties, and not a few diſtinct ſpecies of this plant, propagated in the gardens of the curious with us.

The moſt common ſpecies, which is the *xylon herbaceum*, or *herby cotton*, is cultivated very plentifully in Candia, Lemnos, Cyprus, Malta, Sicily, Naples, and alſo between Jeruſalem and Damaſcus, from whence the *cotton* is annually brought in large quantities to us in the northern parts of Europe. It is ſown on plowed lands in ſpring, and is cut down as our corn in harveſt-time, being an annual plant.

The *cotton* is a woolly or downy ſubſtance, which incloſes the ſeed, and which is contained in a brown huſk or ſeed-veſſel. It is from this plant that moſt of the *cotton* we uſe is produced, the difference of the ſeveral ſorts of it being owing to the different ſoil and climates it has grown in, and the different culture it has received.

The *cotton* in the wool, as it is uſually called, is what we have from Cyprus. Damaſcus *cotton* is called *cotton* in the yarn; and the Jeruſalem *cottons*, which are called *bazas*, are the fineſt kinds of all. There is alſo a ſilky *cotton* in the Antilles, called the white *cotton* of Siam, becauſe the grain was brought from thence. This is very fine and ſoft; and the hoſe made of it exceed thoſe of ſilk in luſtre and beauty.

All the kinds of *cotton* plants are propagated with us from ſeeds, which muſt be ſown on a hot-bed early in the ſpring; and when the young plants are come up, they ſhould be tranſplanted each into a ſeparate pot of light earth, which is to be plunged into a moderate hot-bed of tanners bark, obſerving to water and ſhade them till they have taken root; after this they ſhould be watered at times, and have as much air as the ſeaſon will permit. As they enlarge in ſize, they muſt be ſhifted into larger pots; but they muſt be kept in the ſtove, where the herbaceous kinds will annually flower in autumn; but they will ſeldom bring their pods to any perfection.

One ſort of *cotton* is a native of the Eaſt and Weſt Indies.

This is an annual plant, which periſhes ſoon after the ſeeds are ripe. The ſtaple of this is much finer than either of the other ſpecies; and is therefore well worth the attention of the Britiſh colonies in America, to cultivate and improve; ſince it will ſucceed in Carolina, where it has grown for ſome years. It might be a commodity worthy of encouragement by the public, could they contrive a proper gin to ſeparate the *cotton* from the ſeeds to which this ſort adheres much cloſer than any of the other ſorts. The *cotton* of this ſhrub is preferable to any other yet known. Miller's Gard. Dict.

The ſeed of the *cotton* being mixed in the fruit, together with the *cotton* itſelf, they have invented little machines, which being played by the motion of a wheel, the *cotton* falls on one ſide, and the ſeed on the other; and thus they are ſeparated.

Cotton makes a very conſiderable article of commerce: it is diſtinguiſhed into *cotton in the wool*, and *ſpun-cotton*. The firſt uſed for various purpoſes, is to be put between two ſtuffs, in quilts, night-gowns, &c. but it is the latter is more general; furniſhing various cloths, muſlins, callicoes, dimmities, and hangings; beſides that it is frequently joined with ſilk and flax, in the compoſition of other ſtuffs.

The firſt kind is ordinarily brought from Cyprus and Smyrna: near Smyrna its produce is greater than any where elſe. There are ordinarily brought from Smyrna ten thouſand bales of *cotton* per annum; and yet there is, at leaſt, as much more ſpent in the manufactures of the country.

As to the ſpun *cottons*, they are diſtinguiſhed by various names: beſides thoſe from Jeruſalem, called *bazas*, and thoſe of Damaſcus, called *cottons of the* OUNCE, already mentioned, there are others called *demi-bazas*, *baladins*, *payas*, *cottons joſeph*, *genegunſo*, &c.

Cotton anciently only grew in Egypt, and was uſed by the prieſts and ſacrificers for a very ſingular kind of gowns, worn by them alone.

Cotton applied to wounds in lieu of linen, produces an inflammation. Leewenhoek, examining into the reaſons of this with a microſcope, found its fibres to have each two flat ſides; whence he concludes, that each of its minute parts muſt have two acute angles, or edges; which acute edges being not only thinner and more ſubtile than the globules whereof the fleſhy filaments conſiſt, but alſo more firm and ſtiff than any of the globulous fleſh; it follows, that upon the application of *cotton* to a wound, its edges muſt not only hurt and wound the globules of the fleſh, but alſo cut inceſſantly the new matter brought to them to produce new fleſh, and that with more eaſe, as this matter, not having attained the firmneſs and conſiſtence of fleſh, is the leſs able to reſiſt its attacks: whereas the linen ordinarily uſed in wounds, being compoſed of little round parts, very cloſe to each other, forms large maſſes, and is thus incapable of hurting the globous parts of the fleſh.

COTTON-*graſs*. See ERIOPHORUM.

COTTON, *lavender*. See LAVENDER-*cotton*.

COTTON-*paper*. See PAPER.

COTTON, *philoſophic*, a name given by ſome chemical writers to the flowers of zinc, from their whiteneſs, and ſilky or cottony appearance.

COTTON-*tree*, *ſilk*. See BOMBAX.

COTTON-*weed*. See CUDWEED.

COTTONIAN *Library*, conſiſting of curious manuſcripts, &c. was founded by Sir Robert Cotton, who was forty years in collecting it; and at his death in 1631, left the property of it to his family, though deſigned for public uſe. A large acceſſion was made to this library by private benefactions before the death of the founder, and afterwards by the purchaſes of his heirs, and donations of others, who added to it a great number of books, chiefly relating to the hiſtory and antiquities of our own nation. An act of parliament was obtained, at the requeſt of Sir John Cotton, in 1700, for preſerving it after his deceaſe, under the above denomination, for public uſe. It is now fixed in the Britiſh Muſeum. For ſtatutes relating to it, ſee 12 and 13 W. III. c. 5. and 5 Anne, cap. 30.

COTTUS, in *Ichthyology*, the name of a genus of the acanthopterygious fiſhes, the characters of which are theſe: the branchioſtege membrane on each ſide contains ſix very diſtinct bones: the head is broader than the body, and is depreſſed and prickly; there are two fins on the back; the foremoſt has ſeveral flexile prickles in it. The fins of the belly are ſmall, and have only four bones in each, and the ſkin of the whole fiſh is ſmooth, not ſcaly. The ſpecies of this genus are three; one of which is the little fiſh known by the name of the miller's thumb. Artedi Gen. Piſc. 34. See DRACO *Marinus*.

COTULA. See CHAMOMILE.

COTULA *fœtida*, in *Botany*, a name given by ſome to the ſtinking CHAMOMILE.

The *cotula fœtida* has all the virtues of caſtor, but in a more remiſs degree. A decoction of it, when carefully dried, is of great uſe in all diſorders of the hyſteric kind. It is alſo uſed externally, by way of fomentation, in pains and tumours. Some alſo uſe the expreſſed juice of the freſh leaves, as a remedy in ſcrophulous caſes. The flowers have much the ſame virtues as thoſe of the common chamomile.

COTYLA, or COTULA, a liquid MEASURE in uſe among the ancients, equal to the Roman ſemi-ſextary.

Savot adds, that the Roman *cotyla* contained twelve ounces of any liquor: upon which principle there muſt have been as many *cotylæ* as there were liquors ordinarily ſold; which is nothing ſtrange, ſince, in ſeveral countries, we ſtill find meaſures of different capacity, called by the ſame name, when they contain the ſame weights, though under different bulks.

Fannius ſays, the *cotyla* was the ſame thing with the hemina, which was half a ſextary.

> *At* cotylas, *quas, ſi placeat, dixiſſe licebit*
> *Heminas, recipit geminas ſextarius unus.*

Chorier obſerves, that the *cotyla* was uſed as a dry meaſure, as well as a liquid one; from the authority of Thucydides, who in one place mentions two *cotylæ* of wine, and in another two *cotylæ* of bread.

COTYLA, or COTYLE, or COTYLOIDES, in *Anatomy*, is a name given the cavities at the extremities of large bones, encompaſſed with thick ſtrong edges, which receive the heads, or apophyſes of other bones articulated with them.

Such is the cavity in the *iſchion*, or hip-bone, which receives the head of the BONE of the thigh. It is alſo called *acetabulum*, i. e. *cup*.

COTYLEDON, in *Botany*, a name by which ſome authors call the *umbilicus veneris*, or NAVEL-*wort*, a round leafed plant, found on old walls.

COTYLEDONES, in *Anatomy*, little glands diſperſed throughout the outermoſt membrane of the fœtus, called *chorion*, and ſuppoſed to ſeparate a nutritious juice for the ſubſiſtence of the fœtus.

Cotyledones, in this ſenſe, are only found in ſheep, goats, and ſome other animals; the PLACENTA in the womb ſupplying the place thereof in women.

Other authors uſe *cotyledones* for the apertures of the veins in the inner ſurface of the womb. See MATRIX.

COTYLISCUS, or COTYLUS, in *Antiquity*, a veſſel with a narrow mouth, a very wide belly, and only one handle.

COTYTTIA, or COTYTTIS, in *Antiquity*, a nocturnal feſtival, in honour of *Cotys*, or *Cotytta*, the goddeſs of wantonneſs. They paſſed from Thrace to Athens, where they were introduced by Alcibiades.

COVALAM, in *Botany*, the name of a plant which grows in the Eaſt Indies, otherwiſe called *cucurbitifera trifolia Indica fructus pulpâ cydonii æmula*. *Cydonia exotica*. C. B.

This is a tall tree which grows in Malabar, and the iſland of Ceylon, the fruit of which reſembles a round apple in ſhape; it is covered with a greeniſh thin rind, under which lies another, which is hard and woody, encloſing a viſcid, yellowiſh, moiſt ſubſtance, of a ſweetiſh acid taſte, in which are placed flat, oblong, white ſeeds, turgid, with a gummy pellucid juice.

The fruit, while tender, is preſerved in ſugar or vinegar; when ripe, they are eaten by the inhabitants of the country; while unripe, they ſtop a diarrhœa, or dyſentery. A decoction is prepared of the bark and ſmall roots with common water, which cures hypochondriac melancholy, palpitations of the heart, and faintings. An electary made of the bark in powder, with honey, promotes digeſtion, takes away head-achs and vertigos. A decoction of the leaves cures an aſthma; from the flowers a water is diſtilled, poſſeſſed of cardiac and alexipharmic virtues. James.

COUARD, in *Heraldry*. See COWARD.

COUCH, in *Heraldry*, a term uſed to expreſs the ſhield of a coat of arms, when it does not ſtand erect, but hangs downward. The origin of this poſition of the ſhield ſeems to have been, that the perſons who were to fight in tournaments were compelled, from the time when proclamation was made, till the day of fighting, to hang up their ſhields, by one corner, from the windows or balconies of the neighbouring houſes, or on the trees or barriers of the ground, if the exerciſe was performed in the fields. The horſe combatants hung up their ſhields by the left corner, and the foot combatants by the right. Hence the left corner hanging became the moſt honourable; and we ſee, in all the ſons of the royal blood of England and Scotland, that the ſhields with their arms all hang that way. Some writers on heraldry expreſs this diſpoſition by the word *pendant*.

COUCH, in *Gaming*. See BASSET.

COUCH, in *Malting*. See WET-*couch*.

Couch, in *Painting*, denotes a lay, or impreſſion of colour, whether in oil or water, wherewith the painter covers his canvas, wall, wainſcot, or other matter to be painted.

The word is alſo uſed for a lay or impreſſion on any thing, to make it more firm and conſiſtent, or to ſcreen it from the weather.

Paintings are covered with a *couch* of varniſh; a canvas to be painted muſt firſt have two *couches* of ſize, before the colours be laid; two or three *couches* of white lead are laid on wood, before the *couch* of gold be applied: the leather-gilders lay a *couch* of water and whites of eggs, on the leather, before they apply the gold or ſilver leaf.

The gold wire-drawers alſo uſe the word *couch* for the gold or ſilver leaf wherewith they cover the maſs to be gilded or ſilvered, before they draw it through the iron that is to give it its proper thickneſs.

The gilders uſe *couch* for the quantity of gold or ſilver leaves applied on the metals in gilding or ſilvering. Each *couch* of gold is but one leaf, or two at moſt, and each of ſilver three, to gild: if the gilding be hatched, there are required from eight to twelve *couches*; and only three or four, if it be without hatching. To ſilver there are required from four to ten *couches*, according to the beauty of the work.

Couch-*graſs*. See **Grass**.

COUCHANT, in *Heraldry*, is underſtood of a lion, or other beaſt, when lying down; but with his head lifted up; which diſtinguiſhes the poſture of *couchant* from *dormant*, wherein he is ſuppoſed quite ſtretched out, and aſleep.

Couchant *and Levant*, in *Law*. See **Levant**.

COUCHE', in *Heraldry*, denotes any thing laid all along: thus, a *chevron couché* is a chevron lying ſidewiſe with the two ends on one ſide of the ſhield, which ſhould properly reſt on the baſe.

COUCHER, or **Courcher**, in our *Statutes*, is uſed for a factor, or one that continues in ſome place or country for traffic; as formerly in Gaſcoign, for the buying of wines. Anno 37 Edw. III. c. 16.

Coucher is alſo uſed for the general book, in which any religious houſe or corporation regiſter their particular acts. Anno 3 & 4 Edw. VI. c. 10.

COUCHING *of cataracts*. See **Cataract**.

Couching-*needle*. See **Needle**.

COU-DOU, or **Cu-du**, in *Zoology*, a ſpecies of **deer** ſo called at the Cape of Good Hope. It is diſtinguiſhed by the length of its body, which is diſproportioned to its height; the delicate ſlenderneſs of its limbs; the uncommon ſtatelineſs and beauty of its horns, which are ſmooth, hollow, and as beautifully tranſparent as tortoiſe-ſhell; the ſtripes of white upon its ſkin; a black horny ſubſtance in its upper jaw, inſtead of teeth; a ſtripe of hair paſſing from the midſt of the horns to the tail, which is white from the ſhoulder downwards; and a tuft of hair reaching from the neck to the breaſt. There are alſo animals of the ſame name, though different from each other, in Aſia and America.

COVE, a ſmall creek or bay, where boats and ſmall veſſels may ride at anchor, ſheltered from the wind and ſea.

COVENANT, the conſent or agreement of two or more parties to do or perform ſomething.

A *covenant* ſeems to be much the ſame with a *pactum*, or *conventum*, among the civilians.

Covenant is either *in law* or *in fact*.

Covenant, in *Law*, is that which the law intends to be made, though it be not expreſſed in terms: as, if the leſſor demiſe, and grant a tenement to the leſſee for a certain term; the law intends a *covenant* on the leſſor's part, that the leſſee ſhall, during the term, quietly enjoy the leaſe againſt all lawful incumbrances.

Covenant *in fact*, is that which is expreſsly agreed between the parties.

There is alſo a *covenant merely perſonal*, and a *covenant real*. Fitzherbert defines a **Covenant** *real* to be that whereby a man ties himſelf to paſs a thing real, as lands or tenements, or to levy a fine on lands, &c.

Covenant *merely perſonal*, is where a man covenants with another by deed to build him a houſe, or to ſerve him, &c.

Covenant *to ſtand ſeiſed to uſes*, is when a man that hath a wife, children, brother, ſiſter, or kindred, doth by *covenant* in writing under hand and ſeal, agree that for their, or any of their proviſion or preferment, he and his heirs will ſtand ſeiſed of land to their uſe, either in fee-ſimple, fee-tail, or for life. The uſe being created by the ſtat. 27 Hen. I. c. 10. which conveyeth the eſtate, as the uſes are directed; this *covenant to ſtand ſeiſed* is become a conveyance of the land ſince the ſaid ſtatute. The conſiderations of theſe deeds are, natural affection, marriage, &c. and the law allows, in ſuch caſes, conſiderations of blood and marriage to raiſe uſes, as well as money and other valuable conſideration when a uſe is to a ſtranger.

Covenant, in *Eccleſiaſtical Hiſtory*, denotes a contract or convention agreed to by the Scotch in the year 1638, for maintaining their religion free from innovation. In 1581, the general aſſembly of Scotland drew up a confeſſion of faith, or national *covenant*, condemning epiſcopal government, under the name of Hierarchy, which was ſigned by James I. and which he enjoined on all his ſubjects. It was again ſubſcribed in 1590 and 1596. The ſubſcription was renewed in 1638, and the ſubſcribers engaged by oath to maintain religion in the ſame ſtate as it was in 1580, and to reject all innovations introduced ſince that time. This oath annexed to the confeſſion of faith received the name of the *covenant*; as thoſe who ſubſcribed it were called Covenanters.

Covenant, in *Theology*, is much uſed in connection with other terms. Thus, the *covenant of grace* is that which is made between God and thoſe who believe the Goſpel, whereby they declare their ſubjection to him, and he declares his acceptance of them and favour to them. The Goſpel is ſometimes denominated a *covenant of grace*, in oppoſition to the Moſaic law.

Covenant of redemption denotes, a mutual ſtipulation, tacit or expreſs, between Chriſt and the Father, relating to the redemption of ſinners by him, previous to any act on Chriſt's part under the character of Mediator.

Covenant of works ſignifies, in the language of ſome divines, any *covenant* whereby God requires perfect obedience from his creatures, in ſuch a manner as to make no expreſs proviſion for the pardon of offences to be committed againſt the precepts of it, on the repentance of ſuch ſuppoſed offenders, but pronounces a ſentence of death upon them: ſuch, they ſay, was the *covenant* made with Adam in a ſtate of innocence, and that made with Iſrael at Mount Sinai.

Covenant, *Solemn League and*, was eſtabliſhed in the year 1643, and formed a bond of union between Scotland and England. It was ſworn and ſubſcribed by many in both nations, who hereby ſolemnly abjured popery and prelacy, and combined together for their mutual defence. It was approved by the parliament and aſſembly at Weſtminſter, and ratified by the general aſſembly of Scotland in 1645. King Charles II. diſapproved of it when he ſurrendered himſelf to the Scots army in 1646: but in 1650 he declared his approbation both of this and the national *covenant* by a ſolemn oath; and in Auguſt of the ſame year, made a farther declaration at Dumfermling to the ſame purpoſe, which was alſo renewed on occaſion of his coronation at Scone in 1651. The *covenant* was ratified by parliament in this year, and the ſubſcription of it required by every member, without which the conſtitution of the parliament was declared null and void. It produced a ſeries of diſtractions in the ſubſequent hiſtory of that country, and was voted illegal by parliament, and proviſion made againſt it. Stat. 14 Car. II. c. 4.

Covenant, *Suit*. See **Suit**.

Covenant, *Ark of the*. See **Ark**.

COVENTRY *bells*. See **Campanula**.

COVERED *Flank*, *Fountain*, *Medals*. See **Flank**, **Fountain**, **Medal**.

COVERING, in *Architecture*, one of the principal parts of a building. See **Roofing**.

Covering, in *Painting*. See **Body**.

CO-VERSED *ſine*, a term which ſome people uſe for the remaining part of the diameter of a circle, after the **versed sine** is taken from it.

COVERT, in *Law*.—*Feme* **Covert** denotes a woman married, and ſo *covered* by, or under the protection of, her huſband.

Covert-*way*, in *Fortification*, a ſpace of ground level with the adjoining country, on the edge of the ditch, ranging quite round the half-moons, and other works withoutſide the ditch. See *Tab. Fortification, fig.* 21. *lit. b b, &c.*

It is otherwiſe called *corridor*, and hath a parapet together with its banquette, and glacis, which form the height of the parapet.

One of the greateſt difficulties in a ſiege, is to make a lodgment on the *covert-way*; becauſe, uſually, the beſieged paliſade it along the middle, and undermine it on all ſides.

This is ſometimes alſo called the *counterſcarp*, becauſe it is on the edge of the ſcarp.

COVERTURE, in *Law*, is particularly applied to the ſtate and condition of a married woman; who, by the laws of our realm, is under *covert-baron*, or *ſub poteſtate viri*, and called a *feme covert*; and therefore diſabled to make bargains with any, to the prejudice of herſelf, or her huſband, without his conſent or privity; or at leaſt without his allowance and confirmation: and if the huſband alien the wife's lands, during the marriage, ſhe cannot gainſay it during his life.

By the law of England, *coverture*, in ſome caſes, will excuſe the woman from the pains of felony, &c. See Feme *covert.*

COUGH, in *Medicine*, a diſeaſe affecting the LUNGS, occaſioned by a ſharp ſerous humour, vellicating the fibrous coat thereof, and urging it to a diſcharge by ſpitting, &c.

Medical writers define a *cough* to be a diſcuſſory and eliſory motion of the breaſt, by means of which nature attempts to throw off ſomewhat that is offenſive to her.

Phyſicians diſtinguiſh *coughs* into the idiopathic and the ſymptomatic: the firſt is truly pectoral; the other only affects the breaſt, by means of the conſent of parts. Of the ſymptomatic, or, as ſome expreſs themſelves, the conſenſual *coughs*, ſome have a catarrhal diſpoſition, and have a coryza for their origin or attendant, or, more ſtrictly ſpeaking, a gravedo; ſometimes a bronchus, hoarſeneſs, and inflammation of the tonſils; others are called hypochondriacal, which ſometimes ariſe from diſorders of the ſtomach, and are therefore called dry ſtomachic *coughs*; and ſometimes from ſchirrhoſities of the liver, whence they are common to people in cachexies, and in hectics and dropſies.

A *cough*, which ariſes from internal cauſes, is to be carefully diſtinguiſhed from one that riſes from external. The dry and the moiſt *cough*, that is, thoſe in which matter is ſpit up, and thoſe in which nothing is evacuated, differ alſo greatly, as well in regard to their ſymptoms, as to the perſons they attack. The dry *cough* is always more tedious to cure than the moiſt, and more eaſily returns. The ſtomachic *cough*, which is owing to conſent of parts, is known by the quantity and thickneſs of the matter that is ſpit up, which is always moſt frequent after meals, and gives a tendency toward a reaching to vomit. This moiſt ſtomachic *cough* differs in this manner, in all particulars, from the dry *cough* of the ſame name and origin with it, as mentioned before.

The hypochondriac *cough* is abundantly diſtinguiſhed from the other kinds, by its dryneſs, and by its vehement violence, for it always leaves a hoarſeneſs behind it; it is always moſt violent after eating, and after drinking large draughts of cold liquors, or aſcending ſteep places: As alſo by its bearing very well a cold and humid air, and not being exaſperated by it, as the pectoral *coughs* are; and finally, by a ſenſation of a concuſſion of the diaphragm, when the effects in coughing are violent.

The common habitual dry *cough* is diſtinguiſhed from the other kinds by its remarkable dryneſs; and the common moiſt habitual *cough* by its abundant quantity of matter diſcharged, and by its appearing pulpy and greeniſh, and not ſanious, or ſtreaked with blood, and continuing in the ſame degree uſually for a conſiderable time. In this habitual *cough* there is no waſting of the fleſh, nor is there that violent exacerbation on the taking of opiates, which is always found in the phthiſical *coughs*, to which all opiates ſeem the greateſt enemies. This *cough* alſo always receives great benefit from purging medicines, but the phthiſical *cough* none at all: but both theſe differ greatly, according to the age and temperament of the body of the perſon afflicted with them.

Perſons ſubject to coughs. The ſimple idiopathic *cough*, ariſing from internal cauſes, whether it be of the moiſt or dry kind, is almoſt peculiar to young people, and thoſe of plethoric habits. The catarrhal ſymptomatic *cough*, which ariſes from external accidents, is common to perſons of all ſtates and ages; but is more frequent among old men than among others. The perſons moſt ſubject to the common dry *cough*, are young people of a florid conſtitution and dry habit of body; and men of the middle or more advanced ages are ſometimes alſo afflicted with it, from ſuppreſſions of the hæmorrhoidal diſcharges, or from omiſſion of habitual bleedings; as are alſo people who are badly conformed, gibboſe or crooked, and ſuch as are afflicted with the evil, or have calculi in the bronchia, or nodes of a ſchirrhous nature in the lungs; and finally, ſuch as have been ill treated in the ſmall-pox, or have had the itch, or any other violent cutaneous eruption ſtruck in upon them. People moſt ſubject to a common moiſt *cough*, are thoſe of a phlegmatic habit, ſuch as are apt to cool their neck and breaſt in autumn in damp cold air in evenings; ſuch as have omitted their habitual bleedings, and ſuch as have drank too freely of ſpirituous liquors, or taken too much of acids. The idiopathic pectoral *cough* ariſes from a congeſtion of humours in the breaſt; and the hypochondriac *cough* is either owing to a fault in the ſtomach, or to a ſchirrhoſity in the liver.

Prognoſtics in coughs. The ſimple idiopathic pectoral *cough* very frequently goes off of itſelf, without the aſſiſtance of medicines, or with no farther aſſiſtance to nature than bleeding, judiciouſly managed; but though thus gentle while recent, yet when it is become habitual, and fixed upon a perſon, it is very obſtinate; and though at firſt it is far from a conſumptive *cough*, yet there is no certainty but that it may, at ſome time or other, occaſion ulcerations in the lungs. A dry *cough* in young people is much to be feared, when of long ſtanding; for it not unfrequently degenerates into a ſpitting of blood, or into a conſumption: this kind ſometimes alſo changes into what authors call the *ferine cough*, which is ſo violent, that perſons afflicted with it are ſcarce able to recover themſelves after a fit of it. In general, any *cough* that ſeizes a perſon in the ſpring, is much eaſier cured than one that attacks in autumn. Periodic *coughs*, that have been long uſed to return upon people at certain times, are always to be ſuſpected of danger, if they leave them ſuddenly, and no natural or artificial evacuation is made in their place; for they too often bring on faults in digeſtion, and ſometimes ſuffocative catarrhs, and paralytic diſorders. A moiſt habitual *cough*, when it ſuddenly changes into a dry one, is alſo a bad prognoſtic. A violent dry hypochondriac *cough*, that frequently remits and recurs again, and is uſually worſt in the night, gives great reaſon to ſuſpect a ſchirrhoſity in the liver; and the more regularly it returns at ſtated times, the more certain is the defect of this or ſome other of the viſcera; ſo that the prognoſtic is very fatal and very certain from it.

Method of cure. In caſe of a moiſt pectoral *cough*, it is proper firſt to give a purge, not violent, but yet moderately ſtrong, to derive the matter from the breaſt; and the catarrhal matter muſt then be prepared for evacuation. When it is ſimply mucous, the common reſolvent and diſcutient catarrhal medicines are to be depended upon; ſuch are decoctions of the roots of pimpernel and iris, with the leaves of hyſſop, horehound, ſcabious, and ſpeedwell; with theſe are to be given the attenuant gums, as ammoniacum, benjamin, and ſagapenum, with the warm carminative ſeeds. When the matter is too tough and viſcous, the buſineſs then is, on the contrary, to incraſſate and reduce it to a ſoft pulpoſe body. This is effected by liquorice-root or juice, with gum Arabic, figs, ſtarch, together with all the ſulphureous medicines. If, on the contrary, the matter is thin and acrimonious, and irritates violently, then the cure is to be effected by ſuch things as obtund and ſweeten it; of this kind are emulſions of almonds, and the cold ſeeds, with barley-water, water-gruel, the mucilages of quince and fleawort ſeeds, and the like; and to theſe are to be added occaſionally, ſpermaceti, and oil of ſweet almonds. When the *cough* is habitual, laxatives are to be given after theſe, or in the intermediate times, during the taking them; and if the *cough* returns, when the matter of it is no longer the cauſe, it is to be quieted by gentle opiates, ſuch as the ſtorax pill; and finally, corroborants are to be given to reſtore the due tone of the lungs.

In the dry *cough*, the gentleſt purges only can properly have place, and nothing is ſo proper as to begin with ſmall doſes of rhubarb; after this, to diſcuſs the ſtagnating blood about the breaſt, decoctions of the pectoral herbs are to be taken in large quantity, ſuch as coltsfoot, ſcabious, maiden-hair, and the like. While the patient is taking theſe, he ſhould frequently waſh his feet in warm water; and finally, the cure is to be completed by ſuch corroborants as reſtore the due tone of the lungs; of this kind Stahl's tonico-nervine mixture is a very excellent medicine.

In the hypochondriacal *cough*, as there is generally a fault in the liver, the *cough* can never be cured, unleſs that defect can be removed The *cough* is therefore to be judged, in this caſe, only a ſymptom of the diſeaſe, and the method of treatment muſt be the ſame as in the infarctions of the liver. See Hepatis *infarctus.*

When this obſtruction is removed, the *cough*, occaſioned by it, goes off of itſelf. In caſes where the hypochondriac *cough* depends on a fault in the ſtomach, the firſt conſideration to be had, is, whether it be dry or moiſt: when it is dry, we may conclude that the fault is not ſo much in the ſtomach, as in the parts about it; and hence the motion of the congeſtions of blood toward the *vena porta* is to be regarded.

The moiſt ſtomachic *cough* always brings the breaſt into conſent, and is hence often called a *ſtomachico-pectoral cough*; for the mucous matter which lies in the fauces, and is daily evacuated rather by hawking than coughing, probably aſcends up the *æſophagus*, and cauſes a ſlight *cough* in the day-time; but in the night, when that excretion ceaſes, it is eaſy for ſome little humidity to ſlip down the *aſpera arteria*, and this will be again thrown up by coughing in the morning. In the cure of this, there muſt be firſt given ſome gentle purges; after theſe, ſuch medicines as reſolve viſcoſities in their firſt formation;

in which intention the roots of elecampane and pimpernel, with that of Florentine orrice, are of great effect; and in the food it will be proper to eat large quantities of ginger, pepper, and the other ſpices; and at night, going to bed, drink a ſmall glaſs of brandy. When the diſeaſe begins to mitigate, the eſſence of amber is a medicine that will do the greateſt ſervice.

Bleedings in *coughs* in general, when the conſtitution is plethoric, and they are done at proper times, are of great ſervice in breaking the force of the diſeaſe; nay, in caſes of a true phthiſis, bleeding often greatly retards, and keeps off the bad ſymptoms. It is to be obſerved, however, in all theſe caſes, that, when the conſtitution will bear it, the quantity taken away ſhould be large, for otherwiſe they only invite a larger afflux of blood to the breaſt, and ſo increaſe inſtead of mitigating the force of the diſeaſe.

Bleeding is always more neceſſary in a dry *cough* than in a moiſt one, unleſs the ſuppreſſion of ſome natural hæmorrhage, or the omiſſion of the habitual bleedings, have been the occaſion of it. Bleeding is alſo the more neceſſary in *coughs*, as they return at times with renewed violence, and hurt the breaſt and lungs; and in this caſe alſo, if cupping has been frequently uſed, and lately omitted, it muſt be had recourſe to again. Purging medicines have the moſt ſpeedy effects in moiſt *coughs*, and indeed in dry ones they are not always ſafe, or, at the moſt, very gentle purgations alone are proper in this laſt caſe, where there is not a load of attending matter to be evacuated, as in the firſt. Sweating medicines are by ſome preſcribed in *coughs*; but they have no proper place in any judicious regimen for theſe caſes, unleſs after the *cough* is cured, and the matter carried off, when they may perhaps be of ſome ſervice to complete the reſtoration of the conſtitution to its priſtine ſtate, by an equal diſtribution of the humours through the whole body. In ſimple *coughs* there is occaſion for very few medicines, and, in general, inciding things, which diſpoſe the matter to an eaſy evacuation, with gentle laxatives, do the whole buſineſs

The commotions occaſioned by humid *coughs* are never extremely violent, nor of any great danger, and therefore it is not neceſſary to be at any great pains to allay them by opiates; but theſe are very ſucceſsfully given in caſes where the emotions are greatly too violent for the quantity of matter, or where they continue after the matter is carried off and evacuated. In this caſe the ſtorax pill is of great ſervice. Juncker.

The method often followed in the convulſive *cough* is by evacuations; but this has been obſerved rather to prevent the diſeaſe from becoming fatal than to ſhorten it, ſuch *coughs* continuing ſeveral months notwithſtanding. However, a remiſſion for ſome days happens after bleeding and purging, eſpecially when the purgatives work upwards as well as downwards. Pectorals, balſamics, and attenuants, have been ſometimes found to do little or no good, and opiates rather to do hurt.

Cough, *in infants*. See Infant.

Cough, in *Farriery*, is a diſeaſe to which horſes are very ſubject. Some of theſe are ſymptomatic of a consumption, when they have been of long continuance, and are attended with loſs of appetite, waſting of fleſh, and weakneſs. Other *coughs* proceed from phlegm and ſlimy matter that ſtuff up the veſſels of the lungs: in this caſe, which is of the aſthmatic kind, the horſe's flanks have a quick motion; he breathes quick; his *cough* is ſometimes dry and huſky, ſometimes moiſt, before which he wheezes, rattles in the throat, and throws out of his noſe and mouth a quantity of white phlegm, eſpecially after drinking, or when he begins or ends his exerciſe. Theſe *coughs* ſhould be diſtinguiſhed from that thickneſs of wind, which is occaſioned by full or foul feeding, want of exerciſe, or their being taken up from winter's graſs. Theſe are eaſily cured by proper diet and exerciſe: and the other diſorder may be relieved, and totally cured if it happens to a young horſe, and is not of long continuance, by the following treatment. Bleeding ſhould be uſed, in proportion to the ſtate of the horſe with reſpect to fleſh: mercurial medicines are of great ſervice: a mercurial ball with two drams of calomel may be given at night, and a common purge in the morning; or the following, which is recommended by Mr. Gibſon: take gum galbanum, ammoniacum, and aſſa fœtida, of each two drams; fine aloes, one ounce; ſaffron, one dram; oil of aniſeed, two drams; oil of amber, one dram; with honey enough to form the whole into a ball. Theſe may be repeated at proper intervals; and during the intervals, and for ſome time after, one of the following balls may be given every morning: take cinnabar of antimony, finely levigated, ſix ounces; gum ammoniacum, galbanum, and aſſa fœtida, of each two ounces; garlic, four ounces; ſaffron, half an ounce; let the whole be mixed into a paſte with honey. Exerciſe and moderate diet are alſo eſſential to the effect of any remedy. In dry *coughs*, which are the nervous aſthmas of horſes, moderate bleeding is proper; two drams of calomel, mixed with an ounce of diapente, may be given for two nights, and a purging-ball in the morning. This purge may be repeated with one mercurial ball once in eight or ten days; after which one of the following balls, about the ſize of a pigeon's egg, may be taken every day for two months or longer: take native cinnabar, half a pound; gum guaiacum, four ounces; myrrh, and gum ammoniacum, of each two ounces; Venice ſoap, half a pound; mix the whole with honey, or oxymel of ſquills. In obſtinate dry *coughs*, the following has been found an uſeful remedy: take gum ammoniacum, ſquills, and Venice ſoap, of each four ounces; balſam of ſulphur, with aniſeeds, one ounce; beat them into a maſs, and give them as the former. Young horſes are ſubject to *coughs* in cutting their teeth; bleeding and warm maſhes are generally ſufficient for removing this complaint: but in ſuch ſubjects the *cough* often proceeds from worms; if this be the caſe, anthelmintic medicines ſhould be given. See Ascarides, and Horse-*worms*.

Cough, *Chin*. See Chin-*cough*.

Cough, called the huſk, is a diſeaſe to which young bullocks are ſubject. In this diſorder, the wind-pipe and its branches are loaded with ſmall taper worms. Farmers count the diſeaſe incurable; but fumigations with mercurials, as cinnabar, or with fœtids, as tobacco, might prove ſerviceable. Phil. Tranſ. vol. xlix. part ii. p. 247.

COUHAGE, or *ſtinking-beans*; theſe are a kind of kidney-beans imported from the Eaſt Indies, where they are uſed as a cure for the dropſy.

The down growing on the outſide of the pod is ſo pointed, as like a nettle to ſting the fleſh, though not with ſo painful a ſenſation. This, by a corruption of the word, is called *cowitch*.

COVIN, a deceitful compact, or agreement between two or more, to deceive or prejudice a third perſon.

As, if a tenant for life conſpire with another, that this other ſhall recover the land which the tenant holds, in prejudice of him in reverſion.

Dr. Skinner takes the word to be a corruption of the Latin *conventum*, and therefore writes it *coven*. See Conspiracy.

COVING, in *Building*. When houſes are built projecting over the ground plot, and the turned projecture arched with timber, lathed and plaſtered; the work is called *coving*.

Coving *corniche*, is a corniche with a great caſement, or hollow therein.

COVINUS, among the *Ancients*, a kind of chariot, in which the Gauls and Britons uſed to fight in battles.

COUL, or Cowl, a ſort of monkiſh habit worn by the Bernardines, and Benedictines.

The word is formed from *cucullus*, by confounding the two firſt ſyllables into one, as being the ſame twice repeated.

There are two kinds of *couls*; the one white, very large, worn in ceremony, and when they aſſiſt at the office: the other black, worn on ordinary occaſions, in the ſtreets, &c.

F. Mabillon maintains the *coul* to be the ſame thing in its origin with the ſcapular. The author of the apology of the emperor Henry IV. diſtinguiſhes two forms of *couls*; the one a gown reaching to the feet, having ſleeves, and a capuchin, uſed in ceremonies; the other a kind of hood to work in, called alſo a *ſcapular*, becauſe it only covers the head and ſhoulders.

COULTER, in *Huſbandry*, that part of a plough which forms the edge, ſtanding before the ſhare of the plough, and cutting the clods as the ſhare tears them up. The *coulter* is an iron inſtrument of two feet eight inches in length, of near two inches breadth, and near one inch thick. It is driven through the beam of the plough, and fixed in its proper direction by a wedge.

The modern improvement of the plough by Mr. Tull, gives it four *coulters*; the conſequence of which is, that the earth ploughed up is cut four times as ſmall as by the common plough, which has only one.

In all *coulters*, the length and direction are to be nicely regulated. The cutting the hole and driving the wedge, regulate the direction; and its length is altered from the beam by the driving it farther down, as its point wears away.

None of theſe *coulters* ought to deſcend ſo low as the ſhare, except when the land is to be ploughed very ſhallow; it is always ſufficient for them to cut through the turf, let the plough go as deep as it will. In ploughing ſhallow, the fin of the ſhare muſt alſo be broad enough to cut off the fourth piece or furrow; elſe that lying very faſt, will be apt to raiſe up the groundwriſt, and throw out the plough: but when the land is ploughed deeper, the groundwriſt will break off this fourth furrow, though the fin be not broad enough to reach it. Tull's Huſbandry.

Coulter-*neb*, or **Counter**-*neb*, in *Zoology*, a name by which the people in ſome parts of England call the *anas arctica cluſii*. See Duck.

COUNCIL, or Counsel, an aſſembly, or meeting of divers conſiderable perſons, or officers, to conſider and concert meaſures touching the adminiſtration of public affairs, rendering juſtice, or the like.

The king's *privy-council* is the primum mobile of the civil government of England; and that from which all the inferior orbs derive their motion. See Privy-*council*.

In the French polity, *councils* are very numerous; they have their *council of ſtate, council of the finances, council of diſpatches, council of directions, grand council, council of the regency, council of conſcience, &c.*

Council, *Aulic*. See Aulic.

Council, in *Church Hiſtory* and *Polity*, a ſynod or aſſembly of prelates and doctors, and deputies, met for the regulation of matters relating to the doctrine or diſcipline of the church. *Councils* of this kind were firſt introduced about the middle of the ſecond century.

Council, *Provincial*, is an aſſembly of the prelates of a province under the metropolitan. See Convocation.

Council, *National*, is an aſſembly of the prelates of a nation, under their primate, or patriarch.

Council, *Oecumenical* or *general*, is an aſſembly of all the prelates of Chriſtendom, or of commiſſioners from all the churches in the Chriſtian world, and repreſenting the church univerſal. Theſe were eſtabliſhed by Conſtantine the Great, who aſſembled the firſt at Nice in 325. See Oecumenical.

Indeed to conſtitute a *general council*, it is not required, that all the prelates ſhould be actually preſent; it is ſufficient, that the *council* be regularly appointed, and that they may be there, or are called thereto.

General councils are frequently called by eccleſiaſtical authors *plenary councils*. The Romaniſts reckon eighteen *general councils*: whereof only the firſt four are admitted by the reformed. The number is made out thus: two of Nice, four of Conſtantinople, one of Epheſus, one of Chalcedon, five of the Lateran, two of Lyons, one of Vienne, one of Florence, and the laſt of Trent, which held from 1545 to 1563. The *council* of Trent ordains *provincial councils* to be held every three years; yet the laſt held in France is that of Bourdeaux, a hundred years ago.

There have been various collections of the canons or decrees of *councils*; as that of Dr. Merlin at Paris in 1524; one of F. Crabbe, a Franciſcan, in 1536; another of Surius, in 1567; another at Venice, in 1585; another at Rome, in 1608; one of Binius, canon of Cologne, in 1606, in ten volumes; another at the Louvre, in 1664, in thirty-ſeven volumes; another of F. Labbé and F. Coſſart, Jeſuits, in 1672, in ſeventeen volumes, more ample than the reſt; laſtly, another by F. Hardouin. See Canon.

Council *of war*, is an aſſembly of the principal officers of an army, or fleet, occaſionally called by the general, or admiral, to conſider of the preſent ſtate of things, and concert meaſures for their conduct, with regard to ſieges, retreats, engagements, &c.

The ſame term is ſometimes alſo uſed for an aſſembly of the officers of a regiment, or ſhip; met to try ſoldiers or ſailors accuſed of any crime.

Council, *Common*. See *Mayor's* Courts.

Council *and Seſſion in Scotland*. See Sessions.

COUNSELLOR, *Conſiliarius*, in *Law*, is a perſon retained by a client to plead his cauſe in a court of judicature. A *counſellor* at law hath a privilege to enforce any thing of which he is informed by his client, if pertinent to the matter, and is not to examine whether it be true or falſe; for it is at the peril of him who informs him. Cro. Jac. 90. But after the court hath delivered their opinions of the matter in law depending before them, the *counſel* at the bar are not to urge any thing farther in that cauſe. 1 Lill. Abr. 355. It has been held that the king's *counſel* ought not to be admitted to argue any cauſe againſt the king; though this was oppoſed by Serjeant Maynard. Hill. 21 Car. II. 1 Mod. 38.

No *counſel* is allowed a priſoner upon a general iſſue, on indictment of felony, &c. unleſs ſome doubtful point of law ariſe; the court is the priſoner's only *counſel*; and the behaviour of the priſoner in his own defence, is one means of diſcovering the truth: but this ſeems to be a defect in our common law. Blackſt. Com. vol. iv. p. 349. In appeals and upon ſpecial pleadings, the priſoner ſhall have *counſel* aſſigned him by the court: though *counſel* is not to prompt the priſoner in matters of fact. 2 Hawk. 400, 401. Proviſion is made for *counſel* for priſoners in treaſon, by ſtat. 7 and 8 W. III. See Barristers and Serjeants.

Counsellors *of Honour*. See Honour.

COUNT, Countee, Comes, a nobleman who poſſeſſes a domain erected into a county. See Viscount.

Engliſh *counts* we diſtinguiſh by the title of *earls*; foreign ones ſtill retain their proper name.

The dignity of a *count* is a medium between that of a duke and a baron.

According to the modern uſe, moſt plenipotentiaries and embaſſadors aſſume the title of *counts*; though they have no county; as the *count d'Avaux*, &c.

Anciently, all generals, counſellors, judges, and ſecretaries of cities under Charlemagne were called *counts*; the diſtinguiſhing character of a duke and *count* being this, that the latter had but one town under him, but the former ſeveral.

A *count* has a right to bear on his arms a coronet, adorned with three precious ſtones, and ſurmounted with three large pearls, whereof thoſe in the middle and extremities of the coronet advance above the reſt.

Counts were originally lords of the court, or of the emperor's retinue, and had their name *comites, à comitando*, or *à commeando*: hence, thoſe who were always in the palace, or at the emperor's ſide, were called *counts palatine*, or *comites à latere*. See Palatine.—In the times of the commonwealth, *comites*, among the Romans, was a general name for all thoſe who accompanied the proconſuls and proprætors into the provinces, there to ſerve the commonwealth; as the tribunes, præfects, ſcribes, &c.

Under the emperors, *comites* were the officers of the palace. The origin of what we now call *counts* ſeems owing to Auguſtus, who took ſeveral ſenators to be his *comites*, as Dion obſerves, i. e. to accompany him in his voyages and travels, and to aſſiſt him in the hearing of cauſes; which were thus judged with the ſame authority as in full ſenate. Gallienus ſeems to have aboliſhed this council, by forbidding the ſenators being found in the armies: and none of his ſucceſſors re-eſtabliſhed it.

Theſe counſellors of the emperor were really *counts, comites*, i. e. companions of the prince; and they ſometimes took the title thereof, but always with the addition of the emperor's name whom they accompanied: ſo that it was rather a mark of their office, than a title of dignity.

Conſtantine was the firſt who converted it into a dignity; and under him it was, that the name was firſt given abſolutely.

The name once eſtabliſhed, was in a little time indifferently conferred, not only on thoſe who followed the court, and accompanied the emperor, but alſo on moſt kinds of officers; a long liſt whereof is given us by Du-Cange.

Euſebius tells us, that Conſtantine divided the *counts* into three claſſes: the firſt bore the title of *illuſtres*; the ſecond that of *clariſſimi*, and afterwards *ſpectabiles*; the third were called *perfectiſſimi*.

Of the two firſt claſſes was the ſenate compoſed; thoſe of the third had no place in the ſenate, but enjoyed ſeveral other of the privileges of ſenators.

There were *counts* who ſerved on land, others at ſea; ſome in a civil, ſome in a religious, and ſome in a legal capacity: as, *comes ærarii, comes ſacrarum largitionum, comes ſacri conſiſtorii, comes curiæ, comes capellæ, comes archiatrorum, comes commerciorum, comes veſtiarius, comes horreorum, comes opſoniorum* or *annonæ, comes domeſticorum, comes equorum regiorum* or *comes ſtabuli, comes domorum, comes excubitorum, comes notariorum, comes legum* or *profeſſor in jure, comes limitum* or *marcarum, comes portus Romæ, comes patrimonii, &c.*

The Francs, Germans, &c. paſſing into Gaul and Germany, did not aboliſh the form of the Roman government; and as the governors of cities and provinces were called *counts, comites*, and *dukes, duces*, they continued to be called ſo.

Theſe governors commanded in time of war; and in time of peace they adminiſtered juſtice. Thus, in the time of Charlemagne, *counts* were the ordinary judges and governors of the cities.

Theſe *counts* of cities were beneath the dukes and *counts* who preſided over provinces; the firſt being conſtituted in the particular cities under the juriſdiction of the latter. The *counts* of provinces were in nothing inferior to dukes, who themſelves were only governors of provinces. Under the laſt of the ſecond race of French kings, they got their dignity rendered hereditary; and even uſurped the ſovereignty when Hugh Capet came to the crown: his authority was not ſufficient to oppoſe their encroachments: and hence it is they date the privilege of wearing coronets in their arms; they aſſumed it then, as enjoying the rights of ſovereigns in their particular diſtricts, or *counties*. But, by degrees, moſt of the *counties* became re-united to the crown.

The quality of *count* is now become very different from what it was anciently; being now no more than a title, which a king grants upon erecting a territory into a county, with a reſerve of juriſdiction and ſovereignty to himſelf.

At firſt, there was no clauſe in the patent of erection, intimating the reverſion of the county to the crown in default of heirs male; but Charles IX. to prevent their being too numerous, ordained that duchies and counties, in default of heirs male, ſhould return to the crown.

The point of precedence between *counts* and marquiſes has been formerly much controverted: the reaſon was, that there are *counts* who are peers of France, but no marquiſes: but the point is now given up, and marquiſes take place; though anciently, when *counts* were governors of provinces, they were on a level even with dukes.

William the Conqueror, as is obſerved by Camden, gave the dignity of *counts* in fee to his nobles; annexing it to this or that county or province, and allotting for their maintenance a certain proportion of money, ariſing from the prince's profits in the pleadings and forfeitures of the provinces. To this purpoſe he quotes an ancient record, thus: Hen. II. *Rex Angliæ his verbis* comitem *creavit*; *ſciatis nos feciſſe Hugonem Bigot* comitem *de Norf. &c. de tertio denarii de Norwich & Norfolk*, *ſicut aliquis* comes *Angliæ*, *&c.*

The Germans call a *count*, *graf*, or *graff*; which, according to a modern critic, properly ſignifies *judge*; and is derived from *gravio*, or *graffio*, of γραφω, *I write*. They have ſeveral kinds of theſe *counts*, or *graffs*; as *landgraves*, *marchgraves*, *burg-graves*, and *palſgraves*, or *counts palatine*. Theſe laſt are of two kinds; the former are of the number of princes, and have the inveſtiture of a palatinate; the others have only the title of *count palatine*, without the inveſtiture of any palatinate.

Some aſſert, that by publicly profeſſing the imperial laws for twenty years, the perſon acquires the dignity of a *count palatine*; and there are inſtances of profeſſors in law, who have aſſumed the title accordingly: but there are others who queſtion this right.

Count, in *Law*, denotes the original declaration in a real action; as the declaration is in a perſonal one: the libellus of the civilians anſwers to both.

Yet, *count* and declaration are ſometimes confounded; and uſed for each other: as, *count in debt*, *count in appeal*, &c.

Count-wheel, in *Clock-Work*, a wheel which moves round in twelve hours; called alſo the *locking-wheel*. See Clock.

COUNTER, from *computare*, is the name of two priſons in London, for the uſe of the city, to confine debtors, breakers of the peace, &c.

Counters, in *Ship-Building*, are diſtinguiſhed into *upper* and *lower*. The *upper counter* is reckoned from the gallery to the lower part of the ſtraight piece of the ſtern. The *lower counter* is between the tranſom and lower part of the gallery.

Counter *of a horſe*, that part of a horſe's fore-hand which lies between the ſhoulders and under the neck.

Counter, of the Latin prepoſition *contra*, *againſt*, is uſed in the compoſition of divers words in our language; and generally implies the relation of oppoſition. As,

COUNTER-ALLEYS, in *Gardening*. See Alley.

COUNTER-APPROACHES, in *Fortification*, lines or trenches made by the beſieged, when they come out to attack the lines of the beſiegers in form.

Counter-approach, *line of*, a trench which the beſieged make from their covered-way to the right and left of the attacks, in order to ſcour or enfilade the enemy's works. It ſhould commence in the angle of the place of arms of the half-moon that is not attacked, and of the baſtion that is attacked; about fifty or ſixty fathoms from the attacks; and continued as far as ſhall be found neceſſary in order to ſee the enemy in his trenches and parallels. This line muſt be perfectly enfiladed from the covered-way and the half-moon, that if the enemy get poſſeſſion of it, it may be of no ſervice to him. In this line the governor muſt frequently in the night-time ſend ſmall parties of horſe, or foot, to drive the workmen from their poſts; and, if poſſible, to carry off the engineers, who have the direction of the works.

COUNTER-BARRY, or Contre-barre', is uſed by the French heralds for what we more ordinarily call *bendy ſiniſter per bend counterchanged*. See Barry.

COUNTER-BATTERY, a battery raiſed to play on another, in order to diſmount the guns.

COUNTER-BENDY, or Contre-bande', in *Heraldry*, is uſed by the French to expreſs what we ordinarily call bendy *of ſix per bend ſiniſter counterchanged*.

COUNTER-BOND, is a bond given to ſave a perſon harmleſs, who has given his bond for another. This is alſo called *counter-ſecurity*.

COUNTER-BRACING. See Tacking.

COUNTER-BREAST-WORK in *Fortification*, a fausse-braye.

COUNTER-CHANGE, in *Commerce*, a mutual exchange between two parties.

COUNTER-CHANGED, in *Heraldry*, is when there is a mutual changing of the colours of the field and charge in an eſcutcheon, by means of one or more lines of partition. Thus, in the coat of the famous Chaucer: he beareth, party per pale argent and gules, a bend *counter-changed*; that is, that part of the bend, which is in that ſide of the eſcutcheon which is argent, is gules; and that part of it which is on the other, is argent. Vide *Tab.* II. *Heraldry*, *fig.* 50.

COUNTER-CHARGE, is a reciprocal charge, or recrimination brought againſt an accuſer.

COUNTER-CHARM, a charm or spell, contrived to hinder the effect of another. See Ligature.

COUNTER-CHEVRONED, denotes a ſhield *chevronny*, or parted by ſome line of partition.

COUNTER-COLOURED. See Contrebend.

COUNTER-COMPONED, or Contre-compone', or Counter-company, is when a bordure is compounded of two ranks of panes: as repreſented in *Tab. Heraldry*, *fig.* 51. When it conſiſts but of one rank, it is called *componed*; and when of more than two, checky.

COUNTER-DEED, a ſecret writing, or a private act, either before a notary, or under a privy-ſeal; which deſtroys, changes, annuls, or alters, ſome more ſolemn and public act.

Counter-deeds are rather tolerated than permitted: in many caſes they are actually prohibited; as being uſually no better than frauds. The cuſtom of Paris annuls all *counter-deeds*, contrary to the tenor of a marriage.

COUNTER-DRAWING, in *Painting*, *&c.* the copying a deſign or painting, by means of a fine linen cloth, an oiled paper, or other tranſparent matter; whereon the ſtrokes appearing through, are followed and traced with a pencil, with or without colour.

Sometimes they *counter-draw* on glaſs, and with frames or nets divided into ſquares, with ſilk, or with thread; and alſo by means of inſtruments invented for the purpoſe, as the parallelogram. See Designing.

COUNTER-ERMINE. See Ermine.

COUNTERFEIT *Architecture*. See Architecture.

COUNTERFEITING *the King's Coin and Seals*. See Treason.

COUNTERFEITS, in *Law*. See Cheats.

COUNTER-FISSURE. See Contrafissure.

COUNTER-FOIL, or Counter-stock, is that part of a tally, ſtruck in the exchequer, which is kept by an officer of the court.

COUNTER-FORTS, *Buttreſſes*, or *Spurs*, are pillars of maſonry, ſerving to prop or ſuſtain walls, or terraces, ſubject to bulge, or be thrown down.

Theſe works are uſually turned archwiſe, and placed at a diſtance from each other, which is uſually three times their thickneſs; and their length is one fourth of the height of the wall. Mr. Vauban places them at the ſame diſtance, whether the wall be high or low. See Muller's Mathem. vol. iv. p. 5, &c. who directs that their thickneſs ſhould never be leſs than half their length.

When any thing is built on the deſcent of a mountain, it muſt be ſtrengthened with *counter-forts* well bound to the wall, and at the diſtance of about twelve yards from each other.

COUNTER-FUGUE, in *Muſic*, is when fugues proceed contrary to one another.

COUNTER-GAGE, in *Carpentry*, a method uſed to meaſure the joints, by transferring, v. gr. the breadth of a mortiſe to the place in the timber where the tenon is to be, in order to make them fit each other.

COUNTER-GUARD, in *Fortification*, a work generally ſerving to cover a bastion. It is compoſed of two faces, forming a ſaliant angle before the flanked angle of a baſtion. Next to the ravelin, it is one of the moſt uſeful outworks. They are ſometimes made before the ravelins. See Envelope.

COUNTER-HARMONICAL. See Contra-harmonical.

COUNTER-INDICATION. See Contra-indication.

COUNTER-LIGHT, a window, or light, oppoſite to any thing, which makes it appear to a diſadvantage. A ſingle *counter-light* is ſufficient to take away all the beauty of a fine painting.

COUNTERMAND, in a general ſenſe, a revocation of an order; or an excuſe for ſetting aſide, or deferring, a thing ordered to be done.

By the French law, a *countermand* differs from an *eſſoin*, 1. In that, in the *countermand*, the conſignment is propoſed to be deferred to a day certain, which is not in the *eſſoin.* 2. In the *eſſoin*, the cauſe of deferring the conſignment is expreſſed, and affirmed to be true; but in a *countermand* that affirmation is not required.

Countermand, in the *Engliſh Law*, is where a thing, formerly executed, is afterward, by ſome act or ceremony, made void by the party that firſt did it.

As, if a man make his laſt will, and deviſe his land to T. S. and afterwards enfeoff another of the ſame land; this feoffment is a *countermand* of the will, and the will void as to the diſpoſition of the land.

COUNTER-MANDATE. See Contramandatum.

COUNTER-MARCH, in *War*, a change of the face, or wings, of a battalion; whereby the men, who were in the front, come to be in the rear.

This is an expedient they have recourſe to, when the enemy attacks their rear; or when they change their march for a direction oppoſite to that wherein they had begun.

The *counter-march* is either made by files, or ranks: by files, when the men in the front of the battalion go into the rear; by ranks, when the wings, or flanks, of the battalion change ground with one another.

The term is alſo uſed at ſea, for the like change or motion of a ſquadron of ſhips.

COUNTER-MARK, a ſecond or third mark, put on any thing marked before.

The word is applied, in commerce, to the ſeveral marks put on a bale of goods belonging to ſeveral merchants; that it may not be opened but in the preſence of them all, or their agents.

In goldſmiths' works, &c. the *counter-mark* is the mark, or punchion of the hall, or company, to ſhew the metal is ſtandard, added to that of the artificer who made it.

Counter-mark of a horſe, is an artificial cavity, which the jockeys make in the teeth of horſes that have out-grown the natural mark; to diſguiſe their age, and make them appear as if they were not above eight years old.

Counter-mark of a medal, is a mark added to a medal, a long time after its being ſtruck.

Counter-marks appear to be faults, or flaws, in medals, disfiguring the ground, ſometimes on the ſide of the head, and ſometimes on the reverſe; particularly in the large and middle-ſized braſs: yet they are eſteemed as beauties among the curious, who ſet a particular value on ſuch medals, becauſe they know the ſeveral changes in value they have undergone; which are expreſſed by thoſe *counter-marks*.

Antiquaries, however, are not well agreed about the ſignification of the characters they find on them. On ſome, N. PROB. on others, N. CAPR. on others, CASR. RM. NT. AUG. SC. Some have, for their *counter-mark*, an emperor's head; ſome ſeveral; ſome a cornucopia.

Care muſt be taken not to confound the monograms with the *counter-marks*: the method of diſtinguiſhing them is eaſy. The *counter-marks*, being ſtruck after the medal, are dented, or ſunk in; whereas the monograms, being ſtruck at the ſame time with the medals, have rather a little relievo.

COUNTER-MINE, in *War*, a ſubterraneous vault, running the whole length of a wall, three feet broad, and ſix deep, with ſeveral holes and apertures therein: contrived to prevent the effect of mines, in caſe the enemy ſhould make any to blow up the wall.

This kind of *counter-mine*, however, is now little in uſe. The modern *counter-mine* is a well, or pit, and a gallery, ſunk on purpoſe, till it meet the enemy's mine, and prevent its effect: it being firſt pretty well known whereabouts that is.

COUNTER-MURE, Counter-wall, a little wall built cloſe to another, to fortify and ſecure it, that it may not receive any damage from the buildings contiguous to it.

By the cuſtom of Paris, if a ſtable be erected againſt a partition-wall, there muſt be a *counter-wall* added, eight inches thick. M. Bullet obſerves, that the *counter-wall* ought never to be bound, or connected, with the proper wall.

Counter-mure, in *Fortification*. See Contra-mure.

COUNTER-PALED, Contre-pale, in *Heraldry*, is when the eſcutcheon is divided into twelve pales parted per feſſe, the two colours being counter-changed; ſo that the upper are of one colour, or metal, and the lower of another.

COUNTER-PART, a part of ſomething oppoſite to another part.

Thus, in *Muſic*, the baſs and treble are two *counter-parts*, or oppoſite parts.

Counter-part, in *Law*, is the duplicate, or copy, of an indenture, or deed. That executed by the grantor is called the original, the reſt are *counter-parts*; though it is better for all the parties to execute all, which renders them originals.

COUNTER-PASSANT, in *Heraldry*, is when two lions are in a coat of arms, and one appears to be paſſing, or walking, quite the contrary way from the other. See Passant.

COUNTER-PLEA, in *Law*, a replication to a plea, or prayer.

When a tenant by courteſy, in dower, or other real action, prays the view or aid of the king, or him in the reverſion, for his better defence; or if a ſtranger to the action begun deſire to be admitted to ſay what he can for the ſafeguard of his eſtate: that which the demandant alleges againſt this requeſt, why it ſhould not be admitted, is called a *counter-plea*.

COUNTER-PLOT, a plot, or intrigue, contrived to thwart and overthrow another.

COUNTER-POINT, in *Muſic*, the art of compoſing harmony; or of diſpoſing and concerting ſeveral parts ſo together, as that they make an agreeable whole.

Counter-point is divided into *ſimple*, and *figurative*; agreeably to the diviſion of harmony, into the harmony of concords, and that of diſcords.

Counter-point took its name hence: when muſic in parts was firſt introduced, their harmony being ſo ſimple, they uſed no notes of different time, and marked their conſonances by *points* ſet *againſt* each other. Hence, becauſe of the equality of the notes of time, the parts were made to concord in every note.

This afterwards became denominated *ſimple* and *plain counter-point*; to diſtinguiſh it from another kind, wherein notes of different value were uſed, and diſcords brought in betwixt the parts; which they call *figurative counter-point*.

Simple counter-point, or the harmony of concords, conſiſts of the imperfect as well as the perfect concords; and may therefore be denominated *perfect* or *imperfect*, according as the concords are, whereof it is compoſed: thus, the harmony ariſing from a conjunction of any note with its fifth and octave, is perfect; but with its third and ſixth, imperfect.

Now to diſpoſe the concords, or the natural notes, and their octaves, into any key, in *ſimple counter-point*; obſerve, with regard to the diſtinction into perfect and imperfect harmony, this general rule; viz. to the key *ſ*, to the fourth *ſ*, and to the fifth *ſ*, a perfect harmony muſt be joined; to the ſecond *ſ*, the third *ſ*, and ſeventh *ſ*, an imperfect harmony is indiſpenſible; to the ſixth *ſ*, either an imperfect or perfect harmony.

In the compoſition of two parts, obſerve, that though a third appears only in the treble on the key *ſ*, the fourth *ſ*, and the fifth *ſ*; yet the perfect harmony of the fifth is always ſuppoſed, and muſt be ſupplied in the accompanyments of the thorough baſs to theſe fundamental notes.

More particularly, in the compoſition of two parts, the rules are, that the KEY *ſ* may either have its octave, its third, or its fifth; the fourth *ſ*, and fifth *ſ*, may have either their reſpective thirds or fifths; and the firſt may have its ſixth; as, to favour a contrary motion, the laſt may have its octave.

The ſixth *ſ* may have either its third, its fifth, or its ſixth. The ſecond *ſ*, third *ſ*, and ſeventh *ſ*, may have either their reſpective thirds or ſixths; and the laſt, on many occaſions, its falſe fifth: which rules hold the ſame both in flat and ſharp keys. For the rules of *counter-point*, with regard to the ſucceſſion of concords, it muſt be obſerved, that as much as can be in parts, may proceed by a contrary motion; i.e. the baſs may aſcend when the treble deſcends, and *vice verſa*. The parts moving either upwards or downwards the ſame way; two octaves, or two fifths, never to follow one another immediately. Two ſixths *l* never to ſucceed each other immediately. Whenever the octave or fifth is to be made uſe of, the parts muſt proceed by a contrary motion, except the treble move into ſuch octave or fifth gradually. If in a ſharp key, the baſs deſcend gradually from the fifth *ſ* to the fourth *ſ*; the laſt, in that caſe, muſt never have its proper harmony applied to it: but the notes that were harmony in the preceding fifth *ſ*, muſt be continued on the fourth *ſ*. Thirds and fifths may follow one another as often as one has a mind.

Figurative counter-point is of two kinds: in the one, diſcords are introduced occaſionally; ſerving only as tranſitions from concord to concord: in the other, the diſcord bears a chief part in the harmony.

For the firſt, nothing but CONCORDS are ever to be uſed on the accented parts of the meaſure: in the unaccented parts, diſcords may paſs tranſiently, without any offence to the ear. This the French call *ſuppoſition*; becauſe the tranſient diſcord always ſuppoſes a concord immediately following it: which is of infinite ſervice in muſic.

For the ſecond, wherein the DISCORDS are uſed as a ſolid and ſubſtantial part of the harmony; the diſcords that have place are the fifth when joined with the ſixth, to which it ſtands in the relation of a diſcord: the fourth when joined with a fifth; the ninth, which is in effect the ſecond; the ſeventh; and the ſecond and fourth.

Theſe diſcords are introduced into the harmony with due preparation, and are to be ſucceeded by concords: which is commonly called the *reſolution of a diſcord.*

The diſcord is prepared by firſt ſubſiſting in the harmony in quality of a concord; i. e. the ſame note which becomes the diſcord, is firſt a concord to the baſe note immediately preceding that to which it is a diſcord. The diſcord is reſolved by being immediately ſucceeded by a concord deſcending from it by the diſtance only of ſecond *g*, or ſecond *l*.

As the diſcord makes a ſubſtantial part of the harmony, ſo it muſt always poſſeſs an accented part of the meaſure. Now to introduce the diſcords into HARMONY, it muſt be conſidered what concords may ſerve for their preparation and reſolution; the fifth, then, may be prepared, either by being an octave, ſixth, or third. It may be reſolved either into the ſixth or third. The fourth may be prepared in all the concords, and may be reſolved into the ſixth, third, or octave. The ninth may be prepared in all the concords except the octave; and may be reſolved into the ſixth, third, or octave. The ſeventh may be prepared in all the concords, and reſolved into the third, ſixth, or fifth. The ſecond and fourth are uſed very differently from the reſt; being prepared and reſolved into the baſs. See farther under CLEF, and MODULATION.

It has been a queſtion which has given birth to many learned diſquiſitions and diſputes, whether the ancients had *counter-point*, or muſic in parts. See an account of what has been advanced on both ſides, with the author's opinion on the negative, in Dr. Burney's General Hiſtory of Muſic, vol. i. ſect. 8. p. 112. 4to. 1776.

COUNTER-POINTED, by the French called *contre-pointé*, is when two chevrons in one eſcutcheon meet in the points; the one riſing, as uſual, from the baſe; and the other inverted, falling from the chief: ſo that they are *counter*, or oppoſite to one another in the points.

They may alſo be *counter-pointed* the other way; that is, when they are founded on the ſides of the ſhield, and the points meet that way; called *counter-pointed in feſſe.*

COUNTER-POISE, any thing ſerving to weigh againſt another; particularly a piece of metal, ordinarily of braſs or iron, making a part of the *ſtatera Romana*, or STEEL-YARD. It is contrived to ſlide along the beam; and from the diviſion in which it keeps the balance in equilibrio, the weight of the body is determined.

It is alſo, by ſome, called the *pear*, on account of its figure; and *maſs*, by reaſon of its weight. Rope-dancers uſe a pole by way of *counter-poiſe*, to keep their bodies in equilibrio.

Counter-poise, in the *Manege*, denotes the liberty of the action and ſeat of a horſeman; ſo that in all the horſe's motions he continues in the middle of the ſaddle, bearing equally on the ſtirrups.

COUNTER-POISON, an antidote, or remedy, which prevents the effect of a poiſon.

Of this kind are Venice treacle, mithridate, orvietan, &c. *Counter-poiſons* are either *general*, or *ſpecific*: to the general kind belong angelica, carduus benedictus, the vincetoxicum, dittany, ſcorzonera, citrons, bezoar, hartſhorn, &c. For ſpecifics, citron-bark is ſuppoſed a *counter-poiſon* to nux vomica; Venice treacle to the bite of a viper; oil of ſcorpion to the bite of ſcorpions; oil of pine-apples to orpiment; gentian to the cicuta, &c.

Vander Linden, in his treatiſe De Venenis, ſays, that in every putrid indiſpoſition, whether ariſing from the bite of venomous beaſts, or from an alcali formed by putrefaction, vinegar drank is ſovereign, either ſimple or diſtilled; either with honey in form of oxymel, or with ſquills.

COUNTER-POTENT, or *potent counter-potent*, by the French heralds called *contre-potence*, is reckoned a fur, as well as vair and ermine; but compoſed of ſuch pieces as repreſent the tops of crutches, called in French *potences*, and in old Engliſh *potents*. See VAIRY-*cuppy*.

COUNTER-PROOF, in *Rolling-Preſs Printing*, a print taken off from another freſh printed; which, by being paſſed through the preſs, gives the figure of the former, but inverted.

To *counter-prove*, is alſo to paſs a deſign in black lead, or red chalk, through the preſs, after having moiſtened with a ſponge, both that, and the paper on which the *counter-proof* is to be taken.

COUNTER-QUARTERED, by the French called *contre-eſcartelé*, denotes the eſcutcheon, after being quartered, to have each quarter divided again into two: ſo that there are in it eight quarters, or diviſions.

COUNTER-ROLL, a copy of the ROLLS relating to appeals, inqueſts, &c.

COUNTER-ROUND, a body of officers going to viſit, and inſpect the rounds.

COUNTER-SALIENT, is when two beaſts are borne in a coat of arms in a poſture of leaping from each other, directly the contrary way.

COUNTER-SCARP, in *Fortification*, the exterior ſlope, or acclivity of the ditch, looking towards the champagne. See *Tab. Fortification, fig.* 21. *lit. c c.*

Counter-scarp is alſo uſed for the covert-way, and the glacis. *Counter-ſcarps* are ſometimes made of ſtone, and without any ſlope.

To be lodged on the counter-ſcarp, is to be lodged on the COVERT-*way*, or the GLACIS.

Counter-scarp, *angle of the.* See ANGLE.

COUNTER-SIGNING, the ſigning an order, or patent of a ſuperior, in quality of ſecretary; to render the thing more authentic.

Charters, &c. are ſigned by the king, and *counter-ſigned* by a ſecretary of ſtate, or the lord chancellor.

COUNTER-SWALLOW-TAIL, an outwork, in form of a ſingle tenaille, wider at the gorge, or next the place, than at the head, or next the champagne.

COUNTER-TALLY, one of the two tallies whereon any thing is ſcored.

COUNTER-TENOR, is one of the mean or middle parts of muſic: ſo called, as being oppoſite to the tenor. It is likewiſe applied to a voice which is of higher pitch than the tenor, but lower than the treble.

COUNTER-TIME, in the *Manege*, ſignifies the defence or reſiſtance of a horſe that interrupts his cadence, and the meaſure of his manege, occaſioned either by a bad rider or a malicious horſe.

COUNTER-TRENCH, in *Fortification*, a trench of twelve or fifteen feet wide, made againſt the beſiegers, and which, of conſequence, has its parapet turned towards them.

There are uſually a great many communications between this and the place, to prevent the enemy from making any uſe of it, in caſe they render themſelves maſters thereof.

COUNTER-TRIPPING, is when two beaſts are borne in a coat of arms tripping, i. e. in a walking poſture, and the head of the one to the tail of the other.

COUNTER-VAIR, in *Heraldry*, is when bells or cups of the ſame tincture are placed baſe againſt baſe, and point againſt point.

COUNTER-VALLATION. See CONTRAVALLATION.

COUNTER-VENTION. See CONTRAVENTION.

COUNTER-WORKING, in the *Military Art*, the raiſing of works, in order to oppoſe thoſe of the enemy.

COUNTING, or COMPTING-HOUSE. See COMPTING-HOUSE.

Counting-board. See ABACUS.

COUNTORS, CONTOURS, or COUNTERS, has been uſed for ſerjeants at law, retained to defend a cauſe, or to ſpeak for their client in any court of law.

It is of theſe Chaucer ſpeaks:

> —— A ſheriff had he been, and a *contour*,
> Was no where ſuch a worthy vavaſour.

They were anciently called ſerjeant *contours*.

COUNTRIES, among the *Miners*, a term or appellation they give to their works under ground. Phil. Tranſ. Nº 198.

COUNTRY-DANCE is of Engliſh origin, though tranſplanted into almoſt all the countries and courts of Europe. There is no eſtabliſhed rule for the compoſition of tunes to this dance, becauſe there is in muſic no kind of time whatever which may not be meaſured by the motions common in dancing; and there are few ſong-tunes of any note within the laſt century, that have not been applied to *country-dances*.

Country *faſt*. See SHELF.

Country, *trial by*, the ſame with trial by JURY.

Country *wakes*. See WAKES.

COUNTY, originally ſignifies the territory of a count, or earl. But now it is uſed in the ſame ſenſe with SHIRE; the one word coming from the French, the other from the Saxon.

In this view, a *county* is a circuit, or portion of the realm; into fifty-two of which, the whole land, England and Wales, is divided, for its better government, and the more eaſy adminiſtration of juſtice.

Theſe *counties* are ſubdivided into rapes, lathes, wapentakes, hundreds; and theſe again into tithings: a diviſion owing to king Alfred.

For the execution of the laws in the ſeveral *counties*, excepting Cumberland, Weſtmorland, and Durham, every Michaelmas term, officers are appointed, under the denomination of *ſheriffs*. This officer has a double function: firſt, *miniſterial*, to execute all proceſſes and precepts of the courts of law directed to him: and ſecondly, *judicial*; whereby he has authority to hold two courts, the one called the *ſheriff's tourn*, the other the *county court*. Other officers of the ſeveral *counties* are, a *lord lieutenant*, who has the command of the militia of the *county*: *cuſtodes rotulorum*, *juſtices of peace*, *bailiffs*, *high-conſtable*, and *coroner*. See farther under LORD LIEUTENANT, MILITIA, CUSTOS *rotulorum*, JUSTICE *of the peace*, *High*-CONSTABLE, BAILIFF, and CORONER.

Of the fifty-two *counties*, there are three of ſpecial note, which are therefore termed *counties palatine*, as Lancaſter, Cheſter, and Durham. The two latter are ſuch by preſcription, or immemorial cuſtom, at leaſt as old as the Norman conqueſt; the former was created by Edward III. in favour of Henry Plantagenet, firſt earl and duke of Lancaſter. Pembroke alſo, and Hexham, were anciently *counties palatine*; which laſt belonged to the archbiſhop of York, and was ſtripped of its privilege in the reign of queen Elizabeth, and reduced to be a part of the *county* of Northumberland: the former was aboliſhed in 27 Hen. VIII. the latter in 14 Eliz.

The chief governors of theſe *counties palatine*, heretofore, by a ſpecial charter from the king, ſent out all writs in their own names; and touching juſtice, did all things as abſolutely as the king himſelf in other *counties*; only acknowleging him their ſuperior and governor: whence *palatine*, *a palatio*, becauſe the owners of them had *jura regalia* as fully as the king hath in his palace. Theſe privileges were probably granted to them, becauſe they bordered on enemies countries, viz. Wales and Scotland. But in Henry the Eighth's time, the ſaid power was much abridged; though ſtill all writs are witneſſed in their names, and all forfeitures for treaſon by the common law accrue to them. The iſle of Ely has been ſometimes reckoned among the *counties palatine*, though it is properly only a royal franchiſe; the biſhop having, by grant of king Henry I. *jura regalia* within the iſle of Ely, whereby he exerciſes a juriſdiction over all cauſes, criminal and civil.

COUNTY-CORPORATE, is a title given to ſeveral cities, or ancient boroughs, on which the Engliſh monarchs have thought fit to beſtow extraordinary privileges; annexing to them a particular territory, land, or juriſdiction; and making them counties of themſelves, to be governed by their own ſheriffs and magiſtrates.

The chief of theſe is the CITY of London; with York, Canterbury, Briſtol, Cheſter, Norwich; the towns of Kingſton upon Hull, Newcaſtle upon Tyne, and Haverford Weſt in Wales, &c.

COUNTY-*court*. See *County* COURT.

COUNTY-*rates*, are thoſe ordered by juſtices of peace at their quarter ſeſſions; collected by high-conſtables of hundreds, and paid to treaſurers appointed by the juſtices, for repairing bridges, &c. 12 Geo. II. c. 29.

COUNTY, *Rier*. See RIER.

COUP *de bride*, in the *Manege*. See EBRILLADE.

COUP *de grace*, in the *French Muſic*, the ſame as what the Italians call TRONCO *per grazia*.

COUPED, COUPEE', in *Heraldry*, expreſſes a head, limb, or other thing in an eſcutcheon, which is borne as if cut clear and even off, from the trunk; in oppoſition to its being forcibly torn off, which they call *eraſed*.

Thus, the arms of Ulſter, which all baronets carry, is a dexter-hand *couped*, or cut off at the wriſt.

COUPED, *Coupée*, is alſo uſed to denote ſuch croſſes, bars, ends, chevrons, &c. as do not touch the ſides of the eſcutcheon, but are, as it were, cut off from them.

COUPEE, a motion in dancing, wherein one leg is a little bent, and ſuſpended from the ground; and with the other a motion is made forwards.

The word, in the original French, ſignifies a *cut*.

COUPLE *cloſe*, in *Heraldry*, the fourth part of a chevron: never borne but in pairs, except a CHEVRON be between, ſaith Guillim; though Bloom gives an inſtance to the contrary.

COUPLED *columns*. See COLUMN.

COUPLET, a diviſion of a hymn, ode, ſong, or the like, wherein an equal number, or equal meaſure, of verſes is found in each part.

The word is French, formed from the Latin *copula*.

In odes, theſe diviſions are more ordinarily called STROPHES.

By an abuſe, *couplet* is ſometimes uſed to ſignify a couple of verſes.

COURAGE, in *Ethics*, is that quality of the mind, derived either from conſtitution or principle, or both, that enables men to encounter difficulties and dangers.

COURANT, or CURRENT, a term uſed to expreſs the preſent time: thus, the year 1779 is the *courant* year; the fifteenth *courant*, the fifteenth day of the month now running.

The term is French, and properly ſignifies *running*.

With regard to commerce, the *price courant* of any merchandize, is the known and ordinary price accuſtomed to be given for it.

COURANT is alſo uſed for any thing that has courſe, or is received, in commerce: in which ſenſe, we ſay, *courant*, or *current* coin, &c.

COURANT is alſo a term in *Muſic* and *Dancing*; being uſed to expreſs both the tune or air, and the dance.

With regard to the firſt, *courant*, or *currant*, is a piece of muſic in triple time: the air of the *courant* is ordinarily noted in triples of minims; the parts to be repeated twice. It begins and ends, when he who beats the meaſure falls his hand; in contradiſtinction from the ſaraband, which ordinarily ends when the hand is raiſed.

With regard to dancing, the *courant* was long the moſt common of all the dances practiſed in England: it conſiſts, eſſentially, of a time, a ſtep, a balance, and a coupee; though it alſo admits of other motions.

Formerly they leaped their ſteps; in which point, the *courant* differed from the low dances and pavades. There are *ſimple courants*, and *figured courants*, all danced by two perſons.

COURAP, in *Medicine*, the Indian name for a diſtemper, which, as Bontius informs us, is very common in Java and other parts of the Eaſt Indies. It is a ſort of herpes or itch, which generally breaks out on the arm-pits, breaſt, groin, and face, with ſuch an intolerable itching, that the perſons affected cannot forbear ſcratching themſelves perpetually: but they pay very dear for the eaſe this gives them; as an unſufferable pain ſucceeds in thoſe parts which are rendered bare and denudated of the cuticula by the nails; theſe diſcharging an acrid humour which vellicates the parts, and cauſes the linen to adhere ſo faſt to them, as not to be ſeparated without tearing the cruſt formed thereon.

Courap is a general name for any ſort of itch, but the inhabitants call this diſtemper thus by way of eminence. It is ſo extremely contagious, that very few eſcape it; and though it is an unſeemly diſorder, cauſing a roughneſs of the ſkin with ſcales and furfures, yet the inhabitants imagine it is attended with this advantage, that while a perſon is affected with it, he is ſure to be troubled with no other dangerous diſtemper: and they look upon the diſappearing of this, as a prognoſtic of ſome worſe diſorder. They are therefore very eaſy under it for years together, without being very ſolicitous about curing it. It is remarkable that the vulgar in Scotland are poſſeſſed of the ſame opinion with reſpect to the itch; and even carry it ſo far as to affirm, that the catching this diſtemper proves a cure for any other previous to it; conſidering it in the ſame light as others do the gout, and perhaps with equal foundation. James.

COURBARIL, the name of a genus of plants. See LOCUST-*tree*.

COURIER, or CURRIER, from the French *courir*, *to run*, a meſſenger ſent poſt, or expreſs, to carry diſpatches.

Antiquity, too, had its *couriers*; we meet with two kinds, viz. thoſe who ran on foot, called by the Greeks *hemerodromi*, q. d. *couriers of a day*. Pliny, Corn. Nepos, and Cæſar, mention ſome of theſe, who would run twenty, thirty, thirty-ſix, and, in the circus, even forty leagues *per* day. And *riding couriers*, *curſores equitantes*, who changed horſes, as the modern *couriers* do.

Xenophon attributes the firſt *couriers* to Cyrus. Herodotus ſays, they were very ordinary among the Perſians, and that there was nothing in the world more ſwift than theſe kind of meſſengers. "That prince," ſays Xenophon, "examined how far a horſe would go in a day; "and built ſtables, at ſuch diſtances from each other, "where he lodged horſes, and perſons to take care of "them; and at each place kept a perſon always ready to "take the packet, mount a freſh horſe, and forward it to "the next ſtage: and thus quite through his empire."

But it does not appear, that either the Greeks or Romans had any regular fixed *couriers*, till the time of Auguſtus: under that prince they travelled in cars; though it appears from Socrates, they afterwards went on horſeback. Under the weſtern empire, they were called *viatores*; and under that of Conſtantinople, *curſores*: whence the modern name. See POST.

COURIERS *extraordinary*. See EXTRAORDINARY.

COURIERS, *Van*. See VAN *Couriers*.

COURSE, in *Navigation*, the point of the compaſs, or horizon, on which a ſhip ſteers; or the angle which the rhumb line on which it ſails makes with the meridian.

When a veſſel begins its *courſe*, the wind wherewith it is driven makes a certain angle with the meridian of the place; and, as it is here ſuppoſed, the veſſel follows exactly the direction of the wind; it makes the ſame angle with the meridian which the wind makes.

The wind is further ſuppoſed always the ſame; and becauſe each point, or inſtant of a *courſe*, may be regarded as the firſt; every moment of the *courſe* it makes the ſame angle with the wind.

Now a wind that is north-eaſt, v. gr. here (and by conſequence makes an angle of forty-five degrees with our meridian),

meridian), is north-eaſt wherever it blows, and makes the ſame angle of forty-five degrees with all the meridians it meets.

The *courſe* of a veſſel, therefore, driven by the ſame wind, makes the ſame angle with all the meridians on the ſurface of the globe.

If the veſſel run north and ſouth, it makes an angle infinitely ſmall with the meridian, i. e. is parallel to it, or never goes from it: if it run eaſt and weſt, it cuts all the meridians at right angles. In the firſt caſe it deſcribes a great circle; in the ſecond, either a great circle, which is the equator, or a parallel. But if the *courſe* be between the two, it does not then deſcribe a circle; becauſe a circle drawn in ſuch a manner, would cut all the meridians at unequal angles. It deſcribes therefore a ſpiral or curve, the eſſential condition whereof is to cut all the meridians under the ſame angle; called the *loxodromic curve*, or *loxodromy*, popularly *rhumb*.

The ſhip's *courſe*, therefore, except in the two firſt caſes, is always a loxodromic curve; and the hypothenuſe of a rectangle triangle, the two other ſides whereof are the ſhip's way in latitude and longitude.

The latitude is uſually had by obſervation.

The rhumb, or angle of the *courſe*, is had by the compaſs, together with the one or other of the two ſides; and what remains to be calculated in ſailing, is the quantity of the longitude, and of the rhumb, or *courſe*.

Course, *complement of the*. See Complement.

Course *of a river*. See River.

Course, in *Architecture*, denotes a continued range of ſtones, level, or of the ſame height, throughout the whole length of the building; and not interrupted by any aperture. It forms a parapet to the intermediate ſpace between the body of the building and the wings. See *Tab. Architecture*, *fig*. 16. and K, *fig*. 40. See alſo Building, Wall, and Masonry.

Course *of plinths*, is the continuity of a plinth of ſtone, or plaiſter, in the face of a building; to mark the ſeparation of the ſtories.

Course is alſo uſed for a collection, or body of laws, canons, or the like. See Corpus.

The *civil courſe*, is the collection of Roman laws, compiled by order of Juſtinian. See Civil *law*.—*Canonical courſe*, is the collection of the canon law, made by Gratian.

Course, again, is uſed for the time ordinarily ſpent in learning the principles of a ſcience, or the uſual points and queſtions therein. Thus, a ſtudent is ſaid to have finiſhed his *courſe* in the humanities, in philoſophy, &c.

Course is alſo uſed for the elements of an art exhibited and explained, either in writing, or by actual experiment. Hence our *courſes* of philoſophy, anatomy, chemiſtry, mathematics, &c. probably ſo called, as going throughout, or running the whole length or *courſe* of the art, &c.

Course *of the moon*. See Moon.

Course, *Paddock*. See Paddock.

COURSES, in *Sea-Language*, is uſed for a ſhip's main-ſail and fore-ſail. When ſhe ſails under them only, without lacing on any bonnets, they ſay, ſhe goes under *a pair of courſes*. Or more generally, all the principal ſails, viz. the main-ſail, fore-ſail, and mizen, are thus diſtinguiſhed: and ſometimes alſo the mizen ſtay-ſail and fore-ſail, and all the main ſtay-ſails of brigs and ſchooners.

COURSING. There are three ſeveral *courſes* with greyhounds. 1. At the hare. 2. At the fox. And, 3. At the deer.

For the deer there are two ſorts of *courſes*, the one in the paddock, the other either in the foreſt or purlieu. For the paddock *courſe*, there muſt be the greyhound and the terrier, and the mungril greyhound, whoſe buſineſs it is to drive away the deer before the greyhounds are ſlipped; a brace, or a leaſh, are the uſual number ſlipped at a time, ſeldom at the utmoſt more than two brace.

In *courſing* the deer in the foreſt or purlieu, there are two ways in uſe, the one is *courſing* from wood to wood, and the other upon the lawns by the keeper's lodge. In the *courſing* from wood to wood, the way is to throw in ſome young hounds into the wood, to bring out the deer; and if any deer come out that is not weighty, or a deer or antler, which is buck, ſore or ſorrel, then you are not to ſlip your greyhounds, which are held at the end of the wood, where the keepers, who can gueſs very well on theſe occaſions, expect that the deer will come out. If a proper deer come out, and it is ſuſpected that the brace or leaſh of greyhounds ſlipped after him, will not be able to kill him, it is proper to waylay him with a couple of freſh greyhounds.

The *courſing* upon the lawn is the moſt agreeable of all other ways. When the keeper has notice of this, he will lodge a deer for the *courſe*, and then by coming under the wind, the greyhound may be brought near enough to be ſlipped for a fair *courſe*.

The beſt method of *courſing* the hare, is to go out and find a hare ſitting, which is eaſily done in the ſummer, by walking acroſs the lands, either ſtubble, fallow, or corn grounds, and caſting the eye up and down; for in ſummer they frequent theſe places for fear of the ticks, which are common in the woods at that ſeaſon; and in autumn, the rains falling from the trees offend them. The reſt of the year there requires more trouble, as the buſhes and thickets muſt be beat to rouſe them, and often they will lie ſo cloſe, that they will not ſtir till the pole almoſt touches them: the ſportſmen are always pleaſed with this, as it promiſes a good *courſe*.

If a hare lies near any cloſe or covert, and with her head that way, it is always to be expected that ſhe will take to that immediately on being put up: all the company are therefore to ride up and place themſelves between her and the covert before ſhe is put up, that ſhe may take the other way, and run on an open ground. When a hare is put up, it is always proper to give her ground or law, as it is called, that is, to let her run twelveſcore yards or thereabouts, before the greyhounds are ſlipped at her; otherwiſe ſhe is killed too ſoon, and the greateſt part of the ſport thrown away, and the pleaſure of the ſeveral windings and turnings that the creature will make to get away, is all loſt. A good ſportſman had rather ſee a hare ſave herſelf, after a fair *courſe*, than ſee her murdered by the greyhounds as ſoon as ſhe is up.

In *courſing* the fox, no other art is required than ſtanding cloſe, and on a clear wind, on the outſide of ſome grove, where it is expected he will come out; and when he is come out, he muſt have head enough allowed him, elſe he will turn back to the covert. The ſloweſt greyhound will be able to overtake him after all the odds of diſtance neceſſary; and the only danger is, the ſpoiling the dog by the fox, which too often happens; for this reaſon, no greyhound of any value ſhould be run at this *courſe*, but the ſtrong, hard-bitten dogs, that will ſeize any thing.

For the laws of *courſing* eſtabliſhed by the duke of Norfolk, and the ſportſmen of the kingdom in the reign of queen Elizabeth, ſee Sportſman's Dict. in voc.

COURT, an appendage to a house, or habitation; conſiſting of a piece of ground incloſed with walls, but open upwards.

The word is formed from the French *cour*, and that from the Latin *cohors:* whence alſo *cortis* and *curtis* are ſometimes uſed for the ſame. In the laws of the Germans, there is one article, *De eo qui in curte regis furtum commiſerit*; and another, *De eo qui in curte ducis hominem occiderit*. Others derive *court* from the Gauliſh *cors*, formed of *cohors*, and *cohors* from χορτος. See Cohort.

The *court* before a houſe is properly called the *fore-court*; that behind, the *back-court*; that where country affairs, &c. are managed, i. e. where cattle, &c. come, the *baſſe-court*.

Court is alſo uſed for the palace, or place where a king, or ſovereign prince, reſides.

Court, *Curia*, in a Law *Senſe*, is the place where the judges diſtribute juſtice, or exerciſe their juriſdiction. Alſo the aſſembly of judges, jury, &c. in that place.

By the law of England, no *court* in this kingdom can claim any juriſdiction, unleſs it be ſome way or other derived from the crown; the king being the fountain of juſtice, and the ſupreme magiſtrate of the kingdom, intruſted with the whole executive power of the land.

Yet the king cannot give any addition of juriſdiction to an ancient *court*; but all ſuch *courts* muſt be held in ſuch manner, and proceed by ſuch rules, as their known uſage has limited and preſcribed. Whence it follows, for inſtance, that the *court* of king's bench cannot be authorized to determine a mere real action between ſubject and ſubject; nor can the *court* of common pleas enquire of treaſon or felony.

In this ſenſe, *courts* are divided into *ſovereign*, or *ſuperior*, and *ſubaltern*, or *inferior:* and, again, into *courts of record*, and *baſe courts*. Crompton deſcribes thirty-two *courts* in England, moſt of them *courts of record*.

Courts of record are created by act of parliament, letters patent, or preſcription.

The *ſupreme court* is the *court* of parliament.

Superior courts of record are diſtinguiſhed into *more principal*, and *leſs principal*.

The *more principal courts* are, the *houſe of lords*, the *court of chancery*, the *king's bench*, *common pleas*, and *exchequer*; and alſo, according to Sir Matthew Hale, the *juſtices itinerant ad communia placita*, and *ad placita foreſtæ*.

The *leſs principal courts of record* are ſuch as are held, 1. By commiſſions of *gaol-delivery*, *oyer* and *terminer*, *aſſiſe*, *niſi prius*, and ſome others. 2. By cuſtom, or charter; as the *courts* of the counties palatine of Lancaſter, Cheſter, Durham. 3. By virtue of an act of parliament, and the king's commiſſion; as the *court of ſewers*, *juſtices of the peace*, &c.

Inferior courts of record are, *corporation courts*, *courts leet*, and the *ſheriffs tourn*.

Every *court* of record is the king's *court*, though the profits may be another's. If the judges of ſuch *courts* err, a writ of error lies The truth of its records ſhall be tried by the records themſelves, and there can be no averment againſt the truth of the matter recorded. Coke, Litt. 117. b. 8. Coke, 38. b.

Courts not of record are, the *courts baron*, *county courts*, *hundred courts*, and others.

Theſe *courts* cannot impoſe any fine on an offender, nor award a capias, nor hold plea of debt or treſpaſs, if the debt or damages amount to forty ſhillings; nor of a treſpaſs done *vi & armis*, though the damage be laid under forty ſhillings. And their proceedings may be denied and tried by a jury, and a writ of falſe judgment, not of error, lies on their judgments.

The *court* of chancery proceeding by *ſubpœna*, is not a *court* of record.

On the ſubject of *courts*, ſee New Abr. of the Law, tit. *Courts*.

Again, *courts* are either ſuch as are held in the king's name, as all the ordinary *courts*; or thoſe held by his authority, where the precepts are iſſued in the judge's name, *virtute magiſtratus ſui*, as the admiral's *court*.

In England, we have four principal *courts* ſubſiſting; all eſtabliſhed by ancient cuſtom of the realm, rather than by any ſtatute; though their eſtabliſhments have been from time to time ſince confirmed by acts of parliament. Theſe are, the *courts of king's bench*; the *common bench*, or *pleas*; the *exchequer*; and the *court of chancery*. See each in its alphabetical order, infra.

COURT *of Admiralty*, is a *court* held by the high admiral, or commiſſioners of the admiralty; to which belongs the deciſion of all maritime controverſies, trials of malefactors, and the like.

The proceedings in this *court*, in all civil matters, are according to the civil law; becauſe the ſea is without the limits of the common law, and under the admiral's juriſdiction

In criminal affairs, which ordinarily relate to piracy, the proceedings in this *court* were anciently likewiſe by information and accuſation, according to the civil law; but that being found inconvenient, becauſe no perſon could be convicted without either their own confeſſion, or an eye-witneſs of the fact, ſo that the greateſt offenders often eſcaped with impunity, there were two ſtatutes made by Henry VIII. enacting, that criminals ſhould henceforth be there tried by witneſſes and a jury; and this by ſpecial commiſſion from the king to the lord admiral: wherein ſome of the judges of the realm are always to be commiſſioners; and the trial according to the laws of England, directed by thoſe ſtatutes.

The *court of admiralty*, is ſaid to have been firſt erected in 1357, by king Edward III. To the civil law, firſt introduced in it by the founder, were afterwards added, by his ſucceſſors, particularly Richard I. the laws of Oleron; and the marine uſes and conſtitutions of ſeveral people; as thoſe of Genoa, Piſa, Marſeilles, Meſſina, &c. The juriſdiction of this *court* was limited by Richard II.

Under this *court* is alſo a *court*-merchant, or *court* of equity; wherein all differences between merchants are decided, according to the rules of the civil law.

Between the *courts of admiralty* and common law, there ſeems to be *diviſum imperium*; for the ſea, ſo far as the low-water mark, is accounted *infra corpus comitatus adjacentis*; and the cauſes thence ariſing are determinable by the common law: yet when the ſea is full, the admiral has juriſdiction there alſo ſo long as the ſea flows, over matters done between the low-water mark and the ſhore.

The *admiralty court* is not allowed to be a *court* of record, becauſe it proceeds by the civil law; and the judge has no power to take ſuch a recognizance as a *court* of record may. The proceſs and proceedings are in the name of the lord admiral, and by libel; and the plaintiff and defendant enter into a ſtipulation or bond for appearance, and to abide the ſentence. 4 Inſt. 134, 135.

If an erroneous judgment be given in the admiralty, appeal may be had to DELEGATES appointed by commiſſion out of chancery, whoſe ſentence ſhall be final. Stat. 8 Eliz. c. 5.

Among the Hollanders, the five *admiralties* are ſo many chambers, compoſed of the deputies of the nobles, the provinces, and the towns; to whom belong the equipping out of fleets, the furniſhing proviſions for them, and directing what relates to maritime affairs.

COURT *of Aids*, in France. See AIDS.

COURT *of Arches*, *Curia de arcubus*, the chief and moſt ancient conſiſtory *court* belonging to the archbiſhop of Canterbury, for the debating of ſpiritual cauſes. It is ſo called from the church in London, commonly called St. Mary le Bow, where it was formerly held, which church had its name from the ſteeple, which was raiſed by pillars built archwiſe, like bent bows. Cowel.

The judge of this *court* is ſtyled *dean of the arches*, or official of the *arches court*. He hath extraordinary juriſdiction in all eccleſiaſtical cauſes, except what belong to the prerogative *court*; alſo all manner of appeals from biſhops, or their chancellors or commiſſaries, deans and chapters, &c. firſt or laſt are directed hither. He hath ordinary juriſdiction throughout the whole province of Canterbury in caſes of appeals; ſo that upon any appeal made, he without any farther examination of the cauſe, ſends out his citation to the appellee, and his inhibition to the judge, from whom the appeal was made. Of this ſee more, 4 Inſt. 337. But he cannot cite any perſon out of the dioceſe of another, unleſs it be on appeal, &c. 23 Hen. VIII. c. 9. In another ſenſe, the dean of *arches* has a peculiar juriſdiction of thirteen pariſhes in London, called a deanery (being exempt from the authority of the biſhop of London), of which the pariſh of Bow is the principal. The perſons concerned in this *court*, are the judge, advocate, regiſters, proctors, &c. and the foundation of a ſuit in theſe courts, is a citation for the defendant to appear; then the libel is exhibited, which contains the action, to which the defendant muſt anſwer: whereupon the ſuit is conteſted, proofs are produced, and the cauſe determined by the judge, upon hearing the advocates on the law and fact; when follows the ſentence and decree thereupon. Jacob. See AUDIENCE.

This *court* (as alſo the *court* of peculiars, the admiralty *court*, the prerogative *court*, and the *court* of delegates, for the moſt part) is now held in the hall belonging to the college of civilians, commonly called Doctors Commons. Floy. 21.

From this *court*, the appeal is to the king in Chancery, by 25 Hen. VIII. c. 19.

COURT *of Archdeacon*, is the moſt inferior *court* in the whole eccleſiaſtical polity. It is held before the archdeacon or his official, and appeal lies to the biſhop's court.

COURT *of Aſſiſe*. See ASSISE.

COURT *of Augmentation*, the name of a *court* erected, 27 Hen. VIII. for determining ſuits and controverſies, relating to monaſteries and abbey lands. The intent of this *court* was that the king might be juſtly dealt with, touching the profit of ſuch religious houſes, and their lands, as were given him by act of parliament the ſame year. This *court* was diſſolved under queen Mary, by the parliament held the firſt year of her reign; but the office of *augmentation* remains to this day, in which are many valuable records. Terms de Ley. 68.

COURT *of Barghmote*. See BARGHMOTE.

COURTS *Baron*, are *courts* that all lords of manors, who were anciently called *barons*, have within their reſpective precincts. It is an inſeparable incident to a manor; and muſt be held by preſcription, for it cannot be created at this day. 1 Inſt. 58. 4 Inſt. 268.

A *court baron* muſt be kept on ſome part of the manor; and is twofold. 1. *By cuſtom:* as, if a man having a manor in a town, grant the inheritance of the copyholds thereto belonging to another; this grantee may keep a *court* for the cuſtomary tenants, and accept ſurrenders to the uſe of others, and make both admittances and grants. 2. *By common law.* This is of freeholders, which is properly called a *court baron*, wherein the freeholders are judges: whereas of the other, the lord or his ſteward is judge.

COURT, *Biſhop's*, an eccleſiaſtical court held in the cathedral of each dioceſe; the judge whereof is the biſhop's chancellor, anciently called *eccleſiaſticus*, and *eccleſiæ cauſidicus*, q. d. the church-lawyer; who judges by the civil and canon law; and, if the dioceſe be large, has his commiſſaries in remote parts, who hold what they call *conſiſtory courts*, for matters limited to them by their commiſſion.

COURT *of Chancery*, the grand court of equity, and conſcience, inſtituted to moderate the rigour of the other courts that are tied to the ſtricteſt letter of the law.

The judge of this *court* is the lord high chancellor, whoſe function ſee under CHANCELLOR.

The proceedings of this *court* are either *ordinary*, like other *courts*, according to the laws, ſtatutes, and cuſtoms of the nation, by granting out writs remedial and mandatory, writs of grace, &c. or *extraordinary*, according to equity and conſcience, by bills, anſwers, and decrees, to examine frauds, combinations, truſts, ſecret uſes, &c. to ſoften the ſeverity of common law, and reſcue people from oppreſſion; to relieve them againſt cheats, unfortunate accidents, breaches of truſt, &c.

Out of the *court of chancery*, are iſſued writs or ſummonſes for parliaments and convocations, edicts, proclamations, charters, protections, patents, ſafe conducts, and writs of *moderata miſericordia*, &c.

Here are alſo ſealed and enrolled letters patent, treaties and leagues, deeds, writs, and commiſſions.

The officers of this *court*, beſide the lord chancellor, who is ſupreme judge, are, the maſter of the rolls, who, in the chancellor's abſence, hears cauſes, and gives decrees; and twelve maſters of chancery, one of whom is the maſter of the rolls, who are aſſiſtants, and ſit by turns on the bench.

For the equity part of this *court* there are ſix clerks, and their deputies, who have under them a number of others, called the ſixty ſworn clerks, in the nature of attorneys of the *court*; two chief examiners, for examining witneſſes, who have each five or ſix clerks apiece; one principal regiſter, who has four or five deputies; clerk of the crown, who makes writs, commiſſions, &c. warden of the Fleet; ſerjeant at arms, who bears the mace before the chancellor; and the uſher and crier of the *court*.

To the common law part belong the twenty-four curſitors, and their clerks, who make out original writs; clerks of the petty bag; clerks of the hanaper; comptroller of the hanaper; clerk of appeals; clerk of the faculties; ſealer; chafe-wax; clerks of the patents, of preſentations, diſmiſſions, licenſes to alienate, enrollments, protections, ſubpœnas, affidavits, &c. See each under its proper article.

Appeals from the decrees of the *court of chancery* may be brought into the HOUSE *of lords*.

The juriſdiction of this *court* was impugned about the time of its original creation, and even in the reign of queen Elizabeth it was ſtrongly holden by the judges of the common law courts, that the chancellor could not by his decree ſequeſter the party's lands, that is, he could only *agere in perſonam*, but not *in rem*; and agreeably thereunto it was reſolved, 16 Eliz. in the caſe of Coleſton and Gardener, that if a man killed a ſequeſtrator in the execution of ſuch proceſs, it was no murder. Vide New Abr. Law, vol. i. p. 588. Cro. Eliz. 651. 4 Inſt. 84. 1 Rol. Rep. 86. 190. Lit. Rep. 166.

Alſo in the reigns of queen Elizabeth, and king James the Firſt, there are ſeveral ſtrong opinions, that a *court* of equity could not examine, or give redreſs in a cauſe after judgment at law; and that ſuits in equity, to relieve againſt a judgment at law, are within the ſtatutes, which make it a præmunire to appeal to any foreign court, eſpecially if the end thereof be to controvert the very point determined at law, or to ſeek relief after judgment in a caſe wherein the law may relieve, as againſt exceſs of damages. But ſuch opinions ſeem now to be wholly exploded. Vid. Caſ. Eq. Abr. p. 130.

The ancient rule for the juriſdiction of the extraordinary *court of chancery*, was confined to frauds, accidents, and truſts; and though at this day, by its power of granting injunctions, it curbs the juriſdiction of other *courts*, and thereby has ſwallowed up the greateſt part of the buſineſs of the common law; yet it is ſtill under ſome of theſe notions, that it exerciſes a juriſdiction in relieving againſt forfeitures, penalties, where a compenſation can be made, in preventing multiplicity of ſuits, decreeing a ſpecific execution of agreements, aſſiſting defective conveyances, &c. But in no caſe will it relieve againſt an act of parliament, nor directly againſt a fundamental rule or maxim of the common law, nor retain a ſuit where the party appears to have a plain and adequate remedy at law. Three things, ſays lord Coke, are to be adjudged in a *court of equity*. 1. All covins, frauds, and deceits, for which there is no remedy by the ordinary courſe of law. 2. Accidents, as when a ſervant, obligor, or mortgagor, is to pay money on a certain day, and they happen to be robbed in going to pay it. 3. Breaches of truſt and confidence. 4 Inſt. 84.

Upon this foundation, that a *court of equity* could not relieve againſt a maxim of the common law, it was formerly holden, that one executor could not compel the other to account; that one joint-tenant could not ſue his companion; that if an obligee loſt his bond, he was without remedy: ſo where the leſſor entered upon his leſſee, and ſuſpended his rent, it was held that he had no remedy: ſo where the party became remedileſs by his own act, as by paying money without an acquittance: ſo where one on valuable conſideration promiſed to make a leaſe, it was held that the party could not ſue on this promiſe in equity, becauſe he might have an action on the caſe. But theſe laſt opinions are now of no weight or authority, as appears by daily experience.

All matters of truſt are particularly within the juriſdiction of the *court of chancery*.

COURT *of Chivalry*, or the *Marſhal's Court*; a *court* whereof the judges are, the lord high conſtable, and the earl marſhal of England. This *court* is the fountain of marſhal law; and the earl marſhal is not only one of the judges, but alſo to ſee execution done. 4 Inſt. 123. See CHIVALRY.

COURT *Chriſtian*, *Curia Chriſtianitatis*, is an eccleſiaſtical judicature, oppoſed to the *civil court*, or lay tribunal: and as in ſecular *courts*, human laws are maintained; ſo in the *court Chriſtian*, the laws of Chriſt ſhould be the rule. The judges therefore are divines; as archbiſhops, biſhops, archdeacons, &c. 2 Inſt. 488. *Courts Chriſtian* are ſo called, becauſe they handle matters eſpecially appertaining to Chriſtianity. See COURTS *Eccleſiaſtical*, infra. See alſo CONSISTORY.

COURTS *of Cinque-ports*. See CINQUE-PORTS.

COURT *of Common Pleas*, *Communia placita*, or *Bancus communis*, one of the king's *courts*, held in Weſtminſter-hall. Gwyn obſerves, that till the granting of Magna Charta, there were but two *courts* called the king's *courts*, viz. the exchequer, and the king's bench; and that upon the grant of that charter, the *court of common pleas* was erected, and fixed to a place certain, viz. Weſtminſter-hall: whence the writs which before ran *coram me vel juſticiariis meis*, ſimply, were now changed, and run *coram juſticiariis meis apud Weſtmon.*

The juriſdiction of this *court* is founded on original writs, iſſuing out of the chancery, which are the king's mandates for them to proceed on to determine ſuch and ſuch cauſes. But this is to be underſtood when the cauſe is between common perſons; for when an attorney, or any perſon belonging to the *court*, is plaintiff, he ſues by writ of privilege, and is ſued by bill, which is in nature of a petition; both which originally commence in the *common pleas*, and have no foundation in the chancery. 4 Inſt. 99.

The juriſdiction of each *court* is at this day ſo well eſtabliſhed, that as the *court* of king's bench cannot determine a mere real action, ſo neither can the *court of common pleas* enquire of felony or treaſon. Vide 2 Hawk. P. C. p. 2.

This *court*, without any writ, may, upon a ſuggeſtion only, grant prohibitions, to keep as well temporal as eccleſiaſtical *courts* within their bounds and juriſdiction. See 4 Inſt. 99. and Vaughan's Reports, p. 157.

In term time, this *court* may award a habeas corpus by the common law, for any perſon committed for any cauſe under treaſon or felony; and thereupon diſcharge him, if it ſhall clearly appear, by the return, that the commitment was againſt law, as being made by one who had no juriſdiction of the cauſe, or for a matter, for which, by law, no man ought to be puniſhed. Vide Vaughan, 154, ſeq. 2. Jones, 14.

All civil cauſes, both real, perſonal, and mixed, are tried in this *court*, according to the ſtrict law of the realm: Forteſcue repreſents it as the only *court* for real cauſes.

The chief juſtice hereof is called the *lord chief juſtice of the common pleas*, whoſe ſalary is 2500*l.* a year; who is accompanied with three of his aſſociates, at a ſalary of 2000*l.* each, created by letters patent, and as it were judges inſtalled or placed on the common bench by the lord chancellor, and the lord chief juſtice of the *court*.

The reſt of the officers belonging to this *court* are, the cuſtos brevium; three prothonotaries, or prænotaries, ſee PROTHONOTARY; a chirographer; ſeventeen filazers; exigenter; clerk of the warrants; clerk of the juries, or jurata writs; clerk of the treaſury; clerk of the king's ſilver; clerk of the eſſoigns; clerk of the outlawries; clerk of the errors, &c. whoſe ſeveral functions ſee in their places, CUSTOS *brevium*, CHIROGRAPHER, EXIGENTER, CLERK, &c.

COURT *of Conſcience*, *Curia conſcientia*. In the 9th of Henry VIII. the *court of conſcience* in London was erected: there was then made an act of common council, that the lord mayor and aldermen ſhould aſſign monthly two aldermen and four diſcreet commoners, to be commiſſioners to ſit in this *court* twice a week, to hear and determine all matters brought before them between party and party, between citizens and freemen of London, in all caſes where the debt or damage was under forty ſhillings. And this act of common council is confirmed by the ſtat. 1 Jac. I. which empowers the commiſſioners of this *court* to make ſuch orders between the parties touching ſuch debts, as they ſhall find ſtand to equity and good conſcience. Alſo the ſtat. 3 Jac. I. c. 15. ſince explained and amended by 14 Geo. II. c. 10. farther eſtabliſhes this *court*; the courſe and practice whereof is by ſummons, to which if the party appear, the commiſſioners proceed ſummarily; examining the witneſſes of both parties, or the parties themſelves on oath; and as they ſee cauſe, give judgment. If the party ſummoned appear not, the commiſſioners have power to apprehend and commit him: alſo the commiſſioners have power to commit a perſon refuſing to obey their orders, &c. Vid. ſtat. 3 Jac. I.

There are many other *courts of conſcience* lately eſtabliſhed by act of parliament, of a ſimilar nature; as that for Southwark, for Weſtminſter, the Tower Hamlets, &c. &c.

Court *of the Coroner*, is a *court* of record, to enquire when any one dies in priſon, or comes to a ſudden and violent death, by what manner he came to his end. See Coroner.

Court, *County*, is a *court* of juſtice held in each county by the ſheriff thereof, or his deputy, every month. See Sheriff.

This *county court* had anciently the cognizance of matters of great moment; but it was much abridged by Magna Charta, and more 1 Edward IV. But it has ſtill the determination of debts and treſpaſſes under forty ſhillings.

In effect, till the *courts* at Weſtminſter were erected, the *county courts* were the chief *courts* of the kingdom.

Among the laws of king Edgar is this, viz. Let there be two *county courts* in a year, and let there be preſent a biſhop and an alderman or earl; one whereof ſhall judge according to the common law, the other according to the eccleſiaſtical law.—The conjunction of theſe two powers to aſſiſt each other, is as ancient as the Engliſh government itſelf. They were firſt ſeparated by William the Conqueror, who brought all the eccleſiaſtical buſineſs into a conſiſtory, erected for that purpoſe; and the law buſineſs into the king's bench.

Court *of Delegates*, is a *court* where delegates or commiſſioners are appointed by the king's commiſſion, under the great ſeal, upon an appeal to him.

It is granted in three caſes: firſt, when a ſentence is given in an eccleſiaſtical cauſe, by the archbiſhop, or his official; ſecondly, when a ſentence is given in an eccleſiaſtical cauſe, in places exempt; thirdly, when ſentence is given in the admiralty *court*, in ſuits civil or marine, by order of the civil law. 4 Inſt. 339. Stat. 25 Hen. VIII. c. 19.

This is the higheſt *court* for civil affairs concerning the church; for the juriſdiction whereof it was provided, 25 Hen. VIII that it ſhall be lawful for the ſubject, in caſe of defect of juſtice in the eccleſiaſtical *courts*, to appeal to the ſovereign in his court of chancery; whence a commiſſion is directed under the great ſeal to particular perſons therein mentioned, for redreſs of judgment.

From the higheſt eccleſiaſtical *court* there lies no appeal, but to the *court of delegates*; and beyond this to no other, except to the houſe of lords. But the king, of his free will, may grant a Commission of review under the great ſeal. The citations run all in the king's name.

Court, *Duchy*, a *court* wherein all matters belonging to the duchy or county palatine of Lancaſter, are decided by decree of the chancellor of that *court*.

The original of this *court* was in Henry the Fourth's time, who obtaining the crown by depoſition of Richard II. and having the duchy of Lancaſter, by deſcent, in right of his mother, became ſeiſed thereof as king, not as duke. So that all the liberties, franchiſes, and juriſdictions of the ſaid county paſſed from the king, by his great ſeal, and not by livery, or attornment, as the earldom of March, and other poſſeſſions, which deſcended to him by other anceſtors than the king's, did.

Henry IV. by authority of parliament, ſevered the poſſeſſions, liberties, &c. of the ſaid duchy from the crown: but Edward IV. reſtored them to their former nature.

The officers belonging to this *court* are, a Chancellor, attorney-general, receiver-general, clerk of the court, and meſſenger; beſide the aſſiſtants, as an attorney in the exchequer, another in chancery, and four counſellors. See Attorney *of the Duchy*.

The duchy of Lancaſter, ſays Gwyn, grew out of the grant of Edward III. who gave that duchy to his ſon John of Gaunt, and endowed it with royal rights, equal to thoſe of the county palatine of Cheſter. And foraſmuch as it came afterwards to be extinct in the perſon of king Henry IV. by reaſon of its union with the crown; the ſame king ſuſpecting himſelf more rightfully duke of Lancaſter, than king of England, determined to ſave his right in the duchy, whatever ſhould befal the kingdom. Accordingly, he ſeparated the duchy from the crown; and ſettled it ſo in his own perſon, and heirs, as if he had been no king, or politic body at all: in which condition it continued during the reigns of Henry V. and VI. who deſcended from him; till Edward IV. who, by recovery of the crown, recontinuing the right of the houſe of York, appropriated the duchy to the crown again; yet ſo, that he ſuffered the court and officers to remain as he found them. In this manner, it came, together with the crown, to Henry VII. who taking Henry the Fourth's policy (by whoſe right, indeed, he obtained the kingdom), re-ſeparated the duchy, and ſo left it to his poſterity, who ſtill enjoy it.

Courts *Eccleſiaſtical*, *Curiæ eccleſiaſticæ*, are thoſe *courts* which are held by the king's authority, as ſupreme head of the church, for matters which chiefly regard religion. 4 Inſt. 321.

The ſuits in *ſpiritual* or *eccleſiaſtical courts*, are for the reformation of manners, for puniſhing of hereſy, defamation, laying violent hands on a clerk, and the like; and ſome of their ſuits are to recover tythes, legacies, contracts of marriage, &c. and in cauſes of this nature, the *courts* may give coſts, but not damages. Things that properly belong to theſe juriſdictions, are matrimonial and teſtamentary; and defamatory words for which no action lies at law, as for calling a perſon adulterer, fornicator, uſurer, or the like. 11 Rep. 54. Dyer, 240.

The proceedings in the *eccleſiaſtical courts* are according to the civil and canon law; by citation, libel, anſwer upon oath, proof by witneſſes, and preſumptions, &c. and after ſentence for contempt, by excommunication: and if the ſentence is diſliked, by appeal. The juriſdiction of theſe *courts* is voluntary or contentious; and the puniſhments inflicted by them, are cenſures and puniſhments *pro ſalute animæ*, by way of penance, &c. They are not *courts* of record. See Audience.

Court *of Exchequer*, is a *court* wherein are tried all cauſes relating to the king's treaſury, or revenue; as, touching accounts, diſburſements, cuſtoms, fines, &c.

It conſiſts of ſeven judges, viz. the lord treaſurer, the chancellor of the exchequer, the lord chief baron with a ſalary of 3000*l.* a year, and three other barons of the exchequer at a ſalary of 2000*l.* a year each, with one curſitor baron.

The lord chief baron is the principal judge of the *court*. See Barons *of the exchequer*.

The *court of exchequer* is divided into two: the one *of law*, the other *of equity*.

All judicial proceedings according to law, are ſtyled, *coram baronibus* only: but the *court* of equity held in the exchequer chamber, is *coram theſaurario, cancellario, & baronibus*; before the treaſurer, chancellor, and barons.

For a long time after the Conqueſt, there ſate in the exchequer, both ſpiritual and temporal barons of the realm: but of later times, there have ſat in their places other judges, who, though no peers of the realm, yet retain the original denomination.

The common opinion of our hiſtorians is, that *this court* was erected by William the Conqueror, ſoon after his having obtained the kingdom; and that it took its form from the *eſchequier*, or *ſcaccarium*, eſtabliſhed in Normandy long before that time. In effect, the two exchequers have this in common, that the Norman was the ſupreme *court* of that duchy, or a general aſſiſe whereat all the great lords attended, to judge finally of all concerns of the greateſt importance; and was ambulatory; and that the Engliſh exchequer was a *court* of the higheſt juriſdiction; that the acts thereof were not to be examined by any of the ordinary *courts*; that it was the repoſitory of the records of all the other *courts*; and that it was to be held in the king's *court*, and before him; and that it was concerned in the prerogative, as well as the revenue of the crown.

The immediate profits of the crown, as of franchiſes, lands, tenements, hereditaments, debts, duties, accounts, goods, chattels, all diſburſements, ſeizures, and fines impoſed on the ſubjects, &c. are all within the juriſdiction of the exchequer. And the king's attorney may exhibit bills, for any matter concerning the king in inheritance, or profits; ſo alſo may any perſon who finds himſelf aggrieved in any cauſe proſecuted againſt him on behalf of the king, or any patent by grant of the king, exhibit his bill againſt the king's attorney, &c. to be relieved by equity in this *court*.

To this *court* belong two officers; the king's remembrancer's office, and that of the lord treaſurer's remembrancer. See Remembrancer.

Authors are divided about the origin of the denomination of this *court*, exchequer. Du-Cange is of opinion, it came from a chequer-wrought carpet, covering the great table in that *court*; or from the pavement of the *court*, which was chequer-wiſe: others, from the accomptants in this office uſing chequers, or cheſs-boards, in their computations.

In the exchequer there are ſeven *courts*: 1. The *court* of pleas. 2. The *court* of accounts. 3. The *court* of receipt, otherwiſe called the *lower exchequer*, as alſo the *receipt of the exchequer*; and is the place wherein the king's revenue is received and diſburſed. The principal officers hereof are, the lord treaſurer, a ſecretary of the treaſury, a chancellor of the exchequer, two chamberlains of the exchequer, an auditor of the receipts of the exchequer, four tellers, a clerk of the pells, an uſher of the receipt, a tally cutter, &c. See farther under Treasurer, Chancellor *of the exchequer*, Secretary, Chamberlain, Underchamberlain, Teller, Pells, Tally, &c. 4. The *court of exchequer* chamber, being the aſſembly of all the judges of England for matters in law. 5. The *court of exchequer* chamber, for errors in the *court of exchequer*, eſtabliſhed by 31 Edw. III. c. 12. 6. The *court of exchequer* chamber, for errors in the king's bench, erected by 27 Eliz. c. 8. 7. The *court* of equity in the exchequer chamber. Vide New Abr. Law, vol. i. p. 597.

By the 33 Hen. VIII. cap. 39. the *court of exchequer* has power to diſcharge all debts and duties due to the king, upon an equity diſcloſed; and it is by virtue of this act, that they diſcharge recognizances: and it ſeems, by the ſaid act, they may diſcharge penal laws made before this ſtatute; but all penal laws made after the ſtatute cannot be diſcharged, but muſt be compounded.

The *court of exchequer* in Scotland, has the ſame power, authority, privilege, and juriſdiction over the revenue of Scotland, as the *court of exchequer* in England has over the revenues there; and all things and matters competent to the *court of exchequer* in England, ſo far as they relate to the king's revenue, are likewiſe competent to the *exchequer* of Scotland. The judges are likewiſe inveſted with the power of paſſing ſignatures, gifts, and tutories, and to reviſe and compound them in the ſame manner as was done by the lord high treaſurer, commiſſioners of the treaſury, and *court of exchequer* in Scotland, before the union. All ſerjeants at law, barriſters at law, of five years ſtanding, in any of the four inns of court of England; and advocates of five years ſtanding, in the college of juſtice in Scotland, are qualified for being barons of this *court*; whoſe commiſſions are *quam diu ſe bene geſſerint*.

Court *of Faculties*, in England, belongs to the archbiſhop of Canterbury, and his officer is called *magiſter ad facultates*. His power is to grant diſpenſations, as to marry, for the ſon to ſucceed his father in his benefice, one to have two or more benefices incompatible, &c.

The office where ſuch diſpenſations are taken out, is alſo called the *Faculty office*.

Courts *of Foreſt*. See **Attachments**, **Regard**, **Swanimote**, and **Justice** *of the foreſt*.

Court, *Hundred*, is a larger *court baron* held for all the inhabitants of a particular hundred, inſtead of a manor.

Court *of Huſtings*, a *court* of common pleas held before the lord mayor and aldermen of London, in Guild-hall. 4 Inſt. 247.

Of the great antiquity of this *court* we find this mention in the laws of king Edward the Confeſſor. *Debet etiam in London quæ eſt caput regni & legum, ſemper curia domini regis ſingulis ſeptimanis, die Lunæ* huſtingis *ſedere & teneri: fundata erat olim & ædificata ad inſtar & ad modum & in memoriam veteris magnæ Trojæ, & uſque in hodiernum diem, leges, & jura & dignitates, & libertates regiaſque conſuetudines ſuas una ſemper inviolabilitate conſervat.* Taylor, Hiſt. of Gavel-kind.

The *court of huſtings* is the principal and higheſt of all the *courts* of the city. This *court* determines all pleas, real, perſonal, and mixt: and here all lands, tenements, and hereditaments, rents and ſervices within the city of London and ſuburbs of the ſame, are pleadable in two huſtings; the one called huſtings of the plea of lands, and the other called huſtings of common pleas. Error or attaint lies there of a judgment or falſe verdict in the ſheriffs' *courts*.

Other cities and towns had alſo *courts* of the ſame name; as Wincheſter, Lincoln, York, &c.

Court *of King's Bench, Bancus Regius*, a *court*, or judgment-ſeat, ſo called, becauſe the king is ſuppoſed to ſit in perſon as judge of the *court*, which was formerly the caſe, and may do ſo whenever he pleaſes; for which reaſon all writs, and other proceſs in this *court*, are made returnable *coram nobis*, that is, before the king himſelf, and not *coram juſticiariis noſtris*, as is the form in the common pleas. 4 Inſt. 73.

The judges of this *court* are the lord chief juſtice, whoſe annual ſalary is 4000*l.* and three other puiſne juſtices at 2000*l.* a year each.

In this *court* are principally determined matters relating to the crown, and the peace. When any perſon is aggrieved by an order of juſtices, or quarter-ſeſſions, they have recourſe hither; the rights of elections of mayors, bailiffs, conſtables, &c. are often upon mandamuſes, brought before this *court* to be ſettled; and prohibitions are hence iſſued out to ſtay proceedings in the eccleſiaſtical, admiralty, or any inferior *court*, where the matter appears to be triable at common law. The ſubject has alſo a right to ſue in this *court* for any debt or contract, as well as in any other *court*, and may as advantageouſly and expeditiouſly proceed.

The chief juſtice is conſtituted by writ, and he is to hold, *quamdiu ſe bene geſſerint*, and ſo cannot be diſplaced without ſome great miſdemeanor; though formerly the chief juſtice, and other inferior judges, were made only *durante beneplacito*, and accordingly were turned out at the king's pleaſure. He preſides under his majeſty in this *court*; but when the *court* divides, in giving judgment upon any ſpecial argument, he hath but one voice; ſo that if the opinion of the *court* ſhould be equally divided, the matter muſt reſt till one of the judges ſhall ſee juſt reaſon to alter his opinion. He is to attend the lords in parliament, though he has no vote, unleſs he be a peer himſelf, but is to give his opinion and advice to the houſe by virtue of a writ of aſſiſtance; and is frequently therefore conſulted by them, both in making and repealing laws, and in altering or explaining them. He makes a return of all writs of error in parliament directed to this *court*; and with his own hand delivers the writ of error, and a tranſcript of the proceedings in the cauſe into the houſe of lords.

The three puiſne, or inferior judges of this *court*, go the circuits, and are in commiſſion of oyer and terminer at the Old Bailey. They, as well as the chief juſtice, are entitled to their ſalary, though they happen not to ſit one day in *court* in the term, unleſs they give their aſſent ſo ſlightly, as, on a *ſcire facias*, to be charged with negligence: theſe alſo hold by *quamdiu ſe bene geſſerint*.

There are ſeveral officers belonging to this *court*, as two chief clerks, or prothonotaries, who are ſuppoſed to enter all the pleadings and judgments between party and party; although this is in reality done by an entering-clerk under them; and all writs of *latitat*, *non omittas*, bills of Middleſex, *habeas corpus*, &c. are ſubſcribed with the names of theſe chief clerks.

The ſecondary acts as maſter of the office on the pleas ſide, and is the chief clerk's deputy; his buſineſs is to examine any perſon, who is to be ſworn an entering-clerk, or attorney at large, whether he be duly qualified, and to preſent him to the chief juſtice. He alſo ſigns all judgments, and gives coſts upon them; and the *court*, upon any motion, in relation to the irregular practice of any clerk or attorney, generally refers the examination thereof to him. He alſo takes all affidavits in *court* (unleſs on the crown-ſide); and the acknowlegement of all deeds in *court*.

This *court* was always ambulatory, and removed with the king wherever he went: hence the writs returnable in this *court* are *coram nobis ubicunque fuerimus in Anglia*; and all records there are ſtyled *coram rege*, as it is ſtill ſuppoſed to have always the king himſelf in perſon ſitting in it; from whence it obtained the name of the *court of king's bench*, and hath always retained a ſupreme original juriſdiction in all criminal matters, for in theſe the proceſs both iſſued, and was returnable into this *court*: but in treſpaſs it might be made returnable into either the *king's bench*, or common pleas; becauſe the plea was criminal as well as civil. Vide 4 Inſt. 70. 2 Inſt. 24. Cok. Lit. 71. Cromp. of Courts, 78. 1 Rol. Abr. 94.

This *court* is often termed the *cuſtos morum* of all the realm; and wherever it meets with an offence contrary to the firſt principles of juſtice, and of dangerous conſequence, if not reſtrained, it may adapt a proper puniſhment to it. For the better reſtraining ſuch offences, it has a diſcretionary power of inflicting exemplary puniſhment on offenders, either by fine, impriſonment, or other infamous puniſhment, as the nature of the crime, conſidered in all its circumſtances, ſhall require. It may make uſe of any priſon which ſhall ſeem moſt proper; and it is ſaid, that no other *court* can remove or bail perſons condemned to impriſonment by this *court*. 2 Hawk. P. C. p. 6.

An act of parliament, appointing, that all crimes of a certain denomination ſhall be tried before certain judges, does not exclude the juriſdiction of this *court*, without expreſs negative words; and therefore it has been reſolved, that 33 Hen. VIII. c. 12. which enacts, that all treaſons, &c. within the king's houſe, ſhall be determined before the lord ſteward of the king's houſe, does not reſtrain the *court of king's bench* from proceeding againſt ſuch offences. 2 Inſt. 549.

But when a ſtatute creates a new offence, which was not taken notice of by the common law, and erects a new juriſdiction for the puniſhment of it, and preſcribes a certain method of proceeding, it ſeems queſtionable how far this *court* has an implied juriſdiction in ſuch a caſe.

The judges of this *court* are the ſovereign juſtices of oyer and terminer, gaol-delivery, conſervators of the peace, &c. As alſo the ſovereign coroners; and therefore, where the ſheriffs and coroners may receive appeals by the bill, *a fortiori*, this *court* may. Alſo this *court* may admit perſons to bail in all caſes according to their diſcretion. 4 Inſt. 73. 9 Co. 118. b. 4 Inſt. ibid. 4 Inſt. 74. Vaugh. 157.

This *court* has not only a power to reverſe erroneous judgments, for ſuch errors as appear the defect of the underſtanding; but alſo to puniſh all inferior magiſtrates, and all officers of juſtice, for wilful and corrupt abuſes of their authority againſt the obvious principles of natural juſtice.

This *court* being the ſupreme court of oyer and terminer, gaol-delivery, and eyre, its preſence ſuſpends the power, and avoids the proceedings of all other *courts* of the ſame nature in the county where it ſits, during its ſitting there. 4 Inſt. 73. 3 Inſt. 27.

The civil ſide of the king's bench commences on a ſuppoſition of a treſpaſs committed by the defendant in the county where it reſides, and that he is taken up by proceſs of this *court*, as the ſovereign eyre, and being committed to the marſhal, he may be declared againſt in any civil action whatſoever. The firſt proceſs, therefore, is a bill either real or feigned; and ſo called, becauſe its foundation was the bill of complaint in *court*, touching the treſpaſs: in this is founded the *latitat*, which ſuppoſes that the defendant has eſcaped, and therefore iſſues in the king's name, to apprehend the party wherever he may be found. Vide New Abr. Law, vol. i. p. 595. and title *Proceſs*.

Court *Leet, Leta viſus franci plegii*, is a *court* of record, ordained for puniſhing offences againſt the crown; and is ſaid to be the moſt ancient *court* of the land. 2 Danv. Abr. 289. It enquires of all offences under high treaſon; but thoſe who are to be puniſhed with loſs of life or member, are only enquirable and preſentable here, and to be certified over to the juſtices of aſſiſe. Stat. 1 Edw. III. And this *court* is called the view of frank pledge, becauſe the king is to be there certified by the view of the ſteward, how many people are within every leet, and have an account of their good manners and government; and every perſon of the age of twelve years, who hath remained there for a year and a day, may be ſworn to be faithful to the king, and the people are to be kept in peace, &c. A leet is incident to a hundred, as a court baron to a manor: for by grant of a hundred, a leet paſſeth; and a hundred cannot be without a leet. Kitch. 70.

The uſual method of puniſhment in the *court leet*, is by fine and amercement; the former aſſeſſed by the ſteward, and the latter by the jury.

Court *of the Legate*, was a *court* obtained by cardinal Wolſey of pope Leo X. in the ninth year of Henry VIII. wherein he, as legate of the pope, had power to prove wills, and diſpenſe with offences againſt the ſpiritual laws, &c. It was but of ſhort continuance.

Court *of Marſhalſea*, a *court* of record to hear and determine cauſes, between the ſervants of the king's houſehold, and others within the verge: and hath juriſdiction of all matters within the verge of the *court*, and of pleas of treſpaſs, where either party is of the king's family; and of all other actions perſonal, wherein both parties are the king's ſervants. This is the original juriſdiction of the *court of marſhalſea*.

Court *Martial, Curia Martialis*, is a *court* for puniſhing the offences of officers and ſoldiers, in time of war: and it appears by our books, that if any perſon in commiſſion, in time of peace, put to death any man by martial law, it is againſt Magna Charta, and murder. 3 Inſt. 52. Though temporal acts of parliament have of late enabled our kings to hold *courts martial*, in times of peace, &c. Deſertion and mutiny are puniſhable by this *court*; which muſt conſiſt of at leaſt thirteen commiſſion officers; nine of whom muſt concur in order to ſentence of death. A field officer is not to be tried by any under the degree of a captain.

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Court, *Prerogative*, is a *court* belonging to the archbiſhop of Canterbury; wherein all wills are proved, and all adminiſtrations granted, that belong to the archbiſhop by his prerogative; that is, where the party at his death had *bona notabilia*, five pounds or upwards, out of the dioceſe where he died, and within the archbiſhop's province.

All citations and decrees of this *court* run in the name of the archbiſhop.

This *court*, for the province of Canterbury, is kept in the common hall in Doctors Commons, in the afternoon, next day after the arches

The judge is attended by the regiſter, who ſets down the decrees and acts of *court*; and keeps records, &c. all original wills and teſtaments of parties dying, having *bona notabilia*.

The place is uſually called the *Prerogative office*: it is now kept in Dean's court; where, for a moderate fee, a copy may be had of any ſuch will. See Will.

Appeal lies from this *court* to the king in chancery, who appoints delegates, &c. 25 Hen. VIII. c. 19. though if the delegates revoke a will, &c. they cannot grant letters of adminiſtration; for their power is to hear and determine the apppeal. 2 Bulſt. 2. Roll. Abr. 233. The archbiſhop hath probate of every biſhop's teſtament, &c. though he hath not *bona notabilia* out of the dioceſe: ſo where a perſon dies beyond ſea. 4 Inſt. 335.

The archbiſhop of York hath alſo the like *court*, called his *exchequer*.

Court *of Requeſts*, was a *court* of equity, of the ſame nature with the *court* of chancery, but inferior to it; being principally inſtituted for the help of ſuch petitioners, as, in conſcionable caſes, dealt by ſupplication to his majeſty.

Of this *court* the lord privy-ſeal was chief judge; aſſiſted by the maſters of requeſts. It had its beginning about 9 Hen. VII. according to Sir Julius Cæſar's tract on this ſubject. Mich. 40 and 41 Eliz. in a *court* of common pleas, it was adjudged, upon ſolemn argument, that this *court of requeſts*, or the *Whitehall*, was no *court* that had the power of judicature, &c. Coke Inſt. fol. 97. It had aſſumed ſo great power to itſelf, that it grew burdenſome and grievous, and was therefore taken away, with ſome others, by a ſtatute made 16 and 17 Car. I. cap. 10.

Courts, *Stannary*. See Stannaries.

Court *of Star-chamber*, *Camera Stellata*, or *Chambre de Eſtoiels*, ſo called becauſe the roof was originally painted with ſtars; or more probably becauſe the contracts and obligations of the Jews, before their baniſhment under Edward I. which were called *ſtarrs*, from a corruption of the Hebrew word *ſhetar*, *a covenant*, were kept in cheſts in the king's exchequer. This is of an ancient ſtanding; but its authority was very much heightened by Henry VII. and Henry VIII. who appointed, by two ſeveral ſtatutes, that the chancellor, aſſiſted by others there named, ſhould have power to hear complaints againſt retainers, embracers, miſdemeanors of officers, and other like offences, which through the power and authority of thoſe who committed them did lift up the head above other faults; and for which inferior judges were not ſo meet to give correction, and the common law had not ſufficiently provided.

By the ſtatute 16 Car. I. the *court* called *ſtar-chamber*, and all juriſdiction, power, and authority thereto belonging, are abſolutely diſſolved.

Court *Supreme*. See Peer.

Court *of Verge*. See Court *Palace*.

Courts, *Univerſity*. The *courts* of the univerſities of Oxford and Cambridge, are of a particular nature: they were granted by charters, and confirmed by authority of parliament. See ſtat. 13 Eliz. 4 Inſt. 227. Theſe *courts* are called the chancellor's *courts*, and are kept by the vice-chancellors of the univerſities. Their juriſdiction extends to all cauſes eccleſiaſtical and civil (except for maihem, felony, and relating to freeholds); where a ſcholar, ſervant, or miniſter of the univerſities, is one of the parties to the ſuit.

Courts *of Wales*, are eſtabliſhed over the principality chiefly by 12 Edw. I. and 34 and 35 Hen. VIII. c. 26. Beſides *courts* baron, hundred and county *courts*, like thoſe in England, a ſeſſions is held twice every year in each county, by judges appointed by the king; in which pleas and perſonal actions ſhall be held in the ſame manner, and with the ſame extent, as in the *court* of common pleas at Weſtminſter; and writs of error ſhall lie from judgment in them to the *court* of king's bench. And the proceedings are according to the laws of England.

Court *of Wards*, a *court* firſt erected by king Henry VIII. and after augmented by him with the office of liveries: but now abſolutely taken away and aboliſhed, by a ſtatute made 12 Car. II. cap. 24.

For the nature of this *court*, ſee Coke on Litt. tit. *Knight's ſervice*.

Court, *Bouche of*. See Bouche.

Court, *Deſpight of the*. See Departure.

Court, *Forejudged the*. See Forejudged.

Court, *Inns of*. See Inn.

Court, *Perquiſites of*. See Perquisite.

Court, *Suit of*. See Suit.

Court, *Ambulatory*. See Ambulatory.

Court, *Baſe*. See Base.

Court, *Honour*. See Honour.

Court, *Lawleſs*. See Lawless.

Court, *Wood-plea*. See Wood.

COURT-DAYS, are days when the courts of judicature are open, and pleas held.

COURT-LANDS, ſuch as the lord of the manor keeps in his own hands, for the uſe of his family, and for hoſpitality. See Manor.

COURT-ROLL, a roll which contains an account of the number, &c. of lands, depending on the lord of the manor; with the names of the TENANTS, &c.

Tenants holding by copy of this roll, are denominated COPY-HOLDERS.

COURTAIN. See Curtin.

COURTESY, or Curtesy *of England*, a TENURE, whereby a man marrying an inheritrix, or a woman ſeiſed of lands in fee-ſimple, or fee-tail general, or ſeiſed as heir of tail-ſpecial, and getting a child by her which cometh alive into the world, though both wife and child die forthwith; yet, if ſhe were in poſſeſſion, he ſhall keep the land during his life, and be called *tenant by the courteſy of England*; this privilege being not allowed in any other country, except Scotland, where it is called *curialitas Scotiæ*.

This tenure was introduced by the Conqueror, and borrowed by him from his own country, Normandy, where it obtained before, under the name of *veuveté*. It is ſaid in the Mirrour to have been introduced by Henry I.

Courtesy, *Arms of*. See Arms.

COURTIN, or Courtain, in *Fortification*. See Curtin.

COURTISAN, a term of infamy, applied to women who expoſe their perſons, and make a trade of proſtitution.

Lais, the famous Theban *courtiſan*, ſtands on record for requiring no leſs than ten thouſand crowns for a ſingle night. Of all places in the world, Venice is that where *courtiſans* abound the moſt: it is near three centuries ſince the ſenate, which had expelled them, was obliged to recall them; to provide for the ſecurity of women of honour, and to keep the nobles employed, leſt they ſhould make innovations in the ſtate.

COUSIN, a term of relation and kinſhip, applied to thoſe who are iſſued from two brothers, or two ſiſters.

The word is ordinarily derived from *conſanguineus*; though Menage brings it from *congenius*, or *congeneus*, q. d. *ex eodem genere*.

In the firſt generation they are called *couſin germans*, i. e. next *couſins*: in the ſecond, *ſecond couſins*: in the third and fourth, *couſins in the third and fourth degrees*.

In the primitive times, it was allowed *couſin germans* to marry, to prevent their making alliances in heathen families: but Theodoſius the Great prohibited it, under pain of death; on pretence that they were, in ſome ſort, brothers and ſiſters, with regard to each other.

Paternal couſins, are thoſe ſprung from relations on the father's ſide. *Maternal*, thoſe on the mother's.

Cousins, *Quater*. See Quater.

Cousin is alſo a title of honour, which kings beſtow on peers, or nobles, foreign princes of the blood, cardinals, and the principal perſons of their ſtate.

COUSSINET, *cuſhion*, in *Architecture*, the ſtone that crowns a piedroit, or pier; or that lies immediately over the capital of the impoſt. Its under-ſide is level, and its upper curved; receiving the firſt riſe or ſpring of the arch, or vault.

The word is uſed alſo to ſignify an ornament, in the Ionic capital, between the ABACUS and ECHINUS, or quarter-round; and which ſerves to form the volutes. It is thus denominated from its repreſenting a pillow, or cuſhion, preſſed by the weight over it, and bound with the ſtrap, or girdle, called, by Vitruvius, *baltheus*.

COUSU, in *Heraldry*, is uſed in the ſame ſenſe as *remply*; viz. for a piece of another colour, or metal, placed on an ordinary as if it were ſewed on; which the word, in the French language, naturally implies: becauſe the additional piece is not properly on the field, but in the nature of a thing ſewed on, *adſutus*. This is generally of colour on colour, or metal on metal, contrary to the general rule of heraldry.

COUTHUTLAUGH, from the Saxon *couth*, *knowing*, and *utlaugh*, *outlaw*; he that wittingly receives a man outlawed, and cheriſhes or conceals him: for which offence he was, in ancient time, ſubject to the ſame puniſhment with the outlaw himſelf.

COUVERT, in *Heraldry*, denotes ſomething like a piece of hanging, or a pavilion, falling over the top of a chief, or other ordinary; ſo as not to hide, but only be a ſhading thereto.

COW, in *Zoology*. See Bull, and Bos.

The *cow* ought to have a broad forehead, black eyes, large clean horns, a long thin neck, a large deep belly, thick thighs, round legs, large feet, ſhort joints, and a white large udder with four teats.

The uſe of the *cow* is either for the dairy, or for the breed. The red *cow* is generally ſuppoſed to give the beſt milk, and the black *cow* to bring the beſt calves. The *cow* that gives the milk longeſt is the beſt both for the breed and dairy; and, for the latter uſe, it is moſt convenient that the *cow* ſhould calve in the ſpring.

This *court* has not only a power to reverſe erroneous judgments, for ſuch errors as appear the defect of the underſtanding; but alſo to puniſh all inferior magiſtrates, and all officers of juſtice, for wilful and corrupt abuſes of their authority againſt the obvious principles of natural juſtice.

This *court* being the ſupreme court of oyer and terminer, gaol-delivery, and eyre, its preſence ſuſpends the power, and avoids the proceedings of all other *courts* of the ſame nature in the county where it ſits, during its ſitting there. 4 Inſt. 73. 3 Inſt. 27.

The civil ſide of the king's bench commences on a ſuppoſition of a treſpaſs committed by the defendant in the county where it reſides, and that he is taken up by proceſs of this *court*, as the ſovereign eyre, and being committed to the marſhal, he may be declared againſt in any civil action whatſoever. The firſt proceſs, therefore, is a bill either real or feigned; and ſo called, becauſe its foundation was the bill of complaint in *court*, touching the treſpaſs: in this is founded the *latitat*, which ſuppoſes that the defendant has eſcaped, and therefore iſſues in the king's name, to apprehend the party wherever he may be found. Vide New Abr. Law, vol. i. p. 595. and title *Proceſs*.

COURT *Leet*, *Leta viſus franci plegii*, is a *court* of record, ordained for puniſhing offences againſt the crown; and is ſaid to be the moſt ancient *court* of the land. 2 Danv. Abr. 289. It enquires of all offences under high treaſon; but thoſe who are to be puniſhed with loſs of life or member, are only enquirable and preſentable here, and are to be certified over to the juſtices of aſſiſe. Stat. 1 Edw. III. And this *court* is called the view of frank pledge, becauſe the king is to be there certified by the view of the ſteward, how many people are within every leet, and have an account of their good manners and government; and every perſon of the age of twelve years, who hath remained there for a year and a day, may be ſworn to be faithful to the king, and the people are to be kept in peace, &c. A leet is incident to a hundred, as a court baron to a manor: for by grant of a hundred, a leet paſſeth; and a hundred cannot be without a leet. Kitch. 70.

The uſual method of puniſhment in the *court leet*, is by fine and amercement; the former aſſeſſed by the ſteward, and the latter by the jury.

COURT *of the Legate*, was a *court* obtained by cardinal Wolſey of pope Leo X. in the ninth year of Henry VIII. wherein he, as legate of the pope, had power to prove wills, and diſpenſe with offences againſt the ſpiritual laws, &c. It was but of ſhort continuance.

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It had its name either becauſe moſt ordinarily held in ſummer, and that the ſuiters hereat were chiefly country clowns, with duſty feet, called by the French, *pieds poudreux*; or from the expedition intended in the hearing of cauſes proper thereto, before the duſt went off the plaintiff and defendant's feet: or rather, from the old French *pied puldreaux*, *a pedlar*; ſignifying the *court* of ſuch petty chapmen as reſort to fairs or markets.

The Saxons called it *ceapung-gemot*, i. e. *court of merchandiſe*; or a *court* for the deciſion of diſputes relating to buying and ſelling. It is a *court* of record held during the continuance of the fairs. The ſteward, who has the toll of the market, is the judge; and the trial is by merchants and traders in the fair. A writ of error lies to the *courts* at Weſtminſter.

COURT, *Prerogative*, is a *court* belonging to the archbiſhop of Canterbury; wherein all wills are proved, and all adminiſtrations granted, that belong to the archbiſhop by his prerogative; that is, where the party at his death had *bona notabilia*, five pounds or upwards, out of the dioceſe where he died, and within the archbiſhop's province.

All citations and decrees of this *court* run in the name of the archbiſhop.

This *court*, for the province of Canterbury, is kept in the common hall in Doctors Commons, in the afternoon, next day after the arches

The judge is attended by the regiſter, who ſets down the decrees and acts of *court*; and keeps records, &c. all original wills and teſtaments of parties dying, having *bona notabilia*.

The place is uſually called the *Prerogative office*: it is now kept in Dean's court; where, for a moderate fee, a copy may be had of any ſuch will. See WILL.

Appeal lies from this *court* to the king in chancery, who appoints delegates, &c. 25 Hen. VIII. c. 19. though if the delegates revoke a will, &c. they cannot grant letters of adminiſtration; for their power is to hear and determine the apppeal. 2 Bulſt. 2. Roll. Abr. 233. The archbiſhop hath probate of every biſhop's teſtament, &c. though he hath not *bona notabilia* out of the dioceſe: ſo where a perſon dies beyond ſea. 4 Inſt. 335.

The archbiſhop of York hath alſo the like *court*, called his *exchequer*.

Court *of Requeſts*, was a *court* of equity, of the ſame nature with the *court* of chancery, but inferior to it; being principally inſtituted for the help of ſuch petitioners, as, in conſcionable caſes, dealt by ſupplication to his majeſty.

Of this *court* the lord privy-ſeal was chief judge; aſſiſted by the maſters of requeſts. It had its beginning about 9 Hen. VII. according to Sir Julius Cæſar's tract on this ſubject. Mich. 40 and 41 Eliz. in a *court* of common pleas, it was adjudged, upon ſolemn argument, that this *court of requeſts*, or the *Whitehall*, was no *court* that had the power of judicature, &c. Coke Inſt. fol. 97. It had aſſumed ſo great power to itſelf, that it grew burdenſome and grievous, and was therefore taken away, with ſome others, by a ſtatute made 16 and 17 Car. I. cap. 10.

Courts, *Stannary*. See Stannaries.

Court *of Star-chamber*, *Camera Stellata*, or *Chambre de Eſtoiels*, ſo called becauſe the roof was originally painted with ſtars; or more probably becauſe the contracts and obligations of the Jews, before their baniſhment under Edward I. which were called *ſtarrs*, from a corruption of the Hebrew word *ſhetar*, *a covenant*, were kept in cheſts in the king's exchequer. This is of an ancient ſtanding; but its authority was very much heightened by Henry VII. and Henry VIII. who appointed, by two ſeveral ſtatutes, that the chancellor, aſſiſted by others there named, ſhould have power to hear complaints againſt retainers, embracers, miſdemeanors of officers, and other like offences, which through the power and authority of thoſe who committed them did lift up the head above other faults; and for which inferior judges were not ſo meet to give correction, and the common law had not ſufficiently provided.

By the ſtatute 16 Car. I. the *court* called *ſtar-chamber*, and all juriſdiction, power, and authority thereto belonging, are abſolutely diſſolved.

Court *Supreme*. See Peer.

Court *of Verge*. See Court *Palace*.

Courts, *Univerſity*. The *courts* of the univerſities of Oxford and Cambridge, are of a particular nature: they were granted by charters, and confirmed by authority of parliament. See ſtat. 13 Eliz. 4 Inſt. 227. Theſe *courts* are called the chancellor's *courts*, and are kept by the vice-chancellors of the univerſities. Their juriſdiction extends to all cauſes eccleſiaſtical and civil (except for maihem, felony, and relating to freeholds); where a ſcholar, ſervant, or miniſter of the univerſities, is one of the parties to the ſuit.

Courts *of Wales*, are eſtabliſhed over the principality chiefly by 12 Edw. I. and 34 and 35 Hen. VIII. c. 26. Beſides *courts* baron, hundred and county *courts*, like thoſe in England, a ſeſſions is held twice every year in each county, by judges appointed by the king; in which pleas and perſonal actions ſhall be held in the ſame manner, and with the ſame extent, as in the *court* of common pleas at Weſtminſter; and writs of error ſhall lie from judgment in them to the *court* of king's bench. And the proceedings are according to the laws of England.

Court *of Wards*, a *court* firſt erected by king Henry VIII. and after augmented by him with the office of liveries: but now abſolutely taken away and aboliſhed, by a ſtatute made 12 Car. II. cap. 24.

For the nature of this *court*, ſee Coke on Litt. tit. *Knight's ſervice*.

Court, *Bouche of*. See Bouche.

Court, *Deſpight of the*. See Departure.

Court, *Forejudged the*. See Forejudged.

Court, *Inns of*. See Inn.

Court, *Perquiſites of*. See Perquisite.

Court, *Suit of*. See Suit.

Court, *Ambulatory*. See Ambulatory.

Court, *Baſe*. See Base.

Court, *Honour*. See Honour.

Court, *Lawleſs*. See Lawless.

Court, *Wood-plea*. See Wood.

COURT-DAYS, are days when the courts of judicature are open, and pleas held.

COURT-LANDS, ſuch as the lord of the manor keeps in his own hands, for the uſe of his family, and for hoſpitality. See Manor.

COURT-ROLL, a roll which contains an account of the number, &c. of lands, depending on the lord of the manor; with the names of the tenants, &c.

Tenants holding by copy of this roll, are denominated copy-holders.

COURTAIN. See Curtin.

COURTESY, or Curtesy *of England*, a tenure, whereby a man marrying an inheritrix, or a woman ſeiſed of lands in fee-ſimple, or fee-tail general, or ſeiſed as heir of tail-ſpecial, and getting a child by her which cometh alive into the world, though both wife and child die forthwith; yet, if ſhe were in poſſeſſion, he ſhall keep the land during his life, and be called *tenant by the courteſy of England*; this privilege being not allowed in any other country, except Scotland, where it is called *curialitas Scotiæ*.

This tenure was introduced by the Conqueror, and borrowed by him from his own country, Normandy, where it obtained before, under the name of *veuveté*. It is ſaid in the Mirrour to have been introduced by Henry I.

Courtesy, *Arms of*. See Arms.

COURTIN, or Courtain, in *Fortification*. See Curtin.

COURTISAN, a term of infamy, applied to women who expoſe their perſons, and make a trade of proſtitution.

Lais, the famous Theban *courtiſan*, ſtands on record for requiring no leſs than ten thouſand crowns for a ſingle night. Of all places in the world, Venice is that where *courtiſans* abound the moſt: it is near three centuries ſince the ſenate, which had expelled them, was obliged to recall them; to provide for the ſecurity of women of honour, and to keep the nobles employed, leſt they ſhould make innovations in the ſtate.

COUSIN, a term of relation and kinſhip, applied to thoſe who are iſſued from two brothers, or two ſiſters.

The word is ordinarily derived from *conſanguineus*; though Menage brings it from *congenius*, or *congeneus*, q. d. *ex eodem genere*.

In the firſt generation they are called *couſin germans*, i. e. next *couſins*: in the ſecond, *ſecond couſins*: in the third and fourth, *couſins in the third and fourth degrees*.

In the primitive times, it was allowed *couſin germans* to marry, to prevent their making alliances in heathen families: but Theodoſius the Great prohibited it, under pain of death; on pretence that they were, in ſome ſort, brothers and ſiſters, with regard to each other.

Paternal couſins, are thoſe ſprung from relations on the father's ſide. *Maternal*, thoſe on the mother's.

Cousins, *Quater*. See Quater.

Cousin is alſo a title of honour, which kings beſtow on peers, or nobles, foreign princes of the blood, cardinals, and the principal perſons of their ſtate.

COUSSINET, *cuſhion*, in *Architecture*, the ſtone that crowns a piedroit, or pier; or that lies immediately over the capital of the impoſt. Its under-ſide is level, and its upper curved; receiving the firſt riſe or ſpring of the arch, or vault.

The word is uſed alſo to ſignify an ornament, in the Ionic capital, between the abacus and echinus, or quarter-round; and which ſerves to form the volutes. It is thus denominated from its repreſenting a pillow, or cuſhion, preſſed by the weight over it, and bound with the ſtrap, or girdle, called, by Vitruvius, *baltheus*.

COUSU, in *Heraldry*, is uſed in the ſame ſenſe as *remply*; viz. for a piece of another colour, or metal, placed on an ordinary as if it were ſewed on; which the word, in the French language, naturally implies: becauſe the additional piece is not properly on the field, but in the nature of a thing ſewed on, *adſutus*. This is generally of colour on colour, or metal on metal, contrary to the general rule of heraldry.

COUTHUTLAUGH, from the Saxon *couth*, *knowing*, and *utlaugh*, *outlaw*; he that wittingly receives a man outlawed, and cheriſhes or conceals him: for which offence he was, in ancient time, ſubject to the ſame puniſhment with the outlaw himſelf.

COUVERT, in *Heraldry*, denotes ſomething like a piece of hanging, or a pavilion, falling over the top of a chief, or other ordinary; ſo as not to hide, but only be a ſhading thereto.

COW, in *Zoology*. See Bull, and Bos.

The *cow* ought to have a broad forehead, black eyes, large clean horns, a long thin neck, a large deep belly, thick thighs, round legs, large feet, ſhort joints, and a white large udder with four teats.

The uſe of the *cow* is either for the dairy, or for the breed. The red *cow* is generally ſuppoſed to give the beſt milk, and the black *cow* to bring the beſt calves. The *cow* that gives the milk longeſt is the beſt both for the breed and dairy; and, for the latter uſe, it is moſt convenient that the *cow* ſhould calve in the ſpring.

Either in the month of March or April, when a *cow* is near calving, ſhe ſhould be put into good graſs three or four weeks before the time; or if it happen in winter, ſhe is to be fed well with hay. The day and night after ſhe has calved, ſhe ſhould be kept in the houſe, and the water that ſhe drinks ſhould be a little warmed. The next day, at noon, ſhe may be turned out; but ſhe ſhould be taken in at night, for three or four days afterwards, and then ſhe may be left to herſelf. Every night that ſhe is taken in, ſhe ſhould be kept till the cold of the morning is over, and a drink of warm water given her before ſhe goes out.

The largeſt *cows*, in general, give the greateſt quantity of milk: and it is always a good rule to take the cattle from a worſe ground than that on which they are to be kept; for if from a better, they are apt to degenerate. The beſt time of a *cow*'s life for breeding of calves, is from three years oſd till twelve.

Cow, *Sea.* See Sea *Cow.*

Cow-*parſnep.* See Parsnep.

Cow-*weed.* See Chervil.

Cow-*wheat.* See Wheat.

COWARD, in *Heraldry.* A lion borne, in an eſcutcheon, with his tail doubled, or turned in between his legs, is called a *lion coward.*

COWITCH. See Couhage.

COWL, or Coul, *Cuculla*, a ſort of hood, wore by certain monks. See Coul.

Cowl, *Friar's*, in *Botany.* See Wake *Robin.*

COWPER'*s Glands*, in *Anatomy*, a pair of glands diſcovered by Mr. Cowper in 1699, and lying upon each ſide of the perinæum. See Urethra.

COWRING, in *Falconry*, the quivering of young hawks, who ſhake their wings, in ſign of obedience to the old ones.

COWSLIP, in *Botany.* See Primrose.

Cowslip *of Jeruſalem.* See Lungwort.

Cowslip, *French.* See Auricula.

COXÆ *os.* See Coccygis.

Coxæ, Coxendicis, *oſſa*, and in Engliſh the *hip-bones*, called alſo *oſſa innominata*, are two large bones, ſituate on either ſide the *os ſacrum.* See *Tab. Anatomy* (*Oſteol.*) *fig.* 3. *n.* 16, 17, 18, 19.

In infants, each of theſe conſiſts of three diſtinct bones, ſeparated by cartilages; which, in adults, grow up, and conſtitute one firm, ſolid bone; whoſe parts, however, retain three diſtinct names, according to their former diviſion, viz. the *os ilium*, *os iſchium*, by ſome peculiarly called *os coxendicis*, and the *os pubis.*

Coxæ *muſculus*, according to Dr. Drake, is a pair of muſcles ariſing fleſhy from the *os iſchium*, between the *muſculi marſupialis*, and *pyriformis*; and which, deſcending obliquely, terminate on each ſide the *os coccygis*, and adjoining part of the *os ſacrum*; ſerving to draw the *os coccygis* upwards and inwards, as antagoniſts to two ligaments ſpringing from the back part of the *os ſacrum*, and terminating in the external ſurface of the *os coccygis.*

COXENDIX, in *Anatomy*, the *hip.* See its bones and muſcles under Coxæ.

COXSWAIN, on board a ſhip. See Cockswain.

COYA, or Coyba, a venomous inſect in South America, of a fiery red colour, and about the ſize of a bug. The poiſonous juices of this inſect, when burſt upon the ſkin of any animal, are often fatal. However, the Indians have an antidote againſt it, in the dried ſtems of an herb.

COYOLCOZQUE, in *Zoology*, the name of an American bird, deſcribed by Hernandez and Nieremberg, as a ſpecies of quail, or partridge. Its back is of a mixt white and yellow colour; its breaſt and belly wholly yellow; and its head and neck are ornamented with ſpots of black and white: its eyes are black; and its legs yellow. It is very common in many parts of New Spain, and is a very well taſted bird. Ray.

COZCACOAUHTLI, in *Zoology*, the Mexican name of a large bird of the eagle kind, deſcribed by Nieremberg; and called *regina aurarum*, *the queen of the winds*, from its being able to fly againſt any wind.

CQUILAQUIL, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands, to the ſpecies of parrot common with them; and diſtinguiſhed from all the other kinds, by being very large, and all over of a fine green.

CRAB, in *Zoology*, a genus of aptera in the claſs of inſects in the Linnæan ſyſtem, comprehending no leſs than eighty-ſeven ſpecies. See Squilla.

The *cancer major*, or common large *crab*-fiſh, has its abode from twenty to forty fathom water. Theſe animals herd together in diſtinct tribes, and have their ſeparate haunts for feeding and breeding, and will not aſſociate with their neighbours. This has been carefully tried, by marking the ſhell of a *crab*, and carrying it to two or three miles diſtance, and there leaving it among the ſame ſpecies: this *crab* has, after this, found its way home, and been caught in its old abode by the ſame fiſhermen.

The fiſhermen find the *crabs* of this ſpecies from the ſize of a cheſnut to twelve pound weight.

The *cancer major*, and all ſpecies of *crabs*, caſt their ſhells; though at what ſeaſon of the year, or how frequently, is not exactly to be determined; but it is believed to be annually, at the beginning of the ſummer, ſooner or later, according to the greater or leſs ſtrength of the *crab.* A membrane, like wet parchment, with which the carcaſs is enveloped, hardens by degrees into a new ſhell.

Nothing, in the hiſtory of the *crab*, is ſo ſingular as its breaking off its own limbs, which it occaſionally does, in the following manner: the creature is able to do this in any poſition, but the moſt advantageous way of making the experiment is to lay it on its back; then, with a pair of iron pincers, break the ſhell, and bruiſe the fleſh of one of the outer joints of a ſmall leg: the wound will bleed, and the creature ſhew ſigns of pain, by moving it about; afterwards it holds it quite ſtill, in a direct and natural poſition, without touching any part of its body, or other legs with it; then, on a ſudden, with a gentle crack, the wounded part of the leg drops off, at the internodium of the ſecond joint, from the body. If a hole be pierced in the great claws, or legs, and an iron put in to lacerate the muſcle, the effect is the ſame, and this large limb is thrown off in the ſame manner, only with more violence.

When the leg is off, a mucus overſpreads the wound, and ſtops the bleeding; and a ſmall leg is, by degrees, produced, which afterwards attains to the ſize of the former. Nature ſeems to have given this ſingular power to this creature for the preſervation of its life, in the mutual quarrels it very frequently has with others of its own ſpecies: in theſe one *crab* lays hold of the claws of another, and cruſhes it in ſuch a manner, that it would bleed to death, had it not this power of giving up the limb, and healing the wound. Phil. Tranſ. Nº 478. S. 14. and vol. xlvii. Nº 8. See Exuviæ.

Crab, in *Mechanics*, an engine uſed for mounting guns on their carriages. See Gin.

Crab, in *Sea-Language*, a wooden pillar, whoſe lower end is let down through the ſhip's decks, and reſts upon a ſocket like the capstan: in its upper end are three or four holes at different heights, through the middle of it, above one another; into which long bars are thruſt, whoſe length is nearly equal to the breadth of the deck. It is employed to wind in the cable, and for other purpoſes requiring a great mechanical power.

The *crab* with three claws is uſed to launch ſhips, and to heave them into the dock or off the key. See *Tab.* II. *Mechanics*, *fig.* 30.

Crab'*s claws*, or Crab'*s eyes*, *Chelæ Cancrorum*, in the *Materia Medica*, the tips of the common *crab* broken off at the verge of the black part; ſo much of the extremity of the claws only being uſed in medicine, as is tinged with this colour. The blackneſs, however, is only ſuperficial; they are of a greyiſh white within, and, when levigated, furniſh a tolerably white powder: this is of the number of the alkaline abſorbent powders, but ſuperior to moſt of them. It makes the baſis of the famous Gaſcoign powder, the *lapis contrayerva*, and many other of the compound ſudorific powders; and is ſometimes, though rarely, preſcribed ſingly.

It is the common opinion, that theſe *crab's eyes* act as mere abſorbents in the *primæ viæ*, and extend their efficacy no farther than thoſe paſſages. The French Memoirs, however, give us an account of their certainly paſſing into the blood, in a remarkable caſe. Mem. Acad. Par. 1709.

Crab'*s eyes*, *Oculi Cancrorum*, or *Lapides Cancrorum*, in *Natural Hiſtory* and *Medicine*, are little, white, round ſtones, ordinarily flat; ſo called, though really taken out of the cray-fiſh, or river lobſter: and bearing no great reſemblance to eyes, though reſembling them more than any other part. They are much uſed in medicine, as a powerful alkali, or abſorbent.

The moſt able naturaliſts long imagined them formed in the brain of the animal. Van Helmont firſt found them in the region of the ſtomach: M. Geoffroy the younger has obſerved the manner of their formation much more accurately. Whilſt the ſhell of the cray-fiſh, which it caſts every year, is hardening, a white nutritious juice, ſecreted in two portions of the ſtomach, forms by degrees a ſoft calculous ſubſtance, of a cruſtaceous texture, from ſucceſſive appoſitions of the juice. Before the caſting of the ſhell, the animal is in a weak and ſickly ſtate; takes no food for ſome days; and in this period the calculi ſeem to ſerve for its nouriſhment. And on this account the *crab's eyes* are met with only whilſt the fiſh are loſing their ſhells, and for a few days afterwards, and not for a conſiderable time after this period. Neumann.—See CRAY-*fiſh*.

CRAB-*lice*, a troubleſome kind of vermin, which ſtick ſo faſt with their claws to the ſkin, as to render it difficult to diſlodge them. Being viewed with a glaſs, they nearly reſemble the ſmall crab-fiſh; whence they obtained their popular name. They are alſo called *pluſtulæ*, *morpiones*, *petolæ*, and *peſſolatæ:* they uſually infeſt the arm-pits, eye-lids, eye-brows, and *pudenda*.

They will be quickly deſtroyed, and drop off dead, upon the application of a rag wet with the milk of ſublimate. This ſort of vermin is reckoned to prognoſticate ſpeedy mortality to thoſe whom they abandon, without being removed by medicine.

CRAB-*tree*, *Malus ſylveſtris*, in *Botany*. See APPLE-*tree*.

CRABRO. See HORNET.

CRACKER, in *Zoology*. See DUCK.

CRADLE, a well-known machine, in which children are rocked to ſleep.

It alſo denotes that part of the ſtock of a croſs-bow, in which the bullet is put.

CRADLE, in *Engraving*, is the name of an inſtrument uſed in ſcraping mezzotintoes, and preparing the plate. It is formed of ſteel, reſembling a chiſſel, with one ſloping ſide, upon which are cut hollow lines very near each other, and at equal diſtances. The acting part of this tool is made circular, and the corners are rounded. After being properly tempered, it muſt be ſharpened on the whetſtone. There are various ſizes of this inſtrument.

CRADLE, in *Huſbandry*, a part often added to a ſcythe, in order to gather the corn into ſwaths, when it is mowed.

CRADLE, in *Ship-building*, a frame of timber raiſed along the outſide of a ſhip, by the bildge, for the more commodious and ſecure launching of the veſſel. The *cradle* is much uſed in Italy, Spain, and Turky; where they alſo trim great veſſels in the *cradle*.

CRADLE, in *Surgery*, a caſe in which a broken leg is laid, after being ſet.

CRAFT, a ſea term, ſignifying all manner of lines, nets, hooks, and the like, which ſerve for fiſhing. See FISHING.

Hence, as thoſe who uſe the fiſhing-trade, uſe ſmall veſſels, ſuch as ketches, hoys, ſmacks, &c. they call ſuch little veſſels *ſmall craft*.

CRAKE, in *Ornithology*. See *Land* RAIL.

CRAKE-*berries*, in *Botany*, *empetrum*. See *Berry-bearing* HEATH.

CRAMA, in *Metallurgy*, a name given by the ancients to braſs, made by the mixture of copper and the *lapis calaminaris*, as at this time. They had alſo a kind of white braſs, or mixt metal, made of copper, in uſe among them, which they eſteemed much above the yellow. We find mention of this in Virgil, under the name of *album orichalcum*; and the other old writers often call it *album crama*. We know of many ways of turning copper white: arſenic and many other minerals will do it; and the ſpoons, and other utenſils, which ſome years ago uſed to be made of a mixt metal, called alchymy metal, were a ſort of white braſs. But it does not appear, that any of our methods have been the ſame with that of the ancients: the copper is rendered more brittle, and in ſome ſort debaſed, in all our compoſitions of this kind; but in thoſe of the ancients, it ſeems to have been rendered more ductile than at firſt.

CRAMA, CROMA, and CHRAMA, in *Medical Writers*, are uſed to ſignify a mixture of things, whether medicines or elements.

CRAMBE, in *Botany*, the *ſea-cabbage*, a genus of the *tetradynamia ſiliquoſa* claſs. Its characters are theſe: the flower hath four petals, placed in form of a croſs; and ſix ſtamina, two of which are the length of the empalement, the other four being longer. The petals have honey glands on their inſides, which are longer than the ſtamina. It hath an oblong germen, which afterward becomes a round dry capſule, with one cell encloſing a roundiſh ſeed. There are five ſpecies; the firſt of which is found wild upon ſea ſhores in divers parts of England, but particularly in Suſſex and Dorſetſhire, where the inhabitants gather it in ſpring to eat, preferring it to any of the cabbage kind. As it generally grows upon the gravelly ſhores, where the tide flows over it, the inhabitants obſerve where the gravel is thruſt up by the roots of this plant, and cut the ſhoots before they are expoſed to the open air; whereby they appear as if they were blanched, and are very tender and ſweet: but if they are ſuffered to grow until they are green, they become tough and bitter.

This plant may be propagated in a garden, by ſowing the ſeed ſoon after it is ripe, in a ſandy or gravelly ſoil, where it will thrive exceedingly, and its creeping roots will ſoon overſpread a large ſpot of ground; but the heads will not be fit to cut, until the plants have had a year's growth. In order to have it good, the bed, in which the plants grow, ſhould at Michaelmas be covered over with ſand or gravel about four or five inches thick, which will allow a proper depth for the ſhoots; and if this be repeated every autumn, in the ſame manner as is practiſed in earthing aſparagus beds, they will require no other culture.

The other ſorts are only preſerved in curious gardens for variety. Miller.

It is eſteemed more hot and dry than the cabbage. Dale informs us that the leaves heal wounds, and diſcuſs inflammatory, and other tumours.

CRAMP, a kind of numbneſs, or convulſion, occaſioned by a thick viſcid vapour entering the membranes of the muſcles, which contracts or extends the neck, arms, legs, &c. with a violent, but tranſitory pain; being uſually driven off with friction alone.

The word comes from the German *krampſe*, which ſignifies the ſame.

A glaſs of tar water, to be drank night and morning, has been recommended; a rod of brimſtone, when held in the hand, has given preſent relief.

CRAMP-*fiſh*, or NUMB-*fiſh*, in *Ichthyology*, the Engliſh name of the TORPEDO. See alſo RAJA.

CRAMP-*iron*, a piece of iron, bent at each extreme, ſerving to bind together pieces of wood, ſtones, or other things.

Some derive the word, by corruption, from the French *agrapon*, or the Italian *rampone*, which ſignify the ſame thing.

CRAMPER, in *Zoology*, a name given by ſome to the BRAMA *ſaxatilis*, or *pagrus Indicus*, a large and broad ſea-fiſh, caught among the rocks on the ſhores of many parts of the Eaſt Indies.

CRAMPONEE', in *Heraldry*. A *croſs cramponeé*, is that which at each end has a *cramp*, or ſquare piece coming from it: as repreſented in *Tab.* II. *Heraldry*, *fig.* 52.

CRAMPOONS, CRAMPONS, pieces of iron, hooked at the ends; for the drawing or pulling up of timber, ſtones, &c.

CRANAGE, a liberty to uſe a crane, for drawing up wares out of a ſhip, or hoy, &c. at a wharf; and to make profit thereof.

The word alſo ſignifies the money taken, or paid for the ſame.

CRANBERRY, in *Botany*. See WHORTLE-*berry*.

CRANE, *Ardea grus*, in the Linnæan ſyſtem of *Zoology*, a ſpecies of the ARDEA, or HERON. The characteriſtic of this genus is, that the head is criſtated or creſted, and almoſt bare of feathers.

Theſe birds are very tall, and remarkable for the length of their legs and neck, of which there are three known ſpecies. 1. The common *crane*, the body of which is ſo large, as ſometimes to weigh ten or twelve pounds; and when meaſured from the tip of the beak to the toes extended, is ſix feet long. Its beak is of a greeniſh black, and is long and pointed; its wings are large; and its legs and feet black; its toes very long. But what is moſt obſervable in this bird, is the conſtruction of its wind-pipe, or *aſpera arteria*, which runs deep into the breaſt, by means of a foramen prepared for it; and there ſuffering ſome windings and turnings, goes out again at the ſame paſſage, and then deſcends into the lungs. Phil. Tranſ. vol. lvi. p. 204.

It is a very common bird in Italy, and other places; and formerly viſited England, large flocks of them having been ſometimes ſeen in Lincolnſhire, and Cambridgeſhire, in ſummer. But they have now forſaken our iſland, though formerly natives. It is ſuppoſed by many, that this bird eats fiſh, but erroneouſly; the ſtructure of its ſtomach plainly ſhows it a granivorous bird; and its fleſh is very delicate, and much valued in the Italian markets. The whole of this bird, its fat, gall, head, and eyes, its ſtomach, and the marrow of its legs, are uſed in medicine. The bird itſelf, becauſe nervous, is ſaid to be highly beneficial to the nervous and membranous parts; hence the uſe of it is recommended in colics. Its fat, dropped into the ears, leſſens deafneſs, ſoftens hardneſs, and obſtinate tumours of the ſpleen: it quickly relieves a ſtiffneſs of the neck; and is ſaid to be of the ſame nature with the fat of the gooſe. The gall is beneficial to the eyes. The head, eyes, and ſtomach, when reduced to a powder, are ſprinkled upon fiſtulas, cancers, and varicoſe ulcers. An ophthalmic ointment is prepared of the marrow of the legs.

2. The Indian *crane*. This is ſmaller than ours, and of the ſame grey colour; its tail is ſo ſhort that the wings hide it, and it is not ſeen. Its beak is longer than that of our *crane*; but its moſt obvious diſtinction is, that it

has on the top of its head, from the inſertion of the beak to the crown, a rough red ſkin, beſet with a few looſe hairs.

3. The laſt ſpecies is the *grus Balearica*, the Majorca *crane*; this is of the ſhape of the ſtork, but inſtead of its long beak, has that of the *crane*, and is diſtinguiſhed by a fine thick ſhewy creſt which it carries on its head. This is not made up of feathers, but of hairs like hog's briſtles. It runs very ſwiftly, and feeds on herbs and corn like the hens and turkeys. Ray's Ornithol. p. 200, 201.

The general diſtinctions of the *crane* kind from the herons, are theſe: 1. The claw of the middle toe is not ſerrated. 2. They are much larger. 3. Their beak is ſhorter. Beſide theſe, the make of their ſtomach, guts, and above all, of their *aſpera arteria*, greatly diſtinguiſh them.

Crane is alſo improperly applied to the ſhag, or ſmall cormorant, a bird common about our ſhores.

Crane, *Numidian*. See Demoiselle.

Crane, a machine uſed in *Building* and in *Commerce*, for raiſing large ſtones, and other weights.

M. Perrault, in his notes on Vitruvius, makes the *crane* the ſame with the *corvus*, or raven, of the ancients.

The modern *crane* conſiſts of ſeveral members, or pieces, the principal whereof is a ſtrong perpendicular beam, or arbor, firmly fixed in the ground, and ſuſtained by eight arms, coming from the extremities of four pieces of wood laid acroſs, through the middle whereof the foot of the beam paſſes. About the middle of the arbor the arms meet, and are mortiſed into it: its top ends in an iron pivot, whereon is borne a tranſverſe piece, advancing out to a good diſtance in manner of a *crane*'s neck; whence the name. The middle and extremity of this are again ſuſtained by arms from the middle of the arbor: and over it comes a rope, or cable, to one end whereof the weight is fixed; the other is wound round the ſpindle of a wheel, which turned, draws the rope, and that heaves up the weight; to be afterwards applied to any ſide or quarter, by the mobility of the tranſverſe piece on the pivot.

There are ſeveral improvements of this uſeful machine mentioned in Deſagulier's Experim. Philoſ. p. 178, ſeq. particularly how to prevent the inconveniencies ariſing from ſudden jerks, as well as to increaſe its force by uſing a double axis *in peritrochio*, and two handles.

The *crane* is of two kinds; in the firſt kind, called the *rat-tailed crane*, the whole machine, with the load, turns upon a ſtrong axis: in the ſecond kind, the gibbet alone moves on its axis. We ſhall refer to Deſaguliers *ubi ſupra* for a particular account of the different *cranes*, and of the gradual improvements they have received; and give a deſcription of one, in which moſt of them are combined, invented by the late Mr. Padmore of Briſtol. It conſiſts of wheels, axles, pulleys, ropes, and a gib or gibbet. When the rope H is hooked to the weight K, a man turns the winch A, on the axis whereof is the trundle B, which turns the wheel C, on whoſe axis D is the trundle E, which turns the wheel F with its upright axis G, on which the great rope H H winds as the wheel turns; and going over a pulley I at the end of the arm *d* of the gib *c c d e*, it draws up the heavy burden K; which, being raiſed to a proper height, as from a ſhip to the quay, is then brought over the quay by pulling the wheel Z round by the handles *z*, *z*, which turns the gib by means of the half wheel *b* fixt on the gib-poſt *c c*, and the ſtrong pinion *a* fixt on the axis of the wheel Z. This wheel gives the man that turns it an abſolute command over the gib, ſo as to prevent it from taking any unlucky ſwing, ſuch as often happens when it is only guided by a rope tied to its arm *d*; and people are frequently hurt, ſometimes killed, by ſuch accidents.

The great rope goes between two upright rollers *i* and *k*, which turn upon gudgeons in the fixed beams *f* and *g*; and as the gib is turned towards either ſide, the rope bends upon the roller next that ſide. Were it not for theſe rollers, the gib would be quite unmanageable; for the moment it were turned ever ſo little towards any ſide, the weight K would begin to deſcend, becauſe the rope would be ſhortened between the pulley I and axis G; and ſo the gib would be pulled violently to that ſide, and either be broke to pieces, or break every thing that came in its way. Theſe rollers muſt be placed ſo, that the ſides of them, round which the rope bends, may keep the middle of the bended part directly even with the center of the hole in which the upper gudgeon of the gib turns in the beam *f*. The truer theſe rollers are placed, the eaſier the gib is managed, and the leſs apt to ſwing either way by the force of the weight K.

A ratchet-wheel Q is fixt upon the axis D, near the trundle E; and into this wheel falls the catch or click R. This hinders the machine from running back by the weight of the burden K, if the man who raiſes it ſhould happen to be careleſs, and ſo leave off working at the winch A ſooner than he ought to do.

When the burden K is raiſed to its proper height from the ſhip, and brought over the quay by turning the gib about, it is let down gently upon the quay, or into a cart ſtanding thereon, in the following manner. A man takes hold of the rope *t t* (which goes over the pulley *v*, and is tied to a hook at S in the catch R), and ſo diſengages the catch from the ratchet-wheel Q; and then, the man at the winch A turns it backward, and lets down the weight K. But if the weight pulls too hard againſt this man, another lays hold of the handle V, and by pulling it downward, draws the gripe U cloſe to the wheel Y, which, by rubbing hard againſt the gripe, hinders the too quick deſcent of the weight; and not only ſo, but even ſtops it at any time, if required. By this means, heavy goods may be either raiſed or let down at pleaſure, without any danger of hurting the men who work the engine.

When part of the goods are craned up, and the rope is to be let down for more, the catch R is firſt diſengaged from the ratchet-wheel Q, by pulling the cord *t*; then the handle *q* is turned half round backward, which, by the crank *n n* in the piece *o*, pulls down the frame *b* between the guides *m* and *m* (in which it ſlides in a groove), and ſo diſengages the trundle B from the wheel C: and then, the heavy hook β at the end of the rope H deſcends by its own weight, and turns back the great wheel F with its trundle E, and the wheel C; and this laſt wheel acts like a fly againſt the wheel F and hook β; and ſo hinders it from going down too quick; whilſt the weight X keeps up the gripe U from rubbing againſt the wheel Y, by means of a cord going from the weight, over the pulley *w* to the hook W in the gripe; ſo that the gripe never touches the wheel, unleſs it be pulled down by the handle V.

When the *crane* is to be ſet at work again, for drawing up another burden, the handle *q* is turned half round forwards; which, by the crank *n n*, raiſes up the frame *b*, and cauſes the trundle B to lay hold of the wheel C; and then, by turning the winch A, the burden of goods K is drawn up as before. See *Tab.* II. *Mechanics*, *fig.* 31.

The crank *n n* turns pretty ſtiff in the mortiſe near *o*, and ſtops againſt the farther end of it when it has got juſt a little beyond the perpendicular; ſo that it can never come back of itſelf: and therefore, the trundle B can never come away from the wheel C, until the handle *q* be turned half round.

The great rope runs upon rollers in the lever L M, which keep it from bending between the axle at G and the pulley I. This lever turns upon the axis N by means of the weight O, which is juſt ſufficient to keep its end L up to the rope; ſo that, as the great axle turns, and the rope coils round it, the lever riſes with the rope, and prevents the coilings from going over one another.

The power of this *crane* may be eſtimated thus: ſuppoſe the trundle B to have 13 ſtaves or rounds, and the wheel C to have 78 ſpur cogs; the trundle E to have 14 ſtaves, and the wheel F 56 cogs. Then, by multiplying the ſtaves of the trundles, 13 and 14, into one another, their product will be 182; and by multiplying the cogs of the wheels, 78 and 56, into one another, their product will be 4368, and dividing 4368 by 182, the quotient will be 24; which ſhews that the winch A makes 24 turns for one turn of the wheel F and its axle G on which the great rope or chain H I H winds. So that, if the length or radius of the winch A were only equal to half the diameter of the great axle G, added to half the thickneſs of the rope H, the power of the *crane* would be as 24 to 1: but the radius of the winch being double the above length, it doubles the ſaid power, and ſo makes it as 48 to 1: in which caſe, a man may raiſe 48 times as much weight by this engine as he could do by his natural ſtrength without it, making proper allowance for the friction of the working parts. Two men may work at once, by having another winch on the oppoſite end of the axis of the trundle under B; and ſo make the power ſtill double.

If this power be thought greater than what may be generally wanted, the wheels may be made with fewer cogs in proportion to the ſtaves in the trundles; and ſo the power may be of whatever degree is judged to be requiſite. But if the weight be ſo great as will require yet more power to raiſe it (ſuppoſe a double quantity), then the rope H may be put under a moveable pulley, as δ, and the end of it tied to a hook in the gib at ε; which will give a double power to the machine, and ſo raiſe a double weight hooked to the block of the moveable pulley.

When only ſmall burdens are to be raiſed, this may be quickly done by men puſhing the axle G round by the handſpokes *y*, *y*, *y*, *y*; having firſt diſengaged the trundle B from the wheel C: and then, this wheel will only act as a fly upon the wheel F; and the catch R will prevent its running back, if the men ſhould inadvertently leave off puſhing before the burden be unhooked from β.

Laſtly, when very heavy burdens are to be raiſed, which might endanger the breaking of the cogs in the wheel F; their force againſt theſe cogs may be much abated by men puſhing round the hanſpokes *y*, *y*, *y*, *y*, whilſt the man at A turns the winch. Ferguſon's Lectures on Select Subjects, 4to. p. 52, &c.

If the axis GG be placed horizontally, and inſtead of the wheel F a larger wheel be fixed to it, which may be turned by men walking in it, we ſhall have another kind of *crane*; the rope will coil round the axle as the wheel turns, and the gib-work is the ſame as in the other ſort of *crane*. Mr. Padmore contrived to prevent the danger attending the uſe of this conſtruction, by putting cogs all round the outſide of the wheel, and applying a trundle to turn it; by which addition the power is increaſed in the proportion of the number of cogs to the number of ſtaves in the trundle: and in order to hinder its running back by the force of the weight, ſhould the men within it ſlip, or leave off walking, he added a ratchet-wheel to the axis of the trundle, like that already deſcribed. Two winches may alſo be fixed to the ends of the axle, by working which the men in the wheel would be much aſſiſted. On the axle he likewiſe fixed a gripe-wheel, ſuch as has been already deſcribed, by means of which heavy burdens may be let down without the leaſt danger.

Mr. Ferguſon has contrived and deſcribed a new and ſafe *crane*, with four different powers adapted to different weights. In this *crane* (ſee *Tab. II. Mechanics*, *fig.* 32.) A repreſents the great wheel, and B its axle, on which the rope C winds. This rope goes over a pulley D in the end of the arm of the gib E, and draws up the weight F, as the winch G is turned round. H is the largeſt trundle, I the next, and K is the axis of the ſmalleſt trundle, which is ſuppoſed to be hid from view by the upright ſupporter L. A trundle M is turned by the great wheel, and on the axis of this trundle is fixed the ratchet-wheel N, into the teeth of which the catch O falls. P is the lever, from which goes a rope QQ, over a pulley R to the catch; one end of the rope being fixed to the lever, and the other end to the catch. S is an elaſtic bar of wood, one end of which is ſcrewed to the floor: and, from the other end goes a rope (out of ſight in the figure) to the further end of the lever, beyond the pin or axis on which it turns in the upright ſupporter T. The uſe of this bar is to keep up the lever from rubbing againſt the edge of the wheel U, and to let the catch keep in the teeth of the ratchet-wheel: but, a weight hung to the farther end of the lever, would do full as well as the elaſtic bar and rope.

When the lever is pulled down, it lifts the catch out of the ratchet-wheel, by means of the rope QQ, and gives the weight F liberty to deſcend: but if the lever P be pulled a little farther down than what is ſufficient to lift the catch O out of the ratchet-wheel N, it will rub againſt the edge of the wheel U, and thereby hinder the too quick deſcent of the weight; and will quite ſtop the weight if pulled hard. And if the man, who pulls the lever, ſhould happen inadvertently to let it go; the elaſtic bar will ſuddenly pull it up, and the catch will fall down and ſtop the machine.

WW are two upright rollers, above the axis or upper gudgeon of the gib E: their uſe is to let the rope C bend upon them, as the gib is turned to either ſide, in order to bring the weight over the place where it is intended to be let down: which ought to be ſo placed, that if the rope C be ſtretched cloſe by their outmoſt ſides, the half thickneſs of the rope may be perpendicularly over the center of the upper gudgeon of the gib; for then the length of the rope between the pulley in the gib and the axle of the great wheel, will be always the ſame, in all poſitions of the gib, and the gib will remain in any poſition to which it is turned.

The powers of this machine may be eaſily calculated: the horizontal wheel has ninety-ſix cogs, the largeſt trundle twenty-four ſtaves, the next largeſt has twelve, and the ſmalleſt has ſix. So that the largeſt trundle makes four revolutions for one revolution of the wheel; the next makes eight; and the ſmalleſt makes ſixteen. When a winch is occaſionally put upon the axis of either of theſe trundles for turning it, the handle of the winch deſcribes a circle in every revolution equal to twice the circumference of the axle of the wheel; and therefore the length of the winch doubles the power gained by each trundle. So that if the winch be applied to the axle of the largeſt trundle, and turned four times round, the wheel and axle will be turned once round, and the power will move through eight times as much ſpace as the weight riſes through: in which caſe, the power will be to the weight as eight to one; i. e. a man may raiſe eight times as much weight by the *crane*, as he might by his natural ſtrength without it. If the ſecond trundle be uſed, the proportion of the power to the weight will be as ſixteen to one; and with the ſmalleſt trundle, as thirty-two to one. The power may again be doubled, by drawing up the weight by one of the parts of a double rope, going under a pulley in the moveable block which is hooked to the weight below the arm of the gib; for then the power will be as ſixty-four to one: and by increaſing the number of pullies, the power will be proportionably increaſed. See Supplement to Ferguſon's Lectures, p. 3, &c. or Phil. Tranſ. vol. liv. art. 3. p. 24.

Crane is the name of a ſouthern conſtellation. See Grus.

Crane is alſo a popular name for a siphon.

Crane's *bill*, a kind of forceps uſed by ſurgeons, and ſo named from its figure.

Crane's *bill*, in *Botany*, *&c.* See Geranium.

Crane-*fly*, a name given by ſome to the creature we commonly call *father long-legs*; and the authors of hiſtories of inſects, *tipula terreſtris*. This creature affords the microſcopic obſerver many curious particulars; but the moſt remarkable is, the ſurpriſing contraction of the muſcular fibres in the legs. Theſe being diſſected in a drop of water, and placed before the microſcope, the fleſhy fibres contract and diſtend themſelves in a manner not to be imagined, and continue this motion for ſeveral minutes; and this is conſtantly to be obſerved in this inſect, and never in any other, ſo far as has been yet obſerved. Lewenhoek, Arcan. Nat. tom. iii. p. 109.

The inteſtines of this creature are alſo very wonderful, conſiſting of numberleſs veſſels and organs, which may be ſeen as plainly by the microſcope, as the bowels of larger animals can by the naked eye. The tails both of the male and female are alſo of an amazing ſtructure; the female's ends in a ſharp point, with which ſhe perforates the ground, and depoſits her eggs under the graſs in meadows.

Crane-*lines*, in a ſhip, are lines going from the upper end of the ſprit-ſail-top-maſt, to the middle of the fore-ſtays; ſerving to keep the ſprit-ſail-top-maſt upright and ſteady. See *Tab. Ship. fig.* 1. 137.

Crane-*neck of a carriage*. See Perch.

CRANIOLARIA, in *Botany*, a genus of the *didynamia angioſpermia* claſs. Martynia, Houſt. Gen. Its characters are theſe: the flower hath a permanent empalement, compoſed of four ſhort narrow leaves and a ſwollen hood, which is cut longitudinally on the ſide. The flower hath one petal, which is unequal, having a very long tube, whoſe brim is divided into two lips. It hath four ſtamina, two of which are the length of the tube, and two are ſhorter. At the bottom of the tube is ſituated an oval germen, which afterward becomes an oval leathery fruit, pointed at both ends, opening with two valves, encloſing a depreſſed woody nut, pointed at both ends and recurved, having two or three furrows, ſo as to reſemble a ſkull opening in two parts. There are two ſpecies, natives of Spaniſh America.

CRANIUM, in *Anatomy*, an aſſemblage of ſeveral bones, which cover and encloſe the brain and *cerebellum*; popularly called the skull. See *Tab. Anatomy (Oſteol.) fig.* 1 and 2.

The word comes from the Greek κρανιον, of κρανος, *galea*, *helmet*; becauſe it ſerves to defend the brain, like a head-piece. Pezron again, derives κρανιον from the Celtic *cren*, becauſe of its roundneſs.

Cranium, in *Natural Hiſtory*, the name of a ſpecies of the *echinus marinus*, of the genus of the brissoides.

CRANK, a contrivance in machines, in manner of an elbow, only of a ſquare form; projecting out from an axis, or ſpindle; and ſerving, by its rotation, to raiſe and fall the piſtons of engines for raiſing water, or the like.

Crank, in *Sea-Language*. A ſhip is ſaid to be *crank-ſided*, when, for want of a ſufficient quantity of ballaſt or cargo, ſhe cannot bear her ſails, or can bear but ſmall ſail for fear of overſetting.

She is ſaid to be *crank by the ground*, when her floor is ſo narrow, that ſhe cannot be brought on ground without danger.

Crank is alſo an iron brace which ſupports the lanthorns on the poop-quarters, &c.

CRANNY, in the *Glaſs Trade*, a round iron, whereon the workmen in the glaſs-houſes roll the glaſs, to make the neck of it ſmall.

CRAPE, a light tranſparent ſtuff, in manner of gauze; made of raw ſilk, gummed and twiſted on the mill; woven without croſſing, and much uſed in mourning.

Crapes are either *craped*, i. e. *criſped*; or *ſmooth*: the firſt *double*, expreſſing a cloſer mourning; the latter *ſingle*, uſed for that leſs deep. Note, White is reſerved for young people, or thoſe devoted to virginity.

The ſilk deſtined for the firſt is more twiſted than that for the ſecond; it being the greater or leſs degree of twiſting, eſpecially of the warp, which produces the criſping given it when taken out of the loom, ſteeped in clear water, and rubbed with a piece of wax for the purpoſe.

Crapes are all dyed raw. The invention of this ſtuff came originally from Bologna: but the chief manufacture hereof is ſaid to be at Lyons.

Hiſtory tells us, that St. Bathilda, queen of France, made fine *crape*, *crepa*, of gold and ſilver, to lay over the body of St. Eloy. The Bollandiſts own they cannot find what this *crepa* was. Binet ſays, it was a frame to cover the body of the ſaint; but others, with reaſon, take it to be a tranſparent ſtuff, through which the body might be ſeen; and that this was the *crepa* whence our word *crape* was formed.

CRAPULA, a SURFEIT by over-eating and drinking.

CRASIS *of the blood*, denotes a due temperament or conſtitution of that humour; wherein the ſeveral principles, viz. ſalt and oil, whereof it is compoſed, are found in their juſt proportion and purity: in contradiſtinction to *dyſcraſy*, which conſiſts in an improper mixture of the principles, or an unnatural ſtate of ſome of the ingredients thereof.

The word is Greek, κρασις, from κεραννυμι, *I mix*; ſignifying *mixture*, *temperament*.

The chief dyſcraſies the blood is ſuſceptible of, whence flow moſt of the diſeaſes of the body, are coagulation, diſſolution, oilineſs, fizineſs, and ſaltneſs.

CRASIS, in *Grammar*, is a figure, whereby two different letters are either contracted into one long letter, or a diphthong. Such, e. g. is οφις for οφιας; αληθη for αληθεα, &c. τυχης for τυχεος, &c. where ι and α are contracted into ι; ε and α into η; and ε and ο into ȣ.

CRASPEDARIA, from κρασπεδον, *fringe*; in *Zoology*, a genus of animalcules, without any viſible limbs or tails; but with an apparent mouth, and a ſeries of fimbriæ round it in the manner of a fringe.

Of this genus there are three ſpecies: 1. The *craſpedarium* with a roundiſh body. 2. The *craſpedarium* with an oval body. 3. The *craſpedarium* with a cylindric body.

CRASSAMENTUM, a term uſed by ſome *Anatomiſts*, for the CRUOR of the blood; or that part which, upon ſtanding to cool, and ſeparate, forms the coagulum: in oppoſition to the *ſerum*, or whey, wherein it ſwims.

Some authors have ſuppoſed the *craſſamentum* to be ſpecifically lighter than the *ſerum*; but Dr. Jurin ſhews the contrary from repeated experiments.

Some have ſuppoſed that the immediate cauſe of animal heat is the action of the *craſſamentum* in attracting and retaining the fire which is diſperſed through the earth. On the due proportion of the *craſſamentum* or red globules depends the health and life of man. This conſiſts of two parts, one of which gives it ſolidity, and is called the fibrous part of the blood, but more properly the *coagulable* LYMPH, and of another which gives the red colour to the blood. See an account of Dr. Hewſon's curious experiments and obſervations, in Phil. Tranſ. vol. lx. art. 32, 33, 34.

CRASSIROSTRÆ, in *Zoology*, the name of a genus of ſmall birds, diſtinguiſhed by the thickneſs of their beaks; as the ſparrow, greenfinch, and the like.

CRASSULA, in *Botany*; Dillen. Hort. Elth. 14. *leſſer orpine*, *live for ever*, and *baſtard navel-wort*; a genus of the *pentandria pentagynia* claſs. Its characters are theſe: the flower conſiſts of five narrow petals, joined at their baſe, but reflexed and ſpread open at their brim: in the bottom of the tube are ſituated five nectaria, and five ſtamina ſituated round theſe. At the bottom of the tube are ſituated five oblong pointed germina, which, after the flower is paſt become five capſules, opening lengthways, and filled with ſmall ſeeds. There are eleven ſpecies.

CRATÆGUS, in *Botany*. See SERVICE-*tree*.

CRATCHES, in *Farriery*, a ſwelling on the paſtern under the fetlock, and ſometimes under the hoof.

CRATER, *Cup*, in *Aſtronomy*, a conſtellation of the ſouthern hemiſphere; whoſe ſtars, in Ptolemy's Catalogue, are ſeven; in Tycho's, eight; in Hevelius's, ten; in the Britannic Catalogue, thirty-one. The order, names, longitudes, latitudes, &c. whereof are as follow.

Names and ſituations of the ſtars.	Bayer's Char.	Signs.	Longitud.			Latitude.			Magnitude.
			°	′	″	°	′	″	
	φ	♍	12	58	27	23	14	2	6
	φ		13	45	56	23	29	50	5
North. of two below the baſe of the Cup.	b		15	54	24	23	4	24	6
Following.	ν		16	3	39	21	49	28	4
	b		17	26	16	23	45	3	6
5.									
	b		18	44	33	24	59	42	6
	α		19	26	43	22	42	0	4
	ι		24	3	28	30	8	48	6
South. of two below the baſe of the Cup.	χ		25	1	40	30	16	31	5
			26	14	11	30	41	12	6
10.									
N. of two below the baſe of the Cup.	β		24	15	35	25	37	33	3.4
N. of two in the middle of the Cup.	δ		22	23	50	17	35	20	4
	λ		25	6	43	20	49	31	5.6
In N. part of the circumf. of the mouth.	ι		21	55	59	13	28	28	4
S. in the middle of the Cup.	γ		24	56	16	19	39	22	4
15.									
	κ		23	9	20	14	35	16	5
		♎	2	6	56	29	22	14	6
			3	11	25	30	55	59	6
Firſt of three after 20th in the triangle.	ξ		3	37	47	31	35	55	4
			4	34	51	32	21	21	6
20.									
In N. handle of the Cup.	θ	♍	24	16	26	11	18	33	4
		♎	5	54	10	33	39	23	7
			5	7	46	32	12	27	6
Middle of three after 20th in the triangle.	ι	♍	26	8	52	14	13	32	5
	ο	♎	6	47	26	33	26	39	5
25.									
			5	53	2	31	18	40	6
In S. circumf. of the mouth.	ζ	♍	29	45	50	18	17	29	4
	β	♎	9	4	47	31	28	16	4
			6	53	3	26	21	30	6
In S. handle of the Cup.	η		1	47	42	16	4	46	4
			3	58	41	17	52	59	5.6
31.									

CRATER, in *Falconry*, denotes a line on which hawks are faſtened when reclaimed.

CRATERITES, in *Natural Hiſtory*, the name of a gem mentioned by Pliny, and ſaid to be extremely hard, and of a middle colour between that of the chryſolite, and of the common yellow amber. This was plainly a ſpecies of CHRYSOLITE.

CRATEVA, in *Botany*, a genus of the *dodecandria monogynia* claſs; the *garlic pear*. Its characters are theſe: the flower hath four oval petals, which are narrow at the baſe, and broad at the top. It hath many briſtly ſtamina, which are longer than the petals; and a long incurved ſtyle, upon which ſits an oval germen, which afterward becomes a large fleſhy globular fruit with one cell, including many kidney-ſhaped ſeeds. There are two ſpecies, natives of both the Indies.

CRATICULA, a chemical inſtrument, made of ſquare pieces of iron of about a finger's thickneſs, placed ſo as to have half a finger's ſpace betwixt them. It is uſed in making of fires to keep up the coals.

The word is Latin, importing a roaſter, or gridiron.

CRATICULAR *Ectype* and *Prototype*. See ANAMORPHOSIS.

CRAVANT, in *Zoology*, a name by which Bellonius and ſome others have called the BARNACLE, a ſmall ſpecies of wild gooſe, common in winter on the coaſts of Lancaſhire.

CRAVEN, or CRAVENT, in *Britiſh Antiquity*, a term of reproach uſed in trials by battle.

The law was, that the victory ſhould be proclaimed, and the vanquiſhed acknowledge his fault, in the preſence of the people, or pronounce the word *cravent* in the name of recreantice, or cowardice, &c. and, preſently, judgment to be given; and the recreant *amittere legem terræ*, i. e. become infamous.

Coke obſerves, that if the appellant join battle, and cry *craven*, he is to loſe *liberam legem*. If the appelled cry *craven*, he is to be hanged.

CRAW, *Crop*, or *Ingluvies*, a part in granivorous fowls which ſerves for the immediate reception of the food; where it remains ſome time for maceration, before it be tranſmitted to the ſtomach.

This *ingluvies* is furniſhed with glands, which, the patrons of fermentation maintain, convey a menſtruum thither, that impregnates the aliment, and ſerves inſtead of maſtication.

CRAX, in *Zoology*, a name given by the ancients to the *ortygometra*, or DAKER-*hen*, a bird larger than the quail, and common in Ireland and ſome of the northern counties of England. Ray's Ornithology, p. 122.

CRAX, in the Linnæan ſyſtem of *Zoology*, the name of a diſtinct genus of birds, the diſtinguiſhing character of which from the reſt of the *gallinæ* is, that the feet have each four toes, and the head is ornamented with a kind of feathery crown, bending backwards. Linnæi Syſt. Nat. p. 47. Phil. Tranſ. vol. lvi. p. 204.

CRAY-*fiſh*, in *Zoology*, a ſpecies of the SQUILLA.

Cray-fiſh are found in rivers and freſh water; their fleſh is cooling, moiſtening, and adapted to nouriſh ſuch as labour under atrophies. There are various methods of preparing theſe animals; they may be either boiled or fried, and then taken out of their ſhells, and made up in variety of diſhes: but no parts of them are eatable except their claws and tails. Preparations and broths of *cray-fiſh* are celebrated not only for a palatable aliment, but alſo for anſwering ſome medicinal intentions, as being of a moiſtening quality, and ſheathing up and correcting acrimony. The broth is prepared of four or five *craw-fiſh*, which having their heads cut off, and their inteſtines extracted, are to be bruiſed and boiled in the broth of fleſh or poultry, until they become ſufficiently red; after which the liquor is to be ſtrained off and ſeaſoned, as the caſe may require. This broth may be rendered ſtill more medicinal by the addition of herbs, ſnails, or other ſubſtances; according to the intention of the phyſician. Their fleſh is counted beſt in the ſummer months.

The delicate flavour of theſe fiſh depends in a great meaſure on their food. When they have well-taſted food, their fleſh preſerves the reliſh of it: but when they feed on other things, they are often rendered of no value, by the flavour communicated to their fleſh by them. There are great quantities of theſe fiſh in the river Obra, on the borders of Sileſia; but the people find them ſcarce eatable, becauſe of a bitter aromatic flavour, very diſagreeable in food. It has been ſince obſerved, that the *calamus aromaticus* grows in vaſt abundance on the banks of that river, and that theſe creatures feed very greedily upon its roots. Theſe have a very remarkable bitterneſs mixed with their aromatic flavour, while freſh, which goes off very much in the drying; and on comparing the taſte of theſe roots with that of the *cray-fiſh*, there remains no doubt of the one being owing to the other. Act. Leipſ. 1690.

They abound in the river Don in Muſcovy, where they are laid in heaps to putrefy; after which the ſtones, called crab's eyes, are picked out.

Theſe animals are very greedy of fleſh, and flock in great numbers about carcaſes thrown into the water where they are, and never leave it while any remains. They alſo feed on dead frogs when they come into their way. James.

In Swiſſerland, there are ſome *cray-fiſh* which are red, while they are alive, and others bluiſh. Some kinds of them alſo will never become red, even by boiling, but continue blackiſh.

The *cray-fiſh* diſcharges itſelf of its ſtomach, and, as M. Geoffroy thinks, of its inteſtines too. Theſe, as they putrefy and diſſolve, ſerve for food to the animal; during the time of the reformation, the old ſtomach ſeems to be the firſt food the new one digeſts. It is only at this time, that the ſtones are found called CRAB'*s eyes*; they begin to be formed when the old ſtomach is deſtroyed, and are afterwards wrapped up in the new one, where they decreaſe by degrees till they entirely diſappear.

CRAYER, a kind of ſmall ſea-veſſel or ſhip. It is mentioned in the ſtat. 14 Car. II. c. 27. and in old records, *Et tranſitus* craerarum *& batellorum cum victualibus & aliis neceſſariis, &c.* Parl. 6 Ric. II. Par. 2. M. 13.

CRAYON, a general name for all coloured ſtones, earths, or other minerals and ſubſtances, uſed in deſigning, or painting in paſtel; whether they have been beaten and reduced to a paſte, or are uſed in their primitive conſiſtence, after ſawing or cutting them into long narrow ſlips.

In this laſt manner are red *crayons* made, of blood-ſtone, or red chalk; black ones, of charcoal and black lead. The beſt charcoal is that of willow, on account of its ſoftneſs. *Crayons* of all other colours are compoſitions of earths reduced to paſte.

CRAZE-*mill*, or CRAZING-*mill*, a mill in all reſpects like a griſt-mill to grind corn, and is ſo called by the tin-miners, who uſe it to grind their tin, which is yet too great, after trambling, and then it is trambled only.

CREAM is a name applicable to all ſubſtances, which ſeparate from a liquor, and collect on its ſurface: but it is particularly applied to the following.

CREAM *of lime*, is that matter which ſeparates from lime-water by cryſtallization, during the evaporation of the water; forming on the ſurface a ſemi-tranſparent pellicle, which gradually thickens, till at length it ſubſides in the form of ſcales. This is a calcareous earth, which, having once loſt its GAS or *fixed* AIR by calcination, is recombined with it after being diſſolved in water, and expoſed again to the air: and hereby becomes mild, cryſtallizable, unſoluble in water, and recovers its original ſtate before calcination. Macquer, Dict. Chem. Eng. ed. 1777.

CREAM *of milk*, is the moſt oily part of it, which being ſpecifically lighter than the other parts, collects and ſwims on the ſurface; being that of which BUTTER is made.

The word is derived from *cremor*, which ſignifies the ſame; though in the lower Latin we find *crema lactis*.

CREAM *of tartar*, *cremor tartari*, is that part of the concrete acid of tartar which cryſtalliſes firſt, and forms a pellicle on the ſurface of water in which tartar has been boiled. This has been a general name comprehending this ſaline pellicle and the *cryſtal of* TARTAR.

CREASE-TYLES. See TYLE.

CREAT, in the *Manege*, an uſher to a riding-maſter.

CREATION. See GENESIS.

CREATION, *epocha of the*. See EPOCHA.

CREDENTIALS, letters of credit and recommendation; eſpecially ſuch as are given to ambaſſadors, plenipotentiaries, &c. ſent to foreign courts.

CREDIBILITY, a quality in objects whereby they become fit to be believed. See FAITH.

A thing is ſaid to be *credible*, which is not apparent of itſelf, nor is certainly to be inferred either from the cauſe or effect; and yet has the atteſtation of a truth. Things which appear immediately true, as the whiteneſs of ſnow, or that the whole is equal to its parts; are not ſaid to be *credible*, but evident. Thoſe to which we only give our aſſent in virtue of ſome competent authority, or teſtimony of others, are, by the ſchoolmen, ſaid to be *credible*. In the Philoſophical Tranſactions, we have a mathematical computation of the *credibility* of human teſtimony. See EVIDENCE.

CREDIT, in *Commerce*, a mutual truſt or loan of merchandize or money, on the reputation of the probity and ſolvability of a dealer.

Credit is either *public* or *private*.

Every trader ought to have ſome eſtate, ſtock, or portion, of his own, ſufficient to carry on the traffic he is engaged in: they ſhould alſo keep their dealings within the extent of their capital, ſo that no diſappointment in their returns may incapacitate them from ſupporting their *credit*. Yet traders of worth and judgment may ſometimes lie under the neceſſity of borrowing money for carrying on their buſineſs to the beſt advantage; but then the borrower ought to be ſo juſt to his own reputation and to his creditors, as to be well aſſured that he has ſufficient effects within his power, to pay off his obligations in due time. But if a trader ſhould borrow money to the extent of his *credit*, and launch out into trade, ſo as to employ it with the ſame freedom as if it was his own proper ſtock; ſuch a way of management is very precarious, and may be attended with dangerous conſequences. Merchants ought never to purchaſe their goods for exportation upon long *credit*, with intent to diſcharge the debt by the return of the ſame goods; for this has an injurious influence on trade ſeveral ways: and if any merchant has occaſion to make uſe of his *credit*, it ſhould always be for the borrowing of money, but never for the buying of goods; nor is the large *credit* given to wholeſale traders, a prudential or juſtifiable practice in trade.

The public *credit* of a nation is ſaid to run high, when the commodities of that nation find a ready vent, are ſold at a good price, and when dealers may be ſafely truſted with them: alſo when lands and houſes find ready purchaſers; when money is to be borrowed at a low intereſt; when people think it ſafe and advantageous to venture large ſtocks in trade; and when notes, mortgages, &c. will paſs for money. Poſt. Dict. Com.

CREDIT, *letters of*, are thoſe given to perſons in whom a merchant, &c. can truſt, to take money of his correſpondent abroad, in caſe he happens to need it.

CREDIT is alſo uſed for the currency which papers, or bills, have in the public, or among dealers.

In this ſenſe, *credit* is ſaid to *riſe*, when in negotiating the ſhares of a company, they are received and ſold at prices above *par*, or the ſtandard of their firſt creation.

Diſcredit is oppoſed to *credit*, and is uſed where money, bills, &c. fall below *par*.

CREDIT was alſo anciently a right which lords had over their vaſſals; conſiſting in this, that during a certain time they might oblige them to lend them money.

In this ſenſe, the duke of Britanny had *credit* during fifteen days on his own ſubjects, and thoſe of the biſhop of Nantes; and the biſhop had the ſame *credit* or right among his ſubjects, and thoſe of that prince.

CREDITOR, a perſon to whom any ſum of money is due, either by obligation, promiſe, or otherwiſe.

The laws of the Twelve Tables, which were the foundation of the Roman juriſprudence, allowed the *creditor* to tear or cut his debtor to pieces, in caſe he proved inſolvent.

Creditor, in *Book-keeping*. See BOOK-KEEPING.

CREDULITY denotes a weakneſs of mind, by reaſon of which a perſon yields his aſſent to propoſitions or facts, before he has conſidered their EVIDENCE.

CREED, **Credo**, a ſhort, or ſummary account of the chief articles of the Chriſtian faith; thus called from the firſt word thereof in Latin, *credo, I believe*. See SYMBOL.

The principal of theſe are the *Apoſtles'*, the *Athanaſian*, and the *Nicene*.

Creed, *Apoſtles'*, is ſo called, becauſe for many ages it was believed to have been framed by the apoſtles before they left Jeruſalem. The firſt perſon who gave this account of its original was St. Ambroſe, towards the latter end of the fourth century; in which he is followed by Ruffinus, Jerom, and ſeveral others: and ſome have even aſſerted, that each apoſtle ſupplied his particular article. See SYMBOL. But there are many reaſons why this account cannot be admitted: if a *creed* of ſuch high authority had exiſted in the Chriſtian church, it is reaſonable to ſuppoſe that it would have been mentioned by St. Luke in the hiſtory of the Acts of the Apoſtles, or by ſome of the earlier writers in the four firſt centuries, before the time of St. Ambroſe; that it would have been referred to as a ſtandard of doctrine by the more ancient councils; and that it would have ſuperſeded the neceſſity of compoſing new *creeds*, which was done on many occaſions. Beſides, the ſeveral copies of this *creed*, of which the principal are the vulgar or Roman, the Aquileian, and the Oriental, differ from one another in many articles; and this difference cannot eaſily be reconciled with the notion, that it was framed by the apoſtles, and tranſmitted from them to their ſucceſſors. To which we may add, that ſome of the articles contained in it were inſerted in oppoſition to errors that ſprung up in the Chriſtian church, long after the time of the apoſtles. However, this *creed* is a very ancient compoſition, and upon the whole an unexceptionable ſummary of the Chriſtian doctrine, and much ſuperior to compoſitions of a ſimilar kind of later date. It might in part have been tranſmitted down from the apoſtles, and afterwards gradually enlarged in its preſent form as occaſion required. Lord King's Crit. Hiſt. of the Apoſtles' Creed. See SYMBOL.

Creed, *Athanaſian*, has been falſely attributed to Athanaſius biſhop of Alexandria, who lived and wrote in the fourth century: it is neither mentioned nor referred to in any of his genuine works; no notice is taken of it by writers who immediately ſucceeded him; it was never appealed to for the deciſion of the controverſy relating to the proceſſion of the Spirit between the Eaſtern and Weſtern churches, in the ſeventh and ninth centuries; nor is it quoted, ſay ſome, till one thouſand years after Chriſt. Fabricius is of opinion, that it was firſt writ in Latin long after the fifth century, and afterwards tranſlated into Greek. It is appointed to be read in the ſervice of the church of England thirteen times in the year. Voſſii Diſſ. de Symbolis. Fabr. Bib. Græc. vol. v.

Creed, *Nicene*, was compoſed and eſtabliſhed as a proper ſummary of the Chriſtian faith by the council at Nice, A. D. 325, againſt the Arians. This is alſo called the Conſtantinopolitan *creed*, becauſe it was confirmed with ſome few alterations by the council of Conſtantinople, A. D. 381.

Theſe three *creeds* are uſed in the public offices of the church of England; and ſubſcription to them is required of the clergy, and of diſſenting teachers properly qualified by the TOLERATION act, as the eighth ARTICLE declares that they may be proved by the ſureſt teſtimonies of Scripture.

CREEK, a part of a haven, where any thing is landed from the ſea.

So many landing-places as there are in a HARBOUR or port, ſo many *creeks* there are.

It is alſo ſaid to be a ſhore or bank whereon the water beats, running in a ſmall channel from any part of the ſea; from the Latin *crepido*. This word is uſed in the ſtat. 4 Hen. IV. c. 20. and 5 Eliz. c. 5.

CREENGLES, *Cringles*, probably derived from *krinckelen* (Belg.), *to run into twiſts*; in *Naval Architecture*, are ſmall ropes ſpliced into the bolt-ropes of the ſails of the main-maſt and fore-maſt, into which the bowling bridles are made faſt; and are alſo to hold by when a bonnet is ſhaken off. Harris, in his Lexicon Technicum, has the ſame deſcription under *Crenyles*; and the Gentleman's Dictionary under *Crencles*.

CREEPER, the Engliſh name of a ſpecies of ISPIDA, which, though very unlike the common KING's *fiſher* both in colour and figure, yet is comprehended under that genus on account of the ſtructure of its feet.

This ſmall bird, which is hardly larger than a WREN, has likewiſe been called the *certhia* and *certhius*, by authors, and in Engliſh the *ox-eye*.

It climbs trees exactly like the woodpecker, in which it is greatly aſſiſted by the rigidity of its tail. It builds in holes of trees, and lays a great number of eggs, ſometimes eighteen or twenty. Ray's Ornith. p. 100.

Creeper, in *Sea Language*, a ſort of grapnel, having a ſhank and four hooks or claws, but without flooks; uſed for recovering things that may be caſt overboard.

CREMASTERS, in *Anatomy*, an epithet given to two muſcles, otherwiſe called *ſuſpenſores*; ſerving to raiſe, or draw up the teſticles. See *Tab. Anat.* (*Myol.*) *fig.* 2. *n.* 32.

The word comes from the Greek *κρεμαω*, *ſuſpendo, I ſuſpend*.

CREMATION is ſometimes uſed for burning, particularly when applied to the ancient cuſtom of burning the dead. This cuſtom is well known to have prevailed among moſt eaſtern nations, and continued with their deſcendants after they had peopled the different parts of Europe. Hence we find it prevailing in Greece, Italy, Gaul, Britain, Germany, Sweden, Norway, and Denmark, till Chriſtianity aboliſhed it. Phil. Tranſ. Nº 458. ſect. 3.

CRENATED *leaves*. See LEAF.

CRENELLE', *embattled*, in *Heraldry*, is when any honourable ordinary is dented, after the manner of battlements of a wall. See *Tab.* II. *Heraldry*, *fig.* 59.

The French word comes from *crena, a notch*, or *interval*; the Engliſh from its being a place of fighting, or battle. Upton, in Latin, calls this *imbatallatum*, a word forged from the Engliſh; but moſt others term it *pinnatum*, from *pinna, a battlement*.

The origin hereof is, doubtleſs, from the figures of ſuch walls being given to warriors, either for having been the firſt at mounting, or the chief in defending them.

CRENOPHYLAX. The *crenophylaces* at Athens were magiſtrates who had the inſpection and management of fountains under their care.

CREODIBA, in the *Cuſtoms of the Middle Age*, a robbery and murder committed in a wood, where the body of the perſon killed was burnt, in order to prevent any diſcovery of the crime. The word, ſays Wendelinus, is compounded of *cruy* and *diven*, that is, *wood-robbers*.

CREOLES, a name given to the families deſcended from the Spaniards who firſt ſettled at Mexico in America. Theſe are much more numerous than the Spaniards properly ſo called, and the Mulattoes, which two other ſpecies of inhabitants they diſtinguiſh; and are excluded from all conſiderable employments.

CREPANU, in the *Manege*, a chop in a horſe's leg, made by the ſpunges of the ſhoes of one of the hinder feet, croſſing and ſtriking againſt the other.

CREPIDÆ, among the Romans, a kind of ſlippers or ſhoes, which were always worn with the *pallium*, as the *calcei* were with the *toga*.

CREPIS, in *Botany*, baſtard hawkweed. See HAWKWEED.

CREPITATION, that noiſe, which ſome ſalts make over the fire in CALCINATION; called alſo *detonation*.

Crepitation is alſo uſed in *Surgery*, for the noiſe made by the ends or pieces of bones, when the ſurgeon moves a limb to aſſure himſelf by his ear of the exiſtence of a fracture.

This is one of the evident indications of a fracture of bones; and to judge by it with the greater eaſe to the patient, it is neceſſary that the upper part of the limb be held faſt, while the lower part is gently moved. The jar of the bones will likewiſe be ſometimes felt by the hand, when nothing is heard.

CREPITUS *lupi*, in *Natural Hiſtory*, a kind of fungus, popularly called *puff-ball*.

Mr. Derham obſerves, that upon examining the powder thereof with a microſcope, he found the ſeeds to be ſo many exceeding ſmall puff-balls, with round heads, and long, ſharp-pointed ſtalks; as if made on purpoſe to prick into the ground.

The ſeeds become hurtful to the eyes, probably by their ſharp ſtalks pricking and wounding them.

CREPUNDIA, in *Antiquity*, tokens left with expoſed children, by which they might be afterwards known. Theſe were of conſiderable value, if the child happened to be nobly born, in order to defray part of the expence of its education.

Crepundia was alſo uſed in a leſs proper ſenſe, for the ſwaddling cloths in which children were expoſed; becauſe by them they might be known again. See **Exposing** *of children.*

CREPUSCULUM, in *Aſtronomy*, *twilight*; the time from the firſt dawn or appearance of the morning, to the riſing of the ſun; and again, between the ſetting of the ſun, and the laſt remains of day.

Papias derives the word from *creperus*; which, he ſays, anciently ſignified *uncertain*, *doubtful*, q. d. *a dubious light*.

The *crepuſculum* is uſually computed to begin and end when the ſun is about eighteen degrees below the horizon; for then ſtars of the ſixth magnitude diſappear in the morning, and appear in the evening. It is of longer duration in the ſolſtices than in the equinoxes, and longer in an oblique than in a right ſphere.

The *crepuſcula* are occaſioned by the ſun's rays refracted in our atmoſphere, and reflected from the particles thereof to the eye. For ſuppoſe an obſerver in O (*Tab. Aſtronomy*, *fig.* 41.), the ſenſible horizon AB, and the ſun under the horizon in HK; and let the ray SE fall in the atmoſphere below the horizon. Since it paſſes out of a rarer into a thicker medium, it will be refracted, and that towards the perpendicular, i. e. towards the ſemidiameter CE. It will not, therefore, proceed to T, but touching the earth in D, it will fall upon A, the eaſtern part of the ſenſible horizon: nor can any other ray beſides AD, of all thoſe refracted in E, arrive at A. But now, ſince the particles of the atmoſphere reflect the ſun's rays (ſee **Reflection**); and ſince the angle DAC is equal to CAO; the rays reflected in A will be carried to O, the place of the ſpectator; who will therefore ſee the particle A ſhining in the ſenſible horizon, and conſequently the beginning of the morning *crepuſculum*.

And in the ſame manner might be ſhewn the refraction and reflection of the ſun's rays in the atmoſphere, in the evening *crepuſculum*.

Kepler, indeed, aſſigns another cauſe of the *crepuſculum*; viz. the luminous matter around the ſun; which, ariſing near the horizon, in a circular figure, exhibits the *crepuſculum*; in no wiſe, as he would ſhew, owing to the refraction of the atmoſphere.

The ſun's luminous atmoſphere, though neither the ſole nor principal cauſe of twilight, may lengthen its duration, by illuminating our air, when the ſun is too low to reach it with his own light. Greg. Aſt. book ii. prop. 8.

The depth of the ſun below the horizon, at the beginning of the morning crepuſculum, *or end of the evening one*, is determined in the ſame manner as the arch of viſion; viz. by obſerving the moment wherein the air firſt begins to ſhine in the morning *crepuſculum*, and that wherein it ceaſes in the evening; and finding the ſun's place for that moment.

Alhazen found it 19°; Tycho, 17°; Rothmannus, 24°; Stevenius, 18°; Caſſini, 15°; Ricciolus, in the equinox in the morning 16°, in the evening 20° 30′; in the ſummer ſolſtice in the morning 21° 25′, in the winter ſolſtice in the morning 17° 25′.

Nor need we wonder at this difference among aſtronomers; the cauſe of the *crepuſculum* being inconſtant: for, if the exhalations in the atmoſphere be either more copious, or higher, than ordinary; the morning *crepuſculum* will begin ſooner, and the evening hold longer than ordinary: for the more copious the exhalations are, the more rays will they reflect, conſequently the more will they ſhine; and the higher they are, the ſooner they will be illumined by the ſun. On this account, the evening twilight is longer than the morning, at the ſame time of the year in the ſame place. To this it may be added, that in a denſer air, the refraction is greater; and that not only the brightneſs of the atmoſphere is variable, but alſo its height from the earth: and therefore the twilight is longer in hot weather than in cold, in ſummer than in winter, and alſo in hot countries than in cold, other circumſtances being the ſame. But the principal differences are owing to the different ſituations of places upon the earth, or to the difference of the ſun's place in the heavens. Thus, the twilight is longeſt in a parallel ſphere, and ſhorteſt in a right ſphere, and longer to places in an oblique ſphere in proportion to their nearneſs to one of the poles: a circumſtance which affords relief to the inhabitants of the more northern countries, in their long winter nights. And the twilights are longeſt in all places which have north latitude, when the ſun is in the tropic of Cancer; and to thoſe in ſouth latitude, when he is in the tropic of Capricorn. The time of the ſhorteſt twilight is different in different latitudes; in England, it is about the beginning of October and of March, when the ſun is in the ſigns ♎ and ♓. For the method of determining it trigonometrically, ſee Greg. Aſtron. book ii. prob. 41.

Hence, when the difference between the ſun's declination and the depth of the equator is leſs than 18°, ſo that the ſun does not deſcend more than 18° below the horizon; the *crepuſculum* will continue the whole night.

The elevation of the pole PR (*fig.* 42.), *and the ſun's declination* OS, *being given; to find the beginning of the morning* crepuſculum, *or end of the evening*. Since in the triangle PSZ the ſeveral ſides are given; viz. PZ the complement of the elevation of the pole PR, and PS the complement of the declination OS, and SZ the aggregate of the quadrant ZD, and the ſun's depth DS; find the angle ZPS, whoſe meaſure is the arch AO. See **Triangle**.

Convert AO into ſolar time: thus have you the **time** elapſed from the beginning of the morning *crepuſculum*, to noon.

To find the crepuſculum *by the artificial globe*; ſee **Globe**.

Suppoſing the depreſſion of the ſun at which twilight begins or ends to be 18°, it is eaſy to determine the height of the **atmosphere**. Let AEFG (*Tab.* II. *Aſtronomy*, *fig.* 65.) be the earth, the pointed circle ſurrounding it the outward ſurface of the atmoſphere, the height of which DB is to be found: let A be the place of an obſerver, *ho* his ſenſible, HO his rational horizon; let IKLM be the ſun, ENG the ſhadow of the earth, IB a ray from the upper edge of the ſun, touching the earth in E, and falling upon the outward ſurface of the atmoſphere at B, whence it is reflected to the eye of the obſerver at A in the line of his ſenſible horizon BA: ſince the ſun is larger than the earth, he enlightens a little more than a hemiſphere, or that part repreſented by the arc EFG = 180° 32′, becauſe ECF + ECN = two right angles, and ECN is leſs than a right angle by the angle ENC = 16′; conſequently, the half of EFG or the angle ECS = 90° 16′; and therefore taking away OCS the ſun's depreſſion = 18°, there will remain ECO = 72° 16′; and as ACO = 90°, ACE will be = 17° 44′, and DCA, its half = 8° 52′. Then in the right-angled triangle BAC, the angles and one ſide AC are known, therefore the ſide BC may be found. AC being made radius, BC will be the ſecant of the angle BCA = 8° 52′: therefore 10000000 : 10120948 :: $3967\frac{1}{2}$ the miles in the earth's ſemidiameter : $4015\frac{1}{2}$ the diſtance from the center to the outward ſurface of the atmoſphere, from which ſubtract the ſemidiameter, and the remainder 48 miles will be the height of the atmoſphere. If allowance of 34′ is made for the horizontal refraction, the angle BCA will be 8° 18′, the ſecant of which is 10105851, whence the height of the atmoſphere will be 42 miles. Long's Aſt. vol. i. p. 260. See **Atmosphere**.

CRESCENT, the new moon, which, as it begins to recede from the ſun, ſhews a little rim of light, terminating in points, or horns, which are ſtill increaſing, till it become full, and round in the oppoſition.

The word is formed from *creſco*, *I grow*.

The term is alſo uſed for the ſame figure of the moon in its wane, or decreaſe, but improperly; becauſe the points or horns are then turned towards the weſt, whereas they look to the eaſt in the juſt *creſcent*.

Crescent, in *Heraldry*, is a bearing in form of a half-moon. The Ottomans bear ſinople, a *creſcent* montant, argent.

The *creſcent* is frequently uſed as a difference in coat-armour, to diſtinguiſh it for that of a ſecond brother, or junior family.

The figure of the *creſcent* is the Turkiſh ſymbol; or rather, is that of the city Byzantium, which bore this device from all antiquity; as appears from medals ſtruck in honour of Auguſtus, Trajan, &c.

The *creſcent* is ſometimes *montant*, i. e. its points look towards the top of the chief, which is its moſt ordinary repreſentation; whence ſome contend, that the *creſcent*, abſolutely ſo called, implies that ſituation; though other authors blazen it *montant*, when the horns are towards the dexter-ſide of the eſcutcheon, in which poſition others call it *incroiſſant*.

Creſcents are ſaid to be *adoſſed*, when their backs or thickeſt parts are turned towards each other; their points looking to the ſides of the ſhield.

Creſcent inverted, is that whoſe points look towards the bottom: *turned creſcents*, are placed like thoſe *adoſſed*; the difference is, that all their points look to the dexter-ſide of the ſhield: *conturned creſcent*:, on the contrary, look to the ſiniſter ſide: *affronted* or *appointed creſcents*, are contrary to the *adoſſed*, the points looking towards each other.

Crescent is alſo the name of a military order, inſtituted by Renatus of Anjou, king of Sicily, &c. in 1448; ſo called from the badge, or ſymbol thereof, a *creſcent* of gold enamelled.

What gave occaſion to this eſtabliſhment was, that Renatus took for his device a *creſcent*, with the word *loz*, *praiſe*; which, in the ſtyle of rebus, makes *loz in creſcent*, q. d. *by advancing in virtue, one merits praiſe.*

CRESCENTIA, in *Botany*. See CALABASH-*tree*.

CRESSA, in *Botany*, a genus of the *pentandria digynia* claſs, with a five-leaved calyx, a ſaucer-ſhaped corolla, and a two-valved capſule containing a ſingle ſeed.

CRESSES, in *Botany*, *naſturtium*. In the Linnæan ſyſtem this is joined to LEPIDIUM. The characters are theſe: the flower hath a four-leaved empalement, and four petals placed like a croſs, with ſix awl-ſhaped ſtamina, four of which are the ſame length of the empalement, two being ſhorter. In the center is ſituated a heart-ſhaped germen, which afterward turns to a heart-ſhaped ſhort capſule, with acute borders, having two cells, each containing one or two oval ſeeds. There are only three ſpecies cultivated in gardens.

The common *creſs* is a plant ſo well known as to need no deſcription. There is a variety of this, whoſe lower leaves are much curled on the edges, and was formerly cultivated in greater plenty than at preſent. Whether this is a diſtant ſpecies, or only a variety, is not yet determined; though it has been found to retain its difference for ſome years.

It is commonly cultivated in gardens as a ſallad-herb, and being one of the warm kinds, is chiefly eſteemed during the winter and ſpring. During the winter ſeaſon it muſt be ſown upon a gentle hot-bed, covered from rains and froſts. In the ſpring it may be ſown in warm borders, where if it be defended from cold winds it will thrive very well: but if it is intended to continue it in ſummer, it muſt be ſown every third day in ſhady borders; otherwiſe it will grow too faſt for uſe.

Creſſes are good for the ſcurvy, for which the Dutch commonly eat them in May, with bread and butter.

A cataplaſm of the leaves with hog's lard, cures ſcald heads; the ſeed likewiſe helps the ſcurvy and dropſy, ſwelling of the ſpleen, and opens obſtructions of the female ſex. Miller's Bot. Off.

The herb, but eſpecially the ſeed, are hot and acrimonious; whence they are attenuating, abſterſive, and aperitive.

CRESSES, *Indian*, *tropæolum*, in *Botany*, a genus of the *octandria monogynia* claſs. Its characters are theſe: the empalement of the flower is of one leaf, ending in five points; it is erect, ſpreading, and falls off. The two under ſegments are narrow, their tail ends in a nectareous horn, which is larger than the empalement. The flower has five roundiſh petals inſerted in the ſegments of the empalement; the two upper ſit cloſe to the footſtalk, but the lower have oblong hairy tails. It has eight ſhort awl-ſhaped ſtamina, which decline, and are unequal; terminated by oblong riſing ſummits, having four cells, and a roundiſh germen with three lobes which are ſtreaked, ſupporting a ſingle erect ſtyle, crowned by an acute trifid ſtigma. The germen afterward becomes a ſolid fruit in three parts, convex on the outſide, angular within, having many furrows; each part or cell including one furrowed ſeed, convex on one ſide, and angular on the other. There are two ſpecies, natives of South America.

Both kinds of this plant are eaſily propagated, by ſowing their ſeeds in March or April, in a good ſoil, and warm ſituation; and ſhould be planted near a hedge or wall, being great climbers, and their lying on the ground being ſubject to rot them. They flower in June, and continue flowering till October, when the froſts ſoon deſtroy the whole plant.

The double-flowered kind produces no ſeeds, and muſt therefore be propagated by planting cuttings of it. This may be done in any of the ſummer months; but the plants muſt be carefully preſerved in winter, being very ſubject to rot. If this be confined in pots, and thoſe filled with a poor ſoil, it will ramble leſs in the branches, and will produce more flowers. The flowers of this kind, though very beautiful, are not nearly ſo well taſted in ſallads as thoſe of the ſingle kind, which are very warm, and agreeable; and are eſteemed very wholeſome. The ſeed is pickled, and by ſome preferred to moſt kinds of pickles for ſauce.

CRESSES, *Meadow*. See CARDAMINE.

CRESSES, *Sciatica*, *iberis*, in *Botany*, a genus of the *tetradynamia ſiliculoſa* claſs. Its characters are theſe: the flower hath an empalement of four oval leaves, which ſpread open, are hollowed, and fall away. It hath four unequal, oval, obtuſe petals, which are ſpread open; and ſix awl-ſhaped erect ſtamina, terminated by roundiſh ſummits: the germen is in the center of the tube, round and compreſſed; and ſupporting a ſhort ſingle ſtyle, crowned by an obtuſe ſtigma, which afterwards becomes a roundiſh compreſſed veſſel, having two cells, each containing one oval ſeed. Miller enumerates eight ſpecies. See DITTANDER.

CRESSES, *Spaniſh*, *vella*, in *Botany*, a genus of the *tetradynamia ſiliculoſa* claſs. Its characters are theſe: the empalement of the flower is cylindrical, and compoſed of four linear obtuſe leaves, which drop off. The flower has four petals placed in form of a croſs, whoſe tails are the length of the empalement; and ſix ſtamina of the ſame length, two of which are a little ſhorter, terminated by ſingle ſummits, and an oval germen, ſupporting a conical ſtyle, crowned by a ſingle ſtigma. The germen afterward turns to a globular capſule with two cells, divided by an intermediate partition twice as large as the pod, oval, erect, ſtretching beyond the capſule, each cell containing one ſeed. There are two ſpecies. Miller.

CRESSES, *Swine's*. See COCHLEARIA.

CRESSES, *Wall*. See TURRITIS.

CRESSES, *Water*, *ſiſymbrium*, in *Botany*, a genus of the *tetradynamia ſiliquoſa* claſs. Its characters are theſe: the flower has a ſpreading empalement, compoſed of four linear, ſpear-ſhaped, coloured leaves, which fall off: it has four oblong ſpreading petals, placed in form of a croſs, and ſix ſtamina, four of which are longer than the empalement, the other two which are oppoſite are ſhorter, terminated by ſingle ſummits. It has an oblong ſlender germen, with ſcarcely any ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a taper, oblong, incurved pod, having two cells opening with two valves, which are ſhorter than the intermediate partition, filled with ſmall ſeeds. There are nine ſpecies; the firſt of which is the common *water-creſſes*, which grows naturally in ditches and rills of water in moſt parts of England, in which places they are generally gathered for market. But it may be eaſily cultivated, by taking ſome of the plants early in the ſpring, from the places of their natural growth; preſerving the roots as entire as poſſible, and planting them into mud, and then letting the water in upon them by degrees. When they have taken root, they will ſoon flouriſh and ſpread over a large compaſs of water; but ſhould not be cut the firſt ſeaſon, but ſuffered to run to ſeed, which falling into the water, will furniſh a ſufficient ſupply of plants afterward.

But where the water is ſo deep that it will not be eaſy to plant them, the beſt method will be to get a quantity of the plants juſt as their ſeed is ripening, and throw them on the ſurface of the water where they are wanted to grow; here the ſeeds will ripen and fall to the bottom, where they will take root, and produce a ſupply of theſe plants.

Some of thoſe people who gather this herb for uſe, either through ignorance, or ſome worſe deſign, have frequently taken the creeping water-parſnip, and ſold it for *water-creſſes*; whereby many perſons have been injured by eating it: but they may eaſily be diſtinguiſhed by the ſhape of the leaves; thoſe of the *water-creſſes* being roundiſh, almoſt heart-ſhaped lobes, with a few indentures on their edges, and are of a dark green; but thoſe of the water-parſnip have oblong lobes ending in points, which are of a light green ſawed on their edges. Miller.

Water-creſſes are frequently eaten in ſpring as a ſallad. The whole plant is of a very acrid taſte, and is a powerful attenuant and reſolvent. It is recommended as a kind of ſpecific in the ſcurvy, and is eaten in great quantities by many with that intent. It is good againſt all obſtructions of the *viſcera*; and conſequently in jaundices, and other chronic diſeaſes. It is alſo a powerful diuretic, and promoter of the *menſes*. People have pretended to preſerve the virtues of this plant in waters, ſyrups, and conſerves; but the beſt way of taking it is either to eat it as a ſallad, or to drink its expreſſed juice ſingly, or mixed with that of the other antiſcorbutic plants, as brook-lime, &c. which is often done.

CREST, in *Armoury*, the uppermoſt part of the defenſive armour of the head; riſing over the reſt, in manner of the comb or tuſt of a cock; to ſuſtain the effort of very keen ſcimitars, &c. It has its name from *criſta*, *cock's comb*.—Hence, alſo,

CREST, in *Heraldry*, denotes the uppermoſt part of an armoury; or that part riſing over the CASK, or helmet.

Next to the mantle, ſays Guillim, the *creſt* or *cognizance* claims the higheſt place, being ſeated on the moſt eminent part of the helmet; yet ſo, as to admit an interpoſition of ſome eſcrol, wreath, chapeau, crown, &c.

The ancient warriors wore *creſts* to ſtrike terror in their enemies, as the ſight of the ſpoils of animals they had killed; or to give them the more formidable mien, by making them appear taller, &c.

In the ancient tournaments, the cavaliers had plumes of feathers, eſpecially thoſe of oſtriches and herons, for their *creſts*; theſe tufts they called *plumarts*; and were placed in tubes, on the tops of high caps, or bonnets. Some had their *creſts* of leather; others of parchment, paſteboard, &c. painted or varniſhed, to keep out the weather; others of ſteel, wood, &c. on which were ſometimes repreſented a member or ordinary of the coat; as, an eagle, fleur de lys, &c. but never any of thoſe called honourable ordinaries, as pale, feſſe, &c. The *creſts* were changeable at pleaſure; being reputed no other than as an arbitrary device, or ornament.

Herodotus attributes the riſe of *creſts* to the Carians, who firſt bore feathers on their caſks, and painted figures on their bucklers; whence the Perſians called them *cocks*.

The *creſt* is eſteemed a greater mark of nobility than the armoury, as being borne at tournaments; to which none were admitted, till they had given proof of their nobility. Sometimes it ſerves to diſtinguiſh the ſeveral branches of a family. It has alſo ſerved, on occaſion, as the diſtinguiſhing badge of factions. Sometimes the *creſt* is taken from the device; but more uſually it is formed of ſome piece of the arms: thus, the emperor's *creſt* is an eagle; that of Caſtile, a caſtle, &c. Families that exchange arms, as the houſes of Brunſwick and Cologne have done, do not change their *creſts*; the firſt ſtill retain the horſe, and the latter the mermaid.

The *creſt* of the arms of England, is a lion paſſant gardant, crowned with an imperial crown; that of France, a fleur-de-lys.

CREST, among *Carvers*, an imagery, or carved work, to adorn the head, or top, of any thing; like our modern corniche.

CRESTED, in *Heraldry*, is a term applied to a cock, or other bird, whoſe creſt is of a different tincture from other parts.

CRESTED *graſs*. See GRASS.

CRESTED *ſtalk*. See STALK.

CREST-FALLEN, is ſpoken of a horſe, when the upper part of the neck, on which the mane grows, does not ſtand upright, but hangs either to one ſide or the other

CRETA, in *Natural Hiſtory*, and in *Medicine* See CHALK.

CRETIO, in *Antiquity*, a certain number of days allowed the heir to conſider, whether he would act as heir to the deceaſed, or not; after which time, if he did not act, he was excluded from the eſtate.

CREUX, a term in *Sculpture*, much uſed by the French; though not yet, that we know of, naturalized among us: but the want of a word of equal import in Engliſh, as it has frequently put us under a neceſſity of uſing this in the courſe of the preſent work; ſo it pleads ſtrongly for its admiſſion into our language.

Creux originally ſignifies a *hollow*, *cavity*, or *pit*, out of which ſomething has been ſcooped, or dug: hence it is uſed to denote that kind of ſculpture, and graving, where the lines and figures are cut and formed within the face, or plane of the plate, or matter engraven on.

In which ſenſe, it ſtands oppoſed to *relievo*; where the lines and figures are imboſſed, and appear prominent above the face of the matter.

CREW, the company of ſailors belonging to a ſhip, boat, or other veſſel.

The ſailors that are to work and manage a ſhip are regulated by the number of laſts it may carry; each laſt making two tun.

The *crew* of a Dutch ſhip, from 40 to 50 laſts, is ſeven ſailors and a ſwabber; from 50 to 60 laſts, the *crew* conſiſts of eight men and a ſwabber; and thus increaſes at the rate of one man for every ten laſts; ſo that a ſhip of 100 laſts has twelve men, &c. Engliſh and French *crews* are uſually ſtronger than Dutch; but always in about the ſame proportion.

In a ſhip of war there are ſeveral particular *crews*, or gangs, as the boatſwain's *crew*, the carpenter's *crew*, the gunner's *crew*, &c.

CREX, in *Zoology*, the name of a bird, common about the Nile, and remarkable for the noiſe which it makes, which is no other than *crex*, *crex*, whence it has its name. Its beak is moderately long and black, as are alſo its head and its legs; its neck, back, and breaſt, are white, but the back a little greyiſh; the wings are black, variegated with white. It feeds on inſects, and generally makes a very loud noiſe all the time it is on the wing. Bellonius de Avibus.

CRIB, in the Engliſh *Salt-Works*, the name given to a ſort of caſe uſed in ſome places inſtead of the DRAB, to put the ſalt into as it is taken out of the boiling-pan.

Theſe *cribs* are like hay-racks, wide at the top, and tapering to a narrow bottom, with wooden ribs on each ſide, placed ſo cloſe, that the ſalt cannot eaſily fall through them. Through theſe apertures, however, the ſuperfluous ſaline liquor drains out, and leaves the ſalt, after a few days, dry enough to be added to the heaps that ſtand ready for ſale. At Limington, and in ſome other places, they uſe, inſtead of theſe *cribs*, a ſort of wooden troughs with holes in the bottom, through which the ſaline liquor drains from the ſalt, and falls into veſſels placed underneath to receive it; and in other places they uſe barrows or wicker baſkets, out of which the liquor runs with great eaſe on all ſides at once.

CRIBBAGE, a game at cards, wherein no cards are thrown out, and the ſet makes ſixty-one: it being an advantage to deal, by reaſon of the crib, it is proper to lift for it; and he who has the leaſt card, deals.

CRIBRATION, in *Pharmacy*, *ſifting*; the act of ſeparating the finer parts of a medicine, whether dry or humid, from the groſſer; the latter by means of a pulping-ſieve, the former by a fine ſearce.

With reſpect to *cribration*, Quincy, a very good judge of pharmacy, makes the following remark, in order to obviate the miſchiefs and inconveniencies which through inadvertency or haſte, frequently happen in the practical ſhops: which is, that whatſoever is to be powdered, the whole ingredient or ingredients, with all their parts to be uſed, ſhould paſs the ſieve, and be all mixed equally together, before any be uſed. For through neglect of this caution, ſeveral medicines which come under this kind of management, will, in their different parts, be of different efficacies, according as that part of moſt virtue, being more or leſs friable, may paſs through firſt, which will make that much too ſtrong, or remain behind to the ſame prejudice. In compoſitions likewiſe of ingredients of different textures or coheſions, ſome run through much ſooner than others; ſo that there is an abſolute neceſſity of mixing the whole carefully after all is paſſed.

CRIBROSUM *os*, or *Os* CRIBRIFORME, in *Anatomy*, a little bone at the top of the noſe, pierced like a ſieve, to let paſs ſeveral little fibres, ariſing from the mamillary productions, and terminating in the membrane that lines the cavity of the noſtrils; called alſo *os ethmoides*.

CRICELASIA, formed of κρικος, *ring*, and ελαυνω, *I drive*, among the Greeks, the exerciſe of rolling the circle or *trochus*. This was a ſpecies of exerciſe in uſe among the ancients; and is, though not very diſtinctly, deſcribed by Oribaſius, in his Medicinal Collections, lib. vi. cap. 26. from Antyllus. It ſhould ſeem to be little more than driving the hoop, as is now practiſed by boys. The hoop was ſo large as to reach as high as the breaſt of the perſon who uſed it; the inſtrument by which it was driven along was of iron, with a wooden handle; and ſmall rings, κρίκοι, were faſtened to the hoop, to jingle and divert the perſon who exerciſed himſelf with it; which Oribaſius conſiders as of importance. This exerciſe was recommended for rendering the limbs pliable, and ſtrengthening weak nerves.

CRICETUS, in *Zoology*, the name of an animal of the MOUSE kind. Its ſize is between that of a common rat and a rabbit. Its legs are very ſhort; its back is of the colour of a hare's; its ſides have more redneſs; and its belly is black; each ſide is variegated alſo with three large white ſpots. The hairs of this creature are ſo firmly rooted in the ſkin, that they can by no means be pulled out, but ſooner tear away the ſkin with them; and for this reaſon, as well as for the variety of colours, the ſkins are much valued. It is a very bold and deſperate creature; and if a man on horſeback moleſt it, will fly up at the noſe of the horſe, and hold him very faſt. It lives in holes in the earth, as the rabbit, and heaps up large quantities of vegetable fruits and corn for its ſtore, and is uſually found very fat. It is very apt to ſit on its buttocks, and in that poſture looks like a little bear, whence ſome have called it *arctomys Palæſtinorum*. It has two large teeth in the front of each jaw, and it uſes its fore-feet by way of hands, like the ſquirrel. Ray's Syſt. Quad. p. 201.

CRICKET, *Gryllus*, in *Natural Hiſtory*, the name of a genus of inſects of the *hemiptera* claſs, nearly allied to the locuſt kind. The two principal kinds are the houſe and field-*cricket*, and they are hoſtile to each other. The firſt of theſe is ſmaller, and is of a brown colour ſpotted with black. The latter is more than an inch long, and has a great head and very large eyes. The antennæ in this ſpecies have no articulations.

Crickets are thought to be ruminating animals, and certainly are furniſhed with ſeveral different ſtomachs. In medicine they are believed to be diuretic, and leſs dangerous than cantharides; for which intention they are dried and powdered, and given in doſes from twelve grains to a ſcruple. The houſe-*cricket* only flies from the light, as many other inſects do; it feeds almoſt on every thing; the males only chirp; and their monotony, however diſagreeable to ſome people, is pleaſant enough to their own females, for it is the voice of love; and it is continual, night and day, except in very cold weather. They become habituated to bear all kinds of noiſe, but the field-*cricket* is very timorous, and chirps only in the heat of the fineſt days of ſummer. Coll. Acad. tom. vii. P. E. 3. p. 209.

Cricket, *balm*. See Cicada.

Cricket, *mole*, *Gryllotapha*, a ſpecies of the *gryllus*, in *Natural Hiſtory*, a creature approaching to the locuſt kind, and very properly called by this name by Mouffett, as it has much the form of the *cricket*, and makes a noiſe like it in the evening, and is like the mole, continually employed in digging the ground. It is an inſect of a very unpleaſant form. It is of the length and thickneſs of a man's little finger, and is of a brown colour, which is darker in the male than in the female. There are on each ſide of the anus two hairy proceſſes, reſembling the tails of mice; its belly is compoſed of eight joints, and is covered with as many ſcales, which are of a pale fleſh-colour, and are covered with ſhort hair. The back is covered by a pair of pointed wings, along each of which there runs a black ſtreak or line. Theſe wings fold any way at the creature's pleaſure, and when fully expanded are very large. Over theſe lie the antennæ; theſe are variegated alſo with black, and reach about half the length of the wings. It has only four legs; the hinder pair are long and fit for hopping; the anterior pair are ſhort, and furniſhed with a ſort of hands for digging in the manner of the mole. The breaſt is covered with a cruſtaceous ſubſtance, which is blackiſh, and hairy on the outſide, and ſmooth and pale within. The eyes are very bright and black, and are very hard, and the mouth is wide, and has two tonſils, and teeth in both jaws. This creature lives under ground, and is principally found in damp and boggy places. They come out in the duſk of the evening, and make a very loud noiſe of the nature of that of the *cricket*.

The *mole-cricket* moves very ſlowly; and Goedartius is of opinion, that its wings were given it rather as an ornament, than as a thing of uſe; or if they have any real uſe, that it is the covering and defending the tender body of the creature, which is very ſoft, and eaſily liable to accidents; and Mouffett ſays, that its flights are no more than long leaps. But we have a very different account of the uſe this creature makes of its wings, in the German Ephemerides. Mentzelius, in a paper there, declares this to be one of the moſt miſchievous inſects of the creation. He ſays it is a kind of amphibious creature, and that it lives equally well under ground, in the air, or under water; that while it is under ground, it does infinite miſchief by burrowing under the beds of a garden, and eating the roots of flowers, and that in the night it comes out, and taking wing ſettles upon the fruit-trees, where it does little miſchief; and all this the author affirms from his own experience, in the gardens which he obſerved.

This creature is very nice in the conſtruction of its neſt. This is always under ground, and it chooſes a ſolid clay for the purpoſe. All its precautions ſeem to be neceſſary to ſecure its eggs from becoming a prey to a kind of black fly, which conceals itſelf under ground. The noiſe of the *cricket* is variouſly accounted for by naturaliſts; but is moſt probably effected by the play of organs in their belly, of a ſingular conſtruction. This is certain, that if the head of the animal be taken off, or if it be ſevered in the middle, it continues to live, and even to chirp for ſome conſiderable time.

It is remarkable of this creature, that it can move backward as faſt as forward, and often does ſo when frighted.

Cricket is alſo the name of an exerciſe, or game, with bats and a ball.

CRICOARYTÆNOIDÆUS, in *Anatomy*, a name given to two pair of muſcles, ſerving to open the larynx.

The *cricoarytænoidæi* are either *poſterior* or *lateral*: the former are the firſt pair of openers of the larynx; the latter, the ſecond pair.

The *lateral* have their origin in the edge of the lateral and ſuperior part of the cartilage cricoides, and are inſerted into the lateral and ſuperior part of the arytænoides.

The *poſterior* have their origin in the poſterior and lower part of the cricoides: and hence the reaſon and etymology of the name is evident.

CRICOIDES, in *Anatomy*, a cartilage of the larynx; ſo called, as being round, like a ring, and encompaſſing the whole larynx.

The word is formed from κρικος, uſed by tranſpoſition for κιρκος, *circle*, and ειδος, *form*.

The *cricoides* is the ſecond cartilage of the larynx; it is narrow before, thick behind; and ſerves as a baſe to all the other cartilages; being, as it were, let into the thyroides.

It is by means of this, that the other cartilages are joined to the trachea; on which account it is immoveable.

CRICO-PHARINGEI, muſcles which ariſe from the lower part of the ſide of the cricoid cartilage.

CRICOTHYROIDÆUS, in *Anatomy*, a name given to the firſt pair of muſcles proper to the larynx.

Their name is derived hence, that they have their origin in the lateral and interior part of the *cricoides*; and are inſerted into the inferior part of the thyroides.—Their uſe is to dilate the ſcutiform cartilage.

CRIER, *common*, an officer in the city of London, to whom, and to the ſerjeant at arms, it belongs to ſummon all executors and adminiſtrators of freemen to appear, and to bring in inventories of the perſonal eſtates of freemen, within two months after their deceaſe; who is alſo to have notice of the appraiſements. He is alſo to attend the lord-mayor on ſet days, and at the courts held weekly by the mayor and aldermen.

CRIME, a breach or tranſgreſſion of a law, or an action contrary to the purport of a law, either natural or divine, civil, or eccleſiaſtic: to which a penalty is annexed.

The term *crime* includes in it the idea of a determination and deſign formed to do an injury. It is derived from the Latin *crimen*, of κρινω, *judico*, *I judge*.

The Romans diſtinguiſhed two kinds of *crimes*; viz. *private*, which only affected particular perſons; the proſecution whereof was not allowed by the laws to any but thoſe intereſted therein; as *adultery*, &c. and *public crimes*; the proſecution whereof was permitted to all perſons, though in no-wiſe immediately intereſted.

With us, *crimes* are diſtinguiſhed into *capital*; as *treaſon*, *murder*, *robberies*, &c. and *common*, as *perjuries*, &c.

They are again divided into crimes cognizable by the king's judges; as thoſe above mentioned: and ſuch as are only cognizable in the ſpiritual courts, as ſimple *fornication*, &c.

There is an excellent book on the ſubject of *crimes* and punishments, publiſhed by the marquis de Beccaria.

Crime, *quaſi*. See Quasi *crime*.

Crimen *falſi*. See Falsi.

CRIMINAL *law*, is that which diſcuſſes the nature of crimes, and inflicts ſuitable penalties; or, as it is more uſually denominated in England, the doctrine of the pleas *of the crown*.

CRIMNOIDES, or **Crimoides**, formed of κριμνον, *bran*, in *Medical Writers*, is uſed for urine with thick ſediments at the bottom, like bran.

CRIMSON, one of the ſeven red colours of the dyers.

The word comes from the Arabic *kermiſi*, of *kermes*, *red*.

The Bollandiſts inſinuate, that *crimſon* comes from *Cremona*, and is uſed for *Cremonois*.

The ſtuffs to be dyed in *crimſon*, after they have been cleared of their ſoap, and ſtrongly alumed, are put in a decoction of cochineal, each according to its colour.

In a leſs durable *crimſon* by brazil-*wood*, and for the colour called by dyers *demi-crimſon*, the root of madder is mixed with cochineal.

To dye a lively *crimſon*; firſt wet the goods well, and for every pound of ſtuff, to make the ſuds, uſe two ounces and a half of tempered aqua fortis, three ounces and a half of tartar, an ounce and a half of cochineal, and eight ounces of alum. Boil the goods with all theſe for half an hour, let them cool, and rince them out. To finiſh the dye, boil four ounces of cochineal, three ounces of ſtarch, three ounces of white wine tartar, and half an ounce of white arſenic together, for a quarter of an hour; then put in the goods, and let them boil for above half an hour, or until they have taken the dye well and equally. See Dying.

Crimson *graſs vetch*, in *Botany*. See *Chichling* Vetch.

CRINONES, from *crinis*, *hair*, in *Medicine*, a ſort of worms, ſometimes found under the ſkin, in children; reſembling ſhort thick hairs, or briſtles.

They are called *dracunculi*, and *comedones*, from the Latin *comedere*, *to eat*; from their preying upon the ſubſtance of the child, or conſuming its nouriſhment. See Dracunculi.

The common way of getting out theſe worms is by the point of a needle; and to prevent their forming there again, the uſual cuſtom is to waſh the parts with wine or vinegar, with alum, nitre, or common ſalt, or with a ſtrong lixivium of oak aſhes, and afterwards anointing them with an ointment of the common kind, uſed for ſcorbutic eruptions, with a ſmall mixture of quickſilver.

CRINONIA, a kind of cap, worn by the emperors of Conſtantinople on ſolemn occaſions.

CRINUM, in *Botany*. See *Aſphodel* Lilly.

CRISIS, from κρινω, *I judge*, in *Medicine*, a change, or turn, in acute diſeaſes; wherein the morbific matter is ſo altered, as to determine the patient either for recovery or death; the doctrine of which formed a principal part of ancient medicine.

The cauſe of ſuch change is owing to the remaining vital forces being irritated by the matter of the diſeaſe ſo or ſo conditioned; i. e. fit either to be evacuated, or tranſlated, or to kill.

If the matter be diſpoſed for evacuation or tranſlation, but is not ſalubrious, it produces a change called a *critical perturbation*, or *imperfect criſis*.

If the change become ſenſible, they are called *critical ſymptoms*, or *ſigns of a criſis*, either future or preſent. See SIGN.

The ſymptoms of the *criſis* are frequently confounded with thoſe ariſing from the cauſe of the diſeaſe, and the diſeaſe itſelf, or the matter of the diſeaſe; whence have ſprung the moſt unhappy conſequences.

The differences between critical ſymptoms and morbific ones are, that the firſt proceed from the vital powers prevailing over the force of the diſeaſe; but the latter from the diſeaſe prevailing over the vital faculty: that the firſt are preceded by a manifeſt concoction, but the latter are formed even in crudities: that the former happen about the critical times, but the latter at all times of the diſeaſe, chiefly during its increaſe.

The principal ſymptoms of an approaching *criſis* are, after digeſtion, and about the critical time, a ſudden ſtupor, drowſineſs, waking, delirium, anxiety, dyſpnœa, grief, redneſs, titillation, pricking, heavineſs, darkneſs, light, ſpontaneous tears, nauſea, heat, thirſt, trembling of the lower lip, &c.

The ſymptoms and effects of a preſent *criſis* are, after the preceding ones, a vomiting, ſalivation, looſeneſs, thick ſediment in the urine, bleeding at the noſe, hæmorrhoids, ſweat, abſceſſes, puſtules, tumours, buboes, purules, aphthæ, &c.

Dr. Albertinus obſerves, that all feveriſh, nay, almoſt all diſeaſes, are followed by *criſes*, and that particularly after intermitting fevers are ſtopped by the bark, critical evacuations are to be expected. If they do not come timely, the patient is in danger of ſome other diſeaſe, eſpecially if any uſual evacuation has been hindered; in which caſe it is dangerous to give the bark, unleſs we promote a ſuitable excretion, if a *criſis* does not ſoon come.

Dr. Martine defends the ancients in the rules they have laid down concerning the periods and *criſes* of diſeaſes, endeavouring to prove that they are founded on accurate obſervations.

CRISP *leaf*, *criſpum folium*, among *Botaniſts*. See LEAF.

CRISTA *galli*, in *Anatomy*, an eminence in the middle of the *os ethmoides*, advancing within the cavity of the cranium; and to which is faſtened that part of the dura mater which divides the brain, called *falx*.

It has its name from its figure, which reſembles that of a cock's comb. In adults, this proceſs appears of a piece with the *ſeptum narium*.

CRISTA, *galli*, in *Conchyliology*, the name of a peculiar ſpecies of oyſter, called alſo by ſome *auris porci*, or the hog's ear-ſhell.

CRISTÆ is alſo a term uſed, in *Surgery*, for certain preternatural excreſcences ariſing about the fundament, reſembling cocks combs.

Theſe, M. Dionis ſays, are taken off either by ligature, cauterization, or amputation. When they have other figures, they have other names, as ficus, &c. See CONDYLOMA.

CRISTA is alſo uſed for a crooked, twiſted, ſpiral eminence, in the middle of the ſpine of the *omoplata*.

CRISTA *pavonis*, in *Botany*, a name by which ſome authors have called the POINCIANA.

CRISTA *pavonis* is alſo a name given to the tree, the wood of which is uſually denominated LOGWOOD.

CRITERIUM, or CRITERION, formed of κρινω, *I determine*, a rule or ſtandard, whereby to compare propoſitions and opinions, in order to diſcover their truth or falſhood.

The doctrine of *criteria*, and the characters and rules thereof, make the firſt part of the Epicurean philoſophy. EVIDENCE is the grand *criterion* of truth.

CRITHE, Κριθη, in *Medicine*, a ſmall tubercle, hard, red, and immoveable, ſeated upon the eye-lid, above the cilia, or range of hairs. It is always included in a kind of cyſt, and by inflammation degenerates into a thickiſh matter, from whence frequently proceed intenſe pains, and various diſorders of the ſight. It is ſometimes ſeated immediately under the ſkin of the eye-lid; ſometimes it is within, under the muſcle. When this tubercle is moveable, it is generally called *chalazium*, or in Engliſh *ſtye*, or *ſlithe*. Heiſter's Surgery, p. 365.

CRITHMUM, *ſamphire*, in *Botany*. See SAMPHIRE.

CRITHOMANCY, a kind of divination, performed by conſidering the dough, or matter of the cakes offered in ſacrifice; and the meal ſtrewed over the victims to be killed.

Hence, in regard they ordinarily uſed barley-meal in theſe ceremonies, this kind of divination was called *crithomancy*, from κριθη, *barley*, and μαντεια, *divination*.

CRITICAL *days*, *ſymptoms*, &c. are certain days, and ſymptoms uſually ariſing in the courſe of acute diſeaſes, as fevers, ſmall-pox, &c. which indicate the patient's ſtate, and determine him either to recover, or grow worſe.

The word comes from κρινω, *judico*, *I judge*.

The criſes have been frequently obſerved to happen on the ſeventh, fourteenth, or twentieth day; whence thoſe are denominated *critical days*.

For the theory of *critical days*, it may be obſerved, that the concoction of any morbific matter, and the humour to be ſecerned, is nothing elſe but a change thereof into ſuch a due magnitude, or ſmallneſs, as it may be carried by the circulating blood along the canals, and excerned by veſſels deſtined for that purpoſe. But if the morbific matter cannot be reduced to ſuch a magnitude or ſmallneſs as may correſpond to the orifices of the ſecretory veſſels; then either an abſceſs or hæmorrhage will follow, if a criſis be begun; for which reaſon, abſceſſes, &c. are accounted leſs perfect criſes. But, that the morbific matter may be reduced to a due magnitude, or ſmallneſs, and its wiſhed-for diſcharge take place, there is required a conſiderable time, if the quantity of matter be large; that is, if the diſtemper be great and ſevere: and ſince there are a great many cauſes, and thoſe very conſtant, which may occaſion the blood, and offending humours therein, to be of a different fluidity in the inhabitants of different climates, it is impoſſible but that different ſpaces of time ſhould be required for the finiſhing concoction: which makes it impoſſible to determine the *critical* days in one climate, from what they are found to be in another.

The cauſes of real *critical* days, that is, ſuch on which happens the laſt concoction of the morbific matter, which is always attended with expulſion, are all thoſe things which occaſion the humours to become of ſuch a certain magnitude or minuteneſs, and of a greater or leſſer coheſion; but with any given power, bodies unequally large, or unequally cohering, cannot be concocted in an equal time: wherefore it is to be found by the obſervations made by all nations among themſelves, which are the uſual cauſes and conditions of thoſe diſeaſes, that require a certain number of days to finiſh ſuch a concoction in it.

CRITICISM, the art of judging concerning diſcourſe and writings. See JUDGMENT.

Some define *criticiſm*, more amply, the art of judging of a hiſtory, or a work of genius, with the various incidents there met with, their ſtyle, and authors.

On which footing, M. le Clerc ſeems to have given a defective idea of *criticiſm*, when he defines it ſimply the art of entering into the meaning of ancient authors, and of making a juſt diſcernment of their genuine works.

We may diſtinguiſh divers ſorts, or branches, of this art: as,

CRITICISM, *philoſophical*, or the art of judging of opinions and hypotheſes in philoſophy.

CRITICISM, *theological*, the art of judging of explications of doctrines of faith, &c.

CRITICISM, *political*, the art of judging of the means of governing, acquiring, and preſerving ſtates.

But the ordinary uſe of the word is reſtrained to

CRITICISM, *literary*, which, however, is of great extent, as it takes in the art of judging of facts; a branch of *criticiſm*, which regards not only hiſtory, but alſo the diſcernment of the real works of an author, the real author of a work, the genuine reading of a text, and the art of diſcovering ſuppoſititious monuments, charters, interpolated paſſages, &c.

The other parts of *literary criticiſm* are, the art of judging of works of genius, their excellencies and defects. We have alſo

CRITICISM, *grammatical*, or the art of interpreting and diſcovering the words and meanings of an author.

CRITICISM *of antiques*, which conſiſts in diſtinguiſhing genuine medals, and the different taſte and ſpirit found among them, according to the different people, the different country, and the different times wherein they were ſtruck; the diſtinguiſhing between what is caſt, and what ſtruck; what has been retouched, and repaired or added, from what is really antique; the genuine from the ſpurious, &c. and to decypher and explain them, &c.

CRITICISM, *ſacred*, in general, is that employed in eccleſiaſtical matters, the hiſtory of the church, the works of the fathers, councils, lives of the ſaints, &c. but more particularly what concerns the books of the Holy Scriptures, and the canon thereof.

Ariſtotle, if we believe Halicarnaſſeus, is the firſt inventor of the art of *criticiſm*. Ariſtarchus, Dionyſius Halicarnaſſeus himſelf, Varro, and Longinus, diſtinguiſhed themſelves therein in their days. Among the Chriſtians, Dionyſius Alexandrinus, Heſychius, Euſebius, St. Jerom, and Theodoret, were the greateſt maſters in this art. The decree of pope Gelaſius about the apocryphal books, required a good ſhare of *criticiſm*.

But the critical art fell with the other arts; and lay unknown till the time of Charlemagne, when it was reeſtabliſhed

eſtabliſhed under him and his ſons. The care which the religious Ciſtercians took to correct the manuſcripts of the Bible, ſhew that the rules of *criticiſm* were not entirely unknown in the eleventh century. The works of Johannes Sariſburienſis, Euſtathius, and Tzetzes, make it evident it was cultivated in the twelfth. The manuſcripts of the Bible, corrected by the Dominicans of Paris, and the doctors of the Sorbonne, in the thirteenth, ſhew it was ſubſiſting then. In the following ages, it was ſtill cultivated with more earneſtneſs; eſpecially in the ſixteenth, ſeventeenth, and eighteenth centuries, when all the world made it their ſtudy.

From the whole, it follows, that *criticiſm* does, indeed, ſuppoſe an uncommon ſtock of knowlege of the ſubject whereon it is employed: but that *criticiſm*, itſelf, is nothing elſe but good ſenſe perfected by grammar and logic.

CRIZZELLING, in the *Glaſs Trade*, a kind of roughneſs ariſing on the ſurface of ſome kinds of glaſs. This was the fault of a peculiar ſort of glaſs made in Oxfordſhire, and ſome other places, of black flints, a cryſtallized ſand, and a large quantity of nitre, tartar, and borax. The glaſs thus made is very beautiful, but, from the too great quantities of the ſalts in the mixture, is ſubject to *crizzel*; that is, the ſalts in the mixture, from their too great proportion, are ſubject, either from the adventitious nitre of the air from without, or from warm liquors put in them, to be either increaſed in quantity, or diſſolved, and thereby induce a ſcabrities, or roughneſs, irrecoverably clouding the tranſparence of the glaſs. This is what was called *crizzelling*; but by uſing an Italian white pebble, and abating the proportions of the ſalts, the manufacture is now carried on with advantage, and the glaſs made with theſe ſalts is whiter than the fineſt Venetian, and is ſubject to no faults. Plott's Oxfordſhire, p. 258.

CROCALLIS, in *Natural Hiſtory*, the name given by the ancients to a ſtone famous for its virtues againſt poiſons, and venomous bites. All the deſcription Pliny gives of it is, that it was of the ſize and ſhape of a cherry.

CROCARDS, an old name given by the Iriſh to a certain kind of money brought over into that kingdom from France, and other parts beyond the ſeas, and uttered there for pennies, though not really worth ſo much as a halfpenny. They were a ſmall ſort of coin, made of a mixture of copper, ſulphur, and a ſmall quantity of ſilver, and were called by ſeveral other names, as *mitres*, *lionines*, *roſaries*, and the like, from the figures they were impreſſed with. They were current in Ireland, and in ſome parts of England, a great many years; but were afterwards denied, and prohibited importation, both in England and Ireland, under the penalty of the forfeiture of life and effects. At this time, mints were ſet up in Dublin, for the coining of good money, and, in a few years, the whole quantity of the *crocards* was deſtroyed. See POLLARDS.

CROCEUS, in *Natural Hiſtory*, is ſaid to be an amphibious animal, which is neither fiſh nor bird, but both. All the ſummer it is a bird of a ſaffron colour, and flies through the mountains; but towards the end of autumn it returns to the ſea, and becomes a fiſh. It is only in winter that they catch it, when it is very good food.

CROCHES, among *Hunters*, the little buds about the top of a deer's horns.

CROCI, among *Botaniſts*, the apices, or ſmall knobs, on the tops of flowers.

CROCIA, a biſhop's or abbot's CROSIER, or paſtoral ſtaff.

CROCIAS *lapis*, in *Natural Hiſtory*, a name given by ſome of the old authors to a ſpecies of agate, of a yellow colour, but deeper than the cerachates, or wax-coloured agate, and approaching to what is called a ſaffron colour.

CROCINUM, a name given by the ancient phyſicians to a ſort of oil of ſaffron, which is thus deſcribed by Dioſcorides.

Eight drams of ſaffron are to be put into three pints of inſpiſſated oil, and they are to be ſtirred together ſeveral times in a day, for five days together; then the oil is to be ſeparated from the ſaffron, and a like quantity is to be added to the ſame ſaffron, and ſtirred about at times, for three days; then this oil is to be cleanſed off, and to it are to be added fifty ounces of powdered myrrh. Theſe having been well ſtirred together, are then to be ſet by for uſe.

Some uſed an oil, impregnated with aromatics, in the compoſition of the *crocinum*; but that was uſually eſteemed beſt, which ſmelt the moſt ſtrongly of ſaffron, or elſe of myrrh.

The *crocinum* was eſteemed heating and narcotic; whence it was frequently preſcribed by way of embrocation, or elſe held in the noſe in frenſies. It was alſo eſteemed uſeful as a ſuppurative, and to cleanſe old ulcers: it was much eſteemed alſo in hardneſſes, obſtructions, and other diſorders of the uterus, being uſed with wax, marrow, and double the quantity of oil; for a *glaucoma* it was alſo uſed with ſucceſs, when mixt with water, and the eyes anointed frequently with it.

CROCODILADES. See THISTLE.

CROCODILE, in *Zoology*, a ſpecies of lizard, with a two-edged tail, and triangular feet, the fore ones having five, and the hinder only four toes.

This animal is the largeſt of the LIZARD kind, growing to twenty-five feet in length, and about the thickneſs of a man's body; its noſe is like that of a hog; the opening of its mouth monſtrouſly large, reaching even to the ears, and the upper-jaw moving in the opening of it, gives it a very terrible aſpect. The teeth are large, white, and very numerous, and ſet by one another, like the teeth of a comb; there are two long teeth in the lower-jaw, which paſs into two holes in the upper. Herodotus affirms that the *crocodile* has no tongue; but he is obſerved to have a fleſhy ſubſtance like a tongue, that is fixed to the lower-jaw, which ſerves to turn his meat. The legs ſtand ſideways; and the feet are armed with extremely ſharp claws. The length of the tail is equal to that of the whole body; the ſkin of the belly is ſoft, and eaſily wounded, but that of the reſt of the body ſo hard as to be impenetrable to ſpears or darts, and is covered with ſtrong prickly ſcales. The colour is in ſome a duſky reddiſh yellow, but in moſt a diſagreeable brown, with a mixture of grey; and even thoſe which, when alive, had much yellowneſs, always acquire this duſky colour in dying.

It is a native of the torrid zone, frequenting ſalt-water rivers, where it lies concealed among the reeds or ruſhes, until it finds an opportunity to ſeize men or other animals, which it drags into the water; always taking this method of drowning them firſt, that it may afterward ſwallow them without reſiſtance; its general food, however, is fiſh. The Africans and Indians eat its fleſh, which is white, and has a kind of perfumed flavour.

Its eggs are about the ſize of a gooſe egg, and it lays fifty of theſe for one brood, burying them in the ſands, and leaving them for the ſun to hatch them. As ſoon as they are hatched, which takes twenty-five or thirty days, the parent takes care of the young, which run with them into the water. The *crocodile* is found in the great rivers, as the Nile, the Niger, and the Ganges, and in ſome other places. Ray's Syn. Quad. p. 261. Warm. Muſ. p. 815. Pococke's Deſcr. of the Eaſt, vol. i. p. 202, &c.

The *crocodile* was worſhipped by the Egyptians.

See an account of a peculiar ſpecies of *crocodile*, diſtinguiſhed by a narrow beak, reſembling the bill of a gooſander, and by a pouch under the belly, probably formed for receiving its young in times of danger, with a drawing by Mr. G. Edwards, in the Phil. Tranſ. vol. xlix. art. 95. p. 639.

CROCODILE, *foſſile*. One of the greateſt curioſities in the foſſile world, which the late ages have produced, is the ſkeleton of a large *crocodile*, almoſt entire, found at a great depth under ground, bedded in ſtone. This was in the poſſeſſion of Linkius, who wrote many pieces in natural hiſtory, and particularly an accurate deſcription of this curious foſſile. It was found in the ſide of a large mountain, in the midland part of Germany, and in a ſtratum of a black foſſile ſtone, ſomewhat like our common ſlate, but of a coarſer texture, the ſame with that in which the foſſile fiſh of many parts of the world are found. This ſkeleton had the back and ribs very plain, and was of a much deeper black than the reſt of the ſtone, as is alſo the caſe in the foſſile fiſhes, which are preſerved in this manner. The part of the ſtone where the head lay was not found, this being broken off juſt at the ſhoulders, but that irregularly, ſo that, in one place, a part of the back of the head was viſible in its natural form. The two ſhoulder-bones were very fair, and three of the feet were well preſerved; the legs were of their natural ſhape and ſize, and the feet preſerved, even to the extremities of the five toes of each.

CROCODILE, CROCODILUS, in *Rhetoric*, a captious and ſophiſtical kind of argumentation; contrived to ſeduce the unwary, and draw them ſpeciouſly into a ſnare.

It has its name, *crocodile*, from the following occaſion, invented by the poets. A poor woman, begging a *crocodile* that had caught her ſon walking by the river-ſide, to ſpare and reſtore him, was anſwered, that he would reſtore him, provided ſhe ſhould give a true anſwer to a queſtion he ſhould propoſe: the queſtion was, *Will I reſtore thy ſon, or not?* To this the poor woman, ſuſpecting a deceit, ſorrowfully anſwered, *Thou wilt not:* and demanded to have him reſtored, becauſe ſhe had anſwered truly. Thou lyeſt, ſays the *crocodile:* for if I reſtore him, thou haſt not anſwered truly: I cannot therefore reſtore him, without making thy anſwer falſe. Under this head may be reduced the propoſitions called *mentientes*, or *inſolubiles*; which deſtroy themſelves. Such is that of the Cretan poet: *Omnes ad unum Cretenſes ſemper mentiuntur: All the Cretans to a man, always lye.* Either, then, the poet lyes, when he aſſerts that the Cretans all lye; or the Cretans do not all lye.

CROCODILION, in *Botany*, a name given by ſome authors to the plant commonly called the ECHINOPUS, or *globe*-THISTLE.

CROCOMAGMA, in *Pharmacy*, a name given by ſome to troches compoſed of ſaffron, myrrh, red roſes, ſtarch, and gum Arabic: thus called from κροκος, *ſaffron*, and μαγμα, *a maſs of any thing*.

CROCOTTA, in *Natural Hiſtory*, a name given by the ancients to a very fierce and terrible animal, produced by copulation between the large hyæna and the lioneſs. See LEOCROCOTTA.

CROCUS, in *Botany*. For the characters, ſee SAFFRON.

The variety of the ſeveral ſpecies of *crocus* produced in the gardens of the curious, by raiſing them from well choſen ſeeds, is almoſt incredible.

They are all very hardy, and will increaſe exceedingly by the roots, if ſuffered to remain ſome years in the ground. They will grow in all ſoils and ſituations, and are great ornaments to a garden, as they flower when ſcarce any thing elſe is up. The fibres of theſe roots periſh when their leaves do, and they may, therefore, like all other roots of that kind, be taken up as ſoon as the leaves appear dead, and laid by, in a dry place, till September, at which time they muſt be planted again for the ſpring-flowering. They ſhould be planted in holes made with a dibble, about two inches deep, and at two inches diſtance from one another; the earth being raked over them, they ſhould remain covered about an inch deep with it. If the weather is mild, they will, in January, appear above ground, and in February they will be in full flower. The leaves are ſo ſhort when the flower appears, that it ſeems produced on a naked ſtalk, but as that decays they grow to a conſiderable length; theſe look but unſightly after the flower is gone, but they ſhould not be cut, for that greatly weakens the root for the next ſeaſon's flowering.

CROCUS, in *Chemiſtry*. The preparations of metals which are generally known by this name, as the *crocus Martis*, and the like, ſeem to have obtained it from their ſaffron-like colour. They are the calxes of metals, conſiſting of their fixed parts ſeparated from their ſulphureous; they are made either by the means of fire, or by the action of ſalts of various kinds; and are either naturally in a powder, or very eaſily reducible into one.

The general ſubjects of this ſort of proceſs are gold, ſilver, iron, and antimony, and there are many ways of making the proceſſes. The virtues aſcribed to the gold and ſilver *crocuſes* ſeem, in a great meaſure, imaginary: thoſe of antimony are far from being the beſt ſort of preparations of that metal; but thoſe of iron are, more than all others, uſeful in medicine. Hoffman, in his Acta Laboratorii, has many improvements on the common proceſſes for the making theſe preparations.

CROCUS *antimonii*, or *metallorum*, in *Pharmacy* and *Chemiſtry*, the name given, in the late London Diſpenſatory, to the preparation of antimony and nitre commonly known by the name of *crocus metallorum*. It is made of equal parts of antimony and nitre, powdered fine, and thrown gradually into a red-hot crucible, and, when thoroughly melted, poured out, and ſeparated from its ſcoriæ. This looks more yellow the longer it has been melted: it is but little uſed, except among horſes; but when intended for internal uſe among men, ſhould be procured faithfully prepared in this manner; for our chemiſts generally abate of the nitre to ſave charges, and render the medicine of a very different effect. Pemberton's Lond. Diſp. p. 230.

Waſhed *crocus* of antimony is made by boiling the *crocus* of antimony, reduced to a very fine powder, in water, ſtill changing the water, till it comes off inſipid. Of this is made the *vinum antimoniale*, called alſo VINUM *emeticum*, and *benedictum*.

The medicinal *crocus* of antimony conſiſts of eight ounces of antimony, and one ounce of nitre, pulverized, mixed, and deflagrated: the matter is then taken from the fire, and cooled and powdered for uſe. A doſe from eight to twenty grains will operate gently both as an emetic and purge. The milder *crocus* of antimony is prepared with two pounds of crude antimony, and one of nitre, much in the ſame manner as the former.

CROCUS *Indicus*, *Indian ſaffron*, in the *Materia Medica*, a name given by ſome authors to the *curcuma*, or *turmeric* root of the ſhops.

CROCUS *martis*, a preparation of iron; which is of two kinds, viz. *crocus martis aperiens*, and *crocus martis aſtringens*.

CROCUS *Martis aperiens*, *opening ſaffron of Mars*, is a preparation of iron plates, made by firſt waſhing them, then expoſing them to the dew, till they have contracted a ruſt; which ruſt is ſcraped off, and the plates expoſed for more.

Others prepare it by calcining iron filings with an equal weight of ſulphur. Others, by clapping a bar of iron, red, or rather white hot, between two rolls of brimſtone; in which caſe, the iron melts, and runs down into a veſſel of water below: which ſome call *Mars cum ſulphure præparatus*. Others have other preparations.

Crocus Martis aperiens is preſcribed in caſes of obſtructions, the doſe being from ten to thirty grains.

M. Lemery endeavours to ſhew, that iron taken in ſubſtance, is much more ſalutary and efficacious than when thus prepared; the proceſs tending to ſtrip it of its oily part, wherein its chief virtue reſides; leaving nothing behind but the mere ferruginous earthy part.

CROCUS *Martis aſtringens*, *binding ſaffron of iron*, is a preparation of iron filings; wherein they are deprived of their more ſaline parts by waſhing them five or ſix times in ſtrong vinegar, and calcining them five or ſix hours.

It is preſcribed in hæmorrhages, dyſenteries, and diarrhœas, the doſe being the ſame as in the former. The beſt way is to give it in a bolus, or pills, becauſe in liquid it ſinks to the bottom too ſuddenly to be taken without waſte.

Crocus Martis is a chemical preparation, uſed by the glaſs-makers, to give a red colour to glaſs. The glaſs-makers prepare this for themſelves, and have four ways of doing it. The firſt is this: take filings of iron; mix them with three parts of powdered brimſtone, and keep them in a melting-pot, in a furnace, to calcine, and burn off the ſulphur; let them ſtand four hours in this ſtate, then take them out, and, when cold, powder and ſift them, and put the powder into a crucible, which lute over, and ſet it in the leer of the furnace for fifteen days, or more; it will then be of a reddiſh purple, and muſt be kept for uſe.

The ſecond way of making this, is by ſprinkling filings of iron with ſtrong vinegar, and ſetting them in the ſun to dry; when dry, powder and ſift them, and wet them again with vinegar, and, when dry, powder them again. Repeat this eight times, and then powder the whole, and ſift it fine for uſe.

The third way is to uſe aqua fortis, inſtead of vinegar, in the ſame manner.

The fourth way, which is the beſt of all, is this: diſſolve filings of iron in aqua regia, and let the ſolution ſtand three days in a veſſel cloſe ſtopped, ſhaking it about at times; then evaporate the liquor gently, and there will remain a moſt valuable *crocus Martis*.

CROFT, CROFTUM, a little cloſe adjoining to a dwelling-houſe, either for paſture or tillage.

Poſſunt etiam dicti monachi de eiſdem mariſcis verſus occidentem jacentibus pro ſe, & hominibus ſuis, includere croftos, *ſive pratum juxta pontem, ſpecialiter, quantum illus placuerit.* Ingulf.

In ſome ancient deeds, *cruſta* occurs as the Latin word for a *croft*; but *cum toftis & croftis* is more frequent. *Croft* is tranſlated in Abbo Floriacenſis, by *prædium*, a *farm*.

CROISADE, CRUSADE, or CRUZADO, a *holy war*, or an expedition againſt infidels and heretics; particularly againſt the Turks, for the recovery of Paleſtine.

People anciently flocked on theſe *croiſades* out of devotion; the popes bulls, and the preaching of the prieſts of thoſe days, making it appear a point of conſcience. Hence ſeveral orders of knighthood took their riſe.

Many circumſtances contributed to give riſe to theſe expeditions. The deſire of viſiting a country which had been the ſcene of very important tranſactions, and in which the Son of God had accompliſhed the redemption of mankind, together with the idea of peculiar merit, acquired by a diſtant pilgrimage of this kind, and of its ſerving as a general expiation for almoſt every crime, had no ſmall influence on this occaſion. Beſides, an opinion prevailed, that the thouſand years mentioned by St. John, Rev. xx. 2, 3, 4. were accompliſhed, and that the end of the world approached; many thus hurried into the Holy Land, where they imagined that Chriſt would quickly appear to judge the world. Chriſtians alſo thought it reproachful, to ſuffer a country, which had been ſo ſignally diſtinguiſhed, and whence they derived the moſt valuable benefits, to be abandoned to the enemies of the Chriſtian name; and they thought it meritorious to avenge the calamities and injuries which its profeſſors had ſuffered under the Mahometan yoke. Moreover, pilgrims were encouraged in their reſort to Jeruſalem, whilſt Paleſtine continued ſubject to the caliphs; but when the Turks conquered Syria, about the middle of the eleventh century, they were expoſed to every kind of outrage from theſe barbarians, and returned with exaggerated accounts of the vexations they had endured. Accordingly, the firſt ſignal was given by Silveſter II. towards the cloſe of the tenth century, in an epiſtle wrote in the name of the church of Jeruſalem to the church univerſal throughout the world, in which all the European powers are intreated and exhorted to ſuccour and reſcue the Chriſtians in Paleſtine. This effort of zeal, however, produced no immediate effect. Gregory VII. in the beginning of the eleventh century, renewed the undertaking, and propoſed in perſon to invade the Holy Land. Though he was prevented from executing this deſign, the ſpirit of the people was inflamed; and Peter the Hermit, returning from a voyage which he had made through Paleſtine, A. D. 1093, complained of the extreme ſufferings of the Chriſtians, applied to Urban II. for ſuccour, and run from province to province with a crucifix in his hand, exciting princes and people to this holy war, and pretending a divine commiſſion for this purpoſe. At length, Urban II. finding a general ardour for the cauſe, aſſembled a grand and numerous council at Placentia, A. D. 1095, and warmly recommended this expedition. Soon after the propoſal was renewed with ſucceſs at the council of Clermont. In 1096, an army of 800,000 men ſet out for Conſtantinople, in ſeparate bodies, under the command of Peter the Hermit, Godfrey of Bouillon, and many other noble and illuſtrious leaders. Nor need we wonder at the multitude who flocked to the ſtandard of the croſs, when we conſider the natural operation of frantic zeal, and the numberleſs privileges which the cruſaders acquired; ſuch as exemptions from proſecutions for debt, from paying intereſt for money, and from taxes; the power of alienating their lands without conſent of their lord, the protection of St. Peter, the immunities of eccleſiaſtics, and the plenary remiſſion of their ſins. Du-Cange.

The firſt efforts of theſe adventurers were irreſiſtible, and they gained conſiderable advantages; but before the expiration of the thirteenth century, the Chriſtians were driven out of all their Aſiatic poſſeſſions; and the enterpriſe remains a ſingular monument of human folly. Nevertheleſs, many ſubſtantial benefits accrued from it in a political and commercial view, however injurious it was to individuals, and to the cauſe of religion in general. To theſe wild expeditions we owe the firſt gleams of light which tended to diſpel barbarity and ignorance. They were the means of introducing a more general and ſteady adminiſtration of juſtice, and of eſtabliſhing regal government in the ſeveral kingdoms of Europe, and of extending commerce. Robertſon's Hiſt. ch. V. p. 26, &c. Moſheim's Ecc. Hiſt. Eng. ed. 8vo. vol. ii. p. 189. 231, &c.

Thoſe who engaged to go on this ſervice, diſtinguiſhed themſelves by croſſes of different colours, worn on their cloaths; ordered, it is ſaid, by the council of Clermont; and were thence called *croiſes*, or croſs-bearers, of whom, contemporary authors tell us, there were ſix millions: the Engliſh wore them white; the French, red; the Flemiſh, green; the Germans, black; and the Italians, yellow.

The following are the principal *croiſades* for the conqueſt of the Holy Land: the firſt undertaken in 1095, at the council of Clermont; the ſecond in 1147, under Louis VII. and the pontificate of Eugenius III. at the inſtigation of Bernard, abbot of Clairval; the third in 1189, and 1190, by Frederic I. ſurnamed Barbaroſſa, emperor of Germany, Henry II. of England, and Phil. Auguſtus of France; the fourth in 1195, by pope Celeſtin III. and the emperor Henry VI. the fifth publiſhed in 1198, by order of Innocent III. wherein the French, Germans, and Venetians, engaged; the ſixth undertaken in the year 1217, under the pontificate of Honorius III. by the confederate arms of Italy and Germany, which ended in the rout of the Chriſtians; the ſeventh under Frederic II. emperor of Germany; who ſet out in the year 1228, and concluded a truce of ten years with the ſultan of Egypt in 1229, which was ſucceeded by inconſiderable and very unſucceſsful expeditions in 1239, under Theobald VI. king of Navarre; and in 1240, under Richard earl of Cornwall, brother to Henry III. of England; the eighth under Louis IX. of France, in conſequence of a vow which he had made in 1248; and the ninth, and laſt, renewed by the ſame valiant, but unfortunate monarch, who died of a peſtilential diſeaſe in the harbour of Tunis, in the year 1270. Theſe expeditions coſt Europe at leaſt two millions of its inhabitants, and an immenſe ſum of money.

The abbot Juſtiniani makes an order of knighthood of the croiſes, who ſerved in the *croiſades*.

Towards the middle of the twelfth century, there was alſo a *croiſade* of the Saxons, againſt the pagans of the north; wherein the archbiſhop of Magdeburg, the biſhops of Halberſtadt, Munſter, Merſburgh, Brandenburgh, &c. with ſeveral lay-lords, embarked. And towards the beginning of the ſame century, under the pontificate of Innocent, there was alſo a *croiſade* undertaken againſt the Albigenſes; who were become powerful in Languedoc, &c.

CROISES, or CROIZES, in our *Ancient Cuſtoms*, pilgrims bound for the Holy Land, or who had already been there; ſo called from a badge which they wore on their garments, repreſenting a croſs.

The word *croiſes* is alſo extended to the knights of St. John of Jeruſalem, created for the defence and protection of pilgrims; and all thoſe of the nobility, gentry, &c. who in the reigns of king Henry II. Richard I. Henry III. and Edward I. were *cruce ſignati*, i. e. dedicated themſelves to the wars, for the recovery of the Holy Land.

CROISIERS, CRUCIGERI, or *croſs-bearers*, a religious order, or congregation of regular canons, ſo called.

There are three orders which have, or do ſtill bear this name; one in Italy; another in the Low Countries; and a third in Bohemia.

The firſt pretend to be derived from St. Clet; and add, that St. Quiriacus the Jew, who ſhewed S. Helena the place of the true croſs, and was afterwards converted, reformed them. All we know for certain is, that they ſubſiſted in Italy before Alexander III. mounted the throne; for that pontiff, flying from Frederic Barbaroſſa, found an aſylum in the monaſteries of the *croiſiers*, which he afterwards, in 1169, took under his protection, giving them the rule of St. Auguſtine, &c.

They were confirmed by Pius V. but the diſcipline being much relaxed, they were ſuppreſſed in 1656, by Alexander VII.

Matt. Paris ſays, that the *croiſiers*, bearing ſtaffs with croſſes at the end, came into England in 1244, and preſented themſelves before a ſynod held by the biſhop of Rocheſter, demanding to be admitted. They were here called *crouched* friars.

Dodſworth and Dugdale mention two monaſteries of this order in England, the one at London, the other at Ryegate; the firſt founded in 1245, the latter in 1298; ſome add a third at Oxford, where they were received in 1349. M. Allemand ſays, there were fourteen monaſteries of *croſs-bearers* in England; adding, that they came from Italy; thoſe of the Low Countries diſowning them.

The *croiſiers* of the Low Countries and France were founded in 1211, by Theodore de Celles ſon of Boſon, who having ſerved in a croiſade in Paleſtine, in 1188, and there found ſome of the *croiſiers* inſtituted by St. Clet, conceived a deſign of inſtituting another congregation in his own country. This is certain, that Theodore, in his return from Paleſtine, engaged himſelf in the eccleſiaſtical ſtate; and went in quality of miſſionary to the croiſaide againſt the Albigenſes: and that at his return in 1211, the biſhop of Liege gave him the church of St. Thibault near Huy; where, with four companions, he laid the foundation of his order; which was confirmed by Innocent III. and Honorius III. Theodore ſent his religious to Tholouſe, to join thoſe of St. Dominic, and combat the Albigenſes; and the congregation multiplied in France. The popes have endeavoured to bring the *croiſiers* of Italy under thoſe of Flanders. The *croiſiers*, or *port croix with a ſtar*, in Bohemia, derive their origin from St. Quiriacus, and ſay they came from Paleſtine into Europe, where they embraced the rule of St. Auguſtine, and built monaſteries. They add, that St. Agnes of Bohemia, to diſtinguiſh them from other *croiſiers*, obtained of Innocent IV. to add a ſtar to their habit. But the ſtory of St. Quiriacus has no foundation; and it was Agnes herſelf, daughter of Primiſlaus king of Bohemia, who inſtituted the order at Prague, in 1234. They are very numerous; and have, now, two generals.

CROISSANTE', in *Heraldry*. *Croix croiſſanté* is a croſs creſcented; that is, having a creſcent, or half-moon, fixed on each end thereof.

CROM-LECHE, in *Britiſh Antiquity*, derived, according to the conjecture of Mr. Rowlands, from the Hebrew *carem-luach*, a devoted ſtone or altar, are huge, broad, flat ſtones, raiſed upon other ſtones ſet up on end for that purpoſe. They are common in Angleſey; and Mr. Rowlands ſuppoſes, that they are the remains of altars erected there by the firſt coloniſts. Mona Antiqua reſtaurata.

CRONICAL, in *Aſtronomy*. See ACRONICAL.

CRONIUS, in *Chronology*, the ancient name of the Athenian month HECATOMBÆON, which was the firſt of their year, and anſwered to the latter part of our June, and beginning of July.

There were feaſts called *cronienes*, celebrated at Athens in this month, in honour of Saturn, anſwering to the *Saturnalia* of the Romans.

CROOKEDNESS. See DISTORTION.

CROOTES, a ſubſtance found about the ore in the lead-mines, at Mendip, being a mealy, white, ſoft ſtone, matted with ore.

CROPPER, or *Dutch* CROPPER, in *Zoology*, the name of a particular ſpecies of pigeon, called the *columba gutturoſa Bataviæ*, by Moore. It is naturally thick, and has its name from its large crop, or bag of wind, which it carries under its beak, and can, at pleaſure, either raiſe or depreſs. Theſe are thick-bodied, and ſhort; their legs are alſo thick and ſhort, and are feathered down to the feet; the crop is large, and hangs low; the feathers on the thighs hang looſe; and their legs ſtand wide; they are gravel-eyed, and are generally very bad feeders.

There are of theſe pigeons of all colours, and thoſe who are careful of them, generally take them away from their proper parent, while young, and breed them under the females of other ſpecies.

CROSETTES, in *Architecture*, the returns in the corners of chambranles, or door-caſes, or window-frames; called alſo *ears*, *elbows*, *ancones*, *prothyrides*, &c.

CROSIER, or **CROZIER**, *ſhepherd's crook*, a ſymbol of paſtoral authority, conſiſting of a gold or ſilver ſtaff, crooked a-top, carried occaſionally before BISHOPS and ABBOTS, and held in the hand when they give ſolemn benediction. At one end it is crooked, at the other pointed; expreſſed in the verſe:

Curva trahit mites, pars pungit acuta rebelles.

The cuſtom of bearing a paſtoral ſtaff before biſhops is very ancient, as appears from the life of St. Cæſarea of Arles, who lived about the year 500. Among the Greeks, none but the patriarchs had a right to the *croſier*. The *croſiers* were at firſt no more than ſimple wooden ſtaves, in form of a T, uſed to reſt and lean upon: by degrees they were made longer; and at length arrived to the form we now ſee them of. *Tab.* III. *Heraldry*, *fig.* 122.

Regular abbots are allowed to officiate with a MITRE and a *croſier*.

CROSIER, in *Aſtronomy*, four ſtars, in form of a croſs; by help whereof, thoſe who ſail in the ſouthern hemiſphere find the antarctic pole.

CROSS, **CRUX**, a ſort of inſtrument, compoſed of two pieces of wood, traverſing and cutting each other, ordinarily at right angles.

Pezron derives the word *crux* from the Celtic *croug*, and *croas*; though, perhaps, *croug* and *croas* might with as much juſtice be derived from *crux*.

The *croſs* was uſed among the ancients as a puniſhment for malefactors and ſlaves; and was planted at ſeveral places, *in terrorem*, as our gallows, &c.

Sozomen obſerves, that it was Conſtantine who by law firſt aboliſhed the puniſhment of the *croſs*, which had obtained among the Romans till his time. It had alſo been in uſe among the Aſſyrians, Egyptians, Perſians, Carthaginians, and even the Greeks.

As to crucifixion, or the manner wherein the puniſhment of the *croſs* was effected, the critics, both ancient and modern, are exceedingly divided: the points in diſpute are, Whether the criminal was faſtened with three nails, or with four; whether the feet were immediately faſtened to the *croſs*, or whether they reſted on a little piece of wood, in manner of a ſtep, or reſt, called ϖηγμα; whether the *croſs* was planted in the earth before the perſon was nailed on, faſtening him afterwards by means of a ſcaffold raiſed to the height of the place where the feet were to be nailed; or whether he was nailed before the *croſs* was raiſed or planted, as the painters repreſent it: or laſtly, whether the patient was faſtened quite naked, or covered: queſtions that have all been occaſioned by the *crucifixion* of Jeſus Chriſt.

CROSSES were uſually in former times erected on the tops of houſes, by which tenants pretended to claim the privileges of the Templars Hoſpitallers, to defend themſelves againſt their rightful lords. This was condemned by the ſtatute Will. II. c. 37. It was uſual alſo, in thoſe days, to ſet up *croſſes* in places where the corpſe of any of the nobility reſted, as it was carried to be buried, that *a tranſeuntibus pro ejus animo deprecetur*.

Croſſes, &c. are forbid to be brought into England, by 13 Eliz. c. 2. on pain of a *præmunire*, &c.

CROSS, *Invention of the*, *inventio crucis*, an ancient feaſt, ſolemnized on the third of May, in memory of St. Helena's (the mother of Conſtantine) finding the true *croſs* of Chriſt deep in the ground, on mount Calvary; where ſhe erected a church for the preſervation of part of it: the reſt being brought to Rome, and repoſited in the church of the *Holy Croſs* of Jeruſalem. See FEAST.

Theodoret mentions the finding of three *croſſes*, that of Jeſus Chriſt, and thoſe of the two thieves; and that they diſtinguiſhed between them by means of a ſick woman, who was immediately healed by touching the true *croſs*.

The place is ſaid to have been pointed out to her by St. Quiriacus, then a Jew, afterwards converted and canonized.

CROSS, *Exaltation of the*, an ancient feaſt, held on the fourteenth of September, in memory of this, that Heraclitus reſtored to mount Calvary the true *croſs*, in 642, which had been carried off fourteen years before, by Coſroes king of Perſia, upon his taking Jeruſalem from the emperor Phocas.

The adoration of the *croſs* appears to have been practiſed in the ancient church, in as much as the heathens, particularly Julian, reproach the primitive Chriſtians with it. And we do not find that their apologiſts diſclaimed the charge. Mornay, indeed, aſſerted, that this had been done by St. Cyril, but could not ſupport his allegation at the conference of Fontainbleau. St. Helena is ſaid to have reduced the adoration of the *croſs* to its juſt principle, ſince ſhe adored in the wood, not the wood itſelf, which had been direct idolatry and heatheniſm, but him who had been nailed to this wood. With ſuch modifications ſome proteſtants have been induced to admit the adoration of the *croſs*. John Huſs allowed of the phraſe, provided it were expreſly added, that the adoration was relative to the perſon of Chriſt. But however Roman catholics may ſeem to triumph by virtue of ſuch diſtinction and mitigations, it is well known they have no great place in their own practice. Imbert, the good prior of Gaſcony, was ſeverely proſecuted in 1683, for telling the people, that in the ceremony of adoring the *croſs*, practiſed in that church on Good Friday, they were not to adore the wood, but Chriſt who was crucified on it: the curate of the pariſh told them the contrary: it was the wood! the wood! they were to adore. Imbert replied, it was Chriſt, not the wood: for which he was cited before the archbiſhop of Bourdeaux, ſuſpended from his functions, and even threatened with chains and perpetual impriſonment. It little availed him to cite the biſhop of Meaux's diſtinction; it was anſwered, that the church allowed it not.

CROSS-*bearer*, *port-croix*, *cruciger*, in the Romiſh *Church*, the chaplain of an archbiſhop, or a primate, who bears a *croſs* before him on ſolemn occaſions.

The pope has the *croſs* borne before him every where; a patriarch any where out of Rome; and primates, metropolitans, and thoſe who have a right to the pallium, throughout their reſpective juriſdictions.

Gregory XI. forbad all patriarchs and prelates to have it borne in preſence of cardinals. A prelate bears a ſingle *croſs*, a patriarch a double *croſs*, and the pope a triple one on their arms.

CROSS-*bearers* alſo denote certain officers in the INQUISITION, who make a vow before the inquiſitors, or their vicars, to defend the catholic faith, though with the loſs of fortune and life. Their buſineſs is to provide the inquiſitors with neceſſaries. They were formerly of great uſe; but in proceſs of time, ſome of their conſtitutions were changed, and they were called, of the penance of St. Dominic. Limborch's Hiſt. Inq. by Chandler, ch. x. See FAMILIARS, and INQUISITION.

CROSS, *pectoral*, is a *croſs* of gold or ſilver, or other precious materials, often enriched with diamonds, which the biſhops, archbiſhops, &c. and regular abbeſſes, wear hanging from the neck.

CROSS, *order of the*, or **CROISADE**, an order of ladies inſtituted in 1668, by the empreſs Eleonora de Gonzagua, wife of the emperor Leopold; on occaſion of the miraculous recovery of a little golden *croſs*, wherein were encloſed two pieces of the *true croſs*, out of the aſhes of part of the palace. It ſeems the fire had burnt the caſe wherein it was incloſed, and melted the cryſtal; yet the wood remain untouched.

CROSS, *Maids of the*, a community of young women inſtituted in 1265, at Roye, in Picardy, and ſince diſperſed to Paris, and other towns. They inſtruct young perſons of their own ſex; ſome take the three vows of poverty, chaſtity, and obedience; others retain their liberty. They are under the direction of a ſuperior.

CROSS, *judgment of the*, a cuſtom in France, at the beginning of the ninth century, of giving judgment in favour of one of two contending parties, who held his arms for the longeſt time lifted up to a *croſs*.

CROSS, in *Botany*, is uſed to expreſs the arrangement of the petala of certain flowers; called *plantæ flore cruciformi*. See PLANT, and FLOWER.

The flowers are not to have either more or leſs than four petala; and their calyx only to conſiſt of four pieces. The piſtil generally becomes a fruit called *ſiliqua*. See CRUCIFORM *flowers*.

CROSS, in *Coins*, a name given to the face, or right ſide, the other being called the pile, or reverſe. It has been a coma common error that the reverſe was meant by the *croſs*; becauſe at this time with us marked with figures diſpoſed in that form; but the ſtamping the head of the prince in theſe kingdoms, on the right ſide of the coin, was preceded by a general cuſtom of ſtriking on that part the figure of a *croſs*, while the other, called the pile, contained the arms, or ſome other device.

Cross, in *Dialling*. See Dial.

Cross, in *Heraldry*, is defined by Guillim, an ordinary compoſed of fourfold lines; whereof two are perpendicular, and the other two tranſverſe; for ſo we muſt conceive of them, though they be not drawn throughout, but meet by couples, in four right angles, near the feſs-point of the eſcutcheon. See Ordinary.

The content of a *croſs* is not always the ſame: for when it is not charged, cantoned, nor accompanied, it has only the fifth part of the field; but if it be charged, it muſt contain the third part thereof.

This bearing was firſt beſtowed on ſuch as had performed, or at leaſt undertaken, ſome ſervice for Chriſt, and the Chriſtian profeſſion; and is held, by divers, the moſt honourable charge in all heraldry. What brought it into ſuch frequent uſe, was the ancient expeditions into the Holy Land; and the holy war pilgrims, after their pilgrimage, taking the *croſs* for their cognizance; and the enſign of that war being the *croſs*.

In thoſe wars, ſays Mackenzy, the Scots carried St. Andrew's *croſs*; the French a *croſs* argent; the Engliſh a *croſs* or; the Germans, ſable; the Italians, azure; the Spaniards, gules.

St. George's *croſs*, or the *red croſs*, in a field argent, is now the ſtandard of England; that ſaint being the reputed patron of this nation.

Guillim enumerates thirty-nine different ſorts of *croſſes* uſed in heraldry, the ſeveral names whereof here follow; the deſcriptions whereof are to be looked for under their proper articles. A *croſs* voided, a *croſs* wavy-voided, a *croſs* patée fimbriated, a *croſs* patée fitched on the foot, a *croſs* patée on three parts and fitched on the fourth, a *croſs* engrailed, a *croſs* patonée, a *croſs* flory, a *croſs* patonée voided, a *croſs* avelane, a *croſs* patée lambeaux, a *croſs* furchée, a *croſs* croſlet, a *croſs* croſlet fitchée at the point, a *croſs* bottonée, a *croſs* pommée, a *croſs* urdée, a *croſs* degraded fitchée, a *croſs* potent, a *croſs* potent fitched, a *croſs* calvary, a *croſs* croſlet ſet in degrees, a *croſs* patriarchal, a *croſs* anchored, a *croſs* molinée, a *croſs* clechée, a *croſs* flory or fleur-de-lys, a *croſs* double fitchée, a *croſs* a-ſeize points, a *croſs* milrinée, a *croſs* raguled, a *croſs* pointed voided, a *croſs* pall, a tau or St. Antony's *croſs*, a *croſs* voided and couped, a *croſs* couped pierced, a *croſs* molinée pierced lozenge ways, a *croſs* molinée quarter-pierced, a ſaltire or St. Andrew's *croſs*, which will be diſtinctly ſpoken of under that denomination; and ſo all the other may be found more particularly deſcribed under the names of their ſeveral differences.

Colombiere makes ſeventy-two diſtinct ſorts of *croſſes*, of which we ſhall only mention thoſe that differ from ſuch as have been mentioned above; as a *croſs* remply, which is only one *croſs* charged with another; a *croſs* party, that is, one half of one colour, and the other of another; a *croſs* quartered, that is, the oppoſite quarters of ſeveral colours; a *croſs* of five pieces, that is, of ſo many colours; a *croſs* mouſſue, and abaiſée; a *croſs* barbée; a *croſs* croiſſanante, or creſcented, that is, having a creſcent at each end; a *croſs* forked of three points; a *croſs* pometée of three pieces; a *croſs* reſſercelée; a *croſs* pointed; a *croſs* ankered, and fur-ankered; a *croſs* ankered with ſnakes heads; a *croſs* orled; a high *croſs*; a *croſs* rayonnant, or caſting out rays of glory; a *croſs* of Malta; a *croſs* of the Holy Ghoſt; a *croſs* forked like the ancient reſts for muſquets; a *croſs* with eight points; a *croſs* bourdonnée; a *croſs* cramponnée and tournée; a *croſs* cablée; a *croſs* inclining; a *croſs* pater noſtre, that is, made of beads; a *croſs* treſle; a *croſs* fleuronnée; a *croſs* vuidée, clechée, and pommetée; a *croſs* crenellée and baſtiéle; a *croſs* with four ſteps to every arm; a *croſs* rounded; a *croſs* and an half; a *croſs* eſtoilée, or ſtar-ways; a *croſs* corded; a *croſs* doubled of ſix pieces ſet together; a double *croſs* ſplit in pale; a long *croſs* cut in pieces and diſmembered; a *croſs* couped or cut through in feſſe, of the two contrary colours to the field; a chevron ſurmounted by an half *croſs*; four tails of ermine in a *croſs*, the tops of the ermines oppoſite to each other in the middle; four pieces of vair placed *croſs-ways*, and counter-pointing in the center; the *croſs* or ſword of St. James; *croſs* potence cramponnée on the dexter upper arm, and a potence about the middle of the ſhaft.

Theſe are the various *croſſes* we find in the aforeſaid authors; which ſome may think too many, as not being all uſed in England: but heraldry extends to all countries; and all terms uſed require to be explained.

Nor is it only in *croſſes* that the variety is ſo great; the like is found in many other bearings, and particularly in lions, and the parts of them; whereof the ſame Colombiere gives us no leſs than ninety-ſix varieties. Leigh mentions but forty-ſix ſeveral *croſſes*; Sylvanus Morgan, twenty-ſix; Upton, thirty; Johannes de Bado Aureo, twelve; and ſo others, whom it is needleſs to mention. Upton owns he dares not preſume to aſcertain all the various *croſſes* uſed in arms, for that they are at preſent almoſt innumerable: and therefore he only takes notice of ſuch as he had ſeen uſed in his own time.

Crosses, in *Mining*, are two nicks cut on the ſuperficies of the earth, thus +, which the miners make when they take the ground, to dig for ore. This *croſs* gives the miners three days liberty to make, and ſet on ſtones. As many of theſe *croſſes* as the miner makes, ſo many mears of ground he may have in the vein, if he ſet on ſtones within three days after the making his *croſs* or *croſſes*. But if he make but one *croſs*, and a ſtander-by makes the ſecond, and a ſtranger makes the third, every one is ſerved with the next mear, according as they have, firſt or laſt, ſooner or later, made their *croſs*, or *croſſes*, upon the ground.

Cross, in *Surveying*, is an inſtrument conſiſting of a braſs circle, divided into four equal parts, by two lines cutting each other in the center: at each extremity of either line is fixed a ſight, perpendicular over the lines; with holes below each ſlit, for the better diſcovery of diſtant objects. The *croſs* is mounted on a ſtaff, or ſtand, for uſe. Sometimes, inſtead of four ſights there are eight. The *ſurveying croſs* is but little known or uſed among us: abroad it is of more account. The manner of applying it is as follows.

Suppoſe the field ABCDE (*Tab. Surveying, fig.* 9.) required to be ſurveyed: plant poles at all the angles; meaſure the line AC, and the perpendiculars let fall from the angles to the line: take down the dimenſions of each. Now, to find the point F, plant poles at pleaſure in the line AC, and at the foot of the inſtrument in the ſame line, in ſuch manner, as that through two of the oppoſite ſights you may obſerve two of the ſtaves; and through the other two, the ſtaff E. If in this ſtation E be not viſible, remove the inſtrument backwards or forwards, till the lines AF, EF, make a right angle in F; by which means, the plot of the triangle AFE will be had. After the ſame manner is the point H found, where the perpendicular DH falls; whoſe length, together with that of HF, is meaſured, to have the plot of the trapezium EFHD.

Again, meaſure HC, making a right angle with HD, and the plot of the triangle DHC will be had. All that now remains, is to find the point G, where the perpendicular BG falls: which being found after the ſame manner as the reſt, we have the plot of the whole field A, B, C, D, E. The area whereof is had by adding the triangles and trapeziums together.

Cross-*bar ſhot*, in the *Military Art*, a round ſhot, or great bullet, with a bar of iron put through it, coming out at both ends ſix or eight inches. It is of good uſe in fight, for cutting and ſpoiling ropes, ſails, &c.

Cross *battery*, in *War*. See Battery.

Cross-*bill*, in *Zoology*, the Engliſh name of the loxia, a ſmall bird remarkable for its beak, which is hooked both ways, and has the points croſſing one another. It feeds on the kernels of fruits, and is very deſtructive in orchards.

In the Linnæan ſyſtem of *Zoology*, *loxia* is uſed for the name of a genus of birds of the *paſſeres* kind; the diſtinguiſhing characters of which are, that the tongue is plain, equal, and whole; the beak large, thick, and ſhort, and crooked and convex both ways.

Of this genus are the *coccothrauſtes*, *loxia*, or *croſs-bill*, &c. It is about the ſize of the green-finch, and much of the ſame ſhape. Its beak is very hard, thick, ſtrong, and black; and contrary to the cuſtom of nature, in all other birds, both parts of it are crooked, and that contrary ways: the upper chap being bent a point downwards, and the lower one hooked and brought upwards to one as ſharp, ſo that the ends ſtand acroſs. They do not always obſerve the ſame ſide of falling over; the upper one ſometimes lying on the right, ſometimes on the left ſide of the under. One would think this croſs ſtructure of the beak but a bad one for feeding with, yet the bird is very voracious; it feeds on ſeeds, which it picks up with great dexterity; in particular, it is fond of the kernels of the apple, and to get at them, ſplits an apple in two with one ſtroke of its oddly-faſhioned beak, by which it does infinite miſchief in orchards. It is common in Germany, Sweden, and ſome other countries, and ſometimes in autumn comes over to us in vaſt abundance, doing great miſchief to the orchards in the weſt of England. It ſings very ſweetly, and, as it is ſaid, only in winter. See *Tab. Birds*, N° 36.

Cross-*bill*, in *Chancery*, is an original bill, by which the defendant prays relief againſt the plaintiff.

Cross-*bows*. See Bows, and Archery.

Cross, inſtead of a ſignature to a deed, &c. is derived from the Saxon practice of affixing the ſign of the *croſs*, whether they could write or not.

Cross-*grained ſtuff*, in *Joinery*. Wood is ſaid to be *croſs-grained*, when a bough or branch has ſhot out of it: for the grain of the branch, ſhooting forward, runs athwart that of the trunk.

In wood well grown this defect is ſcarce perceivable, except in working; but in deal-boards theſe boughs make knots. If the bough grew up with the young trunk, inſtead of a knot is found a *curling in the ſtuff*; very ſenſible under the plane.

Cross-*jack*, in a ſhip, is a ſail extended on the lower-yard of the mizen-maſt, which is hence called the *croſs-jack-yard*. It is ſeldom uſed.

Cross *multiplication*, a method of multiplying feet and inches, by feet and inches, or the like; ſo called, becauſe the members are multiplied *croſs-wiſe*. See Multiplication.

Cross-*piece*, in *Ship-Building*, a rail of timber, extended over the windlaſs of a merchant-ſhip, from the knight-heads to the belfry. It is ſtuck full of wooden-pins, which are uſed to faſten the running-rigging as occaſion requires.

Cross-*ſtaff*, a mathematical inſtrument, otherwiſe called the fore-*ſtaff*.

Cross-*tining*, in *Huſbandry*, a method of harrowing land, conſiſting in drawing the harrow up the interval it went down before, and down that which it was drawn up.

Cross-*trees*, in a ſhip, *croſs* pieces of timber ſet on the head of the maſt, and bolted, and let into one another very ſtrongly. They are four in number, and are generally called *croſs-trees*, but, ſtrictly ſpeaking, only thoſe which go thwart ſhips, are called *croſs-trees*; the other, in the largeſt ſhips, are called treiſel-trees. Their uſe is to keep and bear the top-maſts up; for the foot of the top-maſt is always faſtened into them, ſo that they bear all the ſtreſs. They alſo bear the tops, and are neceſſary to all maſts which carry any other top, or flag-ſtaff, at the head. Manwayring.

Cross-*tree-yard* is a yard ſtanding ſquare, juſt under the mizen-top, and to it the mizen-top is faſtened below. See Cross-*jack*.

Cross, *Winter*, in *Botany*, *Eriſymum*. See *Hedge* Mustard.

Cross-*wort*, *Cruciata*, in *Botany*, the name of a genus of plants, the characters of which are theſe: that the flowers and fruit wholly agree with thoſe of the aparine, but the leaves grow in form of ſtars round the ſtalks, and are only four at a joint. This is a ſpecies of Valantia in the Linnæan ſyſtem.

The ſpecies of *croſs-wort* enumerated by Mr. Tournefort are nine. Tourn. Inſt. p. 115.

A decoction of this plant in wine has been recommended as a very excellent vulnerary and detergent. Camerarius tells us, that it is of great efficacy in attenuating and expectorating tough humours.

CROSSE, a name given by the people of Guinea, and ſome other parts of Africa, to a kind of fruit very common among them. It very much reſembles our common hazel-nut, but that the ſhell is not ſo hard. Phil. Tranſ. N° 108.

CROSSELET, *little croſs*, a diminutive *croſs*, uſed in *Heraldry*, where we frequently ſee the ſhield covered with *croſſelets*; alſo feſſes, or other honourable ordinaries, charged or accompanied with *croſſelets*.

Croſſes themſelves frequently terminate in *croſſelets*: as in *Tab*. II. *Heraldry*, *fig*. 54.

CROTALARIA, in *Botany*, a genus of the *diadelphia decandria* claſs. Its characters are theſe: the flower is of the butterfly-kind, the ſtandard large, heart-ſhaped, and pointed; the wings are oval, and half the length of the ſtandard; the keel is pointed, and as long as the wings. It hath ten ſtamina, which are united, and an oblong reflexed germen, which afterward becomes a ſhort turgid pod, with one cell, opening with two valves, and filled with kidney-ſhaped ſeeds. There are nine ſpecies, natives of the Eaſt and Weſt Indies.

CROTALOPHORUS *anguis*, in *Zoology*, the name uſed by the generality of authors for the *rattle*-snake.

Crotalophorus *anguis*, in *Zoology*, is alſo the name of a very remarkable ſpecies of ſerpent, more uſually known by the name of cobra *de capello*.

CROTALUM, an ancient kind of caſtagnetta, or muſical inſtrument, found on medals, in the hands of the prieſts of Cybele.

The *crotalum* differed from the *ſiſtrum*; though authors frequently confound the two. It conſiſted of two little braſs plates, or rods, which were ſhaken in the hand, and in ſtriking againſt each other made a noiſe. It was ſometimes alſo made of a reed ſplit lengthwiſe; one part whereof they ſtruck againſt the other: and as this made a noiſe ſomewhat like that of a crane's bill, they called that bird *crotaliſtria*, a player on the *crotala*: and Ariſtophanes calls a great talker a *crotalum*.

Clemens Alexandrinus attributes the invention to the Sicilians; and forbids the uſe thereof to the Chriſtians, becauſe of the indecent motions and geſtures that accompany it.

CROTALO, an inſtrument of military muſic, like that deſcribed in the preceding article. The Turks are the firſt, among the moderns, who introduced the uſe of it for their troops. It is now common in Flanders and Florence, and other territories on the continent. It has only one tone; but its effect in marking time may be diſtinctly heard through the noiſe of forty drums. This is the ſame inſtrument with the ancient cymbalum.

CROTALYSTRIÆ, in *Antiquity*, a kind of morice dancers, admitted to entertainments, in order to divert the company with their dancing, and playing on an inſtrument called crotalum, whence they had their name.

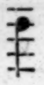
CROTAPHIC *artery* is uſed, by ſome medical writers, to denote the tendon of the muſcle called crotaphites, or *temporalis*.

CROTAPHITES, in *Anatomy*, a muſcle of the lower-jaw, ſerving to draw it downwards. Its fibres ſpring ſeverally from the bones of the forehead, the ſinciput, ſphenoides, and temporale; which meeting, and, as it were, centering under the *os jugale*, whence alſo this muſcle receives ſome fibres, proceed to the *proceſſus corone*, into which they are inſerted.

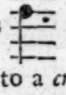
CROTAPHIUM, in *Medical Writers*, is uſed for a pain in the head. See Head-*ach*.

CROTCHES, *Croccia*, in *Sea-Language*, a name given to thoſe crooked timbers that are placed upon the keel, in the fore and hind-parts of a ſhip, upon which the frame of her hull grows narrower below, as it approaches the ſtem afore, and the ſtern-poſt abaft.

Crotches are alſo certain pieces of wood or iron, whoſe upper parts open into two horns, or arms, like a half-moon. They are fixed in different parts of the ſhip, according to the uſes for which they may be deſigned, which is uſually to ſupport the ſpare maſts, yards, &c.

CROTCHET, in *Muſic*, one of the notes, or characters of time, marked thus  equal to half a minim, and double a quaver.

It is not eaſy to conceive how this character comes by the name *crotchet*: the word is apparently borrowed from the French *crochet*, of *croc*, a *crook* or *hook*, uſed by them for what we call the *quaver*, or *half crotchet*; by reaſon of the additional ſtroke at bottom, which gives it an appearance of a crook.

A dot added to the *crotchet*, thus  increaſes its time by half; that is, makes it equal to a *crotchet* and an half, or to three quavers.

Crotchet, in *Printing*, denotes a ſort of line, ſometimes ſtrait, ſometimes waved, but always turned up at each extreme: ſerving to bind or link together ſeveral articles, that are to be read together, before you proceed to the ſubdiviſions, placed aſide of them with ſimilar or ſmaller *crotchets*; much uſed in genealogies, analytical tables, &c. for facilitating the diviſion and ſubdiviſion of any ſubject.

Crotchets are alſo uſed for two oppoſite characters, ſerving to incloſe what we call a *parentheſis*, or any other part of a diſcourſe, to be diſtinguiſhed from the reſt of the work; ſometimes in this [ ], and ſometimes in this ( ).

CROTON, in *Botany*, a genus of the *monoecia monadelphia* claſs, *baſtard ricinus*, or *tallow-tree*. Its characters are theſe: it hath male and female flowers on the ſame plant; the flowers have five petals, thoſe of the male being no larger than the leaves of the empalement; and they have five nectarious glands, which are fixed to the receptacle. They have ten or fifteen ſtamina, which are joined at their baſe. The female flowers have a roundiſh germen, with three reflexed ſtyles, which afterward become a roundiſh three-cornered capſule with three cells, each containing a ſingle ſeed. There are nine ſpecies, natives of the Weſt Indies, and ſouth of France.

CROUP, in *Medicine*, *ſuffocatio ſtridula*, is a diſeaſe to which children, chiefly under twelve years of age, are ſubject in cold and wet ſeaſons, and moſt commonly on the ſea-coaſt, and in low marſhy countries. It is a ſpecies of asthma or catarrh, attended with an inflammatory fever, and many violent ſymptoms. It is ſeated in the cavity of the wind-pipe, a little below the glottis downwards, and affects the mucus ſeparated there, which is ſo thickened, as to fill up the paſſage of the trachea. It often proceeds from catarrhs, occaſioned by the meaſles, hooping-cough, ſmall-pox, or cold damp weather. It is indicated by a frequent pulſe, quick and laborious breathing, which is performed with a peculiar kind of croaking noiſe; the voice is ſharp and ſhrill, and the face generally much fluſhed, though ſometimes of a livid colour. When a child is ſeized with the above ſymptoms, his feet ſhould be put into warm water; he ſhould be bled, and a laxative clyſter adminiſtered as ſoon as poſſible. He ſhould be made to breathe over the ſteams of warm water and vinegar; an emollient decoction and cataplaſms, or fomentations, may be applied round the neck; a bliſter-plaſter may be alſo applied to the neck, or ſhoulders. A mixture of ſyrup of althea, and balſamic ſyrup, an ounce each, with three ounces of pennyroyal water, may be given in the quantity of a table-ſpoonful frequently. Aſſa-fœtida has likewiſe been of ſervice. This diſorder is in ſome places called the chock, and the ſtuffing or riſing of the lights. Buchan's Domeſtic Med. ed. 5. p. 606. Home's Inquiry into the Nature and Cure of the *Croup*.

CROUP *of a horſe*, in the *Manege*, the extremity of the reins above the hips. It ſhould be large and round, ſo that the tops of the two haunch bones be not within view of each other. It ſhould have its compaſs from the haunch bones to the very dock, or onſet, of the tail; and ſhould be divided in two by a channel, or hollow, all along to the neck. A rocking *croup* is when a horſe's fore-quarters go right, but his *croup* ſwings from ſide to ſide; when ſuch a horſe trots, one of the haunch bones will fall, and the other riſe like the beams of a balance; a ſign that he will not be very vigorous.

CROUPADE, in the *Manege*, a leap, higher than the curvet, wherein the fore and hind-parts of the horſe keep an equal height; his legs being truſſed under his belly, without ſtretching them out, or ſhewing his ſhoes.

CROUPER, or CRUPPER. See CRUPPER.

CROUTE, *Sour-croute*, or KROUTE. As this preparation of CABBAGE has been found of ſovereign efficacy as a preſervative in long voyages from the ſea-ſcurvy, it may not be unacceptable to give a conciſe account of the proceſs for making it, according to the information communicated by an ingenious German gentleman.

The ſoundeſt and moſt ſolid cabbages are ſelected for this uſe, and cut very ſmall, commonly with an inſtrument made for this purpoſe; not unlike the plain which is uſed in this country for ſlicing cucumbers. A knife is uſed, when the preparation is made with greater nicety. The cabbage thus minced is put into a barrel in layers, hand high, and over each is ſtrewed a handful of ſalt and carraway ſeeds; in this manner it is rammed down with a rammer *ſtratum ſuper ſtratum*, till the barrel be full; when a cover is put over it, and preſſed down with a heavy weight. After ſtanding ſome time in this ſtate, it begins to ferment; and it is not till the fermentation has entirely ſubſided, that the head is fitted to it, and the barrel is finally ſhut up, and preſerved for uſe. There is not a drop of vinegar employed in this preparation. The Germans write this preparation in the following manner: *Sauer kraut*, or *ſaurer kohl*, that is, in their language, ſour herb, or ſour cabbage.

CROW, *Cornix*, in *Ornithology*. See CORVUS.

The carrion *crow*, *cornix*, or *corvus corone* of Linnæus, agrees in the form of its body with the RAVEN, and in its food, which is carrion, and other filth. It will alſo eat grain and inſects, and, like the raven, pick out the eyes of lambs juſt dropped. Ben Johnſon, in his Fox, act i. ſcene 2. calls it the *gor*, or *gore-crow*, and claſſes it with the vultur, kite, and raven, as birds of prey. Virgil ſays that its croaking foreboded rain:

Tum cornix *plena pluviam vocat improba voce.*

And it was thought to be a bird of bad omen, when ſeen on the left hand:

Sæpe ſiniſtra cava prædixit ab illice cornix.

England formerly abounded with *crows*; and in the reign of Henry VIII. an act was paſſed for their deſtruction.

CROW, *hooded*, *corvus cornix*, agrees in the ſhape of its bill with the ROOK, and reſembles it alſo in its manners, flying in flocks, and feeding on inſects. In England it is a bird of paſſage, viſits us in the beginning of winter, and leaves us with the woodcocks. It is common in Scotland, and is the only ſpecies of genuine *crow* in many parts of the Highlands, and in all the Hebrides, Orkneys, and Shetlands, where it continues the whole year. They have a ſhriller note than the common *crows*, and are much more miſchievous. The head, and under ſide of the neck and wings, are black, gloſſed over with a fine blue; the breaſt, belly, back, and upper part of the neck, are of a pale aſh colour; the irides hazel, the legs black, and the toes broad and flat, to enable them to walk without ſinking in marſhy and muddy ground.

CROW, in *Mechanics*, an iron lever, furniſhed with a ſharp point at one end, and two claws at the other. It has various uſes, in heaving or purchaſing great weights.

The name *crow*, or *raven*, *corvus*, was anciently given to ſeveral machines of war, uſed in the defence of places: one invented by Diades; another by the Tyrians, mentioned by Q. Curtius; another by Cn. Ovilius. Vitruvius calls the firſt the *demoliſhing crow*, *corvus demolitor*, and alſo *deprædator*: others call it the *crane*, *grus*. Polybius deſcribes another invented by C. Duillius uſed againſt the Carthaginian fleet.

They were all a kind of grappling-hooks; ſerving to drag things towards the engineer. That deſcribed by Q. Curtius was thrown out of a baliſta.

CROW-*berries*, in *Botany*, *Empetrum*. See *Berry-bearing* HEATH.

CROW'S-*bill*, an inſtrument uſed by ſurgeons, in their operations; eſpecially for drawing bullets and other foreign bodies out of wounds. It has its name from its figure.

CROW'S-*feet*, in the *Military Art*. See CALTROP.

CROW'S-*feet*, in a *Ship*, are ſmall ropes, or lines, ſometimes ſix, eight, or ten, reeved through the dead man's eye. They are uſed to ſuſpend the awnings; or to keep the top-ſails from fretting againſt the edges of the tops.

CROW-*foot*, *muſk-wood*. See ADOXA.

CROW'S-*foot*, in *Botany*. See RANUNCULUS.

CROW-*flowers*. See CAMPION.

CROW-*garlic*, a name given to a ſpecies of ONION.

CROW-*net*. See NET.

CROW, *ſcare*, in *Ornithology*, a ſpecies of the larus. See GULL.

CROW-*ſtaves*, in *Agriculture*, a name given to a part of a plough, ſignifying two upright pieces ſtanding perpendicularly, inſerted into the box of the plough, near the wheels, and each pierced with two rows of holes; by means of which they ſupport a tranſverſe piece, called the pillow of the plough, running acroſs them, and ſerving to raiſe or ſink the beam, by being pinned higher or lower, according as the ground is to be ploughed deeper or ſhallower. See PLOUGH.

CROWD, *to*, in *Sea Language*, is to carry an extraordinary force of ſail on a ſhip, in order to accelerate her courſe on ſome important occaſion.

CROWN, *Corona*, a mark of regal dignity; being an ornament worn on the head by kings and ſovereigns, as a ſymbol of their authority.

Gallot derives the word *corona*, whence *crown*, from the Latin *cornu*, *horn*; becauſe the ancient *crowns* were pointed in manner of horns; which were anciently, both by Jews and Gentiles, eſteemed as marks of power, ſtrength, authority, and empire. Hence, in the Holy Scripture, horns are uſed for the regal dignity: and accordingly, *horn* and *crown*, in the Hebrew, are expreſſed by the ſame word.

In the remoteſt antiquity, the *crown* was only given to gods. Pliny ſays, that Bacchus was the firſt who uſed it. Pherecydes, cited by Tertullian De Corona, ſays, Saturn. Diodorus aſcribes it to Jupiter, after his victory over the Titans. Q. Fabius Pictor attributes the invention to Janus; adding, that it was an ornament he uſed in ſacrificing. Leo the Egyptian ſays, it was Iſis who firſt wore a *crown*; and that it conſiſted of ears of corn, the uſe whereof ſhe firſt taught men.

In this, moſt authors agree, that the *crown*, originally, was rather a religious than a civil ornament; rather one of the pontificalia, than the regalia; that it only became common to kings, as the ancient kings were prieſts as well as princes; and that the modern princes are entitled to it, in their eccleſiaſtical capacity rather than their temporal. See KING, &c.

The firſt *crowns* were no more than a bandelet, or head-band, drawn round the head, and tied behind; as we ſtill ſee it repreſented on medals, around the heads o Jupiter, the Ptolemies, and the kings of Syria.

Afterwards they conſiſted of two bandelets; by degrees they took branches of trees of divers kinds: at length they added flowers; inſomuch that Tertullian, De Corona, aſſures us (from Claudius Saturninus, who had written expreſly on the ſubject) there was not any plant whereof *crowns* had not been made.

The woods and groves were ſearched, to find different *crowns* for the ſeveral deities: thus, on medals, we find Jupiter's *crown* of flowers, more frequently of laurel; Juno's of the vine; that of Bacchus, the vine with grapes, vine-leaves, and branches of ivy, with flowers and berries: thoſe of Caſtor, Pollux, and the river-gods, of bulruſhes; that of Apollo, ſometimes of laurel, ſometimes of ruſhes; that of Saturn, new figs; that of Hercules, poplar; that of Pan, pine or alder; that of Lucina, dittany; that of Horæ, the fruits proper to each ſeaſon; that of the Graces, olive-branches, as well as that of Minerva; that of Venus, roſes; of Ceres, ears of corn, as well as that of Iſis; that of the Lares, myrtle or roſemary, &c.

Crowns were not only uſed on the ſtatues and images of the gods, by the prieſts in ſacrificing, and by kings and emperors; but alſo on altars, temples, doors of houſes, ſacred veſſels, victims, ſhips, &c.

The *agonothetæ crowned* thoſe who were victors in the ſolemn games, warriors, &c.

Among the Romans, there were various kinds of *crowns*, diſtributed as rewards of military atchievements. The *oval crown* was the firſt, made of myrtle; and was beſtowed on generals who had been victorious over ſlaves or enemies unworthy of the Roman valour, and who were entitled to the honours of the leſſer triumph, called *ovation*. *Tab.* III. *Heraldry*, *fig.* 96.

The ſecond was the *naval* or *roſtral crown*, conſiſting of a circle of gold, raiſed with prows and poops of ſhips; given to the captain who firſt grappled, or the ſoldier who firſt jumped aboard an enemy's ſhip. *Fig.* 97.

The third called *vallaris*, or *caſtrenſis*, was alſo a circle of gold, raiſed with piles or palliſades; given to him who firſt leaped into the enemy's camp, or forced the palliſades. *Fig.* 98.

The fourth, called *mural crown*, was a circle of gold, indented or embattled; given to him who firſt mounted the wall of a place beſieged, and there lodged a ſtandard: this *crown* we alſo find given, on medals, to the particular genii and guardians of provinces and places. *Fig.* 99.

The fifth, the *civic crown*; made of a branch of green oak; given to him who had ſaved the life of a citizen in a battle or aſſault. This was conferred on Cicero for detecting Catiline's conſpiracy, and afterwards on Auguſtus Cæſar himſelf. *Fig.* 100.

The ſixth was the *triumphal crown*, made of branches of laurel, or bay-tree, given to a general who had gained a battle, or conquered a province. This was afterwards made of gold. *Fig.* 101.

The ſeventh the *corona obſidionalis*, or *graminea*, made of graſs or herbs found on the ground; given to generals who had delivered a Roman army beſieged by the enemy, and obliged him to decamp. *Fig.* 102.

The eighth was alſo a *crown* of laurel, given by the Greeks to their athletæ; and by the Romans, to thoſe who had negociated, or confirmed a peace with an enemy: this was the leaſt eſteemed. Beſides theſe, in antiquity, we meet with *radial crowns*, given to princes at their tranſlation, among the gods; whether before or after their death. *Fig.* 103. Caſaubon ſays, this ſort of *crown* was peculiar to deities; yet it is certain Nero took it in his life-time.

Athletic crowns were deſtined to crown victors at the public games.

From ſome paſſages in Euſebius Cæſarienſis, ſome authors conclude, that biſhops had likewiſe anciently their *crowns*.

The Roman emperors had four kinds of *crowns*, ſtill ſeen on medals, viz. a *crown* of laurel, a radiating *crown*, a *crown* adorned with pearls and precious ſtones; and the fourth a kind of bonnet, or cap, ſomething like the mortier.

The firſt was ordinarily that uſed from the time of Julius Cæſar: the right of bearing it was granted him by the ſenate; ſome ſay, on account of his baldneſs; and afterwards continued to his ſucceſſors. Juſtinian was the firſt who took that of the bonnet-kind.

The *papal* CROWN is compoſed of a cap or tiara, encloſed by three marquiſes coronets, having two pendants, like the biſhops mitres; and on its top a mound of gold: theſe three *crowns* repreſent the pretended triple capacity of the pope, viz. as high-prieſt, ſupreme judge, and ſole legiſlator of the Chriſtians. *Fig.* 104.

The *imperial* CROWN is a bonnet or tiara, voided at the top like a creſcent, with a circle of gold, adorned with precious ſtones and pearls, heightened with fleurs-de-lys, ſupporting a globe, with a croſs at the top. *Fig.* 105.

The *Engliſh* CROWN is adorned with four croſſes, in the manner of thoſe of Malta; between which are fleurs-de-lys. It is covered with four diadems, which meet at a little globe ſupporting a croſs. *Fig.* 106.

The *French* CROWN is a circle, enamelled, of eight fleurs-de-lys, encompaſſed with eight arched diadems; bearing a-top a double fleur-de-lys, which is the creſt of France. *Fig.* 107.

The *Spaniſh* CROWN is adorned with large indented leaves, covered with diadems; bordering on a globe, ſurmounted with a croſs. *Fig.* 108. Thoſe of Portugal, Poland, Denmark, and Sweden, are of the ſame form.

The *crowns* of moſt other kings are circles of gold, adorned with precious ſtones, and heightened up with large trefoils, and cloſed by four, ſix, or eight diadems, ſupporting a mound, ſurmounted with a croſs.

The great Turk bears over his arms a turband, enriched with pearls and diamonds, under two coronets, the firſt of which is made of pyramidal points, heightened up with large pearls, and the uppermoſt is ſurrounded with creſcents. *Fig.* 109.

The *Electoral* CROWN, or *coronet*, is a ſcarlet cap, turned up with ermine, and cloſed with a ſemi-circle of gold, all covered with pearls. On the top of it there is a globe with a croſs thereon. *Fig.* 110.

CROWNS, or *coronets*, *of Britiſh princes of the blood royal*. 1. The *crown* of the prince of Wales: this was formerly a circle of gold, ſet round with four croſſes-pattee, and as many fleurs-de-lys alternately; but now conſiſts of one arch, adorned with pearls; in the middle of which is a ball and croſs, and bordered with ermine, as in the royal diadem. *Fig.* 111. Beſides this, the prince of Wales has another diſtinguiſhing mark of honour, viz. a plume of three oſtrich feathers, with an ancient coronet of a prince of Wales, with this motto, *Ich dien*, i. e. *I ſerve*. This device was at firſt taken by Edward prince of Wales, commonly called the Black Prince, after the battle of Creſſy, where, having killed John king of Bohemia, he took from his head ſuch a plume, and put it on his own. *Fig.* 112. 2. That of the younger ſons and brothers of the king, conſiſts likewiſe of a circle of gold, bordered with ermine, and heightened with four croſſes and fleurs-de-lys alternately, but without any arch, or being ſurmounted with a globe and croſs on the top. *Fig.* 113. 3. That of the other princes of the blood conſiſts alternately of croſſes and leaves, like thoſe in the coronets of dukes, &c. *Fig.* 114. Thoſe of the princeſſes have the addition of ſtrawberry-leaves. *Fig.* 115.

CROWNS, or *coronets*, *of the Britiſh nobility*. 1. That of a duke is a circle of gold, bordered with ermine, and enriched with pearls and precious ſtones, and ſet round with eight large leaves of parſley, or ſtrawberry. *Fig.* 116. 2. That of a marquis is ſet round with four ſtrawberry-leaves, and as many pearls, on pyramidal points of equal height, alternately. *Fig.* 117. 3. An earl's has eight pyramidal points, with as many large pearls on the tops of them, placed alternately, with as many ſtrawberry-leaves, lower than the pearls. *Fig.* 118. 4. The viſcount has only pearls, without any limited number, placed on the circle itſelf, all round. *Fig.* 119. 5. A baron has only ſix pearls, ſet at equal diſtance, on the golden border of ermine; not raiſed, to diſtinguiſh him from the earl; and limited, to ſhew that he is inferior to the viſcount. *Fig.* 120.

The eldeſt ſons of peers, above the degree of a baron, uſe the CORONET appertaining to their father's ſecond title; and none of the younger ſons uſe *coronets*.

The *coronet* of a French earl is a circle of gold, with eighteen pearls ſet on the brim of it; that of a French viſcount an enamelled circle of gold, charged with four large pearls; and that of a French baron a circle of gold enamelled, and bound about with a double bracelet of pearls. All theſe are uſed on their coats of arms, and not worn on their head, as Britiſh noblemen and their ladies do at the king's coronation.

Ch. Paſchal has wrote expreſly de Coronis. Baudelot, in his Hiſtory of Ptolemy Auletes, has a number of curious obſervations on the ſame ſubject, that had eſcaped Paſchal. Du-Cange gives us a curious diſſertation on *crowns*; and Schmeizell, a German, a treatiſe of *royal crowns*, both ancient and modern.

CROWN, in *Architecture*, denotes the uppermoſt member of the corniche; called alſo CORONA and LARMIER.

CROWN, in *Aſtronomy*, is a name given to two conſtellations; the one called *ſeptentrionalis*, and the other *meridionalis*. See CORONA.

CROWN, in *Commerce*, is a general name for coins both foreign and domeſtic, of or near the value of five ſhillings ſterling.

In its limited ſenſe, *crown* is only applicable to that popular Engliſh coin which bears the name, and which is equivalent to ſixty Engliſh pence, or five ſhillings; or to ſix livres French money. But, in its extenſive ſenſe, it takes in ſeveral others; as the French ecu, which we call the French *crown*, ſtruck in 1641 for ſixty ſols, or three livres; alſo the patagon, dollar, ducatoon, rix-dollar, and piaſtre, or piece of eight.

CROWN, in an *Eccleſiaſtical Senſe*, is uſed for the clerical tonſure; which is the mark, or character, of the Romiſh eccleſiaſtics.

This is a little circle of hair, ſhaved off from the *crown* of the head; more or leſs broad, according to the quality of the orders received. That of a mere clerk is the ſmalleſt; that of prieſts and monks the largeſt.

The *clerical crown* was anciently a round liſt of hair, ſhaved off around the head, repreſenting a real *crown*: this is eaſily obſervable in ſeveral ancient ſtatues, &c. The religious of St. Dominic and St. Francis ſtill retain it.

CROWN, in *Geometry*, a plane ring included between two parallel or concentric peripheries, of unequal circles; generated by the motion of ſome part of a right line round a center, the moving part not being contiguous to the center.

The area of this is had, by multiplying its breadth by the length of a middle periphery, which is a mean proportional between the two peripheries that bound it.

Let D be the middle point of the breadth AB (*Tab.* II. *Analyſis, fig.* 39.); let CB $= a$, and CA $= r$. Let the circumference of the outer circle be c, and its area will be $\frac{ca}{2}$, and the area of the inner circle will be $\frac{cr^2}{2a}$, this quantity being a fourth proportional to a^2, r^2, and $\frac{ca}{2}$; then the difference of theſe two areas, or the area of the *crown*, will be $\frac{ca}{2} - \frac{cr^2}{2a} = \overline{a-r} \times \frac{c}{2} \times \frac{a+r}{a}$: but $a-r$ is equal to AB, the breadth of the *crown*, and $\frac{c}{2} \times \frac{a+r}{a}$ is the circumference of the circle, whoſe radius is CD; becauſe CD is an arithmetic mean between CA and CB, and therefore equal to $\frac{r+a}{2}$, and the circumferences of circles are as their radii, or $a : c :: \frac{r+a}{2} : \frac{c}{a} \times \frac{a+r}{2}$.

Crown, or **Coronet**, in *Heraldry*, is uſed for the repreſentation of that ornament, in the mantling of an armoury; to expreſs the dignity of the perſon who bears it. The *crown* here is of more antiquity even than the helmet; and it was uſed as a ſymbol of victory and triumph.

Crown, among *Jewellers*, the upper work of the roſe diamond, which all centers in the point at the top, and is bounded by the horizontal ribs.

Crowns, *pearled*, or *flowered*, thoſe with pearls, or leaves of ſmallage, parſley, &c. Such were anciently almoſt all *crowns*, even thoſe of ſovereign princes: though they were not uſed in their armours, till about two hundred years ago.

Crowns, *radiated*, or *pointed*, are thoſe of the ancient emperors, which had twelve points; repreſenting, as ſome will have it, the twelve months of the year.

Crown *Royal, order of*, an order of knighthood, which, ſome ſay, was inſtituted in 802; the knights of which bore a *crown* embroidered with gold, on a white robe. Others deny the exiſtence of ſuch an order.

Crown *of colours*, in *Meteorology*, certain coloured rings, which, like halos, appear about the body of the ſun and moon, but of the colours of the rainbow; and at a leſs diſtance than the common halos. Theſe *crowns* Sir Iſaac Newton ſhews to be made by the ſun's ſhining in a fair day, or the moon in a clear night, through a thin cloud of globules of water or hail, all of the ſame bigneſs; and according as theſe globules are bigger or leſs, the diameter of theſe *crowns* will be larger or ſmaller; and the more equal theſe globules are to each other, the more *crowns* of colours will appear; and the colours will be the more lively.

Crown, in *Muſic*, a REST marked by a reverſed C, with a point in the middle of it thus 𝄐

Crown, *clerk of the*. See CLERK.

Crown, *pleas of the*. See PLEA.

Crown, *officers of the*. See OFFICER.

Crown-*glaſs*, denotes the fineſt ſort of window-glaſs. See GLASS.

Crown-*grafting*. See ENGRAFTING.

Crown, *imperial*, in *Botany*. For the characters, ſee FRITILLARIA.

There are ſeveral diſtinct ſpecies of this plant preſerved in the gardens of the curious, all which make a very elegant appearance; there are alſo a great number of varieties which are propagated from the ſeeds of one or other of the ſpecies, in the ſame manner with thoſe of the TULIP.

When they are thus raiſed, the beſt time for tranſplanting their roots is in July or Auguſt, before they puſh forth new fibres; or they may be taken up out of the ground in June, after their green leaves are decayed, and kept till Auguſt, and then planted out into beds of rich earth, with ſome rotten dung buried deep in them. The moſt pleaſing method of planting them is at eight or ten feet diſtance, in the middle of long flower-beds: a hole of ſix inches deep ſhould be opened with a ſpade, and the root put into it, and the earth put in with the hand upon it, and all the ſtones picked out, and the lumps broke. They now require no farther care, but in February will ſhoot up, and grow ſo quick, if the weather be mild, as to flower in March. As this is uſually a windy ſeaſon, it is proper to plant ſtakes in the earth, to tye theſe plants to, to prevent their being blown down; and it is a good caution never to gather the flowers, which much weakens the roots; they ſhould, therefore, always be ſuffered to die upon the ſtalks. The roots ſhould be removed once in three years, and their off-ſets ſeparated, and planted in beds.

Crown *imperial ſhell*, in *Conchyliology*. See VOLUTA.

Crown-*office*, a court or office under the king's-bench, ſo called, becauſe the *crown* is more immediately concerned in what is therein tranſacted. See COURT *of King's-bench*.

Though none of the officers under the lord chief-juſtice of the king's-bench are employed in ſummoning a parliament; yet many of them have buſineſs in other matters, during the ſitting of the parliament: as in caſes of error, &c. but more eſpecially on trials of peers; wherein the clerk of the *crown* is chief manager. He has likewiſe, out of parliament, all indictments in the *crown*, informations, recognizances; and a multitude of other buſineſs runs through his hands, as the writings of all pleadings, declarations, and other proceedings upon records: but the executive part is left to his ſecondary or deputy.

Crown-*poſt*, in *Architecture*, a poſt which in ſome buildings ſtands upright in the middle, between two principal rafters; and from which there go ſtruts or braces to the middle of each rafter. It is otherwiſe called a *king's-piece*, or *joggle-piece*. See POST.

Crown-*ſcab*, in *Farriery*, a diſeaſe in horſes, conſiſting in an humour that breaks out round the coronet, of a ſharp itching nature, and attended with ſcurfineſs. The beſt remedy for this diſorder is a mixture of equal parts of marſhmallow ointment, and yellow baſilicon, ſpread on tow, and laid round the coronet.

Crown, *right of*, JUS CORONÆ, in *Britiſh Hiſtory*, denotes the right of ſucceſſion to the throne in theſe kingdoms. In this ſenſe the *crown*, according to judge Blackſtone, is by common law, and conſtitutional cuſtom, hereditary, in a manner peculiar to itſelf; ſo that the right of inheritance may from time to time be changed, or limited, by act of parliament. The ſucceſſion is ſuch, that the next heir of the crown takes poſſeſſion on the death or demiſe of the laſt proprietor; not by any *jure divino* title, but that kind of hereditary right which owes its origin ſolely to the founders of our conſtitution. The ſucceſſion likewiſe reſembles that of the heirs to landed eſtates, under particular exceptions: thus, the *crown* deſcends lineally to the iſſue of the reigning monarch, as from king John to Richard II. and to the firſt born of the male iſſue, as in the caſe of Edward V. who was preferred to Richard his younger brother, and Elizabeth his elder ſiſter; but on failure of the male line, it deſcends to the female iſſue: thus Mary I. ſucceeded Edward VI. and the line of Margaret queen of Scots, the daughter of Henry VII. inherited on failure of the deſcendants of Henry VIII. Among the females, the *crown* deſcends to the eldeſt daughter and her iſſue, and not, like common inheritances, to all the daughters at once: thus queen Mary, on her brother's death, was the ſole ſucceſſor, though her ſiſter Elizabeth was living. Moreover, the lineal deſcendants of any perſon deceaſed claim, as their anceſtor would have done, if he had been ſtill living. Thus, Richard II. ſucceeded his grandfather Edward III. in right of his father the Black Prince, to the excluſion of all his uncles. On failure of lineal deſcendants, the *crown* is veſted in the next collateral relations of the late king, if they are lineally deſcended from the blood royal, as in the caſe of Henry I. who ſucceeded to William II. John to Richard I. and James I. to Elizabeth, being all derived from the Conqueror, who was then the only regal ſtock: nor is there any exception, as in common deſcents, to collateral relations of the *half*-BLOOD. Thus Mary I. inherited after Edward VI. and Elizabeth after Mary, though born of Henry VIII. by different mothers.

However this hereditary right is by no means indefeaſible; becauſe the immediate heir has been, and may be excluded by the ſupreme legiſlative authority of this kingdom. Under this controul, the *crown* naturally deſcends either to the *hæres natus*, if the courſe of deſcent is unimpeached, or to the *hæres factus*, in conſequence of a particular ſettlement: becauſe the KING never dies, and there can be no *interregnum*.

Egbert, in the beginning of the ninth century, was the ſole monarch of this kingdom. From Egbert, to the death of Edmund Ironſide, through a ſucceſſion of fiſteen princes, the crown deſcended regularly, with very little deviation. In the three ſucceeding reigns, the ſucceſſion was ſuſpended by force; at length the Saxon line was reſtored in Edward the Confeſſor, who indeed was not the next heir, becauſe his brother Edmund Ironſide had a ſon living, then an outlaw in Hungary. On his deceaſe Harold II. uſurped the throne, though the right remained in Edgar Atheling, ſon of Edward the outlaw. At this time William the Norman invaded England, pretending a right to the *crown* from a grant of Edward the Confeſſor; and his conqueſt transferred the ſucceſſion of the *crown* to a new family. From the Conqueror it deſcended to his ſons William II. and Henry I. the eldeſt ſon Robert being kept out of poſſeſſion by his brethren. Henry was ſucceeded by Stephen of Blois, grandſon of William I. by his daughter Adelicia, his elder brother Theobald waving his claim, and Matilda or Maud, the daughter of Henry I. and the grand-daughter of Edward the outlaw, to whom the ſucceſſion properly belonged, being excluded by force. However, her ſon Henry II. as heir to the Conqueror, ſucceeded Stephen, though the proper heirs in the Saxon line were the ſons of Malcolm king of Scotland, by Margaret, the daughter of Edward the outlaw. From Henry II. the *crown* deſcended to his eldeſt ſon Richard I. and on his death was ſeized by his brother John, the youngeſt ſon of Henry, the right being veſted in his nephew Arthur. On the death of Arthur, and his ſiſter Eleanor, without iſſue, the *crown* properly deſcended to Henry III. the ſon of John, and from him, in an hereditary line of ſix generations, to Richard II. and this right of ſucceſſion was declared in parliament by ſtat. 25 Edw. III. When Richard reſigned the *crown*, the right reſulted to the iſſue of his grandfather Edward III. and particularly to the poſterity of Lionel duke of Clarence; but Henry duke of Lancaſter uſurped the *crown* under the title of Henry IV. pretending to be a ſucceſſor by right line of the blood royal. Parliament, by ſtat. 7 Henry IV. c. 2. ſettled the inheritance of the *crown* and kingdom in him and his heirs. He was regularly ſucceeded by his ſon and grandſon, Henry V. and VI. In the laſt of theſe reigns the houſe of York began to aſſert their dormant title, and eſtabliſhed it in the perſon of Edward IV. At his acceſſion, the diſtinction of a king *de jure*, and a king *de facto*, firſt occurs; and by ſtat. 1 Ed. IV. c. 1. the three Henries are ſtyled kings *in dede, and not of right.* This king was ſucceeded by his eldeſt ſon Edward V. who was depoſed by his unnatural uncle Richard III. under a pretence of baſtardy. During the tyrannical reign of Richard, Henry VII. earl of Richmond, aſſumed the regal dignity, and his poſſeſſion was eſtabliſhed by parliament in the firſt year of his reign. He afterwards married Elizabeth of York, the undoubted heireſs of the Conqueror, in whom the right of the *crown* was veſted. Henry VIII. ſucceeded by indiſputable hereditary right, and tranſmitted the *crown* to his three children in ſucceſſive order; and ſtat. 25 Hen. VIII. cap. 12. provides for the regular ſucceſſion in his deſcendants. This ſtatute was repealed by 28 Hen. VIII. c. 7. by which Elizabeth and Mary were baſtardized, after the king's divorce from Anne Boleyn. They were again legitimated, and the ſucceſſion reſtored by 35 Henry VIII. c. 1. The right both of Mary and Elizabeth is again expreſly recognized by parliament, after their reſpective acceſſion; and parliament explicitly aſſerts its right of directing the ſucceſſion of the *crown*, by ſtat. 13 Eliz. c. 1. On the death of queen Elizabeth, James VI. of Scotland, and I. of England, was the lineal deſcendant, from the alliance of Margaret, eldeſt daughter of Henry VII. by Elizabeth of York with James IV. of Scotland; and in him were united not only the claims of different competitors ſince the Conqueſt, but likewiſe the right of the Saxon monarchs, becauſe he was the direct lineal heir of Malcolm, who married Margaret, grand-daughter of Edmund Ironſide. Several inſtances have occurred, in this abſtract of the hiſtory of the deſcent of the *crown*, in which parliament has interpoſed to fix, direct, and limit the ſucceſſion; particularly, under Henry IV. Henry VII. Henry VIII. queen Mary, and queen Elizabeth; to which we may alſo add the ſtat. 1 Jac. I. c. 1. which recognizes the ſucceſſion as lawfully deſcending to king James.

The attempt to obtain a bill of EXCLUSION in the latter end of the reign of Charles II. evidently ſuppoſed that the *crown* was hereditary, and at the ſame time liable to the controul of parliament. This attempt proved ineffectual, and James II. ſucceeded.

However, in conſequence of his abdication in 1688, and the declared vacancy of the throne, the lords and commons, repreſenting all eſtates of the people of the realm, invited over William prince of Orange, and the princeſs Mary, eldeſt daughter of king James II. and declared them king and queen, during their lives, and the life of the ſurvivor of them; and ſettled the *crown* on the iſſue of queen Mary; and on failure of ſuch iſſue, on the princeſs Anne of Denmark, and her iſſue. Stat. 1 W. and M. c. 2.

By ſtat. 12 and 13 W. III. c. 2. the princeſs Sophia, youngeſt daughter of Elizabeth queen of Bohemia, who was the daughter of James I. and the heirs of her body, being proteſtants, and married to none but proteſtants, were declared next in ſucceſſion after king William, the princeſs Anne, and their iſſue; and it is enacted that they ſhould join in communion with the church of England, as by law eſtabliſhed. After the death of queen Anne, the *crown* deſcended to George I. eldeſt ſon of the princeſs Sophia; from him to George II. and laſt of all to our preſent ſovereign George III. Blackſtone's Commentaries, vol. i. chap. 3. See KING and PARLIAMENT.

CROWN-*wheel of a* WATCH, is the upper wheel next the balance, or that which drives the balance.

CROWN-*work*, in *Fortification*, is an out-work running into the field; deſigned to keep off the enemy, gain ſome hill, or advantageous poſt, and cover the other works of the place. See *Tab. Fortific. fig.* 21. *lit. ll.*

The *crown-work* conſiſts of two demi-baſtions at the extremes, and an entire baſtion in the middle, with curtins.

CROWN, the *American ſea-ſun*. See AMERICAN, &c.

CROWNED, in *Farriery*. A horſe is ſaid to be *crowned*, when by a fall, or other accident, the knee is ſo hurt, that the hair falls off, without growing again.

CROWNED *horn-work*, is a HORN-*work*, with a *crown-work* before it.

CROWNING, in *Architecture*, is underſtood, in the general, of any thing that terminates, or finiſhes a member or decoration.

Thus, a corniche, a pediment, a croteria, &c. are called *crownings*. Thus, alſo, the ABACUS is ſaid to *crown* the capital; and thus any member or moulding is ſaid to be *crowned*, when it has a fillet over it; and a niche is *crowned*, when it is covered with a capital.

CROWNING, in *Sea-Language*, denotes the finiſhing part of a knot made at the end of a rope. It is performed by interweaving the ends of the different ſtrands artfully amongſt each other, ſo as that they may not become looſened or untwiſted. They are uſeful in all kinds of ſtoppers.

CROWTH, or CRUTH, an inſtrument of muſic (ſee *Tab. Muſic, fig.* 3.) reſembling a violin, formerly in common uſe in the principality of Wales. It has ſix ſtrings, ſupported by a flat bridge, placed obliquely to the ſides, and is played on with a bow. A A repreſent the apertures for the hand; B B the ſtrings conducted under the end board; C C the pegs, and *d d* the ſound holes. The fifth and ſixth ſtrings are the uniſon and octave of G, the fourth and third the ſame of C, and the ſecond and firſt the ſame of D; ſo that the ſecond pair of ſtrings are a fourth, and the third a fifth to the firſt.

This inſtrument was not peculiar to Wales; ſince a figure of it has been lately diſcovered among the outſide ornaments of the abbey church of Melroſs in Scotland, built about the time of Edward II.

From the name *crowth* is derived *crowther*, a *crowder*, as a common fidler is now called. The uſe of this inſtrument is almoſt loſt. Hawkins's Hiſt. of Muſic, vol. ii. p. 273.

CROZIERED *abbots*. See ABBOT.

CRUCIAL *inciſion*, in *Chirurgery*, an inciſion, or cut, into ſome fleſhy parts, in form of a croſs.

CRUCIAN, in *Ichthyology*, the CYPRINUS *caraſſius* of Linnæus, is common in many of the fiſh-ponds about London, and other parts of the ſouth of England, though probably not a native fiſh. The meat of it is coarſe, and little eſteemed. For the characters, ſee CARASSIUS.

CRUCIANELLA, in *Botany*, a genus of the *tetrandria monogynia* claſs; *petty madder*. Its characters are theſe: the flower hath one petal, with a ſlender cylindrical tube, longer than the empalement, cut into four parts at the brim. It hath four ſtamina ſituated in the mouth of the tube. It has a compreſſed germen ſituated at the bottom of the tube, which afterward becomes two twin capſules, each containing one oblong ſeed. There are three ſpecies, natives of the ſouthern parts of Europe.

CRUCIBLE, in *Chemiſtry*, &c. a little veſſel, ordinarily of earth, ſometimes of iron, without any handle; wherein chemiſts, coiners, goldſmiths, glaziers, and other artificers, uſe to melt and calcine gold, ſilver, or other metals, whereon they work.

The word is formed from the French *creuſet*, which ſignifies the ſame. Du-Cange derives this further from *cruſelinum*; which, in the lower Latin, ſignifies a little drinking veſſel.

Earthen *crucibles* are made of potters clay, with ſtone potſherds pounded and ſifted: they are of various ſizes, but generally of the ſame form, which reſembles that of an inverted cone, or pyramid. Theſe are chiefly uſed in coinage, as being the only ones in which gold will melt kindly. Iron *crucibles* are in form of little buckets without handles, made of iron well ſorged and hammered: in theſe they melt ſilver, copper, &c.

There are earthen *crucibles* that hold from 800 to 24 or 2500 ounces; but thoſe ordinarily uſed are but of 800. The iron ones are larger; ſome holding 10,000 ounces: theſe are not taken off the furnaces when the plates are to be run, but the metal is laded out with an iron ladle. It is a rule, never to put as much metal in the *crucible* as it will hold.

The *crucibles* uſed by goldſmiths and founders, are like thoſe uſed in COINAGE; thoſe of chemiſts, &c. are of all ſizes, according to the quantity and quality of the metal to be put in them.

Theſe veſſels, ſo much uſed by aſſayers, &c. are beſt made of a pure and well-waſhed clay, with an admixture of the pureſt ſand, powder of flint, or the powder of other broken *crucibles*, which have already ſuſtained a great fire, and are very clear. They are formed in wooden, or braſs moulds, divided longitudinally into two parts, and to be disjoined or put together again at pleaſure: for this purpoſe alſo a broad iron ring is adapted to the outſide of the mould, in ſuch manner, that the two ſides are kept firmly together while this ring is on, and fall aſunder as ſoon as it is taken off. This mould, however, gives only the outer ſhape of the *crucible*; its cavity muſt be made by a peſtle, or other ſuch inſtrument.

When theſe veſſels are to be made, the ring is put upon the mould, and the whole ſet upon a ſtrong ſupport: then the cavity of the mould is to be filled with the matter very ſtiff; this is to be preſſed down firſt with the fingers, or with a ſtick, making a hollow in the middle, and leaving the edges of the matter above the ſides of the mould; then apply to this hollow the peſtle, rubbed over with the fat of bacon, and drive it in with ſeveral ſtrong ſtrokes of a mallet: then take away the peſtle, and, taking the ring from off the mould, the *crucible* is taken out perfect, and finiſhed, and is to be dried, and baked in a potter's kiln. See *Tab. of Chemiſtry*, Nº 25.

If, from the too great moiſture of the matter, when put into the mould, or from any inequalities or roughneſſes in the mould, the *crucible* will not readily ſeparate from its ſides, as ſoon as made, place the mould in a dry, warm place, for a few minutes, and the veſſel will, after that, come out eaſily.

In making theſe veſſels, a ſufficient quantity of the matter muſt always be put at once into the mould; for if you add to the matter once compreſſed, a new lump of the ſame, it will not cohere with the firſt. If the matter be put into the mould in ſmall maſſes, not moulded thoroughly together firſt by handling, theſe never cohere; but the veſſel, when finiſhed, will be full of chinks and pores, which, though not to be diſcovered either by the eye, or by the ſound of the veſſel when ſtruck, yet let the ſalts in fuſion paſs through them.

If theſe veſſels are not made with a large bottom, the concave mould muſt not be greaſed; for if it be, the veſſel comes out of it with the peſtle, and ſticks ſo firmly to it, as not to be got off without breaking. Cramer, Art of Aſſ. p. 66.

Others order a large piece of chalk to be cut into the form of a *crucible*, and boiled in linſeed-oil for twenty-four hours: this, when dry, they uſe as a *crucible*.

Mr. Scheffer ſays, that *crucibles* may be made much more durable and ſolid, by ſteeping them for a few days in linſeed-oil, and ſtrewing powdered borax on them before they are dried. Mem. Sued. 1752.

On the method of preparing *crucibles*, ſo as to ſtand ſulphureous mixtures, &c. ſee Lewis's Commercium P. Technic. p. 156.

Black lead *crucibles* are preferred for melting of GOLD, becauſe very ſmooth, and leſs apt to retain the particles of this coſtly metal; and alſo becauſe leſs liable to crack, ſo that they may be uſed for ſeveral fuſions, and with leſs precaution. Ibid. p. 67.

The beſt *crucibles* for ſuſtaining the action of violent fire, and of chemical ſolvents, are prepared of good baked clay; but as theſe are liable to be broken by a ſudden application of heat or cold, another ſort is made of a mixture of refractory clay, with two parts of ſand, of a middling fineneſs: and the addition of ſand makes the clay leaner, and prevents its cracking whilſt it dries, and likewiſe preſerves it from becoming too compact, by being baked. Theſe are better adapted to contain metals in fuſion, and leſs ſubject to break than thoſe made of pure clay. The beſt of this kind are brought from Heſſe in Germany. *Crucibles* that are deſigned for containing glaſs, and vitrifying matters for a long time in fuſion, ſhould have no mixture of ſand, flints, and vitrifiable earths, becauſe they are acted upon by the vitreous matters, and the *crucibles* are ſoon penetrated and melted. For this purpoſe the powder of baked clay ſhould be ſubſtituted in the room of ſand; and thus pots are prepared for glaſs-houſes, which will bear a violent and conſtant fire for ſeveral months. Of this kind are the *crucibles* which are made in France. Every laboratory, then, ſhould be furniſhed with *crucibles* of different kinds; Paris *crucibles* for a more gentle fire; thoſe of Heſſe for a more violent heat; and thoſe of baked clay for vitreſcent matters, and penetrating fluxes. Pott's Diſſertation on Chemical Veſſels. See POTTERY.

CRUCICOLÆ, q. d. *worſhippers of the croſs*, a deſignation given to the primitive Chriſtians, by the heathens.

CRUCIFIX, a croſs, whereon the body of Jeſus Chriſt is faſtened in effigy; much uſed by the Romaniſts in their churches, and other places, to recognize the paſſion of Jeſus Chriſt, and direct their prayers to.

There are ſome chapters wherein Jeſus Chriſt is the firſt canon, and the income of the canonry goes to the ſubſiſtence of the *crucifix*.

CRUCIFIXION, an ancient form of execution; by faſtening the criminal to an erected CROSS.

CRUCIFORM *flowers*. See FLOWER.

CRUCIFORM *hyperbola*. See CURVES.

CRUCIS *experimentum*. See EXPERIMENTUM.

CRUDE, ſomething that has not paſſed the fire, or has not had the degree of coction, i. e. of heat, requiſite to prepare it for eating, or ſome other uſe.

Crude, or raw ſilk, is that which has not been put in boiling water, to unwind it from off the cod; nor boiled in water and ſoap, to fit it for dying.

CRUDE *ſugar*. See SUGAR.

CRUDE *antimony*, is that which comes immediately from the mines, without any preparation, except once melting.

CRUDE *humours*, in *Medicine*, are thoſe which want that preparation and elaboration which they ordinarily receive from a thorough digeſtion.

The retainers to the doctrine of trituration hold, that the *crudity* of the humours only conſiſts in this; that they are not broken and comminuted ſo much as they ſhould be by the ordinary action of the ſtomach.

CRUDITY, ſometimes denotes that ſtate of a diſeaſe, wherein the morbific matter is of ſuch bulk, figure, coheſion, mobility, or inactivity, as creates or increaſes the DISEASE.

The *crudity* is diſcovered, 1. From the diſeaſe continuing its degree of ſtrength, or increaſing. 2. From a continual increaſe of ſymptoms. 3. From a diſorderly exerciſe of the functions. 4. But chiefly from a fault in the quantity or quality of the humours; both thoſe ſtill circulating, and thoſe ſecreted; as of ſweat, tears, mucus of the noſe, ſaliva, ſputum, the bile, urine, ichor, pus, blood, menſes, lochia, milk, aphthæ, &c.

That ſtate of the diſeaſe, wherein the *crude* matter is changed, and rendered leſs peccant, and laudable, is called *digeſtion*, *concoction*, or *maturation*.

CRUISE, from the German *kruiſs*, *a-croſs*, ſignifies to croſs to and fro, to ſail up and down within a certain ſpace of the ſea, called the *cruiſing* latitude, in queſt of veſſels, or fleets of an enemy, &c.

CRUISERS, in the *Navy*, are ſmall men of war, made uſe of to and fro in the Channel, and elſewhere, to ſecure our merchant-ſhips and veſſels, from the enemy's ſmall frigates and privateers. They are generally ſuch as ſail well, and are commonly well manned: and, indeed, the ſafety of the trade in the Channel, and up and down the ſoundings, and other places, abſolutely requires the conſtant keeping out of ſuch ſhips at ſea.

CRUMENA, from κρεμαω, *pendeo*, *I hang*, in *Zoology*, the name given by Cardan, and ſome others, to the purſe, or pouch, which the OPOSSUM has under its belly, and into which it receives the young in time of danger.

Scaliger, ſuppoſing there might be other animals, as well as the opoſſum, to which nature might have given this ſort of pouch, has erected a generical diſtinction, under the name of *animalia crumentata*; but the opoſſum is the only ſpecies yet known to belong to this genus. The only inſtance that naturaliſts ſeem to afford us of a like proviſion of nature for the care of the young, is what is related of ſome of the fiſh kind. Oppian, in his Halicutics, mentions this property of receiving the young into the body, in time of danger, to be in the dog-fiſh, and in the ſquatina, and ſome others; and Tyſon obſerves, that, in the anatomy of a female dog-fiſh, he ſaw two ſlits under the belly, cloſed up in their natural ſtate, but eaſily diſtenſible, ſo as to be capable of receiving the young fiſh; and that theſe went not into the womb, nor any other peculiar part, but only into the cavity of the abdomen.

The account given by Oppian is, that, in time of danger from a ſtorm, or from any fiſh of prey purſuing the young fry, they go into their parent's belly. If therefore, after this account of Tyſon's, any young fiſh ſhould ever be found looſe, in the cavity of the mother's belly, it will prove the truth of this paſſage in Oppian, which has been ſo much diſputed. Phil. Tranſ. Nº 239. p. 120.

CRUMENTATA, a term uſed by Julius Scaliger to expreſs ſuch animals as have a pouch, or bag, under their belly, into which young ones may be received in time of danger. See Opossum.

CRUOR, from κρυος, *cold*, according to Ainſworth, or perhaps from χροα, *colour*, a term uſed by anatomiſts for the red globules of the blood; in contradiſtinction to the limpid or ſerous part.

Some authors, as Dr. Keill and Dr. Woodward, ſuppoſe theſe globules replete with an elaſtic aura, or air; and on this principle account for ſome of the phænomena of the animal œconomy; particularly muſcular motion, &c. But Dr. Jurin has overturned that ſuppoſition.

Van Helmont uſes the word *cruor* for the blood in the veins; in contradiſtinction to the blood in the arteries, which he calls *ſanguis*. See Blood.

CRUPEZIA, in *Antiquity*, wooden ſhoes, or clogs, worn by the mesochori.

CRUPINA, in *Botany*, a name by which ſome authors call the *carduus ſtellatus*, or ſtar-thiſtle.

CRUPPER is uſed by ſome for the hind part of a horſe, comprehended between the place of the ſaddle and the tail.

The word is formed from the French *crouppe*, which ſignifies the ſame. It denotes alſo a thong of leather put under a horſe's tail, and fixed to the ſaddle, to prevent it from being thrown forward.

CRURA *clitoridis*, in *Anatomy*. Between the *corpora nervoſa* of the *clitoris*, runs a *ſeptum*, or membranous partition, from the glans to its divarication at the *os pubis*; dividing the *clitoris* into two parts, called the *crura* of the *clitoris*. See *Tab. Anatomy* (*Splanch.*) *fig.* 13. *lit. b b.*

Theſe are three times as long as the ordinary trunk of the *clitoris* itſelf.

Crura *of the medulla oblongata*, are two of the four roots whence the *medulla oblongata* ſprings, in the brain.

The *crura* are the larger roots; the two ſmaller are called *pedunculi*.

CRURÆUS, in *Anatomy*, a muſcle ariſing from the forepart of the thigh-bone, between the leſſer and great trochanter, and lying cloſe upon the bone, joins its tendon with three others, which all together make one broad tendon, that paſſes over the *patella*, and is inſerted into the little tuberoſity on the upper and fore-part of the *tibia*. Its uſe is to extend the leg. See *Tab. Anatomy* (*Myol.*) *fig.* 2. *n* 40.

It is called *cruræus*, as being faſtened to the thigh-bone in the ſame manner as the *brachiæus* to the arm.

CRURAL, in *Anatomy*, an epithet given to the large artery and vein of the thigh.

The *crural* artery ariſes from the iliac artery; or rather, it is the iliac itſelf, under another name; being called *crural*, from the place of its entrance into the thigh. See *Tab. Anatomy* (*Angeiol.*) *fig.* 1. *n.* 69.

It conveys blood through all the part, by means of a great number of branches diſſeminated through its ſubſtance.

The *crural* vein is the production of the external iliac vein, and is formed of ſix other veins, viz. the *great* and *little ſciatica*, the *muſculoſa*, the *poplitea*, the *ſural*, and the *ſaphena*.

Crural *nerves*. See Nerve.

CRUS, among *Anatomiſts*, denotes all that part of the body which reaches from the buttocks to the toes; and is divided into thigh, leg, and foot.

CRUSCA, an Italian term, ſignifying *bran*, or what remains of meal after the flour has been ſifted out. It is only in uſe among us to denote that celebrated academy called *Della Cruſca*, eſtabliſhed at Florence, for purifying and perfecting the Tuſcan language.

The academy took its name from its office, and the end propoſed by it; which is to refine the language, and, as it were, to ſeparate it from the bran. Accordingly, its device is a ſieve, and its motto, *Il piu bel fior ne coglie*; that is, *It gathers the fineſt flour thereof.*

In the hall or apartment where the academy meets, M. Monconis informs us, every thing bears alluſion to the name and device: the ſeats are in form of a baker's baſket; their backs like a ſhovel for moving of corn; the cuſhions of grey ſattin in form of ſacks, or wallets; and the branches where the lights are placed, likewiſe reſemble ſacks.

The vocabulary *Della Cruſca* is an excellent Italian dictionary, compoſed by this academy.

CRUSTA *lactea*, *Achor*, in *Surgery*, ſignifies a cruſt of ſcabby ulcers, apt to affect the faces of children. The cure of it depends principally on regulating the diet of the nurſe, and giving her gentle purges, and ſweetening powders; the infant ought alſo to take at times a few gentle doſes of phyſic; and, in the intervals, between the purges, to take powders of crude, or diaphoretic antimony, with flower of brimſtone, and crabs claws, and other of the teſtaceous powders. When this method has been purſued for ſome time, the parts may be anointed with cream, with a ſmall quantity of chalk, or ceruſe, mixed in it, or with a mixture of oil of eggs, with a ſmall quantity of oil of bricks. Ointments of mercury, or ſulphur, are very dangerous in the beginning of this diſorder, or to weakly infants; and when ſuch have been uſed by ignorant perſons, the beſt method to be taken is the endeavouring to throw out the humour again by ſudorifics. Heiſter's Surgery, p. 269.

Crusta *villoſa*, in *Anatomy*, the fourth tunic, or coat of the stomach.

On the inner ſurface of the coat are ſeen innumerable villi, or fibrillæ, riſing every where perpendicularly from it; which ſome will have to ſerve for nothing but a defenſative to the ſtomach, to preſerve it from acrimonious humours: but Dr. Drake rather takes them to be excretory ducts to the ſubjacent glands; which ſome authors would have to be that now exploded thing a parenchyma; but which are, indeed, the organs by which moſt of that humour which is diſcharged into the ſtomach, is ſeparated; and theſe villi the immediate channels through which it is conveyed.

CRUSTACEOUS *fiſh*, in *Natural Hiſtory*, are thoſe covered with ſhells, conſiſting of ſeveral pieces, or ſcales; as thoſe of crabs, lobſters, &c. See Squilla.

Theſe are uſually ſofter than the ſhells of the teſtaceous kind, which conſiſt of a ſingle piece, and uſually much thicker and ſtronger than the former; ſuch as thoſe of the oyſter, ſcallop, cockle, &c. See Testaceous *animals*.

Dr. Woodward obſerves, in his Natural Hiſtory, that of all the ſhells found in beds of all the different matters dug out of the earth, there are ſcarce any of the *cruſtaceous* kind: the reaſon he gives for it is, that theſe being much lighter than the reſt, muſt have floated on the ſurface at the time of the deluge, when all the ſtrata were formed; and there have corrupted and periſhed.

CRUSTULA, in *Medical Writers*, the ſame as *ecchymoma*, in the eye, being a deſcent of the blood from the arteries into the *tunica conjunctiva*, occaſioned by a wound, ſtroke, &c.

CRUX *herrings*. See Herring.

CRUYSHAGE, in *Zoology*, the name of a fiſh of the ſhark kind, ſomewhat approaching to that ſtrange fiſh the zygæna, but much leſs monſtrous, its head being only triangular, or ſomething like the figure of a heart, whence Willughby has named it *zygænæ affinis capite triangulo.* The eyes are very ſmall, and are placed, as in the zygæna, at the ſides of the head: the mouth is ſmall and triangular, and placed a vaſt way below the end of the noſe, and is furniſhed with three rows of very ſmall teeth.

CRUZADO, or Croisade, an expedition to the Holy Land.

Cruzado, or Crusade, in *Commerce*, is a Portugueſe coin, ſtruck under Alphonſus V. about the year 1457, at the time when pope Calixtus ſent thither the bull for a croiſade againſt the infidels. See Coin.

It had its name from a croſs, which it bears on one ſide; the arms of Portugal being on the other.

CRUZITA, in *Botany*, a genus of the *tetrandria digynia* claſs, with a four-leaved calyx, corolla, and a ſingle ſeed.

CRY. See Hue, Clamor, Haro, &c.

CRYMODES, from κρυος, *cold*, in *Medical Writers*, a cold, ſhivering fever, but often accompanied with an inflammation of the inner parts.

CRYPTA, a ſubterraneous cell, or vault; eſpecially under a church, for the interment of particular families, or perſons.

S. Ciampini, deſcribing the outſide of the Vatican, ſpeaks of the *cryptæ* of St. Andrew, St. Paul, &c.

The word is formed of κρυπτω, *abſcondo*, *I bide*; whence κρυπτη, *crypta.*

Vitruvius uſes the word *crypta* for a part of a building, anſwering nearly to our cellar; Juvenal, for a *cloaca.*

Hence, *crypto-porticus*, a ſubterraneous place, arched, or vaulted; uſed as an under-work, or paſſage, in old walls.

The ſame is alſo uſed for the decoration at the entry of a grotto.

Crypta is alſo uſed, by ſome of our ancient writers, for a chapel, or oratory, under-ground.

Cryptæ, in *Anatomy*, a name given by Ruyſch to glands ſituated on the back of the tongue, and to glands of the inteſtines.

CRYPTOGAMIA, in *Botany*, a claſs of plants whoſe flowers are either wholly inviſible, or ſcarce diſcernible by the eye.

The word is formed of κρυπτος, *hidden*, and γαμος, *marriage*. Theſe are a claſs of plants whoſe fructification is concealed, and under it are comprehended thoſe plants which either flower, as is generally ſuppoſed, within the fruit, or have the organs of their fructification ſo minute, as to eſcape our obſervation. This claſs comprehends four orders, viz. the *filices*, or ferns, the *muſci*, or *moſſes*, the *algæ*, or flags, and the *fungi*, or *muſhroom*. See *Tab.* I *of Botany, Cryptogamia*; and *Tab.* II. *Filices*, &c.

CRYPTOGRAPHY, the art of ſecret writing, or writing in CIPHER. See DECIPHERING.

The word is compounded of κρυπτω, *I hide*; and γραφω, *I deſcribe*.

CRYSTALS, in *Natural Hiſtory*, are defined to be hard, pellucid, and naturally colourleſs bodies, of regularly angular figures, compoſed of ſimple not filamentous plates, not flexile nor elaſtic, giving fire with ſteel, not fermenting in acid menſtrua, and calcining in a ſtrong fire. They poſſeſs the general properties of the earths called vitrifiable. Moſt of the coloured *cryſtals* are fuſible by a violent fire; and probably derive both their colour and fuſibility from metallic ſubſtances.

The word comes from κρυϛαλλος, *glacies*; formed of κρυος, *frigus*, and ϛελλω, *concreſco*; becauſe of its reſembling ice.

The ancients were but little acquainted with the nature of *cryſtal*. Pliny ſpeaks of it as hardened petrified water, which was the popular opinion of thoſe days; but experience has ſhewn us the contrary: for by a chemical analyſis, inſtead of reſolving into water, it yields nothing but a calx, earth, and ſalts.

For the places where it is found, Pliny adds, that he has ſeen it dug from off the higheſt and roughest rocks of the Alps; whence, doubtleſs, its name of *rock-cryſtal*. It is ſometimes alſo found in brooks and rivers, but not formed there; only waſhed down thither from the mountains by the violent rains.

Several mountains of Europe, and ſome of Aſia, produce *rock cryſtal*. If we may believe the French relation of Madagaſcar, that iſland yields more than all the world beſide.

Its perfection conſiſts in its luſtre, and tranſparency; that with ſtraws, duſt, clouds, &c. is little valued.

This claſs of bodies is arranged into three diſtinct *orders*, and under thoſe into nine *genera*.

Of the *firſt order*, are the perfect columnar *cryſtals*, with double pyramids, compoſed of eighteen planes, in an hexangular column, terminated by an hexangular pyramid at each end. See *Tab. Foſſils, Claſs* 3.

Of the *ſecond order*, are the perfect *cryſtals*, with double pyramids, and without a column. Theſe are compoſed either of twelve or of ſixteen planes, in two hexangular pyramids, joined cloſely baſe to baſe, without the intervention of any column.

Of the *third order*, are the imperfect *cryſtals*, with ſingle pyramids. Theſe are *cryſtals* of the common kind, and are compoſed either of twelve or of ten planes, in an hexangular or pentangular column, affixed irregularly at one end to ſome ſolid body, and terminated at the other by an hexangular or pentangular pyramid. There are ſeveral *genera* in each order.

Adding to theſe regular *genera* the accidental varieties of *cryſtals*, owing to the admixture of metalline particles, influencing their ſhape as well as colour; the three principal of which are thoſe impregnated with lead, iron, and tin; the firſt cubic, the ſecond rhomboidal, and the laſt quadrilateral pyramids, without columns; we have the whole ſeries of the figured *cryſtals*: the firſt of theſe are called *molybdia*, the ſecond *ſideria*, and the third *caſſiteria*. Beſide all theſe, *cryſtal* is alſo ſometimes found in a pebble-like form, which is an accidental variety, like thoſe in the cryſtallizations of ſalts, where many concretions entirely want their naturally angular form.

It is cut, or engraved, in the ſame manner, with the ſame inſtruments, and by the ſame workmen, as diamonds. See DIATRÆTA.

The origin and formation of *cryſtals*, as to the time and manner of them, deſerve a very nice enquiry, ſince many of the more compound foſſile bodies are principally compoſed of either *cryſtal*, or ſpar, a body in many things reſembling it; and the aſcertaining the great queſtion, whether it was all formed at one time, and that long ſince, or does continue to be formed at this day, will ſo far alſo aſcertain the time of the coaleſcence of thoſe other bodies, of which it is the baſis.

The original coaleſcence and formation of thoſe bodies of which ſpar is the baſis, we well know, may have been but of yeſterday, ſince we have evident proofs, that ſpar is concreting to this day, and that ſparry bodies are forming every moment. This is evident, from the ſparry STALACTITÆ in the arches of modern buildings, particularly in one ſo lately built as the new bridge at Weſtminſter, the roofs of the arches of which were filled with theſe ſpars within a year after the arches were built; and there are evident proofs, that ſpars are not made of matter endued from the ſtone, ſince brick arches equally abound with them; and the brick vault which ſupports part of the grand terrace at Windſor, has been ſo full of them, that there was not room to walk.

From theſe obſervations, as alſo thoſe of the ſparry incruſtations round vegetable, and other bodies in ſprings, and at the bottoms of our tea-kettles, which are all incruſted with it, we have evident proof, that ſparry bodies are formed to this day, but we have no ſuch clear evidence of the preſent growth of *cryſtal*.

The ſubject of enquiry, therefore, may be reduced to a narrow compaſs; and all that experiments have to determine is, 1. Whether *cryſtal* or ſpar are at this time found ſuſpended in water, in imperceptible particles, or whether they are not; and, 2. If they are thus ſuſpended, whether they are or are not capable of being raiſed in vapours.

The ſubſtance encruſting tea-kettles, &c. is found to be a genuine ſpar, with a greater or leſſer admixture of earth, and is wholly the ſame with the encruſtations on vegetables in ſprings, &c. Here therefore is a proof of ſpar and earth being ſuſpended in common water, but none of *cryſtal*. This was alone to be determined by repeated and cautious diſtillations. In diſtilling the water of the ſame ſpring, with different degrees of fire, a different quantity of matter was found left at the bottom of the veſſel. It appeared hence, that in a greater degree of heat, a great part of the matter had been raiſed in vapour, and the remainder, on trial, always proved to be only ſpar and earth. Here were therefore both the queſtions anſwered in the affirmative, in regard to ſpar, viz. that it is continually ſuſpended in water, and may be raiſed in vapour. The water of theſe diſtillations being returned into the cucurbit, and rediſtilled, leaves a ſecond ſediment in ſmall quantity, and of a whiter colour. This being examined according to the known laws of foſſils, proves to be part ſpar, and part *cryſtal*, an undiſſolved powder remaining from it, after pouring on aqua fortis to take up the ſpar; and this in all teſts appearing to be true and perfectly pure *cryſtal*. A third diſtillation of the ſame water, produced not the leaſt reſiduum. Hence therefore it is evident, that *cryſtal* as well as ſpar is continually ſuſpended in water, and may be raiſed in vapour, and ſeparated by no other agent than heat. And hence the concluſion is plain, that *cryſtalline* as well as ſparry bodies may be, and doubtleſs are, continually formed in the earth to this day. Hill's Hiſt. of Foſſils, p. 157.

Cryſtals are probably formed by the acceſſion of cryſtalline or ſaline particles, which are diffuſed through the whole globe, and mixed in ſome degree with moſt ſtrata: theſe particles being gradually carried along by the moiſture or vapours which ſoak through the pores, till they come to ſome cavity, where their progreſs is obſtructed, and they collect together in drops, and by their mutual attraction form cryſtalline bodies. By the acceſſion of more particles, their pores are diminiſhed, and they gradually increaſe in tranſparency; agreeably to the hypotheſis of Sir Iſaac Newton, that the tranſparency of bodies is occaſioned by the minuteneſs of their pores, and their opacity by the largeneſs of the pores. Phil. Tranſ. vol. lvii. p. 61.

Having thus from experiments gone through the hiſtory of what may be the origin of many of the *cryſtalline* bodies we daily meet with, it remains to ſay ſomething of their form.

The perfect regularity of the figures of *cryſtals*, cannot but be the effect of ſome fixed, permanent, and invariable cauſe; theſe being ever, unleſs altered by accidents, which rarely happen, the very ſame in the ſame genus.

Signior Lana, who had an opportunity in the Val-ſabbia, of ſeeing many of the perfect double pointed kinds, imagined, that they owed their origin to dews congealed by nitrous exhalations. Rohault imagines the figure of common *cryſtal* the effect of ſix drops of water thrown together.

Others are for its being formed of radiations; others, from all its parts being like the whole; and others from the mutual tendency of the parts of it toward the ſame center. But all theſe the laws of action in matter, and the ſtructure of *cryſtal* in the ſeveral ſpecies, eaſily ſhew to be erroneous.

Many think they have ſolved all difficulties, when they ſay, that *cryſtals* are ſalts; but we know no more of the true cauſe of the figure of ſalts, than we do of thoſe of *cryſtals*. And it is to be added, that if *cryſtals* are ſalts, then ſalts are ſomething elſe from what we have been taught to think they are, *cryſtals* by no means anſwering to the definitions given us of them by authors. As we yet know ſo little of the cauſes of the regular cryſtalizations of ſalts, why are we to ſuppoſe no other bodies but ſalts capable of ſuch cryſtalizations.

Henkel, a very accurate chemiſt, gives us a remarkable account of the formation of *cryſtal* out of human urine, which ſeems ſo ſtrange, that it would have been deſpiſed had it come from an author of leſs credit; and as it is, will require repeated experiments to convince the world there was no error in the caſe. He tells us, that he once filled a large round glaſs veſſel half way up, with the recent urine of a young lad, and tying a bladder over the mouth of the veſſel, he ſet it in a ſtove for four years together, never ſtirring it during that whole time. At the end of this time he found a number of ſmall white ſtones growing to the inſide of the glaſs; they were of the ſize of an oat-ſeed, of a priſmatic figure, and tolerably pellucid; they ſtuck ſo faſt to the ſides of the glaſs, as not to be waſhed off by the ſhaking about of the urine, and, when taken out, had no ſalt taſte, and were not ſoluble even in hot water. Act. Erudit. ann. 1720, p. 272.

When any piece of workmanſhip in *cryſtal* is become foul and dark, the method of recovering its luſtre without hurting its poliſh, is this: mix together ſix parts common water, and one part brandy; boil theſe over a briſk fire, and let the *cryſtal* be kept in it, in a boiling ſtate, a quarter of an hour; then take it out, and rub it carefully over, with a bruſh dipped in the ſame liquor; after this, it is not to be left to dry of itſelf, but to be wiped with a clean napkin, and its ſurface will by this means be perfectly cleaned, and rendered as bright as at firſt, without that injury to the points of the cutting, or to the ſurfaces of the planes or facets, which would naturally have been the conſequence of doing it by mere rubbing or wiping.

Natural *cryſtal* may be reduced, by calcination, into the ſtate of the bodies proper for making glaſs with alkaline ſalts, and makes a moſt fine and valuable FRITT. The method of doing it is this: calcine natural *cryſtal* in a crucible; when it is red-hot, throw it into cold water to quench it; repeat this eight times, covering the crucible, that no duſt or aſhes may get in and mix with the *cryſtal*; dry this calcined maſs, and reduce it to an impalpable powder; mix three pounds of this powder with two pounds of pure ſalts of polverine, or with a quarter of a pound of red lead, and with theſe make fritt, and with the proper quantity of manganeſe, or other tinging ſubſtance; waſh this often in cold water, and after a proper time, work it; it will yield a moſt beautiful GLASS.

Some have pretended to colour *cryſtals* by thus fuſing them, and imparting the various tinges to them, while in a melted ſtate. But as they cannot be fuſed by the heat of furnaces, without the medium of ſome fluxing body added to them, their texture and properties are ſo changed, or rather the glaſs produced by the compoſition is ſo different from the *cryſtal* itſelf, that there does not appear to be any advantage in employing rock *cryſtal* in ſuch a compoſition preferably to flints. Hand. Arts. vol. ii. p. 327.

Natural *cryſtal* may be coloured of ſeveral colours, without melting or running it into glaſs, in the following manner. Take a number of pieces of fine, clear, and pure *cryſtal*, of various ſizes, of white arſenic and yellow orpiment in powder, of each two ounces; ſal ammoniac one ounce; powder this alſo, and mix them well together; put this powder into a ſtrong crucible, and lay upon it the pieces of *cryſtal* in their natural ſtate, then cover this crucible with another, mouth to mouth; lute them well, and when the lute is dry, ſet them in coals, which kindle by little and little; and when they begin to fire, let them kindle of themſelves, and they will then ſmoak very much. Let this be done in a large chimney, taking care to avoid the fumes. When it fumes no more, let the fire go out of itſelf, and let all ſtand till cool; then unlute the crucibles, and take out the *cryſtals*; thoſe at top will be coloured to a fine yellow, with a deep and pale red, the colours of the common fine and balaſs ruby, with beautiful ſpots; and thoſe which are at the bottom upon the powder, will be of a watery colour, mottled like that of the viper. This *cryſtal* comes out ſo fair from this proceſs, that it may be cut as a gem; and though many are ſpoiled, yet, in making a large quantity, there are always ſome fair and perfect. Neri's Art of Glaſs. p. 117. See DOUBLETS, and OPAL.

Baptiſta Porta directs to colour *cryſtals* by keeping them immerſed for four or five hours in a melted mixture of ſulphur, crude antimony, orpiment, arſenic, and tutty. In theſe operations the *cryſtals* ſeem to imbibe ſome of the vapours of the metallic ſubſtances: though the method of giving colours to *cryſtals* by cementation ſeldom or ever fairly ſucceeds.

Crystals, *improper*, a term introduced into the world by Dr. Coppeler, in his Prodromus Cryſtallographiæ, to diſtinguiſh bodies which have the figure of *cryſtals*, but are not ſuch, from the proper or true genuine *cryſtals*.

Improper *cryſtals* are, according to this author, ſuch bodies, either ſtones, metals, or ſalts, as have any reſemblance to true *cryſtal*, either as to their multangular, regular, or irregular figure; or as to their pellucidity, or any other of their eſſential properties. As the number of theſe bodies is very extenſive, it was a work of great accuracy to arrange them into any ſort of order; but this is one of the principal attempts of the author. Among the firſt claſs of improper *cryſtals*, that is, ſuch as are ſtones, come all thoſe gems which have any determinate figure, as the diamond, emerald, amethyſt, and the like. To the ſecond belong all ſorts of regularly figured, metalline bodies, ſuch as *pyritæ* and marcaſites, as alſo thoſe ores of ſilver, where the native metal has aſſumed ſome regular form; as when this or any other metal ſhoots, in its natural bed, into the form of a tree or the like.

Under the third claſs of improper *cryſtals*, including the ſalts, come in all the chemical preparations of ſalt and ſaline bodies. The figure in this claſs is more determinate and accurate than in either of the former claſſes of bodies. See *Tab. Cryſtallization of Microſcopical Objects*.

We are happy enough to have at preſent much better arrangements of FOSSILS than this.

Crystal, *pebble*, a ſpecies of petridia. See PETRIDIA.

Crystal, *prepared*, a term among the makers of counterfeit gems, for a powder of natural *cryſtal*, made for their purpoſe. The manner of preparing it as follows: take the pureſt and cleareſt natural *cryſtal*, put it into a crucible covered at the top, ſet it among burning coals; let the *cryſtal* be made red-hot, then plunge it into a large veſſel of cold water. When the *cryſtal* is cold, put it into the fire again, heat it red-hot, and quench it again; and repeat this operation twelve times, carefully keeping aſhes or any other foulneſs out of the crucible. When the calcination is finiſhed, the *cryſtal* will be brittle and crumbly, powder it, and levigate it on a porphyry to an impalpable powder. This powder muſt be made perfectly fine, otherwiſe the gems made with it will be all foul and coarſe, and no braſs or copper veſſels muſt be uſed about the operation. If the *cryſtal* ſhould be powdered in a braſs or bell-metal mortar, there could be no gem but an emerald ever be made of it, from the quantity of copper it would take up in the powdering. When carefully prepared, it receives all the colours of the gems, by proper additions, and affords a maſs ſofter indeed, but not leſs bright and pellucid, or not leſs beautifully tinged than the fineſt of the oriental gems. Neri's Art of Glaſs, p. 125.

Crystal, *rock*, otherwiſe called *ſprig-cryſtal*, in *Natural Hiſtory*, a name given to the third order of *cryſtals* from their being affixed to a *rock*, or other ſolid body.

This kind of *cryſtal* is the moſt common of all others, and is what the generality of authors deſcribe under the name of *cryſtal of the ſhops*, being that kept for medicinal purpoſes.

The cleareſt, pureſt, and moſt tranſparent that can be had, ought to be choſen; and to prove its genuineneſs, it may be tried with aqua fortis, true *cryſtal* making no effervеſcence with that menſtruum.

Crystal, in *Medicine*, has many virtues attributed to it, being eſteemed an aſtringent and lithontriptic; hence it has been given in diarrhœas, the fluor albus, and in caſes of gravel in the kidneys. Its doſe is a ſcruple, or half a dram, being firſt reduced to a fine powder, by repeated calcinations, and extinctions in cold water.

Many are afraid of the uſe of theſe ſtony medicines, in nephritic caſes. The objection againſt ſpar will hold good againſt *cryſtal*; but there wants ſufficient proofs to determine this point. In general, however, SPAR is an alkali, which *cryſtal* is not.

Cryſtal has been recommended by ſome, as a dentrifice, and there is no doubt of its cleaning the teeth; but, like other hard bodies, it is apt to wear away their enamel, and thereby ſubject them to decay.

Crystal is alſo uſed for a factitious body, caſt in the glaſs-houſes; called alſo *cryſtal-glaſs*.

It is, in effect, glaſs; but carried, in the melting, and in the matter whereof it is compoſed, to a degree of perfection beyond the common glaſs. It is ſimilar in appearance to the whiteſt and moſt tranſparent natural *cryſtal*, though much leſs hard, and more fuſible.

The beſt artificial *cryſtals* are ſaid to be thoſe made at Moran, near Venice; called *Venice cryſtals*.

Crystals, in *Chemiſtry*, expreſs ſalts, or other matters, ſhot, or congealed, in manner of *cryſtal*. See Crystallization. Thus,

Crystal *of alum*, is alum purified, and reduced into *cryſtals*, in the ſame manner as tartar. In like manner are vitriol, nitre, and other ſalts, *cryſtallized*.

Cryſtals of alum are quadrangular, and brilliant, like diamonds; thoſe of nitre, white, and oblong; thoſe of vitriol, green, angular, and ſhining. See Salt.

Crystal, or **cream** *of tartar*, is tartar purified and diſſolved, and again coagulated in form of *cryſtals*.

To prepare it, they boil tartar in water, ſkim it, and ſtrain it; when cool, there are formed little white ſhining *cryſtals*, at the edges; as alſo a pellicle, or cream ſwimming a-top.

The cream and *cryſtals* were anciently ſuppoſed to be different; but are now found the ſame thing.

Cryſtal of tartar is eſteemed purgative, and aperitive; proper in hydropical and aſthmatical caſes, and in intermitting fevers.

Crystal *of tartar chalybeated*, is when it is impregnated with the moſt diſſoluble parts of iron.

Crystal *of tartar emetic*, is when it is charged with the ſulphureous parts of antimony, to render it vomitive.

Crystal *mineral*, called alſo *mineral anodyne*, and *ſal prunella*, is nitre detonated with ſulphur, thus: put a pound of nitre in a crucible, and ſet that in a furnace; and when the nitre is in fuſion, let it be detonated with a dram of ſulphur; in which it is to be agitated, whilſt in a fluid ſtate, that it may fix in the form of cakes, or tablets. After the flame is over, invert the crucible into a braſs or copper baſon.

This is eſteemed good againſt the ſquinancy, whence its name of *ſal prunella*; *pruna*, or *prunella*, expreſſing that diſeaſe. It is cooling, ſedative, aperitive, and diuretic.

Crystals *of ſilver*, or *luna*, denote ſilver, penetrated and reduced into the form of ſalts, by the ſtrong acid of ſpirit of nitre: or by a ſolution in a weaker acid, if the liquor be left to cool, and the water to evaporate. Theſe *cryſtals* are white, flattened like thin ſcales, and not very hard.

It is uſed for making eſchars, by applying it to any part: it is alſo of uſe internally, in dropſies, and diſeaſes of the brain; though its corroſive quality ſeems to render it unfit for this latter purpoſe.

Mr. Boyle commends it highly in this view; and propoſes a method of rendering it mild, which is not likely to prove effectual; and therefore its uſe in medicine is not yet eſtabliſhed. Macquer.

Crystals *of Mars*, called alſo *ſalt*, or *vitriol of Mars*, is iron reduced into a ſalt by an acid liquor; uſed in diſeaſes ariſing from obſtructions.

Crystals *of Venus*, or of *copper*, called alſo *vitriol of Venus*, is copper reduced into the form of vitriol by ſpirit of nitre, or by diſſolving verdegriſe in good diſtilled vinegar, till the acid be ſaturated; it is very cauſtic, and uſed to eat off proud fleſh. It is alſo uſed by painters, and manufacturers, and ſold under the name of *diſtilled* verdegrise. It is alſo called *radical* vinegar.

Crystal *of Iceland*, or *Iſland*, a tranſparent fiſſile ſtone, brought from Iceland, ſoft as talc, clear as rock-*cryſtal*, and without colour; famous among optic writers for its unuſual refractions.

It is there found in great abundance all over the country, but is particularly plentiful in a mountain, not far from the bay of Roezfiord, where the fineſt and moſt pellucid pieces are found on digging. The mountain lies in ſixty-five degrees latitude, and has its whole outſide made up of it; but, though this makes a very bright and glittering appearance, it is not ſo fine as that which lies at a little depth, and is met with on opening the ſurface. This is generally taken up out of the earth in maſſes a foot long, and its corners very frequently are terminated in theſe large maſſes, by a ſort of *cryſtals*, very different in figure and qualities from the reſt of the maſs. The ſtone itſelf is of a parallelopiped figure; but theſe excreſcences are either ſingle pyramids, affixed to columns, like common *cryſtal*, or double pyramids, with or without columns between. The ſtone itſelf is ſoft, theſe are hard, and cut glaſs; the ſtone calcines to lime in the fire, theſe run into glaſs; in ſhort the ſtone itſelf is true ſpar, and theſe are true *cryſtal*: beſide theſe, there ſometimes grows out of the ends of the larger maſſes a pure fine aſbeſtos This likewiſe is the caſe ſometimes in the ſpar found about Barege in France, and ſhews how nearly together the formation of bodies, wholly different from one another, may happen. The general figure of the ſtone is parallelopiped; or, as ſome expreſs it, rhomboide; and it retains this not only while whole, but alſo when broken to pieces. Every fragment it naturally falls into, though ever ſo ſmall, being truly of that ſhape. But it is remarkable, that in ſome places of this mountain, the ſame ſort of matter is found in form of triangular pyramids, all which have the ſame property of the double refraction with the parallelopipeds of the ſame ſubſtance; ſo that the original error of ſuppoſing its qualities owing to its ſhape, is refuted by this, as well as by the trials made with other pellucid bodies of the ſame figure, which do not ſhew this remarkable property. Phil. Tranſ. Nº 67.

The *Iceland cryſtal* is electrical, and when rubbed will draw up ſtraws, feathers, and other light ſubſtances, in the ſame manner that amber does.

The vaſt maſſes of white ſpar which are found in the lead-mines of Derbyſhire, though they are not externally of the parallelopiped figure of the *Iceland cryſtal*, nor have any thing of its brightneſs or tranſparence in the general lump; yet, when they are broken, they ſeparate into rhomboidal fragments, and ſome of theſe are found to be tolerably pellucid: all thoſe which are ſo have the property of the *Iceland cryſtal*; and being laid upon paper, where a black line is drawn, they all ſhew that line double in the ſame manner as the real *Iceland cryſtal* does.

Iceland cryſtal bears a red heat without loſing its tranſparency; and, in a very intenſe heat, calcines without fuſion: ſteeped a day or two in water, it loſes its natural poliſh.

It is very ſoft and eaſily ſcratched with the point of a pin; it will not give fire on being ſtruck againſt ſteel; and ferments, and is perfectly diſſolved in aqua fortis. It is found in Iceland, from whence it has its name; and in France, Germany, and many other places. In England, fragments of other ſpars are very often miſtaken for it, many of them having, in ſome degree, the ſame property.

It has none of the diſtinguiſhing characters of *cryſtal*, and is plainly a genus of ſpars, called, from their figure, *parallelopipedia*, which, as well as ſome other bodies of a different genus, have the ſame properties. Bartholine, Huygens, and Sir Iſaac Newton, have deſcribed the body at large, but have accounted it either a *cryſtal* or a talc; errors which could not have happened, had the criterions of foſſils been at that time fixed; ſince Sir Iſaac Newton has recorded its property of making an ebullition with aqua fortis, which alone muſt prove that it is neither talc nor *cryſtal*, both thoſe bodies being wholly unaffected by that menſtruum.

It is always found in form of an oblique parallelopiped, with ſix ſides, and is found of various ſizes, from a quarter of an inch to three inches or more in diameter. It is pellucid, and not much leſs bright than the pureſt *cryſtal*, and its planes are all tolerably ſmooth, though when nicely viewed, they are found to be waved with crooked lines made by the edges of imperfect plates. What appears very ſingular in the ſtructure of this body is, that all the ſurfaces are placed in the ſame manner, and conſequently it will ſplit off into thin plates, either horizontally or perpendicularly; but this is found, on a microſcopic examination, to be owing to the regularity of figure, ſmoothneſs of ſurface, and nice joining of the ſeveral ſmall parallelopiped concretions, of which the whole is compoſed, and to the ſame cauſe is probably owing its remarkable property in refraction. Hill. See Parallelopipedia.

The phænomena of this ſtone are very remarkable, were firſt ſuggeſted by Bartholin, and have been examined with great accuracy by M. Huygens, and Sir Iſaac Newton. 1. Whereas in other pellucid bodies there is only one refraction, in this there are two; ſo that objects viewed through it appear double.

2. Whereas in other tranſparent bodies, a ray falling perpendicularly on the ſurface, paſſes ſtrait through, without ſuffering any refraction; and an oblique ray is always divided: in *Iceland cryſtal*, every ray, whether perpendicular or oblique, becomes divided into two, by means of the double refraction. One of theſe refractions is, according to the ordinary rule, the ſine of incidence out of air into *cryſtal*, being to the ſine of refraction as five to three; but the other is perfectly new. The like double refraction is alſo obſerved in *cryſtal of the rock*, though much leſs ſenſibly.

When an incident ray is thus divided, and each moiety arrives at the farther ſurface, that refracted in the firſt ſurface after the uſual manner, is refracted entirely after the uſual manner at the ſecond; and that refracted in the unuſual manner in the firſt, is entirely refracted after the like manner in the ſecond; ſo that each emerges out of the ſecond ſurface, parallel to the firſt incident ray. Again, if two pieces of this *cryſtal* be placed over each other, ſo that the ſurfaces of the one be parallel to the correſponding ones of the other; the rays refracted in the uſual manner in the firſt ſurface of the firſt, are refracted after the uſual manner in all the other ſurfaces; and the ſame uniformity appears in the rays refracted after the unuſual manner; and this in any inclination of the ſurfaces, provided their planes of perpendicular refraction be parallel.

From theſe phænomena Sir Iſaac Newton infers, that there is an original difference in the rays of light; by means whereof ſome are, here, conſtantly refracted after the uſual manner; and others in the unuſual manner. Were not the difference original, and did it ariſe from any new modifications impreſſed on the rays at their firſt refraction, it would be altered by new modifications in the three following ones; whereas, in fact, it ſuffers no alteration at all.

Again, he hence takes occaſion to ſuſpect, that the rays of light have ſeveral ſides, endued with ſeveral original properties: for it appears from the circumſtances, that theſe are not two ſorts of rays differing in their nature from each other, one conſtantly, and in all poſitions, refracted in the uſual, and the other in the unuſual manner; the difference in the experiment mentioned, being only in the poſition of the ſides of the rays, to the plane of perpendicular refraction. For one and the ſame ray is refracted ſometimes after the uſual, and ſometimes after the unuſual manner, according to the poſition of its ſides to the *cryſtal*: the refraction being alike in both, when the ſides of the rays are poſited the ſame way to both, but different, when different.

Every ray, therefore, may be conſidered as having four ſides, or quarters: two of which, oppoſite to each other, diſpoſe the ray to be refracted after the unuſual manner; and the other two in the uſual. Theſe diſpoſitions, being in the rays before their incidence on the ſecond, third, and fourth ſurfaces; and ſuffering no alterations, for what appears in their paſſage through them, muſt be original and connate.

Father Beccaria corrects the obſervations of Huygens and Newton concerning the refraction of rock or mountain *cryſtal*. The double refraction of the latter happens, when a ray paſſes through two ſides that are inclined to each other, and conſequently iſſues coloured; whereas that of the Iceland *cryſtal* is made by the paſſage of a ray through two parallel ſides, and therefore it iſſues colourleſs. He ſuggeſts, that there may be other ſubſtances, in which there is a manifold refraction. Graveſande had a priſm of Braſil pebble, which had a double refraction at each angle, but of a different kind from one another. Phil. Tranſ. vol. lii. part ii. p. 487, &c.

Mr. B. Martin prepared ſeveral priſms of Iceland *cryſtal*, which exhibited not only a double but a multiple refraction. A ſingle priſm produced a ſix-fold refraction; and by combining ſeveral priſms, a number of refractions was obtained equal to the product of thoſe of the ſingle priſms; i. e. a priſm which afforded two images applied to one of ſix, produced a priſm of twelve images, &c. He farther obſerves, with reſpect to Iceland *cryſtal*, that though the ſides of its plane of perpendicular refraction be parallel to one another, a beam of light tranſmitted through them will not be colourleſs; in which property it differs from all other known ſubſtances. See Martin's Eſſay on Iceland Cryſtal, or Prieſtley's Hiſt. of Viſion, period vii. § 8. p. 548, &c.

CRYSTALLI, among *Phyſicians*, denote puſtules diſperſed all over the body, white and tranſparent, and of the bigneſs of a lupine: much the ſame with what are otherwiſe called *phlyctanæ*.

CRYSTALLINE *humour* is a thick, compact humour of the eye, in form of a flattiſh convex lens, ſituate in the middle of the eye; ſerving to make that refraction of the rays of light, neceſſary to have them meet in the retina, and form an image thereon, whereby viſion may be performed.

The *cryſtalline* is ſet in the anterior part of the vitreous humour, like a diamond in its collet; and is retained there by a membrane which ſurrounds it; and which, for that reaſon, is called the *capſula of the cryſtalline*.—This membrane is ſometimes alſo called *cryſtalloides*; and by others, on account of its fineneſs, which reſembles that of a ſpider's web, *arachnoides*.

It is the configuration of the *cryſtalline* that occaſions perſons to be either *myopes*, or *preſbytæ*; i. e. to be either long, or ſhort-ſighted; a diſcovery firſt ſuggeſted, and proved by Maurolycus of Meſſina, in a treatiſe, De Lumine & Umbra, publiſhed in 1575. Bapt. Porta thought that this humour was the principal ſeat of viſion.

The *cryſtalline* being of two conſiſtences, outwardly like a jelly, but toward the center as hard as ſalt; hence ſome authors think, that its figure may be varied; which variation they ſuppoſe to be effected by the ligamentum ciliare. Hence, Dr. Grew, and others, aſcribe to the ciliary ligament a power of making the *cryſtalline* more convex, as well as of moving it to or from the retina: accordingly, by the laws of optics, ſomething of this kind is abſolutely neceſſary to diſtinct viſion: for, as the rays from diſtant objects diverge leſs than thoſe from nigh ones; either the *cryſtalline humour* muſt be capable of being made more convex, or more flat; or elſe there muſt be an elongation of the eye, or of the diſtance between that and the retina.

The *cryſtalline humour*, when dried, appears to conſiſt of a vaſt number of thin, ſpherical laminæ, or ſcales, lying over one another. Leewenhoek reckons there may be two thouſand of them in one *cryſtalline*; each of theſe, he ſays, he has diſcovered to conſiſt of a ſingle fibre, or fine thread, wound up in a ſtupendous manner, this way and that, ſo as to run ſeveral courſes, and meet in as many centers; and yet not interfere nor croſs in any place. Phil. Tranſ. Nº 165, and 293.

The veſſels of the *cryſtalline* humour of the eye are all the branches of an artery, which being ſent off from the artery which enters at the central part of the retina, paſſes through the vitreous humour, and when it reaches the *cryſtalline*, diſperſes its branches along the ſurface of the lens like radii, till they are exceeding minute, when they pierce into its ſubſtance. Med. Eſſ. Edinb. vol. i. p. 337.

M. Petit, the phyſician, has many minute obſervations and experiments on the colour, conſiſtence, meaſure, weight, &c. of the *cryſtalline humour* of the eye, and its *capſula* in different animals: but his obſervations are ſo numerous that we can only take notice of ſome of them. He obſerved, that in ſerpents and fiſhes the *cryſtalline* is nearly ſpherical, whereas in all other animals which he examined it was lenticular, the anterior ſurface being leſs convex than the poſterior.

This humour hardens with age, and is not ſo hard in men as in birds, quadrupeds, and fiſhes; its hardneſs increaſing in the order here expreſſed.

He alſo obſerves, that the *cryſtalline* changes colour with age, becoming gradually more and more tinged with yellow after the age of twenty-five years, in proportion to its hardneſs.

He ſhews, in confirmation of Leewenhoek's diſcovery, that the *cryſtalline* conſiſts of concentrical laminæ: he always found the capſula tranſparent, and denies any connection between this membrane and the *cryſtalline*, or that there are any veſſels going from the one to the other; but affirms that the *cryſtalline* is nouriſhed by abſorbing the lymph lodged between it and its capſula.

But Albinus diſcovered this to be a miſtake; and that, on the contrary, it is connected with the capſula by means of ſeveral veſſels, which, paſſing through ſmall perforations in the capſula, are inſerted at the extremities of it, and ſpread along the back part of it; and that it receives its nouriſhment by veſſels, which are the branches of the central artery paſſing through the vitreous humour, and divided into ſeveral branches in the back part of the capſula, and tranſmitted to the interior parts of the *cryſtalline*, by which it is alſo ſuſpended.

Dr. Porterfield has accounted for the greater central hardneſs of the *cryſtalline*; as the rays of light, which fall near its axis, and would conſequently be leſs refracted than thoſe that fall more obliquely nearer the extremities, have hereby their refraction increaſed, and are made to converge and meet with thoſe at the ſame point with thoſe that paſs through it nearer its edge.

When the *cryſtalline* or vitreous humours are fallen out of the eye, it is eaſy to conceive, that not only the ſight, but the figure of the eye, muſt be entirely deſtroyed; therefore, an accident of this kind muſt at firſt be dreſſed with compreſſes dipped in warm wine, or ſpirit of wine, and afterwards with ſome vulnerary balſam. But it ſometimes happens, when only the *tunica albuginea*, and ſclerotica, are ſlightly wounded, the cornea and uvea remaining unhurt, that the eye recovers itſelf: and though both the vitreous and *cryſtalline* humours fall out by the wound, yet they are renewed again by the efficacy of nature, and the office of ſight performed as well as before the injury happened. Heiſter.

The *cryſtalline* is the ſubject of the diſeaſe called a CATARACT, and the operation of COUCHING. See EYE.

CRYSTALLINE *heavens*, in the *Old Aſtronomy*, two orbs imagined between the *primum mobile* and the firmament, in the Ptolemaic ſyſtem, where the heavens were ſuppoſed ſolid, and only ſuſceptible of a ſingle motion.

King Alphonſus of Arragon is ſaid to have introduced the *cryſtallines*, to explain what they called the *motion of trepidation*, or *titubation*.

The firſt *cryſtalline*, according to Regiomontanus, &c. ſerves to account for the ſlow motion of the fixed ſtars; which makes them advance a degree in ſeventy years, according to the order of the ſigns, viz. from weſt to eaſt; which occaſions the preceſſion of the equinox.

The ſecond ſerves to account for the motion of libration, or trepidation; whereby the celeſtial ſphere librates from one pole towards another, occaſioning a difference in the ſun's greateſt declination.

But the moderns account for theſe motions in a much more natural and eaſy manner.

CRYSTALLINE *arſenic*. See ARSENIC.

CRYSTALLIZATION, in *Chemiſtry*, a kind of congelation befalling eſſential, fixed, and volatile ſalts: when, being ſet free from the greateſt part of their humidity, they are left to harden, dry, and ſhoot into cryſtals.

The term has been extended to denote any regular arrangement of the parts of a body which is capable of it, whether the aggregate maſſes be tranſparent or not. Opake ſtones, pyrites, and minerals, when regularly formed, are ſaid to be cryſtallized, as well as tranſparent ſtones and ſalts. Ice is a true *cryſtallization*, formed of long needle-like maſſes, flattened on one ſide, and joined together in ſuch a manner, that the ſmaller are inſerted into the ſides of the greater; making, as M. Mairan has obſerved, conſtantly the ſame angle, i. e. either 60°, or 120°. Melted metals, and other bodies, which become ſolid after fuſion, aſſume a regular arrangement, whenever they are cooled ſlowly enough for that purpoſe; and thus all kinds of earths, and metallic and mineral matters, whoſe integrant parts ſwim ſeparately in water, are *cryſtallized*, by ſlowly evaporating the watery fluid that ſeparates their parts, and allowing them to approximate and unite by the moſt ſuitable ſides, forming maſſes of a determinate figure. See CRYSTAL, *Rock*.

The ordinary method of *cryſtallization* is performed by diſſolving the ſaline body in water, filtering it, and letting it evaporate ſlowly, till a film appears at the top; and laſtly, letting it ſtand to ſhoot.

Cryſtallization may alſo be effected by the application of cold to the water ſuſpending the ſalt. As moſt ſalts are diſſolved more eaſily, and in greater quantity, by hot than cold water, it is plain, that if the water is ſuffered gradually to cool, the portion of ſalt, which was diſſolved merely by the heat of the water, will be collected and cryſtallized; and the cryſtals will be both larger, and more regular, as the water cools the more ſlowly. Another method of *cryſtallizing* ſalts, is by adding to a ſolution of ſalt, a ſubſtance which has no action on that ſalt, but which has a greater affinity with the water: and this will ſerve to take away from the ſalt a portion of water, which keeps it diſſolved. Spirit of wine will anſwer this purpoſe with regard to many ſalts.

This ſhooting is accounted for, on Sir Iſaac Newton's principles, from that attractive force which is in all bodies, and particularly in ſalt, by reaſon of its ſolidity: whereby, when the menſtruum or fluid, in which ſuch particles float, is ſated enough, or evaporated (which brings it to the ſame), ſo that the ſaline particles are within each other's attractive powers, and can draw one another more than they are drawn by the fluid, they will run into *cryſtals*.

This is peculiar to SALTS; that, let them be ever ſo much divided and reduced into minute particles, yet, when they are formed into *cryſtals*, they each of them re-aſſume their proper figures; ſo that one might as eaſily diveſt and deprive them of their ſaltneſs, as of their figure. See VEGETATION *of ſalts*.

Saline *cryſtals* retain part of the water with which they were united in ſolution; and to this they owe their form, tranſparency, and even the coheſion of their parts. This is called by chemiſts *the water of cryſtallization*; the quantity of it varies in different ſalts, being greater or leſs, as the acid in them is leſs or more firmly combined with its baſis. M. Baumè has diſcovered, that, when the *cryſtallization* is properly conducted, this water is perfectly pure, without the mixture of any ſubſtance foreign to the cryſtallized ſalt.

This being an immutable and perpetual law, by knowing the figure of the *cryſtals*, we may underſtand what the texture of the particles ought to be, which can form thoſe *cryſtals*: and, on the other hand, by knowing the texture of the particles, may be determined the figures of the *cryſtals*.

For ſince the figures of the moſt ſimple parts remain always the ſame; it is evident, that the figures they run into, when compounded and united, muſt be uniform and conſtant; and ſince the force of attraction may be ſtronger on one ſide of a particle, than on another, there will conſtantly be a greater accretion of ſalts upon thoſe ſides which attract more ſtrongly; from which it may eaſily be demonſtrated, that the figure of the leaſt particles is entirely different from that which appears in the CRYSTAL. See Macquer's Chem. Dict.

A great number of pigments or colours are obtainable by *cryſtallization* from metalline bodies; but theſe are ſubject to corrode and eat the canvas, &c. and are not capable of waſhing, by which ſome naturally corroſive colours are rendered mild and harmleſs. The blue and green vitriols, or *cryſtals* of copper, cannot be deprived of their aqueous, or ſaline parts, by a dry air, or by waſhing, without ſuffering extreme alterations, or being left in the form of a dry, groſs, terreſtrial matter, differently coloured from what they were before: and thus the fine green *cryſtals* of iron, being expoſed to the air, become white; and when well waſhed in water, loſe their greenneſs, and turn to a reddiſh, or yellow, ochreous earth; and if deprived of their ſaline and aqueous parts, by a ſtrong diſtillation, they leave behind a brown, or red caput mortuum, which being waſhed in water, affords not a green, but a brown-coloured pigment; and as this holds proportionably of other colours obtained by *cryſtallization*, there are little hopes of procuring durable pigments by this operation, which ſhall be of the ſame colour with themſelves, though, after waſhing, ſome other colours may be thus procured. Shaw's Lectures, p. 187.

CRYSTALLOIDES, the cryſtalline coat of the EYE; a fine membrane, immediately encompaſſing, and containing the cryſtalline humour; and ſuppoſed to ſerve, by conſtringing or dilating that humour, to vary the place of its focus.

Anatomiſts are divided about the reality of ſuch tunic, which is alſo, from its fine texture, called *aranea tunica*, or *arachnoides*.

CRYSTALLOMANCY, the art of divining, or foretelling, future events, by means of a mirror; wherein the things required are repreſented.

It is alſo called catoptromancy. The firſt from κρυϛαλλος, *congealed water*, or *cryſtal*; and the ſecond from κατοπτρον, *mirror*, and μαντεια, *divination*.

CRYSTALLUS *lapis*, a word uſed by ſome of the old authors, not in the expreſs ſenſe in which we now make it ſignify *rock cryſtal*, but as a general term for all pellucid ſtones. Some extend it even to the factitious, as well as the natural gems.

CRYSTINE, a ſilver coin in Sweden, equal to fourteen ſols and eleven deniers French. They have alſo demi-*cryſtines*.

CTENITA, or CTENOIDES, names ſometimes given to thoſe pectens, which have one of their ſhells very convex. See PECTEN.

CUANDA, in *Zoology*. See PORCUPINE.

CUB denotes a bear's whelp; a fox and martin of the firſt year are alſo called by this name.

CUBA, in *Mythology*, a goddeſs among the Romans, thus called from *cubo, I lie down*, who was invoked, in order to make children ſleep.

CUBATURE, or CUBATION, of a ſolid; the meaſuring of the ſpace comprehended in a ſolid; as a cone, pyramid, cylinder, &c. or finding the ſolid content thereof. The *cubature* regards the content of a ſolid, as the quadrature does the ſuperficies of a figure: ſo that the *cubature* of the ſphere turns on the ſame thing as the quadrature of the circle.

CUBBITTING, in *Farriery*, a vice of horſes, conſiſting in their catching hold of the manger, ſucking in the air, and ſwallowing it down in ſuch large quantities that they are ready to burſt. No method has yet been deviſed of curing this vice.

CUBBRIDGE-*heads*, in *Ship-Building*, is ſometimes uſed for the bulk-heads of the fore-caſtle, and the half deck: the firſt being called the *cubbridge-head before*; the other the *cubbridge-head abaft*.

CUBE, in *Geometry*, a regular or ſolid body, conſiſting of ſix ſquare and equal faces, or ſides; and its angles all right, and therefore equal.

The word comes from κυϐος, *teſſera, die*.

The *cube* is alſo called *hexaedron*, becauſe of its ſix ſides.

The *cube* is ſuppoſed to be generated by the motion of a ſquare plane, along a line equal to one of its ſides, and at right angles thereto: whence it follows, that the planes of all ſections, parallel to the baſe, are ſquares equal thereto; and, conſequently, to one another.

To deſcribe a rete, or net, whence any given cube *may be conſtructed, or wherewith it may be covered.* On the right line AB (*Tab. Geometry, fig.* 11.) ſet off the ſide of the *cube* four times; on A erect a perpendicular, AC, equal to the ſide of the *cube* AI, and complete the parallelogram ACDB: with the interval of the ſide of the *cube*, in the line CD, determine the points K, M, and O; laſtly, draw the right lines, IK, LM, NO, and BD; produce IK and LM, each way to E and F, and to G and H; till $EI=IK=KF$, and $GL=LM=MH$, and draw the right lines EG, FH.

To determine the ſurface and ſolidity of a cube. As the ſurface of a *cube* conſiſts of ſix equal ſquares, a ſide multiplied by itſelf, and the product by ſix, will give the ſuperficies; and the ſame product, again, multiplied by the ſide, the ſolidity.

Hence, if the ſide of a *cube* be 10, the ſolidity will be 1000; if that be 12, this will be 1728: wherefore the geometrical perch being ten feet, and the geometrical feet twelve digits, &c. the *cubic* perch is 1000 *cubic* feet, and a *cubic* foot 1728 *cubic* digits, &c.

Hence, alſo, *cubes* are in the triplicate ratio of their ſides; and are equal, if their ſides be ſo.

Cube, *duplication of a.* See Duplication.

Cube, *ſcenography of a.* See Scenography.

Cube, or Cubic *number*, in *Arithmetic*, is a number ariſing from the multiplication of a ſquare number by its root.

Thus, if the ſquare number four be multiplied by its root two, the factum eight is a *cube*, or *cubic number*; and the number two, with reſpect thereto, a *cube root.*

Hence, ſince, as unity is to the root, ſo is the root to the ſquare; and as unity is to the root, ſo is the ſquare to the *cube:* the root will, alſo, be to the ſquare, as the ſquare to the *cube:* that is, unity, the root, the ſquare, and the *cube*, are in continual proportion; and the *cube root* is the firſt of two numbers that are mean proportionals between unity and the *cube*.

Cubic *numbers, for the compoſition of.* Every *cubic* number of a binomial root is compoſed of the *cubic* numbers of the two parts of the factum, of thrice the ſquare of the firſt part into the ſecond, and of the factum of thrice the ſquare of the ſecond part into the firſt.

Demonſt. For a *cubic* number is produced by multiplying the ſquare by the root; but the ſquare of a binomial root is compoſed of the ſquares of the parts, and double the factum of one part into the other.

Wherefore, the *cubic* number is compoſed of the *cube* of the firſt part, of the triple factum of the ſquare of the firſt part into the ſecond, and of the triple factum of the ſquare of the ſecond part into the firſt.

An occular demonſtration of this we have in the following example, where multiplication alone is uſed. Suppoſe, v. gr. the root 24, or 20+4.

$$\begin{array}{lr}
\text{Here} & 24^2=20^2+2\times4\times20+4^2 \\
 & 20+4 \\
\hline
 & 4\times20^2+2\times4^2\times20+4^3 \\
 & 20^3+2\times4\times20^2+4^2\times20 \\
\hline
 & 24^3=20^3+3\times4\times20^2+3\times4^2\times20+4^3
\end{array}$$

$$\begin{array}{lr}
\text{Then} & 20^3=8000 \\
 & 3\times4\times20^2=4800 \\
 & 3\times4^2\times20=960 \\
 & 4^3=64 \\
\hline
 & 24^3=13824
\end{array}$$

Hence, as the part on the right-hand is placed among units, and that on the left among tens; the *cubic* number of the right-hand part muſt be put in the right-hand place; the factum of its triple ſquare into the left, in the ſecond place; and the factum of the triple ſquare of the left into the right, in the third: laſtly, the *cube* of the left-hand part falls in the fourth place.

If the root be a multinomial, two or more characters on the right muſt be eſteemed as one, that it may have the form of a binomial. It is obvious, that any *cube* is compoſed of the *cubes* of the ſeveral parts of the root, and of the factums of the triple ſquare of any of the left-hand characters into the next on the right; and alſo of the factums of the triple ſquare of the right-hand characters into all the left. Suppoſe, v. gr. the root 243; take 240 for one part of the root, three will be the other part; conſequently,

$$\begin{array}{r}
240^3=13824000 \\
3\times240^2\times3=518400 \\
3\times240\times3^2=6480 \\
3^3=27 \\
\hline
243^3=14348907
\end{array}$$

The places of the ſeveral factums are determined from what was obſerved above: for regard muſt here, too, be had to the ciphers to be added to the numbers multiplied by each other, if they be placed alone.

This compoſition of *cubic numbers* once well conceived, the extraction of *cubic* roots will be eaſy.

Cube *root*, or Cubic *root*, the origin of a *cubic number*; or a number by whoſe multiplication into itſelf, and again into the product, any given number is formed.

The *extraction of the cube root* is the ſame thing as the finding any number, v. gr. 2; by whoſe multiplication into itſelf twice continually, a given number, v. gr. 8, is produced: the proceſs whereof, ſee under the article Extraction.

CUBEBS, in *Pharmacy*, a fruit brought from the iſland of Java, in grains, or ſeeds, reſembling pepper, both in form and ſize; whence ſome call it *wild pepper.*

This is a ſmall round fruit or berry, rather leſs than pepper, with a dark brown wrinkled outſide, and whitiſh within, having a little ſhort ſtalk at one end; whence it has been called *piper caudatum*, or pepper with a tail. It is not near ſo hot and biting as pepper, but is of an aromatic ſmell and taſte.

Botanical writers differ as to their opinion of the growth of *cubebs*; ſome, as Mr. Ray, Dr. Plukenet, and others, believe that they grow on trees as big as apple-trees, in bunches like grapes; of which Dr. Plukenet gives a figure. Others, as Herman and Pomet, will have them to grow on a ſcandent plant like pepper.

Cubebs are heating and drying, ſtrengthen the ſtomach, expel wind, comfort the brain and nerves, and are particularly uſeful againſt the vertigo or giddineſs, with other diſorders of the head. Miller's Bot. Off.

They are recommended in a hoarſeneſs and loſs of voice, eſpecially when the tonſils are ſtuffed and obſtructed. The doſe is from ten to twenty-four grains in ſubſtance, to be chewed, or from a dram to a dram and a half in infuſion.

They are farther recommended in diſorders of the ſpleen, and in cold diſtemperatures of the uterus.

It is ſaid, the natives of the place boil it before they allow it to be exported, to prevent its being ſown in other countries.

CUBIC *equation.* See Equation.

For the conſtruction of cubic *equations, ſee* Construction.—*For their reſolution*, ſee Resolution.—*For their roots*, ſee Root, and Extraction.

Cubic *foot.* See Foot.

Cubic *hyperbola*, in *Conics*, one expreſſed by the equation $xy^2=a$, having two aſymptotes, and conſiſting of two hyperbolas, lying in the adjoining angles of the aſymptotes, and not in the oppoſite angles, like the *Apollonian hyperbola.* It is alſo called an *hyperboliſmus* of a *parabola.*

CUBICAL *parabolois*, a term uſed by ſome writers for a parabola of the higher kind; v. gr. where $a^2x=y^3$, &c. See Curve and Parabola.

CUBICLE. See Chamber.

CUBIDIA, in *Natural Hiſtory*, the name of a genus of ſpars. The word is derived from κυϐος, a *die*, and is given them from their being of the ſhape of a common die, or of a cubic figure. Theſe bodies owe this ſhape to an admixture of particles of lead, and there are only two known ſpecies of the genus. 1. A colourleſs cryſtalline one, with thin flakes, found in the lead mines of Yorkſhire, and ſome other parts of the kingdom. And, 2. A milky white one, with thicker cruſts. This is found in the lead-mines of Derbyſhire and Yorkſhire, but is uſually ſmall, and is not found plentifully.

CUBING *of a ſolid.* See Cubature, and Solid.

CUBIT, a long meaſure, uſed by the ancients, eſpecially the Hebrews; taken from the ordinary extent of a man's arm, between the elbow and the tip of the hand.

In the Scripture, we find *cubits* of two lengths; the one equal, according to Dr. Arbuthnot, to 1 foot 9 inches $\frac{888}{1000}$ of an inch, our meaſure; being the fourth part of the fathom, double the ſpan, and ſix times the palm: the other equal to 1 $\frac{824}{1000}$ foot, or the four hundredth part of a ſtadium. The Romans, too, had a *cubit*, equal to 1 Engliſh foot, 5 inches, $\frac{406}{1000}$ of an inch. F. Merſenne makes the Hebrew *cubit* 1 foot 4 digits and 5 lines, with regard to the foot of the Capitol. According to Hero, the geometrical *cubit* is 24 digits; and, according to Vitruvius, the foot is $\frac{2}{3}$ of the Roman *cubit*, i. e. 16 digits, or finger's-*breadths.*

CUBITÆUS *externus*, or *ulnarus*, in *Anatomy*, the firſt of the extenſor muſcles of the fingers; thus called, as being placed along the *cubitus*, externally.—It riſes from the external protuberance of the humerus, and, paſſing its tendon under the *ligamentum annulare*, is inſerted into the fourth bone of the metacarpus, that ſuſtains the little finger.

Cubitæus *internus*, the firſt of the flexors, placed along the *cubitus*, withinſide the arm. It riſes from the internal protuberance of the *humerus*, and part of the *ulna*; upon which it runs along till it paſſes under the *ligamentum annulare*, and is inſerted by a ſtrong and ſhort tendon into the fourth bone of the firſt order of the *carpus.*

CUBITI *biceps.* See Biceps.

Cubiti *brevis.* See Brevis.

Cubiti *longus.* See Longus.

CUBITUS, in *Anatomy*, a bone of the arm, reaching from the elbow to the wriſt; otherwiſe called *ulna*, or the *greater focile.* Some uſe the word for all that part of the arm between the elbow and the wriſt; including the *ulna*, or *cubitus*, properly ſo called, and the *radius.*

Cubitus, *fractured.* The lower part of the arm, which is called the *cubitus*, contains two bones, the *radius* and *ulna:* fractures of this part, therefore, ſometimes happen only to one, ſometimes to both theſe bones, and that ſometimes near their extremities, but oftener towards their middle: but, when they are both broke together, the bones are not only very eaſily diſtorted from each other, but they are not to be replaced without very great difficulty alſo: if one only ſhould, on the contrary, be broken, while the other remains whole, the fractured parts do not much recede out of their places, nor are they very difficult to reduce and retain; for the bone remaining ſound, is found, in this caſe, to be a better direction and ſupport than either ſplints, or bandages. When the fracture happens toward the lower head, near the pronator quadratus muſcle, the fractured part is ſtrongly drawn by that muſcle, and the intervening ligament that is extended between the radius and ulna, toward the ſound bone; and this makes it more difficult to replace. If the radius is to be replaced, whoſe fragment is contracted towards the ulna, an aſſiſtant muſt hold the arm, while the ſurgeon inclines the patient's hand towards the ulna, to draw back the contracted part of the radius. When this is done he muſt carefully reduce them by compreſſion on both ſides with his hands, ſo as to reſtore the compreſſed muſcle between the radius and ulna, and the fragments of the radius, to their proper places. The arm is then to be bound up with the proper bandage, and the limb muſt afterwards be placed in a ſort of caſe made of paſteboard, or light wood, to be ſuſpended in a ſling put about the neck.

In ſetting a fracture of the ulna, the whole method muſt be the ſame with this of the radius, except that in the extenſion, the hand muſt be bent toward the thumb, and radius, before the diſtorted part of the ulna can be compreſſed into its proper place. When both bones of the *cubitus* are broken, the method of cure is much the ſame with that uſed to each of them, when broken ſingly: but there is required more ſtrength and circumſpection, both in replacing them, and a great deal of caution in applying the bandage to retain them. Care muſt alſo be taken, that, while the arm continues in this caſe a great while, without motion, the mucilage of the joint does not harden, or the ligament become ſtiff, and the arm, or *cubitus*, be thereby rendered immoveable. To guard againſt this, it will be proper to unbind the arm once in two or three days, and to move it a little, carefully and gently, backwards and forwards; and ſometimes to foment it with warm water or oil; by which means its motion will be preſerved.

CUBITUS, *luxated*. The *cubitus* conſiſting of two bones, the ulna and radius is articulated by a ginglymus; and the connection of theſe bones is ſuch, that the ulna, or *cubitus*, as being the largeſt bone, and ſeated in the lower part of the arm, does of itſelf perform the whole flexion, and extenſion of the arm, yet it cannot perform thoſe motions without carrying the radius along with it; but, on the other hand, the radius may be turned along with the hand both inward and outward, without at all moving or bending the ulna, as when the pronation and ſupination of the hand are made thereby. Both theſe bones of the *cubitus* are ſo articulated with the lower head of the *os humeri*, that large protuberances are received into deep cavities, or grooves, and the whole inveſted and faſtened with exceeding ſtrong ligaments; ſo that, notwithſtanding the *cubitus* may be luxated in all four directions, outward or inward, backward or forward, yet it is but ſeldom that it ſuffers a perfect or entire diſlocation, unleſs the upper part of the ulna be broken, or the ligaments of the *cubitus* much weakened by ſome great external violence. The ſlighter, and more recent luxations of this kind are, the more eaſy is the reduction of them. Be the caſe better or worſe, however, the patient muſt be placed in a chair, and both parts of the limb, the humerus and the *cubitus*, muſt be extended in oppoſite or contrary directions, by two ſtrong aſſiſtants, till the muſcles are found pretty tight, with a free ſpace between the bones: then the luxated bone muſt be replaced, either with the ſurgeon's hands alone, or with the aſſiſtance of bandages, that the proceſſes may fall into their ſinuſes; and when that is done, the *cubitus* muſt be ſuddenly bent. But if the tendons and ligaments are ſo violently ſtrained that they can ſcarce perform their office, it will be proper to anoint them with emollient oils, ointments, and the fat of animals; or to apply emollient cataplaſms and fomentations. As ſoon as the reduction has been effected, the articulation muſt be bound up with a proper bandage, and the arm afterwards ſuſpended in a ſling hung about the neck. But care muſt be taken that the bandage is not kept on too long, nor the arm kept entirely without motion all the time, leſt the mucilage of the joint ſhould become inſpiſſated, and the articulation rendered, by that means, ſtiff, or the motion of the part be entirely loſt. To prevent this, it will be proper to undreſs the bandage every other day, and gently to bend, and extend the limb: afterwards compreſſes dipt in warm wine may be applied, and held on with the bandage. Heiſter's Surg. p. 164.

CUBO-CUBO-CUBUS. See CUBUS-CUBI.

CUBO-CUBUS, the term whereby Diophantus, Vieta, &c. diſtinguiſh the ſixth POWER; which the Arabs call *quadratum cubi*.

CUBOIDES, or *Os* CUBIFORME, in *Anatomy*, the ſeventh bone of the foot; ſo called, from its being in form of a *cube*, or die. See *Tab. Anat.* (*Oſteol.*) *fig.* 7. *lit. b b.* See alſo FOOT.

Some alſo call it *multiforme*: it is ſituated before the *os calcis*, on the ſide of the *os ſcaphoides*: it is a maſs with ſix ſides, all very unequal, and very irregular. The upper ſide is flat and rough, for the inſertion of the ligaments which connect it with the neighbouring bones: the lower ſide has an oblique eminence, and, immediately below that, a canal, or groove, which is alſo oblique: the eminence divides this ſide into two, and is a little cartilaginous on that ſide next the groove; the groove appears to be cartilaginous from a ligament which lines it, and both that, and the edge of the eminence, ſerve for the inſertion of an annular ligament, and for the paſſage of the tendon of the *peronæus longus*. The poſterior ſide is cartilaginous, broad, oblique, partly convex, and partly concave, anſwering to the anterior ſide of the *os calcis*. The anterior ſide is pretty broad, and is divided into two portions by a narrow prominent line, by which portions this bone is articulated with the third and fourth bones of the metatarſus. The inner ſide is the longeſt of all: it has a ſmall cartilaginous ſurface, by which it is articulated with one of the two *oſſa cuneiformia*; the reſt is rough, with ſeveral depreſſions, in which veſſels and glands are lodged. Behind the cartilaginous portion there is, in ſome ſubjects, another narrow ſurface, which is articulated with the neighbouring portion of the circumference of the *os ſcaphoides*. This articulation, when wanting, is ſupplied by ligaments. The outſide is the leaſt of all; it is irregular, ſhort, and narrow; and it has a notch which communicates with the groove, on the lower ſide. Winſlow's Anatomy, p. 99.

CUBROS *Gezira*. See GEZIRA *Cubros*.

CUBUS-CUBI, a name whereby the Arab writers, and thoſe who follow them, denominate the ninth POWER, or a number multiplied eight times by itſelf continually; which Diophantus, and after him Vieta, Oughtred, &c. call *cubo-cubo-cubus*.

CUCKING-STOOL, COKESTOOL, or CASTIGATORY, anciently called *tumbrel*, and *trebucket*; an engine for the puniſhment of ſcolds and unquiet women, by ducking them in the water.

Kitchen ſays, "Every one having a view of frank-pledge, "ought to have a pillory and a tumbrel." This machine was much in uſe, even among our Saxon anceſtors, who called it *ſcealding-ſtole*, or *ſcolding-ſtool*.

The puniſhment was anciently alſo inflicted on brewers, and bakers, tranſgreſſing the law; who were thereupon, in ſuch a ſtool or chair, to be ducked *in ſtercore*, ſome muddy or ſtinking-pond. This was anciently written *gaging-ſtool*; in Domeſday it is called *cathedra ſtercoris*.

CUCKOW, CUCKOO, *Cuculus*, in the Linnæan ſyſtem of *Zoology*, makes a diſtinct genus of birds of the order of the *picæ*. The characters of this genus are, that the feet are climbing, having two toes before, and two behind; the bill is ſmooth, and a little arched; the tail whole, and compoſed but of ten feathers; the tongue ſhort and membranaceous, and terminated by hairs, and the noſtrils prominent.

The *cuckow* is a bird well known in England by the ſingularity of its note; its beak is long and ſtrait, only it is a little hooked at the end, of a blackiſh brown above, and of a yellowiſh white below; its mouth is yellow within, and the iris of its eyes of a hazel colour; its noſtrils round, open, and ſtanding out beyond the ſurface of the bill, by which mark alone it is to be diſtinguiſhed from all other birds; its throat, breaſt, and belly, are white, variegated with tranſverſe ſtreaks of brown; the feathers of its head are brown, with white edges, and its rump is grey; its back, neck, and wings, are of a browniſh hue; its long wing-feathers have white tips, and are variegated with black, brown, and white; and the tail-feathers are beautifully variegated with white. Its feet and legs are yellow; its food is caterpillars, and other inſects. Ray's Ornithol. p. 63.

It never builds itſelf a neſt, but ſeizes upon that of any other ſmall bird, and, deſtroying its eggs, leaves its own in its place. The water wag-tail, yellow-hammer, or a hedge-ſparrow, &c. is generally the nurſe of the young *cuckow*.

The ſtomach of this bird reaches almoſt to the vent; and on account of this formation, which diſables it from incubation, and not from want of affection, it probably leaves its young to be hatched by other birds.

Whether it hides in hollow trees, &c. during the winter, with us, or whether it leaves us for a warmer climate, is not certainly known. It is pretended that many have been found in hollow trees, but the truth of it has never been well atteſted. It is probably a bird of paſſage, appears early in the ſpring, and makes a ſhort ſtay with us. The continuance of the *cuckow's* ſong is ſaid to coincide with the ſeaſon of the mackarel's being in full roe, viz. from the middle of April to the end of June.

The note of this bird is a call to love, and peculiar to the male: from this its name is derived. The *cuckow* was admired for its delicacy as a food by the Romans, and is now eat in France and Italy.

The whole bird and its dung are uſed in medicine. The bird burnt whole is recommended for the gravel, pains and exceſſive humidity of the ſtomach. Rondel.

It is given with good ſucceſs alſo in the paroxyſms of fevers. The dung of the *cuckow* drank is ſaid to cure the bite of a mad dog.

CUCKOW-*flower*, or *Lady's-ſmock*. See CARDAMINE.

CUCKOW-*pint*, *Arum*. See WAKE-*Robin*.

CUCKOW-*ſpit*, a frothy ſubſtance found on ſeveral plants. See CICADULA.

CUCKSOO, the name of a common diſh among the Moors of Africa, made of flour, and prepared for ſeveral ways of dreſſing afterwards. They take fine wheat-flour, or, when, that is ſcarce, barley, millet, or Indian corn flour is made to ſerve: they firſt ſprinkle ſome water over the bottom of an unglazed earthen pan, and then ſhake ſome of this flour into it; they knead this together with their hands, and roll it backwards and forwards under their open palms; by this means they work it into grains like ſago, and then it is fit for uſe: when they have meat to ſtew, they do this in an earthen pot, and over the mouth of this they place a colander, in which is put a quantity of this granulated paſte; over this colander is fixed on a top or cover for the pot, and by this means as the meat ſtews, all the vapour that aſcends from it is received into the grains of *cuckſoo*; by that time the meat is done enough, the *cuckſoo* is ſo too; and opening the pot, they firſt take out this, which is ſoft, ſwelled, and tender, and piling it up in a diſh, they make a hollow in the top of the heap, in which they lay the meat, and then add their ſpices, which are better than thoſe of many neighbouring nations; the pooreſt uſing pepper, ginger, and ſaffron, the richer a great variety.

CUCUBALUS, in *Botany*. See *Berry-bearing* CHICKWEED.

CUCULARIA, in *Botany*. See FUMITORY.

CUCULLA, a cowl. See ABBOT, and COWL.

CUCULLARIS, in *Anatomy*, a muſcle of the ſcapula, ſo called from the reſemblance it is ſuppoſed to bear to a monk's cowl; and *trapezius*, from its reſemblance to a geometrical figure called a *trapezium*. See *Tab. Anat.* (*Myol.*) *fig.* 6. *n.* 9. *fig.* 2. *n.* 4. *fig.* 1. *n.* 18.

The fibres of this muſcle have various originations and actions; whence Dr. Drake thinks, it may be more properly called three, than one muſcle. The upper order of fibres, or muſcles, ſprings from the *os occipitis*; the ſecond from the ſpine of the vertebræ of the neck, and the third from the ſpines of the eight upper vertebræ of the thorax, or back; and are inſerted into the ſpine, acromium, and baſis of the ſcapula, and part of the clavicula.

From the different diſpoſitions of theſe fibres, the ſcapula is drawn different ways; the firſt pulling obliquely upwards, the laſt obliquely downwards, and the middle backwards: when they act all three together, they are ſaid to draw backwards only; i. e. the two extremes antagonizing, the middle one alone is at liberty to act.

CUCULLATE *flowers*, among *Botaniſts*, are ſuch as reſemble a *cucullus*, or monk's hood, or cowl. See FLOWER.

CUCULLUS was anciently a traveller's cap; called alſo *cowl*, *goul*, or *gula*: whence the name paſſed to the monks, among whom it ſignified their frock and cap, which were of one piece.

CUCULLUS, in *Conchyliology*, the name of a genus of ſhells, called by other authors cornet ſhells, or *volutæ*. See VOLUTA.

CUCULLUS *indicator*, a ſpecies of *cuckow* found in the interior parts of Africa, at a conſiderable diſtance from the Cape of Good Hope, and called by the Dutch ſettlers *honig-wyzer*, or *honey-guide*. It is of a ſmaller ſize than the common *cuckow*. It is famous for conducting thoſe who obſerve its motions, to the wild bee-hives, by a ſhrill note, ſounding *cherr*, *cherr*. This note is anſwered with a ſoft whiſtle, and repeated by the bird till the hive is found. Phil. Tranſ. vol. lxvii. part i. p. 43.

CUCUMBER, *Cucumis*, in *Botany*, a genus of the *monoecia ſyngeneſia* claſs. Its characters are theſe: it hath male and female flowers on the ſame plant, which are are bell-ſhaped, of one petal, which adheres to the empalement, and is cut into five oval rough ſegments. The male flowers have three ſhort ſtamina, which are inſerted in the empalement: the female flowers have no ſtamina, but have three ſmall pointed filaments, without ſummits. The germen is ſituated under the flower, which afterward becomes an oblong fleſhy fruit with three cells, including many oval, flat, pointed ſeeds.

There are three ſpecies of this plant cultivated in gardens, the common kind, the white one, and the long green one. The firſt is what we bring to market in England; the ſecond is the common Dutch kind, and is greatly preferable to ours, as being much firmer, and having fewer ſeeds; and the third is better even than that, but it is raiſed with difficulty.

The common one, which is what our gardeners almoſt ſolely cultivate, is raiſed at three different ſeaſons of the year; the firſt is on hot-beds, under garden frames, for early fruit; the ſecond is under bell, or hand-glaſſes, which is for the middle crop; and the third is on the common ground, which is for a late crop, or to pickle.

The *cucumbers* which are ripe before April are unwholeſome, being raiſed wholly by the ferment of dung, not by the ſun's heat. Thoſe ripe in April are good fruit, and are raiſed in the following manner: toward Chriſtmas, or the beginning of January, a quantity of freſh horſe-dung muſt be procured, with the litter among it, and a ſmall proportion of ſea-coal aſhes ſhould be added to it. In four or five days the dung will begin to heat, at which time a little of it may be drawn flat on the outſide, and covered with two inches thickneſs of good earth: this muſt be covered with a bell-glaſs, and after two days, when the earth is warm, the ſeeds muſt be ſown on it, covered with a quarter of an inch of freſh earth, and the glaſs then ſet on again. The glaſs muſt be covered with a mat at nights, and, in four days, the young plants will appear; when theſe are ſeen, the reſt of the dung muſt be made up into a bed for one or more lights. This muſt be three feet thick, and beat cloſe together, and covered three inches deep with fine freſh earth; the frame muſt then be put on, and covered at night, or in bad weather with mats.

When the earth is hot enough, the plants from under the bell muſt be tranſplanted into it, and ſet at two inches diſtance. The glaſſes muſt be now and then a little raiſed to give air to the plants, and turned often, to prevent the wet from the ſteam of the dung from dropping down upon them. The plants muſt be watered at times, with water ſet on dung till as warm as the air in the frame: and as the young plants grow up, the ſtalks of them ſhould be earthed up, which will give them great additional ſtrength. If the bed is not hot enough, ſome freſh litter ſhould be laid round its ſides; and if too hot, ſome holes ſhould be bored into ſeveral parts of it with a ſtake, which will let out the heat; and when the bed is thus brought to a proper coolneſs, the holes are to be ſtopped up again with freſh dung. When theſe plants begin to ſhoot their third, or rough leaf, another bed muſt be prepared for them like the firſt, and when it is properly warm through the earth, the plants of the other bed muſt be taken up, and planted in this, in which there muſt be a hole in the middle of each light, of about a foot deep, and nine inches over, filled with light and fine freſh earth, laid hollow, in form of a baſon: in each of theſe holes there muſt be ſet four plants; theſe muſt be, for two or three days, ſhaded from the ſun, that they may take firm root, after which they muſt have all the ſun they can, and now and then a little freſh air, as the weather will permit. When the plants are four or five inches high, their ſtalks ſhould be gently pegged down toward the earth, in as different directions as may be from one another, and the branches afterwards produced, ſhould be treated in the ſame manner. In a month after this, the flowers will appear, and, ſoon after, the rudiments of the fruit. The glaſſes muſt now be carefully covered at nights, and in the day time they ſhould have gentle waterings, ſprinkling over the whole plants. Theſe will produce fruit till about Midſummer, at which time thoſe of the ſecond crop will come in to ſupply their place: theſe are to be raiſed in the ſame manner as the early crop, only they do not require ſo much care and trouble. This ſecond crop ſhould be ſowed in the middle, or towards the end of March. Miller.

The ſeaſon for ſowing the *cucumbers* for the laſt crop, and for pickling, is toward the latter end of May, when the weather is ſettled: theſe are ſown in holes dug to a little depth, and filled up with fine earth, in form of a baſon, eight or nine ſeeds in each hole. Theſe will come up in five or ſix days, and, till they are about a week old, are in great danger from the ſparrows; after this they require only watering now and then, and keeping clear from weeds. There ſhould be only five plants left at firſt in each hole, and when they are grown a little farther up, the worſt of theſe is to be pulled up, that there may finally remain only ſour. The plants of this crop will begin to produce fruit in July.

The Hiſtoria Plantarum, publiſhed under the name of Boerhaave, informs us, that if the branches of *cucumbers* are much trodden upon, the fruit will be bitter and emetic; and that a water diſtilled from *cucumbers* when full ripe, and beginning to putrify, purges ſmartly, in the quantity of a dram.

The *cucumber* is one of the four great coolers of the ſhops. It is almoſt an univerſal ingredient in emulſions, and is ſound of ſervice in fevers, and nephritic complaints.

Cucumber, *ſingle-ſeeded*, *Sicyos*, in *Botany*, a genus of the *monoecia ſyngeneſia* claſs. Its characters are theſe: it hath male and female flowers on the ſame plant; the male flowers have a bell-ſhaped empalement of one leaf, with five indentures. The petal is bell-ſhaped, growing on the empalement; and they have each three ſtamina, which are united above, terminated by ſummits, joined in a head. The female flowers are like the male, and ſit upon the germen; they have no ſtamina, but the germen ſupports a cylindrical ſtyle, crowned by a thick three-pointed ſtigma. The germen becomes an oval fruit, ſet with briſtly hairs, having one cell, containing a ſingle ſeed of the ſame ſhape. There are three ſpecies, natives of North America, and the Weſt Indies.

Cucumber, *wild*, *Egyptian*, or *ſquirting*, in *Botany*. See *Male* Balsam *Apple*, and Elaterium.

Cucumber, *ſmall creeping*. See Melotheria.

Cucumber, *ſerpent*. See Trichosanthes.

CUCUMIS *capparis*, in the *Botanical Writings* of the Arabians, a name given by Avicenna, and others, to the plant which produced the fruit called bel. This fruit was like the capers in ſhape, and had a hard ſhell over its kernel, like that of a hazel-nut. Such is the deſcription they give of it, and of the fel and sel, two other fruits as like it in ſhape, and other reſpects, as in virtue.

CUCUPHA, an ancient form of medicine: being a cap, or cover ſor the head, with cephalic powders quilted in it; worn in many nervous diſtempers, and particularly ſuch as more immediately affect the head: as againſt catarrhs, defluxions, &c. It is now much out of uſe.

CUCURBIT, Cucurbita, in *Chemiſtry*, an earthen, or glaſs veſſel, called alſo *body*; of the figure of a gourd, or a pear; wherein are put the matters to be diſtilled.

It is ſometimes alſo made of tin, and ſometimes of braſs, tinned. When a diſtillation is to be made, they fit on to it a glaſs head with an aperture, and a neck proportional. Thus fitted, it is called an alembic.

CUCURBITACEOUS *plants*, a claſs of plants, ſo called from their reſemblance to the gourd, called by the Latins *cucurbita*, which is the head of this family.

Plants of the *cucurbitaceous* kind ſend out their branches every way; which are ſoft, and generally beſet with tendrils, by means whereof they cling to the bodies that are near them.

Their flowers are either ſterile, or fertile: the laſt knit, and yield fleſhy fruits of various figures; containing within them ſeveral flat ſeeds placed in three or four lodges, or even a greater number.

Theſe ſeeds have uſually a white ſweetiſh kernel; the greateſt part of them being of thoſe called *frigidæ majores*, or the greater cold ſeeds.

The pumpion, melon, &c. are of the *cucurbitaceous kind*.

CUCURBITINI *lumbrici*, are broad worms that breed in the inteſtines, like the ſeed of a gourd.

CUCURBITULA, in *Chirurgery*, a cupping-glass, or inſtrument, uſed in the operation of cupping.

CUCURI, in *Zoology*, the Braſilian name of a fiſh of the ſhark kind, but not miſchievous, called *caſſaon* by the Portugueſe.

It is about two feet and a half long. The head ends in an hyperbolic figure, and the mouth is placed far below its end; it has only one row of teeth, and thoſe very ſmall; its eyes are of the ſize of a large pea; its belly is of a ſilver white. Willughby.

CUCURUCU, in *Zoology*, the name of a ſerpent found in America, growing to ten or twelve feet long. It is very thick alſo in proportion to its length, and is of a yellowiſh colour, ſtrongly variegated with black ſpots, which are irregularly mixed among the yellow, and often have ſpots of yellow within them, and are plainly black. It is a very poiſonous ſpecies, and greatly dreaded by the natives; but its fleſh is a very rich food, and greatly eſteemed among them, when properly prepared. Ray.

CUD, ſometimes means the inſide of the throat in beaſts, and ſometimes the food that they keep there, and chew over again: from whence, to chew the *cud*, ſignifies to ponder, think, or ruminate upon a thing.

Cud *loſt*; cattle ſometimes loſe the *cud* by chance, ſometimes by ſickneſs, poverty, mourning, &c. to cure which, take four leaven of rye bread, and ſalt, and mixing it with human urine and barm, beat it in a mortar: then making a large ball or two thereof, put them down the beaſt's throat.

CUDDY, in a *Firſt-rate Man of War*, is a place lying between the captain lieutenant's cabin, and the quarter-deck; and divided into partitions, for the maſter, and other officers. See *Tab. Ship. fig.* 2. *lit. r.*

It denotes alſo a kind of cabbin near the ſtern of a lighter, or barge of burden.

CUDWEED, *Gnaphalium*, in *Botany*, the name of a genus of plants of the *ſyngeneſia polygamia ſuperflua* claſs. The characters of which are theſe: the flower is of the floſculous kind, and is compoſed of ſeveral floſcules, which are divided into many ſegments, and formed like a ſtar at the ends; theſe are placed upon the embryo fruit, and are contained in a general cup, which is of a ſcaly or ſquamoſe ſtructure, but is not at all bright or ſhining.

The ſpecies of *cudweed* enumerated by Mr. Tournefort, are eight. The common *cudweed* is deſiccative and aſtringent, and is of great efficacy in hæmorrhages of all kinds. In dyſenteries, and in floodings of the menſes, it has been known to do great cures. Some have recommended the diſtilled water of it in cancers, but this ſeems to have no very great foundation. A decoction of it in ſmall beer is a common medicine among country people for quinſies, and is ſaid ſometimes to have done remarkable cures in them.

Cudweed, *Baſtard*, *Micropus*, or *Gnaphaloides*, in *Botany*, a genus of the *ſyngeneſia polygamia neceſſaria* claſs. The characters are: it hath hermaphrodite and female flowers, included in the ſame double empalement; ten hermaphrodite flowers compoſe the diſk, which have one petal, are funnel-ſhaped, cut into five parts at the top, and have five ſhort briſtly ſtamina, terminated by cylindrical ſummits. In the ſame empalement are five female flowers in the circumference, which have each an oval germen, compreſſed, hid under the ſcales of the interior empalement, each having a ſtyle by their ſide, which is briſtly, turning towards the hermaphrodite flowers, crowned by ſlender acute-pointed ſtigmas, divided into two parts. The female flowers are ſucceeded by a ſingle oval ſeed; the hermaphrodite flowers are barren. Miller.

CUE, an *item*, or *innuendo*, given to the actors on the ſtage, what, or when, to ſpeak. See Prompter.

CUERPO. To *walk in cuerpo*, is a Spaniſh phraſe for going without a cloke; or without all the formalities of a full dreſs.

CUGNACUARANA, in *Zoology*, the name of an American beaſt of prey, uſually confounded with the tyger, and deſcribed by Marggrave as one of the three ſpecies of American tygers, the *jaguara* and *jaguarete* being the two others. Thoſe two animals are plainly rather of the leopard, or lynx, than of the tyger kind; and perhaps, this is as little of the tyger as they. It is a large and very fierce beaſt, of the ſhape of the jaguara, but of one ſimple colour, which is a very pale tawney, like the colour of ſome goats, but not ſo ſtrong. It is a little duſkier on the back than on the ſides, and there is a little white under the chin, and on the belly. Its hair is very ſhort. Ray.

CUGUACUETE, and Cuguacuapara, in *Zoology*, the Braſilian names of an animal of the caprea kind, ſeeming to be the male and female of the ſame ſpecies, and not diſtinct animals. The former has no horns, the latter has, and is probably the male; the horns are compoſed of three branches; they ſend out one near the inſertion, and from this they run up ſingle to the extremity, where they are bifid.

We have not ſeen the animal in England; but its horns, which are very ſingular in their ſhape, are preſerved in the muſeum of the Royal Society. This is the animal which Johnſon has figured under the name of the *capreolus marinus*. *Tab.* 33.

CUGUPUGUACU, in *Zoology*, a name by which many call the meros, a Braſilian fiſh of conſiderable ſize, and a very good taſte.

CUI *ante divortium*, in *Law*, a writ, which a woman divorced from her huſband hath, to recover lands or tenements from him to whom her huſband alienated them during marriage; becauſe during the marriage ſhe could not gainſay it.

Cui *in vita* is a writ of entry, which a widow hath againſt him to whom her huſband alienated her lands or tenements in his life-time; ſpecifying, that, during his life, ſhe could not withſtand it.

CUJETE, in *Botany*. See Calabash *Tree*.

CUIRASSE, a piece of defenſive armour, made of an iron plate well hammered; ſerving to cover the body, from the neck to the girdle, both before and behind.

Some derive the word, by corruption, from the Italian *cuore, heart*; becauſe it covers that part: others from the French *cuir*, or the Latin *corium, leather*; whence *coriaceous*: becauſe defenſive arms were originally made of leather.

The *cuiraſſe* was not brought into uſe till about the year 1300, though they were known both to the ancient Greeks and Romans in different forms.

Hence, *cuiraſſiers*, the cavalry armed with *cuiraſſes*.

The French have ſtill a regiment of *cuiraſſiers*; and a good part of the German cavalry are *cuiraſſed*: but the *cuiraſſe* is principally confined to general officers, and officers of the cavalry. Others bear only a plate of iron, which covers them before.

In the Roman calendar, we find the name of St. Dominic *the Cuiraſſed*; a title given a ſaint of the eleventh century, from his conſtant wearing of an iron *cuiraſſe*, by way of penance.

CUIRIRI, in *Zoology*, the name of a Braſilian bird of the ſtarling kind, very like the common ſtarling, and no way differing from the *pitanguaguacu*, but that it has a yellow ſpot upon its head.

Probably this is the male of the ſame ſpecies.

CUITPALLI, in *Natural Hiſtory*, the American name of a very beautifully variegated ſtone, found in New Spain, and ſome other places: its name expreſſes the painted ſtone. It is a ſpecies of jaſper of a beautiful green, variegated with very beautiful lines, and clouds of black, and is in ſome parts tranſparent.

CUL *de lamp*, a French term, properly ſignifying the bottom of a lamp. It is applied in architecture to ſeveral decorations, both of maſonry and joinery, uſed, in vaults and cielings, to finiſh the bottom of works, and wreathed ſomewhat in manner of a *teſtudo*; particularly a kind of pendentive in Gothic vaults.

Cul *de four*, a ſort of low, ſpherical VAULT, oven-like.

Cul de four of a niche, denotes the arched roof of a niche on a circular plan. See Mem. Acad. Scienc. an. 1719, p. 363.

CULCASIA, in *Botany*, a name given by ſome of the old writers to an Egyptian plant growing near the ſea-ſhores. It is by many ſuppoſed to have been the *colocaſia*, but improperly. The reſemblance of the name was the only thing that gave the idea of its being this plant; but the virtues attributed to it, and the uſes it was put to in the common affairs of life, ſhew that it was the *kali*, or *cali*, the plant of whoſe aſhes they made a ſalt uſeful in many arts, and ſtill the baſis of the glaſs and ſoap manufactures, and called by Avicenna *uſnen*.

CULCUL, a ſort of grain brought from Egypt to Conſtantinople, where it is much eſteemed, eſpecially when freſh. Authors are not agreed what plant it is produced from.

CULDEES, in *Church Hiſtory*, a deſignation given to the monks, or prieſts, in Scotland, in the firſt ages of Chriſtianity, whence the term paſſed into Ireland.

They were called *culdees*, quaſi *cultores dei*, from their great piety and devotion.

CULEUS, the name of a meaſure of liquids, the greateſt of all the meaſures among the Romans: it contained twenty amphoræ. Columella reckons the *culeus* of wine, at the vineyard, to be worth three hundred nummi, or ſeventy-five denarii, that is, according to Engliſh rate, a hundred and forty gallons three pints and an half, for two pounds eight ſhillings and five pence farthing, which is about a halfpenny the pint. Columella, lib. iii. cap. 3.

The *culeus* is, by others, deſcribed to contain 160 congii, or 960 ſextarii. We read of *dolia culearia*, and *ſeſquiculearia*, the latter of which muſt have been very large, being about 3$\frac{1}{7}$ hogſheads, and therefore larger than our pipes.

The word *culeus* is uſed alſo by ſome Roman authors for a leather ſack.

CULEX, in *Zoology*, the name of a genus of two-winged flies, comprehending the GNATS and HUMBLE-*bee* flies.

The diſtinguiſhing characteriſtic of this genus is, that their head is furniſhed with a ſiphon, or ſucker, very ſlender, oblong, and filiform.

CULINARY, an epithet frequently added to FIRE; determining it to be a common fire, excited in wood, coals, or other ordinary fuel: in contradiſtinction to ſolar fire, or that raiſed by the action of a burning-glaſs; alſo to central fire; to animal fire, &c.

The word is formed from the Latin *culina, kitchen*; this being the chief place of ſuch fires.

Culinary fire, according to Boerhaave, conſiſts of a portion of pure elementary, or ſolar fire, attracted by the oily, or ſulphureous parts of the fuel, with ſuch velocity, as that it moves the ſame, agitates and whirls them violently about, and by degrees breaks and attenuates them; renders them volatile, and diſperſes them in air.

The effect of air upon this fire is, to make, as it were, a vault around it, and, by that means, reſtrain and keep it in, determine it upon the ſulphur, and thus prevent its too haſty diſſipation.

CULLIAGE, or **Cullage**, a right uſurped by the ancient lords, and eſtabliſhed by a ſhameful cuſtom, which gave them the firſt night with their vaſſals brides.

The word is formed from the French *cul, podex*, the *breech*.

It is ſaid this right was eſtabliſhed by Evenus III. king of Scotland, and finally aboliſhed by Malcolm III. a compenſation being ſettled in its ſtead; as occaſioning frequent revolts of the vaſſals againſt their lords. See Marcheta.

CULLION, in *Botany*. See Orchis.

CULM, among *Botaniſts*, a term expreſſing the STALK of gramineous plants.

The *culmus*, and *culmen*, of the Latins, and the καλαμος of the Greeks, are what we call a ſtalk of corn or graſs. In graſſes and corns, the *culm* or ſtalk correſponds to the caudex or trunk in trees; and to the *calamus* in the cyperus and bulruſh: ſo that it generally denotes that part which reaches between the root and the ear, or panicle. Hence it appears in general what plants are of the culmiferous kind: but theſe are variouſly limited by the founders of different botanic ſyſtems, who have adopted them for conſtituting particular *genera* of plants.

CULMIFEROUS, in *Botany*, a term applied to ſuch plants as have a ſmooth-jointed ſtalk, uſually hollow; the ſtalk wrapped about, at each joint, with ſingle, narrow, ſharp-pointed leaves; and the ſeeds contained in chaffy huſks.

Culmiferous plants are divided by Ray into two kinds; thoſe with a *greater*, and thoſe with a *ſmaller* ſeed.

Thoſe with a larger ſeed are called *frumentaceous*, or *cereales*; and are again divided into *ſpicatæ*, as wheat, rye, ſpelt, barley, rice, peas, &c. and *paniculatæ* or *jubatæ*, as oats, ſcordium, milium, and maiſe.

CULMINATION, in *Aſtronomy*, the tranſit of a ſtar or planet over the meridian, or that point of its orbit wherein it is at its greateſt altitude.

Hence, a ſtar is ſaid to *culminate*, when it paſſes the meridian.

To find the culmination *of a ſtar, or the time wherein it paſſes the meridian.* On a meridian line AB (*Tab.* II. *Aſtronomy, fig.* 66.) ſtretch a thread, DC, perpendicularly; and from D to E another, DE, cutting the meridian obliquely, at any angle: the triangular thread, DCE, will cut the plane of the horizon in the meridian line, or at right angles; and conſequently will be in the plane of the meridian.

The eye, therefore, being ſo placed, as that the thread DE may cover the thread DC; wait till the ſtar be biſected by the triangle DCE; for then the eye and the ſtar will, together with the triangle DCE, be in the ſame plane: conſequently the ſtar is in the meridian.

To find the culmination of a ſtar by the globe, ſee Globe.

To find the time of a ſtar's culminating; its right aſcenſion, and the ſun's place in the ecliptic, being given.—From the ſun's place find his right aſcenſion; and from this ſubtract the right aſcenſion of the ſtar: the difference being converted into ſolar time, gives the time elapſed from mid-day to the time of the ſtar's *culmination*.

CULPABILIS. See Non *eſt culpabilis*.

CULPRIT, in *Law*, a term uſed by the clerk of the arraignments, when a perſon is indicted for a criminal matter.

After the indictment is read in court (which is the crown's charge againſt the priſoner at the bar), he is aſked if guilty, or not guilty? If he anſwers, *not guilty*, there is next a replication from the crown, by continuing the charge of guilt upon him; which is expreſſed by pronouncing the word *cul-prit*; *cul* being an abbreviation of the Latin word *culpa, guilt*, or *culpabilis, guilty*, and *prit* (now *pret*) the old French word for *ready*; or, as others rather think, the Latin *apparet, appears*.

From this formula, therefore, of the clerk of the arraignments, the priſoner is deemed guilty of the crime charged on him; and that the crown is ready to prove it upon him.

That this is the true explanation of the term, ſeems evident from the form of the entry of the record of the trial, when drawn at large.

CULTELLATION, a term which ſome authors uſe for the meaſuring of heights, and diſtances, by piecemeal: that is, by inſtruments which give us ſuch heights and diſtances by parts, and not all at one operation.

CULTIVATOR, in *Huſbandry*, the name given by foreigners to inſtruments uſed for ſtirring the earth, anſwering to our horſe-hoes.

CULTRARIUS. See Popæ.

CULTURE. See Agriculture, and Horticulture.

Culture *of hops*. See Hops.

CULVERIN, in *War*, a long ſlender piece of ordnance and artillery, ſerving to carry a ball to a great diſtance.

Menage derives the word from the Latin *colubrina*; others from *coluber*, *ſnake*; either on account of the length and ſlenderneſs of the piece, or of the ravages it makes.

Of theſe there are three kinds; viz. the *culverin extraordinary*, the *ordinary*, and the *leaſt ſized*.

The *culverin extraordinary* has 5½ inches bore; its length 32 calibers, or 13 feet; it weighs 4800 pound; its load is above 12 pound; carries a ſhot 5 inches ¼ diameter, weighing twenty pound weight.

The *ordinary culverin* is 12 feet long; carries a ball of 17 pound five ounces; caliber 5½ inches; its weight 4500 pound.

The *culverin* of the *leaſt ſize* has its diameter 5 inches; is 12 feet long; weighing about 4000 pounds; carries a ſhot 3 inches ¾ diameter, weighing 14 pounds 9 ounces. See Demi-Culverin.

CULVERTAIL, in *Ship-Building*, is uſed for a manner of letting one timber into another, ſo that they cannot ſlip aſunder. The faſtening of a ſhip's *carlings* into the beam is ſo performed. See Dove-tail.

CUMAMUS, in the *Materia Medica*, a name given by many of the ancients to cubebs.

CUMANDA *Guacu*, in *Botany*, a name for certain very large Indian kidney-beans, which roaſted, contuſed, and exhibited with an egg, are given for fluxes of the belly; boiled, made into a cataplaſm, and applied to the belly, they are ſaid to cure colic pains; and they are in this form applied to apoſtemations, with a view of reſolving them.

CUMELE, in *Botany*, the name by which the ancient Greek writers have deſcribed the *lupulus* or hop, with which we make our malt liquors bitter.

CUMELOBOTANE, in *Modern Greek Writers*, is alſo a name given to the *lupulus*, or plant, which produces the hops.

CUMIN, Cuminum, in *Botany*, a genus of the *pentandria digynia* claſs. Its characters are theſe: it hath an umbelliferous flower, the involucrum of which is longer than the umbel. The great umbel is uniform, the flowers have five unequal petals, whoſe borders are inflexed; and five ſingle ſtamina, with a large germen ſituated under the flower, ſupporting two ſmall ſtyles, which afterward becomes an oval ſtriated fruit, compoſed of two oval ſeeds, which are convex, and furrowed on one ſide, and plain on the other. We have but one ſpecies of this genus.

Miller derives *cumin* from κυειν, *to bring forth*, becauſe it is ſaid to be effectual in curing ſterility.

The ſeed of this plant is much like that of fennel; and grows abundantly in the iſle of Malta, where it is ſown and cultivated after the manner of corn.

The French frequently call it *anis aigre*, *ſharp* or *ſour anis*.

It is uſed with ſucceſs in vertigos, wind-colics, tympanies, &c. It is eſteemed excellent to retrieve the natural heat in ſtallions, bulls, &c. Pigeons are exceedingly fond of it; whence ſome make uſe of it to ſtock their dove-houſes; incorporating it with an earth naturally ſaline, or ſome other earth that has imbibed urine.

This ſeed, as well as the common aniſe, yields, by expreſſion, a kind of oil, eſteemed ſovereign in rheumatiſms; provided it be uſed with precaution, and in ſmall quantities.

Cumin, *baſtard*, or *wild*, *Cuminoides*, *Lagœcia*, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: it hath many flowers collected into a head, in one common empalement, compoſed of eight indented leaves. The flower conſiſts of five horned petals, at the bottom of which is ſituated a pointal, attended by five ſtamina: the pointal afterward becomes an oval ſeed, crowned with the empalement. There is only one known ſpecies of this plant, which is the *cuminum ſylveſtre*, or wild *cummin* of authors.

CUMPETES, in the *Materia Medica*, a name given by ſome of the Greek writers to the *carpeſia* of Galen and others. This was an aromatic drug, and was the younger ſhoots and tender twigs of an odoriferous tree, growing on ſome mountains in Pamphylia, which were collected in the ſpring, and, when dried. were uſed as a ſuccedaneum for the cinnamon. The word *cumpetes* often occurs in Myrepſus; but there is ſome doubt in the orthography, whether it be *cumpetes* or *cumpepes*; there ſeems moſt reaſon to believe the latter is the proper word. Charito mentions this drug in his antidotes, and the commentators uſually explain it by the word *carpeſia* or *carpaſus*, a name by which they underſtood, though improperly, the cubebs. The Greeks of the later ages, and the Latin writers who ſucceeded them, all fell into the ſame error, of calling the *carpeſia* the cubeb; though the accounts of the ancient Greeks are againſt it. Nay, Avicenna ſeems to have given into the ſame error; for he has tranſcribed into his chapter of cubebs what Galen ſays of the *carpeſia*.

CUN, or Cunning, at ſea. See Cond.

CUNEI, in *Natural Hiſtory*, a name given to thoſe *tellinæ*, which have one ſide of their ſhell much more extended than the other. See Muscle.

CUNEIFORM *leaf*, among *Botaniſts*. See Leaf.

CUNEIFORME *os*, in *Anatomy*. See Sphenoides.

Cuneiformia *oſſa* denote the fourth, fifth, and ſixth bones of the foot; thus called from their wedge-like ſhape, being large above, and narrow below. See *Tab. Anat.* (*Oſteol.*) *fig.* 7. *lit. c c. fig.* 3. *n.* 27. 27.

They lie all three aſide of one another, and are of different ſizes; their upper ſide convex, and their under hollow, by which means the muſcles and tendons in the bottom of the foot are not hurt in walking.

At one end they have each a ſinus, which receives the *os naviculare*; and at the other end they are joined each to one of the three inner bones of the *metatarſus*. See Winſlow's Anatomy, p. 83, and 100.

CUNETTE, or Cuvette, in *Fortification*, a deep trench, about three or four fathom wide, ſunk along the middle of a dry moat, to lade out the water; or to make the paſſage more difficult to the enemy.

CUNEUS, one of the *mechanical* powers; more uſually, by Engliſh writers, called the wedge.

Cuneus, among the Romans, a term often uſed to ſignify that part of the theatre where the ſpectators ſat, on account of its reſembling the figure of a wedge.

Cuneus, the wedge, was alſo a form of battle frequent among the Romans.

Cuneus, *parabolic*. See Parabolic *Cuneus*.

CUNICULUS, in *Zoology*, a genus of animals of the *lepus*, or hare-kind, called in Engliſh rabbit.

Cuniculus *Americanus*, in *Zoology*, a name given by ſome to the creature called tapeti, a ſmall ſpecies of rabbit.

Cuniculus *Braſilienſis*, a ſpecies of rabbit called aperea.

Cuniculus *Sibericus*, the name of the long-tailed Siberian rabbit, the fur of which is much valued. During the ſummer months many of them are beautifully variegated with oblique and tranſverſe ſtreaks of black and grey.

Cuniculus, in *Mining*, a term uſed by authors, in diſtinction from *puteus*, to expreſs the ſeveral ſorts of paſſages and cuts in theſe ſubterranean works. The *cuniculi* are thoſe direct paſſages in mines, where they walk on horizontally; but the *putei* are the perpendicular cuts or deſcents.

It is an obſervation with our miners, that the damps ſo much dreaded in all mines, happen generally in the horizontal cuts; but Dr. Brown, in his examination of the gold and ſilver mines in Hungary, obſerves, that they as often happen there in the *putei* or *ſchachts*, as in the *cuniculi* or *ſtollen*. Another obſervation as to damps with us is, that they are moſt frequent in clayey and ſoft places under ground; but in thoſe mines they are as frequent where the matter is hard ſtone; and one of the moſt miſchievous that had then lately happened, was in a place every way ſurrounded with ſtone ſo hard, that the tools of the miners could ſcarce work through it; and the deſcent had, in the very ſpot where the damp was, been made by means of gunpowder. In ſome of the *cuniculi* in theſe mines, there are damps that regularly return on certain occaſions; as if the lower end of the *cuniculus* be filled up with water, certain parts in going to it are always affected with damps, which will put out a lamp or candle the moment it enters them, and often do great miſchief to the miners in paſſing them. Phil. Tranſ. N° 48. See Damp.

CUNILA *bubula*, in *Botany*, a name by which Pliny, and ſome other authors, have called the wild marjoram or origanum.

Cunila, in *Botany*. See Iron-*wort*.

Cunila, in the Linnæan *Syſtem*, makes a diſtinct genus of the *diandria monogynia* claſs; with a ringent corolla; the upper-lip is erect and plane; there are two torn filaments, and the germen turns to four ſeeds.

CUNILAGO, in *Botany*, is uſed by ſome authors for the *coryza*.

CUNINA, in *Mythology*, a goddeſs who had the care of little children.

CUNNUS, the pudendum *muliebre*; or the anterior parts of the genitals of a woman, including the *labia pudendi*, and *mons Veneris*.

CUNOCEPHALI, in *Mythology*, from κυων, *dog*, and κεφαλη, *head*, a kind of baboons, or animals with heads like thoſe of dogs, which were wonderfully endowed and preſerved, with great veneration, by the Egyptians, in many of their temples. It is related, that, by their aſſiſtance, the Egyptians found out the particular periods of the ſun and moon; and that one half of the animal was often buried, while the other half ſurvived; and that they could read and write. This ſtrange hiſtory, Dr. Bryant imagines, relates to the prieſts of Egypt, ſtyled *caben*, to the novices in their temples, and to the examinations they were obliged to undergo, before they could be admitted to the prieſthood. The Egyptian colleges were ſituated upon rocks or hills, called *caph*, and from their conſecration to the ſun, *caph-el*; whence the Greeks deduced κεφαλη, and from *caben-caph-el* they formed κυνοκεφαλος. So that *caben-caph-el* was ſome royal ſeminary in Upper Egypt, whence they drafted novices to ſupply their colleges and temples. By this etymology, he explains the above hiſtory. The death of one part, while the other ſurvived, denoted the regular ſucceſſion of the Egyptian prieſthood. The *cunocephali* are alſo found in India, and other parts of the world. Theſe and the *acephali* were thus denominated from their place of reſidence, and from their worſhip. Bryant's Analyſis of Ancient Mythology, vol. i. p. 329, &c.

CUNODONTES, a people mentioned by Solinus and Iſidorus, and by them ſuppoſed to have the teeth of dogs. They were probably denominated, ſays Dr. Bryant, from the object of their worſhip, the deity *Chan-Adon*, which the Greeks expreſſed Κυνοδων, and thence called his votaries *Cunodontes*. Ibid. vol. i. p. 341.

CUNONIA, in *Botany*, a genus of the *decandria digynia* claſs, with a five-petalled corolla, a five-leaved calyx, a bilocular, acuminated, polyſpermous capſule, and ſtyles longer than the flower.

CUP, *Calyx*, a veſſel ſo called, of various forms and uſes. In the Ephem. German. we have a deſcription of a *cup* made of a common pepper-corn, by Oſwald Nerlinger; which holds one thouſand two hundred other ivory *cups*, each having its ſeveral handle, all gilt on the edges; with room for four hundred more.

CUPS, among *Herbaliſts*, are thoſe ſhort green huſks in which flowers grow; ſome being divided into two, three, four, five, or ſix leaves. See CALYX.

CUP-*fountain*. See FOUNTAIN.

CUP-*galls*, in *Natural Hiſtory*, a name given by authors to a very ſingular kind of galls found on the leaves of the oak, and ſome other trees. They are of the figure of a cup, or drinking-glaſs, without its foot, being regular cones, adhering by their point or apex to the leaf; and the top or broad part is hollowed a little way.

Beſide this ſpecies of gall, the oak leaves furniſh us with ſeveral others, ſome of which are oblong, ſome round, and others flatted; theſe are of various ſizes, and appear on the leaves at various ſeaſons of the year. They all contain the worm of ſome ſmall fly; and this creature paſſes all its changes in this its habitation, being ſometimes found in the worm, ſometimes in the nymph, and ſometimes in the fly ſtate, in the cavity of it. See *Tab. of Inſects*, Nº 25.

CUP-*ſhell*. See SHELL.

CUPA, among the *Ancients*, a kind of boats, uſed in laying bridges over rivers, being broad below, and narrow above.

CUPANIA, in *Botany*, a genus of the *monoecia monadelphia* claſs. The male of this genus hath a three-leaved calyx, a five-petalled corolla, and five ſtamina: the female hath a three-leaved calyx, three-petalled corolla, a ſtyle divided into three parts, a three-celled capſule, and a double ſeed.

CUPOLA, in *Architecture*, the ſame with DOME.

The word is Italian, formed of the barbarous Latin *cuppala*, otherwiſe called *thola*, and *fornix*.

CUPPEL, CUPEL, or COPPEL, among *Chemiſts*, a veſſel or utenſil, uſed in the trying and purifying of gold and ſilver; called alſo TEST. See COPPEL.

CUPPELLATION, in *Chemiſtry*. See COPELLING.

CUPPING, an operation in *Chirurgery*, for the diſcharge of blood, and other humours, by the ſkin.

It is performed by collecting the humours into a tumour under the *cutis*; and letting them out thence, by ſcarification; i. e. by ſeveral inciſions made with a ſcarificator.

The inſtruments uſed herein are the *cucurbitulæ*, or *cupping-glaſſes*, and *ſcarificator*: the deſcription of each whereof ſee under their proper head.

The uſe of *cupping*-glaſſes is very extenſive, comprehending almoſt the whole body: but their application is to be conſidered under two different circumſtances; for, they are either applied to the place firſt ſcarified with a knife, or to a whole ſkin. This latter is called dry, and the other ſanguinaceous or wet *cupping*.

Cupping is performed either *with*, or *without fire*.

Cupping with fire is the more uſual proceſs; and is commonly, among us, thus effected: the air in the cavity of the cucurbitula is heated, and ſo rarefied, by the application of the flame of a lamp, or the like; and the veſſel immediately applied to the part to be *cupped*.

Others, eſpecially the French, proceed thus: a piece of card is cut round, and a lamp, or four little wax candles, affixed to it: this is placed after the manner of a candleſtick on the part whereon the operation is to be performed, and covered with a cucurbitula or *cupping*-glaſs. After the included air has been well heated and rarefied with the flames of the candles, the glaſs is clapped cloſe to the ſkin; which is no ſooner touched, than the candles are extinguiſhed, and the tumor is raiſed.

In *cupping without fire*, inſtead of rarefying the air included in the *cupping*-glaſs by heat, it is done by a ſyringe applied to the neck of the *cupping*-glaſs, fitted with a braſs collar, cap, and valve: the *cupping*-glaſs being applied to the ſkin, and the SYRINGE wrought, part of the air is pumped out of the cucurbitula; and thus the tumor riſes, as in the former caſe.

The reaſon of the phenomenon is this: the air included in the *cupping*-glaſs being rarefied, a great part of the load which before preſſed the part, and kept it down, and which ſtill continues to preſs the reſt of the body, is taken off; upon which the air, known to be contained in the veſſels of the body, and mixed with the blood and juices, expands itſelf, and raiſes a tumor, carrying with it the fluids wherewith it is mingled.

The operation is performed on the back, and on the breaſts and thighs, to ſtop or promote the menſes: on the navel, for the colic. *Cupping* is alſo uſed for defluxions on the eyes, for venomous wounds, and buboes; on the head, for apoplexies, &c.

In dry *cupping*, before the application of the glaſs, a lighted candle or fire is to be conveyed into it, that the air being expelled by the heat, the glaſs may immediately be adapted to, and impreſſed upon the body, until it adheres firmly; an operation which the practitioners at bagnios perform with great dexterity.

The uſe of dry *cupping* is twofold; either to make a revulſion of the blood from ſome particular part affected, or elſe to cauſe a derivation of it into the affected part upon which the glaſs is applied. It is in the firſt ſenſe that Hippocrates orders a large *cupping*-glaſs to be applied under the breaſts of women, who have a too profuſe diſcharge of the menſes, intending thereby to cauſe a revulſion of the blood upwards from the *uterus*. And upon the ſame principle have hæmorrhages at the noſe been ſtopped by applying *cupping*-glaſſes to the legs and feet, particularly about the ankles and knees. Spitting of blood from the lungs has alſo been cured by the ſame method; and Scultetus gives a remarkable inſtance of a woman, who by the repeated application of ſix *cupping*-glaſſes, without ſcarification, to her thighs, was not only relieved of the troubleſome ſymptoms ariſing from an obſtruction of the menſes, but was alſo freed from the obſtruction itſelf.

Dry *cupping* is alſo uſed with ſucceſs to make a revulſion by applying the glaſſes to the temples, behind the ears, or to the neck and ſhoulders, for the removal of pains, vertigoes, and other diſorders of the head. They are alſo applied to the upper and lower limbs, to drive blood and ſpirits into them when they are paralytic; and laſtly, to remove the ſciatica, or other pains in the joints. The operation in theſe caſes is to be repeated till the part looks red, and becomes painful. Heiſter's Surgery, p. 308.

CUPPING-*glaſs*, *cucurbitula*, in *Chirurgery*, a glaſs veſſel, applied to certain parts of the body, to draw the blood, and other humors, from within, outwards; to be diſcharged through ſeveral inciſions made with a ſcarificator. See the preceding article.

The veſſel is of various dimenſions: ſometimes, inſtead of glaſs, it is made of wood, horn, braſs, ſilver, &c.

CUPRESSUS, in *Botany*. See CYPRESS.

CUPRUM. See COPPER.

CURA *avenacea*, a diet drink of OATS, much recommended by ſome authors in various diſtempers.

CURATAS. See CAZIC.

CURATE is properly a PARSON, or vicar of a pariſh, who hath the charge or CURE of the pariſhioners ſouls.

CURATE is now more generally uſed for a deputy, or ſubſtitute of the parſon; or one who officiates in the place of the incumbent, or beneficiary. And in caſe of plurality of livings, or where a clergyman is old and infirm, it is requiſite there ſhould be a *curate* to perform the cure of the church. He is to be licenſed and admitted by the biſhop of the dioceſe, or by an ordinary having epiſcopal juriſdiction: and when a *curate* hath the approbation of the biſhop, he uſually appoints the ſalary too; and in ſuch caſe, if he be not paid, the *curate* hath a proper remedy in the eccleſiaſtical court, by a ſequeſtration of the profits of the benefice: but if he hath no licence from the biſhop, he is put to his remedy at common law, where he muſt prove the agreement, &c. Rights of Clergy, 127. By ſtatute, where *curates* are licenſed by the biſhop, they are to be appointed by him a ſtipend not exceeding 50*l.* nor leſs than 20*l.* *per annum*, according to the value of the livings; to be paid by the rector or vicar: and the ſame may be done, on any complaint made. Stat. 12 Anne, c. 2.

There are perpetual *curates* as well as temporary, who are appointed where tythes are impropriate, and no vicarage endowed. Theſe are not removable, and the impropriators are obliged to find them, ſome whereof have certain portions of the tythes ſettled on them. Stat. 29 Car. II.

CURATELLA, in *Botany*, a genus of the *polyandria digynia* claſs; having a five-leaved calyx, four petals, two ſtyles, a bipartite capſule, with double-ſeeded cells.

CURATIVE *indication*, among *Phyſicians*, that which directs what is to be done for the cure of a diſeaſe. See Symptom, and Indication.

CURATOR, among the Romans, an officer under the emperors, who regulated the price of all kinds of merchandize and vendible commodities in the cities of the empire.

They had likewiſe the ſuperintendence of the cuſtoms and tributes; whence alſo they were called *logiſtæ*.

Curator, in *Civil Law*, a truſtee, or perſon nominated to take care of the affairs and intereſts of a perſon emancipated, or interdicted.

In countries where the Roman law prevails, between the age of fourteen and twenty-four years, minors have *curators* aſſigned them; till fourteen, they have tutors.

Curator *of an univerſity*, in the United Provinces, is an elective office, to which belongs the direction of the affairs of the univerſity; as, the adminiſtration of the revenues, the inſpection of the profeſſors, &c.

The *curators* are choſen by the ſtates of each province: the univerſity of Leyden has three; the burghermaſters of the city have a fourth.

CURB, in the *Manege*, a chain of iron faſtened to the upper part of the branches of a bridle, in the part called the eye, and running over the horſe's beard. Care ſhould be taken that it be neither too long nor too ſhort, and that the links be large and ſmooth.

Curb, in *Farriery*, is a hard and callous ſwelling on the hind part of the hock, attended with ſtiffneſs, and ſometimes with pain and lameneſs. See Spavin.

CURCAS, in *Botany*, a name given in Egypt to an eſculent root, approaching to the taſte and virtues of the *colocaſia*.

It is alſo a name uſed in Malabar, for a ſmall fruit of the ſhape and ſize of a hazel nut. Both theſe things have the credit of being great provocatives; and it is very probable, that the *curcas* of the Eaſt Indies may be the fruit called *bel* by Avicenna, and ſaid to poſſeſs the ſame famous virtues. Garcias has been led into a very great error by this ſimilarity of names and virtues, and ſuppoſes the *curcas* of Egypt the ſame with the *curcas* of the Eaſt Indies.

CURCULIO, in *Zoology*, the name of a genus of beetles, diſtinguiſhed by having their antennæ affixed to an elongated horny ſnout. See Scarabæus.

CURCUM, in the *Materia Medica of the Arabians*, the name of the large celandine; the roots of which, when dried, were uſed by the dyers of thoſe times as a yellow colour, and by the phyſicians as deobſtruents.

CURCUMA, *turmeric*. See Turmeric.

CURDLING, the coagulating or fixing of any fluid body; particularly milk.

Pauſanias ſays, that Ariſtæus ſon of Apollo, and Cyrene daughter of the river Peneus, were the firſt who found the ſecret of *curdling* milk.

At Florence they *curdle* their milk for the making of cheeſe with artichoke flowers; in lieu of the rennet uſed for the ſame purpoſe among us.

The Biſaltæ, a people of Macedonia, Rochfort obſerves, live wholly upon *curdled* milk, i. e. on curds. He adds, that curds are the whole food of the people of Upper Auvergne in France, and whey their only drink.

Women newly delivered are ſubject to have their milk *curdled*, converted into little grumæ, in their breaſts, which occaſions violent pains, with a ſhivering in the back.

It is owing to the want of being ſucked; whence the method of remedying, and preventing it, is apparent.

CURE, in *Medicine*. See Palliative *cure*.

Cure *of ſouls*, a benefice, the incumbent whereof has the charge and guidance of the ſouls of the people within a certain extent of ground, called a *pariſh*.

Such are a vicar, a rector, &c. in contradiſtinction to a prebend, a dean, a chantor, &c.

Cures, *ſine*. See Sine.

Cure, in *Falconry*, the ſame with casting.

CUREMA, in *Zoology*, the name of a fiſh of the mullet kind, but of a remarkable ſize, growing to two feet long, and having a very large moveable upper lip; the under one being ſmall, triangular in figure, and ſcarce viſible, being ſomething ſhorter than the upper. Its eyes are large, and its fins of a fine ſilvery white; in all other reſpects it reſembles the common mullet.

CURETES, in *Antiquity*, a ſort of prieſts, or people of the iſle of Crete; called alſo *corybantes*.

The name *curetes*, according to Strabo, was given them becauſe of their cutting off the hair before, to prevent the enemy's taking hold thereof: the word being Greek, κουρητες, of κουρα, *tonſure*, from κειρω, *tondo*. Others derive it from κουροτροφια, *the feeding* or *educating of a child*; becauſe they are ſaid to have educated Jupiter.

The *curetes* are ſaid to have been originally of mount Ida, in Phrygia; for which reaſon they were alſo called *Idæi Dactyli*. Ovid ſays, they had their origin from a huge ſhower of rain: Lucian and Diodorus Siculus repreſent them as very expert in caſting of darts; though other authors give them no weapons but bucklers and pikes: but all agree in furniſhing them with tabors and caſtanettas; and relate, that they uſed to dance much to the noiſe and claſhing thereof.

Some authors, however, give a different account of the *curetes*: according to Pezron, and others, the *curetes* were, in the times of Saturn, &c. and in the countries of Crete and Phrygia, what the druids and bards were afterwards among the Gauls, &c. i. e. they were prieſts who had the care of what related to religion, and the worſhip of the gods.

Hence, as in thoſe days it was ſuppoſed there was no communication with the gods but by divinations, auguries, and the operations of magic; the *curetes* paſſed for magicians and enchanters: to theſe they added the ſtudy of the ſtars, of nature, and poeſy; and ſo were philoſophers, aſtronomers, &c.

Such were the *curetes*, and after them the druids; with this difference, that the *curetes*, in the time of the Titans, went to the wars; for which reaſon they were armed, and were wonderfully dextrous in dancing, cap-à-pie, ſhaking their bucklers and javelins: from which action, Pezron conjectures, they took their name *curetes*; *curo*, in the Celtic, being the ſame with κουρω in the Greek; q. d. *I ſtrike* or *beat*.

According to Kircher, the *curetes* were what the *ſpirits* are among the Cabbaliſts, the *powers* in Dionyſius, the *dæmons* among the Platoniſts, and the *genii* among the Egyptians.

Voſſius, De Idololat. diſtinguiſhes three kinds of *curetes*; thoſe of Ætolia, thoſe of Phrygia, and thoſe of Crete, who were originally derived from the Phrygians.

The firſt, he ſays, took their name from κουρα, *tonſure*; becauſe, from the time of a combat wherein the enemy ſeized their long hair, they always kept it cut: thoſe of Phrygia and Crete, he ſuppoſes were ſo called from κουρος, *young man*; becauſe they were young; or becauſe they nurſed Jupiter when he was young.

CURFEU, q. d. *couvre-feu*, a ſignal of retreat, given in cities taken in war, &c. to advertiſe the inhabitants to go to bed, and not to ſtir out any more.

The *curfeu-bell*, wherewith the ſignal was anciently given, was ſometimes hung up as a puniſhment of ſedition. Paſquier ſays, it was called *carfou*, and *garefou*; as being intended to advertiſe the people to ſecure themſelves from the robbers and debauchees of the night.

The moſt ancient *curfeu* was that eſtabliſhed in England by William the Conqueror; who appointed, under ſevere penalties, that, at the ringing of a bell at eight o'clock in the evening, every one ſhould put out their lights, cover, or rake up their fires, and go to bed. Whence, to this day, where a bell is accuſtomed to be rung about bed-time, it is called *curfeu-bell*. It was aboliſhed by Henry I.

CURIA, in our *Ancient Cuſtoms*. It was uſual for the kings of England to ſummon the biſhops, peers, and great men of the kingdom, to ſome particular place, at the chief feſtivals in the year; and this aſſembly is called, by our hiſtorians, *curia*; becauſe they were conſulted about the weighty affairs of the nation: whence it was ſometimes alſo called *ſolemnis curia*, *generalis curia*, *Auguſtalis curia*, and *curia publica*, &c.

Curia *adviſare vult*, in *Law*, is a deliberation which the court ſometimes take, before they give judgment in a cauſe wherein there ſeems to be any point of difficulty.

Curiam, *accedas ad*. See Accedas.

Curiæ, *auxilium*. See Auxilium.

Curia *baronum*. See Court-*baron*.

Curia *claudenda*, is a writ that lies againſt him who ſhould fence and incloſe the ground, but refuſes or defers to do it.

CURIA *militum*, a court ſo called; anciently held at Cariſbrook caſtle, in the iſle of Wight.

Et idem dominus Willielmus de inſula facere debet ſectam ad curiam *domini caſtri de Cariſbroc, de tribus ſeptimanis in tres ſeptimanas, in* curia *quæ vocatur* curia militum.

CURIA, *rectus in.* See RECTUS.

CURIA, among the Romans, denoted a portion, or diviſion, of a tribe.

In the time of Romulus, a tribe conſiſted of ten *curiæ*, or a thouſand men; each *curia* being one hundred: that legiſlator made the firſt diviſion of his people into thirty *curiæ*.

Afterwards, *curia*, or *domus curialis*, became uſed for the place where each *curia* held its aſſemblies.

Hence, alſo, *curia* paſſed to the ſenate-houſe; and it is from hence the moderns come to uſe the word *curia*, COURT, for a place of juſtice, and for the judges, &c. there aſſembled.

Varro derives the word from *cura*, *care*, q. d. an aſſembly of people charged with the care of public affairs: others deduce it from the Greeks; maintaining, that at Athens they called κυρια the place where the magiſtrate held his aſſiſes, and the people uſed to aſſemble: κυρια, again, may come from κυρος, *authority*, *power*; becauſe it was here the laws were made.

CURIALITAS *Angliæ*. See COURTESY *of England*.

CURIASSIERS, in *War*, horſemen that wear armour. Theſe have ſometimes only breaſt-plates.

CURIATA *comitia*. See COMITIA *curiata*.

CURICACA, in *Zoology*, the name of a Braſilian bird, called *maſarino* by the Portugueſe. It is a very large bird, approaching to the ſize of a gooſe, but in ſhape reſembling the curlew. Its beak is ſix fingers breadth long; its head and neck are covered with white and yellow feathers; and its whole body is black, except that on the back, the head, and the lower part of the belly, it has a greyiſh caſt. It is much eſteemed at table. There is another ſpecies of it ſmaller than the former, not exceeding the ſize of a pullet. It is common about the rivers.

CURIMATA, in *Zoology*, a name by which ſome authors have called the LAVARETUS, a ſmall fiſh, of a ſort of middle nature, between truttaceous and the herring kind, and caught in the American and German lakes.

CURING, is uſed for the preſerving fiſh, fleſh, and other animal ſubſtances, by means of certain additions of things, to prevent putrefaction. One great method of doing this, is by ſmoking the bodies; that is, the making them imbibe a great quantity of vegetable fumes; for this is uſually done where wood is burnt. The reaſon of this ſort of preſervation is eaſily ſeen by the curious enquirer, ſince wherever wood, or any vegetable of the acid tribe is burnt, the acid particles go off with the ſmoke, and in this form penetrate into, and lodge themſelves in animal ſubſtances expoſed thereto; by which means this ſmoke acts upon them in the ſame manner that the fumes of ſpirit of nitre would do: and whether it be not a nitrous acid that tinges hams, herrings, &c. to a redneſs in the drying, is a ſubject worth enquiry. Shaw's Lectures, p. 152.

CURIO, the chief, and prieſt of a CURIA.

Romulus, upon dividing the people into *curiæ*, gave each diviſion a chief, who was to be prieſt of that *curia*, under the title of *curio*, and *flamen curialis*.

His buſineſs was to provide and officiate at the ſacrifices of the *curia*, which were called *curionia*; the *curia* furniſhing him with a ſum of money on that conſideration: which penſion or appointment was called *curionium*.

Each diviſion had the election of its *curio*; but all theſe particular *curios* were under the direction of a ſuperior, or general, called *curio maximus*; who was the head of the body, and elected by all the *curios*, aſſembled in the *comitia curialis*.

All theſe inſtitutions were introduced by Romulus, and confirmed by Numa, as Halicarnaſſeus relates it. Godwyn will have two *curios* in each *curia*.

CURIOSUS, an officer of the Roman empire, during the middle age, appointed to take care that no frauds and irregularities were committed; particularly no abuſes in what related to the poſts, the roads, &c. and to give intelligence to the court of what paſſed in the provinces. This made the *curioſi* people of importance; and put them in a condition of doing more harm than they prevented: on which account, Honorius caſhiered them, at leaſt in ſome parts of the empire, *anno* 415.

The *curioſi* came pretty near to what we call *controllers*: they had their name from *cura*, *care*; *quod curis agendis & evectionibus curſus publici inſpiciendis operam darent.*

CURIOSI *naturæ*, *academy of the*. See ACADEMY.

CURLEW, the Engliſh name of the ARQUATA or *numenius*.

Curlews frequent our coaſts in winter in large flocks, but retire to breed in ſummer on the more mountainous parts of the country. Their fleſh is rank and fiſhy, though ſome have highly commended it.

CURLEW, *ſtone*, a ſpecies of the CHARADRIUS. It is a migratory bird, appears in England about the middle of April, and retires in autumn. It is remarkable for a piercing ſhrill noiſe, which it begins in the evening: it breeds in rabbit-burrows, and alſo lays its eggs, which are two of a copper colour, among the ſtones on the bare ground. It feeds in the night on worms and caterpillars; and it is ſaid they will catch mice. Its fleſh is eſteemed very delicate food. In habit, make, and manners, this bird approaches near to the BUSTARD.

CURMI, a name given by the ancients to a ſort of malt liquor or ale. It was made of barley, and was drank by the people of many nations inſtead of wine, according to Dioſcorides's account. He accuſes it of cauſing pains in the head, generating bad juices, and diſordering the nervous ſyſtem. He alſo ſays, that in the weſtern part of Iberia, and in Britain, ſuch a ſort of liquor was in his time prepared from wheat inſtead of barley.

CURNOCK, a meaſure of corn, containing four buſhels, or half a quarter.

CURRANT-*tree*, *ribes*, in *Botany*, a genus of the *pentandria monogynia* claſs. Its characters are theſe: the flower has a bellied empalement, cut at the top into five obtuſe concave ſegments: it has five ſmall, obtuſe, erect petals, growing to the border of the empalement; and five awl-ſhaped ſtamina inſerted in the empalement, terminated by incumbent compreſſed ſummits. A roundiſh germen is ſituated under the flower, ſupporting a bifid ſtyle, crowned by obtuſe ſtigmas; which afterward becomes a globular umbilicated fruit, with one cell, containing many roundiſh compreſſed ſeeds. There are four ſpecies. The *currant*-tree is ſaid to have been firſt brought from the iſle of Zant belonging to Venice, and planted in England in the year 1533.

The firſt ſort grows naturally in the northern parts of Europe, but has been long cultivated in the gardens, and greatly improved; ſo that at preſent there are the following varieties in the Engliſh gardens; viz. The common *currant* with ſmall red fruit, the ſame with white fruit, and another with pale fruit, which is commonly called the Champagne *currant*: but ſince the two ſorts of Dutch *currants* have been introduced, and become common in the gardens, the old red and white *currants* have been almoſt baniſhed. The ſecond ſort, called the ſweet alpine *currant*, is kept in a few gardens for the ſake of variety; but as the fruit is very ſmall, and has little flavour, it is not much cultivated. The third ſort, which is a black *currant*, grows naturally in Helvetia, Sweden, and other northern countries; and is ſometimes cultivated in gardens for its fruit, of which is made a rob very much eſteemed for ſore throats; from whence the fruit has been called ſquinancy berries, on account of their great uſe in quinſies. As this fruit has a ſtrong diſagreeable flavour, it is ſeldom admitted to the table. The fourth ſort grows naturally in Penſylvania; but the fruit does not merit cultivation.

The fruit of the red and white *currants*, are greatly eſteemed for the table, and are alſo very good in fevers: they are cooling and grateful to the ſtomach, quench thirſt, and are ſomewhat reſtringent. The jelly made with the juice of this fruit and ſugar, is very grateful in fevers, and is uſed as ſauce to the table. This fruit may be procured good much longer than moſt others, upon the plants, by planting them in different ſituations: for if they are planted againſt pales or walls expoſed to the ſouth, the fruit will ripen in June; and by planting ſome againſt north walls, if they are ſcreened from birds, and covered from the autumnal froſts, they may hang until November; and as the fruit is greatly uſed for tarts, it is very convenient to keep a ſucceſſion of them for ſo long a time.

The ſeveral ſpecies of *currants* are very eaſily propagated, by planting their cuttings any time from September to March, upon a ſpot of freſh earth, which muſt be carefully kept clear from weeds in the ſpring; and in the dry weather, the young plants muſt be frequently watered. When they have ſtood about two years in this place, they will be fit to tranſplant to the places where they are to remain; and this ſhould be done when the leaves are juſt decayed, that they may have time to be rooted before winter. If they are for ſtandards, they ſhould be planted in rows of ten feet diſtance from one another, and the trees in each row four feet from each other; but the much better way is to train them in eſpaliers, in which ſtate they take up much leſs room, and their fruit is much the finer. They ſhould be placed at eight feet diſtant in eſpaliers, and all their branches trained horizontally. They are to be allowed the ſame diſtance when ſet againſt walls or pales.

Currant-trees produce their fruit on the former year's wood, and alſo on ſmall ſnags that come out of the old wood. This may give a caution as to the manner in which they are to be pruned.

They will thrive in any ſoil, or ſituation; but this fruit is always beſt taſted when they grow in a dry ſoil, and an open ſpot of ground. Miller.

CURRANTS, in *Commerce*, a kind of little raiſins, or dried grapes of different colours, black, white, or red; brought from ſeveral places of the Archipelago, and among others, from the iſthmus of Corinth; whence their name, *currants*, q. d. *Corinths*.

They muſt be choſen new, ſmall, and in large maſſes; and care be taken, that the little Spaniſh *currants* be not foiſted in their room. When made up in bales, they may keep two or three years, without ſtirring, or giving them air. Their uſe is in ſeaſoning ſeveral viands, and in ſome medicinal compoſitions; where they ſerve in lieu of raiſins. Sir George Wheeler's account of theſe fruits, and the manner of preparing them, is very curious. The iſland of Zant, he obſerves, is the chief place whence *currants* are brought: the Morea, or the iſthmus of Corinth, which was anciently the principal plantation, and whence the Latins denominated them *uvæ Corinthiacæ*, now produces no more, as having been much neglected; the jealouſy of the Turks not allowing large veſſels to enter the gulph to take them off their hands.

They do not grow on buſhes, like our gooſeberries, though that be the common opinion, but on vines, like other grapes; except that the leaves are ſomewhat thicker, and the grapes ſomewhat ſmaller: they have no ſtone, and, in this country, are all red, or rather black.

They gather them in Auguſt, diſpoſe them in couches on the ground till they be dry, clean them, and lay them up in magazines, which the natives call *ſeraglios*; pouring them in at a hole, till the magazine be full. They cling ſo faſt together by their own weight, that they are forced to be dug out with iron inſtruments.

To barrel them for ſending abroad, they have people who greaſe their feet and legs, and tread them cloſe, that they may keep the better. They are ſold for about twelve crowns the thouſand weight; and pay as much cuſtom to the ſtate of Venice.

Zant produces enough yearly to load five or ſix veſſels; Cephalonia three or four; and the other iſlands one. The Engliſh have a factory at Zant; the Dutch two or three merchants, and the French one: the Engliſh conſuming more than ſix times the quantity that both France and Holland do together. Thoſe of Zant know but little of the uſe we make of them; being perſuaded they only ſerve in dyeing of cloth; and being entirely ignorant of the luxury of Chriſtmas pyes, and Engliſh puddings.

CURRANT, or **COURANT** *money*, good money, or that which paſſes in commerce from one to another. See COURANT.

CURRANT *accompts*. See BOOK.

CURRANT *coins*. See COIN.

CURRANT *price*. See PRICE.

CURRANT, *Curranto*, alſo denotes a ſort of running French dance; ſometimes, a muſical air in triple time. See COURANT.

CURRE, an Engliſh name for the fiſh called by authors *cuculus*, and by us more frequently named the *red* GURNARD.

CURRENCY. *Paper currency*, with reſpect to the Britiſh colonies in America.

On the firſt ſettlement of theſe colonies, an Engliſh crown was five ſhillings in denomination; but the trade there was chiefly carried on by exchanging one commodity for another, and with little or no ſilver or gold: ſugar, tobacco, and rice, ſerved as a medium for trade in ſome of the plantations.

As the American commerce flouriſhed, foreign ſpecie were introduced, and became a medium for trade; and bills of credit, commonly called paper credit, or paper *currency*, were remitted to ſome colonies by their governments, to be diſcharged by a tax or otherwiſe, at certain times to come, which added to their medium of trade and circulation, and anſwered the intention of theſe colonies while they kept within due bounds.

As the ſaid ſilver coin went by tale, and were not milled, they were clipped to ſuch a degree, that the exchange to England varied in proportion; and the paper *currency* alſo varied in value, and was depreciated in ſeveral of the colonies, occaſioned by their remitting more than their trade and property could bear, or from ſome other miſtaken conduct.

Now for the better regulating all money and exchange throughout his majeſty's colonies and plantations in America, it may be propoſed that there be an equal and fixed price for ſilver throughout all thoſe colonies; and that all contracts or bargains from ſome certain day to come, be made for ſuch money; and ſuch money to be accounted, received, taken, paid, ſued for, and recovered accordingly. And no recovery to be made for any money of different ſorts or denominations, that ſhall be contracted for after ſuch time, except for ſuch money and at ſuch prices as ſhall thus be ſettled. This will naturally be called ſterling money, proclamation money, or new money; and what is now current, be it what it will, will be called old *currency* or old money.

Notwithſtanding ſuch a regulation, there would ſtill be a ſmall exchange in the ſeveral plantations, in proportion to the riſk, charge, and other incidents attending the tranſporting money from one colony to another: but every one for the future may expect an equal value upon the repayment of the money he ſhall credit, lend, or trade for, without having the value of his property diminiſhed by any law or cuſtom while it is in other people's hands, which is the principal aim of the propoſition.

CURRENT, from *curro*, *I run*; in *Hydrography*, a ſtream or flux of water in any direction. The ſetting of the *current*, is that point of the compaſs towards which the waters run; the drift of a *current*, is the rate it runs an hour.

Currents, in the ſea, are either *natural* and *general*, as ariſing from the diurnal rotation of the earth on its axis; or *accidental* and *particular*, cauſed by the waters being driven againſt promontories, or into gulphs and ſtreights, where, wanting room to ſpread, they are driven back, and thus diſturb the ordinary flux of the ſea.

The *currents* are ſo violent under the equator, where the motion of the earth is the greateſt, that they carry veſſels very ſpeedily from Africa to America; but abſolutely prevent their return the ſame way: ſo that ſhips are forced to run as far as the fortieth degree of latitude, to find a paſſage into Europe.

In the Streights of Gibraltar, the *currents* almoſt conſtantly drive to the eaſtward, and carry ſhips into the Mediterranean: they are uſually, too, found to drive the ſame way in St. George's channel. The great violence and danger of the ſea in the Streights of Magellan, is attributed to two contrary *currents* ſetting in, one from the South, and the other from the North ſea.

CURRENTS, with reſpect to *Navigation*, may be defined, certain progreſſive motions of the water of the ſea, in ſeveral places; by which a ſhip may happen to be carried forward more ſwiftly, or retarded, in her courſe, according to the direction or ſetting of the *current*, in, with, or againſt, the courſe or way of the ſhip.

The buſineſs of *currents* making a conſiderable article in navigation; the way they ſet, together with their ſtrength, is to be carefully obſerved: this ſome do by the ripplings of the water, and by the driving of the froth along the ſhore, when in ſight of it; but the more uſual, as well as more accurate way, is thus: they firſt fix their boat, by throwing out a triangular piece of wood, with a piece of lead faſtened to it, and tied to the ſtem of the boat with a cord, and letting it ſink eighty or a hundred fathom; or ſometimes, by a kettle tied by the bowl, and ſunk, as the other. By either of theſe means, the boat is brought to ride as at anchor; which done, the log is caſt over, the glaſs turned, and as the log-line veers out, the drift of the log is ſet with the compaſs. See CALM.

This ſhews whether there be any *current*, or none; and if any, which way it ſets, and at what rate it drives: obſerving, however, to add ſomething to the drift, for the boat's drift; for though ſhe appear to ſtand ſtill, yet, in reality, ſhe is found to move. This addition, experience has thus determined: if the line ſhe ride by be ſixty fathom, a third part of the drift to be added; if eighty fathom, a fourth; if a hundred, a fifth.

If a ſhip ſail along the direction of a *current*, it is evident the velocity of the *current* muſt be added to that of the veſſel: if her courſe be directly againſt the *current*, it muſt be ſubtracted: if ſhe ſail athwart the *current*, her motion will be compounded with that of the *current*; and her velocity augmented, or retarded, according to the angle of her direction with that of the direction of the *current*; i. e. ſhe will proceed in the diagonal of the two lines of direction, and will deſcribe or paſs through that diagonal in the ſame time wherein ſhe would have deſcribed either of the ſides, by the ſeparate forces.

To determine a ſhip's courſe and diſtance, ſailing obliquely with, or againſt, a current. Suppoſe, v. gr. ſhe ſails N. E. 110 miles, in a *current* which ſets S. W. 30 miles in the ſame time: to ſolve the problem geometrically; ſet off four points from N towards E (*Tab. Navigation, fig.* 15.), and draw AC equal to 110 miles; from C draw CB, parallel to the line NNE, and equal to 30 miles: laſtly, draw AB, which will be the ſhip's true courſe and diſtance.

To find which trigonometrically. In the triangle A B C, there are given A C 110, B C 30, and the angle C 22° 30′; then, $AC+BC : AC-BC :: t, \frac{1}{2} A+B : t, \frac{1}{2} B-A$. That is, as the ſum of A C and B C, viz. 140, is to their difference 80 : : ſo is the tangent of 78° 45′ to the tangent of 70° 49′. Hence her true courſe appears to be N. E. 7° 56′ eaſterly. For her diſtance; as the ſine of the angle A, 7° 56′, is to the drift of the *current* B C, 30, ſo is the ſine of the angle at C 22° 30′, to the diſtance run, viz. 83 miles.

Currents, *Under*, are diſtinct from the upper or apparent, and in different places ſet or drive a contrary way. Dr. Thomas Smith, Phil. Tranſ. N° 158. or Abr. vol. ii. p. 288, 289, makes it highly probable; that in the Downs, in the Streights of Gibraltar, &c. there is an *under-current*, whereby as much water is carried out, as is brought in by the *upper-currents*.

This he argues from the offing between the north and ſouth Foreland, where it runs tide and half-tide, i. e. it is either ebb or flood in that part of the Downs three hours before it is ſo off at ſea: a certain ſign, that though the tide of flood runs aloft, yet the tide of ebb runs under-foot, i. e. cloſe by the ground; and ſo at the tide of ebb it will flow under-foot.

This he confirms by an experiment in the Baltic Sound, communicated to him by an able ſeaman preſent at the making it: being there, then, with one of the king's frigates, they went with their pinnace into the mid-ſtream, and were carried violently by the *current*. Soon after that, they ſunk a baſket with a large cannon-bullet, to a certain depth of water, which gave check to the boat's motion; and ſinking it ſtill lower and lower, the boat was driven a-head to the windward, againſt the *upper-current*; the *current* aloft not being above four or five fathom deep. He added, that the lower the baſket was let down, the ſtronger the *under-current* was found.

From this principle, it is eaſy to account for that continual in-draught of water out of the Atlantic into the Mediterranean, through the Streights of Gibraltar; a paſſage about twenty miles broad: yet, without any ſenſible riſing of the water along the coaſts of Barbary, &c. or any overflowing of the lands, which there lie very low.

Dr. Halley ſolves the *currents* ſetting in at the Streights without overflowing the banks, by the great evaporation; without ſuppoſing any *under-current*.

CURRICULUS, in our *Ancient Writers*, denotes the year, or courſe of a year.

Actum eſt hoc annorum dominicæ incarnationis quater quinquagenis & quinquies, quinis luſtris, & tribus curriculis; i. e. In the year 1028; for four times fifty makes two hundred, and five times two hundred makes one thouſand; five *luſtres* are twenty-five years, and three *curriculi* are three years.

CURRIED *hide*. See Hide.

CURRIERS are thoſe who dreſs and colour leather, after it comes from the tan-yard. If *curriers* do not curry leather that is ſent to them, within ſixteen days between Michaelmas and Lady-day, and in eight days at other times, they are liable to a forfeiture of 5 *l.* on conviction before a juſtice, to be levied by diſtreſs, &c. but ſubject to a mitigation. 12 Geo. II. c. 25.

CURRODREPANUS, formed of *currus*, *chariot*, and δρεπανον, *ſcythe* or *ſickle*; in *Antiquity*, a kind of chariot armed with ſcythes. The driver of theſe chariots was obliged to ride on one of the horſes, as there was no other ſeat for him; the uſual place for him being all armed with knives, as was likewiſe the hinder part of the chariot. There were no ſcythes pointing down to the earth, either from the beam or axle-tree; but theſe were fixed at the head of the axle-tree in ſuch a manner, as to be moveable by means of a rope, and thereby could be raiſed or let down, and drawn forward or let fall backward, by relaxing the rope.

CURRY-*comb*, an inſtrument full of ſmall teeth, uſed for currying horſes.

CURRYING is the art of dreſſing cow-hides, calves-ſkins, ſeal-ſkins, &c. principally for ſhoes: and this is done either upon the *fleſh* or the *grain*.

In dreſſing leather for ſhoes on the *fleſh*, the firſt operation is ſoaking the leather in water, until it be thoroughly wet; then the fleſh-ſide is ſhaved on a *beam*, about ſeven or eight inches broad, with a knife of a peculiar conſtruction, to a proper ſubſtance, according to the cuſtom of the country, and the uſes to which it is to be applied. This is one of the moſt curious and laborious operations in the whole myſtery of *currying*. The knife uſed for this purpoſe is of a rectangular form, with two handles, one at each end, and a double edge. They are manufactured at Cirenceſter, and compoſed of iron and ſteel: the edge is given to them by rubbing them on a flat ſtone of a ſharp gritty ſubſtance, till it comes to a kind of *wire*; this wire is taken off by a fine ſtone; and the edge is then turned to a kind of groove wire by a piece of ſteel, in form of a bodkin, which ſteel is uſed to renew the edge in the operation.

After the leather is properly ſhaved, it is thrown into the water again, and *ſcoured* upon a board or ſtone commonly appropriated to that uſe. *Scouring* is performed by rubbing the grain or hair-ſide with a piece of pumice-ſtone, or with ſome other ſtone of a good grit, not unlike in thickneſs and ſhape to the ſlate with which ſome houſes are covered. Theſe ſtones force out of the leather a white ſort of ſubſtance, called the *bloom*, produced by the oak-bark in tanning. The hide or ſkin is then conveyed to the ſhade or drying place, where the oily ſubſtances are applied, termed *ſtuffing* or *dubbing*: the oil uſed for this purpoſe is prepared by the oil leather-dreſſers, by boiling ſheep-ſkins or doe-ſkins in cod oil. This is put on both ſides of the leather, but in a greater and thicker quantity on the *fleſh*, than on the *grain* or hair-ſide.

Thus we have purſued the *currying* of leather in its wet ſtate, and through its firſt ſtage, commonly called *getting out*.

When it is thoroughly dry, an inſtrument with teeth on the under-ſide, called a *graining board*, is firſt applied to the fleſh-ſide, which is termed *graining*; then to the grain-ſide, called *bruiſing*: the whole of this operation is intended to ſoften the piece of leather, to which it is applied. *Whitening* or *paring* ſucceeds, which is performed with a fine edge on the knife already deſcribed, and uſed in taking off the greaſe from the fleſh. It is then *boarded up* or *grained* again, by applying the graining board, firſt to the grain, and then to the fleſh.

It is now fit for *waxing*, which begins with *colouring*. This is performed by rubbing with a bruſh dipped in a compoſition of oil and lamp-black on the fleſh, till it be thoroughly black: it is then *ſized*, called black ſizing, with a bruſh or ſpunge, dried, tallowed with a woollen cloth, and *ſlicked* upon the fleſh with a broad ſmooth piece of glaſs, ſized again with a ſpunge: and when dry, this ſort of leather, called *waxed* or *black on the fleſh*, is *curried*.

Currying leather on the hair or grain-ſide, termed *black on the grain*, is the ſame in the firſt operation with that dreſt on the *fleſh*, till it is ſcoured. Then the firſt black is applied to it, while wet; which black is a ſolution of copperas in fair water, or in the water in which the ſkins, as they come from the tanner, have been ſoaked: this is firſt put upon the grain, after it has been rubbed with a ſtone; then rubbed over with a bruſh dipped in ſtale urine; ſlicked out with an iron ſlicker, in order to make the grain come out as fine as poſſible; and then *ſtuffed*, in the manner already deſcribed among the firſt operations of *currying*: and when dry, it is *ſeaſoned*, i. e. rubbed over with a bruſh dipped in copperas water on the grain, till it be perfectly black; then ſlicked with a ſtone of a good grit, to take out the wrinkles and coarſe grain as much as poſſible: after this the grain is raiſed with a fine graining board, by turning the ſkin or piece of leather in various directions; and when a little dried, it is *bruiſed*, in order to ſoften it. When it is thoroughly dry, it is *whitened*, bruiſed again, and grained in two or three different ways; and when oiled upon the grain with a mixture of oil and tallow, it is finiſhed.

Bull and cow-hides are ſometimes *curried* for the uſe of ſadlers and collar-makers; but the principal operations are much the ſame as thoſe we have already deſcribed. It ſhould, however, be obſerved, that only a ſmall portion of fleſh is taken off from hides deſigned for theſe purpoſes. Hides for the roofs of coaches, &c. are ſhaved nearly as thin as ſhoe-hides, and blacked on the grain.

CURSED. See Accursed, and Corzned.

CURSITOR, an officer or clerk belonging to the court of chancery, who maketh out original writs.

Theſe are alſo called *clerks of the courſe*, and are twenty-four in number; making a corporation of themſelves. To each of them are allotted ſeveral ſhires; in which ſhires they make out ſuch original writs as are by the ſubject required.

CURSOR, a little ruler, or label of braſs, divided like a line of ſines, and ſliding in a groove, or notch, along the middle of another label, or ruler, repreſenting the horizon, and always at right angles to it. It is uſed in the analemma.

Cursor is alſo uſed for a point ſcrewed on the *beam*-compass; and which may be moved, or ſlidden along the beam thereof, for the ſtriking of greater or leſs circles.

CURTAILING, in the *Manege*, the docking, or cutting off a horſe's tail.

The practice of *curtailing* is no where in vogue ſo much as in England; it being a popular opinion, that the cutting off the tail renders the horſe's chine or back the ſtronger, and more able to bear burdens.

The amputation is uſually made between the fourth and fifth joints of the tail; a ligature being firſt tied tight about the place, to prevent the flux of blood; and the raw ſtump afterwards ſeared up with a hot iron, till the extremities of the veſſels be all ſtopped.

This abſurd and barbarous cuſtom is now in great meaſure out of faſhion; and horſes are allowed to enjoy the uſe, and retain the beauty of their tails, as given to them by nature.

CURTAIN, in *Fortification.* See Curtin.

Curtains, in a *Fire-ſhip*, are pieces of a coarſe canvaſs, about three quarters of a yard wide, and a yard long, thickened in a melted compoſition of pitch, ſulphur, roſin, tallow, and tar, and covered with ſaw-duſt on both ſides.

CURTATE *diſtance*, in *Aſtronomy*, the diſtance of a planet's place from the ſun, reduced to the ecliptic; or, the interval between the ſun, and that point where a perpendicular, let fall from the planet, meets with the ecliptic

CURTATION, in *Aſtronomy*, the interval between a planet's diſtance from the ſun, and the *curtate* diſtance.

From the preceding article, it is eaſy to find the *curtate* diſtance; whence the manner of conſtructing tables of *curtation* is obvious.

The quantity of inclination, reduction, and *curtation* of a planet, depending on the argument of the latitude, Kepler, in his Rudolphin Tables, reduces the tables of them all into one, under the title of Tabulæ Latitudinariæ.

CURTESY. See Courtesy.

CURTEYN, *Curtana*, a name given to king Edward the Confeſſor's ſword, which is the firſt ſword that is carried before the kings of England at their coronation.

It is ſaid, the point of it is broken, as an emblem of mercy.

CURTICONE, in *Geometry*, a cone whoſe top is cut off by a plane parallel to its baſis; called alſo TRUNCATED *cone*.

CURTILAGE, *Curtilagium*, in *Law*, a yard, backſide, or piece of ground, lying near a dwelling-houſe.

CURTILLA, in *Zoology*, a name given by ſome to the *corvus ſylvaticus* of Geſner.

CURTIN, Curtain, or Courtine, in *Fortification*, that part of a wall, or rampart, which is between two baſtions; or which joins the FLANKS thereof. See *Tab. Fortification, fig.* 21. *lit. q q.*

Du-Cange derives the word from the Latin *cortina*, *quaſi minor cortis*, a little county-court, incloſed with walls: he ſays, it was in imitation hereof, that they gave this name to the walls and parapets of cities, which incloſe them like courts: he adds, that the *curtains* of beds take their name from the ſame origin; that *cortis* was the name of the general's, or prince's tent; and that thoſe who guarded it were called *cortinarii* and *curtiſani*.

The *curtin* is uſually bordered with a parapet five feet high; behind which the ſoldiers ſtand to fire upon the covert-way, and into the moat.

Beſiegers ſeldom carry on their attacks againſt the *curtin*, becauſe it is the beſt flanked of any part.

Curtin, *angle of the*. See Angle.

Curtin, *complement of the*. See Complement.

CURVATAPINIMA, in *Zoology*, a name by which ſome authors call the fiſh more frequently named the BONITO.

CURVATOR *coccygis*, in *Anatomy*, a name given by Albinus to a muſcle of the coccyx diſcovered by himſelf, and not deſcribed by any other author. It is an oblong, thin, and ſmall muſcle, and for the moſt part tendinous. It ariſes with a double head, one from the inner, and the other from the lower and lateral part of the *os ſacrum*; and deſcending, terminates in three extremities. He calls it the *curvator coccygis*, from its office, which is the bending the coccyx; and ſays, that he found it in different ſtates, in three ſubjects: one very perfect and entire; in a ſecond, more imperfect and degenerating; and in the third, reſembling a ligament rather than a muſcle.

CURVATURE *of a line*, is its bending, or flexure; whereby it becomes a curve, of any peculiar form and properties.

Thus, the *curvature* of the circle is ſuch, as that all points of the periphery are equally diſtant from one point within, called the *center*.

The *curvatures* of different circles are to each other reciprocally as their radii.

The theory of the *curvature* of lines is of great uſe in geometry, in the phyſico-mathematical ſciences. Hence mathematicians have treated this ſubject fully. We ſhall here inſert as much of this doctrine as ſeems neceſſary to enable beginners to form a juſt notion of the ſubject, and refer thoſe who deſire a farther knowlege to Mr. Mac Laurin's Treatiſe of Fluxions, whom we have in this, as in many other articles, followed; becauſe he every where endeavours to avoid that air of paradox and myſtery, which has been more than once made a reproach to modern mathematicians.

Any two right lines applied to each other, perfectly coincide; and the rectitude of lines admits of no variety. Arches of equal circles applied upon each other, perfectly coincide likewiſe; and the *curvature* is uniform in all the parts of the ſame, or of equal circles. Arches of unequal circles cannot be applied upon each other ſo as to coincide; but when they touch each other, the arch of the greater circle is leſs inflected from the common tangent, and paſſes betwixt it and the arch of the leſſer circle, through the angle of contacts formed by them, and is therefore leſs curve. Any two arches of curve lines touch each other when the ſame right line is the tangent of both at the ſame point; but when they are applied upon each other in this manner, they never perfectly coincide, unleſs they be ſimilar arches of equal and ſimilar figures: and the *curvature* of lines admits of indefinite variety. As the *curvature* is uniform in a given circle, and may be varied at pleaſure in circles by increaſing or diminiſhing their diameters, their flexure or *curvature* will therefore ſerve for meaſuring that of other lines. Only one right line can be the tangent of a given arch of a curve at the ſame point; but an indefinite variety of circles may touch it there; and theſe have various degrees of more and leſs intimate contact with it. And as of all the right lines that can be drawn through a given point in the arch of a curve, that is the tangent which touches the arches ſo cloſely that no right line can be drawn between them; ſo of all the circles that touch a curve in any given point, that is ſaid to have the ſame *curvature* with it, which touches it ſo cloſely that no circle can be drawn through the point of contact between them, all other circles paſſing either within or without them both.

This circle is called the *circle of curvature*; its center, the *center of curvature*; and its ſemidiameter, the *ray* or *radius of curvature*, belonging to the point of contact. It is alſo called, eſpecially by foreign mathematicians, the *oſculatory circle*.

The arch of this circle cannot coincide with the arch of the curve, but it is ſufficient to denote it the circle of *curvature*, that no other can paſs between them; as the tangent of the arch of a curve cannot coincide with it, but is applied to it ſo that no right line can be drawn between them.

As in all figures, rectilinear ones excepted, the poſition of the tangent is continually varying; ſo the *curvature* is continually varying in all curvilinear figures, the circle only excepted.

As the curve is ſeparated from its tangent by its flexure or *curvature*, ſo it is ſeparated from the circle of *curvature* in conſequence of the increaſe or decreaſe of its *curvature*; and as its *curvature* is greater or leſs, according as it is more or leſs inflected from the tangent, ſo the variation of *curvature* is the greater or leſs, according as it is more or leſs ſeparated from the circle of *curvature*.

It is manifeſt, that there is but one circle of *curvature* belonging to an arch of a curve at the ſame point. For if there were two ſuch circles, any circle deſcribed between theſe through that point, would paſs between the curve and circle of *curvature*; againſt the ſuppoſition.

When any two curves touch each other in ſuch a manner that no circle can paſs between them, they muſt have the ſame *curvature*; for the circle that touches the one ſo cloſely that no circle can paſs between them, muſt touch the other in the ſame manner.

It appears from the demonſtration of geometricians, that circles may touch curve lines in this manner; that there may be indefinite degrees of more or leſs intimate contact between the curve and the circle of *curvature*; and that a conic ſection may be deſcribed that ſhall have the ſame *curvature* with a given line at a given point, and the ſame variation of *curvature*, or a contact of the ſame kind with the circle of *curvature*.

If we conceive the tangent of any propoſed curve to be a baſe, and that a new line be deſcribed, whoſe ordinate is a third proportional to the ordinate and baſe of the firſt; this new line will determine the chord of the circle of *curvature*, by its interſection with the ordinate at the point of contact; and by the tangent of the angle in which it cuts that circle, it will meaſure the variation of the *curvature*. The leſs this angle is, the cloſer is the contact of the curve and circle of *curvature*; and of this contact there may be indefinite degrees.

To give an example: let any curve EMH (*Tab.* II. *Analyſis*,

Analyſis, fig. 44.), and a circle ERB touch the right line ET on the ſame ſide at E; let any right line TK, parallel to the chord EB, meet the tangent in T, EMH in M, and a curve BKF that paſſes through B in K: then if the rectangle MTK be always equal to the ſquare of ET, the *curvature* of EMH at E will be the ſame as that of the circle ERB; and the contact EM and ER will always be the cloſer, the leſs the angle is that is contained at B by the curve BKF, and the circle of *curvature* BQE.

For it is demonſtrable from the elements of geometry (ſee Mac Laurin's Fluxions, art. 366.) that all the circles that can be deſcribed through E fall without both ER and EM, or within them both, and no circle whatever can paſs between them when the rectangle MTK is always equal to the ſquare of ET, and the curve in which K is always found, paſſes through B, and conſequently the circle ERB, and the curve EM, have the ſame *curvature* at E.

Now let E*m* (*fig.* 45.), any other curve touching ET in E, and *fk*B another curve paſſing through B meet TK in *m* and *k*, and let the rectangle *m*T*k* be likewiſe equal to the ſquare of ET; then will the *curvature* of E*m* at E be the ſame as that of the curve EM, as has been mentioned. But the rectangles *m*T*k*, MTK, RTQ being equal to each other, and their ſides therefore in a reciprocal proportion to each other, it is plain that if the arch B*k* paſs between BK the arch of the curve BKF, and BQ the arch of the circle BQE; the curve E*m* muſt paſs between EM the arch of the curve EMH, and ER the arch of the circle of *curvature* ERB: ſo that E*m* muſt have a cloſer contact with this circle than EM has with it; and the leſs the angle is that is formed by the curve FKB and the circle of *curvature* EQB at B, the cloſer is the contact at E of the curve EMH and the circle of *curvature* ERB. Thus the curve BKF, by its interſection with EB, determines the *curvature* of EM; and by the angle in which it cuts the circle of *curvature* it determines the degree of contact of EM and that circle, the angle BET and the right line ET being given.

Hence it follows, that the contact of the curve EMH, and the circle of *curvature*, is cloſeſt when the curve BK touches the arch BQ in B, the angle BET being given; but it is fartheſt from this, or is moſt open, when BK touches the right line EB in B.

Hence, alſo, there may be indefinite degrees of more and more intimate contact between a circle and a curve. The firſt degree is, when the ſame right line touches them both in the ſame point; and a contact of this ſort may take place betwixt any circle and any arch of a curve. The ſecond is when the curve EMH and circle ERB have the ſame *curvature*, and the tangents of the curve BKF and circle BQE interſect each other at B in any aſſignable angle. The contact of the curve EM and circle of *curvature* ER at E, is of the third degree, or order, and their oſculation is of the ſecond, when the curve BKF touches the circle BQE at B, but ſo as not to have the ſame *curvature* with it. The contact is of the fourth degree, or order, and their oſculation of the third, when the curve BKF has the ſame *curvature* with the circle BQE at B, but ſo as that their contact is only of the ſecond degree: and this gradation of more and more intimate contact, or of approximation towards coincidence, may be continued indefinitely, the contact of EM and ER at E being always of an order two degrees cloſer than that of BK and BQ at B. There is alſo an indefinite variety comprehended under each order: thus, when EM and ER have the ſame *curvature*, the angle formed by the tangents of BK and BQ admits of indefinite variety, and the contact of EM and ER is the cloſer, the leſs that angle is. And when that angle is of the ſame magnitude, the contact of EM and ER is the cloſer the greater the circle of *curvature* is. When BK and BQ touch at B, they may touch on the ſame or on different ſides of their common tangent; and the angle of contact KBQ may admit of the ſame variety with the angle of contact MER; but as there is ſeldom occaſion for conſidering thoſe higher degrees of more intimate contact of the curve EMH and circle of *curvature* ERB, Mr. Mac Laurin calls the contact or oſculation of the ſame kind, when the chord EB and angle BET being given, the angle contained by the tangents of BK and BQ is of the ſame magnitude.

When the *curvature* of EMH increaſes from E towards H, and conſequently correſponds to that of a circle gradually leſs and leſs, the arch EM falls within ER, the arch of the circle of *curvature*, and BK is within BQ. The contrary happens when the *curvature* of EM decreaſes from E towards H, and conſequently correſponds to that of a circle that is gradually greater and greater, the arch EM falls without ER, the arch of the circle of *curvature*, and BK is without BQ. And according as the *curvature* of EM varies more or leſs, it is more or leſs unlike to the uniform *curvature* of a circle; the arch of the curve EMH ſeparates more or leſs from the arch of the circle of *curvature* ERB, and the angle contained by the tangents of BKF and BQE at B, is greater or leſs. Thus the quality of *curvature*, as it is called by Sir Iſaac Newton, depends on the angle contained by the tangents of BK and BQ at B; and the meaſure of the inequability or variation of *curvature*, is as the tangent of this angle, the radius being given, and the angle BET being right.

The rays of *curvature* of ſimilar arches in ſimilar figures, are in the ſame ratio as any homologous lines of theſe figures; and the variation of *curvature* is the ſame. See Mac Laurin, lib. cit. ſect. 370.

When the propoſed curve EMH is a conic ſection, the new line BKF is alſo a conic ſection; and it is a right line when EMH is a parabola, to the axis of which the ordinates TK are parallel. BKF is alſo a right line when EMH is an hyperbola, to one aſymptote of which the ordinate TK is parallel.

When the ordinate EB, at the point of contact E, inſtead of meeting the new curve BK, is an aſymptote to it, the *curvature* of EM will be leſs than in any circle; and this is the caſe in which it is ſaid to be infinitely little, or that the radius of *curvature* is infinitely great. Of this kind is the *curvature* at the points of contrary flexure in lines of the third order.

When the curve BK paſſes through the point of contact E, the *curvature* is greater than in any circle, or the radius of *curvature* vaniſhes; and in this caſe the *curvature* is ſaid to be infinitely great. Of this kind is the *curvature* at the cuſpids of the lines of the third order.

As to the circles of *curvature* for lines of the third or higher orders, ſee lib. cit. art. 379, and art. 380, when the propoſed curve is mechanical.

As lines which paſs through the ſame point have the ſame tangent when the firſt fluxions of the ordinates are equal, ſo they have the ſame *curvature* when the ſecond fluxions of the ordinate are likewiſe equal; and half the chord of the circle of *curvature* that is intercepted between the points wherein it interſects the ordinate, is a third proportional to the right lines that meaſure the ſecond fluxion of the ordinate and firſt fluxion of the curve, the baſe being ſuppoſed to flow uniformly. When a ray revolving about a given point, and terminated by the curve, becomes perpendicular to it, the firſt fluxion of the radius vaniſhes; and if its ſecond fluxion vaniſhes at the ſame time, that point muſt be the center of *curvature*. The ſame may be ſaid, when the angular motion of the ray about that point is equal to the angular motion of the tangent of the curve; as the angular motion of the radius of a circle about its center is always equal to the angular motion of the tangent of the circle. Hence the various properties of the circle may ſuggeſt ſeveral theorems for determining the center of *curvature*.

See alſo art. 396 of the ſaid treatiſe, and the following, concerning the *curvature* of lines that are deſcribed by means of right lines revolving about given poles, or of angles that either revolve about ſuch poles, or are carried along fixed lines.

It is to be obſerved, that as when a right line interſects an arch of a curve in two points, if by varying the poſition of that line the two interſections unite in one point, it then becomes the tangent of the arch; ſo when a circle touches a curve in one point and interſects it in another, if, by varying the center, this interſection joins the point of contact, the circle then has the cloſeſt contact with the arch, and becomes the circle of *curvature*; but it ſtill continues to interſect the curve at the ſame point where it touches it, that is, where the ſame right line is their common tangent, unleſs another interſection join that point at the ſame time. In general, the circle of *curvature* interſects the curve at the point of oſculation, only, when the number of the ſucceſſive orders of fluxions of the radius of *curvature*, that vaniſhes at the term of time when this radius comes to the point of oſculation, is an even number.

It has been ſuppoſed by ſome, that two points of contact, or four interſections of the curve and circle of *curvature*, muſt join to form an oſculation. But Mr. James Bernoulli inſiſted juſtly, that the coalition of one point of contact and one interſection, or of three interſections, was ſufficient. In which caſe, and in general, when an odd number of interſections only join each other, the point where they coincide continues to be an interſection of the curve and circle of *curvature*, as well as a point of their mutual contact and oſculation. See Mac Laurin's Fluxions, art. 493.

From theſe principles the circle of *curvature* at any point of a conic ſection may be determined. Suppoſe EMH (*fig.*

(*fig.* 46.) to be any conic ſection, ET the tangent at E, HI a tangent parallel to EB (a chord of the circle of *curvature*) that meets ET in I, and let EMH meet EB in G. Take EB to EG, in the ſame ratio as the ſquare of EI is to the ſquare of HI; or, when the ſection has a center as in the ellipſis and hyperbola, as the ſquare of the ſemi-diameter O*a* parallel to ET, is to the ſquare of the ſemi-diameter OA parallel to EB; and a circle deſcribed upon the chord EB that touches ET, will be the circle of *curvature.*

When BET is a right angle, or EB is the diameter of the circle of *curvature*, EG will be the axis of the conic ſection, and EB will be the parameter of this axis; and when the point G where the conic ſection cuts EB, and B are on the ſame ſide of the point E, EMG will be an ellipſis, and EG the greater or leſſer axis, according as EG is greater or leſs than EB.

The propoſitions relating to the *curvature* of the conic ſections, commonly given by authors, follow without much difficulty from this conſtruction.

1. When the chord of *curvature* thus found paſſes through the center of the conic ſection, it will then be equal to the parameter of the diameter that paſſes through the point of contact.

2. The ſquare of the ſemi-diameter O*a*, is to the rectangle of half the tranſverſe and half the conjugate axis, as the ray of *curvature* CE is to O*a*. And therefore the cube of the ſemi-diameter O*a*, parallel to the tangent ET, is equal to the ſolid contained by the radius of *curvature* CE, and the rectangle of the two axes.

3. The perpendicular to either axis biſects the angle made by the chord of *curvature*, and the common tangent of the conic ſection and circle of *curvature.*

4. The chord of the circle of *curvature* that paſſes through the focus, the diameter conjugate to that which paſſes through the point of contact, and the tranſverſe axis of the figure, are in continued proportion.

5. When the ſection is an ellipſis, if the circle of *curvature* at E meet O*a* in *d*, the ſquare of E*d* will be equal to twice the ſquare of O*a*. Hence E*d* : O*a* :: √2 : 1. Which gives an eaſy method of determining the circle of *curvature* to any point E, when the ſemi-diameter O*a* is given in magnitude and poſition.

Several other properties of the circle of *curvature*, and methods of determining it when the ſection is given; or *vice verſa*, of determining the ſection when the circle of *curvature* is given, may be ſeen in Mr. Mac Laurin's Fluxions, art. 375.

CURVATURE, *variation of.* See VARIATION.

CURVATURE, *double*, is uſed for the *curvature* of a line, all the parts of which are not ſituated in the ſame plane.

CURUCUI, in *Zoology*, the name of an American bird of the wood-pecker kind, and very remarkably beautiful.

CURVE, in *Geometry*, a LINE whoſe ſeveral points tend ſeveral ways, or are poſited towards different quarters.

In this ſenſe, the word is uſed in oppoſition to a *ſtrait line*, whoſe ſeveral points are poſited towards the ſame quarter.

Hence, figures terminated with lines of the firſt ſort are called *curvilinear* figures; in oppoſition to thoſe terminated with the latter, called *rectilinear* figures.

The doctrine of *curves*, and of the figures and ſolids generated from them, conſtitute what we call the *higher geometry.*

In a *curve*, the line AD (*Tab. Geometry, fig.* 12.) biſecting the parallel lines MM, is called the *diameter:* if the lines be equidiſtant, and it cut them at right angles, it is called the *axis*; and the point A, whence the diameter is drawn, is called the *vertex.*

The equidiſtant lines, MM, are called *ordinates*, or *applicates*; and their halves, PM, *ſemiordinates.*

The portion of the diameter AP, between the vertex, or other fixed point, and an ordinate, is called the *abſciſſe.* And the concourſe of all the diameters, the *center.*

Modern geometers frequently conſider *curves* as compoſed of an infinite number of infinitely ſmall right lines; and it is often ſaid, that the ancients alſo conſidered *curves* as polygons of an infinite number of ſides. But it is certain, that this principle no where appears in their writings. We never find them reſolving any figure into infinitely ſmall elements. On the contrary, they ſeem to avoid ſuch ſuppoſitions, as if they judged them unfit to be received into geometry; though it was ſometimes obvious, that their demonſtrations might have been abridged, by admitting ſuch notions. They conſidered curvilinear areas as the limits of circumſcribed or inſcribed figures of a more ſimple kind, which approach to theſe limits; ſo that the difference between them may become leſs than any given quantity. The inſcribed and circumſcribed figures were always conceived to be of a magnitude and number that is aſſignable; and they demonſtrated the menſuration, or the proportions of the curvilinear limits themſelves, by arguments *ab abſurdo.*

But modern geometricians have abandoned the foundations of the ancients. It was thought unneceſſary to conceive the figures circumſcribed or inſcribed, in the curvilinear area, or ſolid, as being always aſſignable and finite; and the precautions of Archimedes and the ancients came to be conſidered as a check upon geometricians, ſerving only to retard their progreſs. Therefore, inſtead of aſſignable finite figures, indiviſible, or infinitely ſmall elements were ſubſtituted; and theſe being ſuppoſed infinite in number, their ſum was ſuppoſed to coincide with the curvilinear area or ſolid. See Maclaurin's Fluxions, in the Introd.

Curves are diſtinguiſhed into *algebraic*, frequently with Des Cartes called *geometrical*; and *tranſcendental*, called by the ſame Cartes, &c. *mechanical curves.*

CURVES, *Algebraical*, are thoſe wherein the relation of the abſciſſes AP, AP, AP, *fig.* 13. to the ſemiordinates MP, MP, MP, may be expreſſed by an algebraic equation.

Suppoſe, v. gr. in a circle, $AB=a$, $AP=x$, $PM=y$; then will $BP=a-x$; conſequently, as $PM^2=AP\times PB$, $y^2=ax-x^2$. Or, ſuppoſe $PC=x$, $AC=a$, $PM=y$; then will $MC^2-PC^2=PM^2$; that is, $a^2-x^2=y^2$.

Note. Thoſe are alſo called *algebraical curves*, which are of a determinate order; ſo, as that the equation always continues the ſame in the ſeveral points of the *curve.*

Moſt authors, after Des Cartes, call *algebraic curves geometrical* ones; as admitting none elſe into the conſtruction of problems; nor, conſequently, into geometry. But Sir Iſaac Newton, and after him Meſſ. Leibnitz, and Wolfius, are of another opinion; and think, that in the conſtruction of a problem, one *curve* is not to be preferred to another, for its being defined by a more ſimple equation, but for its being more eaſily deſcribed.

CURVE, *Tranſcendental*, is that which cannot be defined by an algebraic equation. See TRANSCENDENTAL *curve.*

Algebraic CURVES *of the ſame kind or order*, are thoſe whoſe equations riſe to the ſame dimenſion.

Geometrical lines being defined by the relation between the ordinates and abſciſſes (or, which is the ſame, by the number of points wherein they may be cut by a right line), are well diſtinguiſhed into two kinds, or orders: in which view, lines of the firſt order will be right lines; and thoſe of the ſecond, or quadratic order, will be *curves*, viz. the *conic ſections.*

Now, a *curve* of the firſt kind is the ſame with a line of the ſecond (a right line not being numbered among *curves*): and a *curve* of the ſecond kind is the ſame with a line of the third. Thus, *curves of the firſt kind*, are thoſe whoſe equations riſe to two dimenſions; if they riſe to three, the *curves* are *of the ſecond kind*; if to four, *of the third*, &c.

Thus, e. gr. the equation for a circle is, $y^2=ax-x^2$, or $a^2-x^2=y^2$. A circle, therefore, is a *curve* of the firſt kind.

Again, a *curve of the firſt kind*, is that defined by the equation $ax=y^2$; and a *curve of the ſecond kind*, that defined by the equation $a^2x=y^3$.

For the various *curves of the firſt kind*, and their properties, ſee CONIC *ſections.*

For *curves of the ſecond kind*, Sir Iſaac Newton has a diſtinct treatiſe, under the title of Enumeratio Linearum Tertii Ordinis, which was firſt printed at the end of Dr. Clarke's Latin tranſlation of Sir Iſaac's Optics; and ſince publiſhed more correctly by the late Mr. Jones in 1711, with the treatiſe of Quadratures, and other tracts of its illuſtrious author: ſince illuſtrated by Mr. Stirling, in his Lineæ Tertiæ Ordinis Neutonianæ. Oxon. 1717.

Curves of the ſecond and other higher kinds, he obſerves, have parts and properties ſimilar to thoſe of the firſt. Thus, as the conic ſections have diameters and axes; the lines cut or biſected by theſe, are called *ordinates*; and the interſection of the *curve* and diameter, the *vertex:* ſo, in *curves of the ſecond kind*, any two parallel right lines being drawn ſo as to meet the *curve* in three points; a right line cutting theſe parallels ſo, as that the ſum of the two parts between the ſecant and the *curve* on one ſide, is equal to the third part terminated by the *curve* on the other ſide, will cut, in the ſame manner, all other right lines parallel to theſe, and that meet the *curve* in three points, i. e. ſo, as that the ſum of the two parts on one ſide, will be ſtill equal to the third part on the other ſide.

Theſe three parts, therefore, thus equal, may be called *ordinates*, or *applicates*; the ſecant, the *diameter*; and where it cuts the ordinates at right angles, the *axis:* the interſection of the diameter and the *curve*, the *vertex*; and the concourſe of the two diameters, the *center*; and the concourſe of all the diameters, the *common* or *general center.*

Again, as an hyperbola of the firſt kind has two aſymptotes; that of the ſecond has three; that of the third, four, &c. and as the parts of any right line between the conic HYPERBOLA and its two aſymptotes are equal on either ſide; ſo, in hyperbolas of the ſecond kind, any right line cutting the *curve* and its three aſymptotes in three points; the ſum of the two parts of that right line, extended from any two aſymptotes, the ſame way, to two points of the *curve*, is equal to the third part, extended from the third ASYMPTOTE, the contrary way, to the third point of the *curve*.

Again, as in other conic ſections, not parabolical, the ſquare of an ordinate, i. e. the rectangle of the ordinates drawn to contrary parts of the diameter, is to the rectangle of the parts of the diameter terminated at the vertices of an ellipſis or hyperbola, as a given line, called the *latus rectum*, is to that part of the diameter which lies between the vertices, and called the *latus tranſverſum*: ſo, in *curves of the ſecond kind*, not parabolical, the parallelopiped under three ordinates, is to the parallelopiped under the parts of the diameter cut off at the ordinates and the three vertices of the figure, in a given ratio: wherein, if there be taken three right lines ſituate at the three parts of the diameter between the vertices of the figure, each to each; then thoſe three right lines may be called the *latera recta* of the figure, and the parts of the diameter between the vertices, the *latera tranſverſa.*

And, as in a conic parabola, which has only one vertex to one and the ſame diameter, the rectangle under the ordinates is equal to the rectangle under the part of the diameter cut off at the ordinates and vertex, and a given right line called the *latus rectum*: ſo, in *curves of the ſecond kind*, which have only two vertices to the ſame diameter, the parallelopiped under three ordinates is equal to the parallelopiped under two parts of the diameter cut off at the ordinates and the two vertices, and a given right line, which may therefore be called the *latus tranſverſum.*

Further, as in the conic ſections, where two parallels, terminated on each ſide by a *curve*, are cut by two parallels terminated on each ſide by a *curve*, the firſt by the third, and the ſecond by the fourth: the rectangle of the parts of the firſt is to the rectangle of the parts of the ſecond, as that of the ſecond is to that of the fourth: ſo, when four ſuch right lines occur in a *curve* of the ſecond kind, each in three points; the parallelopiped of the parts of the firſt will be to that of the parts of the ſecond, as that of the ſecond to the parts of the fourth.

Laſtly, the legs of *curves*, both of the *firſt*, *ſecond*, and *higher kinds*, are either of the parabolic or hyperbolic kind: an hyperbolic leg being that which approaches infinitely towards ſome aſymptote; a parabolic, that which has no aſymptote.

Theſe legs are beſt diſtinguiſhed by their tangents; for, if the point of contact go off to an infinite diſtance, the tangent of the hyperbolic leg will coincide with the aſymptote; and that of the parabolic leg, recede infinitely, and vaniſh. The aſymptote, therefore, of any leg, is found by ſeeking the tangent of that leg to a point infinitely diſtant; and the bearing of an infinite leg is found by ſeeking the poſition of a right line parallel to the tangent, when the point of contact is infinitely remote: for this line tends the ſame way towards which the infinite leg is directed.

Reduction of CURVES *of the ſecond kind.* Sir Iſaac Newton reduces all *curves of the ſecond kind* to four caſes of equations: in the firſt, the relation between the ordinate and abſciſs, making the abſciſs x, and the ordinate y, aſſumes this form, $xyy-ey=ax^3+bxx+cx+d$. In the ſecond caſe, the equation aſſumes this form, $xy=ax^3+bx^2+cx+d$. In the third caſe, the equation is $yy=ax^3+bx^2+cx+d$. In the fourth, the equation is of this form, $y=ax^3+bx^2+cx+d$. See Stirling's Lineæ, &c. p. 83, &c.

Enumeration of the CURVES *of the ſecond kind.* Under theſe four caſes, the ſame author brings a vaſt number of different forms of *curves*, to which he gives different names.

An hyperbola lying wholly within the angle of the aſymptotes, like a conic hyperbola, he calls an *inſcribed hyperbola*; that which cuts the aſymptotes, and contains the parts cut off within its own periphery, a *circumſcribed hyperbola*; that, one of whoſe infinite legs is inſcribed, the other circumſcribed, he calls *ambigenal*; that whoſe legs look toward each other, and are directed the ſame way, *converging*; that where they look contrary ways, *diverging*; that where they are convex different ways, *croſs-legged*; that applied to its aſymptote with a concave vertex, and diverging legs, *conchoidal*; that which cuts its aſymptote with contrary flexures, and is produced each way into contrary legs, *anguineous*, or *ſnake-like*; that which cuts its conjugate acroſs, *cruciform*; that which returning around cuts itſelf, *nodated*; that whoſe parts concur in the angle of contact, and there terminate, *cuſpidated*; that whoſe conjugate is oval, and infinitely ſmall, i. e. a point, *pointed*; that which from the impoſſibility of its two roots, is without either oval, node, cuſp, or point, *pure*: and in the ſame manner he denominates a parabola to be *converging*, *diverging*, *cruciform*, &c. Where the number of hyperbolic legs exceeds that of the conic hyperbola, he denominates the hyperbola *redundant.*

Now the various *curves* which he enumerates under theſe four caſes, are in number ſeventy-two; whereof nine are *redundant* hyperbolas, without diameters, having three aſymptotes including a triangle; the firſt conſiſting of three hyperbolas, one *inſcribed*, another *circumſcribed*, another *ambigenal*, with an *oval*; the ſecond, *nodated*; the third, *cuſpidated*; the fourth, *pointed*; the fifth and ſixth, *pure*; the ſeventh and eighth, *cruciform*; the laſt, *anguineal.* There are twelve *redundant* hyperbolas, having only one diameter: the firſt, *oval*; the ſecond, *nodated*; the third, *cuſpidated*; the fourth, *pointed*; the fifth, ſixth, ſeventh, and eighth, *pure*; the ninth and tenth, *cruciform*; the eleventh and twelfth, *conchoidal.* Mr. Stirling makes theſe fourteen. Two are *redundant* hyperbolas, with three diameters. Nine are *redundant* hyperbolas, with three aſymptotes converging to a common point; the firſt formed of the fifth and ſixth redundant parabolas, whoſe aſymptotes include a triangle; the ſecond, of the ſeventh and eighth; the third and fourth, of the ninth; the fifth is formed of the fifth and ſeventh of the redundant hyperbolas, with one diameter; the ſixth, of the ſixth and ſeventh; the ſeventh, of the eighth and ninth; the eighth, of the tenth and eleventh; the ninth, of the twelfth and thirteenth: all which converſions are effected, by diſtinguiſhing the triangle comprehended between the aſymptotes, till it vaniſh into a point.

Six are *defective* parabolas, having no diameters: the firſt, *oval*; the ſecond, *nodated*; the third, *cuſpidated*; the fourth, *pointed*; the fifth, *pure*, &c.

Seven are *defective* hyperbolas, having diameters: the firſt and ſecond, *conchoidal*, with an *oval*; the third, *nodated*; the fourth, *cuſpidated*, which is the ciſſoid of the ancients; the fifth and ſixth, *pointed*; the ſeventh, *pure.*

Seven are *parabolic* hyperbolas, having diameters: the firſt, *oval*; the ſecond, *nodated*; the third, *cuſpidated*; the fourth, *pointed*; the fifth, *pure*; the ſixth, *cruciform*; the ſeventh, *anguineous.*

Four are *parabolic* hyperbolas: four are *hyperboliſms* of the hyperbola: three, *hyperbolas* of the ellipſis: two, *hyperboliſms* of the parabola.

Six are *diverging* parabolas: one, a *trident*; the ſecond, *oval*; the third, *nodated*; the fourth, *pointed*; the fifth, *cuſpidated* (this is Neil's *parabola*, uſually called the *ſemicubic parabola*); the ſixth, *pure.*

Laſtly, one commonly called the *cubic parabola.*

Mr. Stirling and Mr. Stone have ſhewn this enumeration to be imperfect; and Mr. Murdoch has ſince found ſome new ſpecies. See his Geneſis Curvarum per Umbras.

Organical deſcription of CURVES. 1. If two angles, given in magnitude, P A D, P B D (*Tab. Geometry*, *fig.* 14.) revolve round poles given in poſition, A and B; and their legs, A P, B P, with their point of concourſe P, paſs over another right line: the other two legs A D, B D, with their point of concourſe D, will deſcribe a conic ſection paſſing through the poles A B; unleſs that line happen to paſs through either of the poles A or B; or unleſs the angles B A D and A B D vaniſh together; in which caſes, the point will deſcribe a right line.

2. Now, if the legs A P, B P, by their point of concourſe P, thus deſcribe a conic ſection paſſing through one of the poles, A; the other two, A D, B D, with their point of concourſe D, will deſcribe a *curve of the ſecond kind*, paſſing through the other pole B, and having a double point in the firſt pole A: unleſs the angles B A D, A B D, vaniſh together; in which caſe, the point D will deſcribe another conic ſection, paſſing through the pole A.

3. If the conic ſection, deſcribed by the point P, paſs through neither of the poles A, B; the point D will deſcribe a *curve of the ſecond or third kind*, having a double point: which double point will be found in the concourſe of the deſcribing legs A D, B D, when the two angles B A P, A B P, vaniſh together. The *curve* deſcribed will be of the *ſecond kind*, when the angles B A D, A B D, vaniſh together; otherwiſe of the *third kind*, having two other double points in the poles A and B.

With regard to *double points of the curves*: we have obſerved

ſerved, that *curves* of the ſecond kind may be cut by a right line in thoſe two points: now two of theſe ſometimes coincide, v. gr. when the right line paſſes through an infinitely ſmall oval, or through the concourſe of two parts of a *curve*, mutually cutting each other, and uniting in a cuſp. Sometimes all the right lines only cut the *curve* in one point; as in ordinates of the Carteſian and cubic parabola, &c. in which caſe, we muſt conceive the right line paſſing through two other points of the *curve*, placed, as it were, at an infinite diſtance: two of theſe coincident interſections, whether at a finite or infinite diſtance, make what we call a *double point.*

The theory of *curves* is a very conſiderable branch of the mathematical ſciences. Thoſe who are curious of advancing beyond the knowlege of the circle and the conic ſections, and to conſider geometrical *curves* of a higher nature, and in a general view, will do well to ſtudy Mr. Cramer's Introduction à l'Analyſe des Lignes Courbes Algebraiques, printed at Geneva, 4to. 1750, which the learned and ingenious author compoſed for the uſe of beginners. We have an elegant poſthumous work of Mr. Maclaurin, printed at the end of his Algebra, and entitled De Linearum Geometricarum Proprietatibus Generalibus. The ſame author, at a very early age, gave a remarkable ſpecimen of his genius and knowlege in his Geometria Organica, and carried theſe ſpeculations farther afterwards, as may be ſeen in the theorems he has given us in the Philoſophical Tranſactions. See Martyn's Abridg. vol. viii. p. 62, ſeq.

Curves may be organically deſcribed by the rotation of angles, in the manner mentioned above; but there is another general method of deſcribing *curves* by the rotation of rulers or ſtraight lines, inſtead of angles.

Thus, if inſtead of angles we uſe three rulers, D Q, C N, S P (*Tab.* II. *Analyſis, fig.* 47.), which are ſuppoſed to revolve about the poles D, C, S, and to cut one another always in three points, N, Q, and P; if any two of theſe interſections, as N and Q, be carried along the given ſtraight lines A E, E B, the third interſection P will deſcribe a conic ſection.

If you aſſume any number of poles whatſoever, and make rulers revolve about each of them, and all the interſections but one, be carried along given right lines, that one ſhall never deſcribe a line of a higher nature than a conic ſection. And if inſtead of rulers you ſubſtitute given angles which move on the ſame poles, the *curve* deſcribed will ſtill be no more than a conic ſection.

But by carrying one of the interſections neceſſary in the deſcription over a conic ſection, lines of higher orders may be deſcribed.

The Rev. Mr. Brakenridge has given us a general method of deſcribing *curves*, by the interſection of right lines moving about points in a given plane. See Phil. Tranſ. Nº 436. Martyn's Abridg. vol. viii. p. 58, ſeq. But the demonſtrations are not yet extant, excepting the particular caſes demonſtrated in his Exercitatio Geometrica de Curvarum Deſcriptione. Lond. 1733. 4to.

Curves may alſo be deſcribed by the projection, or ſhadows of other *curves*. Thus the projection, or ſhadow of the circle upon different planes, will form the reſt of the lines of the ſecond order, or conic ſections. This is evident, becauſe the rays of light proceeding from a point out of the plane of a circle, and falling upon the circumference of that circle form a cone, which being cut by the plane upon which the ſhadow of the circle is projected, the different conic ſections will be formed according to the poſition of the interſecting plane.

In like manner, the projections or ſhadows of lines of the third order, will form other lines of the third order; and projections or ſhadows of lines of the fourth order, will form lines of the fourth order, &c.

And as the circle, by the projection of its ſhadow, forms the conic ſections, ſo the five diverging parabolas among the lines of the third order, will, by their ſhadows, form and exhibit all the reſt of the lines of that order. See Newton, Enumerat. Lin. Terti. Ordin. publiſhed by Mr. Jones, 1711.

This hint of Sir Iſaac Newton has been lately purſued and illuſtrated with great elegance by Mr. Murdoch, in his treatiſe entitled Newtoni Geneſis Curvarum per Umbras, ſeu Perſpectivæ Univerſalis Elementa. Lond. 1746, 8vo.

By an accurate enumeration of theſe projections, Mr. Murdoch finds, that the number of ſpecies of the lines of the third order amount to ſeventy-eight in all.

Deſcription of CURVES *of the ſecond order, having double points.* Theſe are all deſcribed from ſeven given points, whereof one is the double point itſelf; thus, let there be given any ſeven points of the *curve* to be deſcribed; as, v. gr. A, B, C, D, E, F, G (*Tab. Geometry, fig.* 15.), whereof A is the double point: join the point A, and any other two points, v. gr. B and C; and let the angle C A B, of the triangle A B C, revolve about its vertex A; and another of the angles A B C, about its vertex B: and when the point of concourſe C, of the legs A C, B C, is ſucceſſively applied to the four other points D, E, F, G, let the concourſe of the remaining legs A B and B A fall on the four points P, Q, R, S.

Through thoſe four points, and the fifth A, deſcribe a conic ſection; and let the forementioned angles C A B, C B A, ſo revolve, as that the point of concourſe of the legs A B, B A, may paſs over that conic ſection; and the concourſe of the other legs A C, B C, will deſcribe the propoſed *curve.*

Uſe of theſe CURVES *in the conſtruction of equations.* The uſe of *curves* in geometry is, by means of the interſections thereof, to ſolve problems. See CONSTRUCTION.

Suppoſe, v. gr. an equation to be conſtructed of nine dimenſions, as $x^9+bx^7+cx^6+dx^5+ex^4+(m+f)x^3+gx^2+bx+k=o$; where *b*, *c*, *d*, &c. ſignify any given quantities affected with the ſigns + or −: aſſume the equation to a cubic parabola $x^3=y$; and the firſt equation, writing *y* for x^3, will come out $y^3+bxy^2+cy^2+dx^2y+exy+my+fx^3+gx^2+bx+k=o$; an equation to another *curve* of the ſecond kind, where *m* or *f* may be aſſumed or annulled at pleaſure: and by the deſcriptions and interſections of theſe *curves* will be given the roots of the equation to be conſtructed. It is ſufficient to deſcribe the cubic parabola once. If the equation to be conſtructed, by omitting the two laſt terms hx and *k*, be reduced to ſeven dimenſions; the other *curve*, by expunging *m*, will have the double point in the beginning of the abſciſs, and may be eaſily deſcribed as above: if it be reduced to ſix dimenſions, by omitting the three laſt terms, taking gx^2+bx+k; the other *curve*, by expunging *f*, will become a conic ſection: and if, by omitting the three laſt terms, the equation be reduced to three dimenſions, we ſhall fall on Dr. Wallis's conſtruction by the cubic parabola and right line.

CURVE *of a double curvature*, or CURVE *having a double curvature*, is uſed for a *curve*, all the parts of which do not lie in the ſame plane, that is, ſuch as cannot be deſcribed on the ſame plane.

The *curves* commonly treated of in geometry, are ſuppoſed to be deſcribed, or to have all their points placed in the ſame plane; but if a *curve* be ſuppoſed to be deſcribed on a *curve* ſurface, in ſuch a manner that all the points of that *curve* cannot lie or be ſituated in one and the ſame plane, then will the *curve* ſo deſcribed have a *double curvature.*

Monſieur Clairaut has publiſhed an ingenious treatiſe on *curves of a double curvature.* See his Recherches ſur les Courbes, à double Courbure, at Paris, 4to. 1731. Mr. Euler has alſo treated this ſubject in the Appendix to his Analyſis Infinitorum, vol. ii. p. 323.

CURVE, *rectification of a*, denotes the finding a right line equal to a *curve*. For the praxis hereof, ſee RECTIFICATION *of curves.*

CURVE, *inflection of a.* See INFLECTION.

CURVE, *quadrature of a*, the finding the area, or ſpace included, by a *curve*; or the aſſigning a ſquare equal to a curvilinear ſpace.

CURVES, *family of*, is an aſſemblage of ſeveral *curves* of different kinds, all defined by the ſame equation of an intermediate degree; but differently, according to the diverſity of their kind.

E. gr. Suppoſe an equation of an indeterminate degree, $a^{m-1}x=y^m$. If $m=2$, then will $ax=y^2$; if $m=3$, then will $a^2x=y^3$; if $m=4$, then $a^3x=y^4$, &c. all which *curves* are ſaid to be of the *ſame family*, or *tribe.*

The equations whereby the families of *curves* are defined, are not to be confounded with the tranſcendental ones: for though, with regard to the whole family, they be of an indeterminate degree; yet, with reſpect to each ſeveral *curve* of the family, they are determinate; whereas tranſcendent equations are of an indefinite degree, with reſpect to the ſame *curve.*

All algebraic *curves*, therefore, compoſe a certain family, conſiſting of innumerable others; each whereof comprehends infinite kinds. For ſince the equations whereby the *curves* are defined enter the facta, either of the powers of the abſciſſes and ſemiordinates into the given co-efficients, or of the powers of the abſciſſes into the powers of the ſemiordinates, or of the mere given quantities; and all equations may be equal to nothing (v. gr. if $ax=y^2$, then $ax-y^2=0$); the equation for all algebraic *curves* will be

$$\left.\begin{aligned} ay^m + bxy^{m-1} + nx^2y^{m-2}\ \&c. + fy^m \\ + fy^{m-1} + kxy^{m-2} \\ + qy^{m-2} \end{aligned}\right\} = 0.$$

CURVE, *cauſtic*, in the higher geometry, a curve formed by the concourſe, or coincidence of the rays of light reflected, or refracted from ſome other *curve.*

Every *curve* has its twofold cauſtic; accordingly, cauſtics are divided into *catacauſtics*, and *diacauſtics*; the one formed by reflection, the angle of reflection being equal to that of incidence, the other by refraction.

The geneſis of theſe *curves* may be thus conceived: let A B, A B, &c. *Tab.* II. *Analyſis*, *fig.* 48. repreſent an infinite number of incident rays, that lie all in one plane of incidence; it is evident, that after reflection or refraction, they will not belong to a ſingle point or focus, but cut one another in an infinite number of points: then, if a *curve* be ſuppoſed of ſuch a ſhape as to touch every one of the reflected or refracted rays B F, B F, &c. produced, if need be, in the points F, F, &c. the *curve* F F F is called a *cauſtic* by reflection or refraction, as the name is applied to reflected or refracted rays. It is plain, that if two tangents B F, B F interſect one another in G, and be ſuppoſed to approach one another till they coincide, the points of contact and of interſection will alſo coincide: and therefore the reflected or refracted ray touches the *cauſtic* in that point of the ray, where its interſection with the next ray vaniſhed, when they were ſuppoſed to coincide. And if two incident rays infinitely near to each other be conceived to revolve about their focus A, in the plane of incidence, the focus F or point of interſection of the reflected or refracted rays will deſcribe the *cauſtic* above defined; which is real or imaginary, as F is the focus of converging or diverging rays.

Or, a *cauſtic* by refraction, called a *diacauſtic*, may be ſuppoſed to be thus generated. Imagine an infinite number of rays, as B A, B M, B D, &c. (*Tab. Geom. fig.* 20.) iſſuing from the ſame luminous point, B, to be refracted from, or to the perpendicular M C, in the *curve* A M D; and ſo, as that C E, the ſines of the angles of incidence C M E be always to C G, the ſines of the refracted angles C M G, in a given ratio: then the curve line, which touches all the refracted rays, is called the *diacauſtic.*

M. Bouguer obſerves, that there are two *cauſtics* formed at the ſame time, by convex and concave ſurfaces; and that they occaſion two different images of objects ſeen by reflection from them. See his Traité d' Optique; or Prieſtley's Hiſt. of Viſion, p. 233. See alſo on this ſubject, Smith's Optics, p. 171—181.

Cauſtic curves have this remarkable property, that when the *curves* that produce them are geometrical, they are equal to known right lines.

Thus, the *cauſtic* formed by reflected rays from a quadrant of a circle, which came at firſt parallel to the diameter, is equal to three fourths of the diameter; which is a ſort of rectification of *curves* that preceded the invention of the new doctrine of infinites, on which moſt of our rectifications are built.

Cauſtic curves are uſually ſuppoſed to be the invention of M. Tſchirnhauſen; but it is only the name he invented. The firſt mention he made of them was in the year 1682, when he produced no inſtance but that of the cauſtic in a circle, which he might have learned from Dr. Barrow's Lectiones Opticæ, publiſhed in 1669. It would have been eaſy for him to have done the ſame for any *curve*, by the help of the radius of curvature publiſhed by Huygens in his Horologium Oſcillatorium, in 1673. It is certain this had been done by Sir Iſaac Newton as early as the year 1669, as appears from his Lectiones Opticæ, which were read that year at Cambridge, though not publiſhed till after his death, viz. in 1728. Act. Erud. Lipſ. ann. 1682. p. 364. Newt. Lect. Opt. ſect. 4. Preſ. Stat. Rep. Lett. tom. i. p. 50, ſeq.

Curve *reflectoire*, in *Optics*, ſo called becauſe it is the appearance of the plane bottom of a baſon covered with water to an eye perpendicularly over it. In this poſition the bottom of the baſon will appear to riſe upwards from the center outwards; but the curvature will be leſs and leſs, and at laſt the ſurface of the water will be an aſymptote to it. M. Mairan, who firſt conceived this idea from the phenomena of LIGHT, found alſo ſeveral kinds of theſe *curves*; and he gives a geometrical deduction of their properties, ſhewing their analogy to cauſtics by refraction. Ac. Par. 1740. H. 121. M. 1. Dr. Prieſtley's Hiſt. of Viſion, p. 752.

Curves *by the light*, or Courbes *a la lumiere*, in *Optics*, a name given to certain *curves* by M. Kurdwanowſki, a Poliſh gentleman. He obſerved that any line ſtraight or curved, expoſed to the action of a luminous point, received the light differently in its different parts, according to their diſtance from the light. Theſe different effects of the light upon each point of the line, may be repreſented by the ordinates of ſome *curve* which will vary preciſely with theſe effects. Dr. Prieſtley's Hiſt. of Viſion, p. 752.

Curve, *exponential*, is that defined by an exponential equation; that is, by an equation wherein is an exponential quantity, v. gr. x^x, a^x, &c.

The ſymptoms, properties, geneſes, &c. of particular *curves*, v. gr. the cycloid, conchoid, &c. ſee under their proper heads, Cycloid, Conchoid, &c.

Curve, *logarithmic.*

This *curve* was called *logarithmic* or *logiſtic* by Huygens: though others had conſidered it before him, none had named it. He has given us ſeveral curious properties relating to it, at the end of his Treatiſe of the Cauſe of Gravity, but without demonſtrations. Theſe have been ſince ſupplied by Guido Grandi. See Huyg. Oper. vol. ii. Amſtel. 1728.

Theſe properties are, 1. The ſpaces comprehended between two ordinates, are as the difference of thoſe ordinates. Thus, let AVD (*Tab.* II. *Analyſis*, *fig.* 50.) be a logarithmic, and its ordinates A B, V C, D Q; let the two laſt continued meet A K, a parallel to the aſymptote B O, in E and K, then will the ſpaces A B C V, A B Q D be to each other as E V to K D.

2. If A O be a tangent in A, interſecting C E and K Q in I, G; the ſpaces AVE, A D K will be to each other as VI and D G.

3. The ſpace A B Q D is to the infinite ſpace beyond Q D, and lying between the *curve* and its aſymptote, as K D to D Q.

The accurate author obſerves, that when he ſays the infinite ſpace has a certain proportion to a finite one, he means that this infinite, or indefinite ſpace, may approach ſo near to a given ſpace, having that certain proportion to another, that the difference may become leſs than any aſſigned quantity.

4. The ſub-tangent is conſtant.

5. This ſub-tangent may be found by approximation, and is to the portion of the aſymptote intercepted between ordinates in the ratio of 2 to 1, as 43429, &c. to 30103, or nearly as 13 to 9; that is, as the modulus of Briggs's ſyſtem, to the logarithm of 2. See Logarithm.

6. If there be three ordinates, as A D, G H, B F, *fig.* 51. and if from the extremity B of the leaſt, there be drawn a parallel to the aſymptote B K, cutting the other two ordinates in R, K; as alſo a tangent B Q, cutting them in N, Q; the trilinear ſpaces A B K, H B R will be to each other as the portions of the ordinates intercepted between the *curve* and the tangent, that is, as A Q, H N.

7. The infinite ſpace between the *curve* and its aſymptote, lying beyond any ordinate B F, is double of the triangle B F O, formed by that ordinate, the ſub-tangent and tangent. In which ſenſe this is to be underſtood. See above, N° 3.

8. The ſpace comprehended between two ordinates is equal to the rectangle under the ſub-tangent and the difference of the ordinates. Thus the ſpace A B F D is equal to the rectangle under F O, A K, or to B M X Y.

9. The ſolid formed by the revolution of the infinite ſpace lying beyond any ordinate about the aſymptote, is to a cone of the height of the ſub-tangent, with a baſe equal to the circle deſcribed with that ordinate as radius, as 3 to 2. Thus the ſolid formed by the revolution of the indefinite ſpace Z F B T, about F Z, is to the cone formed by the revolution of the triangle F B O, as 3 to 2.

10. The ſolid formed by the revolution of the ſame infinite ſpace about the ordinate F B, is ſextuple of the cone formed by the triangle F B O, revolving about F B.

11. The diſtance of the center of gravity of this infinite plain ſpace from the ordinate B F, is the length of the ſub-tangent F O.

12. The diſtance of this center from the aſymptote is one fourth of the ordinate.

13. The diſtance of the center of gravity of the firſt of the before mentioned ſolids, from its baſe, is one half of the ſub-tangent.

14. The diſtance of the center of gravity of the other ſolid, from its infinite baſe, is one eighth of its axis.

15. If there be two ſegments of an hyperbola, *fig.* 52. comprized between ordinates to one of its aſymptotes, and if the ordinates of the one be to each other, as the ordinates A D, H G of the logarithmic; and if the ordinates of the other be as B F to C E; then will the hyperbolic ſpaces be to each other, as D G to F E. And theſe hyperbolic ſpaces are to the parallelogram of the hyperbola, as the lines D G, F E are to the ſub-tangent F O. So that if this parallelogram be ſuppoſed equal to 0.4342944819, every hyperbolic ſpace com-

prized between two ordinates to one of the aſymptotes, will be to this parallelogram, as the logarithm of the ratio of the two ordinates, or the difference of the logarithms of the numbers expreſſing the proportions of thoſe ordinates, is to 0.4342944819; taking the logarithms of 10 figures beſides the characteriſtic.

We have mentioned one method of finding the ſubtangent of a given logarithmic from Huygens in N° 4. But this may be otherwiſe done thus: produce any ordinate C D, *fig.* 53. from C to E, ſo that the ratio of C E to C D be equal to the *ratio modularis*; and the right line E B drawn from E parallel to the aſymptote, and meeting the curve in B, will be equal to the ſub-tangent. The *ratio modularis* is 2.7182818, &c. to 1, or 1 to 0.3678794, &c. for which may be ſubſtituted the approximations 11 to 4, 87 to 32, &c. greater than the true, and 8 to 3, 19 to 7, 106 to 39, &c. leſs than the true ratio. See Cotes, Harm. Menſ. p. 7 and 16.

While the baſe O P increaſes uniformly, let the ordinate P *p*, *fig.* 54. increaſe or decreaſe proportionally, as mentioned under the head Logarithm; that is, let the velocity of *p* in the direction O *o*, be always as the ordinate P *p*; then will the point *p* deſcribe the *logarithmic curve*. The baſe O P is always the logarithm of the ordinate P *p*; and if the uniform motion of P be equal to the motion of *p* at *o* in the direction O *o*, then is the ordinate O *o* the modulus of this ſyſtem of logarithms; and the fluxion of any ordinate is to the fluxion of the baſe, as that ordinate is to O *o*.

By the general property of tangents, the fluxion of any ordinate is to the fluxion of the baſe, as that ordinate is to the ſub-tangent. Hence the ſub-tangent O T, or A T, will be equal to O *o*. The ſub-tangent will therefore be conſtant. In any other *logarithmic curve*, the ſub-tangent will always be equal to that ordinate, whoſe fluxion is equal to the fluxion of the baſe; that is, the modulus always expreſſes the ſub-tangent of the *logarithmic curve*. See Logarithm.

The ſub-tangent of the logarithmic expreſſing the modulus of that ſyſtem of logarithms, the ſub-tangent will be the logarithm of the *ratio modularis*, that is, of the ratio of two ordinates raiſed at the extremities of the ſub-tangent; and as the *ratio modularis* is the ſame in all ſyſtems of logarithms, ſo the ratio of the two ordinates placed at the extremities of their reſpective ſub-tangents, is the ſame in all *logarithmic curves* whatſoever.

When the *logarithmic curve* is ſuppoſed to be deſcribed, exponential quantities are eaſily determined by it. Let the ordinate A *a* be expreſſed by A; let O P be to O A as any quantity expreſſed by x is to 1: then the ordinate P *p* may be expreſſed by A^x, an exponential quantity of the firſt degree when x is variable. See Exponential.

To rectify the logarithmic Curve. Let it be required to find the length of the logarithmic arc E *e*, *fig.* 55. Draw the perpendiculars E L A, *e l a*, to the aſymptote; and having drawn the tangents E F, *e f*, take A L equal to the exceſs of the tangent above the ſub-tangent A F, and *a l* equal to the exceſs of the tangent *e f* above *a f*; then having drawn L M, *l m* parallel to the aſymptote, if the difference of the tangents E F—*e f*, be added to the difference of the parallels *l m*—L M, the aggregate will be equal to the arc E *e*. Cotes, Harm. Menſ. p. 23, 24.

Curves, *radial*, is a denomination given by ſome authors to *curves* of the ſpiral kind, whoſe ordinates, if they may be ſo called, do all terminate in the center of the including circle, and appear like ſo many radii of that circle; whence the name.

Curves, *regular*, are ſuch whoſe curvity proceeds continually in the ſame uniform geometrical manner. Such are the perimeters of the conic *ſection*, &c.

Such as have a point of inflection, or regreſſion, and which being continued to a certain point, turn themſelves a contrary way, are called *irregular curves*. Such are the conchoid, and the ſolid parabola, which has a ſquare for its parameter. See Flexion and Retrogression.

Curve, *characteriſtic triangle of a*, in the higher geometry, is a rectilinear right-angled triangle, whoſe hypothenuſe makes a part of the *curve*, not ſenſibly different from a right line. It is ſo called, becauſe curve lines are uſed to be diſtinguiſhed hereby.

Suppoſe, e. gr. the ſemiordinate *p m* (*Tab. Analyſis, fig.* 7.) infinitely near another P M; then will P *p* be the differential of the abſciſs: and letting fall a perpendicular, M R = P *p*, R *m* will be the differential of the ſemiordinate. Draw, therefore, a tangent T M; and the infinitely ſmall arch M *m* will not differ from a right line: conſequently M *m* R is a rectilinear right-angled triangle, and conſtitutes the characteriſtic triangle of that *curve*.

CURVET, in the *Manege*. See Corvet.

CURVICAUDA, in *Natural Hiſtory*, the name of a ſpecies of bee-fly, very common in England, and very troubleſome to horſes, commonly known by the name of the wringle-tail.

CURVILINEAR, or Curvilineal *figures*, in *Geometry*, are ſpaces bounded by crooked lines; as the circle, ellipſis, ſpherical triangle, &c.

Curvilinear *angle*, and *ſuperficies*. See Angle, and Superficies.

CURVIROSTRA, in *Ornithology*, a ſpecies of loxia.

Curvirostra *foſſilis*, in *Natural Hiſtory*, the name of a ſpecies of foſſile ſhell, found very frequently in the ſtone quarries of Northamptonſhire, and the neighbouring counties. It is a ſpecies of cockle, and is diſtinguiſhed by its beak not ſtanding in the middle, but always inclining to one or the other ſide. The ſhell is ſometimes found remaining entire, and in its native ſtate and condition, but more frequently there is ſtony matter depoſited in its place.

CURULE *chair*, *ſella* Curulis, in *Antiquity*, a high ivory chair, wherein certain of the Roman magiſtrates had a right to ſit.

The *curule* magiſtrates were, the ædiles, prætors, cenſors, and conſuls.

The ſenators, who had borne theſe charges, were carried to the ſenate on *curule chairs*, as alſo thoſe who triumphed: the chair being fitted into a kind of chariot, *currus*; whence the origin of the word *curulis*.

The *curule chair* is uſed, on medals, to expreſs a *curule* magiſtracy: when traverſed by a haſta, it is the ſymbol of Juno, and ſerves to expreſs the conſervation of princeſſes.

Curule *ſtatues*. See Statue.

CURURU, in *Botany*, a name uſed by Plumier in the ſame ſenſe with the *ſeriana* of the ſame author, in its generical characters, and called by Linnæus paulinia.

CURURUCA, in *Zoology*, the name of an American freſh water fiſh, of an oblong, and not flatted, body. It grows to a foot and a half in length; its mouth is very large. It is eaten in the Braſils.

CUSCASOW, the name of a Mooriſh diſh eaten in Egypt. It is made of flour tempered with water, rolled in the hands into ſmall pieces, and then put into a colander, over a boiling pot, ſtopped cloſe round; ſo that it is dreſſed with the ſteam; and when it is done enough, they put butter to it.

CUSCUTA. See Dodder.

CUSHION, *Ladies*, in *Botany*. See Saxifrage.

Cushion, *Sea*, *Statice*. See Thrift.

Cushion, *a rubber*, in *Electricity*. See Electrical *machine*.

Cushion, in *Engraving*, is a bag of leather filled with ſand, commonly about nine inches ſquare, and three or four thick, uſed for ſupporting the plate to be engraved.

Cushion, in *Gilding*, is made of leather, faſtened to a ſquare board, from fourteen inches ſquare to ten, with a handle. The vacuity between the leather and board is ſtuffed with fine tow or wool, ſo that the outer ſurface may be flat and even. It is uſed for receiving the leaves of gold from the paper, in order to its being cut into proper ſize and figures.

CUSI, in *Natural Hiſtory*, a name given by the people of the Philippine iſlands to a very ſmall and very beautiful ſpecies of parrot.

CUSP, *cuſpis*, properly denotes the point of a ſpear, or ſword; but is uſed in *Aſtronomy* to expreſs the points, or horns, of the moon, or any other luminary.

Cusp, in *Aſtrology*, is uſed for the firſt point of each of the twelve houſes, in a figure, or ſcheme, of the heavens. See House.

CUSPIDATED, in *Botany*, is when the leaves of a flower end in a cuſp, or point, reſembling that of a ſpear.

Cuspidated *hyperbola*, &c. See Curve.

CUSTARD *apple*. See *Cuſtard* Apple.

CUSTODE *admittendo*, and Custode *amovendo*, are writs for the admitting, or removing, of guardians.

Custodes *libertatis Angliæ authoritate parliamenti*, was the ſtyle, or title, in which writs, and other judicial proceedings, did run in the time from the death of Charles I. till Oliver was declared protector, &c.

CUSTODIA. See Recto *de cuſtodia terræ & hæredis*.

Hærede deliberando alii qui habet Custodiam *terræ*. See Hærede.

CUSTOM is uſed to denote the manners, ceremonies, or ways of living of a people, which in time have turned into habit, and by uſage obtained the force of laws.

In this ſenſe, *cuſtom* implies things that were at firſt voluntary, but are become neceſſary by uſe.

Custom, *Conſuetudo*, in *Law*, is a law not written, eſtabliſhed by long uſage, and the conſent of our anceſtors. No law can oblige a people without their conſent: ſo wherever they conſent and uſe a certain rule or method as a law, ſuch rule, &c. gives it the power of a law; and if it is univerſal, then it is common law; if particular to this or that place, then it is *cuſtom*. 3 Salk. 112. And as to the riſe of *cuſtoms*, when a reaſonable act once done, was found to be good, and beneficial to the people, then did they uſe it often; and by frequent repetition of the act, it became a *cuſtom*; which being continued without interruption time out of mind, it obtained the force of a law, to bind the particular places, perſons, and things concerned therein. Thus a *cuſtom* had beginning, and grew to perfection: and a good *cuſtom* muſt be grounded on antiquity, continuance, certainty, and reaſon; antiquity, for that it hath been time out of memory, or threeſcore years, as limited by the ſtatute; and time out of mind, is where no man then living hath heard or known any proof to the contrary. It is ſufficient, if two or more witneſſes depoſe, they heard their fathers ſay the ſame of their time. If it be matter of record, the continuance of one hundred years is ſufficient.

The effect of a *cuſtom*, thus circumſtantiated, is, that in popular ſtates, and limited monarchies, it ſerves to interpret the written laws: for in abſolute monarchies, it is the king alone who has the power of interpreting laws. Hence, the word *cuſtom* is ſtill retained, and ſerves to expreſs the particular rights, and municipal laws, eſtabliſhed by uſage in particular provinces, &c. after they are reduced into written laws.

In this ſenſe, moſt of the common law of England is *lex non ſcripta*; being originally no more than the *cuſtoms* of our forefathers.

Lex non ſcripta, in this ſenſe, is uſed in oppoſition to *ſtatutes*, or *acts of parliament*; which commence laws at once.

Cowel diſtinguiſhes *cuſtom* from *preſcription*, in that the former is more general, and relates to ſeveral perſons; whereas the latter is uſually confined to this or that man. Five years time, too, are ordinarily ſufficient for preſcription; whereas, for *cuſtom*, there are required a hundred.

Cuſtoms are real things, and are included within their limits, or territories: they are either *local*, i. e. reſtrained to this or that place; or *general*.

The *cuſtom* of Paris ſerves as a rule for all the other places of France, where they have no proviſions contrary to it.

The Romans were governed by *cuſtoms*, or unwritten laws, after the expulſion of their kings.

Custom *of London*. The principal local *cuſtoms* of this city are the following: if a citizen and freeman dies, his goods and chattels ſhall be divided into three parts; the wife ſhall have one part, the executors another, to diſcharge legacies, &c. and the children unprovided for the other third part. If he has no wife, half of his perſonal eſtate goes to his children, and the other moiety is at his own diſpoſal: if he has a wife and no children, half belongs to her. By ſtat. 11 Geo. I. c. 18. the above *cuſtom* takes place only when a freeman dies inteſtate; but he is impowered by will to diſpoſe of his perſonal eſtate as he pleaſes. A woman in London, that uſes a trade, without her huſband, is chargeable without him, as a *feme ſole* merchant; and if condemned, may be put in priſon till ſhe pay the debt; and her bail are liable, if ſhe abſents herſelf, and the huſband ſhall not be charged. It is the *cuſtom* of the city of London, that a perſon educated in one trade may ſet up in another. And if a debtor be a fugitive, he may be arreſted before the day to find better ſecurity. Every tenant at will of a houſe above 40*s. per ann.* in the city, ought to give and receive half a year's warning on leaving it. Any *cuſtoms* are tried by writ to the lord mayor and aldermen, who certify whether there be ſuch a *cuſtom* as is pleaded by their recorder: and the *cuſtoms* of London are taken notice of in the courts at Weſtminſter.

Custom *of Merchants*, denotes certain rules of judging in relation to contracts, bills, &c. eſtabliſhed by the uſual proceeding of merchants.

Custom, *Dower by*. See DOWER.

Custom, *Suit*. See SUIT.

Customs, in *Commerce*, the dues, duties, or tolls, paid by merchants to the king, for carrying out, and bringing in, of merchandizes.

Some have imagined that they are called *cuſtoms*, becauſe they were the inheritance of the king by immemorial uſage and the common law, and not granted him by any ſtatute; but Sir Edward Coke has clearly ſhewn, that the king's firſt claim to them was by grant of parliament 3 Edw. I. and this is expreſly acknowleged by ſtat. 25 Edw. I. c. 7. with reſpect to the *cuſtoms* on exported wools, ſkins, and leather, which were called the ſtaple commodities of the kingdom; and theſe *cuſtoms* were formerly denominated the hereditary *cuſtoms* of the crown. They were alſo called *cuſtuma antiqua ſive magna*, in contradiſtinction to *cuſtuma parva & nova*, being an impoſt of three pence in the pound paid by merchant ſtrangers on all commodities imported and exported. This was called the alien's duty, and firſt granted in the 31ſt year of Edward I.

There is another hereditary duty pertaining to the crown, called the PRISAGE or BUTLERAGE of wines, conſiderably older than the *cuſtoms*; to which we may add other *cuſtoms* payable on exports and imports, and diſtinguiſhable into SUBSIDIES, impoſed by parliament on the fore-mentioned ſtaple commodities, TONNAGE, POUNDAGE, and other impoſts.

It was enacted, anno 6 Edw. III. that no new *cuſtom* could be levied, nor old ones increaſed, but by authority of parliament; which was afterwards confirmed by 16 Car. I. c. 8.

By the term *cuſtoms*, as it is now underſtood, we mean ſuch duty or ſubſidy as is paid by the merchant at the quay, on all imported as well as exported commodities, by authority of parliament; unleſs where particular reſtrictions and allowances are ſpecified. The duty of tonnage and poundage was granted to Charles II. for his life, and to his two immediate ſucceſſors; but now by three ſeveral ſtatutes, 9 Ann. c. 6. 1 Geo. I. c. 12. and 3 Geo. I. c. 7. it is made perpetual, and mortgaged for the debt of the public. The *cuſtoms* impoſed by parliament are chiefly contained in two BOOKS *of rates*; to which many ſubſequent additions have been made. Aliens pay a larger proportion than natural ſubjects. Blackſt. Com. vol. i. p. 313, &c. See DUTY, and NATURALIZATION.

The amount of the *cuſtoms* in England, being the medium of the payments into the exchequer, for three years ending in 1773, as ſtated by Dr. Price, a late writer on finance, is 2,528,275*l.* and the expence of collecting, being the average of 1771 and 1772, bounties included, 15 *per cent.* of the groſs produce, excluſive of drawbacks and over-entries, or 468,703*l.* and that of the *cuſtoms* in Scotland eſtimated in the ſame manner, is 68,369*l.*

In caſe goods and merchandiſe are brought to a port, and part of the goods are ſold there, but never landed, they muſt pay the *cuſtoms*. Ships outward bound, and coming from beyond ſea, having goods and merchandiſe on board, are to be entered at the *cuſtom*-houſe, and the *cuſtoms* paid or agreed for, under penalties and forfeiture of the goods; one moiety to the king, and another to the ſeiſor, &c. 13 and 14 Car. II. Officers of the *cuſtoms* may ſearch ſhips; and having writ of aſſiſtance, ſearch houſes. By other ſtatutes, foreign goods, taken in at ſea by any coaſting veſſel, ſhall be forfeited, and treble value: and for prevention of clandeſtine running of goods, if any foreign brandy, &c. is imported in veſſels under forty tons, the importer ſhall forfeit the veſſel and brandy. Run goods concealed or offered for ſale, are liable to forfeiture and treble value. 8 and 11 Geo. I. When three perſons are aſſembled and armed with fire-arms, &c. to be aſſiſting in running goods, they ſhall be adjudged guilty of felony. And two or more found in company within five miles of the ſea-coaſt, with any horſes, carts, &c. on which are put above ſix pounds of tea, or five gallons of brandy, or other foreign goods of 30*l.* value, landed without entry, and not having permits, who ſhall carry any offenſive weapons, &c. or aſſault any officer of the *cuſtoms*, ſhall be deemed runners of goods, treated as felons, and the goods ſhall be ſeized and forfeited. If any perſon offers any tea, brandy, &c. to ſale, without a permit, the perſons to whom it is offered may ſeize and carry it to the next warehouſe belonging to the *cuſtoms* or exciſe, and be entitled to a third part of the produce on condemnation. And perſons offering any bribe to officers of the *cuſtoms* to connive at the running of goods, are liable to a forfeiture of 50*l.* obſtructing ſuch officers in entering and ſearching ſhips, incurs a forfeiture of 100*l.* and if the officers are wounded or beaten on board any ſhip, the offenders incur the penalty of tranſportation, &c. 9 Geo. II. See DRAWBACK, and EXCISE.

CUSTOM-HOUSE, an office eſtabliſhed on the frontiers of a ſtate, or in ſome chief city, or port, for the receipt of the cuſtoms and duties of importation and exportation, impoſed on merchandiſes, by the authority of the ſovereign, and regulated by tariffs, or books of rates.

There are ſeveral *cuſtom-houſes* in the ſeveral ports of England: the moſt conſiderable is that of London. It is under the direction of nine commiſſioners appointed by patent; who have the charge and management of all the cuſtoms (the petty farms alone excepted) in all the ports of England.

Other officers are, a ſecretary, ſolicitor, receiver-general, comptroller of the iſſues and payments of the receiver-general, comptroller-general, inſpector of the out-port collectors accompts, inſpector-general of the exports and imports, regiſter-general of all ſhips of Great Britain, ſurveyor-general, ſurveyor of the out-ports, regiſter of the ſeizures, &c. all holding their places by patents: with other inferior officers, appointed by warrant from the board of treaſury. Theſe officers ſhall have no ſhips of their own, nor uſe merchandiſe, factorage, &c. under penalty of 40*l.* They are alſo prohibited to trade in any exciſable liquor, on pain of 50*l.* and forfeiture of office: for taking a bribe they ſhall forfeit 100*l.* and 500*l.* for making colluſive ſeizures.

CUSTOMARY *tenants*, **CUSTUMARII**, or *tenentes per conſuetudinem*, are ſuch tenants as hold by the cuſtom of the manor as their ſpecial evidence.

Theſe were anciently bondmen, or thoſe that held *tenura bondagii. Et omnes illi qui tenuerint in bondagii tenura, ſolebant vocari* cuſtumarii. MS. de Conſuetud. Man. de Sutton Colfield, de anno 3 Edw. II.

CUSTOS *brevium*, the name of an office belonging to the court of common pleas, executed by four perſons, and a deputy, who receive and keep all the writs, and put them upon files, every return by itſelf; and at the end of each term receive of the prothonotaries all the records of the *niſi prius*, called the *poſtea*.

The writs are firſt brought in, by the clerks of aſſiſe of every county, to the prothonotary who entered the iſſue in that matter, to enter judgment. Four days after the return, the prothonotary enters the verdict, and judgment thereupon, into the rolls of the court; and then delivers them over to the *cuſtos brevium*.

The *cuſtos brevium* alſo makes entry of writs of covenant, and concords on fines; and makes copies and exemplifications of all writs and records in his office, and of all fines levied: the fines, when engroſſed, are divided between the *cuſtos brevium* and chirographer; the former keeping the writ of covenant and the note, the latter the concord and foot of the fine.

In the court of king's bench there is likewiſe a *cuſtos brevium & rotulorum*, who files ſuch writs as are there uſed to be filed, and all warrants of attorney; and tranſcribes or makes out records of *niſi prius*, &c.

CUSTOS *placitorum coronæ*, in our *Ancient Writers of Law*, ſeems to be the ſame with him we now call *cuſtos rotulorum*, which is mentioned in the writ *de odio & atia*.

CUSTOS *rotulorum*, he who has the cuſtody of the rolls, or records, of the ſeſſions of peace; and, ſome ſay, of the commiſſions of peace itſelf; appointed by a writing ſigned by the king's hand.

He is always a juſtice of peace, and quorum, in the county where he hath his office; and by his office appears to be rather a miniſter than a judge: becauſe the commiſſion of the peace, by expreſs words, lays this ſpecial charge upon him; *Quod ad dies & loca prædicta, brevia, præcepta, proceſſus, & indictamenta prædicta coram te & dictis ſociis tuis venire facias.* It is his province to appoint the clerk of the peace.

CUSTOS *ſpiritualium*, he who exerciſes ſpiritual or eccleſiaſtical juriſdiction in any dioceſe, during the vacancy of the ſee.

This, by the canon law, belongs to the dean and chapter; but, in England, to the archbiſhop of the province, by preſcription: though divers deans and chapters do challenge it, by ancient charters, from kings of this land.

CUSTOS *temporalium*, the perſon to whoſe cuſtody a vacant ſee was committed by the king, as ſupreme lord; who, as a ſteward of the goods and profits, was to give an account to the eſcheator, and he into the exchequer.

His truſt continued till the vacancy was ſupplied by a ſucceſſor, who obtained the king's writ *de reſtitutione temporalium*; which was commonly after conſecration, but ſometimes before.

CUT *a feather*, in *Sea Language*, is when a well-bowed ſhip ſo ſwiftly preſſes the water, that it foams, or froths. To *cut the ſail*, is to unfurl it, and let it fall down.

CUT-*baſtion*. See BASTION.

CUT-*purſe*, in *Law*; if any perſon *clam & ſecrete*, and without the knowlege of another, cut his purſe or pick his pocket, and ſteal from thence above the value of twelve pence, it is felony excluded clergy. 8 Eliz. 3 Inſt. 68.

Cut-purſes or *ſaccularii* were more ſeverely puniſhed than common thieves, by the Roman and Athenian laws.

CUT-*roof*. See ROOF.

CUT-*water*, the ſharp part of the head of a ſhip below the beak. It is ſo called becauſe it cuts or divides the water before it comes to the bow, that it may not come too ſuddenly to the breadth of the SHIP, which would retard her.

CUTAMBULI, a name given by the old writers on medicine to certain worms bred under the ſkin, and cauſing by their creeping a very uneaſy ſenſation. Afterwards the ſame word was uſed to expreſs certain uneaſy itchings cauſed by a ſcorbutic habit, and reſembling the crawling of worms.

CUTANEOUS, ſomething that concerns the *cutis*, or ſkin; whether in the way of diſtemper, or remedy.

Thus, we ſay, *cutaneous* eruptions; the itch is a *cutaneous* diſeaſe.

CUTANEOUS *eruptions*, in infants. See INFANT.

CUTHBERT *duck*, in *Zoology*. See DUCK.

CUTICULA, **CUTICLE**, in *Anatomy*, a thin, pellucid membrane, void of ſenſe; ſerving as a cover to the *cutis*, or ſkin. See *Tab. Anat.* (*Myol.*) *fig.* 9.

The *cuticula* is that firſt, and outermoſt covering of the body, called alſo *epidermis*, but more commonly the *ſcarf ſkin*; or that ſoft tegument which riſes in a bliſter upon a burn, or the application of a cautery.

It ſticks cloſe to the ſurface of the *cutis*, or true ſkin, to which it is alſo tied by the veſſels that feed it; though theſe are ſo ſmall as not to be ſeen.

When examined by a microſcope, it appears to conſiſt of ſeveral lays of exceeding ſmall ſcales, which cover one another, more or leſs, according to its different thickneſs, in the ſeveral parts of the body; and in the lips, where the ſcales appear plaineſt becauſe the ſkin is thinneſt, they do little more than barely touch.

Theſe ſcales are either the excretory ducts of the glands of the *cutis*, as is the caſe apparently in fiſhes; or elſe the glands have their tubes, opening between the ſcales. See MILIARY *gland*.

Leuwenhoeck reckons, that in one *cuticular* ſcale there may be 500 excretory ducts; and that a grain of ſand will cover 250 ſcales: ſo that one grain of ſand will cover 1,250,000 pores, or orifices, through which we daily perſpire.

Yet, notwithſtanding the exceeding poroſity of the *cuticula*, it obſtructs a great part of the ſerous humours, which would otherwiſe be evacuated by the glands of the *cutis*; as is evident, from that plentiful diſcharge conſequent on the application of a bliſter, or other accident, whereby the *cuticula* is removed, and the *cutis* bared.

The ſcales are often glued together by the groſſer parts of our inſenſible tranſpiration hardening upon them by the heat of the body, which carries off the more volatile particles; and in this is ſuppoſed to conſiſt that indiſpoſition we popularly call a COLD.

The humour which is thenceforward ſeparated by the glands of the ſkin, being pent in between the ſcales, cauſes frequent itching; and where the matter has been long pent up, ſmall pimples, and other foulneſſes: for removing of which, nature directs to thoſe wholeſome remedies of frequent rubbing, waſhing, or bathing.

Some imagine the *cuticle* to be formed from the groſſer parts of the excrementitious ſerous humour, eliminated through the pores of the *cutis*, and condenſed on the ſurface; like the pellicle which appears, upon evaporation, on the ſurface of the ſerum of the blood: but Leuwenhoeck, with more probability, takes it to be from an expanſion of the excretory ducts of the glands of the ſkin.

Its uſe is to defend the nerves of the *cutis*, which are the origin of the ſenſe of feeling, from the injuries of rough and hard bodies, as well as the air: for either of thoſe would make too exquiſite and painful an impreſſion on the naked nerves; or the air would dry them, ſo as that they would be leſs ſuſceptible of the nicer touches of pleaſure.

Riolanus, and ſeveral others, maintain that the *cuticula* of women has no pores: Molinette argues the contrary from their ſweating; but maintains, alſo, that this is true of dogs and cats, who never ſweat, how much ſoever fatigued.

CUTICULAR *glove*, in the Phil. Tranſ. denotes a ſeparation of the *cuticle* from the *cutis*, from the wriſt to the finger-ends, &c. in the form of gloves, occaſioned by a ſingular kind of fever. See the caſe and hiſtory related, ibid. vol. lix. Nº 38. an. 1769.

CUTICULARES *carunculæ*. See CARUNCULÆ *cuticulares*.

CUTIS, in *Anatomy*, the *ſkin*; a reticular plexus, or body of veſſels, immediately under the cuticle, or ſcarf ſkin. See *Tab. Anat.* (*Myol.*) *fig.* 8.

The veſicles of the *cutis* contain a mucous liquor; from the tincture of which, Malpighi, and others, take the colour of the ſkin to be derived; founded on this, that the *cutis*, as well as *cuticle* of blacks, is white, and the blood red, &c. and that the only thing they have peculiar in this part, is the colour of this liquor.

The *cutis* conſiſts of fibres of its own; or, according to Steno, is formed out of the productions of the tendons of the ſubjacent parts: which terminate in an infinite number of pyramidal papillæ, interwoven with innumerable nervous fibres, and other veſſels, forming what we call a PARENCHYMA. It is by means of theſe papillæ that the *cutis* becomes the organ of feeling.

Dr. Hunter ſays, that when the ſkin is once deſtroyed, it is never regenerated, and that the cicatrix is hardened fleſh.

The *cutis* is generally connected to the ſubjacent parts by the *membrana adipoſa*, and its proper veſſels, the veins, arteries, nerves, &c. Its uſe is to wrap up and cover the whole body; to be a general emunctory for the matter of perſpiration; and to be the organ of feeling.

The diſeaſes of the *cuticula* and *cutis* are, the itch, leproſy, ſmall-pox, meaſles, ſcarlet fever, and eryſipelatous inflammations.

CUTTER, in *Sea Language*, denotes a ſmall veſſel commonly navigated in the Engliſh channel, furniſhed with one maſt, and rigged as a ſloop. Many of theſe are uſed in an illicit trade; and others employed, under the direction of the admiralty or cuſtom-houſe, by government, to ſeize them.

CUTTER is alſo the name of a ſmall boat belonging to ſhips of war. It is broader, deeper, and ſhorter than the BARGE or PINNACE; fitter for ſailing; and uſually employed in carrying ſtores, proviſions, &c. to and from the ſhip. CLINCHER-work is uſed in the ſtructure of theſe boats.

CUTTER *of the tallies*, an officer of the exchequer, who provides wood for the tallies, and cuts the ſum paid upon them. See TALLY.

CUTTING, a term uſed in various ſenſes, and various arts; in the general, it implies a diviſion or ſeparation.

CUTTING is particularly uſed in *Heraldry*, where the ſhield is divided into two equal parts, from right to left, parallel to the horizon, or in the feſſe-way.

The word is alſo applied to the honourable ordinaries, and even to animals, and moveables, when they are divided equally the ſame way; ſo, however, as that one moiety is colour, the other metal. The ordinaries are ſaid to be *cut*, *couped*, when they do not come full to the extremities of the ſhield.

CUTTING, in *Chirurgery*, denotes the operation of extracting the STONE out of the bladder by ſection. See LITHOTOMY.

CUTTING-*glaſs*, in *Chirurgery*. See CUPPING-*glaſs*.

CUTTING, in *Coinage*. When the laminæ, or plates of the metal, be it gold, ſilver, or copper, are brought to the thickneſs of the ſpecies to be coined, pieces are *cut* out, of the thickneſs, and nearly of the weight, of the intended coin; which are now called *planchets*, till the king's image hath been ſtamped on them.

The inſtrument wherewith they *cut*, conſiſts of two pieces of ſteel, very ſharp, and placed over one another; the lower a little hollow, repreſenting a mortar, the other a peſtle. The metal put between the two, is *cut* out in the manner deſcribed under COINAGE.

Note. Medallions, where the relievo is to be great, are not *cut*, but caſt, or moulded.

CUTTING, in the *Manege*, is when the horſe's feet *interfere*; or when with the ſhoe of one foot he beats off the ſkin from the paſtern joint of another foot.

This is more frequent in the hind feet than the fore: the cauſes are either wearineſs, weakneſs in the reins, not knowing how to go, or ill ſhoeing.

CUTTING, in *Painting*, the laying one ſtrong lively colour over another, without any ſhade or ſoftening. The *cutting* of colours has always a diſagreeable effect.

CUTTING *in wood*, a particular kind of ſculpture, or engraving; denominated from the matter wherein it is employed.

It is uſed for various purpoſes; as, for figured letters, head and tail-pieces of books; and even for ſchemes, and other figures, to ſave the expences of engraving on copper: and for prints, and ſtamps for paper, callicoes, linens, &c.

The invention of *cutting in wood*, as well as that in copper, is aſcribed to a goldſmith of Florence; but it is to Albert Durer, and Lucas, they are both indebted for their perfection. See ENGRAVING, and PRINTING.

One Hugo de Carpi invented a manner of *cutting in wood*, by means whereof, the prints appeared as if painted in clair-obſcure. In order to this, he made three kinds of ſtamps for the ſame deſign; which were drawn, after one another, through the preſs for the ſame print: they were ſo conducted, as that one ſerved for the grand lights, a ſecond for the demi-teints, and a third for the outlines and the deep ſhadows.

The art of *cutting in wood*, was certainly carried to a very great pitch above two hundred years ago; and might even vie, for beauty and juſtneſs, with that of engraving in copper. At preſent it is in a low condition, as having been long neglected, and the application of artiſts wholly employed on copper, as the more eaſy and promiſing province: not but that wooden *cuts* have the advantage of thoſe in copper on many accounts; chiefly for figures and devices in books; as being printed at the ſame time, and in the ſame preſs, as the letters: whereas, for the other, there is required a particular impreſſion. In the repreſentation of plants and flowers, and in deſigns for paper-hangings, where the outline only is wanted to be printed, in a bold full manner, this method will be found cheaper and more effectual than the uſe of copper-plates.

The *cutters in wood* begin with preparing a plank or block, of the ſize and thickneſs required, and very even and ſmooth on the ſide to be *cut*: for this, they uſually take beech, pear-tree, or box; though the latter is the beſt, as being the cloſeſt, and leaſt liable to be worm-eaten. The wood being cut into a proper form and ſize, ſhould be planed as even and truly as poſſible: it is then fit to receive the drawing or chalking of the deſign to be engraved. But the effect may be made more apparent, and the ink, if any be uſed in drawing, be prevented from running, by ſpreading thinly on the ſurface of the wood, white lead tempered with water, by grinding with a bruſh pencil, and afterwards rubbing it well with a fine linen rag, whilſt it is wet; and when it is dry, bruſhing off any looſe or powdery part with a ſoft pencil.

On this block they draw their deſign with a pen, or pencil, juſt as they would have it printed. Thoſe who cannot draw their own deſign, as there are many who cannot, make uſe of a deſign furniſhed them by another; faſtening it upon the block with paſte made of flour and water, with a little vinegar, or gum tragacanth; the ſtrokes or lines turned towards the wood.

When the paper is dry, they waſh it gently over with a ſponge dipped in water; which done, they take off the paper by little and little, ſtill rubbing it a little firſt, with the tip of the finger; till at length there be nothing left on the block, but the ſtrokes of ink that form the deſign, which mark out ſo much of the block as is to be ſpared, or left ſtanding. Figures are ſometimes cut out of prints, by taking away all the white part or blank paper, and cemented with gum-water to the ſurface of the wood.

The reſt they *cut* off, and take away very curiouſly with the points of very ſharp knives, or little chiſſels, or gravers, according to the bigneſs or delicacy of the work; for they need no other inſtruments.

It differs from engraving in copper, becauſe in the former, the impreſſion comes from the prominent parts, or ſtrokes left uncut; whereas in the latter, it comes from the channels cut in the metal.

The manner of printing with wooden prints is much more expeditious and eaſy than that of copper-plate: becauſe they require only to be dipt in the printing-ink, and impreſſed on the object in the ſame manner and with the ſame apparatus as the letter-printing is managed; and for purpoſes that do not require great correctneſs, the impreſſion is made by the hand only, a proper handle being fixed to the middle of the print, by which it is firſt dipped in the ink, ſpread by means of a bruſh, on a block of proportionable ſize covered with leather; and then lifted up inſtantly, and dropped with ſome little force on the paper, which is to receive the impreſſion. Handmaid to the Arts, vol. ii. p. 222.

CUTTINGS, or *ſlips*, in *Gardening*, the branches or ſprigs of trees, or plants, cut or ſlipped off to ſet again; which is done in any moiſt fine earth.

The beſt ſeaſon is from Auguſt to April; but care is to be taken, when it is done, the ſap be not too much in the top, leſt the cut die before that part in the earth have root enough to ſupport it: nor yet muſt it be too dry, or ſcanty; the ſap in the branches aſſiſting it to take root.

In providing the *cuttings*, ſuch branches as have joints, knots or burrs, are to be cut off two or three inches beneath them, and the leaves to be ſtripped off ſo far as they are ſet in the earth. Small top-branches, of two or three years growth, are fitteſt for this operation.

CUTTING-*teeth*, in *Anatomy*. See TEETH.

CUTTLE-*fiſh*, *Sepia*, in *Zoology*, the name of a genus of ſea-inſects of the *gymnarthria* kind, called alſo the INK-*fiſh*.

The body of the *ſepia* is of an oblong figure, and depreſſed; it is furniſhed with ten tentacula, two of which are longer than the others, and are pedunculated. It is often ſix inches in length, and three and a half in diameter.

It is ſupported by an oblong, light, and ſpongy ſubſtance, of a friable texture, and lined with a light fungous pith. This is uſed by the ſilver-ſmiths, and as a dentrifice under the name of *os ſepium*, *os ſepiæ*, or *cuttle-fiſh* bone.

This animal, when it is in danger of being taken, is ſaid to emit a black liquor like INK, out of its mouth in conſiderable quantities, whereby the water being obſcured, it finds an opportunity of eſcaping; and from this property it has got the name of the *ink-fiſh*. It is not wholly a ſtranger to our ſeas, as appears from its bone being found on our ſhores.

CUTTLE-*fiſh bone*, *Sepiæ os*, or *teſta*, is a white, ſpongy, teſtaceous ſubſtance, growing on the back of the *cuttle-fiſh*, and ſeeming almoſt to be calcined by the ſun.

It is rough and abſterſive, and chiefly uſed in medicine as a dentrifice. It is hard on one ſide, but ſoft on the other, ſo as to receive neat impreſſions from medals, and to ſerve as a mould for the caſting of metals, which thus take the figure of the original. It is likewiſe uſed for poliſhing or cleanſing ſilver. See Lewis's Com. P. T. p. 333, & ſeq.

CUTTOFOE, in *Botany*, a name given by the people of Guinea to a plant which they eſteem greatly for its medicinal virtues. They boil it in water, and give the decoction in all caſes of the colic, in which it proves a cure. It is a ſpecies of the *anonis*, or reſt-harrow, and is common to Africa, and the Weſt Indies, Sir Hans Sloane having very well figured, and deſcribed it, under the name of *anonis non ſpinoſa minor glabra procumbens flore luteo*, the yellow-flowered, ſmall, procumbent, ſmooth *anonis*, without thorns.

It is found in vaſt abundance on the banks of the Rio Cobre, near the city of St. Jago de la Vega, or Spaniſh Town. Phil. Tranſ. N° 232.

CUTTS, flat-bottomed boats, built low and commodiouſly, uſed in the channel for tranſporting horſes. Stow, Annal. p. 412.

CUVETTE. See CUNETTE.

CUURDO, in *Botany*, is, with ſome authors, the name of the cinnamon-tree.

CYAMEA, in *Natural Hiſtory*, the name by which the ancients call the black flinty eagle-ſtone. Pliny deſcribes its blackiſh colour, and ſays, that when broken, there was found within it another ſtone of the bigneſs of a horſe-bean. This is what rattles in it when ſhaken.

CYANELLA, in *Botany*, a genus of the *hexandria monogynia* claſs. The corolla conſiſts of ſix petals. The fruit is a roundiſh triſulcated capſule, conſiſting of three valves, and containing three cells: the ſeeds are numerous and oblong.

CYANEUS, in *Zoology*. See COLUBER.

CYANUS, in *Botany*. See BLUE-*bottle*, and CENTAURY.

CYANUS, in the *Natural Hiſtory of the Ancients*, is uſed to expreſs two different ſubſtances. The one, the *lapis lazuli*; the other, the *lapis armenus*, a ſubſtance uſed by the painters in its native ſtate, and very improperly called a ſtone, being a mere earth, and being truly to copper, what yellow ochre is to iron.

CYATHUS, from χωειν, *to pour out*, in *Antiquity*, a liquid meaſure among the Romans, being the twelfth part of the SEXTARIUS. It only held as much as a man could eaſily drink at one draught, and was divided into twelve parts, called UNCIÆ.

CYBÆA, in *Antiquity*, a kind of ſhip uſed in commerce, of a roundiſh form.

CYBELE, in *Mythology*, a heathen goddeſs; the daughter of heaven and earth, wife of Saturn, and mother of the gods. She was adored under the names of Ops, Rhea, Veſta, the Good Goddeſs, Dyndimene, Berecynthia, &c. and was called *Cybele* from Mount Cybelus in Phrygia. She is repreſented in a chariot drawn by lions, her garments flowered, a key in her hand, and a turret on her head.

CYBELICUM *marmor*, a name given by the ancients to a ſpecies of marble, dug in a mountain of that name in Phrygia. It was of an extremely bright white, with broad veins of a bluiſh black.

CYBOMANTIA, a ſpecies of divination performed by lots.

CYCAS, in *Botany*, a genus of the *cryptogamia ferns*.

CYCEON, from κοκαειν, *to mix*; a name given by the *Ancient Poets* and *Phyſicians*, to a mixture of meal and water, and ſometimes of other ingredients. Theſe conſtituted the two kinds of *cyceon*; the coarſer being of the water and meal alone; the richer and more delicate compoſed of wine, honey, flour, water, and cheeſe. Homer, in the eleventh Iliad, talks of *cyceon* made with cheeſe and the meal of barley, mixed with wine, but without any mention either of honey or water; and Ovid, deſcribing the draught of *cyceon* given by the old woman of Athens to Ceres, mentions only flour and water. Dioſcorides underſtood the word in both theſe ſenſes; but extolled it moſt in the coarſe and ſimple kind: he ſays, when prepared with water alone, it refrigerates and nouriſhes greatly.

CYCINNIS, a Grecian dance, ſo called from the name of its inventor, one of the ſatyrs belonging to Bacchus. Its conſiſted of a combination of grave and gay movements.

CYCLAMEN, in *Botany*. See SOW-*bread*.

CYCLAS, in our *Old Writers*, a long garment, cloſe upwards, and open, or large below. Matt. Paris, ſpeaking of the citizens of London, tells us they were *cericis veſtimentis ornati*, cycladibus *auri textis circundati*. Anno 1236.

CYCLE, from κυκλοω, *I revolve*, in *Chronology*, a certain PERIOD, or ſeries of numbers proceedingly orderly from firſt to laſt, and recurring again from laſt to firſt, ſucceſſively, and without interruption.

The origin of *cycles* was thus: the apparent revolution of the ſun round the earth, has been divided, arbitrarily, into twenty-four hours; the baſis or foundation of all our menſuration of time. Civil uſe knows none but hours; or rather multiples of hours, as days, and years. But neither the annual motion of the ſun, nor that of the other heavenly bodies, can be meaſured exactly, and without any remainder, by hours, or their multiples. That of the ſun, v. gr. is three hundred and ſixty-five days, five hours, forty-nine minutes, nearly; that of the moon, twenty-nine days, twelve hours, forty-four minutes.

Hence, to ſwallow up theſe fractions in whole numbers, and yet in numbers which only expreſs days and years, *cycles* have been invented: which, comprehending ſeveral revolutions of the ſame body, replace it, after a certain number of years, in the ſame points of the heaven whence it firſt departed; or, which is the ſame thing, in the ſame place of the civil calendar.

Such is the famous *cycle* of 19 years, called alſo the

CYCLE *of the moon*, or *lunar* CYCLE, a period of 19 ſolar years; equivalent to 19 lunar years, and ſeven intercalary months, which was thought to contain exactly 6940 days, or 235 ſynodical months; in which time the new and full moons are ſuppoſed to return to the ſame day of the Julian year. See CALIPPIC.

This is alſo called the *Metonic period*, from its inventor Meton, the Athenian; and the *golden number*. Though, in propriety, the golden number is rather the particular number which ſhews the year of the lunar *cycle*, which any given year is in. This *cycle* of the moon only holds true for 310.7 years: for, though the new moons do return to the ſame day after 19 years; yet not to the ſame time of the day, but near an hour and a half ſooner; which error, in 310.7 years, amounts to an entire day.

Yet thoſe employed in reforming the calendar went on a ſuppoſition of the lunations returning preciſely from 19 years to 19 years, for ever.

The uſe of this *cycle*, in the ancient calendar, is to ſhew the new moon of each year, and the time of Eaſter.

In the new one, it only ſerves to find the EPACTS; which ſhew, in either calendar, that the new moon falls eleven days too late.

As the orientals began the uſe of this *cycle* at the time of the council of Nice in 325, they aſſumed, for the firſt year of the *cycle*, the paſchal new moon to fall on the thirteenth of March: on which foot the lunar *cycle* three fell on the firſt of January, in the third year.

The occidentals, on the contrary, put the number one to the firſt of January, which occaſioned a conſiderable difference in the time of Eaſter: hence, Dionyſius Exiguus, upon framing a new calendar, perſuaded the Chriſtians of the Weſt to ſalve the difference, and come into the practice of the church of Alexandria.—*To find the year of the lunar* CYCLE, is to find the golden number. See GOLDEN-*number*.

CYCLE *of indiction* is a ſeries of fifteen years, returning conſtantly around, like the other *cycles*; and commencing from the third year before Chriſt. See INDICTION.

CYCLE *of the ſun*, or *ſolar* CYCLE, a revolution of 28 years; beginning with 1, and ending with 28; which elapſed, the Dominical or Sunday-letters, and thoſe that expreſs the other feaſts, &c. return into their former place, and proceed in the ſame order as before. The days of the month return again to the ſame days of the week; the ſun's place to the ſame ſigns and degrees of the ecliptic on the ſame months and days, ſo as not to differ one degree in a hundred years; and the leap-years begin the ſame courſe with reſpect to the days of the week on which the days of the month fall.

It is called *ſolar cycle*, not with regard to the ſun's courſe, which has nothing to do herein; but from Sunday, anciently called *dies ſolis*, *the day of the ſun:* in regard the DOMINICAL letter is principally ſought for from this revolution.

The reformation of the calendar under pope Gregory occaſioned a conſiderable alteration of this *cycle*: in the Gregorian calendar, the *ſolar cycle* is not conſtant and perpetual; becauſe every fourth ſecular year is common; whereas, in the Julian, it is biſſextile. The epocha, or beginning of the *ſolar-cycle*, both Julian and Gregorian, is the ninth year before Chriſt.

To find the cycle *of the ſun for any given year*: add nine to the number given, and divide the ſum by 28; the number remaining will be the number of the *cycle*, and the quotient the number of revolutions ſince Chriſt.

If there be no remainder, it will be the twenty-eighth, or laſt year of the *cycle*.

CYCLE *of the Sun in* Julian *Years*.

1	GF	5	BA	9	DC	13	FE	17	AG	21	CB	25	ED
2	E	6	G	10	B	14	D	18	F	22	A	26	C
3	D	7	F	11	A	15	C	19	E	23	G	27	B
4	C	8	E	12	G	16	B	20	D	24	F	28	A

CYCLE *of the Sun from the* Gregorian *Year* 1700, *to the Year* 1800.

1	DC	5	FE	9	AG	13	CB	17	ED	21	GF	25	BA
2	B	6	D	10	F	14	A	18	C	22	E	26	G
3	A	7	C	11	E	15	G	19	B	23	D	27	F
4	G	3	B	12	D	16	F	20	A	24	C	28	E

CYCLE, it may be obſerved, is not only applied in general to all the numbers that compoſe the ſeries; but to each number in particular: thus we compute, that the ordinary epocha from the birth of Jeſus Chriſt had the *ſolar cycle* 10; the *lunar cycle*, or the golden number, 2; the Dominical letter B; and the *cycle of indiction* 4.

CYCLE, *great Paſchal*, is another name for the *Victorian*, or *Dionyſian* PERIOD.

CYCLISCUS (from κυκλος, *circulus*) an inſtrument in form of a half-moon; uſed by the ſurgeons to ſcrape the ſkull, in fractures of that part.

CYCLOID, in *Geometry*, one of the mechanical, or, as others term them, tranſcendental curves; called alſo the *trochoid*.

CYCLOID, *the geneſis of the*, may be conceived by imagining a nail in the circumference of a wheel: the line which the nail deſcribes in the air, while the wheel revolves on a right line, is the *cycloid*. Hence it is called *trochoides*, from τροχος, a *wheel*.

It is deſcribed by the motion of a point C (*Tab. Geometry*, *fig.* 16.) in the periphery of a circle CDH, while the circle makes a revolution along the right line AB. This line is called the baſe; the line EF biſecting it at right angles in F is called the axis; and the point E the vertex of the *cycloid*. The circle by which it is deſcribed is called the generating circle. Hence we may eaſily deduce and demonſtrate the properties of this curve. The right line AB is equal to the periphery of the generating circle CDH, and AF equal to the ſemi-periphery: and in any ſituation of this circle, the right line AD is equal to the arc CD, and therefore the arc $CH = DF = IK = CG$; but CH is equal to the arc EG; therefore $CG =$ arc EG, and the ordinate CK equal to the ſum of the arc EG, and its right ſine GK.

Again, a line CH parallel to the chord EG, is a tangent to the *cycloid* in C. Let an ordinate ck be drawn very near CK, as in the figure; let Cu and Gn be parallel to the axis, and meet it in u and n; and from O, the center of the circle EGF, draw the radius OG. Since $ck = Eg + gk$, cu will be $= Gg + gn$. Let the ordinate ck approach to CK, and at length coincide with it, as Gg and Gn vaniſh, the triangles Ggn and GOK become ſimilar; becauſe the arc Gg in this evaneſcent ſtate coincides with its tangent, the angle OGg is a right angle $= nGK$; and therefore $gGn = OGK$: whence $Gg : gn :: OG : OK$, and $Gg + gn : gn :: OG + OK\ (= FK) : OK$. But $Gn : gn :: GK : OK$, therefore $Gg + gn : Gn :: FK : GK :: GK : EK$; and conſequently $cu : Cu :: GK : EK$; and ſuppoſing the chord Cc to be drawn, the triangles Cuc, EKG will be ſimilar, becauſe they have equal right angles, and the ſides about thoſe angles proportional; and therefore the chord Cc, as the points C and c coincide, becomes parallel to EG, ſince the angles on the ſame ſide of the croſſing line are equal: therefore the tangent of the *cycloid* at C is parallel to the chord EG.

Farther, the arc of the *cycloid* EL is double of the chord EM of the correſponding arc of the generating circle EMF.

Let KL and kS be two very near ordinates of the *cycloid*, meeting the generating circle in M and Q; produce the chord till it meets the ordinate kS in P; let Qo be perpendicular from Q on MP, and draw the lines EN and MN touching the circle in E and M. The triangles ENM and PQM are ſimilar, becauſe of the equal right angles, and the equal vertical angles, QM being indefinitely ſmall, and coinciding with the tangent; and $EN = NM$ as tangents to the ſame circle meeting in N; therefore $PQ = QM$, and Qo biſects the baſe of the iſoſceles triangle, and conſequently $MP = 2Mo$; but LS, being an indefinitely ſmall part of the curve, and coincident with the tangent, is parallel to MP, the chord produced, and equal to it; therefore $LS = 2Mo$. But as LS is the increment of the curve generated in the ſame time in which the chord EM increaſes by MO, ſince EQ ſuppoſed to be drawn is equal to Eo, when Q and M coincide: conſequently the curve increaſes twice as faſt as the chord, and as they begin to increaſe together, the arc of the *cycloid* EL will be always double of the chord EM. Hence it appears that the ſemi-*cycloid* ELB is equal to twice the diameter of the generating circle, EF; and the whole *cycloid* $= 4EF$.

Again, let ER be parallel to the baſe AB, and CR parallel to the axis of the *cycloid*; the ſpace ECR, bounded by the arc of the *cycloid* EC, and the lines ER and RC, will be equal to the circular area EGK. Draw cr parallel to CR; ſince $cu : Cu :: GK : EK$, as we have already proved, $EK \times cu = GK \times Cu$; and therefore $CR \times Rr = GK \times Kk$, and the little ſpace $CRrc = GKkg$: conſequently the areas ECR, EGK increaſe by equal increments; and as they begin to flow together, they muſt be equal. Whence it follows, making AT perpendicular to the baſe at A, that the ſpace ETACE is equal to the ſemicircular area EGF: and conſequently, that the area ECAFE, or ſemi-*cycloidal* ſpace is equal to three times the area of the generating ſemicircle EGF; becauſe AF is equal to the ſemiperiphery, and therefore EFAT being a rectangle under the diameter and ſemiperiphery, is equal to four times the ſemicircle EGF. Thus it appears, that the whole *cycloidal* ſpace is triple the area of the generating circle.

This property of the *cycloid* might likewiſe be eaſily proved, by ſuppoſing a line $\alpha\beta$ to be drawn at a diſtance below the center equal to that of CK above it: let it interſect the generating circle EGE in γ; then $\alpha\gamma + CG = E\gamma$ or $(FG) + EG =$ the ſemiperiphery EGF: and thus the ſum of every pair of lines drawn in the ſame manner will be EGF; and the number of them would be as OE; therefore the part of the *cycloidal* ſpace ECAFGE, ſuppoſed to be formed by theſe lines, would be equal to $OE \times EGF =$ to the area of the generating circle; then, adding to each the ſemicircular area, and the ſemi-*cycloidal* ſpace ECAFE, will appear to be equal to three times the ſemicircular area, &c.

Laſtly, if the line EA be drawn, the area intercepted between the *cycloid* ECA, and this line will be equal to the ſemicircle EGF; for the area $ECAFE = 3EGF$, and the triangle $EAF = AF \times \frac{1}{2} EF =$ the rectangle of the ſemicircle and radius $= 2EGF$; therefore their difference, the area ECAE, is equal to EGF.

The *cycloid* is reputed a modern curve, and its invention aſcribed, by ſome, to Merſenne; by others, to Galileo; but Dr. Wallis ſhews it of an older ſtanding, and to have been knowh to Bovillus about the year 1500, and even conſidered by cardinal Cuſanus much earlier, viz. before the year 1451. Phil. Tranſ. abr. vol. i. p. 116.

Mr. Huygens has demonſtrated, that from whatever point, or height, a heavy body, oſcillating on a fixed center (v. g. a pendulum), begins to deſcend; while it continues to move in a *cycloid*, the times of its falls, or oſcillations, will be equal to each other. This property M. Fontenelle ſtates thus: the nature of the *cycloid* is ſuch, that if a body, which deſcribes it, fall from a greater height, and by that means acquire a certain augmentation of velocity, as in Galileo's theory, the greater *cycloidal* arch which it deſcribes, takes up preciſely that exceſs of velocity: ſo that the body does not deſcribe it either ſooner for its being accelerated, or later for having a greater ſpace to move: and hence ariſes an equality in time, notwithſtanding the inequality of arches.

This is eaſily demonſtrated; ſince the force by which the motion of the pendulum is accelerated in any point M (*Tab.* III. *Mechanics*, *fig.* 33.) of the *cycloid*, is as the arc of the *cycloid* VM, that remains to be deſcribed. The force of gravity, ſuppoſed to be invariable, acting in the direction of the diameter DV, may be repreſented by DV; and it may be reſolved into the two forces DQ and VQ; the firſt of which, in a direction parallel to the ſtring ſuſpending the pendulum CM, ſerves only to ſtretch the ſtring, and does not contribute to accelerate the motion of the pendulum: it is only that part of the force of gravity repreſented by the chord VQ, which accelerates the motion of it along the curve Mm, and is altogether employed to produce that effect, ſince the direction VQ is parallel to the tangent of the *cycloid* at M. But $VM = 2VQ$; therefore the force that accelerates the pendulum at M is as the arc of the curve VM;

and it is a well known theorem in mechanics, that, when the accelerating forces are as the ſpaces to be deſcribed, thoſe ſpaces will be deſcribed in equal times. It appears from the foregoing demonſtration, that the part of the gravity, which the ſtring ſuſtains in any point M is to the whole weight of the pendulum, as the chord DQ to the diameter.

It is alſo demonſtrated by writers on this ſubject, that the time of a complete oſcillation in the *cycloid* is to the time in which a body would fall through its axis, as the circumference of a circle to its diameter (Prop. 25 Horol. Oſcill. and Keil's Introd. Lect. xv. prop. 46). whence we may eaſily infer, that the vibrations in unequal arcs are performed in equal times.

The *cycloid* is a line of the ſwifteſt deſcent; and ſome have imagined that a ray of light paſſing through the ATMOSPHERE deſcribes this curve. See farther on this ſubject, Phil. Tranſ. abr. vol i. p. 462, &c. vol. iv. p. 351, &c. Maclaurin's Fluxions, art. 405—408. Account of Newton's Phil Diſc. p. 209, &c. Cotes's Opera Miſc. p. 80. Stirling. Linæ tertii Ordinis. Appendix.

On this foundation it is, that the pendulum clock is built: on the ſubject whereof, the ſame M. Huygens has written a large volume, under the title of Horologium Oſcillatorium. See PENDULUM, and OSCILLATION.

CYCLOIDAL *ſpace*, the ſpace contained between the *cycloid*, and its ſubtenſe.

CYCLOMETRY, from κυκλος, *circle*, and μετρω, *I meaſure* the art of meaſuring cycles, or circles.

CYCLOPÆDIA, from κυκλος and παιδια, *inſtruction*, the circle, or compaſs of arts and ſciences; more ordinarily called *encyclopædia*.

The word *cyclopædia* is not of claſſical authority, though frequent enough among modern writers, to have got into ſeveral of our dictionaries. Some have cenſured us for having called the preſent work by this name; not conſidering, that names and titles of books, engines, inſtruments, &c. are in a great meaſure arbitrary; and that authors make no ſcruple even of coining new words on ſuch occaſions when there are no old ones to their mind. Thus it is Dr. Hook calls his fine book of microſcopical obſervations, Micographia; Wolfius his book on the air, Aerometria; Drake his book of anatomy, Anthropologia, &c. all of them words of modern, if not of their own fabric; and on no better authority ſtand the names of half our later inventions, as *microſcope*, *teleſcope*, *barometer*, *thermometer*, *micrometer*, &c. But it is ſuggeſted the word *cyclopædia* is ambiguous, and may denote the *ſcience of a circle*, as well as the *circle of ſciences*: we anſwer, that as cuſtom, the only ſovereign rule of language, has determined the word to the latter ſenſe, it is no more chargeable with ambiguity than a thouſand other words of received uſe; no more, for inſtance, than *micrometer*, which might either denote a *little meaſure*, or a *meaſure of little things*.

CYCLOPES, from κυκλος, and ωψ, *eye*, in *Mythology*, a people who were ſaid to inhabit the iſland of Sicily, in the primitive times, together with the Leſtrigones. According to Heſiod they were the ſons of heaven and earth; but of Neptune and Amphitrite, according to Euripides and Lucian. They were called *Cyclopes* from their being deſcribed with but one eye, placed in the middle of their forehead, and were of gigantic ſtature: they were ſaid to be the companions of Vulcan. They are repreſented as a people lawleſs, ſavage, and delighting in human fleſh; which character aroſe from the cruel cuſtom of ſacrificing ſtrangers, whom fortune brought upon their coaſt. It is related that Apollo killed the principal among them for having ſorged the thunderbolts which Jupiter hurled againſt his ſon Æſculapius. The adventures of Polyphemus with Ulyſſes and Galatea are well known.

The explanation of this allegory has been repreſented to be man in a ſtate of uncultivated nature; unſkilled in the laws of civil ſociety, and living in a ſtate of brutal force, having but one ſenſe, which was ſight. Him Ulyſſes overcame by ſuperior knowlege and experience.

The *Cyclopes*, according to Dr. Bryant, were a tribe of the ancient Amonians, who ſettled in many parts of Greece. They were famous for architecture; and the idea of this people was borrowed from the lofty towers which they erected. As theſe buildings were often light-houſes, and had, in their upper ſtory, one round caſement, by which they afforded light in the night, the Greeks made this circumſtance a characteriſtic of the people. They ſuppoſed this aperture to have been an eye, which was fiery and glaring, and placed in the middle of their foreheads. The *Cyclopian* deity was Ouranus, and the *Cyclopians* were his prieſts and votaries. Ouranus was often called Cæl, or Cælus, and worſhipped under the name of a ſerpent, Ops, or Opis. Hence the temple of the deity might have been called Cu-Cæl-Ops, *Domus Cæli Pythonis*; whence Κυκλωψ, and the prieſts and people *Cucelopians*. Analyſis of Ant. Mythol. vol. i. p. 491, &c.

CYCLOPTERUS, in *Ichthyology*, the name of a genus of the branchioſtegous fiſhes, the characters of which are theſe: the branchioſtege membrane on each ſide contains ſix ſmall and cylindric bones. The body is of an oblong, globoſe figure; the belly-fins unite at their extremities, ſo as to form one circular fin, of the ſhape of a funnel; the fins are ſix in number. We at preſent know only one ſpecies, which is the LUMP-*fiſh*, or ſea-owl.

The name is formed of κυκλος, a *circle*, and πτερον, a *fin*; and expreſſes that this fiſh has ſomething circular in its fins, thoſe of the belly being concreted into this form. See *Tab. of Fiſhes*, N° 32.

This is a genus of the *nantes amphibia*, in the Linnæan ſyſtem.

CYDER, a briſk, tart, cool liquor, prepared from apples. The apples ſhould remain on the tree, till they are quite ripe; and this is a circumſtance of great importance with reſpect to the quality of the *cyder*. They ſhould be gathered by the hand in dry weather, and the drieſt part of the day, that they may be guarded both from bruiſes and moiſture. They ſhould then be ſorted, according to their various degrees of maturity; and laid in ſeparate heaps to ſweat and meliorate: ſweating, however, ſeems to be neceſſary only for apples, that are not quite ripe; though ſome recommend it as proper for all apples. The duration of the time of ſweating is beſt determined by the ſmell of the fruit; different kinds require different lengths of time, viz. from eight or ten days to ſix weeks. The harſher the apple is, the more time it needs; they ſhould be well wiped before they are uſed; the rotten part, if any, ſhould be thoroughly pared off, and the ſtalk taken out.

CYDER, *manner of making*. The fruit is firſt ground in a mill, or pounded in a trough, and the juice ſqueezed out of the pomice in a preſs; then it is ſtrained through a ſieve, or other filtre, and tunned up; the veſſel is not to be full. It is better to put the *cyder* into tubs or vats during the firſt fermentation, than to tun it immediately from the preſs. The curious in the manufacture of it have a large veſſel in the ſhape of an inverted cone, with a part cut off near the vertex, holding from five to twenty hogſheads, in which they ferment it. In this veſſel the heavier lees ſubſide, and the lighter forms a cruſt at the ſurface, by the breaking and ſinking of which they judge when it is fit for racking; and it is drawn off by a tap near the bottom. For two or three days it is to be ſtopped looſely, then quite cloſed with clay; a ſmall vent-hole ſhould be left open for ſeveral days, or looſely ſtopped up with a peg, till the wild ſpirit of the liquor be ſpent; afterwards both the vent-hole and bung may be cloſed. Henceforward, a ſmall quantity is to be drawn out every day for ſome weeks, till ſuch time as it be ſuppoſed pretty clear: then it is pierced, to ſee how fine it is; the ſummer fruit after a month; the gennet-moil after the firſt froſts; the redſtreak not till after January; and the other winter fruits about the ſame time.

If it be now not found fine enough, it ſtands a month longer; and if after this it be defective, it is racked off like wine, ſo as to keep out the air.

Some, inſtead of racking, fine it with iſinglaſs, ſteeped in white wine, and diſſolved over the fire; this they boil in a quantity of the liquor to be fined, and then mix it with the reſt: and others, inſtead of diſſolving the iſinglaſs over the fire, let it ſteep in the white wine for about a month, in which time it diſſolves into a jelly of itſelf; a quantity of this is mixed with ſome of the liquor, and the whole beat to a froth; then mingled, together with ſome broom, with the reſt. The liquor once fine, it is drawn out, or bottled off, as occaſion requires.

Some recommend frequent racking, and other means, for renewing and increaſing the fermentation; but this ſhould be regulated according to the ſtrength or weakneſs of the *cyder*.

When the *cyder* has done fermenting, two or three handfuls of wheat-bran, thrown into each veſſel, will thicken the head or cream of the liquor, and make it keep better; and the *cyder* is much improved by putting into each hogſhead about three quarts of good wheat, firſt boiled and hulled. Dead or flat *cyder* may be revived by grinding a ſmall parcel of apples, and putting them into the caſk, to renew the fermentation. This *cyder*, however, ſhould be drawn off in a few days; otherwiſe the muſt will corrupt the whole maſs.

Flat *cyder* in bottles may alſo be remedied, by adding a ſpoonful or two of new muſt to each bottle, and ſtopping it again. Tart or ſouriſh *cyder* may be amended and preſerved by adding wheat to it, in the proportion of about a gallon to a hogſhead; and a greater degree of acidity may be corrected by egg-ſhells, powdered alabaſter, &c. Ginger is uſed for accelerating the maturation of *cyder*, helping its fermentation, preſerving it, and correcting its flatulence.

It is obſerved, that a mixture of fruits is of great advantage to *cyder*; the worſt apples, mixed together, making as good *cyder* as the beſt make alone: always obſerving, however, that they be of equal ripeneſs.

The beſt mixture, according to Mr. Worlidge, is that of redſtreaks with golden-rennets: bitter apples ſpoil the *cyder*, but the juice of them, and of crabs, yield as good ſpirits as the beſt apples, when fermented: neither the ſour nor bitter taſte ariſing with the ſpirit upon diſtillation.

The ſtire, under-leaf, fox-whelp, and golden-pippin, have not yet been found to do ſo well in mixtures, as each of them does by itſelf.

If the apples be pounded in a ſtone mortar, which is the cuſtom of ſome, the kernels and ſtalks are bruiſed with them, which gives the liquor an ill ſavour.

The beſt *cyder* of all the kinds is that made from the redſtreak apple, grafted upon the gennet-moil ſtock. Theſe two ſorts of apple-trees always agree very well, and the ſtalks ſcarce ever canker, as the crab-ſtalks uſually do, when this apple-tree is grafted upon them. The fruit of the redſtreak, on the ſtock here recommended, is always larger and milder, and, when ripe, is a very good eating apple, and the *cyder* made from it is mellower, and has not the over-roughneſs and auſterity that has, which is made from the ſame apple on the crab-ſtock; the apples alſo need leſs mellowing, in order to their making into *cyder*, the ſtalk, in a great degree, meliorating the fruit; for as an apple grafted on a crab becomes better by obtaining an acrimony and quickneſs from the fruit, ſo a crab, and the redſtreak apple, as it is called, which is in itſelf no other, obtains ſoftneſs, mellowneſs, and bigneſs, by being grafted on a good apple. Phil. Tranſ. N° 70.

It might be a great improvement to many eſtates, to cultivate, on the grounds not fit for corn, the proper ſorts of apples for *cyder*. It is a marketable commodity at all times, and coſts no fuel to brew it; and the labour is but once in the year. The greater quantities of *cyder* are made together, the better it uſually ſucceeds, but the veſſels ſhould alſo be large in which it is kept. In this caſe it will not only keep many years, but will improve all the time. Phil. Tranſ. N° 134.

Hugh Stafford, Eſq. a Devonſhire gentleman, publiſhed, about 1753, a pamphlet in 4to. on *cyder-making*, which may afford ſome inſtruction and entertainment to thoſe who cultivate apples, and make *cyder*.

By ſix ſeveral acts, for every hogſhead of *cyder* and PERRY made in Great Britain, and ſold by retail, there ſhall be paid by the retailer the ſum of 6*s*. and 8*d*. and by 12 Ann. ſtat. 1. 4*s*. more to be paid by the firſt buyer or retailer; and by 1 Geo. III. cap. 3. 4*s*. more over and above all other duties payable for *cyder* and perry ſold by retail; and by 6 Geo. III. cap. 14. 6*s*. more; and for every hogſhead conſigned to an agent or factor 16*s*. and 8*d*. By 10 Geo. III. cap. 2. it is declared, that *cyder* and perry made in Great-Britain ſhall in no caſe whatever be chargeable with more than 16*s*. and 8*d*. a hogſhead.

CYDER, *Pippin*. This is a ſort of *cyder* which, in many places, might be made in great quantities, where the redſtreak *cyder* apple will not thrive: the harſhneſs that is apt to be in this ſort of *cyder*, is the only objection to its value, it being of a good body, and otherwiſe, in all reſpects, commendable: the great reaſon of this harſhneſs is the light foulneſs; or, as the *cyder* people expreſs it, the flying lee that always is in this ſort. But it is eaſy, by watching a proper time, to draw off the liquor from this into other veſſels, or to ſtrain it through a cloth: in either caſe, much of the lee will be left out, and the *cyder* loſe its harſhneſs. Phil. Tranſ. N° 70.

CYDER *ſpirit*, a ſpirituous liquor drawn from *cyder* by diſtillation, in the ſame manner as brandy from wine. The particular flavour of this ſpirit is not the moſt agreeable, but it may, with care, be diveſted wholly of it, and rendered a perfectly pure and inſipid ſpirit, upon rectification. The traders in ſpirituous liquors are well enough acquainted with the value of ſuch a ſpirit as this: they can give it the flavours of ſome other kinds, and ſell it under their names, or mix it in large proportion with the foreign brandy, rum, and arrack, in the ſale, without danger of a diſcovery of the cheat.

CYDER *Vinegar*. See VINEGAR.

CYDERKIN, *Purre*, or *Perkin*, is a liquor made of the murk, or groſs matter remaining after the *cyder* is preſſed out. For this purpoſe, the murk is put in a large vat, with a proper quantity of boiled water, which has ſtood till it be cold again: if half the quantity of water be uſed that there was of *cyder*, it will be good; if the quantities be equal, the *cyderkin* will be ſmall. The whole is left to infuſe forty-eight hours, and then well preſſed: what is ſqueezed out by the preſs, is immediately tunned up and ſtopped; it is fit to drink in a few days.

It clarifies of itſelf, and ſerves in families inſtead of ſmall beer. It will keep, if boiled after preſſure, with a convenient quantity of hops.

CYDONIA. See QUINCE.

CYDONITES *Vinum*. See VINUM.

CYGNUS, or CYCNUS, *Gallina*, the SWAN; in *Aſtronomy*, a CONSTELLATION of the northern hemiſphere, between Lyra and Cepheus.

The ſtars in the conſtellation *Cygnus*, in Ptolemy's Catalogue, are 19; in Tycho's, 18; in Hevelius's 47; in the Britannic Catalogue, 81. The order, names, longitudes, latitudes, magnitudes, &c. whereof, are as follow.

Names and ſituations of the ſtars.	Bayer's Cha.	Signs	Longitud.	Latitude N.	Magnitude
			° ′ ″	° ′ ″	
In the right north wing	κ	♒	10 38 18	73 50 11	4
			25 18 47	50 57 30	5
			24 16 45	46 25 40	6
			28 51 20	57 20 44	6
			Unknown	Unknown	
5.					
In the mouth	β		26 55 37	49 0 31	3.4
			13 44 40	72 10 10	6
		♑	29 56 17	55 15 18	6
			Unknown	Unknown	
Middle of the 3 in right wing	ι	♒	13 42 43	71 28 38	6
10.					
			2 38 16	57 23 36	6
	φ		0 36 19	50 39 38	5
South of the 3 in right wing	θ		14 22 42	69 37 56	4
			7 54 44	62 42 5	6
			5 50 43	57 15 9	6
15.					
	1. *c*		17 1 8	69 30 50	6
	χ		4 36 37	53 42 33	5
In the corner of the right wing	δ		11 57 7	64 27 14	3.4
			8 53 22	58 7 12	6
			24 15 34	70 53 26	5.6
20.					
In the middle of the neck	η		8 37 28	54 18 48	6
			10 31 20	57 31 43	6
		♓	4 48 24	74 10 15	6
	ψ		Unknown	Unknown	5
		♒	10 58 10	55 54 29	6
25.					
	2. *c*		23 44 12	67 33 40	6
	1. *b*		12 30 29	54 28 16	5
	2. *b*		13 57 43	55 1 40	5
	3. *b*		15 34 43	54 36 33	6
Firſt of the two in right foot	1. *o*		23 46 19	63 43 29	4
30.					
	2. *o*		23 47 55	63 38 3	5
Second			25 31 58	64 18 53	5.6
			Unknown	Unknown	
			17 29 14	55 29 20	6
New ſtar of the year 1600	*m*		15 44 13	52 36 15	6
35.					
			17 2 13	54 33 16	6
In the breaſt	γ		20 32 51	57 9 20	3
			Unknown	Unknown	
	b		15 42 22	49 36 33	6
			20 51 58	55 4 46	6
40.					
	i		16 24 20	47 28 53	4
			20 0 57	53 7 6	6
In the right knee	1. ω	♓	1 22 17	64 41 46	6
		♒	20 50 54	53 25 24	5
	2. ω	♓	1 46 7	64 3 51	5
45.					
	3. ω		2 31 4	64 10 7	5
	l	♒	20 37 18	51 38 16	6
			19 28 17	47 57 16	6
			20 54 55	48 21 13	6
In the bright tail	α	♓	1 1 32	59 56 37	2
50.					
			7 17 32	64 4 18	6
	k	♒	21 21 29	46 30 26	6
In the corner of the left wing	ε		23 22 52	49 26 21	3
In the middle of the ſame wing	λ		25 26 47	51 38 37	4
		♓	4 8 54	59 57 10	6
55.					
			2 22 56	58 5 31	6
			3 39 19	58 5 13	6
In the left foot	ν		1 51 21	54 56 25	4
	1. *f*		8 49 9	60 6 19	5.6
			7 42 10	58 50 19	6

Names and ſituations of the ſtars.	Bayer's Cha.	Signs.	Longitud.	Latitude. N.	Magnitude.
			° ′ ″	° ′ ″	
			1 57 3	51 50 3	6
In the left knee	ξ		6 32 3	56 36 5	4
	2. f		10 50 41	59 33 40	6
In the extremity of left wing	ζ	♒	28 44 36	43 43 13	3
Southern of the 2 under left wing	τ	♓	4 16 38	50 32 40	4
65.					
	υ		2 57 29	47 29 10	5
Northern	σ		6 3 49	51 30 45	4
	A		Unknown	Unknown	6
			6 41 40	48 25 8	6
			7 1 15	48 34 55	6
70.					
	g		15 39 45	56 25 36	6
			9 59 28	49 7 0	6
	s		15 53 18	55 12 51	4
			12 1 23	50 32 2	6
			15 15 52	52 39 30	6
75.					
			13 31 55	50 25 21	6
			13 56 49	50 34 26	6
			6 8 0	39 32 16	3.4
			Unknown	Unknown	6
	1. π		24 1 45	58 52 37	4
80.					
	2. π	♓	23 17 18	57 12 6	5

CYGNUS, in *Ornithology*. See SWAN.

CYGNUS *cucullatus*, the *hooded ſwan*, a name very improperly given by ſome authors to the DODO, a very large bird, rather approaching to the caſſowary kind, but not ſo long legged, or long necked. Ray.

CYLINDER, in *Geometry*, a ſolid body, contained under three ſurfaces; ſuppoſed to be generated by the rotation of a parallelogram, as CBEF (*Tab. Geometry*, *fig.* 17.) about one of its ſides, CF.

If the generating parallelogram be rectangular, as CBEF, the *cylinder* it produces will be a *right cylinder*, i. e. a *cylinder* whoſe axis is perpendicular to its baſe.

If the parallelogram be a *rhombus*, or *rhomboides*, the *cylinder* will be *oblique*, or *ſcalenous*.

The ſurface of a *right cylinder*, excluſive of its baſes, is demonſtrated to be equal to a rectangle contained under the periphery, and the altitude of the *cylinder*.

The periphery, therefore, of the baſe, and thence the baſe itſelf, being found, and multiplied by two, and the product added to the rectangle of the height, and periphery of the *cylinder*, the ſum will be the area or ſuperficies of the *cylinder*: multiply this by the area of the baſe; and the product will be the ſolidity of the *cylinder*.

For it is demonſtrated, that a circle is equal to a triangle, whoſe baſe is equal to the periphery, and height, to the radius; and alſo, that a *cylinder* is equal to a triangular priſm, having the ſame baſe and altitude with itſelf: its ſolidity, therefore, muſt be had by multiplying the ſuperficies into the baſe.

Again, ſince a cone may be eſteemed an infinite-angular pyramid, and a *cylinder* an infinite-angular priſm; a cone is one third part of a *cylinder*, upon an equal baſe, and of the ſame height.

Further, a *cylinder* is to a ſphere of the ſame baſe and altitude as 3 to 2.

Laſtly, it is demonſtrated in mechanics, that the ſolidity of a *cylinder* is the factum of the generating rectangle ABCD, (*Tab. Mechanics*, *fig.* 28.) into the periphery of the circle deſcribed by the radius EG, which is ſubduple of EF, or the ſemidiameter of the *cylinder*. See CENTRO-BARYC *method*.

CYLINDERS, *for the ratio of*. As all *cylinders*, cones, &c. are in a ratio compoſed of their baſes and altitudes: hence, if their baſes be equal, they will be in the ratio of their heights; if their altitudes be equal, in the ratio of their baſes.

Hence, alſo, the baſes of *cylinders* and cones being circles; and circles being in a duplicate ratio of their diameters; all *cylinders* and cones are in a ratio compounded of the direct ratio of the altitude, and the duplicate one of their diameters: and, if they be equally high, as the ſquares of the diameters.

Hence, again, if in *cylinders*, the altitude be equal to the diameter of the baſes, they will be in a triplicate ratio of the diameters of the baſe. All *cylinders*, cones, &c. are in a triplicate ratio of their homologous ſides; as alſo of their altitudes.

Again, equal *cylinders*, cones, &c. reciprocate their baſes and altitudes. See CONE, &c.

Laſtly, a *cylinder*, whoſe altitude is equal to the diameter of the baſe, is to the cube of its diameter, as 785 to 1000.

To find a circle equal to the ſurface of a given CYLINDER, we have this theorem: the ſurface of a *cylinder* is equal to a circle, whoſe radius is a mean proportional between the diameter and height of the *cylinder*.

The diameter of a ſphere, and altitude of a CYLINDER *equal thereto, being given, to find the diameter of the* cylinder: the theorem is, the ſquare of the diameter of the ſphere is to the ſquare of the diameter of the *cylinder* equal to it, nearly, as triple the altitude of the *cylinder* to duple the diameter of the ſphere. See SPHERE.

To find a rete, *or cage, whence a* cylinder *may be formed, or wherewith any* cylinder *may be covered.* With the diameter of the baſe deſcribe two circles; find their peripheries: and, upon a line equal to the altitude of the *cylinder*, form a rectangle, whoſe other dimenſion is equal to the found periphery. Thus may the *cylinder* required be formed, or covered.

When the *cylinder* is oblique, the eſtimate of its ſuperficies depends upon the rectification of the ellipſe; for a plane cutting the *cylinder* at right angles to the axis will produce an ellipſe, and the ſuperficies will be equal to the product of this elliptic periphery by the ſide of the *cylinder*.

CYLINDER, *reſiſtance of a*. See RESISTANCE.

CYLINDER, *ſcenography of a*. See SCENOGRAPHY.

CYLINDER *charge*, in *Gunnery*, is that part of a great gun which is poſſeſſed by the powder and ball.

CYLINDER *concave*, in *Gunnery*, is all the chace, or hollow length, of a piece of ordnance.

CYLINDER *vacant*, in *Gunnery*, is that part of the hollow that remains empty, after the gun is charged. See CANNON.

CYLINDER, *rolling*, in *Mechanics*, a *cylinder* which rolls up an inclined plane.

The phænomena of the *rolling cylinder* may be eaſily accounted for from what we have obſerved under center of gravity.

For let ABED (*Tab.* III. *Mechanics*, *fig.* 34.) repreſent the ſection of a *cylinder* of wood, biaſſed on one ſide by a cylindrical piece of lead as B, which will bring the center of gravity out of the center of magnitude C to ſome point G between C and B. Let FH be an inclined plane, whoſe baſe is FL. It is evident the *cylinder* laid upon the plane will no where reſt but there, where a perpendicular to the horizon FL paſſes through the center of gravity G, and that point of the plane E, in which the *cylinder* touches it; and this, in all angles of inclination of the plane leſs than that whoſe ſine is equal to CG, the radius being CD, will be in two ſituations ABED, and *abed:* becauſe when the *cylinder* moves, the center of gravity deſcribing a circle round the center of magnitude C, this circle will meet the perpendicular in two points G and *g*, in each of which the center of gravity being ſuppoſed, the *cylinder* will reſt. Therefore the *cylinder* moves from E to *e* by the deſcent of the center of gravity from G to *g*, in the arch of the cycloid G*hg*.

If the *cylinder* ABED, *fig.* 35. inſiſting on the horizontal line EL, in the point E, has the center of gravity G in the horizontal diameter DB, it will gravitate in the perpendicular G*e:* if therefore the plane FH touch the *cylinder* in the point *e*, it is evident the *cylinder* cannot either aſcend or deſcend on ſuch a plane. Becauſe G in any ſituation between *e* and H, or *e* and F, will gravitate to the left or right from the point in which the *cylinder* touches the plane; and ſo will in either caſe bring it back to the point *e*. And as the angle EC*e* is equal to HFL, it follows, that a *cylinder* cannot aſcend on a plane whoſe inclination is greater than that angle.

CYLINDRICAL *Column*, *Compaſſes*, *Mirrours*, *Wax-Candles*. See the ſeveral ſubſtantives.

CYLINDROID, in *Geometry*, a ſolid body, approaching the figure of a *cylinder*; but differing from it in ſome reſpect, e. gr. as having its baſes elliptical, but parallel, and equal.

The word comes from κυλινδρος, *cylinder*; and ειδος, *form*.

CYLINDROID, *hyperbolic*. See HYPERBOLIC.

CYLINDRUS, in *Conchyliology*, the name of a genus of ſhell-fiſh, of which there are many very elegant and precious ſpecies. This genus is more generally, at preſent, called *rhombus*, though this is very improper, the word *cylindrus* very aptly expreſſing the ſhape of the ſhell, which is cylindric and oblong, and the *rhombus*, which ſignifies that figure we call a lozenge, not being at all expreſſive of it.

The characters of this genus are theſe: it is an univalve ſhell, of an oblong cylindric figure, with an oblong mouth, and oftentimes having the clavicle ſeparated from the body by a circle: the columella is, in ſome ſpecies, ſmooth, in others, rough. The moſt obvious character of this genus, without having recourſe to the mouth, is, its having in all the ſpecies, both ends of the ſhell nearly of the ſame ſize, the tail part being always, however, ſomewhat ſmaller than the head. The head is not ſeparated from the body by an elevated rib, as in the volutæ, but follows the ſhape of the body, though ſometimes it is ſeparated by a dentated furrow; and in ſome, though very few ſpecies, by a rib, or riſing circle. This is a very puzzling circumſtance in the diſtinction of the ſhell, bringing it to a near alliance with the volutæ: but, in this caſe, the point of the ſhell muſt be regarded, which in the *cylindrus* is always obtuſe, but in the voluta always pointed. See *Tab. of Foſſils, Claſs* 9. and *Tab. of Shells*, Nº 12.

Among the ſpecies of this family of ſhells, there are found two very remarkable diſtinctions; the one is in the ſpecies juſt mentioned, which has a rib near the head; the other is in the olive *cylindrus*, the two extremities of which are nearly equal, but the middle very conſiderably ſwelled.

The family of the *cylindri* are very numerous. See farther Hiſt. Nat. Eclair. p. 284. See LIMAX.

CYLISTICI, in *Antiquity*, a deſignation given to the *pancratiaſtæ*; becauſe when the weaker found himſelf ſore preſſed by his adverſary, he fell down, and fought, rolling on the ground. See PANCRATIUM.

The word is formed from κυλιω, *to roll*, or *tumble*.

CYLLOSIS, the ſame with CYLLUM.

CYLLUM, from κυλλος, *lame*, in *Medical Writers*, is uſed to ſignify a leg put out of joint outwardly; alſo one that is lame and crooked.

CYMA, in *Botany*, a term ſignifying the tender ſprout of any plant, eſpecially of the cabbage kind.

CYMA, in *Architecture*. See CIMA, and CYMATIUM.

CYMATITES, in *Natural Hiſtory*, a name given by ſome writers to a ſpecies of ASTROITES, the lineations of which are indented, and repreſent waves.

CYMATIUM, CIMATIUM, or CIMA, in *Architecture*, a member, or moulding of the corniche, whoſe profile is waved; i. e. concave at top, and convex at bottom; frequently alſo called *doucine*, *gorge*, or *gula recta*; eſpecially by the French: by the Italians *goletta*, i. e. *parva gula*; but more uſually *cymatium*, among us; being the laſt, or uppermoſt member of the corniche. See *Tab. Architecture*, *fig.* 8.

Some write the word *ſimaiſe*, from *ſimus*, *camus*, *flat-noſed*; but this etymology is improbable: the beauty of the moulding conſiſting in its having its projecture equal to its height. M. Felibien therefore rejects this origin; contending, that the moulding is not ſo denominated from its being the uppermoſt member of the corniche, but, according to the ſentiment of Vitruvius, from its being waved, from the Greek κυματιον, *undula*, of κυμα, *wave*. This is certain, that Vitruvius ſometimes uſes the word *unda* for *cymatium*; and ſometimes *lyſis*, i. e. *ſolution*, *ſeparation*; becauſe, corniches, where the *cymaiſes* are found, ſeparate one piece of architecture from another; as the pedeſtal from the column, and the frieze from the corniche. But it muſt be obſerved, that he does not confine *cymatium* to the corniche, but uſes it for any ſimilar moulding, wherever he meets with it; in which he differs from the more accurate among the moderns.

Felibien makes two kinds of *cymatiums*; the one *right*, the other *inverted*: in the firſt, that part which projects the fartheſt is concave, and is otherwiſe called *gula recta*, and DOUCINE. In the other, the part that projects fartheſt is convex, called *gula inverſa*, or TALON.

Our architects do not uſe to give the name *cymatium* to theſe mouldings, except when found on the tops of corniches; but the workmen apply the name indifferently, wherever they find them. Palladio diſtinguiſhes the *cymatium* of the *corniche* by the name *intavolata*.

CYMATIUM, *Tuſcan*, conſiſts of an ovolo, or quarter-round. Philander makes two Doric *cymatiums*, whereof this is one: Baldus calls this the Leſbian *aſtragal*.

CYMATIUM, *Doric*, is a cavetto; or a cavity leſs than a ſemicircle, having its projecture ſubduple its height. See *Tab. Architecture*, *fig.* 25. Nº 6.

CYMATIUM, *Leſbian*, according to Vitruvius, is what we otherwiſe call *talon*; viz. a concavo-convex member, having its projecture ſubduple its height.

CYMBAL, a muſical inſtrument, uſed among the ancients; called by the Greeks κυμϐαλον, and by the Latins *cymbalum*.

Sylburgius derives the word from three ſeveral roots, viz. from κυφος, *crooked*; from κυπελλον, *cup*; and from φωνη, *voice*. Iſidore derives it from *cum*, and *ballematica*, an immodeſt dance uſed to accompany this inſtrument. The real etymology appears to be from κυμϐος, *cavity*.

The *cymbal* was of braſs, like our kettle-drums; and, as ſome think, reſembling them in their form, but ſmaller, and applied to a different uſe.

Caſſiodorus and Iſidore call it *acetabulum*, the name of a cup or cavity of a bone wherein another is articulated; and Xenophon compares it to a horſe's hoof: whence it muſt have been hollow; which appears, too, from the figure of ſeveral other things denominated from it; as a baſin, caldron, goblet, caſque; and even a ſhoe, ſuch as thoſe of Empedocles, which were of braſs.

In reality, the ancient *cymbals* appear to have been very different from our kettle-drums, and their uſe of another kind: to their exterior cavity was faſtened a handle; whence Pliny compares them to the upper part of the thigh, *coxendicibus*; and Rabanus to phials.

They were ſtruck againſt one another, in cadence, and made a very acute ſound. Their invention was attributed to Cybele; whence their uſe in feaſts and ſacrifices: ſetting aſide this occaſion, they were ſeldom uſed but by diſſolute and effeminate people. M. Lampe, who has written expreſly on the ſubject, attributes the invention to the Curetes, or inhabitants of mount Ida, in Crete: it is certain theſe, as well as the Corybantes, or guards of the kings of Crete, and thoſe of Rhodes, and Samothracia, were reputed to excel in the muſic of the *cymbal*. See CORYBANTES.

The *cymbals* of Bacchus were two ſmall braſs veſſels, ſomewhat in the form of a ſhield, which being ſtruck together by the hands, gave a ſound. The well known ſtatue of the dancing fawn has one of theſe in each hand.

The Jews, too, had their *cymbals*, which they called צלצלים, or תצלתים; or, at leaſt, inſtruments, which the Greek, Latin, and Engliſh tranſlators, render *cymbals*; for as to their matter, form, &c. the critics are wholly in the dark.

The modern *cymbal* is a mean inſtrument, chiefly in uſe among vagrants, gypſies, &c. It conſiſts of ſteel wire, in a triangular form, whereon are paſſed five rings, which are touched and ſhifted along the triangle with an iron rod held in the left hand, while it is ſupported in the right by a ring, to give it the freer motion. Durandus ſays, that the monks uſed the word *cymbal* for the cloiſter-bell, uſed to call them to the refectory. See BELL.

CYMATIUS *ſtorax*. See STORAX.

CYMBARIA, in *Botany*, the name of a genus of plants, of the *didynamia angioſpermia* claſs, the characters of which are theſe: the perianthium is erect, and divided into ſeveral ſegments; two of them, which ſtand oppoſite to one another, are larger and broader than the reſt; the other ten are very narrow: this cup does not fall with the flower. The flower is monopetalous, and its tube is oblong and inflated; the mouth is open; the upper lip is reflex, obtuſe, and divided into two ſegments; the lower one is obtuſe alſo, and is divided into three. The ſtamina are four filaments, of the length of the tube; the antheræ are bifid, and prominent; the germen of the piſtil is oval; the ſtyle is capillary, and of the length of the ſtamina, and the top of it is bent; the ſtigma is obtuſe. The fruit is an oval capſule, compoſed of two valves, and having only one cell; this is ſquare, and contains a number of ſmooth angular ſeeds.

CYMBIFORME *Os*, in *Anatomy*. See NAVICULARE *Os*.

CYMBIUM, in *Natural Hiſtory*, a name given by many authors to a kind of ſea-ſhell, commonly called the GONDOLA *ſhell*. It is of the genus of the *concha globoſa*, or *dolium*, and there are ſeveral ſpecies of it.

CYMENE, in *Botany*, a name given by the ancient Greeks to a plant with which they uſed to dye woollen things yellow, and with which the women uſed alſo to tinge the hair yellow. The *cymene* of the Greeks is evidently the ſame plant with the *lutum* or *lutea herba* of the Latins; and this is deſcribed to have leaves like the *linum*, or flax, and flowers like the *geniſta*, or broom. It is plain from this, that the *lutum* of the Romans was the plant we call *geniſtella tinctoria*, or dyer's weed, ſtill uſed to dye yellow, and which anſwers to all the characters of the Roman deſcription.

CYMINALIS, in *Botany*, a name uſed by ſome authors for the *gentian*, the plant whoſe root is the fine bitter drug of that name.

CYNAPIUM, in *Botany*, a name uſed by authors for the leſſer *hemlock*, or *fool's parſley*.

CYNANCHE, and LYCNANCHE, in *Medical Writers*, an inflammation of the inner muſcles of the larynx, accompanied with a difficulty of breathing, and a continual fever, ſo called, becauſe it is frequently incident to dogs and wolves.

CYNANCHUM, in *Botany*. See *Baſtard* DOG'*s-Bane*.

CYNANTHEMIS, in *Botany*, a name given by ſome authors to the COTULA *fœtida*, or ſtinking mayweed. Ger. Emac. Ind. 2.

CYNANTHROPIA, from κυων, *dog*, and ανθρωπος, *man*, a term uſed for madneſs given by a dog, wherein the patient avoids light, or any thing bright, fears water, and trembles at the ſight and remembrance of it. It proceeds uſually from a poiſonous bite, or the like, of ſome mad creature, as a dog, a wolf, &c.

CYNARA, in *Botany*, a name generally eſteemed ſynonymous with the word *cinara*, but erroneouſly; the *cinara* being properly the ARTICHOKE, and *cynara* the chardoon, or ſome other thiſtle nearly allied to the artichoke kind, of which the ancient Greeks eat the young and blanched ſtalks, as we do the chardoons.

CYNEBOTE, the ſame with CENEGILD.

CYNEGETICS, from κυνηγος, *huntſman*, of κυων, *dog*, and αγω, *I lead out*, books treating of the art of hunting. Gratius Faliſcus has written a *Cynegetica* with applauſe.

CYNICS, a ſect of ancient philoſophers, who valued themſelves on their contempt of every thing, eſpecially riches and ſtate, arts and ſciences; all excepting morality.

The founder of this ſect is ſaid to have been Antiſthenes, a diſciple of Socrates; who, after his maſter's death, quitting the Pyreum, retired to Cynoſarges, a kind of academy not far from the gates of Athens.

Hence, ſome will have it, came the name κυνικος, *cynicus*, viz. from *cynoſarges*. But others, with more probability, derive it from κυων, *dog*, becauſe of their ſeverity and importunity in reprehending vice. Thus, Ariſtotle obſerves, οι δε κυνικοι, &c. *the* Cynics *were ſo called from their free way of rebuking*, &c. Hence, Diogenes the *Cynic* ſaid of himſelf, *I bite the evil*; and Antiſthenes himſelf was called απλως κυων, *an ingenious and ſincere dog:* it being the diſtinguiſhing character of the *Cynics* to attack and bark at the ill, and to defend and fawn on the good.

Arrian very much extols the *Cynical* genius: "A *Cynic* " (ſays he) is a meſſenger ſent from Jupiter to overlook " human affairs; a public doctor, and tutor of man" kind; who inſtructs and chaſtiſes at the ſame time; " an Æſculapius; a lord and king, adorned with a ſcep" tre and diadem, who governs the people; and this " voluntarily, without trembling, without guards, &c. " but by a good conſcience." The ground of this encomium may be owing, in ſome meaſure, to the affinity between the *Stoics* and *Cynics:* the chief difference between them conſiſted in this, that the former were more modeſt and reſerved than the latter; who were ſaid to have baniſhed all ſhame, and were able to practiſe any obſcenity without bluſhing.

Hence, Laertius obſerves of Diogenes, that he did every thing openly, whether it belonged to Ceres or to Venus: though the ſame Laertius adds, that he did it in imitation of the chorididaſcali, i. e. he only ran to an exceſs of impudence, to put others out of conceit with it.

CYNIC *Period*. See *Ægyptian* YEAR.

CYNIC *ſpaſm*, *ſpaſmus* CYNICUS, a ſort of convulſion, whereby the patient is brought to imitate the geſtures, ſnarlings, howlings, &c. of a dog. See SPASM.

Dr. Freind, in the Philoſophical Tranſactions, gives us an account of a very extraordinary *ſpaſmus* of this kind, wherewith two families, at Blackthorn in Oxfordſhire, were ſeized.

The novelty of the thing drew abundance of viſitors to the village, and among the reſt Dr. Willis; who, a good while before he reached the place, heard a terrible noiſe of barking and howling: upon his entering the houſe, he was immediately ſaluted by five girls, bawling, and anſwering each other by turns, with violent motions of the head. In their face there was no convulſion ſeen, beſide *cynic* diſtortions, and oſcillations of the mouth: their pulſe was pretty regular; their noiſe was rather like that of the howling, than of the barking of dogs; though its returns were more frequent, with deep ſighings between.

The *ſpaſmus* had ſeized them all equally: whereof the youngeſt was but ſix, and the eldeſt fifteen years of age: at intervals they had their reaſon and ſenſes entire; but not long, before one of them, returning to her yelling, ſet on the reſt: till at length, all fainting, they fell like epileptics on a bed laid in the middle of the room to receive them.

A little while they would lie quietly and decently together; but upon a new orgaſm of the ſpirits, they began to beat and bruiſe each other. Two of the youngeſt awaked while the doctor ſtayed, and left their ſiſters on the bed: but the *ſpaſmus* ſoon had hold on them again.

In July, 1700, Dr. Freind himſelf viſited another family, in the ſame village; where one boy and three girls had been ſeized ten weeks, without any apparent preceding cauſe. A girl had had it firſt; and the reſt, as the mother informed him, were ſo ſtruck with their ſiſter's diſorder, that they too were ſeized. At his arrival, they were all at play, very briſkly, and unconcernedly, before the doors; at length the eldeſt girl, about fourteen years of age, was ſeized as uſual.

The only ſymptom of its approach, was a ſwelling of the ſtomach; which riſing gradually up the throat, ſet the muſcles of the larynx and the head upon their uſual convulſions: this riſing was a certain ſymptom of an approaching paroxyſm in them all; and if they endeavoured to ſtop it, it burſt out with the greater violence, and held the longer.

The noiſe they made was inceſſant, and diſagreeable; yet not ſo much like the barking or howling of dogs, as had been given out, as a quaint kind of a ſong, conſiſting of three notes, or tones, repeated twice over; and cloſed by deep ſighs, &c. accompanied with extraordinary geſtures and nutations of the head.

This diſeaſe the doctor takes to be natural; and to riſe from the common cauſe of all convulſions, viz. from the animal ſpirits growing unruly in the nerves, and driving the muſcles into various contractions, according to the circumſtances of the indiſpoſition.

CYNIPS, in *Zoology*, a genus of four-winged inſects of the *hymenoptera* order, without a proboſcis, and with a ſpiral ſting, moſt commonly concealed.

CYNOCEPHALUS, from κυων, *dog*, and κεφαλη, *head*, in *Zoology*, the name of one of the genera of monkeys which have a long noſe, and reſemble a dog about the head. Theſe have all tails, ſome longer, ſome ſhorter, and are what we call in Engliſh *baboons*. There are ſeveral ſpecies of theſe, ſome of which are very large.

CYNOCRAMBE, in *Botany*, *Theligonum*. See *Dog's* CABBAGE.

CYNOCTONON. See ACONITE.

CYNODESMUS, or CYNODESMION, among *Anatomiſts*, the band, or ligament, which ties the prepuce of the yard to the nut or glans.

CYNOGLOSSUM, from κυων, *dog*, and γλωσσα, *tongue*, in *Botany*. See HOUNDS-TONGUE.

CYNOGLOSSI *radix*, *hound's-tongue root*, in the *Materia Medica*, is emollient, anodyne, and narcotic; it is alſo gently aſtringent, and is eſteemed a good medicine in catarrhs, diarrhœas, dyſenteries, and hæmorrhages of all kinds; alſo in the fluor albus, and gonorrhœa.

CYNOGLOSSUS, in *Zoology*, the name of a fiſh common in the Mediterranean ſea, and brought to market at Rome, Venice, and elſewhere. It much reſembles the ſoal-fiſh, but is a worſe fiſh for the table.

CYNOGLOSSOIDES. See BORRAGE.

CYNOGLUCOS, from κυων, *dog*, and λυκος, *wolf*, in *Natural Hiſtory*, a name given by the ancient writers to a creature which had the ſhape partly of a dog, and partly of a wolf, and was generated, according to their accounts, by a mixture of thoſe two ſpecies of animals in copulation, as the LEOCROCOTTA was, between the hyæna and lioneſs.

CYNOMITRA, in *Botany*, a genus of the *decandria monogynia* claſs of plants; the cup of which is four-leaved, and the fruit a fleſhy, lunated pod, containing a ſingle ſeed.

CYNOMORIUM, from κυων, *dog*, and μορον, *fruit*, in *Botany*, a name given by Micheli, and continued by Linnæus, to a genus of plants of the *monoecia monandria* claſs; the characters of which are theſe: it produces ſeparate male and female flowers, but they ſtand almoſt cloſe to one another, in the ſame amentum or ear. In the male flowers the general cup is an erect amentum, imbricated on every ſide, and compoſed of oblong, erect, truncated ſquammæ, each containing one flower, and formed narrow at the bottom, and gibbous on one ſide, and hollow on the other; there are no petals, and in the midſt there ariſes, by way of a ſtamen, one firm and ſtrait filament, longer than the cup, and crowned with a double apex. In the female flowers the common amentum is the ſame as in the male, but they have no other cup than is formed by the leaves of the plant. The germen of the piſtil is globoſe; the ſtyle is ſingle, erect, firm, and of the length of the cup; the ſtigma is obtuſe; the ſeed is ſingle and naked.

CYNOMUIA, the *dog-fly*, as the Greek term imports, in *Zoology*. See DOG-*fly*.

CYNOPHONTIS, in *Antiquity*, a feſtival obſerved in the dog-days at Argos, and ſo called απο της κυνας φονειν, i. e. from killing dogs; becauſe it was uſual on this day to kill all the dogs they met with.

CYNOREXY, or CYNODES OREXIS, an immoderate appetite to the degree of a diſeaſe; called alſo *fames canina*, and BULIMY.

CYNORRHODON, in *Botany*, the *dog-roſe*, as the Greek term ſignifies; the common wild briar, or wild white roſe, ſo common in our hedges.

CYNOSBATOS, from κυνων and βατος, *buſh*, in *Botany*, a word uſed as the name of different ſhrubs by different authors. It is now generally uſed as the name of the wild, or *dog-roſe*; but ſome authors have applied it to the common bramble; others to the *oxycanthus*, and others to the CAPER-*buſh*.

The fruit of the *wild roſe* is the *hip*, uſed in conſerve, and ſaid to be good in diſorders of the breaſt, &c.

CYNOSPASTOS, in *Botany*, a name uſed by ſome authors for the *garden piony*.

CYNOSURA, in *Aſtronomy*, a denomination given by the Greeks to URSA *minor*, or the little bear.

The word is formed of κυνοσουρα, q. d. the *dog's tail*.

This is the conſtellation next our pole, conſiſting of ſeven ſtars; four whereof are diſpoſed like the four wheels of a chariot; and three lengthwiſe, repreſenting the beam: whence ſome give it the name of the *chariot*, or Charles's *wain:* a name now more commonly given to the ſeven principal ſtars forming the ſame kind of figure in the Great Bear.

From theſe ſeven ſtars it is the pole takes its name, *Septentrionalis*; and the reſt of the hemiſphere, as far as the line, *Septemtriones.*

CYNOSURUS, *dog's-tail*, in *Botany*, a kind of graſs called *criſtata* by Scheuchzer, and other authors; but in the Linnæan ſyſtem of botany by this name. See Dog's *Tail*.

CYNTHIUS, and Cynthia, in *Mythology*, ſurnames of Apollo and Diana, derived from Cynthia, the name of a mountain in the middle of the iſland of Delos.

CYNOZOLOS, in *Botany*, a name given by ſome of the old Greek writers, and, from them, copied by Pliny, and the Latins, to expreſs the black *chamæleon thiſtle*, a poiſonous plant, which it was very neceſſary to diſtinguiſh perfectly from the plant called the white *chamæleon thiſtle*, which was a ſafe and eſculent plant.

CYON, or Cion, a graft, ſprig, or ſucker.

CYPERUS, in *Botany*, a genus of plants of the *triandria monogynia* claſs; the characters of which are, that the cup is an imbricated ſpike, the ſeveral ſcales of which are ſomewhat bent, of an oval figure, and boat-like form; and ſerve to keep the flowers ſeparate. It has no petals; the ſtamina are three extremely ſhort filaments; and the antheræ are oblong and furrowed; the germen of the piſtillum is extremely ſmall; the ſtyle is thread-like, and very long; the ſtigmata are three, and of a capillary form; it has properly no fruit but a ſingle, three-cornered, pointed, and naked ſeed. See *Tab.* V. *of Botany*, *Claſs* 15. Phil. Tranſ. vol. xlix. part ii. p. 808.

Cyperus *root*, in the *Materia Medica*, the name of a root uſed in medicine, of which there are two kinds, the long and the round; the long *cyperus* is of our own growth; the round, when genuine, we have from the Eaſt Indies, but what is uſually ſold is the root of a baſtard kind, common about our own ditches, and called by authors, by way of diſtinction from the Indian kind, *cyperus rotundus noſtras.*

The Indian round *cyperus* is a knobbed root, full of ſmall ſpecks and tubercles, brown on the outſide, and greyiſh within, of a ſlightly ſweet ſmell, and of an acrid taſte. The long *cyperus* is an oblong root, covered with a great number of fibres, not eaſily broke, of a duſky brown without, and a pale bright grey within, of an acrid taſte, and very agreeable ſmell, when freſh and good. The plants which produce them both, grow in watery places, and have leaves and flowers in ſome meaſure reſembling the water-graſſes, which, from their reſemblance to theſe, are called *cyperus* graſſes. They are poſſeſſed of the ſame virtues, cure ill-ſcented breaths, are good in nephritic diſorders, in colics, and in diſorders of the womb. They are taken in powder, or decoction.

The roots of *cyperus* are attenuants, and deobſtruents, promote urine, and the menſes, are good ſtomachics, and ſerviceable in the firſt ſtages of the dropſy.

CYPHER. See Cipher.

CYPHI, a term in the *Arabian Pharmacy*, ſignifying a kind of cordial perfume.

Mithridates gave the appellation *cyphi* to the troches wherewith the Egyptian prieſts uſed to ſweeten their gods, to make them grant what they requeſted. He uſed the ſame in the compoſition of mithridate, on account of their efficacy againſt poiſons, defluxions, &c. The *cyphi* are compoſed of raiſins, or dried grapes, turpentine, myrrh, bdellium, ſpica nardi, caſſia lignea, aſpalathum, ſaffron, &c. tempered into a maſs with honey and a little wine.

CYPHOMA, Cyphos, and Cyphosis, in *Medical Writers*, an incurvation of the ſpine, forming a crookedneſs of the back.

CYPHON, in *Antiquity*, a kind of puniſhment uſed by the Athenians; it was a collar made of wood, ſo called, becauſe it conſtrained the criminal, who had this puniſhment inflicted on him, to bow down his head.

CYPHONISM, Cyphonismus, from κυφων, which has various ſignifications, derived from κυφος, *crooked*, a kind of torture, or puniſhment, in uſe among the ancients.

The learned are at a loſs to determine what it was: ſome will have it to be that mentioned by St. Jerom, in his Life of Paul the Hermit, chap. 2. which conſiſted in ſmearing the body over with honey; and thus expoſing the party, with his hands tied, to the warm ſun, to invite the flies and other vermin to perſecute him.

CYPRÆA, in *Zoology*, a genus of ſnail-ſhells of an oval contorted figure, and with a longitudinal aperture, comprehending a great variety of ſpecies.

CYPRESS, *Cupreſſus*, in *Botany*, a genus of the *monoecia monadelphia* claſs. Its characters are theſe: it hath male and female flowers on the ſame plant; the male flowers are formed into oval catkins, in which the flowers are placed thinly: they have no petals nor ſtamina, but have four ſummits, which adhere to the bottom of the ſcales. The female flowers are formed in a roundiſh cone, each containing eight or ten flowers: the germen is ſcarcely viſible, but afterward becomes a globular cone, opening in angular target-ſhaped ſcales, under which are ſituated angular ſeeds. There are ſix ſpecies. See *Tab.* V. *of Botany*, *Claſs* 19.

All the ſpecies of *cypreſs* are propagated from ſeeds: theſe ſhould be ſown early in the ſpring, on a bed of warm, dry, ſandy earth, which ſhould be levelled very ſmooth. If the weather prove warm and dry, it will be proper to water the bed, taking care not to waſh the ſeeds out of the ground: in about a month's time, the plants will appear above ground, which ought to be kept free from weeds. After remaining two years in this bed, they may be tranſplanted into a nurſery: the beſt ſeaſon for removing them is in April, on a cloudy day that ſeems to threaten rain; and, in taking them out of the ſeed-bed, the roots ſhould be preſerved entire, with a ball of earth to each plant. When they have been three or four years in the nurſery, they may be planted out for good; and, if deſigned for timber, the diſtance of eighteen or twenty feet ſhould be allowed every way around them. They muſt be well watered at firſt to ſettle the earth to their roots, which ought to be frequently repeated, if the weather proves dry.

The *cypreſs* tree, though found in moſt of our old gardens, is, at preſent, leſs regarded than it really deſerves. It adds a conſiderable beauty to wilderneſſes, or clumps of evergreens. But, beſides this, it ought to be cultivated on account of its valuable wood.

This tree is alſo recommended by many for purifying the air, and relieving weak lungs. On this account the ancient phyſicians of the eaſtern countries uſed to ſend their patients with weak lungs to the iſland of Candia, which then abounded with theſe trees. Miller.

The wood is very compact, and heavy; and its ſmell as agreeable as that of ſaunders. It ſcarce ever rots, decays, or is worm-eaten, any more than cedar, or ebony: for which reaſon, the ancients uſed it to make the ſtatues of their gods.

It is good for making cheſts, muſical inſtruments, and other utenſils. It never cleaves, and is extremely hard and durable; its bitter juice reſiſting worms and putrefaction. Thus we are told, that the gates of St. Peter's church at Rome, made of *cypreſs* wood, had laſted from the time of Conſtantine, eleven hundred years, as freſh as new, when pope Eugenius IV. ordered gates of braſs in their ſtead.

Some will have it, that the wood, gophir, of which Noah's ark was made, was *cypreſs*; which Plato preferred to braſs itſelf, for writing his laws on.

The coffins in which, according to Thucydides, the Athenians buried their heroes, were of this wood, as are alſo many of the Egyptian mummy cheſts. See on the *cyprus* of the ancients, Phil. Tranſ. vol. xlv. p. 564, &c.

Cypreſs nut is a very powerful aſtringent and balſamic. In diarrhœas, and dyſenteries, there is ſcarce any ſimple medicine preferable to it. It is ſaid to be a good febrifuge; but at preſent is little regarded in the ſhops.

Cypress, *ſummer*, a name uſed by ſome for the *chenopodium* of authors. See Goose-*foot*.

CYPRIANUS, in *Ichthyology*, the name given by Ariſtotle to the carp. He has alſo called it cyprinus; and Athenæus, Oppian, and many other writers, uſe indiſferently the one or the other of the words.

CYPRINE, in *Mythology*, a ſurname of Venus, becauſe the iſland of Cyprus was conſecrated to her.

CYPRINUS, in the *Artedian Ichthyology*, the name of a very extenſive genus of fiſhes, comprehending what have been before eſteemed many different genera; the characters are theſe: the branchioſtege membrane on each ſide contains three bones; the whole mouth is ſmooth and toothleſs, but low down in the jaws there are two hard and ſerrated bones, which ſerve as teeth, and over againſt theſe there is one ſoft oval bone to anſwer them. The air bladder is as it were tied with a thread in the middle, and ſo divided into two parts. The fiſh is of the malacopterygious kind, and the two jaws are uſually of the ſame length, but ſometimes the lower one is ſomewhat longer than the upper. Artedi enumerates nineteen ſpecies. Gen. Piſc. 3.

Of this genus are the barbel, bleak, bream, carp, chub, gudgeon, roach, and tench; which ſee under their ſeveral articles.

In the Linnæan ſyſtem this is a genus of the *abdominal* fiſhes.

Cyprinus *latus*, the broad *carp*, in *Zoology*, a name given by many authors to the common bream.

CYPRIPEDIUM, in *Botany*. See Lady's *ſlipper*.

CYPRIUS *lapis*, a kind of adamant brought from Cyprus, with which the ancients uſed to perforate other gems.

CYPRUS, an order of knights, called alſo knights of *Silence*, and knights of *the Sword*; inſtituted by Guy de Luſignan, king of Cyprus, in 1192.

The deſign of the inſtitution was, to oppoſe the inroads and irruptions of the infidels in that iſland: accordingly, their motto was *ſecuritas regni*.

CYPRUS *bird*, in *Zoology*, a common name for the *atricapilla*, or *black cap*, a very ſmall bird, well known in England, and much more plentiful in the iſland of Cyprus, where it is eſteemed a very delicate bird at table.

CYPRUS *vitriol*. See VITRIOL.

CYPRUS *wood*, in the *Materia Medica*, a name given by ſome authors to the *roſe-wood*, becauſe much of it is brought from the iſland of Cyprus.

CYRBASIA, Κυρϐασια, among the Greeks, a kind of caps with high tops, in form of a cone, which were worn by the prieſts.

CYRENAICI, a ſect of ancient philoſophers; ſo called from their chief, Ariſtippus of Cyrene, a diſciple of Socrates. See SOCRATIC.

Their leading tenet was, that man is born for pleaſure; and that virtue is only ſo far laudable, as it conduces thereto. By pleaſure, they meant, not only a privation of pain, and a tranquillity of mind, like what Epicurus taught; but an aſſemblage of all the poſitive pleaſures both of the mind and the ſenſes, eſpecially the laſt. See EPICUREAN.

Cicero makes frequent mention of Ariſtippus's ſchool; and ſpeaks of it as yielding debauchees.

Three diſciples of Ariſtippus, after his death, divided the ſect into three branches; under which diviſion it languiſhed and ſunk: the firſt called the *Hegeſiac* ſchool; the ſecond the *Annicerian*, and the third the *Theodoran*; from the names of their authors.

CYRILLA, in *Botany*, a genus of the *pentandria monogynia* claſs, with an acute petal inſerted in the receptacle; a double-celled capſule, and a bifid, permanent ſtyle.

CYROCEPHALUS, in *Botany*, the name given by ſome authors to the *antirrhinum*, the *calves ſnout*, or SNAP-*dragon*.

CYRTOMA, a bunch or curvity of the back. See GIBBOUS.

CYST, in *Surgery*, the bag, or membrane, in which an encyſted tumor of the ſteatomatous, atheromatous, or ſarcomatous kind, is included. In extirpating theſe tumors, if, by neglect, or accident, the *cyſt*, or any conſiderable part of it be left behind, the tumor will not fail to return. Indeed, if the tumor be a ſchirrhus, the contents are hard enough to make a clear extirpation of it, notwithſtanding its including coats be wounded: but when the matter of the tumor is ſoft, or fluid, by its eſcaping the tumor will become flaccid; ſo that it will be hardly poſſible to make a clear extirpation of the *cyſt*, without leaving ſome fragments of it behind, which muſt, in that caſe, be brought away afterwards by ſuppuratives, digeſtives, and a proper treatment; and when the ſinus is, by this means, cleared, the wound may be ſafely healed, without any danger of the return of the complaint. Heiſter's Surgery, p. 237.

CYST-HEPATIC *duct*, a canal, by which the *porus bilarius* diſcharges a part of its bile into the gall-bladder.

It was firſt deſcribed by Dr. Gliſſon, and long afterwards pretended to be diſcovered by M. Perrault. See *Tab. Anatomy* (*Splanch.*) *fig.* 5. *lit. c c.*

Verheyen, from the courſe of the bile, inverts the name, and more properly calls it *hepaticyſticus*.

CYSTIC, an epithet given to two arteries, and two veins opening into the gall-bladder. See *Tab. Anatomy* (*Angeiol.*) *fig.* 1. *n.* 34.

The *cyſtic arteries*, *cyſticæ gemellæ*, are two branches from the cœliac, beſtowed on the gall-bladder, and bringing blood to the ſame. The *cyſtic veins* return the remains of this blood into the *vena porta*.

CYSTICS, denote medicines againſt diſtempers of the bladder. See STONE, LITHONTRIPTIC, &c.

CYSTICAPNOS, in *Botany*. See FUMITORY.

CYSTICUS *ductus*, or *meatus*, a biliary duct, about the bigneſs of a gooſe's quill; joined to the *meatus hepaticus*, at about two inches diſtance from the gall-bladder; the two together forming the *ductus communis*. See *Tab. Anatomy* (*Splanch.*) *fig.* 1. *lit. d. fig.* 5. *lit. g g.*

CYSTIS, in *Botany*, a name by which many authors have called the *alkekengi*, or *winter cherry*. It had this name *cyſtis* from the remarkable character of its fruit being contained in a ſkinny bladder, or bag. It was generally, however, called *halicacabum*.

CYSTIS, the ſame with *veſica*, or BLADDER.

The word is κυϛις, which ſignifies the ſame.

CYSTIS *cholédocha*, the ſame with *felliculus*, or VESICULA *fellis*.

CYTHARA. See CITHARA.

CYTHEREA, in *Mythology*, the ſurname of Venus, ſo called from Cythera, at preſent Cerigo, an iſland oppoſite to Crete, where ſhe had a temple, eſteemed the moſt ancient in Greece, and on the ſhores of which ſhe was believed to be borne by the Zephyrs, ſurrounded by the Loves, the Tritons, and Nereides, reclining in a languiſhing poſture, in a ſea-ſhell. They give the name of *Cytheriades* to the Graces which attended her on the ſhore without quitting her, except on thoſe occaſions, when ſhe rather choſe to be waited on by the Pleaſures.

CYTHINON, in *Botany*, a name given by the ancient Greeks to the yellow wood, called alſo *thapſum* and *chryſoxylon*, a wood uſed in dying cloths, &c. See CYMENE. It was alſo called *Scythicum lignum*, Scythian wood, from the country whence it was brought; and from this laſt name it is eaſy to deduce the name *cythinon*. The old Greeks often wrote *cythinon* for *ſcythicon*, and the leaving out the initial *ſ*, which was a common practice among them, reduces this word to *cythinon*. Familiar inſtances of this practice occur to us in the words *milax* for *ſmilax*, *maragdus* for *ſmaragdus*, &c.

CYTINUS, in *Botany*, a genus of the *gynandria dodecandria* claſs; the calyx is parted into four ſegments; there is no corolla; with ſixteen ſeſſile antheræ, and an eight-celled berry, incloſing many ſeeds.

CYTISO *Geniſta*. See BROOM-*tree*.

CYTISUS. See *Shrub* TREFOIL.

CYZICENS, CYZICENA, among the ancient Greeks, were a ſort of magnificent banqueting-houſes, always looking towards the north, and uſually opening upon gardens.

They had their name from Cyzicus, a city very conſiderable for the grandeur of its buildings; ſituate in an iſland of Myſia, bearing the ſame name. Theſe *cyzicens* were among the Greeks what the *triclinia* and *cœnacula* were among the Romans.

CYZICUM *marmor*, a ſpecies of marble ſo called by the ancients from the great uſe made of it by a ſtatuary called Cyzicus. It was white, with fine narrow veins of black, and was called alſo PROCONNESIUM *marmor*.

CZAR, a title of honour, aſſumed by the grand-dukes, or, as they are now ſtyled, emperors of Ruſſia.

The natives pronounce it *tzar*, or *zaar*; and this, by corruption, from Cæſar, emperor; from ſome fancied relation to the Roman emperors; on account of which, they alſo bear the eagle as a ſymbol of their empire.

The firſt, who bore the title of *czar*, was Baſil, ſon of Baſilides, who freed his country from its ſubjection to the Tartars, about the year 1470.

M. Sperlingius, in his diſſertation on the majeſty of the name *konning*, obſerves, that the Ruſſian princes never bore the name *czar*, till their people had embraced the Greek faith: before that time, he ſays, they were called *konger*, KING.

When the *czar* Peter I. required his imperial title to be acknowleged by the court of Vienna, there was great difficulty made about it: but the *czar* ſhewing them by his embaſſador an original letter of Maximilian I. to the *czar* John Baſilowitz, the count Sinſendorff, grand chancellor of the court of Vienna, cauſed the archives of the houſe of Auſtria to be ſearched for the original of that letter; but no ſuch letter was found: however, the hand-writing of the ſecretary, and the ſignature of Maximilian, being known and acknowleged, the title of emperor was allowed to Peter and his ſucceſſors, which they continue to enjoy. This anecdote, M. l'abbé Langlet acknowleges to have received from count Sinſendorff himſelf, in 1722. Encycl.

CZEMER, in *Medicine*, a name given by the people of Hungary, and ſome of the neighbouring nations, to a very troubleſome diſtemperature of the wriſts, and lower part of the arms, to which the people of this part of the world are very ſubject. It conſiſts of a tumor not hard, but very painful to the touch. The general method of cure is, by giving firſt a ſtrong emetic, and then confining the patient to his bed, and to the uſe of ſudorifics, which in ſome days carry it off. Phil. Tranſ. N° 243.

END OF THE FIRST VOLUME.